

NOTE ON THE PETROMYZONTIDS.

BY THEODORE GILL.

The purpose of the present note is to make known the characteristics of a genus (*Entosphenus*) proposed by me long ago, and, in connection with it, diagnoses of the genera of the family Petromyzontidæ are given, as well as the synonymy of the several groups of the order HYPEROARTIA.

THE ORDER HYPEROARTIA.

Synonyms as orders.

- <Cyclostomi, *Bonaparte*, Giorn. Accad. di Scienze, t. 52 (Saggio. Distrib. Metod. Animali Vertebr. a Sanguine Freddo, p. 41), 1832.
- <Helminthoidei, *Bonaparte*, Nuovi Annali delle Sci. Nat., t. 2, p. 133, 1838; t. 4, p. 277, 1840.
- = Hyperoartia, *Müller*, Abhandl. K. Akad. Wiss. zu Berlin, 1844, p. —. 1846.
- <Hyperoartii, *Bonaparte*, Cat. Metod. dei Pesci Europei, pp. 9*, 91*, 1846.
- <Cyclostomata, *Fitzinger*, Sitzungsber. K. Akad. der Wissensch. (Wien), B. 67, 1. Abth., p. 57, 1873.

The order 10, "Helminthoidei" is identical with the "Sectio 6, Cyclostomi" and the "Subclassis 4, Marsipobranchii" of Bonaparte.

PETROMYZONTIDÆ.

Synonymy.

- = Lampredini, *Rafinesque*, Indice d'Ittiolog. Siciliana, p. —, 1810.
- <Cyclostomia, *Rafinesque*, Analyse de la Nat., p. 94, 1815.
- <Suceurs, Cyclostomes, *Cuvier*, Règne Animal [1re éd.], t. 2, p. 116, 1817; 2e éd., t. 2, p. 49, 1829.
- = Auloedibranchia, *Latreille*, Fam. Nat. du Règne Animal, p. 111, 1825.
- = Petromyzides, *Risso*, Hist. Nat. de l'Europe Merid., t. 3, p. 99, 1826.
- <Petromyzonidæ, *Bonaparte*, Giorn. Accad. di Scienze, v. 52 (Saggio Distrib. Metod. Animali Vertebr. a Sanguine Freddo, p. 41), 1832.
- <Petromyzonidæ, *Swainson*, Nat. Hist. and Class. Fishes, etc., v. 2, pp. 196, 337, 1839.
- = Petromyzonidæ, *Bonaparte*, Nuovi Annali delle Sci. Nat., t. 2, p. 133, 1838; t. 4, p. 277, 1848.
- <Petromyzidæ, *Gray*, Syn. Brit. Mus., pp. 148, 150 (fide Gray), 1842.
- = Petromyzontidæ, *Girard*, Expl. and Surv. for R. R. Route to Pacific Oc., v. 10, Fishes, p. 376, 1858.
- = Petromyzontoidei, *Bleeker*, Enum. Sp. Piscium Archipel. Indico, p. xxxiii, 1859.
- = Petromyzontoideæ, *Gill*, Cat. Fishes E. Coast N. America, p. 62, 1861.
- = Petromymyzonini, *Siebold*, Süßwassertische von Mitteleuropa, p. 366, 1863.
- = Petromyzontidæ, *Günther*, Cat. Fishes Brit. Mus., v. 8, p. 499, 1870.
- = Petromyzontes, *Fitzinger*, Sitzungsber. K. Akad. der Wissensch. (Wien), B. 67, 1. Abth., p. 58, 1873.

PETROMYZONTINÆ.

Synonymy.

