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1846
Fishes

*Mr Spencer F Baird
with his regards
J. W.
Author*

A

SYNOPSIS

S. F. BAIRD

OF THE

FISHES OF NORTH AMERICA.

BY

DAVID HUMPHREYS STORER, M. D., A. A. S.,

VICE-PRESIDENT OF THE BOSTON SOCIETY OF NATURAL HISTORY; MEMBER OF THE
AMERICAN PHILOSOPHICAL SOCIETY; CORRESPONDING MEMBER OF THE
ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA, ETC.



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MEMOIRS
OF THE
AMERICAN ACADEMY.

VII.

A Synopsis of the Fishes of North America.

BY DAVID HUMPHREYS STORER, M. D., A. A. S.

*Communicated to the Meeting of the American Naturalists, at New Haven,
April 3d, 1845.*

SEVERAL years since, at the suggestion of my friend, Dr. Harris, of Cambridge, I was induced to commence the preparation of a Synopsis of the Fishes of the United States. After having been diligently engaged in this undertaking for a number of months, learning that Dr. Dekay intended to describe, in his contemplated Zoölogical Report of the State of New York, under the head of "Extra-limital," all the fishes of the United States not found in that State, I at once determined to proceed no further until the appearance of that work. Upon the publication of his Report, in the early part of 1842, I found so much had been done by Dr. Dekay towards the execution of the task I had contemplated, that I dismissed from my mind all thoughts of prosecuting the subject. This Association, at its annual meeting at Albany, in 1843, did me the honor to request me to prepare a paper "On the Comparative Ichthy-

ology of North America and Europe." Grateful for this expression of their confidence, and desirous of acknowledging my sense of obligation, I extended my original plan, and have the pleasure now to present to you "A Synopsis of the Fishes of North America."

The paper I offer you claims but little, I might say, perhaps, no originality. With most of the species found out of the waters of Massachusetts, my acquaintance is but slight. Many of them I have had no opportunities of examining. In characterizing them, I have accordingly oftentimes used the very language of the discoverer, or of those who may have heretofore described them. Knowing that the American ichthyologist has no dictionary to refer to, in which *all the described species of this country are contained*, I have endeavoured, by no inconsiderable amount of labor, to supply the deficiency. If, to my fellow-laborers in this extensive and as yet, when compared with the other departments of natural science, almost untrodden domain, it shall appear that I have added any facilities or removed any obstacles to their advancement, I shall ever recur to the time occupied in the preparation of this Report with pleasure and with pride.

To accomplish the duty required of me by this Association, I have prepared a series of tables, exhibiting the geographical distribution of genera.

The first column includes those genera which are found both in Europe and North America.

The second, points out those genera which are found in North America, but which are not peculiar to it, and not found in Europe.

The third, enumerates genera peculiar to America, and, if not mentioned in the fourth column, confined to North America.

The fourth, comprises genera found in North America, and extending to South America.

I have also catalogued the *species* found to exist both in Europe and North America; and those extending from North into South America; and those which are peculiar to the Northwest Coast of America; and, finally, I have enumerated the *genera* found in North America, with the number of *species* contained in each genus.

The *Synopsis* concludes the paper. In this, I have pointed out the characters of each family, genus, and species, with the localities of the last, and the authorities for the localities, and have exhibited as full a list of synonymes as my opportunities have given me power.

Seventeen volumes only of the "Histoire Naturelle des Poissons," by Cuvier and Valenciennes, have as yet been published; the last which appeared containing the commencement of the family Cyprinidæ. The ensuing volumes will undoubtedly contain many species, from the Antilles particularly, as yet unknown to naturalists. Dr. Parnell, of Scotland, writes me, that he is now investigating the fishes of the West Indies. Dr. Holbrook, of Charleston, is preparing for publication a work on the fishes of South Carolina. Ichthyologists in different parts of our country will, each succeeding year, add to our catalogue. Full well am I aware, that but a short period will elapse ere this *Synopsis* shall be looked upon as meagre and unsatisfactory. When that time arrives, I trust some one will take up the subject where I have left it, and, supplying all my deficiencies and adding what may have been recently discovered, present us with a work worthy the science of our country.

Geographical Distribution of Genera.

Ceanthopterygii

Family.	Genera found both in Europe and North America.	Genera found in North America, but not peculiar to it.	Genera peculiar to America.	Genera found in North America, and extending to South America.
PERCIDÆ.	Perca. Labrax. ♀ Lucio-perca. Uranoscopus. ♀ Serranus. Sphyræna.	Plectropoma. Mesoprion. Centropristis. Grystes. Priacanthus. Dules. Trichodon. Myripristis. Holocentrum. Polynemus. Upeneus.	Huro. Percina. Centropomus. Rypticus. Centrarchus. Pomotis. Bryttus. Aphredoderus. Lepisoma.	Plectropoma. Mesoprion. Priacanthus. Rypticus. Centrarchus. Pomotis.
TRIGLIDÆ.	Trigla. Cottus. Aspidophorus. Sebastes. Gasterosteus. Dactylopterus. Scorpæna.	Hemilepidotus. Blepsias.	Hemitripterus. Prionotus. Cryptacanthodes. Temnistia.	Sebastes. Trigla. Dactylopterus. Scorpæna. Prionotus.
SCIENIDÆ.	Corvina. Umbrina.	Otolithus. Lobotes. Glyphisodon. Heliasus.	Leiostomus. Larimus. Pogonias. Conodon.	Otolithus. Corvina. Larimus. Eques. Umbrina. Micropogon. Hæmulon. Pristipoma. Lobotes. Pomacentrus. Heliasus.
SPARIDÆ.	Sargus. Chrysophris. Pagrus. Pagellus.			Sargus.
MENIDÆ.	Smaris.	Gerres.		Smaris. Gerres.
CHETODONTIDÆ.		Chætodon. Ephippus. Holacanthus. Pimelepterus.	Pomacanthus.	Ephippus.

Family.	Genera found both in Europe and North America.	Genera found in North America, but not peculiar to it.	Genera peculiar to America.	Genera found in North America, and extending to South America.
SCOMBRIDÆ.	Scomber. Thynnus. Auxis. Pelamys. Xiphias. Naucrates. Lichia. Caranx. Seriola. Coryphæna. Lampugus. Lampris.	Cybium. Gempylus. Elacate. Trachinotus. Blepharis. Temnodon. Pteraclis.	Argyreiosus. Vomer. Rhombus.	Scomber. Thynnus. Pelamys. Cybium. Trichiurus. Elacate. Chorinemus. Trachinotus. Caranx. Vomer. Seriola. Temnodon. Coryphæna. Rhombus.
TEUTHIDÆ.		Acanthurus.		Acanthurus.
TÆNIDÆ.			Stylephorus.	
ATHERINIDÆ.	Atherina.			Atherina.
MUGILIDÆ.	Mugil.		Dajaus.	Mugil.
GOBIDÆ.	Blennius. Pholis. Clinus. Gunnellus. Zoaricus. Anarrhicas. Gobius.	Salarias. Sicidium. Eleotris.	Chasmodes. Philypnus.	Blennius. Clinus. Gobius.
LOPHIDÆ.	Lophius.	Chironectes. Malthea. Batrachus.	Malthea.	Chironectes. Batrachus.
LABRIDÆ.	Ctenolabrus. Acantholabrus. Tautoga. Julis. Xyrichthys.	Cossyphus. Malacanthus. Scarus. Callyodon.	Clepticus. Lachnolaimus.	Cossyphus. Julis. Xyrichthys. Scarus. Callyodon.
SILURIDÆ.		Bagrus. Galeichthys. Arius. Pimelodus.	Noturus.	Bagrus. Arius. Pimelodus. Galeichthys.

Family.	Genera found both in Europe and North America.	Genera found in North America, but not peculiar to it.	Genera peculiar to America.	Genera found in North America, and extending to South America.
CYPRINIDÆ.	Gobio. Cyprinus. Leuciscus. Lebias. Cyprinodon.	Catostomus.	Sclerognathus. Exoglossum. Hydrargyra. Molinesia.	Pœcilia. Hydrargyra. Lebias.
ESOCIDÆ.	Esox. Belone. Scomberesox. Exocetus. Hemiramphus.			Belone.
FISTULARIDÆ.		Fistularia.		Fistularia.
SALMONIDÆ.	Salmo. Osmerus. Scopelus. Coregonus.		Mallotus.	
CLUPEIDÆ.	Clupea. Alosa.	Chatoëssus. Elops. Butirinus.	Hyodon. Amia.	Butirinus.
SAURIDÆ.			Lepisosteus.	
GADIDÆ.	Morrhua. Merluccius. Lota. Merlangus. Brosmius. Phycis. Macrourus.			
PLANIDÆ.	Hippoglossus. Platessa. Pleuronectes.	Plagusia.		Achirus. Platessa.
CYCLOPTERIDÆ.	Lumpus. Liparis.			
ECHENEIDÆ.	Echeneis.			
ANGUILLIDÆ.	Anguilla. Conger. Ophidium. Fierasfer. Ammodytes.			Conger.

*Malacopterygi abdominalis**subhachiate**alpsoda*

Family.	Genera found both in Europe and North America.	Genera found in North America, but not peculiar to it.	Genera peculiar to America.	Genera found in North America, and extending to South America.
SYNGNATHIDÆ.	{ Syngnathus. Hippocampus.			
GYMNODONTIDÆ.	{ Tetraodon. Orthogoriscus.	Diodon.	Acanthosoma.	
BALISTIDÆ.	{ Balistes.	Monocanthus. Aluterus.		
OSTRACIONIDÆ.		Lactophrys.		
STURIONIDÆ.	{ Acipenser.		Polyodon. Platirostra.	
SQUALIDÆ.	{ Carcharias. Lamna. Mustelus. Selache. Acanthias. Scymnus. Zygæna. Squatina.	Pristis.		
RAIDÆ.	{ Raia. Trygon. Myliobatis.	Aëtobatis.		Aëtobatis. Trygon.
PETROMYZONIDÆ.	{ Petromyzon. Ammocetes.			

Chondropterygia
Branchiostoma

Branchiura
Parasitica

Although it will be seen, by the above catalogue, that quite a number of *genera* are found to inhabit the coasts of both Europe and North America, but few of the *species* belonging to these genera have been detected upon the shores of both countries.

They are as follows: —

- | | |
|-------------------------|----------------------|
| Trigla cuculus. | Scomber colias. |
| Cottus gobio. | Scomber grex. |
| Dactylopterus volitans. | Pelamys sarda. |
| Aspidophorus Europæus. | Trichiurus lepturus. |
| Scorpena porcus. | Auxis vulgaris. |
| Sebastes Norvegicus. | Anarrhicas lupus. |
| Gasterosteus aculeatus. | Salmo salar. |

Scopelus Humboldtii.	Alopias vulpes.
Morrhua æglefinus.	Scymnus borealis.
Morrhua minuta.	Hippoglossus vulgaris.
Merlangus carbonarius.	Cyclopterus lumpus.
Zygæna malleus.	Orthogoriscus mola.
Selache maximus.	Carcharias vulgaris.

Many others of the North American *genera* will doubtless be met with on the coast of South America, by subsequent observers. Several of the *species* have been found to have a very extensive range; even from Massachusetts and New York to Brazil.

Among these are, —

Dules auriga.	Scomber grex.
Dactylopterus volitans.	Pelamys sarda.
Micropogon costatus.	Cybium maculatum.
Lobotes Surinamensis.	Trachinotus argenteus.
Trichiurus lepturus.	Vomer Brownii.
Ephippus faber.	Mugil petrosus.
Ephippus gigas.	Mugil Plumieri.
Elacate Atlantica.	Galeichthys Parra.
Temnodon saltator.	Zygæna malleus.

The following species inhabit the Northwestern Coast of America: —

Triehodon Stelleri.	Salmo salar.
Cottus pistilliger.	Salmo quinnat.
Cottus polyacanthocephalus.	Salmo Gairdnerii.
Cottus asper.	Salmo paucidens.
Aspidophorus acipenserinus.	Salmo Scouleri.
Hemilepidotus Tilesii.	Salmo tsuppitch.
Blepsias trilobus.	Salmo nitidus.
Sebastes variabilis.	Mallotus Pacificus.
Cyprinus balteatus.	Cyclopterus ventricosus.
Leuciscus caurinus.	Acipenser transmontanus.
Leuciscus Oregonensis.	

An Enumeration of the Genera found in North America, with the
Number of Species contained in each Genus.

Division I. — OSSEOUS FISHES.

<i>Family I. — PERCIDÆ.</i>		Genera.		No. of Species.
Genera.	No. of Species.			
1. Perca,	2	3. Dactylopterus,		1
2. Percina,	11	4. Cottus,		12
3. Labrax,	7	5. Aspidophorus,		3
4. Centropomus,	1	6. Cryptacanthodes,		1
5. Lucio-perca,	3	7. Hemitripterus,		1
6. Huro,	1	8. Hemilepidotus,		1
7. Serranus,	20	9. Scorpæna,		4
8. Plectropoma,	4	10. Sebastes,		2
9. Mesoprion,	16	11. Blepsias,		1
10. Centropristis,	5	12. Gasterosteus,		10
11. Grystes,	1	13. Temnistia,		1
12. Rypiticus,	1			
13. Centrarchus,	10	Genera,	13	
14. Pomotis,	10	Species,	42	
15. Bryttus,	3			
16. Priacanthus,	1	<i>Family III. — SCIENIDÆ.</i>		
17. Dules,	1	1. Otolithus,		3
18. Trichodon,	1	2. Corvina,		7
19. Myripristis,	1	3. Leiostomus,		2
20. Holocentrum,	2	4. Larimus,		1
21. Uranoscopus,	1	5. Conodon,		1
22. Aphredoderus,	1	6. Eques,		2
23. Sphyræna,	4	7. Umbrina,		4
24. Polynemus,	1	8. Pogonjas,		2
25. Upeneus,	4	9. Micropogon,		2
26. Lepisoma,	1	10. Hæmulon,		12
		11. Pristipoma,		7
Genera,	26	12. Lobotes,		2
Species,	113	13. Pomacentrus,		1
		14. Glyphisodon,		2
<i>Family II. — TRIGLIDÆ.</i>		15. Heliasus,		1
1. Trigla,	1			
2. Prionotus,	4	Genera,	15	
		Species,	49	

Family IV. — SPARIDÆ.

Genera.	No. of Species.
1. Sargus,	5
2. Chrysophris,	1
3. Pagrus,	1
4. Pagellus,	1
Genera,	4
Species,	8

Family V. — MENIDÆ.

1. Smaris,	1
2. Gerres,	5
Genera,	2
Species,	6

Family VI. — CHETODONTIDÆ.

1. Chætodon,	3
2. Ephippus,	2
3. Holacanthus,	2
4. Pomacanthus,	3
5. Pimelepterus,	1
Genera,	5
Species,	11

Family VII. — SCOMBRIDÆ.

1. Scomber,	3
2. Pelamys,	1
3. Thynnus,	2
4. Auxis,	2
5. Cybium,	5
6. Gempylus,	1
7. Trichiurus,	1
8. Xiphias,	1
9. Naucrates,	2
10. Lichia,	2
11. Chorinemus,	3
12. Trachinotus,	5
13. Palinurus,	1
14. Notacanthus,	1
15. Caranx,	11

Genera.	No. of Species.
16. Blepharis,	3
17. Argyreiosus,	2
18. Vomer,	1
19. Seriola,	6
20. Coryphæna,	5
21. Temnodon,	1
22. Lampugus,	1
23. Pteraclis,	1
24. Rhombus,	2
25. Lampris,	1
26. Elacate,	1
Genera,	26
Species,	65

Family VIII. — TEUTHIDÆ.

1. Acanthurus,	3
Genus,	1
Species,	3

Family IX. — TENIDÆ.

1. Stylephorus,	1
Genus,	1
Species,	1

Family X. — ATHERINIDÆ.

1. Atherina,	6
Genus,	1
Species,	6

Family XI. — MUGILIDÆ.

1. Mugil,	6
2. Dajaus,	1
Genera,	2
Species,	7

Family XII. — GOBIDÆ.

1. Blennius,	3
2. Pholis,	2

Genera.	No. of Species.
3. Chasmodes,	3
4. Salarias,	2
5. Clinus,	1
6. Gunnellus,	7
7. Zoarcus,	3
8. Anarrhicas,	1
9. Gobius,	8
10. Sicidium,	1
11. Eleotris,	5
12. Philypnus,	1
Genera,	12
Species,	37

Family XIII. — LOPHIDÆ.

1. Lophius,	1
2. Chironectes,	5
3. Malthea,	3
4. Batrachus,	3
Genera,	4
Species,	12

Family XIV. — LABRIDÆ.

1. Cossyphus,	1
2. Ctenolabrus,	1
3. Acantholabrus,	1
4. Clepticus,	1
5. Lachnolaimus,	5
6. Tautoga,	1
7. Malacanthus,	1
8. Julis,	9
9. Xyrichthys,	3
10. Scarus,	18
11. Callyodon,	2
Genera,	11
Species,	43

Family XV. — SILURIDÆ.

1. Bagrus,	2
2. Galeichthys,	1
3. Arius,	1

Genera.	No. of Species.
4. Pimelodus,	16
5. Noturus,	1
Genera,	5
Species,	21

Family XVI. — CYPRINIDÆ.

1. Cyprinus,	2
2. Gobio,	1
3. Leuciscus,	38
4. Pimephales,	1
5. Catostomus,	27
6. Sclerognathus,	2
7. Exoglossum,	6
8. Pæcilia,	3
9. Lebias,	1
10. Fundulus,	1
11. Hydrargyra,	9
12. Molinesia,	1
13. Cyprinodon,	1
Genera,	13
Species,	93

Family XVII. — HYPHOCIDÆ.

1. Amblyopsis,	1
Genus,	1
Species,	1

Family XVIII. — ESOCIDÆ.

1. Esox,	5
2. Belone,	3
3. Scomberesox,	1
4. Exocetus,	5
5. Hemiramphus,	2
Genera,	5
Species,	16

Family XIX. — FISTULARIDÆ.

1. Fistularia,	2
Genus,	1
Species,	2

Family XX. — SALMONIDÆ.

Genera.	No. of Species.
1. Salmo,	18
2. Osmerus,	1
3. Scopelus,	1
4. Coregonus,	8
5. Mallotus,	2
6. Thymallus,	1
7. Saurus,	1
Genera,	7
Species,	32

Family XXI. — CLUPEIDÆ.

1. Clupea,	8
2. Alosa,	6
3. Pomolobus,	1
4. Chatoëssus,	5
5. Hyodon,	2
6. Elops,	1
7. Butirinus,	1
8. Amia,	1
Genera,	8
Species,	25

Family XXII. — SAURIDÆ.

1. Lepisosteus,	3
Genus,	1
Species,	3

Family XXIII. — GADIDÆ.

1. Morrhua,	8
2. Merluccius,	1
3. Lota,	3
4. Merlangus,	4
5. Brosmius,	1
6. Phycis,	3
7. Macrourus,	1
Genera,	7
Species,	21

Family XXIV. — PLANIDÆ.

1. Hippoglossus,	1
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Genera.	No. of Species.
2. Platessa,	7
3. Pleuronectes,	3
4. Achirus,	2
5. Plagusia,	1
Genera,	5
Species,	14

Family XXV. — CYCLOPTERIDÆ.

1. Lumpus,	4
2. Liparis,	2
Genera,	2
Species,	6

Family XXVI. — ECHENEIDÆ.

1. Echeneis,	4
Genus,	1
Species,	4

Family XXVII. — ANGUILLIDÆ.

1. Anguilla,	7
2. Conger,	1
3. Muræna,	1
4. Ophidium,	2
5. Fierasfer,	2
6. Saccopharynx,	1
7. Ammodytes,	2
Genera,	7
Species,	16

Family XXVIII. — SYNGNATHIDÆ.

1. Syngnathus,	1
2. Hippocampus,	1
Genera,	2
Species,	2

Family XXIX. — GYMNOBONTIDÆ.

1. Diodon,	3
2. Tetraodon,	4

Genera.	No. of Species.
3. <i>Acanthosoma</i> ,	1
4. <i>Orthogoriscus</i> ,	1
Genera,	4
Species,	9

Family XXX. — BALISTIDÆ.

1. <i>Balistes</i> ,	1
2. <i>Monocanthus</i> ,	4

Genera.	No. of Species.
3. <i>Aluterus</i> ,	3
Genera,	3
Species,	8

Family XXXI. — OSTRACIONIDÆ.

1. <i>Lactophrys</i> ,	3
Genus,	1
Species,	3

Division II. — CARTILAGINOUS FISHES.

Family XXXII. — STURIONIDÆ.

