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Ichthyology.

ICHTHYOLOGY.

BY

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J. Müller, Beiträge zur Kenntniss der natürlichen Familien der Fische, Contributions to the Knowledge of the Natural Families of Fish (Monthly Reports of the Academy of Sciences of Berlin, August 1843; these Archiv. 1843, i, p. 292); and Supplement to the same (these Archiv. 1843, i, p. 381), of the greatest importance with respect to system.

The new Parts of Smith's Illustrations of the Zoology of South Africa (vid. sup. p. 86) contain some new Fishes, which are given below. Besides these, are figured in the 14th Part, *Otolithus æquidens*, Cuv. Val., and *Dentex rupestris*, Cuv. Val.; in the 15th, *Sciæna hololepidota*, Cuv. Val., and *Rhinobatus* (*Syrrhina*) *annulatus*, Müll. Henle.; in the 16th, *Ostracion bicuspis*, Blumenb. (*O. stellifer*, Bl. S.)

The 4th volume of the Zoology of the Voyage of H.M.S. Beagle, under the command of Captain Fitzroy, during the years 1832-1836 (Lond. 1842, 4), contains the Fishes, arranged by Leonard Jenyns. The numerous new species, among which are also several new genera, are quoted below, since it may perhaps be supposed that the work is not one of the most easily accessible. Accurate descriptions of many already known Fishes, and interesting statements are also given. The work is not limited to any definite

Fauna, and can be regarded as a whole, only inasmuch as that the Fish were collected on *one* voyage. They belong to various regions of the earth. The figures occupy 29 lithographic plates.

Of Siebold's Flora Japonica, the second, third, and fourth Parts have appeared, containing the Fishes arranged by Temminck and Schlegel. These Parts include Fishes from the Families of the Percidæ, Scleroparei, Sciænidæ, and some Sparidæ. Among a large number of new Fishes, many previously described are also figured, and our knowledge of these animals is enlarged by numerous interesting accounts and accurate descriptions. The lithographic figures are to be especially praised, from the circumstance that most of them have been finished from recent specimens, which with respect to colour is so highly important. Several new genera are instituted, but the specific names in them are not given.

Of the Zoology of New York, or the New York Fauna, by James De Kay (Albany, 1842, 4), the fourth Volume contains the Fishes. In it 440 species are named as belonging to the United States; these are arranged in 156 genera and 32 families. 294 species are found in the State of New York and the adjacent waters; they are accurately described and figured in 72 lithographic plates.

There are 30 Percidæ: 5 *Perca*, 5 *Labrax* (of which 2 are new), 1 *Huro*, 1 *Pileoma* (n. g.), 2 *Lucioperca* (1 new), 1 *Boteosoma* (n. g.), 1 *Serranus* (new), 1 *Centropristes*, 1 *Grystes*, 3 *Centrarchus* (1 new), 2 *Pomotis*, *P. vulgaris* and *P. appendix* (*Labrus appendix*, Mitch.), 1 *Dules*, 1 *Aphredoderus*, 1 *Uranoscopus*, 1 *Sphyræna* (new), and 1 *Lepisoma* (n. g.).—20 Triglidæ: 1 *Trigla*, 3 *Prionotus*, 1 *Dactylopterus*, 4 *Cottus*, 1 *Hemetripterus*, 2 *Scorpæna*, 1 *Sebastes*, 1 *Uranidea* (n. g.), 1 *Aspidophorus*, 1 *Cryptacanthodes*, 4 *Gasterosteus*.—16 Sciænidæ: 1 *Leiostomus*, 1 *Otolithus*, 5 *Corvina* (1 new), 1 *Umbrina*, 2 *Pogonias*, 1 *Micropogon*, 3 *Hæmulon*, 1 *Pristipoma*, 1 *Lobotes*.—5 Sparidæ: 3 *Sargus* (1 new), 1 *Chrysophrys*, 1 *Pagrus*.—3 Squamipennæ: 2 *Ephippus*, 1 *Pimelepterus*.—27 Scomberidæ: 3 *Scomber*, 1 *Thynnus*, 1 *Pelamys*, 1 *Cybium*, 1 *Trichiuras*, 1 *Xiphias*, 1 *Naucrates*, 1 *Elacate*, 1 *Lichia* (new), 2 *Trachinotus*, 1 *Palinurus* (n. g.), 3 *Caranx* (1 new), 1 *Blepharis*, 2 *Argyreiosus*, 1 *Vomer*, 1 *Seriola*, 1 *Temnodon*, 1 *Coryphæna*, 1 *Lampugus*,

2 *Rhombus*.—1 Teuthidæ: *Acanthurus*.—2 *Atherina*.—4 *Mugil*.—8 Gobiidæ: 1 *Blennius*, 1 *Pholis*, 1 *Chasmodes*, 1 *Gunnellus*, 2 *Zoarces*, 1 *Anarrhichas*, 1 *Gobius*.—7 Lophiidæ: 1 *Lophius*, 2 *Chironectes*, 2 *Malthæa*, 2 *Batrachus* (1 new).—3 Labridæ: 2 *Ctenolabrus*, 1 *Tautoga*; thus, altother, 126 ACANTHOPTERYGII.

Further—6 Siluridæ: 1 *Galeichthys*, 1 *Arius*, 4 *Pimelodus* (2 new).—27 Cyprinidæ: 2 *Cyprinus*, 1 *Abramis* (new), 5 *Labeo* (2 new), 7 *Catostomus*, (2 new), 1 *Stilbe*, 11 *Leuciscus* (4 new).—7 Cyprinodontes: 1 *Lebias*, 3 *Fundulus* (1 new), 3 *Hydrargira* (1 new.—9 Esocidæ: 4 *Esox* (1 new), 1 *Belone*, 1 *Scomberesox*, 3 *Exocœtus*.—2 *Fistularia*.—11 Salmonidæ: 5 *Salmo*, 1 *Osmerus*, 1 *Bajone* (n. g.), 1 *Scopelus*, 3 *Coregonus*.—18 Clupeidæ: 7 *Clupea*, 6 *Alosa* (1 new), 1 *Chætoessus* (new), 2 *Hyodon*, 1 *Elops* 1 *Amia* (new).—2 *Lepisosteus* (1 new).—14 Gadidæ: 4 *Morrhua*, 1 *Merluccius*, 3 *Lota* (1 new), 3 *Merlangus* (1 new), 1 *Brosmius*, 2 *Phyces*.—9 Pleuronectæ: 1 *Hippoglossus*, 6 *Platessa* (2 new), 1 *Pleuronectes* (*Rhombus*), 1 *Achirus*.—1 *Cyclopterus*.—3 *Echeneis*.—7 Anguillares, 4 *Anguilla*, 1 *Conger*, 1 *Ophidium*, 2 *Ammodytes* (1 new, which must form a new genus in the Family of the Scomberidæ—*vid. infr.*); thus, altogether, 115 MALACOPTERGYII.

To these succeed—3 LOPHOBRANCHII: 2 *Syngnathus* (1 new), and 1 *Hippocampus*.—18 PLECTOGNATHI: 4 *Diodon*, 3 *Tetrodon*, 1 *Acanthosoma* (n.g.), 1 *Orthagoriscus*, 4 *Monacanthus* (1 new), 1 *Aluteres*, 1 *Balistes* (new), 3 *Lactophrys* (n. g.); to which belong *Ostracion Yalei*, Storer, *Ost. sexcornutus*, Mitchell, and a new species; 3 *Acipenser*, and 27 Cartilaginous Fishes; 13 Sharks, 9 Rays, and 5 CYCLOSTOMI; of which, 1 *Petromyzon* and *Ammocœtes* are new.