- < Lampredia, *Rafinesque*, *Analyse de la Nature*, p. 94, 1815.
 < Petromyzonini, *Bonaparte*, *Giorn. Accad. di Scienze*, v. 52 (Saggio Distrib. Metod. Animali Vertebr. a Sangue Freddo, p. 41), 1832.
 < Petromyzonini, *Bonaparte*, *Nuovi Annali delle Sci. Nat.*, p. 133, 1838; t. 4, p. 277, 1840.
 < Petromyzontiformes, *Bleeker*, *Enum. Sp. Piscium Archipel. Indico*, p. xxxiii, 1859.

Young.

- > Ammocoetina, *Gray*, *Proc. Zool. Soc. London*, 1851, p. 235, 240; *List Fish. B. M.*, pp. 137, 145, 1851.
 > Ammocoetini, *Bonaparte*, *Cat. Metod. dei Pesci. Europei*, p. 92,* 1846.
 > Ammocoetiformes, *Bleeker*, *Enum. Sp. Piscium Archipel. Indico*, p. xxxiii, 1859.

Petromyzontids with the suproral lamina median and undivided.

Analysis.

- I. Lingual teeth of anterior row coalesced into one; suproral lamina bicuspid or tricuspid.
1. Discal and peripheral teeth in obliquely decurved continuous rows; suproral lamina contracted.
 - 1a. Suproral lamina bicuspid; anterior lingual tooth with a deep re-entering median groove terminating in a point *Petromyzon*.
 - 1b. Suproral lamina tricuspid; anterior lingual tooth with a slight median groove *Ichthyomyzon*.
 2. Discal and peripheral teeth differentiated; former vertically uniserial and bi- or tri-cuspid; latter uniserial and minute; suproral lamina extended laterally.
 - 2a. Suproral lamina bicuspid; anterior lingual tooth with a crescentiform dentated edge and the median denticle enlarged *Ammocartes*.
 - 2b. Suproral lamina tricuspid; anterior lingual tooth wedge-shaped, and with an almost straight, finely serrate edge *Entosphœus*.
- II. Lingual teeth of anterior row two, distinct and conic; suproral lamina quadricuspid *Geotria*.
- III. Lingual teeth three, standing on the same base, pointed and curved; the median smallest *Exomegas*.

PETROMYZON.

Synonymy.

- = *Petromyzon*, *Linæus*, *Syst. Nat.*, ed. 10.
 < *Petromyzon* (*Duméril*), *Cuvier*, *Règne Animal*, t. 2, p. 404, 1817.
 < *Petromyzon*, *Gray*, *Proc. Zool. Soc. London*, pt. 19, p. 235, 236; *List Specimens Fish Brit. Mus.*, pt. 1, p. 137, pl. 1, f. 1 (month), 1851.
 = *Lampetra*, *Malm*, *Forhandl. Skand. Naturf. 8 möde*, p. 580, 1860.
 < *Petromyzon*, *Günther*, *Cat. Fishes Brit. Mus.*, v. 8, p. 500, 1870.

Petromyzontinæ with the suproral lamina contracted and with two converging teeth; infroral lamina multicuspid; disco-peripheral teeth numerous, and in arched series (of 4 to 6 each) declining downwards;

and lingual teeth three, pectinate, the anterior deeply impressed and curved back at middle, and the posterior correspondingly curved backwards at inner anterior angles.

ICHTHYOMYZON.

Synonymy.

- < Ichthyomyzon, *Girard*, Expl. and Surveys for R. R. Route to Pacific Oc., v. 10, Fishes, p. 381, 1858.
 < Ichthyomyzon sp., *Günther*, Cat. Fishes, Brit. Mus., v. 8, p. 506, 1870.
 Petromyzon sp., *auct.*

Petromyzontinæ with the suproral lamina rather contracted and tri-cuspid; infroral lamina multicuspid; disco-peripheral teeth numerous, and in arched series (of 4-7 each) declining downwards; and of lingual teeth, anterior little impressed and incurved at middle, and posterior (shed or wanting).

Type Ichthyomyzon castaneus, *Girard*.

AMMOCÆTES.

Synonymy.