Genera.	No. of Species.
1. <i>Acipenser</i> ,	6
2. <i>Polyodon</i> ,	1
3. <i>Platirostra</i> ,	1
Genera,	3
Species,	8

Family XXXIII. — SQUALIDÆ.

1. <i>Carcharias</i> ,	4
2. <i>Lamna</i> ,	2
3. <i>Alopias</i> ,	1
4. <i>Mustelus</i> ,	1
5. <i>Selache</i> ,	1
6. <i>Acanthias</i> ,	1
7. <i>Scymnus</i> ,	1
8. <i>Zygæna</i> ,	1
9. <i>Squatina</i> ,	1
10. <i>Pristis</i> ,	1
Genera,	10
Species,	14

Family XXXIV. — RAIIDÆ.

Genera.	No. of Species.
1. <i>Raia</i> ,	8
2. <i>Trygon</i> ,	3
3. <i>Myliobatis</i> ,	3
4. <i>Aëtobatis</i> ,	1
5. <i>Rhinoptera</i> ,	1
6. <i>Cephaloptera</i> ,	1
7. <i>Torpedo</i> ,	1
Genera,	7
Species,	18

Family XXXV. — PETROMYZONIDÆ.

1. <i>Petromyzon</i> ,	7
2. <i>Ammocætes</i> ,	3
Genera,	2
Species,	10

Making a total of, —

Families,	35
Genera,	218
Species,	729

It may be observed that I have followed the Family arrangement of Dr. Dekay.

THE following works have been consulted in the preparation of this Report.

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SYNOPSIS.

CLASS I. OSSEOUS FISHES.

SKELETON bony, the osseous matter being deposited in fibres. Sutures of the cranium distinct, with maxillary or intermaxillary bones, always one, and generally both, present. Gill-membrane with rays.

ORDER I. ACANTHOPTERYGII. SPINE RAYED.

They are known by the spines which represent the first rays of the dorsal fin, or which alone sustain the anterior fin of the back, when they have two. Sometimes, instead of an anterior dorsal fin, they have nothing but a few free spines. Their anal fin has also some spines instead of the first rays, and there is, in general, one to each ventral.

FAMILY I. PERCIDÆ.

Comprehends fishes with an elongated body, covered with hard or rough scales, in which the operculum or preoperculum, and frequently both, have indented or spinous edges, and in which the jaws, the front of the vomer, and almost always the palatines, are furnished with teeth.

GENUS I. PERCA.

Two dorsal fins distinct, separated; the rays of the first spinous, those of the second, flexible: tongue smooth: teeth in both jaws, in front of the vomer, and on the palatine bones: preoperculum notched below, serrated on the posterior edge: operculum bony, ending in a flattened point directed backwards. Branchiostegous rays. Scales roughened, and not easily detached.

1. *Perca flavescens*, MITCHILL.

Above, greenish yellow; sides and abdomen, golden yellow. Six to ten vertical black bands descend from the back to the inferior portion of the sides, the alternate ones being shorter. Pectorals, ventrals, and anal, orange.

The fin rays are, — D. 13. 1-13. P. 15. V. 1-5. A. 2-8. C. 17. Length, 4 to 12 inches.

Lake Huron, RICHARDSON. Massachusetts, STORER. Connecticut, AYRES, LINSLEY. New York, MITCHILL, DEKAY. Ohio, KIRTLAND. Pennsylvania, HALDEMAN.

Lake Champlain, New York, Sandford.
Perch Pond, Essex Co. N.Y.
Mesopoma Bay. F.B.

Bodianus flavescens, Yellow Perch, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., i. p. 421.
 La Perche jaunatre d'Amérique, *Perca flavescens*, CUV. et VAL., II. p. 46.
Perca flavescens, American Perch, RICH., Fauna Boreal. Americ., III. p. 1, pl. 74.
Perca flavescens, Common Perch of Massachusetts, STORER's Report, p. 5.
Bodianus flavescens, Yellow Perch, KIRTLAND's Rep. on Zool. of Ohio, pp. 168, 190.
Perca flavescens, American Yellow Perch, DEKAY's Report, p. 3, pl. 1, fig. 1.
 " " " " " LINSLEY's Cat. of Fishes of Conn.
 La Perche à opercules grenues, *Perca serrato-granulata*, CUV. et VAL., II. p. 47.
 " " " " " GRIFFITH's CUV., x. pl. 39, fig. 1.
 " " " " " DEKAY's Report, p. 5, pl. 22, fig. 64.
 La Perche à tête grenue, *Perca granulata*, CUV. et VAL., VII. p. 48, pl. 9.
 " " " " " JARDINE, Nat. Lib., I. p. 92, pl. 1.
 " " " " " DEKAY's Report, p. 5, pl. 48, fig. 220.
 " " " " " LINSLEY's Cat. of Fishes of Conn.
 La Perche à museau pointu, *Perca acuta*, CUV. et VAL., II. p. 49, pl. 10.
 " " " " " Sharp-nosed Perch, RICH., Fauna Boreal. Americ., III. p. 4.
 " " " " " Sharp-nosed Yellow Perch, DEKAY's Rep., p. 6, pl. 68, fig. 222.
 La Perche grêle, *Perca gracilis*, CUV. et VAL., II. p. 50.
 " " " " " RICH., Fauna Boreal. Americ., III. p. 4.
 " " " " " Slender Yellow Perch, DEKAY's Report, p. 6.

2. *Perca Plumieri*, BLOCH.

Conodon antillanus
 p. 70

Whitish, with four longitudinal yellow ribands, and eight vertical blackish bands. The first dorsal and pectorals, gray; the other fins, yellow.

D. 9. 2-8. P. 13. V. 1-6. A. 7. C. 22. BLOCH. Length, (?).

Caribbean Sea, CUV.

Sciæna Plumieri, BLOCH, pl. 306.
 " " " Plumier's *Sciæna*, SHAW's Gen. Zool., IV. p. 537.
 La Perche de Plumier, *Perca Plumieri*, CUV. et VAL., II. p. 51.

GENUS II. ETHEOSTOMA,* RAF.

Body nearly cylindrical, and scaly. Mouth variable, with small teeth. Gill-cover double or triple, unserrate, with a spine on the opercle, and without

* Haldeman formed a genus, which he calls *Percina*; and Dekay, in his "Report on the Zoölogy of New York," characterizes two genera under the names of *Pilecoma* and *Boleosoma*, to receive the fishes which Rafinesque introduced into his genus *Etheostoma*. As Dr.

scales : six branchial rays. Thoracic fins with six rays, one of which is spinous ; no appendage. One dorsal fin, more or less divided into two parts, the anterior one entirely with spinous rays. Vent medial, or rather anterior.

*Percina*1. *Etheostoma caprodes*, RAF.

Body quite cylindrical, whitish, with about twenty transverse bands, alternately shorter. Head elongate, obtuse : upper jaw the longer. Lateral line quite straight. A black spot at the base of the tail.

D. 15-16. P. 14. V. 1-5. A. 13. C. 17. Length, 6 inches.

Western rivers, RAF., KIRTLAND.

Etheostoma caprodes, Common Hog-fish, RAF., Ichth. Ohien., p. 33.
 " " " " KIRTLAND'S Rep. on Zool. of Ohio, pp. 163, 192.
 " " " " Bost. Journ. Nat. Hist., III. p. 346, pl. 5, fig. 3.

2. *Etheostoma blennioides*, RAF.

Body elongate : head small, snout rounded, mouth small beneath, lower jaw shorter. Olivaceous, almost diaphanous, some brown spots on the back, and some brown geminate transversal lines across the lateral line, which is straight, but rising at the base.

D. 15-13. P. 16. V. 1-5. A. 2-9. C. 13. Length, 2 or 3 inches.

Western rivers, RAF., KIRTLAND.

Etheostoma blennioides, Blunt-nose Hog-fish, RAF., Ichth. Ohien., p. 37.
 " " Blenny-like Hog-fish, KIRTLAND'S Rep. on Zool. of Ohio, p. 168.
 " " " " " Bost. Journ. Nat. Hist., III. p. 343, pl. 6, fig. 1.

*Hadropterus*3. *Etheostoma variata*, KIRTLAND.

Body sub-cylindric, back gibbous, abdomen rectilinear ; scales rough, apparently hexagonal. Head conical, gibbous ; orbits prominent. Pectorals large, elongated almost to the origin of the anal fin. Caudal, fan-shaped. Body banded, behind the pectorals, with seven or eight white zones, spotted with orange, the intervening spaces green ; an orange stripe beneath the pectoral fins, on the sides of the body. Back and head olive and green. Anterior dorsal fin edged with orange, and banded through its middle with indigo. Anal fin verditer.

D. 12-13. P. (?). V. (?). A. (?). C. (?). Length, (?).

Mahoning River, Ohio, KIRTLAND.

Etheostoma variata, Variegated Etheostome, or Darter, KIRTLAND, Bost. Journ. Nat. History, III. p. 274, pl. 2, fig. 2.

Kirtland has been able, by means of Rafinesque's descriptions, to identify several of his species, I do not feel at liberty, objectionable as his genus may be in some respects, to substitute any other for it.

4. *Etheostoma maculata*, KIRTLAND.*Nothobranchius*

Body flattish, tapering gradually to tail. Head narrow, compressed. Jaws equal. Back and head, olive and black; sides and abdomen, sea-green, with from twelve to twenty carmine dots near the medial line.

D. 10-13. P. 14. V. 1-5. A. 1-7. C. 22. Length, 2½ inches.

Mahoning River, Ohio, KIRTLAND.

Etheostoma maculata, Black Darter, or Speckled Hog-fish, KIRTLAND, Bost. Journ. Nat. Hist., III. p. 276, pl. 2, fig. 3.

5. *Etheostoma olmstedi*, STORER.*Boliosoma*

Body cylindrical, very slightly compressed. Head small. Pectoral fins very long. Lateral line nearly straight. Yellowish, marked upon the back and sides with reddish brown blotches, which, when looked upon from either extremity of the fish, resemble interrupted longitudinal bands; when the fish is examined from above, these markings present more or less distinct transverse bands upon the back, which are situated at the origin, the middle, and the termination of both the dorsal fins. A narrow, deep black band passes from the snout to the eyes, and another from above the eyes, interrupted by them, to the lower edge of the cheeks.

D. 9-13. P. 15. V. 6. A. 11. C. 15. Length, (?).

Massachusetts, STORER. Connecticut, OLMSTED, AYRES. New York, DEKAY. Susquehannah River, Pennsylvania, HALDEMAN.

Etheostoma olmstedi, STORER, Bost. Journ. Nat. Hist., IV. p. 60, pl. 5, fig. 2.

" " AYRES, " " " p. 257.

Percina minima, HALD., Journ. Acad. Nat. Scien., VIII. p. 330.

Boliosoma tessellatum, Tessellated Darter, DEKAY'S Report, p. 20, pl. 20, fig. 57.

Etheostoma olmstedi, Ground Fish, LINSLEY'S Cat. of Fishes of Connecticut.

Percina minima, DEKAY'S Report, p. 7.

6. *Etheostoma nebulosa*, HALD.*Arc. captrudii*

Body slender, slightly compressed; head and mouth small; dorsal fins separated; lateral line straight; scales small, and strongly serrated; tail truncated; pectoral fins very long; branchiostegous rays, six. Yellowish brown, with irregular dark transverse bands.

D. 14-15. P. 14. V. 7. A. 11. C. 18. Length, 5½ inches.

Susquehannah River, Pennsylvania, HALDEMAN.

Percina nebulosa, HALD., Journ. Acad. Nat. Scien., VIII. p. 330.

Percina nebulosa, DEKAY'S Report, p. 7.

7. *Etheostoma semifasciata*, DEKAY. -P

Body oblong, cylindrical. Head small, sloping; scales moderate in size. Caudal fin broad, and very slightly emarginated. Olive-green, with about twenty dark olive or brownish

transverse stripes on the sides, alternately but not regularly longer. A dark round spot at the base of the caudal.

D. 13-15. P. 15. V. 1-5. A. 12. C. 15 $\frac{3}{4}$. Length, 2 inches.

Lake Champlain, DEKAY.

Pileoma semifasciatum, Champlain Pickering, DEKAY's Report, p. 16, pl. 50, fig. 162.

May not this prove to be the *Percina nebulosa* of Haldeman?

Percina caprodes

8. *Etheostoma bimaculata*, HALD.

Slender, lateral line sub-rectilinear above the middle. Light yellow; sides transversely and irregularly banded with black, and dorsal fins clouded with brown; a distinct black spot at the extremity of the lateral line. Ten or twelve irregular transverse bands upon the back and sides; rays of the second dorsal and caudal fins crossed by dark brown bands.

D. 15-15. P. 13. V. 6. A. 11. C. 17. Length, (?).

Susquehannah River, Pennsylvania, HALDEMAN.

Percina bimaculata, HALDEMAN, Proceedings of the Bost. Soc. Nat. Hist., p. 157.

Percilichthys

9. *Etheostoma cœrulea*, STORER.

Body oblong. Head slightly gibbous anterior to the eyes, which are prominent. When alive, reddish above, orange-colored upon lower portion of the sides, with nine or ten transverse blue bands, which are not seen upon the red above. Anterior dorsal, yellow, margined with blue; posterior dorsal, with a longitudinal blue band at its base and margin; ventral, anal, and caudal fins, bluish; pectorals, light yellow. A blue blotch upon the cheeks.

In spirits, the colors disappear, leaving the fish of a yellowish green, with ten dark brown, perfectly regular transverse bands extending from the dorsum to the abdomen: the bands at the edge of the first dorsal, and base of the second, are nearly black, and that at the margin of the second entirely disappears.

D. 10-13. P. 13. V. 1-5. A. 9. C. 16. Length, 2 $\frac{1}{2}$ inches.

Fox River, Illinois, STORER.

Etheostoma cœrulea, STORER, Proceedings of the Bost. Soc. Nat. Hist., 1845.

10. *Etheostoma tessellata*, STORER.

Body oblong. Head gibbous, less than one fourth the length of the body. Lateral line straight. Top of the head and upper portion of the sides of a greenish brown color; eight or ten transverse bluish bands upon the sides; the intervals between these bands are yellowish, and in the centre of each is a bluish rhomb. A black blotch at the base of the tail. The lips, opercles, and rays of the first dorsal, gamboge yellow.

D. 12 - 13. P. 13. V. 6. A. 12. C. 17. Length, 3 inches ?

Florence, Alabama, STORER. Caught in running water.

Etheostoma tessellata, STORER, Proceedings of the Bost. Soc. Nat. Hist., 1845.

11. *Etheostoma cinerea*, STORER.

Body oblong, compressed. Head gibbous directly over the eyes. The upper portion of the sides is of a light yellow color, crossed longitudinally by three or four cinereous interrupted narrow bands, one or two of which commence at the snout, the others back of the head, and are lost anterior to the tail. Beneath these bands is a series of longitudinally arranged oval blotches, of a similar color, and from these blotches descend obliquely backward and downward to the abdomen, narrow transverse lines; lower portion of the sides yellowish white. First dorsal margined with red; second dorsal and anal variegated with red dots.

D. 11 - 13. P. 15. V. 6. A. 10. C. 17. Length, 3 to 4 inches.

Florence, Alabama, STORER. Caught in deep, still water, when fishing for Perch.

Etheostoma cinerea, STORER, Proceedings of the Bost. Soc. Nat. Hist., 1845.

GENUS III. LABRAX, CUV.

Distinguished from the Perch by the scaly opercula, terminating with two spines, and by a tongue covered with prickles.

1. *Labrax lineatus*, CUV.

Cylindrical, tapering. The upper part of the body is of a silvery brown color; the lower part of the sides and abdomen of a beautiful, clear silver color; eight or more longitudinal black bands on each side, commencing just back of the opercula, the upper bands running the whole length of the fish, the lower ones terminating directly above the anal fin.

D. 9, 1 - 12. P. 18. V. 1 - 4. A. 3 - 11. C. 18. Length, 3 to 4 feet.

Maine, New Hampshire, and Massachusetts, STORER. Connecticut, AYRES. New York, MITCHILL, CUV., DEKAY.

Sciæna lineata, BLOCH, pl. 304.

Perca Mitchilli, Striped Bass, or Rock-fish, MITCHILL, Trans. Lit. et Phil. Soc., I. p. 413, pl. 3, fig. 4.

Rock-fish, MEASE, " " I. p. 502.

Le Bar Rayé (ou Rock-fish) des Etats-Unis, *Labrax lineatus*, CUV. ET VAL., II. p. 79.

" " GRIFFITH'S CUV., X. p. 103.

" " RICH., Fauna Boreal. Americ., III. p. 10.

" " STORER'S Report, p. 7.

" " AYRES, Bost. Journ. Nat. Hist., IV. p. 257.

" " DEKAY'S Report, p. 7, pl. 1, fig. 3.

" " LINSLEY'S Cat. of Fishes of Connecticut.

2. *Labrax rufus*, MITCHILL.

Body deep compressed. Color, a silvery gray; in very large specimens, all the upper part of the body, as well as the head and fins, are of a rusty black. The spinous ray of the second dorsal fin about two thirds the height of the first membranous ray.

D. 9, 1-12. P. 15. V. 1-5. A. 3-9. C. 17. Length, 6 to 15 inches. Usual weight about half a pound. This is known by the fishermen of Massachusetts as the White Perch.

Massachusetts, STORER. Connecticut, AYRES. New York, MITCHILL, CUV., DEKAY. South Carolina, DEKAY.

Bodianus rufus, Red Perch, MITCHILL, Trans. Lit. et Phil. Soc., I. p. 420.

Le Petit Bar d'Amérique, *Labrax mucronatus*, CUV. et VAL., II. p. 86, pl. 12.

" " Small American Bass, or White Perch, STORER's Report, p. 8.

Labrax rufus, Ruddy Bass, DEKAY's Report, p. 10, pl. 3, fig. 7.

Labrax mucronatus, AYRES, Bost. Journ. Nat. Hist., IV. p. 257.

" " White Perch, LINSLEY's Cat. of Fishes of Connecticut.

3. *Labrax pallidus*, MITCHILL.

Body compressed, small, light colored. First ray of the posterior dorsal nearly as long as the second. Opercle with a single spine.

D. 9-13. P. 17. V. 1-5. A. 3-7. C. 17 $\frac{3}{4}$. Length, 4 inches.

Massachusetts, STORER. New York, MITCHILL, DEKAY.

Merone pallida, MITCHILL's Report on the Fishes of New York, p. 18.

Bodianus pallidus, " Trans. Lit. and Phil. Soc. N. Y., I. p. 420.

Labrax pallidus, Little White Bass, or White Perch, DEKAY's Report, p. 11, pl. 1, fig. 2.

4. *Labrax notatus*, SMITH.

This species differs from the *L. lineatus* in being more robust, and in being marked with rows of spots, five above and five below the lateral line, so regularly interrupted and transposed as to appear like ancient church-music. The back is brilliant with iridescent green, gold, and pink colors; the sides, silvery.

D. 9, 1-12. P. (?). V. 1-6. A. 1-12. C. 17. Length, 1 to 2 feet.

The river St. Lawrence, at Quebec, RICHARDSON.

Labrax notatus, Bar-fish, or Canadian Bass, Lt. Col. C. H. SMITH; RICH., Fauna Boreal. Americ., III. p. 3.

" " DEKAY's Report, p. 14.

5. *Labrax multilineatus*, CUV.

Of a dark olive upon the head and back, silvery upon the sides, white beneath. Interrupted dark brown longitudinal stripes, varying in their number, upon the sides. Cuvier, in his description of this species, from a specimen taken in the Wabash, describes the number of stripes as being from sixteen to nineteen. Kirtland, in his account of the same, speaks of six or seven. This species differs from the *lineatus* by its deeper body, shorter head,

smaller teeth, coarser asperities upon the tongue, and particularly by the scales upon the maxillary bones being much larger, and similar to those of the *mucronatus*.

Cuvier's and Kirtland's species may, perhaps, by future research, be ascertained to be distinct species.

D. 9, 1-14. P. 16. V. 1-5. A. 3-13. C. 16 $\frac{1}{2}$. Length, 8 to 15 inches.

The Striped Bass of the Ohio. White Bass of Lake Erie.

Wabash River, Indiana, CUV. Ohio River, Lake Erie, KIRTLAND.

Perca chrysops, RAF., Ichth. Ohien., p. 32.

Perca multilineatus, LESUEUR, CUV. et VAL., III. p. 488.

Le Petit Bar d'Amérique, *Labrax mucronatus*, CUV. et VAL., III. p. 488.

Labrax multilineatus, KIRTLAND, Bost. Journ. Nat. Hist., v. p. 21, pl. 7, fig. 1.

" " DEKAY's Report, p. 14.

6. *Labrax nigricans*, DEKAY.

Dark colored, with a tinge of yellowish. First dorsal more elevated than the second.