The book appears to be very carefully got up, and brought out under good auspices, and is indispensable for the determination of N. American Fish.

In the Figures and Descriptions of New and Rare Animals and Plants collected by Th. Kotschy in Syria and the Western Taurus, edited by Fenzl, Heckel, and Redtenbacher, the first Part of the text (Stuttgard, 1843) includes the whole of the Fish by Jacob Heckel; and the first Part of the Atlas contains six Plates, which, according to the statement in the text, are to be about doubled. 57 species of Fishes were collected by Kotschy in the Orontes and Euphrates, of which 50 species are given as new. It appears that in Syria, as well as throughout the southern half of Asia, the Cyprini predominate among the fresh-water Fish. The Salmon is not met with at all.

(*Salmo orientalis* in the tributary streams of the Oxus! Archiv, 1843, ii, p. 113.) The author says: "In general the fresh-water fish of southern Asia are, by their organization, intended to live upon vegetable food; in fact, it seems to be universally the case, that the Mammalia and fresh-water Fishes, as the two most heterogeneous forms among the Vertebrata, stand in an inverse relation to each other, so that in those regions where the Rapaces in the one class predominate, they are deficient in the other. A great number of the fresh-water Fish in tropical Asia, the seat of the most rapacious beasts, with their toothless mouth, soft, pointed lips, and slender, elongated, intestinal canal, feed exclusively on vegetable substances; whilst in tropical America, so deficient in rapacious Mammals, not a single vegetable feeder occurs among the Fish. On the contrary, we there find shoals of ravenous Salmonidæ, which, with sharp teeth and extraordinary audacity, attack large domestic animals, and even men, when necessitated to swim across the rivers." This ingenious remark has apparently much truth in it, though it must not be considered as precisely accurate. Under the "ravenous Salmonidæ" the Characinæ are intended (vid. Archiv, 1844, Bd. i, p. 81), most of which are furnished with formidable teeth; but among them are also found genera from the same regions, possessing only the most delicate minute teeth; one even (*Anodus*) is entirely edentate. These are of course also not intended for animal feeders, but live partly on vegetables, partly on mud, which is rich in organic substances. Among the 57 species of Syrian Fishes described by Heckel, there are — 45 Cyprini; 5 *Cobitis*; 2 Cyprinodontæ; 3 Siluridæ; 1 *Mastacembelus*; and 1 *Mugil*. It is to be regretted that the work presents many errors of the press in the names, and some even in the localities.

In the Transactions of the Zoological Society of London, Vol. iii, Part ii, p. 133, is a paper by John Richardson—Description of Australian Fish, with five plates, in which

some of the species are figured. Most of the Fishes here described had been already instituted in the Proceed. Zool. Soc. 1839-41. Only two new species are added.

The continuation and conclusion of the Contributions to the Ichthyology of Australia, by John Richardson (vide the last Report, p. 104), appear in the Annals (xi, pp. 22, 169, 352, 422, 489.) These contributions are treated in the same manner as the previous ones. They relate especially to the Family of the Scombridæ, Teuthidæ, and Labridæ, and again contain many interesting illustrations with regard to the Fishes of Forster, Banks, and Solander.

Of Henrik Kröger's Danmarks Fiske (Fish of Denmark), (Copenhagen, 8vo), the first Part of the second Volume appeared in 1843 (the preceding parts I have not seen). The text is in Danish, and the figures of the Fish are on wood.

This part contains *Gadus Morrhua, Æglefinus, minutus, luscus; Merlangus vulgaris, Carbonarius, Pollachius; Merluccius vulgaris; Lota Molva, raptor, abyssorum, vulgaris; Motella Mustela, cimbria, tricirrata; Phycis furcatus; Brosmius vulgaris; Raniceps fuscus; Platessa vulgaris, Flesus, Limanda* and *microcephalus.*

The Naturalist's Library, conducted by William Jardine. Ichthyology Vol. v, contains the Fishes of Guiana, Vol. ii, by Robert Schomburgk. (Edinburgh, 1843. 8.) The descriptions of the Fishes, like those in the first volume, have been drawn up from the author's figures and notes, by a writer whose name does not appear, and whose incognito I suppose I must respect. The descriptions are in general insufficient, and it is difficult or impossible to determine by them, the Fishes from the same locality in the Berlin Museum. The figures, which occupy 30 plates, are still less adapted to facilitate the determination.

Icones piscium, or Plates of Rare Fishes. By J. Richardson. Lond. 1843. 4. Part i.

History of the Fishes of Madeira. By Richard Thomas Lowe. Lond. 1843. 8.

These two works have not yet reached me.

On the subject of Isinglass, some lengthened memoirs are given in the third Volume of M'Clelland's Calcutta Journal of Natural History, 1843. Production of Isinglass on the Coasts of India, with a Notice of its Fisheries. By J. Forbes Royle, p. 76. On East Indian Isinglass, its Introduction to, and Manufacture for, the European Market. By M'Clelland, p. 157. Extract of a Letter from E. O'Reiley, pp. 287, 289.

Remarks on the external respiratory Muscles of Fish. By Robert Remak. (Müller's Archiv, 1843, p. 190.)

On the Caudal and Cephalic Sinuses of Fish, and the lateral system of Vessels connected therewith. By — Hyrtl. (Müller's Archiv, 1843, p. 224.)

ACANTHOPTERYGII.

In this division a great number of new species have been introduced.

Percidæ.—*Perca lævis*, Jenyns, Beagle. Black brown, punctated, snout in front of the nasal cavities naked, scales of the trunk smooth. Allied to *P. trucha*, Val., D. 9. 1. 11; A. 3. 9. Patagonia.

Labrax nigricans, De Kay. Dusky, with a tinge of yellow, first dorsal fin higher than the second; D. 10. 1. 12; A. 3. 8. New York. *L. albidus*, De Kay, blueish white, with slender, dusky lines; D. 9. 1. 13; A. 3. 12. Lake Erie.

Under the genus *Labrax*, which Schlegel places with the Scleroparei, he describes a new species, *L. agrammus*, with a single lateral line, otherwise very like *L. hexogrammus*.

Pileoma, new gen., De Kay, allied to *Huro*. Two distinct dorsal fins, præoperculum smooth, operculum with a weak, flat spine. Abdominal fins with fine soft rays. Teeth equal sized. *P. semifasciatum*, olive green, with numerous dusky, transverse bands; D. 13. 15; A. 12. 2 inch. Lake Champlain.

Lucioperca grisea, De Kay. Two dorsal fins, præoperculum smooth at the margin, operculum scaly, with a spine, six branchial rays, nape compressed, contracted. *B. tessellatum*, brownish, with quadrangular spots on the back and sides; 3 inch. D. 9. 14; A. 10. In the rivers of New York.

Serranus albomaculatus, Jenyns, Beagle. A series of white spots on the sides, jaws scaleless; D. 10. 13; A. 3. 8; Galapagos. *S. aspersus*, id. Dark green above, paler beneath, sprinkled on the sides with light emerald green; D. 11. 15; A. 3. 8. Cape de Verd Islands. *S. labriformis*, id. Præopercu-

lum scarcely toothed, scaly, below the lateral line ciliated, above it smooth; D. 11. 17; A. 3. 8. Galapagos Islands. *S. olfax*, id. Minute lobes at the point of the dorsal spines, two spines on the operculum, all the scales smooth; D. 11. 18; A. 3. 11. Galapagos Islands. *S. erythrogaster*, De Kay. Olive brown above, red beneath, the vertical fins with a blue border and dark margin; D. 11. 16; A. 2. 10; 2ft. Florida, New York.