- > Lampreda, *Rafinesque*, Analyse de la Nature, p. 94 (not described), 1815.
 > Pricus, *Rafinesque*, Analyse de la Nature, p. 94 (not described), 1815.
 > Ammocætes *A. Duméril*, in *Cuvier* Règne Animal [1re ed.], t. 2, p. 119, 1817 (based on larval form).
 = Lampetra, *Gray*, Proc. Zool. Soc. London, pt. 19, pp. 235, 237, 1851; List Specimens Fish Brit. Mus., pt. 1, pp. 137, 140, pl. 1, f. 2 (month), 1851.
 ? Scolecossoma, *Girard*, Expl. and Surveys for R. R. Route to Pacific Oc., v. 10. Fishes, p. 379? 1858 (based on larval form).
 = Petromyzon, *Malm*, Forhandl. Skand. Naturf. 8 möde, p. 580, 1860.
 Ichthyomyzon sp., *Girard*.

Petromyzontinæ, with the suproral lamina transversely extended, and with two cusps, one at each end; infroral lamina multicuspid; discal teeth uniserial, broad and bi- or tri-cuspid; peripheral teeth uniserial; and very small lingual teeth.

ENTOSPHEENUS.

Synonymy.

- = Entosphenus, *Gill*, Proc. Acad. Nat. Sci. Phila., [v. 14,] p. 331, 1862.
 < Ichthyomyzon, *Günther*, Cat. Fishes Brit. Mus., v. 8, p. 506, 1870.

Petromyzontinæ with the suproral lamina transversely extended and tricuspoid; infroral multicuspid; discal teeth uniserial, broad, and bi- or tricuspoid; peripheral teeth uniserial and minute; lingual teeth two, an anterior wedge-shaped, with an almost straight, finely serrate edge, and a posterior horse-shoe-shaped, and with a double finely serrate keel on the sides.

A partial synonymy of the type is as follows:

ENTOSPHEXUS TRIDENTATUS.

Synonymy.

- 1836—*Petromyzon tridentatus*, *Gairdner*, *MSS.*
 1836—*Petromyzon tridentatus*, *Richardson*, *Fauna Boreali-Americana*, v. 3, p. 293, 1836.
 1842—*Petromyzon tridentatus*, *DeKay*, *Nat. Hist. New York*, v. 5, p. 381. (Extralimital.)
 1846—*Petromyzon tridentatus*, *Storer*, *Synopsis of the Fishes of North America* (p. 266) in *Mem. Am. Acad.*, v. 2, p. 518.
 1851—*Petromyzon tridentatus*, *Gray*, *Proc. Zool. Soc. London*, pt. 19, p. 240; *List Specimens Fish in Brit. Mus.*, p. 144.
 1858—*Petromyzon lividus*, *Girard*, *Expl. and Surv. for R. R. Route to Pacific Oc.*, v. 10, *Fishes*, p. 379.
 1862—*Entosphenus tridentatus*, *Gill*, *Proc. Acad. Nat. Sci. Phila.*, [v. 14,] p. 331.
 1870—*Ichthyomyzon tridentatus*, *Günther*, *Cat. Fishes Brit. Mus.*, v. 8, p. 506.

Habitat.—California.

·GEOTRIA.

Synonymy.

- > *Geotria*, *Gray*, *Proc. Zool. Soc. London*, pt. 19, p. 239, pl. 4, f. 3, (mouth,) pl. 5, (fish,) 1851; *List Specimens Fish in Brit. Mus.*, pt. 1, p. 142, pl. 1, f. 3 (mouth), pl. 2 (fish), 1851.
 > *Velasia*, *Gray*, *Proc. Zool. Soc. London*, pt. 19, p. 239, pl. 4, f. 4; *List Specimens Fish in Brit. Mus.*, pt. 1, p. 143, pl. 1, f. 4 (mouth), 1851.
 = *Velasia*, *Günther*, *Cat. Fishes Brit. Mus.*, v. 8, p. 508, 1870.