D. 9 or 10, 1-12. P. 16. V. 1-5. A. 3-8. C. 15 $\frac{2}{3}$. Length, 6 to 12 inches.

New York, DEKAY.

Labrax nigricans, Small Black Bass, DEKAY's Report, p. 12, pl. 50, fig. 160.

7. *Labrax albidus*, DEKAY.

Bluish white, with a few narrow dusky lines. Anal fin with twelve soft rays. Second dorsal scarcely emarginate.

D. 9, 1-13. P. 17. V. 1-5. A. 3-12. C. 17 $\frac{2}{3}$. Length, 10 inches.

Lake Erie, DEKAY.

Labrax albidus, White Lake Bass, DEKAY's Report, p. 13, pl. 51, fig. 165.

GENUS IV. CENTROPOMUS, LACEP.

The preoperculum is indented, but the operculum is obtuse and unarmed.

1. *Centropomus undecimalis*, CUV.

In its general form it resembles somewhat the Pike. Silvery, tinged with brownish or greenish towards the back; lateral line brown and very distinct. Fins yellowish, and dotted with black towards their edges; dorsal fin gray, dotted throughout with black. The second fin has eleven rays; hence its specific name.

D. 8, 1-10. P. 15. V. 1-5. A. 3-6. C. 17. Length, 12 inches.

Caribbean Sea, CUV.

Sciæna undecimalis, BLOCH, 305?

" " Pike-headed *Sciæna*, SHAW's Gen. Zool., IV. p. 535.

Le Centropome brachet de mer, *Centropomus undecimalis*, CUV. et VAL., II. p. 102, pl. 14.

GENUS V. LUCIO-PERCA, Cuv.

So named because, to the characters of the Perch, they join teeth which have some relation to those of the Pike. The edge of their preoperculum has merely a simple indentation; their dorsal fins are separated; some of their jaw and palatine teeth are long and pointed.

1. *Lucio-perca Americana*, Cuv.

Of a grayish yellow upon the sides, darker upon the back. The operculum terminates in a strong, flat spine. The lower edge of the operculum smooth. A black spot upon the posterior part of the spinous dorsal. The first dorsal higher than the second.

D. 14, 1-20. P. 13. V. 1-5. A. 2-11. C. 17. Cuv. et Val. Length, 2 feet.

D. 14, 1-21. P. 13. V. 1-5. A. 1-13. C. 17 $\frac{1}{11}$. RICHARDSON.

Salmon, of the Ohio River. *Pike*, of Lake Erie. *Pickereel*, of the settlers on Lake Huron. *Sandre*, of the French Canadians. *Horn-fish*, of the fur-traders.

Vermont, THOMPSON. Lake Huron, RICHARDSON. Lake Erie, KIRTLAND. New York, MITCHILL, CUV., DEKAY.

Perca vitrea, MITCHILL, Supp. Am. Month. Mag., II. p. 247.

" *salmonea*, RAF., Ichth. Ohien., p. 21.

" *nigro-punctata*, RAF., Ichth. Ohien., p. 23. (The male.)

Le Sandre d'Amérique, *Lucio-perca Americana*, CUV. et VAL., II. p. 122, pl. 16.

Perca fluviatilis, Var? RICH., Franklin's Journal, 1823, p. 725.

Lucio-perca Americana, American Sandre, RICH., Fauna Boreal. Americ., III. p. 10.

" " Okow, or Horn-fish, " " " " p. 14.

" " American Pike-Perch, THOMPSON, Hist. Vermont, p. 130, fig.

" " Salmon of the Ohio, &c., KIRTLAND's Report, p. 190.

" " Yellow Pike-Perch, DEKAY's Report, p. 17, pl. 50, fig. 163.

" " American Sandre, KIRTLAND, Bost. Journ. Nat. Hist., IV. p. 237, pl. 9, fig. 2.

2. *Lucio-perca Canadensis*, SMITH.

The upper part of the body dark olive-green; the lower whitish; a few pale yellow spots below the lateral line. The posterior margin of the bony operculum armed with five acute spines. The two dorsal fins nearly equal in height, and marked with black spots.

D. 12, 1-17. P. 12. V. 1-5. A. 12. C. 17. Length, 14 inches.

The river St. Lawrence, at Quebec, RICHARDSON, SMITH.

Lucio-perca Canadensis, Green Pickering, Lieut. Col. C. H. SMITH; GRIFFITH's CUV., X. p. 275, fig.

" " Canadian Sandre, RICH., Fauna Boreal. Americ., III. p. 17.

" " DEKAY's Report, p. 19.

3. *Lucio-perca grisea*, DEKAY.

General hue grayish. Membrane of the spinous dorsal fin without the black spots. Invariably smaller than the *L. Americana*.

D. 14, 1-17. P. 15. V. 1-5. A. 13. C. 17 $\frac{2}{8}$. Length, 10 to 12 inches.
Found with the *L. Americana*, DEKAY.

Lucio-perca grisea, Gray Pike-perch, DEKAY'S Report, p. 19.

GENUS VI. HURO, CUV.

Have all the characters of the Perch, properly so called, except that the preoperculum is not indented.

1. *Huro nigricans*, CUV.

Above, of an olive-brown, changing into yellowish white on the belly, and along the central ridge of each scale is a line of the same color with the upper parts, giving it a striped appearance on the sides. The first dorsal fin is smaller than that of the Perch, and is placed at a considerable distance in front of the second. The anal fin is somewhat larger in proportion.

D. 6, 2-12. P. 15. V. 1-5. A. 3-11. C. 17. CUV. et VAL. Length, 16 inches.
D. 6, 2-8. P. 15. V. 1-5. A. 3-11. C. 17 $\frac{7}{7}$. RICHARDSON.
Lake Huron, RICHARDSON, CUV.

Le Huron, *Huro nigricans*, CUV. et VAL., II. p. 124, fig. 17.
" " Huron, RICH., Fauna Boreal. Americ., III. p. 4.
" " Black Bass of the Huron, JARDINE, Nat. Lib., I., Perches, p. 103, pl. 6.
" " Black Huron, DEKAY'S Report, p. 15.

GENUS VII. SERRANUS, CUV.

Have the preoperculum denticulated, and the bony operculum terminated with one or two points, and long and pointed teeth distributed in a greater or less number among the smooth teeth of the lower jaw.

1. *Serranus morio*, CUV.

Brownish above, reddish beneath. The extremities of the maxillaries, the lower jaw, and the branchial membrane, red. The spinous portion of the dorsal is of a deeper color than the soft portion. The caudal is brown; the anal is dark orange, margined with brown; the pectorals are orange-colored, and the ventrals are ornamented with large red spots.

D. 11-17. P. (?). V. (?). A. 3-9. C. 17. Length, 30 inches.
New York, Caribbean Sea, CUV.
Called "Nègre," at St. Domingo.

Le Mérou nègre d'Amérique, *Serranus morio*, CUV. et VAL., II. p. 285.
" " DEKAY'S Report, p. 23.

2. *Serranus lunulatus*, Cuv.

Of a dull white, with lunated red spots. Fins blackish; ventrals spotted like the body.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, (?).

Gulf of Mexico, PARRA.

Called "Cabrilla," at Havana.

Cabrilla, PARRA, p. 93, pl. 36, fig. 1.

Le Mérou à croissant, *Serranus lunulatus*, Cuv. et VAL., II. p. 379.

3. *Serranus ouatalibi*, Cuv.

Of a bright red color, brownish upon the sides; it has a large number of small violet dots, encircled with black. The dorsal, particularly its membranous portion, edged with olive; anal, violet; extremity of the caudal red, its base violet; pectorals olive, margined with bright orange.

D. 9-15. P. 17. V. 1-5. A. 3-8. C. 17. Length, 10 or 11 inches.

Gulf of Mexico, PARRA. Caribbean Sea, Cuv.

Called, at Martinique, "Ouatalibé"; at St. Thomas, "Butter-fish."

Guativere, PARRA, p. 7, pl. 5, fig. 2.

Le Mérou ouatalibi, *Serranus ouatalibi*, PARRA, Cuv. et VAL., II. p. 381.

4. *Serranus guativere*, PARRA.

Red upon the back, yellow upon the remainder of the body; tail yellow, with two black spots. Black dots upon the head; a large one in front of the eyes.

Gulf of Mexico, PARRA.

Guativere, PARRA, p. 8, pl. 5, fig. 1.

Le Mérou guativière, *Serranus guativere*, PARRA, Cuv. et VAL., II. p. 383.

5. *Serranus creolus*, Cuv.

Red, deeper upon the back, rose-colored beneath. Sixteen to eighteen parallel lines cross the sides obliquely towards the back. A bright orange spot at the base of the pectorals. The dorsal is spotted with green.

D. 9-19. P. 19. V. 1-5. A. 3-9. C. 17. Length, (?).

Gulf of Mexico, Caribbean Sea, Cuv.

Called "Creole," at Martinique.

Rabirrubia de lo alto, PARRA, p. 43, pl. 20, fig. 2.

Le Barbier, *Serranus creolus*, Cuv. et VAL., II. p. 265.

6. *Serranus striatus*, Cuv.

Two longitudinal bands upon the forehead; four or five irregular wide, vertical bands upon the body, and two upon the tail. Back of the dorsal fin, above the tail, a large, square black spot. Three spines upon the operculum. Very fine denticulations upon the preoperculum.

D. 11-17. P. 17. V. 1-5. A. 3-8. C. 16. Length, 3 feet.

Gulf of Mexico, Caribbean Sea, CUV.

Called "Cabrilla," at Porto Rico.

Cherna, PARRA, p. 50, pl. 24, fig. 1.

Le Mérou à croupe noire, ou Cherna des Espagnols d'Amérique, Serranus striatus, CUV. et VAL., II. p. 298.

7. *Serranus arara*, PARRA.

Dark brown, with gilded brown spots; fins, bluish black; the margin of the soft dorsal, of the anal, and of the caudal, black. No spots upon the fins.

Gulf of Mexico, CUV.

Bonaci arara, PARRA, p. 30, pl. 16, fig. 2.

Le Mérou arara, *Serranus arara*, CUV., CUV. et VAL., II. p. 377.

8. *Serranus cardinalis*, PARRA.

Red, with black spots. The sides, and beneath the head, yellow, with red spots; abdomen white, spotted with red. The soft dorsal, anal, and caudal fins, spotted with red and black; ventrals half red and half yellow; pectorals red, margined with blackish.

Gulf of Mexico, PARRA.

Bonaci cardenal, PARRA, p. 29, pl. 16, fig. 1.

Le Mérou cardinal, *Serranus cardinalis*, CUV., CUV. et VAL., II. p. 378.

9. *Serranus bivittatus*, CUV.

Two longitudinal brown bands upon each side of the body; one above and one below the lateral line. A broad violet stripe arises upon the neck, passes between the eyes, and bifurcates over each nostril; two more upon the suborbitals; and a shorter one upon the opercle.

D. 10-12. P. 16. V. 1-5. A. 3-7. C. 17. Length, 4 to 5 inches.

Gulf of Mexico and Caribbean Sea, CUV.

Le Serran à deux rubans, *Serranus bivittatus*, CUV., CUV. et VAL., II. p. 241.

10. *Serranus oculatus*, CUV.

Elongated, of a beautiful golden aurora color. Caudal fin deeply forked. The dorsal fin much emarginated between its spinous and membranous portions. Eyes larger than in any other species of the genus. Two very short spines upon the operculum.

D. 10-11. P. 16. V. 1-5. A. 3-8. C. 17. Length, 24 inches.

Caribbean Sea, CUV.

Called "Gros yeux," at Martinique.

Le Barbier, *Serranus oculatus*, CUV. et VAL., II. p. 266, pl. 32.

11. *Serranus catus*, CUV.

Resembles considerably the preceding. The spots are larger and less numerous. Vertical fins, with white spots at their base, and their margin blackish. Pectorals yellowish at their base, blackish at their extremities.

D. 11-17. P. 16. V. 1-5. A. 3-9. C. 17. Length, (?).

Caribbean Sea, CUV.

Perca maculata, BL., pl. 213.

Le Mérou chat (*Serranus catus*, CUV., *Perca maculata*, BL.), CUV. et VAL., II. p. 373.

12. *Serranus coronatus*, CUV.

Body brown, variegated with rose and violet-colored spots; three moderate-sized spines upon the operculum.

D. 9-15. P. 16. V. 1-5. A. 3-8. C. 17. Length, (?).

Caribbean Sea, CUV.

Le Mérou couronné (*Serranus coronatus*, CUV., *Perca guttata*, BL.), CUV. et VAL., II. p. 371.

13. *Serranus nigriculus*, CUV.

Violet, with numerous dull, round spots upon the orbits, lips, and vertical fins. Upon the posterior portion of the body these spots become more clouded. Pectorals and ventrals dotted with brown; very fine denticulations upon the preopercle; opercular spines feeble.

D. 11-17. P. 16. V. 1-5. A. 3-9. C. 17. Length, (?).

Caribbean Sea, CUV.

Called, at Martinique, "Petit Nègre," "Grande Gueule," "Vieille."

Le Mérou petit nègre, *Serranus nigriculus*, CUV., CUV. et VAL., II. p. 375.

14. *Serranus flavescens*, CUV.

Body elongated, snout short and thick; head flattened above; preoperculum rounded and finely denticulated; three opercular spines. Yellowish brown upon the back, orange upon the sides; more bright or red upon the abdomen, without spots or bands. Head above, bluish. Fins gray. Caudal margined above and beneath with deeper brown.

D. 9-12. P. 15. V. 1-5. A. 3-7. C. 17. Length, 7 inches.

Caribbean Sea, CUV.

Le Serran jaunatre, *Serranus flavescens*, CUV. et VAL., VI. p. 506.

15. *Serranus fascicularis*, CUV.

With five or six longitudinal bands. Preoperculum with two groups of radiating spines on the lower part of its posterior margin. Three transverse lines on the top of the head.

D. 10-12. P. 15. V. 1-5. A. 3-7. C. 15. Length, 10 inches.

South Carolina, Cuv.

Le Serran à deux faisceaux, *Serranus fascicularis*, Cuv. et Val., II. p. 245, and IX. p. 431.
" " " DEKAY'S Report, p. 23.

16. *Serranus acutirostris*, Cuv.

Entirely brown. Snout more elongated than in the other species. Preopercle very minutely denticulated.

D. 12-16. P. 15. V. 1-5. A. 3-11. C. 18. Length, (?).

South Carolina, Cuv.

Le Mérou à museau aigu, *Serranus acutirostris*, Cuv. et Val., II. p. 286, and IX. p. 432.
" " " DEKAY'S Report, p. 23.

17. *Serranus inermis*, Cuv.

Preoperculum with very small denticulations. The opercular spine hardly visible; hence its specific name. The dried fish is reddish brown, with large, round white spots; brown spots upon the head; the dorsal, anal, and caudal fins blackish, spotted with white; pectorals and ventrals greenish black, sprinkled with olive spots; beneath the angles of the lower jaw, four round white spots.

D. 11-19. P. 18. V. 1-5. A. 3-10. C. 17. Length, (?).

Caribbean Sea, Cuv.

Le Mérou inerme, *Serranus inermis*, Cuv. et Val., IX. p. 436.

18. *Serranus rupestris*, Cuv.

Violet-colored above, sprinkled with large, irregularly rounded spots, of a beautiful vermilion red upon the back, base of the dorsal, and upon the ventrals; these are violet upon the head and sides, and upon the throat they become more vivid than the general color of the fish. Its height is nearly a fourth of its length; its thickness is between a half and a third of its height. An emargination above the angle of the preopercle.

D. 11-16. P. (?). V. (?). A. 3-10. C. (?). Length, 15 inches.

Caribbean Sea, Cuv.

Called "Rock-fish," at St. Domingo.

Le Mérou des roches, *Serranus rupestris*, Cuv. et Val., IX. p. 437.

19. *Serranus tigris*, Cuv.

The preopercle has no emargination. Body violet-colored more or less deep upon the back, and sprinkled with greenish brown spots; brighter beneath. Eight oblique lilac-colored rays cross the body.

D. 11-17. P. (?). V. (?). A. 3-11. C. (?) Length, 13 inches.
Caribbean Sea, Cuv.

Le Mérou tigre, Serranus tigris, Cuv. et Val., ix. p. 440.

20. *Serranus erythrogaster*, DEKAY.

Olive-brown above; beneath red. Dorsal, caudal, ventral, and anal fins bordered with blue, and edged with dusky.

D. 11-16. P. 16. V. 1-5. A. 2-10. C. 16. Length, 2 feet.
Florida, DEKAY.

Serranus erythrogaster, Groper, DEKAY, p. 21, pl. 19, fig. 52.

GENUS VIII. PLECTROPOMA, Cuv.

Differ from the Serrani only in having the teeth, which are more or less numerous on the preoperculum, directed obliquely forward, slightly resembling the teeth of the rowel of a spur.

1. *Plectropoma Hispanum*, Cuv.

Of a beautiful aurora color, marked with red and yellow. Eight dorsal spines; but one tooth beneath the preoperculum. Canines short. Suboperculum denticulated. The twelfth anal spine very stout.

D. 8-12. P. 16. V. 1-5. A. 3-7. C. 17. Length, (?).

Caribbean Sea, Cuv.

Called, at Martinique, "Ouatalibé Espagnol."

Le Plectropome pavillon d'Espagne, Plectropoma Hispanum, Cuv. et Val., II. p. 396.

2. *Plectropoma chloropteron*, Cuv.

Olive, marbled with black. Throat olive, spotted with white. Opercular spines very small. Edge of the preoperculum rounded, with two teeth beneath the angle directed forward. Pectorals green.

D. 11-17. P. 16. V. 1-5. A. 3-8. C. 17. Length, 10 inches.

Caribbean Sea, Cuv.

Called, at St. Domingo, "Farlate."

Le Plectropome à pectorales vertes, Plectropoma chloropteron, Cuv. et Val., II. p. 393.

3. *Plectropoma puella*, Cuv.

Olive, crossed by six violet-black bands; the third, in the centre of the body, is very broad and conspicuous, and is immediately followed by one of narrow dimensions. Blue bands upon the head and breast.

D. 10-16. P. 13. V. 1-5. A. 3-7. C. 17. Length, 4 inches.

Caribbean Sea, Cuv.

Called, at Martinique, "Demoiselle blanche."

Le Plectropome demoiselle, *Plectropoma puella*, Cuv. et VAL., II., p. 405, pl. 37.

" " " " JARDINE, Nat. Lib., Vol. 1., Ichthyology, p. 143, pl. 22.

4. *Plectropoma chlorurum*, Cuv.

Of a beautiful brown. Caudal and pectorals yellow. The other fins black. Three points to the operculum. Six teeth at the lower edge of the preoperculum; its edge is very finely denticulated; three stouter teeth towards the angle.

D. 10-15. P. 12. V. 1-5. A. 3-7. C. 15. Length, (?).

Caribbean Sea, Cuv.

Called, at Martinique, "Petit Nègre."

Le Plectropome à caudale jaune, *Plectropoma chlorurum*, Cuv. et VAL., II. p. 406.

GENUS IX. MESOPRION.

Agrees with *Serranus* in its teeth, fins, and dentated preoperculum, but differs in its opercle being terminated by an obtuse angle, not spinous.

1. *Mesoprion uninotatus*, Cuv.

The back, upper part of the head, and cheeks are of a brownish steel-blue; the lower part of the cheeks and sides of a rich rose-color, and the belly silvery. The entire body striped with seven or eight longitudinal golden bands, irregular and disconnected towards the dorsum. Dorsal fin rose-colored, with three yellow bands; the other fins a jonquil yellow. A dark-colored spot beneath the posterior portion of dorsal fin.

D. 10-12. P. 16. V. 1-5. A. 3-8. C. 17. Length, 13 or 14 inches.

Caribbean Sea, Cuv.

Called, at St. Domingo, "Sarpe Dorée."

Salpa purpurascens variegata, Lane Snapper, CATESBY, II. p. 17, pl. 17.

Sparus Synagris, LIN., SHAW'S Gen. Zool., IV. p. 419.

Le Mésoprion doré, *Mesoprion uninotatus*, Cuv. et VAL., II. p. 449, pl. 39.

" " " " WILSON'S Art. Ichth., p. 169, pl. 298, fig. 5.

" " " " JARDINE, Nat. Lib., I., Ichthyology, p. 143, pl. 24.

2. *Mesoprion chrysurus*, Cuv.

Above the lateral line, grayish, obliquely rayed with golden yellow; beneath it, of a bright purple, with three longitudinal golden stripes. The upper, which is broadest, passes along the middle of the body. Dorsal and anal, olive-yellow; caudal, a bright yellow, margined with two rose-colored lines; pectorals, rose-colored; ventrals, orange. Tail very much forked.