Jenyns has instituted, in the 'Zoology of the Voyage of the Beagle,' a new genus of Sciænidæ, which entirely resembles the genus *Serranus*, the palatal and vomeral teeth only being deficient; he places it in a group with *Hæmulon*, *Pristipoma*, and *Diagramma*, from which, however, it differs in the want of pores on the symphysis. The genus is called *Prionodes*, the sp. *P. fasciatus*, from the Galapagos Islands; D. 10. 12; A. 3. 7. In the appendix he remarks that the want of palatal teeth is a mistake, and withdraws the genus.

Plectropoma patachonica, Jenyns, Beagle. Only two spines on the inferior margin of the præoperculum; D. 13. 15 or 16; A. 3. 8 or 9; probably only a variety of *P. brasilianum*. Patagonia.

Jenyns forms a new separate genus from *Centropistes georgianus*, Cuv., Val. It is said to be distinguished by its herring-like form, toothed sub-orbital bones, scaly jaws, small pectoral fins, and deeply-forked caudal fins; besides this, the scales, instead of the usual fan-like arrangement of rays in the basal portion, present a triangular space, with the most extreme delicate striæ parallel with the margin. The genus is called *Arripis*. *Centropristes truttaceus*, Cuv., Val., is also probably to be referred to the same.

Centrarchus obscurus, De Kay. Greenish brown; 8 in. D. 9. 1. 12; A. 3. 12. The author thinks that *Cichla minima* is probably the same species in a younger state. Onondaga Bay. On account of the small number of rays in the anal fin the fish does not appear to belong to the genus Centrarchus.

Dules leuciscus, Jenyns, Beagle, is probably *D. malo*, Val.

Helotes octolineatus, Jenyns, Beagle; with eight black longitudinal lines, the vertical fins spotted with brown; D. 12. 9; A. 3. 7. New Holland.

Pinguipes fasciatus, Jenyns, Beagle; with twelve chesnut brown transverse bands, few palatal teeth, spinous pharyngeal teeth, abdominal fins exactly beneath the pectoral; D. 7. 27; A. 1. 24.

Under the genus *Aphritis* Jenyns describes (l. c.) two new species: *A. undulatus*, with black transverse bands and undulating longitudinal lines; 3 in. P. 6; D. 8. 25; A. 1. 22. Chonos Islands. *A. porosus*, with blackish transverse bands, with rows of pores on the under jaw, præoperculum and sub-orbital bones. 2½ in. D. 8. 25; A. 1. 22. Patagonia.

Sphyræna borealis, De Kay. Greenish above, lateral lines yellow, operculum with one spine; D. 5. 1. 9; A. 1. 9. New York. *S. nigripinnis*, Schlegel (l. c.) The distance between the two dorsal fins equals 1-4th of the whole fish; all the fins black; D. 5. 1. 9; A. 1. 9. *Acropoma* is the name given by Schlegel (Fauna Japonica) to a fish much resembling *Mullus* in the

shape of the body, but which differs from it in the want of barbal cirrhi; the anus is placed distant from the anal fin, and near the abdominal fin; the jaws are set with pointed teeth, of which the anterior are canine; nothing is mentioned about palatal teeth; 5 in. P. 7. D. 7. 1. 1. 10; A. 3. 7.

Schlegel (l. c.) has described several new species of the genus *Upeneus*, Cuv., Val., although leaving to them the generic name of *Mullus*. *M. chrysopleuron*, blood red, with gold yellow streaks along the lateral lines; 1ft. D. 8. 1. 11; A. 1. 7. *M. Bensasi*, a spine on the operculum, brown red, violet red spots on the head, one in front of the base of the pectoral fin, and two on each side on the body, the dorsal fin and the superior caudal fin have red brown bands, barbal cirrhi citron yellow; 6.″ D. 7. 1. 9; A. 1. 7. *M. subvittatus* was regarded by Cuv., Val., from a fish of Langsdorff, as a variety of *vittatus*; the body is higher, the snout shorter, the forehead much more arched, but almost flat between the eyes; D. 7. 1. 8; A. 1. 7. *M. dubius*. Maxillary teeth uniserial; D. 7. 1. 8; A. 1. 6.

Lepisoma, n. g., De Kay. Body and fins scaly; fleshy filaments along the base line of the head, and at the eyes; one dorsal fin. Six branchiostegous rays. Teeth in the maxillæ, vomer, and palate. Abdominal fins placed before the pectoral. *L. cirrhosum*, 6½ inch. D. 18. 12; V. 3; (?) A. 19. Florida.

Triglidæ.—*Trigla Bürgeri*, Schlegel (l. c.). A process directed outwards on each side of the nose. 9 inch. D. 9-16; A. 16. *T. hemisticta* (id.). Eyes very large, two spines on the præoperculum. D. 7-11; A. 11.

Peristedion orientale, Schlegel (l. c.), differs from the European species in the absence of the three spines about the nose. 7 inch.

Prionotus miles, Jenyns, Beagle. From the Galapagos, and different from all hitherto known species, which are found only on the east side of America.

Uranidea, De Kay, nov. gen. Head wide, depressed; body without scales; two dorsal fins; abdominal fins with three rays; eyes almost vertical, operculum smooth, præoperculum with a single spine, teeth on the maxillæ, vomer, and on the tongue, *U. quiescens*, olive brown; 3 inch. D. 7. 16; V. 3; A. 13. Round Lake, and Pleasant Lake, Hamilton County.

Cottus intermedius, Schlegel (l. c.). The large spine of the præoperculum presents four or five points. D. 9-13; A. 14. *C. uncinatus* (id.). The large spine of the præoperculum uncinate, and curved upwards; 3 inch. D. 8-19; A. 17.

Aspidophorus chiloensis, Jenyns, differs from the hitherto known species, in possessing vomeral and palatal teeth; cirrhi on the mentum and on the branchiostegous membrane, the dorsal fins separate. D. 8. 7; A. 8. Length 2″ 7‴. Chiloe.

Platycephalus inops, Jenyns, Beagle. Allied to *P. lævigatus*, Cuv., Val., but the first dorsal fin has, posteriorly, a large black brown spot; the second

dorsal fin, the caudal fin, and the pectoral fins, have small brown spots, the anal fin and the abdominal fins, almost wholly black. D. 8-12; A. 12. New Holland. *Pl. spinosus*, Schlegel, Fauna Japonic. D. 9-12; A. 12.

Bembras curtus, Schlegel, (l. c.) D. 9. 8; A. 3. 5.

Scorpæna histrio, Jenyns, Beagle. Red, fins paler, with small blackish spots, head, for the most part, without scales; head and sides everywhere with minute membranous lobes, four forming a fringe above the eyes, of which the posterior are the longest. Galapagos. *Sc. neglecta*, Schlegel (l. c.) 9 inches. The spines of the head present some difference from the other species.

Pelor aurantiacum, Schlegel (l. c.), is readily distinguished from *P. japonicum*, Cuv., Val., besides minuter differences, by the orange yellow colour; small black spots are scattered all over the body.

Pterois lunulata, Schlegel, is distinguished by the smallness of the lobes above the eyes, and by the size of the caudal fin. D. 12. 1. 11; A. 3. 7.