Petromyzontinæ with the suproral lamina transversely extended and arched, armed with "four sharp flat lobes," the outer of which are enlarged; the infroral lamina crescent-like, sinuous, or denticulated on the edge; the discal teeth numerous and in diverging series, and the lingual teeth elongated, conic, and two in number (*Gray* and *Günther*).

EXOMEGAS.

Synonymy.

- = *Exodomegas*, *Gill* *MSS.*
Petromyzon sp. *Burmeister*.

Petromyzontidæ with the discal teeth in concentric series, the outer containing the largest teeth (about 24 on each side), lingual teeth three, large pointed and curved, the median smallest, all standing on the same base.

Type *Exomegas macrostomus* = *Petromyzon macrostomus* *Burmeister*, *Anal. Mus. Buenos Aires*, pt. 5, 1868, *Acta Soc. Palæont.*, p. xxxvi.

CARAGOLINÆ.

Synonymy.

Caragolinæ, *Gill*, *MSS.*

Petromyzontids with two lateral suproral laminæ.

CARAGOLA.

Synonymy.

- < Caragola, *Gray*, Proc. Zool Soc. London, pt. 19, p. 239, pl. 4, f. 5; List Specimens Fish in Brit. Mus., pt. 1, p. 143, pl. 1, f. 5 (month), 1851.
 < Mordacia, *Gray*, Proc. Zool Soc. London, pt. 19, p. 239, pl. 4, f. 6; List Specimens Fish in Brit. Mus., pt. 1, p. 143, pl. 1, f. 6 (month), 1851.
 = Mordacia, *Günther*, Cat. Fishes Brit. Mus., v. 8, p. 507, 1870.

Caragolinæ with the suproral laminae entirely separated, triangular, and each with three conic teeth; the infroral lamina "crescent-shaped, with about nine acute conical cusps;" the discal teeth "in somewhat distant series, radiating from the center," those of a series more or less confluent, and the lingual teeth serrated and in two pairs. (*Günther*.)

DESCRIPTION OF A NEW WARBLER FROM THE ISLAND OF SANTA LUCIA, WEST INDIES.

BY ROBERT RIDGWAY.

DENDRŒCA ADELAIIDÆ DELICATA, subsp. nov.

CH. —Differing from *D. adelaidæ*, from Porto Rico, in very much more intense yellow superciliaries and lower parts, the former much broader (occupying the whole of the forehead except a central line), more decided plumbeous of the upper parts, more distinct black mark on sides and fore part of the crown, larger size, and other particulars.

Adult (♂?): Middle of crown, occiput, auriculars, sides of neck, and upper parts in general, clear uniform plumbeous; crown bordered anteriorly and laterally by a broad Λ -shaped mark of deep black, the apex of which is continued in a narrow streak to the base of the culmen, dividing two very broad frontal patches of intense yellow, which extend backward, more narrowly, to just behind the eye; a large sub-orbital spot of clear yellow, separated from that of the forehead by a narrow dusky loreal streak. Malar region, chin, throat, and entire lower parts, except anal region and crissum, very rich, pure gamboge yellow, the first separated from the yellow suborbital spot by a dusky rictal stripe, which gradually blends posteriorly into the plumbeous of the auriculars; anal region, crissum, and lining of the wing pure white. Wings dusky black, the feathers edged with plumbeous, and both rows of coverts very broadly tipped with pure white, forming two conspicuous bands; tail feathers black, edged with plumbeous, the lateral feather with about .80 of an inch of the end of the inner web white, the next two similarly marked, but the white areas gradually reduced in size, the fourth feather with merely a broad terminal edging and small sub-terminal spot of white. Bill brownish black; feet horn-brown. Wing, 2.30; tail, 2.30; culmen, .42; tarsus, .70; middle toe, .40. (Type No. 80909; Sta. Lucia, W. I.; F. A. Ober.)