D. 10-13. P. 14. V. 1-5. A. 3-9. C. 17. Length, 20 inches.

Caribbean Sea, Cuv.

Rabirubia, PARRA, p. 42, pl. 20, fig. 1.

Sparus chrysurus, Gold-tailed Sparus, BL., pl. 262? SHAW'S Gen. Zool., IV. p. 414, pl. 60.

Le Mésoprion à queue d'or, Mesoprion chrysurus, CUV., CUV. et VAL., II. p. 459, pl. 40.
 " " Golden-tailed Mesoprion, JARD., Nat. Lib., I. p. 150, pl. 25.

3. Mesoprion cynodon, Cuv.

Back tinged with orange; abdomen white; fins and sides greenish yellow. The upper canine teeth very stout; also all the lower lateral teeth.

D. 10-14. P. 16. V. 1-5. A. 3-9. C. 17. Length (?).

Gulf of Mexico, PARRA. Caribbean Sea, Cuv.

Caballerote, PARRA, p. 52, pl. 25, fig. 1.

Sparus cynodon, BL., 278? SHAW'S Gen. Zool., Dog-toothed Sparus, IV. p. 411.

Le Mésoprion à dents de chien, Mesoprion cynodon, CUV. et VAL., II. p. 465.

4. Mesoprion jocu, PARRA.

Rose-colored; fins yellowish, except pectorals. A series of silvery spots, edged with brown, upon the cheeks and suborbitals.

D. 10-15. P. 17. V. 1-5. A. 3-9. C. 19. Weight, 12 to 15 pounds.

Caribbean Sea, Cuv.

Jocú, PARRA, p. 53, pl. 25, fig. 2.

Le Mésoprion jocu, Mesoprion jocu, CUV., Anthias jocu, BL., CUV. et VAL., II. p. 466.

5. Mesoprion mahogoni, Cuv.

Of a copper-colored russet-brown, which changes to a golden upon the sides, and silvery upon the back.

D. 10-12. P. 15. V. 1-5. A. 3-8. C. 17. Length, 5 inches.

Caribbean Sea, Cuv.

Called, at Martinique, "Sarpe acajou."

Le Mésoprion acajou, Mesoprion mahogoni, CUV. et VAL., II. p. 447.

6. Mesoprion analis, Cuv.

All the upper part of the body and sides marked with irregular longitudinal golden and silvery lines. The lower part of the sides, and the space between the golden and silvery lines, of a rose-red color. The ventrals, the greater part of the anal, and the edges of the caudal fin, of a bright rose-color; the dorsal bluish, rose-colored at its margin, with a wide yellow band at its base and upon its entire soft portion.

D. 10-14. P. (?). V. (?) A. (?). C. (?). Length, 5 inches.

Caribbean Sea, Cuv.

Called, at St. Domingo, "Sarpe Haut-dos."

Le Mésoprion à anale rouge, Mesoprion analis, CUV. et VAL., II. p. 452.

7. *Mesoprion vivanus*, Cuv.

Of a golden aurora color, with oblique brown lines upon the back, and longitudinal lines upon the sides. A brownish spot at the posterior portion of the body. The extremity of the caudal fin bordered with black.

D. 10-13. P. 16. V. 1-5. A. 3-8. C. 17. Weight, 40 pounds.

Caribbean Sea, Cuv.

Called, at Martinique, "Vivaneau."

Le Mésoprion vivaneau, *Mesoprion vivanus*, Cuv. et Val., II. p. 454.

8. *Mesoprion sobra*, Cuv.

Of a brilliant olive-yellow, longitudinally marked with thirteen or fourteen blue bands, some of which bifurcate upon the back; three blue rays upon the cheeks. The dorsal fins olive, spotted with bluish. The caudal, olive, tinged with red. The anal and ventrals, red. The pectorals, rose-colored. A deep violet-colored spot upon the posterior part of the body.

D. 10-14. P. 16. V. 1-6. A. 3-8. C. 17. Length, (?).

Caribbean Sea, Cuv.

Called, at Martinique, "Sobre."

Le Mésoprion sobre, *Mesoprion sobra*, Cuv. et Val., II. p. 453.

9. *Mesoprion buccanella*, Cuv.

Red; each scale edged with silver. The caudal and anal fins, yellow; the other fins, reddish. A black crescent-shaped spot at the base of the pectorals, — and hence its name. *Oreille noire*.

D. 10-14. P. 15. V. 1-5. A. 3-8. C. 17. Weight, 15 to 20 pounds.

Caribbean Sea, Cuv.

Called, at Martinique, "Oreille noire," and "Noper."

Le Mésoprion oreille noire, *Mesoprion buccanella*, Cuv. et Val., II. p. 455.

10. *Mesoprion aya*, Cuv.

Of a beautiful carmine-red color, scales edged with silver; no black spot upon the pectorals, as in the preceding species. Four anal spines.

D. 10-14. P. (?). V. (?). A. 4-9. C. (?). Length, 28 inches.

Caribbean Sea, Cuv.

Called "Garanha."

Le Mésoprion rouge, *Mesoprion aya*, Cuv. et Val., II. p. 457.

11. *Mesoprion litura*, Cuv.

Of a beautiful red color; a continued blue line upon the cheeks. Perhaps a variety of the *M. jocu*.

D. 10-15. P. 16. V. 1-5. A. 3-8. C. 17. Weight, 20 to 30 pounds.
Caribbean Sea, Cuv.

Le Mésoprion à raie, Mesoprion litura, Cuv. et VAL., II. p. 467.

12. *Mesoprion linea, Cuv.*

Olive-brown; paler upon the abdomen, with seven or eight vertical yellow bands. Fins olive. A narrow silvery line edged with brown passes from the middle of the maxillary bone to the preopercle, and divides upon the opercle.

D. 10-15. P. 15. V. 1-5. A. 3-8. C. 17. Length, 3 or 4 inches.
Gulf of Mexico, Caribbean Sea, Cuv.

Le Mésoprion à ligne, Mesoprion linea, Cuv. et VAL., II. p. 463.

13. *Mesoprion griseus, Cuv.*

Grayish, verging to lilac upon the back, and upon the margin of the dorsal and caudal fins; aurora-colored at the lower portion of the sides, and on the ventrals; anal fin rose-colored or lilac. Beneath, white; each scale has a yellowish spot, by which longitudinal slightly oblique lines are formed upon the sides, which are more mingled with the gray upon the back.

D. 10-14. P. (?). V. (?). A. 3-8. C. (?). Length, 18 inches.
Caribbean Sea, Cuv.

Called, at St. Domingo, "Sarpe grise."

Le Mésoprion gris, Mesoprion griseus, Cuv. et VAL., II. p. 469.

14. *Mesoprion flavescens, Cuv.*

With vertical yellowish bands, lighter upon the back and fins. Neither lines nor dots upon the cheeks.

D. 10-15. P. 17. V. 1-5. A. 3-8. C. 17. Length, (?).
Caribbean Sea, Cuv.

Le Mésoprion jaunatre, Mesoprion flavescens, Cuv. et VAL., II. p. 472.

15. *Mesoprion pargus, Cuv.*

Of a yellowish brown color, spotted with red. The four upper canines are very stout. A well marked tuberosity upon the interopercle.

D. 10-14. P. (?). V. (?). A. 3-8. C. (?). Length, 27 inches.
Caribbean Sea, Cuv.

Le Mésoprion pargo, Mesoprion pargus, Cuv. et VAL., II. p. 473.

16. *Mesoprion isodon, Cuv.*

The teeth differ from those of all the other Mesoprions; the upper jaw has three strong canines, and sixteen conical teeth, decreasing regularly from the first, which is less than

half the height of the others. The first row of teeth in the lower jaw is similar to that of the upper, except that it has no canines. The dried fish is red above, silvery or golden upon its sides, without bands.

D. 11-15. P. 16. V. 1-5. A. 3-7. C. 17. Length, 21 inches.

Caribbean Sea, Cuv.

Le Mésopron à dents égales, Mesopron isodon, Cuv. et VAL., IX. p. 413.

GENUS X. CENTROPRISTIS, Cuv.

A single dorsal fin; branchiostegous rays, seven; all the teeth small and crowded; no canines. Their preoperculum is dentated and the operculum spinous.

1. *Centropristis nigricans*, Cuv.

This species is of a dark brown, almost black, color, lighter beneath; the head is of a sea or bronze green. The young of this species present clouded transverse bands. The white connecting membrane of the dorsal and anal fins is barred with black. The central rays of the caudal fin, which are usually forked, are elongated somewhat in young specimens: thus this fin is trilobed; this elongation is less perceptible in old specimens.

D. 10-11. P. 18. V. 1-5. A. 3-7. C. 17. Length, 12 to 14 inches.

Massachusetts, STORER. New York, MITCHILL.

Perca varia, MITCHILL, Trans. Lit. et Phil. Soc. New York, 1. p. 415, pl. 3, fig. 6.

Centropristis nigricans, GRIFFITH'S CUV., X. p. 117.

Le Centropriste noir, *Centropristis nigricans*, Cuv. et VAL., III. pp. 37, 41. *Lutjanus trilobus*, LACEP.?

" " Black Perch, Black Bass, STORER'S Report, p. 9.

" " Black Sea Bass, DEKAY'S Report, p. 24, pl. 11, fig. 5.

" " "

Centropristis Bressat de Barnerville
Rev. Zool. 1847. p. 130.

2. *Centropristis trifurca*, L.

It is spotted, and ornamented with seven blue bands. The opercula are finely denticulated. The tail is three-pointed, like the *nigricans*. The third and fourth dorsal spines are furnished with tentaculæ as long as the spines themselves.

D. 11-12. P. 16. V. 1-5. A. 3-8. C. 20. Length, (?).

South Carolina, Cuv.

Le Centropriste trident, *Perca trifurca*, L., Cuv. et VAL., III. p. 43. *Lutjanus tridens*, LACEP.?

" " DEKAY'S Report, p. 25.

3. *Centropristis tabacarius*, Cuv.

Of a reddish brown, deeper above, lighter beneath; with an oblong, dull whitish spot upon each side, at the upper edge of the lateral line, opposite the first seven dorsal spines; a second small spot at the first ray of the dorsal fin; and a third at the base of the last few soft rays of the dorsal. Dorsal fin with clouded brown spots. Three spines upon the operculum.

D. 10-12. P. 13. V. 1-5. A. 3-7. C. 17. Length, (?).

Caribbean Sea, Cuv.

Called, at Martinique, "Le Bout de Tabac."

Le Centropriste bout de tabac, *Centropristis tabacarius*, Cuv. et VAL., III. p. 44.

4. *Centropristis auro-rubens*, Cuv.

Upper part of the body of a vermilion-red, which gradually changes upon the sides and abdomen to a rose-red. The sides are sprinkled with oblong, irregular yellow spots. Dorsal and pectoral fins red; ventrals and anal, lighter. One spine upon operculum.

D. 12-11. P. 18. V. 1-5. A. 3-8. C. 17. Length, 1 foot.

Caribbean Sea, Cuv.

At St. Domingo, called "Fadate."

Le Centropriste rouge-doré, *Centropristis auro-rubens*, Cuv. et VAL., III. p. 45.

5. *Centropristis rufus*, Cuv.

Of an uniform beautiful deep russet-color. A single spine upon the operculum.

D. 10-11. P. 17. V. 1-5. A. 3-7. C. 17. Length, 8 inches.

Caribbean Sea, Cuv.

Le Centropriste roux, *Centropristis rufus*, Cuv. et VAL., III. p. 47.

GENUS XI. *GRYSTES*, Cuv.

Differs only from the *Centropristis* in having the preoperculum entire, and not denticulated at the edges.

1. *Grystes salmoides*, LACEP.

The adult fish is of a deep greenish brown color, with a bluish black spot at the angle of the operculum. The posterior portion of the dorsal fin rises high, and resembles somewhat that of some of the Greylings. The tail is shaped much like that of the Salmonidæ, and has a dark brown band crossing its centre. The young are marked with numerous longitudinal bands.

D. 10-13 or 14. P. 16. V. 1-5. A. 3-11 or 12. C. 17. Length, 2 feet

New York, Cuv. Carolina, LACEPEDE. Wabash River, Indiana, Cuv.

Called "Trout," in the places where it is found.

Le Growler salmoide (*Grystes salmoides*, Cuv., *Labrus salmoides*, LACEP.), Cuv. et VAL., III. p. 54, pl. 46.

Grystes salmoides, Salmon-formed Growler, JARDINE, Nat. Lib., I. p. 158, pl. 29.

" " Growler, DEKAY'S Report, p. 26, pl. 69, fig. 223.

GENUS XII. RYPTICUS, Cuv.

A single dorsal fin. Small spines on the opercles; scales small, and concealed beneath a thick epidermis. The species have been called *Savonniers* by the French, in consequence of their soft and soapy surface, which feels as if it had been lubricated by some unctuous matter.

1. *Rypticus saponaceus*, BLOCH:

Oblong and compressed. Of a blackish color, verging to violet; its whole surface covered with very small elliptical scales, which, through the microscope, exhibit radiating striæ, and are crenulated at the edges.

D. 3-25. P. (?). V. (?). A. 17. C. 17. Length, 8 or 9 inches.

Caribbean Sea, Gulf of Mexico, Cuv.

Jabonsillo, PARRA, p. 51, pl. 24, fig. 2.

Le Savonnier commun (*Rypticus saponaceus*, Cuv., *Anthias saponaceus*, BL.), Cuv. et VAL., III. p. 63.

GENUS XIII. CENTRARCHUS, Cuv.

Have an oval, compressed body; a single dorsal fin. Velvet-like teeth in both jaws, before the vomer, upon the palatines, and upon the base of the tongue; the preoperculum entire; the operculum divided at its angle into two flattened points.

1. *Centrarchus æneus*, LESUEUR.

Coppery, occasionally tinged with green. Head and back dusky olive, blotched irregularly with darker spots; the jaws, lips, and throat, dusky; the thorax bluish or steel-gray. The spinous portion of the dorsal fin is longer than the membranous portion, and half of its height.

D. 12-11. P. 16. V. 1-5. A. 6-10. C. 17. LESUEUR. Length, 7 to 10 inches.

D. 11-11. P. 14. V. 1-5. A. 6-10. C. 17. Cuv. et VAL. " "

D. 11-11. P. 14. V. 1-5. A. 6-10. C. 17 $\frac{2}{3}$. RICHARDSON. " "

D. 11-11. P. 16. V. 5. A. 6-10. C. 17 $\frac{2}{3}$. KIRTLAND. " "

D. 11-12. P. 14. V. 1-5. A. 6-11. C. 17 $\frac{2}{3}$. DEKAY. " "

Lake Erie, LESUEUR. Lake Ontario, Cuv. Lake Huron, RICHARDSON. Lake Champlain, DEKAY. Almost every permanent stream in Ohio, KIRTLAND.

Called "Rock Bass," "Goggle-eyed Bass," "Black Sun-fish," in Ohio. "Rock Bass," in Lake Champlain.

Cichla ænea, LESUEUR, Journ. Acad. Nat. Sc., II. p. 214, fig.

Le Centrarchus bronzé, *Centrarchus æneus*, Cuv. et VAL., III. p. 84.

" " Bronzed Centrarchus, RICH., Fauna Boreal. Amer., III. p. 18, pl. 75

Cichla ænea, Rock Bass, KIRTLAND'S Report on the Zool. of Ohio, pp. 168, 191.

Centrarchus æneus, Fresh-water Bass, DEKAY'S Report, p. 27, pl. 11, fig. 4.

" " KIRTLAND, East. Journ. Nat. Hist., IV. p. 239, pl. 11, fig. 1.

2. *Centrarchus fasciatus*, LESUEUR.

Body compressed; back arched and gibbous. Of a dusky bluish color, often with transverse bands. Anal fin with three spines.

D. 9, 1-14. P. 18. V. 5. A. 3-12. C. 16 $\frac{1}{2}$. Length, 18 to 20 inches.

Lake Erie, LESUEUR. New York, DEKAY. Ohio, KIRTLAND.

Cichla fasciata: Ohiensis: minima, LESUEUR, Journ. Acad. Nat. Sc., II. pp. 116, 218.

" " Black Bass of Lake Erie and the Ohio, KIRTLAND'S Report, p. 191.

Centrarchus fasciatus, Black Fresh-water Bass, DEKAY'S Report, p. 28, pl. 111, fig. 8.

" " KIRTLAND, Bost. Journ. Nat. Hist., v. p. 28, pl. 9, fig. 1.

3. *Centrarchus sparoides*, VAL.

This species is of a more rounded form than the *C. hexacanthus*. Its dorsal fin is longer than that of the *C. æneus*, and its anal fin is higher than that of any other species of the genus. The color is greenish above, and beneath silvery. The whole body exhibits golden reflections, and has numerous large black dots upon its sides, which form fourteen longitudinal lines.

D. 12-13. P. 11. V. 1-5. A. 9-15. C. 17. Length, 7 inches.

South Carolina, CUV.

Le *Centrarchus* à neuf épines, *Centrarchus sparoides*, CUV. et VAL., VII. p. 459.

" " DEKAY'S Report, p. 31.

4. *Centrarchus pentacanthus*, CUV.

Similar in form to the *æneus*, but its anal fin has but five spines, and the dorsal ten. A narrow blackish line runs longitudinally across each row of scales. The connecting membrane of the fins is also marked with brown.

D. 10-10. P. 14. V. 1-5. A. 5-11. C. 17. Length, 5 inches.

River Wabash, Indiana, CUV.

Le *Centrarchus* à cinq épines, *Centrarchus pentacanthus*, CUV. et VAL., III. p. 83.

" " DEKAY'S Report, p. 30.

5. *Centrarchus hexacanthus*, VAL.

Forehead and back maculated and variegated with dusky spots on a ground of sea-green; similar spots extend downwards upon the upper half of the body, in irregular bands, on a ground color of light green or yellow. The sides of the head and body are silvery and iridescent; below, of a delicate white. Dorsal, anal, and caudal fins bordered with series of irregular dusky spots, more distinct in old than in young specimens. Pectoral and ventral fins ferruginous or yellowish. It differs from the *æneus* in the form of its dorsal, which is lower before, more elevated at its posterior portion, and has but six spinous rays.

D. 8-16. P. 12. V. 1-5. A. 6-18. C. 17. CUV. et VAL. Length, (?).

D. 6-15. P. 12. V. 1-6. A. 6-19. C. 17 $\frac{1}{2}$. KIRTLAND. Length, (?).

Abundant in the fresh waters of Carolina, Bosc. River Wabash, Indiana, LESUEUR.
Bayous of Cuyahoga, and the Big Miami River, KIRTLAND.

Le *Centrarchus sparoides* (*Centrarchus sparoides*, CUV., *Labrus sparoides*, LACEP.), CUV. et VAL., III. p. 88.
Cantharus nigro-maculatus, LESUEUR, CUV. et VAL., III. p. 88.
Le *Centrarchus à six épines*, *Centrarchus hexacanthus*, VAL., CUV. et VAL., VII. p. 456, pl. 48.
Cichla Storeria, KIRTLAND's Report on the Zool. of Ohio, p. 191.
Centrarchus hexacanthus, Rock-fish, Grass Bass, KIRTLAND, Bost. Journ. Nat. Hist., III. p. 480, pl. 29, fig. 2.
" " DEKAY's Report, p. 31.

6. *Centrarchus irideus*, CUV.

Grayish brown, dotted and spotted with darker brown. A black spot upon the angle of the operculum. Upon the posterior portion of the dorsal fin is a very broad black spot, bounded above and beneath by a yellow line, and some red dots. All the fins are spotted with brown. It resembles the *C. sparoides* in the height of its dorsal fin, but its anal fin is similar to that of the *C. æneus*.

D. 11-14. P. (?). V. (?) A. 7-16. C. (?). Length, 6 inches.

South Carolina, CUV.

Le *Centrarchus iris*, *Centrarchus irideus*, CUV. et VAL., III. p. 89.
" " DEKAY's Report, p. 31.

7. *Centrarchus gulosus*, CUV.

This species, which was originally supposed by Cuvier to be a *Pomotis*, is described as being similar in its color to the *Pomotis vulgaris*. The body is less orbicular; the black auricle is shorter, and it has fewer soft rays in its dorsal and anal fins. The mouth of this species is exceedingly large.

D. 10-9. P. 15. V. 1-5. A. 3-8. C. 17. Length, 8 inches.

Lake Pontchartrain, and the lagoons in the vicinity of New Orleans, CUV.

Le *Pomotis grande gueule*, *Pomotis gulosus*, CUV. et VAL., III. p. 493.
Le *Centrarchus à trois épines*, *Centrarchus gulosus*, CUV. et VAL., VII. p. 459.
" " DEKAY's Report, p. 31.

8. *Centrarchus viridis*, VAL.