Sebastes pachycephalus, Schlegel. The spines of the head are very thick and strong. D. 12. 1. 12; A. 3. 6; P. 19; of which twelve are simple. *S. ventricosus*, (id.). Body moderately deep, head small, acute, mouth little cloven. D. 12. 1. 15; A. 3. 7; P. 16; of which seven simple.

Apistus rubripinnis, Schlegel (l. c.) D. 14. 7; V. 1. 4; A. 3. 4.

Minous pusillus, Schlegel. The space between the eyes narrower than in the other species; 2½ inch. D. 9. 11; A. 1. 8.

A new genus, *Aploactis*, has been formed by Schlegel, from a fish which occupies a middle place between *Cottus*, *Synanceia*, *Apistus*, and *Agriopus*. All the soft rays of the fins are unbranched. 3 inch. P. 5; D. 14. 11; A. 12; V. 1. 2.

Sciænidæ.—*Sciæna japonica*, Schlegel, D. 10. 2. 26; A. 2. 8. Reaches 5 feet in length.

Otolithus analis, Jenyns, 12 inch. D. 9. 1. 24; A. 1. 16. Peru.

Corvina oxyptera, De Kay. Operculum with obsolete serratures, with two spines; præoperculum toothed, pectoral fins long and pointed. D. 10. 19; A. 3. 7. New York.

Umbrina ophicephala, Jenyns, Beagle. Distinguished from all the other species by the elongated form of the body. D. 12. 1. 22; A. 1 9. Chili.

Pogonias nigripinnis, Schlegel. Very deep, frontal profile concave. D. 11. 15; A. 5. 9.

Pristipoma cantharinum, Jenyns, Beagle. Dorsal fins of almost uniform height throughout, blueish silver coloured, the operculum with a black border. D. 12. 15; A. 3. 12. Galapagos.

Diagramma cinctum, Schlegel (l. c.). D. 12. 16; A. 3. 8. Brown gray, sprinkled above with small round spots, two oblique brown bands proceed from the back to the abdominal surface.

The name of Glaucosoma has been given by Schlegel to a fish, which is remarkable among the Sciænidæ by the smallness of the spinous portion of the dorsal fin, and of which a figure only, by Burger, has reached Europe. Pores in the inferior maxilla are not mentioned; the spines of the dorsal fin become longer posteriorly. P. 7; D. 9. 11; A. 3. 9; gray-blue. 2 feet.

Latilus princeps, Jenyns, Beagle. Head in front of the eyes bare, abdominal fins exactly under the pectoral. D. 8. 26; A. 2. 26. Galapagos.

Scolopsides inermis, Schlegel (l. c.). Allied to *S. tæniopterus*, but has larger scales, and a scarcely perceptible spine on the suborbital bones. D. 10. 9; A. 3. 6. Light red, with six dusky bands.

SPARIDÆ.—*Sargus avenosus*, De Kay, with transverse bands, a recumbent spine in front of the dorsal fin; 6 inch. D. 1. 12. 11; A. 3. 12. Long Island.

Dentex griseus, Schlegel (l. c.)

Chrysophrys taurina, Jenyns, Beagle. Only three rows of molar teeth in the upper jaw; resembles *Ch. aculeata*, but has not a recumbent spine before the dorsal fin. Galapagos. *Ch. aries*, Schlegel. Profile much arched, five rows of molars above and three below. D. 11. 13; A. 3. 11; gray green. *Ch. tumifrons*, (id.) The profile of the head almost perpendicular. D. 12. 11; A. 3. 10; red. *Ch. major*, (id.), D. 12. 10; A. 3. 8; red.

SCOMBRIDÆ.—*Cybium flavo-brunneum*, Smith, Ill. 17. Five false fins above and four below. 24 inch.

Lichia carolina, De Kay. The depth in proportion to the length is as 1 to 2; the first ray of the second dorsal fin, and of the anal fin, very long; 1 foot. D. 1. 6. 25; A. 2. 20. Coasts of Carolina.

Paropsis is a new genus instituted by Jenyns, which differs from *Lichia* only in the complete absence of the abdominal fins. The name has been long appropriated among the Coleoptera. The only species, *P. signata*, comes from the north coast of Patagonia; the Berlin Zoological Museum possesses a specimen from Brazil.

De Kay forms, from *Coryphæna perciformis*, Mitchill (*Trachinotus argenteus*, Storer), a new genus, *Palinurus*. The spines in front of the dorsal fin are not free, but connected at the base by a membrane; a spine in front of the anal fin; operculum and præoperculum serrated. The name is appropriated among the Crabs, as the author himself remarks; why has he not invented another? The serrated operculum appears to remove this fish from the family of the Scombridæ; the whole habit, however, would readily induce us to recognize it as belonging to it.

Caranx (*Trachurus*) *declivis*, Jenyns, Beagle. The lateral lines in the whole length, furnished with 82 elevated plates. D. 8. 1. 35; A. 2. 1. 30. About 8 inch. New Holland. *C. torvus* (id.) Lateral line covered anteriorly with small unarmed scales, posteriorly with 36 plates. D. 8. 1. 26; A. 2. 1. 22. Tahiti.

Caranx defensor, De Kay. Depth of the body equals one third of the whole length; a recumbent spine before the dorsal fin; no false dorsal fins; a black spot on the operculum; 9 inch. D. 7. 1. 20; A. 2. 17. New York.

Capros australis, Richardson (Annals xi, p. 170). D. 7. 18; A. 2. 17; 10 inch. Van Diemen's Land.

TEUTHIDÆ.—*Amphacanthus gymnopareius*, Rich. (Ann. xi, p. 174), Dark red-brown.* *A. notostictus* (id, p. 172). Black spots on the sides; an oblique band runs downwards from the posterior part of the eye. Port Essington.

Acanthurus grammoptilus, Richardson (Annals xi, p. 176). D. 9. 26; A. 3. 24. Port Essington.

MUGILIDÆ.—*Mugil Abu*, Heckel., 'Fische Syriens,' p. 107 (1097). D. 4. 1. 8; A. 3. 8.

Atherina microlepidota, Jenyns. Beagle. Scales small, in 18 longitudinal rows. D. 15. 1. 11; A. 1. 17; 4 inch. Valparaiso. *A. incisa* (id.) Scales of medium size, in 12 longitudinal rows; 2½ inch. D. 5. 1. 18; A. 1. 17; to D. 6. 1. 10; A. 1. 19. Chili. *A. hepsetoides*, Richardson (Ann. xi, p. 178). D. 9. 1. 11; A. 1. 14. Port Arthur. *A. presbyteroides* (id.) D. 9. 11; A. 1. 12, ib. *A. nigrans* (id.). D. 1. 4. 1. 12; A. 1. 18. Port Essington.

BLENNIDÆ.—*Blenechis fasciatus*, Jenyns, Beagle. 2½ inch. D. 13. 16; A. 20; V. 2. Chili. *B. ornatus* (id.) 2 inches. D. 12. 11; A. 20. Chili.

Clinus crinitus, Jenyns, Beagle. The palpebral cirrhi constituted of eight hairs, distinct from the base; 6½ inch. D. 26. 11; A. 2. 24; V. 3. Chili.

Jenyns has placed near *Clinus* a new genus, *Acanthoclinus*, which differs from *Clinus* in the greater number of spinous rays in the anal fin, a longitudinal band of minute teeth on the tongue, the position of the abdominal fins beneath the pectorals, and in the presence of three lateral lines. *A. fuscus*, P. 6; D. 20. 4; A. 9. 4; V. 1. 2. New Zealand.

Clinus littoreus, Cuv., Val., also from New Zealand, probably belongs to this genus.

Tripterygion capito, Jenyns, Beagle. The lateral line scarcely extends beyond the pectoral fin; 2½ inch. D. 6. 20. 14; A. 25. New Zealand.

Jenyns (Voyage of the Beagle, p. 165) institutes two new genera in the family of the Blennidæ. Both agree in having a smooth, posteriorly compressed body, in the presence of two large conical teeth, in front of the others, in the upper jaw; of a single pointed tooth on the vomer, and two rows of teeth on the palate, in the extremely small size of the abdominal fins, and in the fusion of the dorsal and anal fins with the caudal. The one, however, *Iluocætes* (*I. fimbricatus*, from Chili), has in each jaw a row of teeth, five rays in the branchiostegous membrane, and the jaws, suborbital bones, and præoperculum fringed with membranous tubes. The other, *Phucocætes*

* In the prepared specimen.

(*Ph. latilans*, from the Falkland Islands), has one row of teeth in the upper jaw, two or three rows in the lower jaw, six rays in the branchiostegous membrane, and pores only instead of the membranous tubes.

Gobiidæ.—Bellamy reports (Ann. xii, p. 298) that an *Anarrhicas lupus* has been caught near Plymouth. It was three feet long, and had Crustacea, *Pecten opercularis* and *Fusus corneus*, in its stomach.

Gobius lineatus, Jenyns, Beagle. D. 6. 1. 9; A. 1. 8. Galapagos. *G. ophicephalus*, D. 8. 1. 16; A. 1. 13. Chiloe.

Discoboli.—Two new genera of this family have been instituted by J. Müller and the Reporter, *Cotylis* and *Sicyases*. (Archiv, 1843, i, p. 297.)

Gobiesox marmoratus, Jenyns. The anterior teeth larger, conical above, incisive below, operculum with a blunt point posteriorly; 2½ inch. P. 6; D. 13; A. 11. Chiloe. *G. poecilophthalmus* (id.). The anterior teeth larger, incisive both above and below. Operculum with a pointed spine posteriorly. 1″ 10‴. P. 6; D. 7; A. 7. Galapagos.

It cannot be determined whether these two species belong to the genus *Cotylis*, since the number of the branchiæ is not stated.

Carpopterygii.—*Lophius upsicephalus*, Smith, 'Illustrations,' part 13. Supra pallidè flavo-brunneus, subtus purpureo griseus, flavo-brunneo tinctus; oculis lucidè viridi-albis; 28½″. D. 7 vel 8; P. 16; A. 17. Cape of Good Hope.

Cheironectes politus, Richardson, 'Trans. Zool. Society.' Dorso bipinnato, corpore lævò, glabro, rubicundo, punctulato; 2½ inch. Port Arthur.

Batrachus celatus, De Kay. Operculum with two spines, dorsal fins separate, body with dark transverse bands; 1 inch. D. 3. 28; V. 3; A. 23. New York. It was found in the streets of New York, in a shower of fish, in the year 1844. *B. diemensis* (Le Sueur?) Richardson. D. 2. 18; A. 16. Port Essington.

PHARYNGOGNATHI.

This order of Fish was founded by J. Müller in the before-mentioned Memoirs on the Natural Families of Fishes. (Vid. Archiv, 1843, i, p. 305.)

Labridæ cycloideæ.—*Labrus Gouldii*, Richardson (Ann. xi, p. 353), appears to be allied to *L. macrodontus*. D. 11. 10; A. 3. 10. Western Australia. *L. cyanodus* (id.), also allied to *L. macrodontus*, no canine teeth in the angle of the mouth. D. 13. 7; A. 3. 10. Port Essington.

Cassyphus Darwini, Jenyns. Præoperculum not toothed, and no scales on the vertical fins. D. 12. 10; A. 3. 12. Galapagos.

Cheilio ramosus, Jenyns, Beagle. Fins of an uniform light brown. D. 9. 13; A. 3. 12. Japan?

Scarus chlorodon, Jenyns, allied to *Sc. variegatus*, C. V., but the caudal fin is slightly emarginate. D. 9, 10; A. 3. 9. Indian Ocean. *Sc. lepidus* (id.), allied to *Sc. globiceps*, Val. Tahiti.

Labridæ ctenoideæ.—*Amphiprion japonicus*, Schlegel. Two white transverse bands, caudal fin yellow, abdominal and anal fins with a black border. D. 10. 15; A. 2. 13.

Heliases notatus, Schlegel (l. c.) Brown-red, a white spot close behind the dorsal fin, a black spot at the base of the pectorals.

Under the name of *Caprodon*, Schlegel (l. c.) describes a fish whose teeth in both jaws are securiform, in front of which is placed a row of larger ones, the three anterior in the upper jaw, on either side, are large incisors, the most anterior in the lower jaw is very large, and directed outwards, behind it is one somewhat smaller; at the middle of the lower jaw again is placed a larger tooth directed backwards, behind which succeed other small securiform teeth. P. 5; D. 10; A. 3. 9. Rose colour, yellow lines on the head, some irregular black spots in the middle of the dorsal fin. The dorsal and anal fins covered with scales as in the Squamipinnæ. Schlegel places the fish among the Sciænidæ, but, on account of the number of branchiostegous rays I think it should be referred to this place.

Jenyns (l. c.) places a new genus, *Stegastes*, in the family of the Squamipinnæ; *St. imbricatus*, from the Cape de Verd Islands. In the 'Supplement' he recognizes the fish as *Glyphisodon luridus*, Cuv., Val.

Chromidæ.—*Chromis facetus*. Jenyns. D. 15. 10; A. 1. 8. Rio de la Plata.

Scomberesocidæ.—Couch has submitted to the Linnæan Society "An Account of a Fish, nearly allied to the genus *Hemiramphus*, taken in Cornwall."

He states that, in the month of August, 1841, several individuals of this little fish were found swimming at the surface of a large pool in the rocks near Polperro. Their length was half an inch; the head proportionately large, especially across; the body slender, eye large, snout in front of it short and abrupt; upper jaw arched, under snout projecting to a considerable extent, the point declining, and the sides not appearing to be formed of parallel rami of the jaw, but rather of a cartilaginous substance; dorsal and anal fins single, posterior, opposite; pectoral fins and tail round. No ventral fins could be discovered, even with the aid of a lens. Mr. Couch had no doubt of the specimens being in a very early state of their existence, but was unable to refer them to any known species. He thought it indeed doubtful whether they really belong to the genus by the name of which he has provisionally designated them, or even to the same family, some parts of their structure seeming to indicate an affinity with the genus *Ammodytes*. A more precise description, however, is requisite for the determination of the genus. (Ann. Nat. Hist. xi, p. 232.)

MALACOPTERYGII.

SILURIDÆ.—*Silurus triostegus*, Heckel, "Fische Syriens." Head elongated, first ray of pectoral fin strong, serrated. D. 1, 2; A. 3. 86. In the Tigris, near Mossoul.

Heckel describes (l. c.) the *Silurus Cous*, Linn. (*Pimelodus Cous*, Val.), as *Arius Cous*, on account of its having on the palate two sets of uniform teeth.