It resembles the *C. æneus* in its form more than other species; but its green color, sprinkled with black spots, reminds us of the *hexacanthus*.

D. 11-10. P. (?). V. (?) A. 3-8. C. (?). Length, 8 inches.

South Carolina, VAL.

Le *Centrarchus vert*, *Centrarchus viridis*, CUV. et VAL., VII. p. 460.
" " DEKAY's Report, p. 31.

9. *Centrarchus tetracanthus*, CUV.

Body compressed; with blackish spots, large towards the head, very small at the posterior part of the body. Four anal spines.

D. 15 - 10. P. 13. V. 1 - 5. A. 4 - 9. C. 16. Length, 8 inches.

Gulf of Mexico, Cuv.

Le Centrarchus à quatre épines, *Centrarchus tetracanthus*, Cuv. et VAL., VII. p. 460.

10. *Centrarchus obscurus*, DEKAY.

Body not gibbous. Of a general greenish brown, or dark olive-color, with faint metallic bronze on the upper parts; beneath, lighter.

D. 9, 1 - 12. P. 16. V. 1 - 5. A. 3 - 12. C. 17 $\frac{2}{3}$. Length, 6 inches.

New York, DEKAY.

Centrarchus obscurus, *Obscure Fresh-water Bass*, DEKAY's Report, p. 30, pl. 17, fig. 43.

GENUS XIV. POMOTIS, Cuv.

A few denticulations, more or less obvious, on the borders of the preoperculum. Palatines and tongue smooth, and without teeth. Minute teeth on the jaws, vomer, and pharyngeals. Branchial rays, six. A membranous elongation at the angle of the operculum.

1. *Pomotis vulgaris*, Cuv.

The general color of this species is a greenish brown, with spots of blue and yellow upon each side. Longitudinal, undulating, deep blue lines across preoperculum and operculum, with rusty yellow blotches interspersed. Head of a darker color than the body generally. At the posterior angle of the operculum, a large black spot, embracing a portion of the operculum, and a fleshy prolongation, having a bright scarlet-colored margin. All the fins more or less colored with black.

D. 10 - 12. P. 13. V. 1 - 5. A. 3 - 10. C. 17. Length, 6 to 9 inches.

Massachusetts, STORER. New York, MITCHILL. Cleveland Harbour, Bayous of Cuyahoga, KIRTLAND. Common in the rivers, creeks, and ponds of Kentucky, RAFINESQUE. Lake Huron, RICHARDSON. South Carolina, CATESBY.

Perca fluviatilis gibbosa ventre luteo, *Fresh-water Perch*, CATESBY, II. p. 8.

Labrus auritus, TURTON'S LINNÆUS, I. p. 794.

" " SHAW'S Gen. Zool., IV. p. 482.

" " MITCHILL, Trans. Lit. et Phil. Soc. N. Y., I. p. 403.

Ichthalis aurita, RAFINESQUE, Ichth. Ohien., p. 29.

Le *Pomotis commun*, *Pomotis vulgaris*, Cuv. et VAL., III. p. 91, pl. 49, et VII. p. 465.

Pomotis vulgaris, Northern *Pomotis*, RICH., Fauna Boreal. Americ., III. p. 24, fig. 76.

" " JARDINE, Nat. Lib., I. 162.

" " *Fresh-water Sun-fish*, *Pond Perch*, *Bream*, STORER'S Report on the Fishes of Mass., p. 11.

" " *Sun-fish*, *Roach*, KIRTLAND'S Report on Zool. of Ohio, p. 191.

" " *Harlequin Roach*, Bost. Journ. Nat. Hist., III. p. 471, pl. 23, fig. 11.

" " *Common Pond-fish*, DEKAY'S Report, p. 31, pl. 51, fig. 166.

2. *Pomotis Ravenelii*, VAL.

The profile of the back is much more rectilinear, and descends more obliquely, than in the vulgaris, which gives a gibbous appearance at the base of the dorsal fin. The denticulations at the angle of its preoperculum are finer.

D. 10-11. P. (?). V. (?). A. 3-9. C. (?). Length, 8 inches.

South Carolina, Cuv.

Le *Pomotis* de Ravenel, *Pomotis Ravenelii*, Cuv. et VAL., VII. p. 465.
" " DEKAY's Report, p. 33.

3. *Pomotis Holbrookii*, VAL.

Similar to the vulgaris in its color. Broader and deeper-colored black spots upon the soft portion of the dorsal fin. Preopercle very finely denticulated.

D. 10-11. P. (?). V. (?). A. 3-11. C. (?). Length, 9 inches.

South Carolina, Cuv.

Le *Pomotis* d'Holbrook, *Pomotis Holbrookii*, Cuv. et VAL., VII. p. 466.
" " DEKAY's Report, p. 33.

4. *Pomotis incisor*, VAL.

The back of this species is more raised between the neck and the dorsal fin than in the vulgaris. The preopercular denticulations are very fine; the teeth of the front row of the upper jaw are a little stronger than in the vulgaris. The back of this species is brown, slightly gilded upon the sides, more brilliant upon the belly. A more or less distinct black *ocellus* exists upon the posterior soft rays of the dorsal. The opercular membrane is quite broad, and upon it is a great portion of the black auricular spot.

D. 10-10. P. (?). V. (?). A. 3-9. C. (?). Length, 6 inches.

Lake Pontchartrain, Louisiana, Cuv.

Le *Pomotis* coupeur, *Pomotis incisor*, Cuv. et VAL., VII. p. 466.
" " DEKAY's Report, p. 33.

5. *Pomotis gibbosus*, VAL.

The body is broader than that of the preceding species, and a little higher before the dorsal fin. The denticulations at the angle of the operculum are rather stronger than those of the incisor, but less so than in the vulgaris. The back is marked with longitudinal rows of blackish dots. The belly is of a dull green color. A large blackish spot upon the posterior rays of the dorsal. The opercular membrane is broad and striated.

D. 10-12. P. (?). V. (?). A. 3-11. C. (?). Length, 8 inches.

South Carolina, VAL.

Le *Pomotis* bossu, *Pomotis gibbosus*, Cuv. et VAL., VII. p. 467.
" " DEKAY's Report, p. 33.

6. *Pomotis solis*, VAL.

Of a uniform greenish yellow color, more or less gilded, without any trace of spots or rays upon the body or the fins. The auricular membrane longer and narrower than in any other species.

D. 10-11. P. (?). V. (?). A. 3-10. C. (?). Length, 4 or 5 inches

Lake Pontchartrain, Louisiana. New York, VAL.

Le Pomotis poisson du soleil, *Pomotis solis*, CUV. et VAL., VII. p. 468.
" " DEKAY'S Report, p. 33.

7. *Pomotis Catesbei*, VAL.

Body elongated. Oblique brown lines upon its cheeks. The body is of a blackish brown, lighter beneath, with golden reflections; blackish dots upon the dorsal and anal fins.

D. 10-10. P. (?). V. (?). A. 3-9. C. (?). Length, 4½ inches.

Pennsylvania, VAL.

Le Pomotis de Catesby, *Pomotis Catesbei*, CUV. et VAL., VII. p. 463.
" " DEKAY'S Report, p. 33.

8. *Pomotis appendix*, MITCH.

Body sombre-colored, beneath whitish. Appendix entirely black. Body more robust than that of the vulgaris. The pectorals broader, and more rounded than in that species.

D. 10-11. P. 13. V. 5. A. 3-10. C. 19. Length, 5 to 6 inches.

New York, MITCHILL.

Labrus appendix, Black-eared Pond-fish, MITCHILL, Supp. to Amer. Month. Mag., II. p. 247.
Pomotis appendix, DEKAY'S Report, p. 32.

9. *Pomotis macrochira*, RAF. The Gilded Sun-fish.

Body somewhat compressed, especially near the back; uniformly oval. Back and head iridescent, brown, and purple, blotched with spots of darker brown; throat, sides, and belly, a brilliant golden yellow. Opercular appendage semicircular, black, and sub-margined with a lighter border.

D. 10-12. P. 15. V. 1-5. A. 3-10. C. 17. Length, 2 to 8 inches.

Tributaries of the Ohio River, RAF., KIRTLAND.

Ichthelis macrochira, Sun-fish, Gold-fish, RAF., Ichth. Ohien., p. 27.
Pomotis macrochira, Gilded Sun-fish, KIRTLAND, Bost. Journ. Nat. Hist., III. p. 469, pl. 27, fig. 3.

10. *Pomotis nitida*, KIRTLAND.

Body compressed, oval. Back gibbous between the eyes and dorsal fin. Brilliant, but evanescent. Upper part of the head and back brown, yellowish, and sometimes greenish.

Head, jaws, operculum, and sides beautifully waved and spotted with verditer blue. Lips light blue, sides golden yellow, belly tinged with orange.

D. 10-11. P. 12. V. 1-5. A. 2-9. C. 15. Length, 3 inches.

Ohio, KIRTLAND.

Pomotis nitida, Sun-fish, Red-eyes, KIRTLAND, Bost. Journ. Nat. Hist., III. p. 472, pl. 28, fig. 1.

GENUS XV. BRYTTUS, VAL.

The only character which distinguishes this genus from the *Pomotis* is a small narrow band of short velvety teeth along the external edge of each palatine.

1. *Bryttus punctatus*, CUV.

Greenish brown, with golden reflections, having parallel rows of rounded black dots. The operculum has, at its angle, a blackish blue spot, which extends along the lower edge of this bone. The membranous edge is not as highly colored as the bone itself. The dorsal, anal, and caudal fins are greenish, with a whitish edge. The ventrals are greenish at their base, and almost black elsewhere. The first soft ventral ray is filiform; the appendix is narrow, and not much elongated.

D. 10-11. P. 12. V. 1-5. A. 3-8. C. 17. Length, 5½ inches.

South Carolina, CUV.

Le Brytte pointillé, *Bryttus punctatus*, CUV. et VAL. VII. p. 462.
" " DEKAY'S Report, p. 33.

Cuvier considered this species to be the *Ichthelis macrochira* of Rafinesque. With all proper respect for the authority of the illustrious naturalist, we cannot refrain from thinking he was incorrect; as Dr. Kirtland, whose opportunities of investigating the Western fishes have been so admirably improved, describes Rafinesque's species so very differently from this.

2. *Bryttus reticulatus*, VAL.

Of a yellowish green color, presenting a reticulated appearance, owing to the base of each scale being blackish, or of a very deep green color. The teeth of this species are stronger, and the opercular spot is much larger, than in the previous species.

D. 11-11. P. (?). V. (?). A. 3-11. C. (?). Length, 7 inches.

South Carolina, CUV.

Le Brytte maillé, *Bryttus reticulatus*, VAL., CUV. et VAL., VII. p. 463.
" " DEKAY'S Report, p. 33.

3. *Bryttus unicolor*, VAL.

Color uniform. Fins unspotted. This species has but three or four small teeth upon the anterior portion of the palatines.

D. 11-11. P. (?) V. (?) A. 3-9. C. (?). Length, 6 inches.

Pennsylvania, South Carolina, CUV.

Le Brytte unicolor, Bryttus unicolore, CUV. et VAL., VII. p. 461.
 " " " " DERAY'S Report, p. 33.

GENUS XVI. PRIACANTHUS, CUV.

Have an oblong, compressed body, entirely covered, as well as the head and jaws, with small rough scales. Fine teeth on both jaws; no canines. The lower angle of the preoperculum spinous.

1. Priacanthus macrophthalmus, BLOCH.

Oblong. Red. Its height equal to one third of its length; length of the head equal to its height. The angle of the preopercle, in the *male*, is prominent and sharp, and the whole edge of the preopercle is notched; in the *female*, the angle is obtuse, and the denticulations are very fine.

D. 10-14. P. 16. V. 1-5. A. 3-15. C. 17. Length, 10 or 12 inches.

Caribbean Sea, CUV.

Anthias macrophthalmus, BLOCH, pl. 319.
 Catalufa, PARRA, p. 20, pl. 12, fig. 1.
 Le Priacanthé à gros yeux, Priacanthus macrophthalmus, BL., CUV. et VAL., III. p. 97.

GENUS XVII. DULES, CUV.

Six branchial rays. Teeth even. Operculum terminated in a spine. Preoperculum denticulated.

1. Dules auriga, CUV.

Compressed, arched. Yellowish gray, with three or more dusky vertical bands. The third ray of the dorsal fin elongated into a filament.

D. 10-13. P. 17. V. 1-5. A. 3-7. C. 17½. Length, 6 to 8 inches.

New York, DEKAY.

Le Doules cocher, Dules auriga, CUV. et VAL., III. p. 112, pl. 51.
 " " WILSON, Encyclop. Brit., Art. Ichth., p. 169, pl. 298, fig. 7.
 " " DEKAY'S Report, p. 34, pl. 19, fig. 54.

GENUS XVIII. TRICHODON, STELLER.

In which the preoperculum has strong spines, and the operculum is terminated in a flat point. They have no scales; their mouth is cleft almost vertically.

1. *Trichodon Stelleri*, Cuv.

This species, above the lateral line, is plumbeous, and beneath it white; slightly golden towards its posterior extremity. The first dorsal fin is edged with brown, with a band of the same color along its base; the second dorsal has no band at its base. The body of the *Trichodon* is compared to the blade of a knife. The head is equal to a fourth of its entire length, and is nearly as high as long; above, it is thicker than the body. The eyes are situated upon the sides of the head, and are directed laterally, but their upper edge touches the plane of the forehead. This is the only known species. It resembles the Weevers in its habits: it buries itself in the moist sand at low water, and is dug up with the hand.

D. 14-17. P. 23. V. (?). A. 28. C. 13. Length, 7 to 10 inches.

The northernmost parts of the Pacific. Was found by *STELLER*, at the island of Unalashka.

Le <i>Trichodon</i> de Steller, <i>Trichodon Stelleri</i> , Cuv. et VAL., III. p. 154, fig. 57.
“ “ GRIFFITH'S CUV., X. p. 121, pl. 15, fig. 3.
“ “ RICH., Fauna Boreal. Americ., III. p. 29.
“ “ JARDINE, Nat. Lib., I. p. 166.
“ “ WILSON, Encyclop. Brit., Art. Ichthyology, p. 170.

GENUS XIX. *MYRIPRISTIS*, Cuv.

Have the brilliancy, form, and scales of *Holocentrum*; but their preoperculum has a double denticulated edge, and is without a spine at its angle. This genus is remarkable for a natatory bladder divided into two, whose anterior portion is bilobed, and is attached to the cranium in two places, merely covered by a membrane, and answering to the cavities of the ear.

1. *Myripristis Jacobus*, Cuv.

The sides of a cherry-red upon a silvery ground, verging to a vermilion towards the back; marked with longitudinal golden lines. The spinous portion of the dorsal is varied with yellow and rose-color, with two series of vermilion spots; a blackish band descends on each side upon the operculum, to the pectorals. Scales large, ten longitudinal rows on each side; the middle row has thirty-six scales.

B. 8. D. 10, 1-14. P. 15. V. 1-7. A. 4-13. C. 19. Length, 8 inches.

Caribbean Sea, Gulf of Mexico, Cuv.

Called, at Martinique, “Frère Jacques.”

Le <i>Myripristis</i> d'Amérique, <i>Myripristis Jacobus</i> , Cuv. et VAL., III. p. 162.

GENUS XX. *HOLOCENTRUM*, ARTEDI.

The scales of this genus are brilliant and denticulated; the operculum is

spinous and denticulated, and the preoperculum is not merely denticulated, but has at its angle a strong spine directed backwards.

1. *Holocentrum longipinne*, Cuv.

Oval, slightly compressed; of a deep rose-color, silvery upon the abdomen, with seven or eight longitudinal golden bands along its sides. It is distinguished from all other species of this genus, by having the soft portion of the dorsal fin, and the forks of the caudal, longer and more pointed.

B. 8. D. 11-15. P. 15. V. 1-7. A. 4-11. C. 19. Length, 12 inches.

South Carolina, CATESBY. Caribbean Sea, Cuv.

Perca marina gibbosa cinerea, Margate fish, CATESBY'S Hist. Carol., II. p. 2, pl. 2.

Matejudo colorado, PARRA, p. 23, pl. 13.

Sciæna rubra, BL., Red Sciæna, SHAW'S Gen. Zool., IV. p. 549.

Holocentrus sogo, BL., Sogo holocentrus, SHAW'S Gen. Zool., IV. p. 553, pl. 80.

Bodianus pentacanthus, BL., Five-spined Bodianus, SHAW'S Gen. Zool., IV. p. 570, pl. 83.

L'Holocentre à longues nageoires, *Holocentrum longipinne*, Cuv. et VAL., IV. p. 185.

2. *Holocentrum marianum*, Cuv.

Lower jaw projecting. The third anal spine very large. It has no black spot upon the dorsal fin, nor black dots upon the scales. It appears to have been silvery, more or less shaded with gold and red.

D. 11-12. P. 14. V. 1-7. A. 4-9. C. 17. Length, (?).

Caribbean Sea, Cuv.

L'Holocentre à mandibule saillante, *Holocentrum marianum*, Cuv. et VAL., III. p. 219.

GENUS XXI. URANOSCOPIUS, L., Cuv.

Eyes placed on the upper surface of a nearly cubical-shaped head; mouth vertically cleft; preopercle crenate towards its base; a strong spine at each shoulder; gills with only six rays. Many of the species have within the mouth, in front of the tongue, a long fleshy filament, which they are enabled to thrust out at their pleasure, to attract smaller fishes within their reach to prey upon.

1. *Uranoscopus anoplos*, Cuv.

Greenish above, minutely punctate with black; beneath the lateral line, silvery. First dorsal fin blackish; pectorals greenish; the other fins white, tinged with yellow. Cheeks smooth and unarmed; no projecting filament from within the mouth.

D. 4, 1-12. P. 19. V. 1-5. A. 12. C. 11½. Length, 2 inches.

South Carolina, LE CONTE.

L'Uranoscope anoplose, *Uranoscopus anoplos*, Cuv. et VAL., VIII. p. 493.

“ “ Unarmed Uranoscope, DEKAY'S Report, p. 37, pl. 22, fig. 65.

GENUS XXII. APHREDODERUS, LESUEUR.

Six branchial rays. Teeth velvet-like. Denticulations on the two edges of the suborbital. Preopercle denticulated. Opercle with a spine at its angle. Ventral fins without a spinous ray. Vent under the throat.

1. *Aphredoderus Sayanus*, GILLIAMS.

Gibbous. Above blackish brown, becoming paler towards the inferior surface, which is light yellowish; fins, except the ventrals, dusky.

B. 6. D. 3-11. P. 12. V. 0-7. A. 3-7. C. 17. Length, 3 inches.

Pennsylvania, GILLIAMS. Lake Pontchartrain, Louisiana, CUV.

Scolopsis Sayanus, GILLIAMS, Journ. Acad. Nat. Sc., iv. p. 51, pl. 3.

L'Aphrédodère bossu, *Aphredoderus gibbosus*, LESUEUR, CUV. et VAL., ix. p. 448.

Aphredoderus Sayanus, Spinless Perch, DEKAY's Report, p. 35, pl. 21, fig. 62.

GENUS XXIII. SPHYRÆNA, CUV.

Body elongated, with two distinct dorsals. Lower jaw longest; both with long teeth. Ventrals back of the pectorals.

1. *Sphyræna becuna*, LACEP.

Considerably elongated. General color silver-blue, with a series of pretty large, round, dark blue spots along the sides; tail spotted with blue.

D. (?). P. (?). V. (?) A. (?). C. (?). Length, 4 feet.

Caribbean Sea, CUV.

Picuda, PARRA, p. 90, pl. 35, fig. 2.

Sphyræna picuda, BLOCH, p. 29, fig. 1.

Esox becuna, *Becuna* Pike, SHAW's Gen. Zoöl., v. p. 112, pl. 109.

La Sphyrène becune (*Sphyrène becune*, LACEP.; *Sphyræna picuda*, BL., SCHN.; *Esox becuna*, SH.), CUV. et VAL., III. p. 341.

2. *Sphyræna barracuda*, CATESBY.

Very large, elongated. Brown, with whitish abdomen. Operculum terminates in two points. This species is exceedingly ferocious, and is as much dreaded as any of the sharks.

B. 7. D. 5, 1-9. P. 12. V. 1-5. A. 1-9. C. 19. Length, 7 or 8 feet.

Caribbean Sea, CATESBY, CUV.

Barracuda, CATESBY's Hist. Carol., II. pl. 1, fig. 1.

Esox barracuda, *Barracuda* Pike, SHAW's Gen. Zoöl., v. p. 105.

La grosse Sphyrène, *Sphyræna barracuda*, CUV. et VAL., III. p. 343.

3. *Sphyræna guachancho*, CUV.

Umber-colored, with a brilliant white lateral line. Caudal fin, green.

D. 5-10. P. (?). V. (?). A. 9. C. (?). Length, 20 inches.
Caribbean Sea, CUV.

Le Guachancho, *Sphyræna guachancho*, CUV. et VAL., III. p. 342.

4. *Sphyræna borealis*, DEKAY.

Small, much elongated, subcylindrical. Greenish brown above, silvery beneath. Lateral line yellow. Operculum with a single point.

D. 5-10. P. 14. V. 6. A. 10. C. 20. Length, 9 inches.

Massachusetts, STORER. New York, DEKAY.

Sphyræna borealis, Northern Barracuda, DEKAY's Report, p. 39, pl. 60, fig. 196.
" " STORER, Bost. Journ. Nat. Hist., p. 143.

GENUS XXIV. POLYNEMUS, L.

The head entirely scaled ; the preoperculum toothed ; the scales easily deciduous ; the dorsal fins far separated, and, with the anal fin, covered with scales ; before the pectoral fins, there are long filamentous appendages.

1. *Polynemus Americanus*, CUV.

Body silvery, greenish or plumbeous above ; pectorals dark brown ; the other fins punctured with black. Seven filaments on each side. Tail forked.

D. 8, 1-12. P. 16. V. 1-5. A. 3-13. C. 17. Length, 20 inches.

Caribbean Sea, CUV.

Called, at Martinique, "Barbu" ; at St. Domingo, "Barbe chau."

Polynemus paradiseus, BLOCH, 402.

Paradise Polyneme, SHAW's Gen. Zool., v. p. 147, pl. 118.

Le Polynème d'Amérique, *Polynemus Americanus*, CUV. et VAL., III. p. 393.

GENUS XXV. UPENEUS, CUV.

Branchiæ with four rays ; teeth on both jaws, but frequently none on the palate ; opercle with a small spine ; a swimming bladder.

1. *Upeneus maculatus*, BLOCH.

Of a red color ; sometimes with two or three spots. Opercular spine strong and pointed. Teeth conical, in a single row. From twenty to twenty-five mucous pores upon the lower edge of the suborbitar bone.

D. 8. P. 17. V. 1-5. A. 7. C. 15. Length, 8 inches.

Gulf of Mexico, Caribbean Sea, CUV.

Mullus maculatus, BL., pl. 348, fig. 1?

" " BL. ; Spotted Surmullet, SHAW's Gen. Zool., IV. p. 617.

L'Upénéus métara, *Upeneus maculatus*, CUV. et VAL., III. p. 478.

2. *Upeneus punctatus*, CUV.

The back and the middle of the cheeks red ; the upper part of the snout, the inferior portion of the cheeks, and the operculum, a greenish yellow ; a yellowish tinge upon the sides ; abdomen white, fins yellow. A small silvery or lilac-colored spot upon each scale, and three narrow lines of a similar color pass from the eye to the snout. Four or five brownish spots upon the sides of the body.

D. 7-9. P. 16. V. 1-5. A. 7. C. 15. Length, (?).

Caribbean Sea, CUV.

L'Upénéus ponctué, *Upeneus punctatus*, CUV. et VAL., III. p. 432.

3. *Upeneus Martinicus*, CUV.

Scales semicircular, with seven or eight crenulations at their base ; the cirrhi do not extend quite to the angle of the preopercle.

D. 7-9. P. 15. V. 1-5. A. 7. C. (?). Length, 5 inches.

Caribbean Sea, CUV.

L'Upénéus Martiniquois, *Upeneus Martinicus*, CUV. et VAL., III. p. 453.

4. *Upeneus balteatus*, CUV.

Back violet ; abdomen white ; a bright yellow longitudinal band upon the sides. A black spot at the side of the tail.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, (?).

Caribbean Sea, CUV.

L'Upénéus à baudrier, *Upeneus balteatus*, CUV. et VAL., III. p. 51.

GENUS XXVI. *LEPISOMA*, DEKAY.

Body and fins scaly. Fleshy filaments along the basal line of the head, and on the orbits. A single dorsal fin. Branchial rays, six. Teeth in the jaws, vomer, and palatines. Ventrals before the pectorals.

1. *Lepisoma cirrhosum*, DEKAY.

Soft portion of the dorsal higher and shorter than the spinous part.

D. 18-12. P. 14. V. 3. A. 19. C. 10½. Length, 6½ inches.

Florida, DEKAY.

Lepisoma cirrhosum, Cirrous *Lepisoma*, DEKAY'S Report, p. 41, pl. 30, fig. 94.

FAMILY II. TRIGLIDÆ.

Contains a numerous series of fish, to which the singular appearance of their head, variously bristled and covered with armor, gives a peculiar physiognomy. Their general character consists in having the suborbital bone more or less extended over the cheeks, and articulated behind with the preoperculum.

GENUS I. TRIGLA, Cuv.

Head nearly square, covered with bony plates; gill-cover and shoulder-plate ending in a spine directed backwards; body elongated, nearly round; two dorsal fins, the rays of the first spinous, those of the second flexible; teeth in both jaws and on the front of the vomer, pointed, small, and numerous; branchiostegous rays, seven; gill-opening large; three detached rays at the base of each pectoral fin.

1. *Trigla cuculus*, L.

Of a beautiful bright red above, sides and belly silvery white. Fins reddish white. The lateral line is crossed throughout its length with small, short, straight, elevated lines, which have the appearance of a series of pins. Bloch compared them to the acicular leaves of the pine, a resemblance which suggested to him the trivial name of *pini* for his species. Linnaeus called it *cuculus* on account of its uttering a note similar to the cuckoo when caught.

D. 9-18. P. 10. V. 1-6. A. 16. C. 11. Length, 8 inches.

New York, Cuv.

Trigla cuculus, Cuckoo Gurnard, L., SHAW'S Gen. Zool., iv. p. 620, pl. 90.

Polynemus tridigitatus, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., i. p. 449.

Trigla lineata, MONTAGU, Trans. Wernerian Society, ii. p. 460.

" " FLEMING, Brit. Animals, p. 215, spec. 153.

" " JENYNS'S Brit. Vert., p. 338.

Le Grondin rouge (*Trigla cuculus*? G., *Trigla pini*, BLOCH, p. 355), Cuv. et VAL., iv. p. 26.

Trigla cuculus, Red Gurnard, Cuckoo Gurnard, YARRELL'S Brit. Fishes (2d edit.), p. 38, plate.

" " Red Gurnard, DEKAY'S Report, p. 43, pl. 70, fig. 225.

GENUS II. PRIONOTUS, Cuv.

Pectorals very large, with numerous rays. A band of even teeth on the palatines.

1. *Prionotus lineatus*, MITCHILL.

Above the lateral line of a slate-color, with a few irregularly distributed black spots; sides lighter, with a reddish tint; abdomen white. Beneath the lateral line, parallel to it, a broader brownish line runs the greater part of the length of the body.

D. 9-13. P. 12. V. 6. A. 11. C. 15. Length, 9 to 18 inches.

Massachusetts, STORER. New York, MITCHILL, CUV., DEKAY.

Trigla lineata, Gurnard, or Sea-Robin, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., p. 430, pl. 4, fig. 4.

Le Prionote strié, *Prionotus strigatus*, CUV. et VAL., IV. p. 86.

“ “ Sea-Robin, Gurnard, Grunter, STORER'S Report, p. 12.

“ “ AYRES, Bost. Journ. Nat. Hist., IV. p. 253.

Prionotus lineatus, Banded Gurnard, DEKAY'S Report, p. 45, pl. 4, fig. 12.

2. *Prionotus Carolinus*, CUV.

Above of a reddish brown color, with irregular blotches and shadings of a darker brown; abdomen nearly white. The fleshy free rays, beneath the pectorals, of a yellow color, and widened at their extremities.

D. 9-13. P. 14. V. 6. A. 12. C. 24. Length, 12 to 18 inches.

Massachusetts, STORER. Connecticut, AYRES. New York, MITCHILL, CUV., DEKAY.
Carolina, CUV.

Trigla palmipes, Web-fingered Gurnard, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., p. 431, pl. 4, fig. 5.

Le Prionote de la Caroline, *Prionotus Carolinus*, CUV. et VAL., IV. p. 90.

“ “ Web-fingered Grunter, STORER'S Report, p. 14.

“ “ AYRES, Bost. Journ. Nat. Hist., IV. p. 253.

“ “ Web-fingered Gurnard, DEKAY'S Report, p. 46, pl. 5, fig. 15.

3. *Prionotus tribulus*, CUV.

Brown above, white beneath. Pectorals reaching to the end of the anal fin. All the spines upon the head, particularly those behind the orbit, and upon the subscapular, are acute and flattened like sword-blades.

D. 10-13. P. 13. V. 1-5. A. 12. C. 11. Length, 7 to 8 inches.

New York, Carolina, CUV.

Le Prionote chaussetrape, *Prionotus tribulus*, CUV., CUV. et VAL., IV. p. 93.

“ “ Spinous Gurnard, DEKAY'S Report, p. 48, pl. 70, fig. 226.

4. *Prionotus punctatus*, CUV.

Above grayish brown, with clouded russet spots; sides yellowish; abdomen white. A black spot upon the first dorsal, between the fourth and sixth rays; small russet dots are scattered over the remainder of this fin. Brownish spots upon the pectorals. Two small spines upon each side of the snout.

D. 10-12. P. 13-3. V. 1-5. A. 11. C. 11. Length, 1 foot.

Caribbean Sea, CUV.

Rubio volador, PARRA, p. 98, pl. 33.

Trigla punctata, BLOCH, 353? Punctated Gurnard, SHAW'S Gen. Zoöl., IV. p. 626.

Le Prionote ponctué, *Prionotus punctatus*, CUV. et VAL., IV. p. 93.

“ “ DEKAY'S Report, p. 48.

GENUS III. DACTYLOPTERUS, LACEP.

The rays under the pectorals are numerous and large ; and instead of being free, as in the preceding genera, they are united by a membrane into a supernumerary fin, larger than the fish itself, and which supports them in the air for some length of time. Their muzzle, which is very short, appears to be cleft like the lips of a hare ; their mouth is situated underneath ; there are, in the jaws only, certain rounded teeth, arranged like pavement ; their head is flat, rectangular, and granulated ; their preoperculum is terminated by a long and strong spine. All their scales are carinated.

1. *Dactylopterus volitans*, L.

Light brown above, with irregular dark spots ; beneath, of a flesh-color. The larger pectorals blackish, with bluish spots. Two flexible filaments at the side of each other, in front of the first dorsal. A short, stout triangular spine between the dorsal fins.

D. 2, 4, 1-8. P. 6-30. V. 1-4. A. 6. C. 10 $\frac{3}{5}$. Length, 6 inches.

Newfoundland, CUV. Massachusetts, STORER. Connecticut, LINSLEY. New York, MITCHILL, DEKAY. Gulf of Mexico, PARRA. Caribbean Sea, CUV.

Trigla volitans, Flying Gurnard, L., SHAW'S Gen. Zoöl., iv. p. 622, pl. 91.

Morcielago, PARRA, p. 25, pl. 14.

Polynemus sexradiatus, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., i. pl. 4, fig. 10.

" " " Suppl. Amer. Month. Mag., II. p. 323.

Le *Dactyloptère commun*, *Dactylopterus volitans*, CUV. et VAL., iv. p. 117.

" " " GRIFFITH'S CUV., x. p. 133.

" " " RICH., Fauna Boreal. Americ., III. p. 40.

" " " WILSON, Encyclop. Brit., Art. Ichthyology, p. 173.

" " " Sea-Swallow, DEKAY'S Report, p. 49, pl. 17, fig. 46.

GENUS IV. COTTUS, LIN.

Head large, depressed ; teeth in both jaws and in front of the vomer, small, sharp, none on the palatine bones ; preoperculum or operculum armed with spines, sometimes both ; branchiostegous rays, six ; gill-openings large ; body attenuated, naked, without scales ; two dorsal fins, distinct, or very slightly connected ; ventral fins small.

1. *Cottus gracilis*, Heck ^{gracilis, Heck} ~~gobio~~, L.

Body very slimy ; yellowish, clouded with black ; the first dorsal fin edged with a very narrow line of orange. Snout to first dorsal ray 0.84, and from here to the last dorsal ray 1.5. The anus is midway between the snout and the base of the caudal rays. The lateral line is straight from the middle of the first dorsal fin backwards.

D. 7-17. P. 14. V. 3. A. 12. C. 13, of which 11 are long. Length, 3 inches.

Connecticut, **OLMSTED, AYRES.** New York, **DEKAY.** Eastern Pennsylvania, **HALDEMAN.** Mahoning River, Ohio, **KIRTLAND.** Bear Lake, Lat. 67°, **RICHARDSON.**

Cottus gobio, LIN., Sys. Nat., p. 452.

" " River Bull-head, SHAW'S Gen. Zool., iv. p. 254, pl. 35.

Le Chabot de rivière, *Cottus gobio*, L., BLOCH, pl. 39; CUV. et VAL., iv. p. 145.

" " River Bull-head, PENNANT'S Brit. Zool., VIII., p. 291, pl. 43.

" " JENYNS'S Brit. Vert., p. 343.

" " Miller's Thumb, YARRELL'S Brit. Fishes (2d edit.), i. p. 71.

Cottus cognatus, Bear Lake Bull-head, RICH., Fauna Boreal. Americ., III. p. 40.

" " " " DEKAY'S Report, p. 55.

Cottus viscosus, HALDEMAN, Supplement, &c., p. 3.

Uranidea quiescens, Little Star-gazer, DEKAY'S Report, p. 61, pl. 5, fig. 14.

Cottus cognatus; *Cottus viscosus*; *Uranidea quiescens*; *Cottus gobio*, AYRES, Bost. Journ. Nat. Hist., v. p. 116, pl. 11.

C. gracilis, Heckel Ann. Mus. Hist. Nat. Wien. 11. 148. (1839)

ca 1840

2. *Cottus Groenlandicus*, CUV.

The upper part of the body of this species is of a dark brown, with large clay-colored blotches on the top of the head and gill-covers, with a few smaller ones on the back and sides, and small circular yellow spots on the sides towards the abdomen. The throat is yellowish white, sprinkled with minute fuliginous specks. Upon the abdomen, beneath the pectoral fins, are large, circular, perfectly white spots. The preopercular spine does not extend to the tip of the opercular spine. A quadrangular area on the head, bounded by four tubercles.

D. 10-18. P. 17. V. 3. A. 13. C. 16. Length, 13 inches.

Greenland, **FABRICIUS, RICHARDSON.** Maine and Massachusetts, **STORER.** New York, **DEKAY.**

Cottus scorpius, FABRICIUS, Fauna Groenlandica, p. 156, No. 113.

Le Chabeissau du Groenland (*Cottus Groenlandicus*, CUV.), CUV. et VAL., iv. p. 185.

Cottus Groenlandicus, Greenland Bull-head, RICH., Fauna Boreal. Americ., III. pp. 46 and 297, and admirably figured, pl. 95.

Cottus Groenlandicus, Greenland Sculpin, STORER'S Report, p. 16.

" " Greenland Bull-head, DEKAY'S Report, p. 54, pl. 4, fig. 2.

3. *Cottus Virginianus*, WILLOUGHBY.

The body is of a light brown color above, with darker irregular blotches, looking, when carefully examined, somewhat like transverse bands. The abdomen is pure white, slightly tinged, in portions, with fuliginous stains. Twenty spines upon and about the head; ten on each side, all naked at their extremities. The spine at the posterior angle of the preoperculum extends as far back as the extremity of the opercular spine.

D. 9-16. P. 17. V. 3. A. 14. C. 12. Length, 11 to 18 inches.

Newfoundland, **RICHARDSON.** Massachusetts, **STORER.** Connecticut, **AYRES.** New York, **MITCHELL, DEKAY.** Virginia, **WILLOUGHBY.**

Scorpius Virginianus, WILLOUGHBY'S Hist. Pisc., App., p. 25, pl. 10, fig 15?

Cottus octodecimspinosus, Eighteen-Spines Cottus, MITCHELL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 380.

Le grand Chaboisseau à dix-huit épines de l'Amérique du Nord, *Cottus octodecimspinosus*, CUV. et VAL., iv. p. 181.

- Cottus octodecimspinosus*, Sculpin, RICH., Fauna Boreal. Americ., III. p. 46.
 " " GRIFFITH'S CUV., pl. 43, fig. 4.
Cottus Virginianus, Common Sculpin, WILL., STORER'S Report, p. 18.
 " " Common Bull-head, DEKAY'S Report, p. 51, pl. 5, fig. 13.

4. *Cottus scorpioides*, FAB.

The upper portion of the body is fuliginous; the abdomen yellow. A white line extends from the ventral fins to the anus. The anterior portion of the ventrals, and the inferior portion of the sides, are spotted with white. The spines on the head smaller than in the *Groenlandicus*. Pectorals very large.

D. 10-15. P. 15. V. 3. A. 12. C. 15. Smaller than preceding.

Greenland, FABRICIUS.

- Cottus scorpioides*, FAB., Fauna Groenlandica, p. 157, No. 114.
 Le petit Chaboisseau du Groenland (*Cottus scorpioides*, FAB.), CUV. et VAL., IV. p. 187.
Cottus scorpioides, Pokudluk, RICH., Fauna Boreal. Americ., III. p. 47.
Cottus quadricornis, PARRY'S First Voyage, Appendix.

3. *Cottus æneus*, MITCHILL.

This species is of a yellowish brown color above, shaded throughout with fuliginous blotches, lighter colored on the sides of the abdomen, beneath the lateral line; cheeks brazen; fins yellowish, with brownish bars. A broad band of very minute black points, commencing beneath the pectoral fins, extends even beyond the anus, along the edge of the anal fin; the portion in front of the anus contains one or more rows of well-marked, large, circular yellow spots. One or two irregular rows of very obvious roughened tubercles above, and quite a number of smaller tubercles scattered over the sides, beneath the lateral line.

D. 10-15. P. 16. V. 3. A. 13. C. 17. Length, 5 to 12 inches.

Massachusetts, STORER. Connecticut, AYRES. New York, MITCHILL, DEKAY.

- Cottus æneus*, Brazen Bull-head, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 330.
 Le Chaboisseau bronzé, *Cottus æneus*, CUV. et VAL., IV., p. 189.
 " " Brazen Bull-head, STORER'S Report, p. 20.
 " " " " DEKAY'S Report, p. 52, pl. 6, fig. 19.
Cottus variabilis, AYRES, Eost. Journ. Nat. Hist., IV. p. 259.

6. *Cottus pistilliger*, PALL.

The body above is brown, with indistinct points of a deeper brown; beneath, it is yellowish. The large spine at the angle of the preoperculum does not extend beyond the operculum, and it has but two spinules at its upper edge, one of them in its centre, the other near the point. The inferior edge of the preoperculum has three strong points directed obliquely forward. The lateral line is marked by a row of roughened tubercles; and beneath it, upon the sides, are small filaments, terminated by enlarged extremities, causing them to look like little mushrooms.

D. 9-13. P. 18. V. 1-3. A. 16. C. 13. Length, 5 inches.

Unalashka, Cuv.

Le Chaboisseau à bois de chevreuil (*Cottus pistilliger*, PALL.), CUV. et VAL., IV. p. 193.
Cottus pistilliger, Antlered Bull-head, RICH., Fauna Boreal. Americ., III. p. 48.

7. *Cottus polaris*, SABINE.

Color light, with clusters of minute dusky spots. The head compressed and armed with two strong spines, placed before and between the eyes; the gill-covers are also armed with four strong spines; the pectoral fins are larger in proportion than those of the *C. gobio*, and the upper jaw rather exceeds the lower; the lateral line is furnished with a series of small tubercles directed backwards.

D. 6-13. P. 15. V. 5. A. 14. C. 14. SABINE. Length, less than 2 inches.

D. 8-13. P. 15. V. 5. A. 15. C. 12-14. CAPT. J. C. ROSS. Length, (?)

North Georgia (Lat. 75°), SABINE, ROSS.

Cottus polaris, SABINE, App. to PARRY'S First Voyage, p. 213; J. C. ROSS, App. to Third Voyage.
" " (SABINE), North Georgia Bull-head, RICH., Fauna Boreal. Americ., III. p. 43.
" " DEKAY'S Report, p. 55.

8. *Cottus polyacanthocephalus*, PALLAS.

The body above is of a greenish brown color, sprinkled with numerous small pale dots; these dots are larger upon the sides; the entire abdomen is whitish. Upon the head are numerous small, pointed granulations, irregularly rayed, those back of the orbit being the largest. A similar collection of granulations, even more irregular still, are seen upon the temple.

D. 10, 1-14. P. 17. V. 4. A. 12. C. 15 and some small ones. Length, 14 inches.

Cape St. Elias, Northwest Coast of America (Lat. 60°), Cuv.