Pimelodus pullus, De Kay. Pectoral fin pointed, caudal, emarginate; 11 inch. D. 1. 5; V. 8; A. 17. Northern Lakes, in New York. *P. atrarius* (id.) black, adipose fin narrow and high; caudal fin emarginate, rounded; 5 inch. D. 1. 6; V. 8; A. 20. In the tributaries of the Hudson. *P. exsudans*, Jenyns. Six barbal cirrhi, the maxillary cirrhi not reaching as far as the anal fin; adipose fin not quite twice as long as the dorsal and anal fins. D. 1. 7; A. 13-14. Brazil.

Callicthys paleatus, Jenyns, allied to *C. punctatus*, Val., but it possesses, besides the four usual cirrhi, two labial cirrhi also, and the maxillary cirrhi reach only to about the middle of the eye. It is probably not a distinct species. South America.

CYPRINIDÆ.—In Heckel's above-mentioned work on the Syrian Fishes, the greater part is devoted to the Cyprini, and the author places great importance, and correctly, on the form of the pharyngeal teeth. The first plate represents their various forms, and it is in fact easy with this assistance, to determine the Cyprini; this is particularly the case with those which the Berlin Museum has received from Syria, through Professor Koch. The pharyngeal teeth are brought under four divisions: 1. Hollow teeth (dentes excavati), with a channelled depression on the dorsal aspect; they pass into spatulate and shovel-shaped teeth. 2. Masticatory teeth (dentes masticatorii), with a grinding surface looking outwards, not uncinate; they pass into tessular, molar, cupped, chisel-shaped, pectinate, and incisive teeth. 3. Uncinate teeth with grinding surface (dentes uncinato-submolares), with a narrow, somewhat concave grinding surface, forming a hook on the inner side; they pass into clavate, compressing, and prehensile teeth. 4. Uncinate teeth, without grinding surface (dentes un-

cinato-subconici), with longitudinal rows of hooks directed backwards; they pass into seizing and strangling teeth (Fangzähne and Würgezahne).

The two former kinds appertain to the Cyprini with a long intestine, the two latter to those with a short intestine. The 54 genera admitted by the author, and among which are 28 of Heckel's, are next divided into 10 tribes, and all of them fully characterized; and in this summary all the species are enumerated, with the necessary citations and statement of habitat. In respect to the generic characters I am compelled to refer to the work itself, the study of which is indispensable in the history of the Cyprinidæ. In many genera the author is not acquainted with the form of the pharyngeal teeth from want of materials, and a great number of species still require examination on the same account, so that this family is not as yet completely set in order. The new species from Syria are the following:

Barbus Lacerta, pectoralis, perniciosus, Grypus, Scincus, Rajanorum, Kersin; Labeobarbus Kotschyi; Luciobarbus xanthopterus, esocinus, Scheich; Scaphiodon Trutta, fratercula, Umbla, socialis, peregrinorum; Systomus luteus, albus; Phoxinellus Zeregi; Cyprinion macrostomus, Kais, Cypris; Discognathus variabilis, rufus, obtusus; Tylognathus nanus; Acanthobrama centisquama, Marmid, Arrhada, cupida; Chondrochilus regius; Squalius Berak, lepidus, cephalopsis, spurius; Aspius vorax; Alburnus Sellal, microlepis, cæruleus, hebes, mossulensis, capito, pallidus; Cobitis frenata, Panthera, insignis, Tigris, Leopardus.

Although the 17th Volume of the Histoire Naturelle des Poissons, by Cuvier and Valenciennes, did not appear till 1844, I have nevertheless thought it convenient to notice it in this place. Valenciennes includes in this volume the true edentate Cyprinidæ. He, in general, follows an entirely opposite principle to that of Heckel. Whilst the latter endeavours, by means of constant characters, to sever, to distinguish, which may perhaps occasionally lead rather to an artificial than a natural system, Valenciennes on the other hand tries to unite, and is more inclined to bring allied forms into large groups. Thus he collects a great

number of Cyprinidæ into one genus, *Leuciscus*, which have by Heckel been distributed into about 16 distinct genera. It may well be difficult to determine a Fish of this division according to Valenciennes' book. Besides these, there follow the genera *Chondrostoma*, *Catla* (*Gibelion*, Heck.), *Catostomus*, *Sclerognathus* (*Catostomus Cyprinus*, Lesueur), which appears to be identical with *Rhitidostomus*, Heck., *Exoglossum*. It is impossible here to enter upon the numerous new species.

Some new Cyprinidæ of the genus *Barbus* have been figured by Smith, 'Ill. South Africa,' 14, and arranged in subgenera. Heckel had already considered them, *Cheilobarbus capensis*. 16½ inch. D. 10; P. 16; V. 8; A. 7; C. 19. *Ch. marequensis* differs somewhat in form from the preceding.

Pseudobarbus Burchellii. 4 inch. The fins red at the base. D. 8; P. 12; V. 6; A. 7; C. 19. *Ps. pallidus*. D. 7; P. 14; V. 6; A. 7; C. 17.

Abrostomus umbratus. Reddish-gray, with yellow spots. D. 10; P. 12; V. 10; A. 6; C. 21. *A. capensis*. D. 11; P. 16; V. 9; A. 6; C. 18.

Labeo elegans, De Kay. Blueish above, head greenish, dorsal fin rounded off superiorly; 8 inch. D. 12; P. 15; V. 9; A. 8. New York. *L. Esopus* (id.) Back raised, scales elongated, lateral line indistinct; 10 inch. D. 12; P. 16; V. 9; A. 7. New York, from the interior of the State.

Abramis versicolor, De Kay. Silvery, variegated with green, blue, and gold; 7 inch. D. 9; P. 14; V. 9; A. 14. In the Connecticut and Hudson.

Catostomus oneida, De Kay. Back gibbous, two short spinous rays in the dorsal fin, head smooth, with numerous mucus-pores; 12 inch. D. 2. 13; P. 15; V. 9; A. 8. Lake Oneida. *C. pallidus* (id.) Sides pale, the two divisions of the swimming bladder connected by a wide opening; 10 inch. D. 13; P. 16; V. 8; A. 8. Near Peekskill.

Leuciscus nitidus, De Kay. Body silvery-white, head with mucus-pores, tail deeply notched, not forked; 10 inch. D. 8; P. 16; V. 10; A. 9. Lake Champlain. *L. chrysopterus* (id.) A large scale at the base of the abdominal fin; dorsal fin emarginate; 6 inch. D. 9; P. 19; V. 9; A. 10. New York Harbour. *L. vittatus* (id.) Olive-green, with a gold-coloured dorsal stripe, silvery beneath, with a dash of flesh-colour; 4 inch. D. 9; P. 15; V. 8; A. 8. Mohawk. *L. pygmæus* (id.) One or more ocellated spots on the tail; 1 inch. D. 14; P. 16; V. 6; A. 13. In brooks near Tappan, Rockland county.

Cyprinodontes.—*Pœcilia decemmaculata*, Jenyns. Ten black spots, in a longitudinal row, on each side. D. 8; A. 10; 1⅕ inch. Maldonado.

Lebias lineata Jenyns. Seven black longitudinal lines on each side; 2 inch.

D. 9; A. 9. Maldonado. *L. multidentata* (id.) Teeth tricuspid, but in several rows; 3 inch. D. 9; A. 9. Monte Video. Will probably be found to constitute a distinct genus. *L. mento*, Heckel, "Fische Syriens," with projecting chin. D. 2. 10; A. 2. 9. *L. cypris* (id.) Dorsal fin wider anteriorly. D. 2. 9; A. 2. 8. Both from Mossoul.