Le Cotte à tête très-épineuse (*Cottus polyacanthocephalus*, PALLAS), CUV. et VAL., IV. p. 176.
Cottus polyacanthocephalus, Many-horned Bull-head, RICH., Fauna Boreal. Americ., III. p. 48.

9. *Cottus hexacornis*, RICHARDSON.

Of the upper aspect, a clouded admixture of broccoli-brown and olive-green tints; of the belly, white. The fins are striated with bluish black. Six club-shaped, or rather nail-shaped, processes stand erect on the top of the head; their summits flattish, minutely cancellated, and scabrous. The smallest pair stand between the nares; the largest over the posterior angles of the orbits; and the third, of intermediate size, on the occiput.

D. 7-13. P. 16. V. 3. A. (?). C. 12. Length, 7 inches.

Coppermine River, RICHARDSON.

Cottus hexacornis, Six-horned Bull-head, RICH., Franklin's Journ., p. 726; Fauna Boreal. Americ., III. p. 41.
" " DEKAY'S Report, p. 55.

10. *Cottus asper*, RICHARDSON.

Colors generally grayish white; top of the head, back, and sides, studded with small clove-brown spots, in some places confluent, and forming patches. Pectorals, dorsals, and caudal, marked with transverse rows of clove-brown spots. Under parts whitish, with minute specks. The skin of the head smooth to the touch, but dotted with minute soft warts. The greater portion of the upper part of the body thickly studded with very small, subulate, acute spines, directed backwards.

B. 6-6. D. 9-21. P. 16. V. 1-4. A. 18. C. 9 $\frac{1}{2}$. Length, 9 inches, 6 lines.

Columbia River, RICHARDSON.

Cottus asper, Prickly Bull-head, RICH., Fauna Boreal. Americ., III. p. 295.

Trachidermus Richardsoni Heck. *Can. Jour. Mus.* II. p. 162 (1839) see app

11. *Cottus porosus*, VAL.

Above grayish, marbled with plumbeous; head lighter. The lateral line is formed of a series of small elevated tubes, pierced at their extremity, which serve as pores. Above and beneath this, and near the orifice of each pore, are seen the openings of smaller pores. A great number of others upon the top of the head, the temples, and along the suborbitals. Between the lateral line and the dorsal fin is a series of small bony plates. This species resembles the *C. scorpius* of Europe in the armature of the top of the head and gill-covers, and *C. Groenlandicus* or *scorpioides* in the great number of its dorsal rays.

D. 11, 1-16. P. 18. V. 1-3. A. 13. C. 17. Length, 6 inches.

Baffin's Bay, CUV.

Le Chaboisseau poreux, *Cottus porosus*, CUV. et VAL., VIII. p. 495.

" " Porous Bull-head, RICH., Fauna Boreal. Americ., III. p. 47.

" " DEKAY's Report. p. 55.

12. *Cottus Mitchilli*, CUV.

Yellowish, with confluent bars and blotches; all the fins with interrupted black bars. Orbits unarmed. Preopercle with four spines.

D. 10-4. P. 16. V. 3. A. 11. C. 9 $\frac{1}{4}$. Length, 3 inches.

New York, MITCHILL, CUV., DEKAY.

Cottus scorpio? MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 381.

Cottus Mitchilli, CUV. et VAL., IV. p. 188.

" " Smooth-browed Bull-head, DEKAY's Report, p. 53, pl. 17, fig. 47.

GENUS V. ASPIDOPHORUS, LACEP.

Body octagonal, covered with scaly plates; head thicker than the body, with points and depressions above, flattened below; teeth in both jaws only, none on the vomer; snout with recurved spines; branchiostegous rays, six; body tapering to the tail; one or two dorsal fins distinct.

1. *Aspidophorus Europæus*, CUV.

Body above brown, with four broad dark-brown bands; tail brown; ventral and anal fins, and all the under parts of the head and body, very light brown, almost white. Two dorsal fins slightly connected by a membrane of a light brown color, mottled with dark brown. Anterior portion of the body hexagonal. Under the muzzle are small barbules, covering the whole surface of the branchiostegous membrane, the corners of the mouth, and border of the interoperculum; there are two at the extremity of the snout, and a minute one before each orbit.

B. 6. D. 5-7. P. 15. V. 1-2. A. 7. C. 11. Length, 3 to 6 inches.

Greenland, RICHARDSON.

L'Aspidophore d'Europe (*Aspidophorus Europæus*, CUV., *Cottus cataphractus*, L., BLOCH, pl. 39), CUV. et VAL., IV. p. 201.

Cataphractus Schoneveldii, POGGE, FLEM., Brit. An., p. 216, pl. 155.

Aspidophorus cataphractus, POGGE, JENYNS'S Brit. Vert., p. 344.

Aspidophorus Europæus, ARMED BULL-HEAD, YARRELL'S British Fishes (2d edit.), I. p. 85.

Cottus (Aspidophorus) Europæus, POGGE, RICH., Fauna Boreal. Americ., III. p. 43.

2. *Aspidophorus acipenserinus*, TILESII.

Of a light, yellowish gray color, browner above, with transverse undulating brownish lines. It is distinguished from the preceding by wanting the barbules on the branchiostegous membrane, and the numerous polygonal plates, marked with stelliform streaks, which cover the breast before the ventrals; while, in the European species, that part is covered by four plates only, arranged in a square form.

B. 6. D. 9-8. P. 17. V. 1-2. A. 8. C. 11. Length, 9 or 10 inches.

Island of Unalashka, CUV.

L'Aspidophore esturgeon (*Agonus acipenserinus*, TIL., *Phalangistes acipenserinus*, PAL.), CUV. et VAL., IV. p. 207.

Aspidophorus acipenserinus, STERRONIC ASPIDOPHORE, RICH., Fauna Boreal. Americ., III. p. 49.

3. *Aspidophorus monopterygius*, BLOCH.

Above of a light-brown color, with six transverse broad dark bands, those near the head the broader. A single dorsal fin.

D. 5. P. 10. V. 4. A. 4. C. 16. Length, 4 to 6 inches.

Greenland, RICHARDSON. Massachusetts, STORER.

Cottus monopterygius, BLOCH, 178.

" " Single-finned Bull-head, SHAW'S Gen. Zoöl., IV. p. 265.

L'Aspidophore à une seule dorsale (*Agonus monopterygius*, BL., SCHN.; *Aspidophoroide Tranquebar*, LACEP.), CUV. et VAL., IV. p. 224; VI. p. 554.

Cottus (Aspidophorus) monopterygius, CUV., *Aspidophore with one dorsal*, RICH., Fauna Boreal. Americ., III. p. 50.

Aspidophoroides monopterygius, Bull-head, STORER'S Report, p. 22, pl. 1, fig. 1.

Aspidophorus monopterygius, American *Aspidophore*, ДЕКЛЪ'S Report, p. 62, pl. 2, fig. 6.

GENUS VI. CRYPTACANTHODES, STORER.

Body anguilliform, very much compressed, gradually tapering to the tail, destitute of scales. Head broad, with no projecting spines but the angles of the gill-covers. The scapular and humeral spines, and the inferior edge of the preoperculum, prominent to the touch. Numerous depressions in the frontal, suborbital, inferior maxillary, and preopercular bones. Branchiostegous rays, seven. Mouth oblique. A single dorsal fin, composed of strong spinous rays, runs nearly the entire length of the fish, and is united, as well as the anal, to the caudal fin. No ventral fins. Teeth in the jaws, vomer, and palatines.

1. *Cryptacanthodes maculatus*, STORER.

Reddish brown, with darker brown blotches, forming two longitudinal series upon the sides.

D. 77. P. 13. V. (?). A. 50. ° C. 19. Length, 21 inches.

Massachusetts, STORER. Connecticut, LINSLEY.

Cryptacanthodes maculatus, Spotted Wry-mouth, STORER'S Report, p. 23.
 " " " " DEKAY'S Report, p. 63, pl. 18, fig. 50.

GENUS VII. HEMITRIPTERUS, CUV.

The head depressed; two dorsals, as in the *Cottus*; no regular scales on the skin, but teeth in the palate. The head is bristly and spinous, and has several cutaneous appendages. The first dorsal is deeply emarginate, a circumstance which has led some authors to believe they had three.

1. *Hemitripterus Americanus*, GMELIN.

This species varies exceedingly in color; in some specimens being of a blood-red color, or a pinkish purple, or of a yellowish brown, darker on the back, variegated on the head and sides and fins with irregularly defined markings; body beneath, yellowish. Surface of the body granulated, and studded with innumerable tubercles.

D. 16 - 13. P. 18. V. 3. A. 15. C. 19. Length, 2 feet.

Nova Scotia and Gulf of St. Lawrence, CUV., RICHARDSON. Massachusetts, STORER. Connecticut, LINSLEY. New York, MITCHILL.

Cottus Acadianus, Acadian Bull-head, PEN., Arc. Zoöl., II. p. 118.
Scorpiæna flava, Yellow Scorpiæna, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 382, pl. 2, fig. 8.
Scorpiæna purpurea and *S. rufa*, MITCHILL, Amer. Month. Mag., II. p. 245.
 L'Hémitriptère de l'Amérique, *Hemitripterus Americanus*, CUV. et VAL., IV. p. 263, pl. 84.
Hemitripterus Americanus, RICH., Fauna Boreal. Americ., III. p. 50.
 " " GRIFFITH'S CUV., p. 141, pl. 53, fig. 3.
 " " Sea-Raven, Deep-water Sculpin, STORER'S Report, p. 23.
 " " American Sea-Raven, DEKAY'S Report, p. 56, pl. 6, fig. 16.

GENUS VIII. HEMILEPIDOTUS, CUV.

In the form of the head, and in the distribution of its spines, there is a resemblance to the Cotti; but in the solitary dorsal fin, and the teeth on the palatine bones, as well as on the vomer, it partakes of the characters of the Scorpæna; it is distinguished at once from both genera by two broad, longitudinal, scaly stripes on each side, alternating with stripes of smooth skin; the scales become visible as the skin dries.

1. Hemilepidotus Tilesii, Cuv.

In its recent state, it exhibits red, violet, and purple tints; specimens are sometimes seen with yellowish or olive. When dried, it is of a reddish brown, irregularly marbled, spotted, or dotted with blackish.

B. 6. D. 11-18. P. 17. V. 1-3. A. 1-14. C. 12. Length, $7\frac{1}{2}$ to 9 inches.

Aleutian Islands, Cuv.

L'Hémilépidote de Tilesius (Hemilepidotus Tilesii, Cuv., Cottus hemilepidotus, Til., Cottus trachurus, Pall.), Cuv. et Val., IV. p. 276, pl. 85.

Hemilepidotus Tilesii, Griffith's Cuv., x. pl. 53, fig. 4.

Hemilepidotus trachurus, Hickejak, Rich., Fauna Boreal. Amer., III. p. 51.

GENUS IX. SCORPÆNA, L.

The Scorpænae have a strong resemblance to the Cotti, in possessing a large, spiny head, large pectorals, and, in part, the thick simple rays of these fins, but they differ in the compressed form of the head, the undivided dorsal, and in the presence of palatine teeth. Seven branchiostegous rays. Cutaneous filaments on different parts of the body.

1. Scorpæna porcus, L.

Body brownish, marbled by large blotches; beneath, the body and inferior fins of a rosy tint. Six small fleshy appendages at the extremity of the snout.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 8 inches.

New York, Cuv.

Scorpæna porcus, L., Shaw's Gen. Zoöl., IV. p. 267.

La petite Scorpène brune, Scorpæna porcus, L., Cuv. et Val., IV. p. 300.

“ “ Small Sea-Scorpion, DeKay's Report, p. 58.

2. Scorpæna bufo, Cuv.

Brown, marbled with rosaceous and violet. The base of the pectorals, beneath, black, dotted with round milk-white spots. Sometimes the dorsal fin has a large black spot between the sixth and seventh rays.

B. 7. D. 12-9. P. 19 or 20. V. 1-5. A. 3-5. C. 13 or 14. Length, 17 to 18 inches.

Newfoundland, RICHARDSON. Gulf of Mexico, PARRA. Caribbean Sea, CUV.

Rascacio, PARRA, p. 31, pl. 18, fig. 1.

La Scorpène crapaud de Mer, Scorpena bufo, CUV. et VAL., IV. p. 306.

Scorpena bufo, Sea-Toad, RICH., Fauna Boreal. Americ., III. p. 300.

" " Spotted Sea-Scorpion, DEKAY's Report, p. 59, pl. 70, fig. 227.

3. *Scorpena grandicornis*, CUV.

Brownish, abdomen whitish. A brown spot at the base of the pectorals beneath, sprinkled with small white spots. Very large acute spines upon the head. Large filaments resembling feathers are distributed upon different parts of the head, over the eyes, cheeks, and at the snout; also upon the sides of the body.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 4 to 6 inches.

Gulf of Mexico, Caribbean Sea, CUV.

La Scorpène Plumier, LACEPEDE, III. p. 282.

Scorpena Plumieri, Plumier's Scorpena, SHAW's Gen. Zool., IV. p. 270.

La Scorpène à longs tentacules, Scorpena grandicornis, CUV. et VAL., IV. p. 309.

4. *Scorpena inermis*, CUV.

Russet, marbled with deeper brown; beneath, paler; fins with irregularly distributed brown spots. Inconspicuous spines, and crests upon the head. Eyes very large. Very small cirrhi upon the body.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, (?).

Caribbean Sea, CUV.

La Scorpène sans armes, Scorpena inermis, CUV. et VAL., IV. p. 311.

GENUS X. SEBASTES, CUV.

Body oblong, compressed, covered with scales; all the upper parts of the head also covered with scales; eyes large; preoperculum and operculum ending in three or more spines; branchiostegous rays, seven; teeth small, numerous, equal in size, placed on both jaws, the vomer, and palatine bones; a single dorsal fin, part spinous, part flexible; inferior rays of the pectoral fin simple.

1. *Sebastes Norvegicus*, CUV.

All the upper part of the body, and the fins, of a reddish color; darker upon the head and back, lighter upon the sides; nearly white beneath. A brown blotch upon the posterior portion of the operculum.

D. 15-15. P. 18. V. 1-5. A. 3-7. C. 19. Length, 2 feet.

Greenland, FABRICIUS. Gulf of St. Lawrence, Newfoundland, RICHARDSON. Massachusetts, STORER. New York, DEKAY.

Perca Norvegica, FAB., Fauna Groen., p. 167.

Perca marina, Sea-Perch, PENN., Brit. Zoöl., p. 226.

Serranus Norvegicus, FLEM., Brit. An., p. 212, sp. 140.

Scorpæna Norvegica, Northern *Sebastes*, JENYNS'S Brit. Vert., p. 347.

Sebastes Norvegicus, GRIFFITH'S CUV., x. p. 144.

La Sébaste septentrionale, *Sebastes Norvegicus*, CUV. et VAL., iv. p. 327, pl. 87.

Scorpæna (*Sebastes*) *Norvegica*, Northern *Sebastes*, RICH., Fauna Boreal. Americ., iii. p. 52.

Sebastes Norvegicus, Bergylt, Norway Haddock, YARBELL'S Brit. Fishes (2d edit.), i. p. 87.

" " Norway Haddock, Rose-fish, Hemdurgan Snapper, STORER'S Report, p. 26.

" " Northern *Sebastes*, DEKAY'S Report, p. 60, pl. 4, fig. 11.

2. *Sebastes variabilis*, CUV.

Brown; beneath, white; in the female, the abdomen is reddish. This species has the head less armed than any other; there are not even crests on the cranium, or over the orbits, and no teeth on the suborbitars; the preoperculum has five short, obtuse teeth, and the operculum two points.

D. 13-15. P. 18, of which 9 are simple. V. 1-5. A. 13-9. C. 17. Length, 2 feet.

Aleutian Islands, CUV.

La Sébaste variable, *Sebastes variabilis*, CUV. et VAL., iv. p. 347.

Scorpæna (*Sebastes*) *variabilis*, Tochoo, RICH., Fauna Boreal. Americ., iii. p. 53.

GENUS XI. BLEPSIAS, CUV.

The spiny preoperculum, compressed head, mailed cheek, palatine teeth, short, simple, and half-detached lower rays of the pectorals, and fleshy appendages of the snout, connect this genus with *Scorpæna*; from which, however, it is distinguished by its five branchiostegous rays, and its high dorsal, divided into three unequal lobes, as in *Hemitripterus*; while the compressed head prevents it from entering the latter genus.

1. *Blepsias trilobus*, CUV.

In its appearance, this species resembles some of the Blennies. The skin is destitute of scales, but is rough, with fine grains, which appear to be disposed in three longitudinal stripes, separated by narrow intervals. It is of a reddish brown color, with three bluish bands upon the cheeks, and a similarly colored spot at the extremity of the operculum. The pectoral and caudal fins are crossed by three brown bands. Oblique or irregularly distributed bands on the dorsal and anal fins.

D. 7-24. P. 11. V. 1-3. A. 20. C. 11. Length, 5 to 5½ inches.

Northwest Coast of America, Cuv.

- Le Blepsias trilobé, Blepsias trilobus, Cuv., Cuv. et VAL., IV. p. 375, pl. 90.
 " " " GRIFFITH'S Cuv., p. 145, pl. 22, fig. 2.
 " " " Three-lobed Blepsias, RICH., Fauna Boreal. Americ., III. p. 53.

GENUS XII. GASTEROSTEUS, Cuv.

Body without scales, more or less plated on the sides ; one dorsal fin with free spines. Ventral fin with one strong spine, and no other rays ; bones of the pelvis forming a shield, pointed behind ; branchiostegous rays, three.

1. *Gasterosteus trachurus*, Cuv.

Back and sides olivaceous, sometimes passing into yellowish brown or dusky blue ; the throat and breast, in some individuals, bright, fiery red, belly and flanks silvery. Three dorsal spines. The sides are defended throughout their whole length by a series of elongated bony plates, arranged vertically ; these plates are continued along the sides of the tail, there being in all twenty-five or twenty-six, exclusive of five small ones that cover the keel of the tail, and render it more prominent.

D. 111-9. P. 10. V. 1. A. 1-8. C. 12. Length, 2 to 3 inches.

Greenland, FABRICIUS.

- Gasterosteus aculeatus*, L.
 " " BL., XI. p. 73, pl. 53, fig. 3.
 " " FAB., Fauna Groenlandica, p. 169.
 " " Common Stickleback, SHAW'S Gen. Zööl., IV. p. 604, pl. 87, fig. 3.
 " " Three-spined Stickleback, JENYNS'S Brit. Vert., p. 348.
 L'Épinoche à queue armée, *Gasterosteus trachurus*, Cuv. et VAL., IV. p. 431, pl. 93, fig. 1.
Gasterosteus, Burnstickle, RICH., Fauna Boreal. Americ., III. p. 54.
Gasterosteus trachurus, Rough-tailed Stickleback, YARBELL'S Brit. Fishes (2d edit.), I. p. 90.

2. *Gasterosteus biaculeatus*, MITCHILL.

Dark olive-green above, gradually intermixing with light greenish and yellowish on the sides. Fins tinged with yellowish. Two distant spines on the back, and a third near the dorsal fin. A sharp, flat tooth on the external base of each ventral spine ; the European species having simply an enlargement there.

D. 2, 1-12. P. 9. V. 1-1. A. 1-8. C. 12. Length, 2 inches.

Newfoundland, Cuv. New York, MITCHILL.

- Gasterosteus biaculeatus*, Two-spined Stickleback, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 430, pl. 1, fig. 10.
 L'Épinoche à deux épines (*Gasterosteus biaculeatus*, PENN., SHAW, et MITCHILL), Cuv. et VAL., IV. p. 503.
Gasterosteus biaculeatus, Two-spined Burnstickle, RICH., Fauna Boreal. Americ., III. p. 56.
 " " Two-spined Stickleback, DEKAY'S Report, p. 65, pl. 3, fig. 8.

3. *Gasterosteus Noveboracensis*, CUV.

Dark brown above the lateral line ; beneath it, silvery. This species differs from the *G. trachurus* in having the dorsal plates narrower ; the lateral carinæ of the tail more prominent, and the lateral line nearer the back.

Mr. Thompson, Vice-President of the Belfast Natural History Society, Ireland, does not consider this species distinct from the *trachurus*. See his paper "On the Species of Stickleback found in Ireland," *Mag. of Zoölogy and Botany*.

D. 3-11. P. 10. V. 1-1. A. 1-8. C. 12. Length, 2½ inches.

Massachusetts, STORER. New York, CUV., DEKAY.

L'Épinoche de New-York, *Gasterosteus Noveboracensis*, CUV., CUV. et VAL., IV. p. 502, pl. 98, fig. 3.

Gasterosteus Noveboracensis, RICH., *Fauna Boreal. Americ.*, III. p. 56.

" " New York Stickleback, STORER'S Report, p. 30.