Fundulus zebra, De Kay. About twenty perpendicular lines on the body, dorsal and anal fins punctated with white. D. 10; P. 17; V. 6; A. 10. In salt-water creeks near New York.

Hydrargira atricauda, De Kay. Olive-brown, with a black broad stripe on the tail; four branchiostegous rays; 3½ inch. D. 15; P. 15; V. 6; A. 10. Lake Champlain.

Among the Cyprinodontes Jenyns places a new genus, *Mesites*, which does not appear to differ from *Galaxias*, Cuv. The author describes three new species, *M. maculatus* and *alpinus*, from Tierra del Fuego, and *M. attenuatus*, from New Zealand. 2½ inch. is stated to be the size of all three.

Characinæ.—The species of *Tetragonopterus*, instituted by Jenyns (Voyage of Beagle), have already been considered in the work on the Characinæ. (vid. *sup.* vol. I, p. 81). *T. rutilus* does not appear to differ from *Tetrag. bimac.*, Müll., Tr. (*Salmo bimaculatus*, Bl.), *T. Abramis* and *scabripinnis* are new: *tæniatus* appears to be the female of *scabripinnis*. *T. interruptus*, on account of the different dentition, must constitute a new genus. All from South America.

Salmonidæ.—Histoire Naturelle des Poissons d'Eau douce de l'Europe Centrale, par L. Agassiz.

Embryologie des Salmones, par C. Vogel. Neufchatel, 1842, 8vo. The observations were made on *Coregonus palea*, Cuv.

Young has made observations on the growth of the Salmon. As long as the Fish remain in fresh water, Young agrees entirely with Shaw; in salt water they grow much faster. He marked many individuals on their passage to the sea, and numbers of these were taken on their return, so that there could be no doubt of their being the same Fish. He thus observed the change at different ages. In April and May, 1837, he marked the descending "Smolts," which in June and July were retaken as "Grilse;" they weighed more or less according to the length of time they had been in the sea. One marked in April weighed on the 25th July seven pounds, another marked in May weighed

on the 30th July $3\frac{1}{2}$ pounds; a Grilse of four pounds, marked in January, 1842, was retaken in July, as Salmon, weighing nine pounds. (Ann. Nat. Hist. xi. p. 157.)

John Shaw has also again made observations on the growth of the Salmon Trout. On the 1st Nov. 1839, the ova were fertilized, the young quitted the egg in 75 days; in two years they attained a size of seven inches, and became "Smolts." He then examined "Smolts" in the river. They returned in July and August as "Herlings" (*Salmo albus*, Flem.); having increased their weight by seven or eight ounces. They afterwards again proceeded to the sea, and returned in May and June with an average weight of $1\frac{1}{2}$ pounds. After the third migration to the sea they re-appeared in the following summer with a weight of four pounds. After the fourth migration, they weighed in the following summer six pounds, that is, in the sixth summer of their life. (Ann. Nat. Hist. xi, p. 384.)

John Blackwall also communicates remarks on the Salmon which he had observed in the river Conway. (1) The lobes of milt are already much developed in the young males, which present the characters of the "Parr," whilst the lobes of roe in the female are still far behind hand. (2) These males shed their milt in the ensuing winter months. (3) The Salmon-Smolts are found to have shed their milt before their migration to the sea, although the roe in the females is at that time very small. (4) The "Smolt" acquires the aspect of a "Parr" when the silvery scales are carefully removed. The author finds fault with Young for not regarding the bulk in his weighings, because the weight depends very much upon the "condition" of the Fish. It is evident that such a remarkable increase in weight in so short a time as that stated by Young, must depend upon a good supply of food. (Ann. Nat. Hist. xi, p. 409.)

Griffith figures *Salmo orientalis* (vid. these Archiv. 1843, II, p. 113); he discovered it at an altitude of 11,000 feet, in the streams which fall into the river Bamean. (M'Clelland, Calcutta Journ. iii, p. 283.)

Amongst the Salmones, De Kay institutes a new genus, *Bajone;* a row of uniform teeth in the upper jaw, a shorter row in the intermaxillary bone, and on the anterior part of the vomer; a row of long curved teeth on the edge of the tongue. Ten branchiostegous rays; adipose fin, behind the anal; scales very minute. *B. fontinalis,* six to eight vertical black bands on the sides; 2 inch. D. 8; P. 12; V. 7; A. 9. Inhabits clear brooks and springs.

Jenyns also institutes a new Salmonian genus, *Aplochiton;* entirely scaleless, small teeth in both jaws, in a single row; two longitudinal rows on the tongue and on the vomer, none on the palate. Three branchiostegous rays. Inhabits fresh water. *A. zebra,* with black transverse bands; 9½ inch. D. 11; A. 2. 14. Falkland Islands. *A. tæniatus,* sprinkled with brown points, with a silvery longitudinal band on the sides; 4 inch. D. 12; A. 2. 13. Tierra del Fuego.

Esocidæ.—*Esox fasciatus,* De Kay. Greenish yellow, with dark vertical stripes on the sides; 10 inch. D. 15; P. 15; V. 9; A. 14. Long Island.

Clupeidæ.—Three new Herrings are mentioned by Jenyns (l. c.): *Clupea fuegensis;* 3 inch. D. 18; A. 19. Tierra del Fuego. *Cl. arcuata,* 4 inch. D. 18; A. 23. Bahia Blanca. *Cl. sagax,* 10½ inch. D. 11; A. 18, 19. Lima.

Alosa teres, De Kay. Cylindrical, ventral fins behind the dorsal; 7 inch. D. 19; P. 15; V. 10; A. 12. New York harbour. *A. pectinata,* Jenyns. Ventral fins in front of the dorsal, scales ctenoid; 12 inch. D. 16; A. 21; P. 17; V. 7. Bahia Blanca.

Engraulis ringens, Jenyns, Beagle. D. 15; A. 19. Peru.

Chatoessus signifer, De Kay. Back with three or four dark lines, a round black spot behind the branchial opening, anal fin distinct; 12 inch. D. 19; P. 18; V. 8; A. 21. New York.

Amia occidentalis, De Kay. Dusky brown, elongated, lateral lines channelled, no black spot; 2 feet. D. 46; V. 9; A. 11.

Sauridæ.—*Lepisosteus platyrhynchus,* De Kay. Jaw broad, elongated; the upper jaw three times as long as it is broad at the base, scales smooth; 2 feet. D. 17; V. 6; A. 8. Florida.

Gadidæ.—*Lota inornata,* De Kay. Ventral fin with a filamentous point, the first ray partly free; both dorsal fins of nearly equal height; 2 feet. D. 9. 71; V. 7; A. 63. Hudson.

Merlangus leptocephalus, De Kay. Green, above the lateral line. D. 12. 19. 19; V. 6; A. 27. 20. New York.

Pleuronectidæ.—*Platessa pusilla,* De Kay. Eyes dextrorsal, olive-brown, no anal spine; 11 inch. D. 67-69; P. 11; V. 6; A. 50. *P. ocellaris.* Upper side with ocellated spots; tail emarginate, eyes sinistrorsal; 18 inch. D. 95; P. 12; V. 6; A. 72.

Hippoglossus Kingii, Jenyns, Beagle. Eyes sinistr., lateral line arched in front. D. 18. 48; A. 51; P. 11; V. 6. Valparaiso.

Rhombus lentiginosus, Richardson. (Annals, xi, p. 495.) Eyes sinistr., elliptical, caudal fin rhomboid; ventral fins separate from each other, and from the anal fin; scales ciliated (at the apex). D. 73; A. 59. Port Essington.

Solea liturata, Richardson. (Transact. Zool. Soc. of London.) "Corpore lituris exiguis geminatis, sparsè sed irregulariter variegato; pinna ventrali dextrâ cum anali conjunctâ; pinnâ caudæ solutâ. Australia. 6 inch.

ANGUILLIDÆ.—*Muræna lentiginosa*, Jenyns (l. c.) Red-brown, with small, yellow circular spots; 20½ inch. Galapagos Islands. Besides this the author describes two species of this genus, without specific names; one from the Cape de Verd Islands, the other from Tahiti.

Conger punctus, Jenyns, with red-brown transverse bands, and narrow, gray interspaces; numerous minute points on the skin; 3 inch. 3 lines. Tierra del Fuego.

OPHIDIDÆ.—Richardson describes (Annals, xii, p. 175) a Fish from Port Essington, New Holland, as a new genus, which he places near *Ophidium*, under the name of *Machærium*. He places the genera *Ophidium*, *Machetes*, *Echiodon*, and *Fierasfer*, as a distinct family, near the Gadidæ, in which he would also include the Blennidæ.

The genus *Machærium*, is characterized as follows: Piscis malacopterygius, apodus, ensiformis, squamosus. Apertura branchialis satis magna sub gula extensa. Radii membr. branch. sex. Opercula conspicua. Os modice extensivum. Dentes parvi, uniseriales in ossibus intermaxillaribus et in maxilla inferiore, quæ rictum efficiunt, ordinati. Genæ et regiones supra scapulares squamosæ. Pinnæ verticales coalitæ, radiis spinosis nullis. Pinna dorsi per totum fere dorsum regnans. Linea lateralis brevis super anum desinens. *M. subducens*, B. 6; D. 70; A. 59; P. 10; V. 0.

De Kay describes a Fish as a new species of Ammodytes, *A. vittatus*, which has seven spinous processes in front of the dorsal fin; maxillary teeth are wanting, and on the vomer are two bony processes, which can hardly be regarded as teeth; no swimming bladder. This Fish appears necessarily to form a distinct genus of Scombridæ, near *Lepidopus*. It has a broad silvery streak on the sides. D. 7. 54; P. 15; A. 28.

LOPHOBRANCHII.

Syngnathus viridescens, De Kay. Dusky olive-green above, yellowish beneath; 7 inch. D. 40; P. 14; A. 3. *S. acicularis*, Jenyns. Yellow-brown, rather more compressed than *S. Acus*; above forty rays in the dorsal fin, one or two in the anal, pectorals very small; 6 inch. Valparaiso. *S. conspicil-*

latus (id.). Gray, with brown transverse bands; 4½ inch. D. 31; A. 32; P. 14. Tahiti. *S. crinitus* (id.) Gray, belly and opercular spot black, two cirrhi above the eyes, no anal fin, pectorals very small; 3½ inch. Patagonia.

PLECTOGNATHI.

Gymnodontes.—*Diodon fuliginosus*, De Kay. Olive-green above, orange beneath, covered with triangular spines; three spines above each eye, caudal fin lanceolate; 2 inch. D. 14; P. 22; A. 8. *D. verrucosus* (id.) With roundish scuta, from which spring flexible spines; 1½ inch. D. 11; P. 22; A. 10. New York Harbour.

Under the name of *Acanthosoma*, De Kay (l. c.) distinguishes a new genus, which differs from *Diodon* in this, that the dorsal, caudal, and anal fins are united. One species, *A. Carinatum* (*Diodon carinatus*, Mitch.), 1 inch long. D. + ; C. + ; A. 52; P. 12.

Tetrodon aerostaticus, Jenyns (l. c.). Resembling *lineatus*, Bl., but wanting the lateral line; back and upper part of sides spotted; 2½ inch. D. 11; A. 10; P. 11. *T. implutus* (id.). Olive colour, with white circular spots; nares tubular, forked; 5 inch. D. 10; A. 10; P. 16. Indian Ocean. *T. annulatus* (id.). Dark brown above, with black circular spots; nares cylindrical, with two lateral openings; 9 inch. D. 8; A. 7; P. 15. Galapagos Islands. *T. angusticeps* (id.). Dark green above, two cirrhi in the middle of the back, nares tubular, with two lateral openings; 9 inch. D. 8; A. 7; P. 15. Galapagos Islands.

Scleroderми.—*Ostracion undecim-aculeatus*, Smith (Illust. South Africa, 16). Quadrangular; five spines on the back, six on the sides of the abdomen. Cape of Good Hope.

From the genus *Ostracion* De Kay separates a genus, *Lactophrys*, in which he places *O. Yalei*, Storer, and *O. sexcornutus*, Mitchill, besides a new species. The body is triangular, with strong spines in front of the anus, directed backwards; spines above the eyes. In the new species, *L. camelinus*, the back is elevated into a spine, besides eight spines; 3½ inch. D. 9; P. 10; A. 10.

Balistes fuliginosus, De Kay. Caudal fin doubly emarginate; a single spine between the first and second dorsal fins; 12 inch. D. 2. 1. 28; P. 14; V. 7; A. 26. New York Harbour.

Monocanthus setifer, De Kay. Some of the anterior rays of the dorsal fin elongated into filaments; 7 inch. D. 1. 33; P. 13; A. 33. New York Harbour.

Aleuteres velutinus, Jenyns. Light brown, with four darker longitudinal bands, rough; 8 inch. D. 2. 33; A. 31. George's Canal.

PLAGIOSTOMI.

Matteucci has instituted new experiments on the Electric Ray. (Annals, xi, p. 406; Comptes rendus, xvi, p. 455; Froriep's Notizen xxv, p. 184.)

In a short paper (Spicilegium Observationum anatomicarum de organo electrico in Raiis anelectricis et de Hæmatozois. Memoriam sacram regis augustissimi beati Frid. Gulielmi III, indicit A. F. J. Carolus Mayer. Bonnæ, 1843), the author shows that even the non-electric Rays are provided with a rudimentary electric apparatus. As such he regards a glandular organ scarcely the size of a hazel-nut, occupying the same situation as that in which the electric organ is placed in the electric Fish. He compares it with the parotid. It was observed in *Raja clavata, batis* and *Schultzii*. (Vide also Froriep's Notizen, xxvii, p. 121.

Humphreys Storer obtained at Cape Cod, and from New York, an electric Fish, which he recognized as identical with *Torpedo nobiliana*, Bonap. (Silliman, Amer. Journ., Jan. 1843; Annals, xi, p. 326).

ELEUTHEROBRANCHII.

On the Structure of the Brain of the Sturgeon. A Paper by Stannius. (Müller's Archiv, 1843, p. 36.)

CYCLOSTOMI.

Petromyzon appendix, De Kay. Dorsal fins connected, yellow; anal fin with a filamentous appendage in front; 6 inch. Hudson.

Ammocœtes unicolor, De Kay. Uniform colour, with a dorsal fin; 5 inch. Lake Champlain.

Myxine australis, Jenyns. Two branchial openings rather behind the fourth part of the whole length; a series of pores on each side of the abdomen; 11½ inch. Tierra del Fuego. Is able to swim tail first.

The Olfactory organ in *Amphioxus* has been discovered by Kölliker. (Müller's Arch. 1843, p. 32.) It is azygous, and is a fresh indication that the animal occupies the lowest place among the Cyclostomi.