" " " " DEKAY'S Report, p. 66, pl. 6, fig. 17.

4. *Gasterosteus quadracus*, MITCHILL. *Apelte*

Greenish brown above the lateral line ; beneath this line, which is scarcely perceptible, darker and irregularly broken by the extension of the whiteness of the abdomen. In young specimens, the color is distributed in four or five bars, which become indistinct in the mature fish. To the under portion of the ventral spine is attached a reddish membrane, which makes this part to appear as if covered with blood, when the fish is suddenly darting through the water with this spine projecting. Three or four spines in front of the dorsal fin. The three foremost fixed, the posterior movable.

D. 3, 1-4. P. 11. V. 1. A. 10. C. 13. Length, 2 inches.

Massachusetts, STORER. New York, MITCHILL, CUV., DEKAY.

Gasterosteus quadracus, Four-spined Stickleback, MITCHILL, *Trans. Lit. and Phil. Soc. of N. Y.*, I. p. 430, pl. 1, fig. 11.

L'Épinoche à quatre aiguilles (*Gasterosteus quadracus*, MITCH.), CUV. et VAL., IV. p. 504.

L'Épinoche à bassin fendu (*Gasterosteus apelte*, CUV.), CUV. et VAL., IV. p. 505.

Gasterosteus apelte, Bloody Stickleback, STORER'S Report, p. 31.

" " Four-spined Stickleback, DEKAY'S Report, p. 67, pl. 6, fig. 18.

5. *Gasterosteus occidentalis*, CUV.

Very similar to the *G. pungitius* ; its form is more elongated. Olive-green, tinged with yellow. More than seven spines in front of the dorsal fin. Tail armed.

D. 8. P. 11. V. 1-11. A. 1-9. C. 12. Length, 1 to 2 inches.

Newfoundland, CUV. Massachusetts, STORER. New York, DEKAY.

L'Épinochette de Terre-neuve (*Gasterosteus occidentalis*, CUV.), CUV. et VAL., IV. p. 509.

Gasterosteus occidentalis, Newfoundland Stickleback, RICH., *Fauna Boreal. Americ.*, III. p. 53.

" " Many-spined Stickleback, DEKAY'S Report, p. 68, pl. 42, fig. 135.

Gasterosteus pungitius, Ten-spined Stickleback, STORER'S Report, p. 32.

6. *Gasterosteus niger*, CUV.

Entirely black. Ventral spines very long. Thirty-three lateral plates. Tail armed. Its form is more elongated, and its spines more slender, than those of the *G. trachurus*.

D. (?). P. (?). V. (?). A. (?) C. (?) Length, 2 inches.

Newfoundland, CUV.

L'Épinoche noire (*Gasterosteus niger*, CUV.), CUV. et VAL., IV. p. 503.
Gasterosteus niger, Black Burnstickle, RICH., Fauna Boreal. Americ., III. p. 56.
 " " DEKAY'S Report, p. 63.

7. *Gasterosteus concinnus*, RICHARDSON.

Olive-green, with a silvery belly, and the whole body and soft parts of the head sprinkled with black dots. Body scaleless. The soft dorsal has nine rays. Contiguous to the anal fin is a separate spine furnished with its proper membrane, like the dorsal spines, the longest of which it equals in size. All the spines, both dorsal and ventral, are movable, and none of them are serrated. Perhaps the smallest of fresh-water fishes.

B. 3. D. 1, 1, 1, 1, 1, 1, 1, 1-9. P. 10. V. 1-1. A. 1-9. C. 12 $\frac{2}{3}$. Length, 1 inch, 3 lines.

From the Saskatchewan, Lat. 53°, to the Great Bear Lake, in the 65th parallel, RICH.

Gasterosteus concinnus, Tiny Burnstickle, RICH., Fauna Boreal. Americ. III. p. 57.
Uswae-atheek-asheest, CREE INDIANS.
Gasterosteus concinnus, DEKAY'S Report, p. 63.

8. *Gasterosteus Mainensis*, STORER.

Sides yellowish; beneath, silvery. Several transverse black bands, varying in their width, upon the sides. Seven spines in front of the dorsal fin, that next the fin the largest. A broad, oblong, serrated plate on the side.

D. 7-10. P. 10. V. 1. A. 1-8. C. 8. Length, 2 inches.

Fresh water, Kennebec County, Maine, STORER.

Gasterosteus Mainensis, Maine Stickleback, STORER, Bost. Journ. Nat. Hist., I. p. 465.
 " " DEKAY'S Report, p. 63.

9. *Gasterosteus inconstans*, KIRTLAND.

Olive or black upon the back; faintly maculated with olive upon its sides; a black or fuscous zone often extends along the median line. Throat and abdomen yellowish or white. Five or six movable spines in front of the dorsal fin. Body smooth.

D. 5, 6, 9-12. P. (?). V. 1. A. 1-9, 12. C. (?). Length, 1 $\frac{1}{2}$ inches.

Ohio, KIRTLAND.

Gasterosteus inconstans, KIRTLAND, Bost. Journ. Nat. Hist., III. p. 273, pl. 2, fig. 1.

10. *Gasterosteus millepunctatus*, AYRES.

Greenish olive, thickly clouded over with brown, which latter color is produced by a vast number of small blackish spots, not dispersed uniformly, but gathered in clouds and

waves, and sometimes in tolerably well defined vertical bands. Abdomen silvery. Four dorsal spines, three of which are free.

D. (?). P. (?). V. (?) A. (?). C. (?). Length, $1\frac{1}{2}$ inches.

Connecticut, **AYRES.**

Gasterosteus millepunctatus, **AYRES**, *Bost. Journ. Nat. Hist.*, iv. p. 294, pl. 12, fig. 13.

GENUS XIII. TEMNISTIA, RICHARDSON.

It has much resemblance, in external form, to *Hemilepidotus* and *Scorpaena*. It is separated from the former by its body being wholly scaly, and by the presence of barbels on the head; and from the latter, by having only five gill-rays and a three-lobed dorsal. The want of scales on the head distinguishes it from *Sebastes*, and its habit, which is very unlike that of a Blenny, its long pectorals and scaly body, detach it from *Blepsias*.

1. *Temnistia ventricosa*, **RICH.**

Brown, with darker spots, and four transverse broad, wavy, red bands. Belly white, studded laterally with brown spots. Abdomen greatly inflated, pendulous and hemispherical. Dorsal fin notched anterior to the twelfth ray by the gradual decrease of the six preceding rays. Another but less decided notch at the third ray, the membrane of which reaches only to the middle of the following ray.

B. 5. D. 31. P. 16. V. 5. A. 16. C. $11\frac{1}{2}$. Length, (?).

Northwest Coast of America, **RICHARDSON.**

Temnistia ventricosa, Northwest Notchfin, **RICH.**, *Fauna Boreal. Americ.*, III. p. 59.

FAMILY III. SCIENIDÆ.

Is very similar to that of the *Percoides*, and presents nearly all the same combinations of exterior character, especially the denticulations of the preoperculum, and the spines of the operculum; but it has no teeth, either on the vomer or palatines; in general, the bones of the cranium and face are cavernous, and form a snout more or less rounded. It often occurs in this family that the vertical fins are rather scaly. Some of the genera of this family have two dorsals, others but one.

GENUS I. OTOLITHUS, Cuv.

The bones of the anal fin are weak, and there are no barbels; some of the teeth terminate in elongated hooks, or are of the canine form. Their natatory bladder has a horn on each side, projecting forwards.

1. *Otolithus regalis*, SCHN.

Head and back brown, with frequently a tinge of greenish. Ventrals and anal orange. Ventral fins with five branched rays. There are two strong canine teeth in the upper jaw, one of which is often broken; the rest of that mandible is armed with a single row of teeth, which are very small, but distinct and pointed. The under jaw is also furnished with a row of small teeth, which is doubled anteriorly. The two dorsal fins separated, and the second, as well as the caudal and anal fins, is in a great part covered with scales.

D. 9, 1-29. P. 16. V. 1-5. A. 1-13. C. 17. Length, 1 to 2 feet.

Bay of Chaleur, LIEUT. COL. HAMILTON SMITH. Massachusetts, STORER. New York, MITCHILL, DEKAY. Caribbean Sea, CUV.

Labrus squeteague, Weak-fish, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 396, pl. 2, fig. 6.

L'Otolithe royal (*Otolithus regalis*, CUV., *Johnius regalis*, SCHN.), CUV. et VAL., v. p. 67.

Sciæna (*Otolithus regalis*, Squeteague, RICH., Fauna Boreal. Americ., III. p. 63.

Otolithus regalis, Weak-fish, STORER'S Report, p. 33.

" " " DEKAY'S Report, p. 71, pl. 8, fig. 24.

2. *Otolithus Drummondii*, RICHARDSON.

Slender. In a preserved specimen, received by Richardson, the back appeared to have been dark, and the sides and belly silvery. Many small, rounded, blackish brown spots on the back above the lateral line, and on the second dorsal and caudal. Two distinct rows of small pointed teeth round the upper jaw, the outer row being more widely set. Caudal fin rounded. Sixty-six scales on the lateral line, exclusive of the minute ones which extend pretty far over the caudal.

D. 9, 1-25. P. 16. V. 1-5. A. 1-8. C. 17 $\frac{1}{4}$. Length, 11 $\frac{1}{2}$ inches.

New Orleans, RICHARDSON.

Otolithus Drummondii, RICH., Fauna Boreal. Americ., III. p. 70.

" " " DEKAY'S Report, p. 72.

3. *Otolithus Carolinensis*, CUV.

Blue on the back, with silvery reflections; beneath, white. The dorsals are gray, spotted with black. Caudal spotted. Anal blackish blue. Scales small, more than eighty in a longitudinal line.

D. 10, 1-27. P. (?). V. (?). A. 1-11. C. (?). Length, 14 inches.

South Carolina, CUV.

L'Otolithe de la Caroline, *Otolithus Carolinensis*, CUV. et VAL., IX. p. 475.

" " " DEKAY'S Report, p. 72.

GENUS II. CORVINA, Cuv.

Have neither canine teeth nor barbels ; all their teeth are even. They also differ from the Otolithi in the thickness and strength of their second anal spine. Teeth generally even, velvet-like on the jaws ; but with a series of teeth larger, pointed, and equal on the upper.

1. *Corvina oscula*, LESUEUR.

The color on the head, snout, and caudal fin is of a bluish gray, tending to black upon the snout and above the eyes, more gray towards the back and above the pectorals ; all the other fins are of a lighter gray ; some red tints upon the cheeks ; a yellowish reflection upon the scales of the back of the tail and of the opercula ; abdomen beneath the throat white. Anterior profile sloping, somewhat concave. Snout prominent and rounded.

D. 9-30. P. 19. V. 1-5. A. 2-7. C. 18, 5-5. Length, 16 inches.

Lake Erie, LESUEUR. Lake Ontario, DEKAY. Ohio River, KIRTLAND. *Lake Champlain Beine*

- Amplodon grunniens*, RAP., Ichth. Ohien., p. 24. *u. l. 11*
Sciæna oscula, LESUEUR, Journ. Acad. Nat. Sc., II. p. 252, pl. 13.
 Le Corb de Lesueur, *Corvina oscula*, Cuv. et VAL., v. p. 98.
Sciæna (*Corvina*) *oscula*, Lesueur's *Corvina*, RICH., Fauna Boreal. Americ., III. p. 68.
Sciæna oscula, KIRTLAND'S Report on the Zool. of Ohio, pp. 168, 192.
Sciæna grisea, LESUEUR, Journ. Acad. Nat. Sc., II. p. 254.
 " " DEKAY'S Report, p. 76.
Sciæna oscula, White Perch of the Ohio River, KIRTLAND, Bost. Journ. Nat. Hist., III. p. 350, pl. 11, fig. 3.
Corvina oscula, Lake Sheephead, DEKAY'S Report, p. 73, pl. 21, fig. 63.

2. *Corvina ocellata*, Cuv.

Bluish above, lighter beneath. Upon the upper part of the tail, on each side, is a black spot, about three quarters of an inch in diameter, resembling the brand of a hot iron upon wood ; whence it has been called the *Branded Drum*. Sometimes two spots on one side, which are confluent on the other.

D. 10 or 11, 1-25 or 26. P. 17. V. 1-5. A. 2-7 or 8. C. 17. Length, 3 feet or more.

New York, MITCHILL. South Carolina, LINNÆUS. Lake Pontchartrain, Louisiana, LESUEUR.

Called, at Charleston, S. C., "Bass," "Sea Bass," "Red Bass"; at New Orleans, "Red-fish."

- Perca ocellata*, Ocellated Perch, LIN., Sys. Nat.
 " " SHAW'S Gen. Zool., IV. p. 550.
Sciæna imberbis, Beardless Drum, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 411.
 Le Johnius ocellé ou brûlé, *Corvina ocellata*, Cuv. et VAL., v. p. 134, pl. 108.
Corvina ocellata, Branded *Corvina*, DEKAY'S Report, p. 75, pl. 21, fig. 61.

3. *Corvina argyroleuca*, Cuv.

The whole complexion whitish. The white of the back relieved by pale brown scales,

disposed in rows ascending towards the back, and thence inclining towards the tail. Below the lateral line, the sides and belly are alternated with shades of a silver white, and a milk white disposed into spaces and rows. Ventral and anal fins yellow. Pectorals, caudal, and second dorsal, yellowish. The first four spinous rays of the dorsal fins successively longer.

D. 11, 1-22. P. 17. V. 1-5. A. 2-9. C. 17. Length, 8 inches.

New York, MITCHILL, DEKAY. Caribbean Sea, CUV.

Bodianus argyro-leucos, Silvery Perch, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., 1. p. 417, pl. 6, fig. 9.
Le Corb blanc-d'argent, *Corvina argyroleuca*, CUV., CUV. et VAL., v. p. 105.
 " " " Silvery *Corvina*, DEKAY's Report, p. 74, pl. 18, fig. 51.

4. *Corvina Richardsonii*, CUV.

Top of the head and the back greenish gray, with darker bands descending a short way from the latter; sides ash-gray, with silvery tips to the scales; belly cream-yellow. Dorsal with a long membrane behind. Anal with a stout spine.

D. 9, 1-18. P. 15. V. 1-5. A. 1-7. C. 17 $\frac{3}{4}$. Length, 1 to 2 feet.

Lake Huron, RICHARDSON.

Called "Sheepshead," on the borders of Lake Huron.

Sciæna (Corvina) Richardsonii (CUV.), Malashegané, RICH., Fauna Boreal. Americ., III. p. 64, pl. 77.
Corvina Richardsonii, Malashegané, DEKAY's Report, p. 76.
Le Corb de Richardson, *Corvina Richardsonii*, CUV. et VAL., v. p. 100.

5. *Corvina ronchus*, CUV.

Very similar to the *C. argyroleuca*. The preopercular teeth are very stout. Anal fin forked. Anal spine stout.

D. 10, 2-23 or 24. P. 18. V. 1-5. A. 3-8. C. 17. Length, 11 inches.

Caribbean Sea, CUV.

Called "Gronde," at St. Domingo.

Le Corb grognant, *Corvina ronchus*, CUV. et VAL., v. p. 107.

6. *Corvina dentex*, CUV.

Silvery, tinged with gray, with very slightly marked longitudinal lines. Fins gray, dotted with brown. Pectorals blackish at their base. Snout slightly prominent. Upon each jaw an outer row of slender, pointed, separated teeth, six or seven on each side.

D. 12, 2-22. P. (?). V. (?). A. 2-9. C. (?). Length, (?).

Caribbean Sea, CUV.

Called "Grondé," at Port au Prince.

Le Grondé de Saint Domingue, *Corvina dentex*, CUV. et VAL., v. p. 139, pl. 109.
 " " " WILSON, Encyclop. Brit., Art. Ichth., pl. 299, fig. 12.

7. *Corvina oxyptera*, DEKAY.

Operculum obsoletely serrate, with two spines; preoperculum denticulated. Pectoral fins long and pointed.

D. 10-19. P. 20. V. 1-5. A. 3-7. C. 19 $\frac{1}{2}$. Length, 8 inches.

New York, DEKAY.

Corvina oxyptera, Sharp-finned Corvina, DEKAY'S Report, p. 77, pl. 30, fig. 96.

GENUS III. LEIOSTOMUS, CUV.

Anal spine feeble. Very minute denticulations on the preopercle. Teeth in the jaws even, and exceedingly small. Pharyngeals paved on their posterior border. Snout convex, arched. Two dorsals.

1. *Leiostomus obliquus*, MITCHILL.

Back convex. Body compressed. Fourteen to eighteen narrow, transverse, oblique bands over the back. A dark rounded spot behind the upper angle of the opercle. Fins yellowish.

D. 10, 1-30. P. 19. V. 1-5. A. 2-13. C. 17. Length, 8 inches.

New York, MITCHILL, CUV., DEKAY. Pennsylvania, CUV.

Labrus obliquus, Little Porgee, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., i. p. 403.

Sciæna multifasciata, LESOURN, Journ. Acad. Nat. Sc., ii. p. 255.

Le Léiostome à épaule noire, *Leiostomus humeralis*, CUV. et VAL., v. p. 141, pl. 110.

Leiostomus obliquus, Lafayette, DEKAY'S Report, p. 69, pl. 60, fig. 195.

2. *Leiostomus xanthurus*, LACEP.

Very similar to the preceding species, but the neck is a little more convex. Of a golden brown color, becoming silvery towards the abdomen, without bands or spots.

D. 11, 1-32 or 34. P. 21. V. 1-5. A. 2-13. C. 17. Length, (?).

South Carolina, Caribbean Sea, CUV.

It is called "Yellowtail," in South Carolina.

Le Léiostome à queue jaune (*Leiostomus xanthurus*, LACEP.), CUV. et VAL., v. p. 142.

Leiostomus xanthurus, DEKAY'S Report, p. 70.

GENUS IV. LARIMUS, CUV.

Two dorsal fins. Teeth velvety. Forehead not arched. Snout very blunt. Preoperculum slightly denticulated.

1. *Larimus breviceps*, CUV.

Silvery, above grayish brown, with brownish oblique lines, which descend forward; towards the tail, these lines are longitudinal. The membrane of the first dorsal is blackish, with a triangular white spot at its base between each of the rays. Snout flat, and very short.

D. 10, 1-28. P. (?). V. (?). A. 2-7. C. 17. Length, 1 foot.

Caribbean Sea, CUV.

Le Larime à court museau, *Larimus breviceps*, CUV. et VAL., v. p. 146.

GENUS V. CONODON, Cuv.

Distinguished from all the other Scienoides by a row of conical teeth in both jaws.

1. *Conodon Antillanus*, Cuv.

Silvery, with seven vertical brown bands. Fins brown. A row of eighteen or twenty conical teeth in each jaw; the six anterior stoutest and longest. The six in the lower, thicker than those in the upper jaw. Preopercular denticulations stout. Two very small pores at the chin.

D. 12, 12 or 11 - 1, 12. P. (?). V. (?). A. 3 - 7. C. (?). Length, 8 inches.

Caribbean Sea, Cuv.

Le Conodon des Antilles, Conodon Antillanus, Cuv. et Val., v. p. 156.

GENUS VI. EQUES, Bl.

Body compressed, long, high on the shoulders, and terminating in a point towards the tail; their teeth are even; two dorsal fins, the first high, the second long and scaly.

1. *Eques balteatus*, Cuv.

Yellowish gray, silvery towards the abdomen, with three broad dark-brown bands; the first is vertical, passing from over the eye, across to the angle of the mouth; the second begins upon the occiput, passes down across the operculum in front of the pectoral fin, and, curving a little, extends upon the base of the ventral fins; the third, commencing at the anterior base of the first dorsal, curves obliquely downward, and extends the whole length of the centre of the body, to the extremity of the tail.

D. 16, 1 - 53. P. 15. V. 1 - 5. A. 2 - 10. C. 19. Length, 6 or 7 inches.

Gulf of Mexico, PARRA. Caribbean Sea, Cuv.

Called "Gentilhomme," at Martinique; "Serrana," at Havana.

Serrana, PARRA, p. 2, pl. 2, upper fig.

Eques Americanus, Bloch.

Eques balteatus, GRIFFITH'S Cuv., x. pl. 21, fig. 1.

Le Chevalier à baudrier, Eques balteatus, Cuv. et Val., v. p. 15.

2. *Eques punctatus*, Bloch.

Of a dark brown color, with five narrow, gray, longitudinal bands upon the sides; the three middle bands curve slightly upwards towards the first dorsal. Two vertical bands upon the head. Dorsal, caudal, and anal, with round bluish or gray spots.

D. 11, 1 - 46. P. 18. V. 1 - 5. A. 2 - 7. C. 19. Length, (?).

Gulf of Mexico, PARRA. Caribbean Sea, Cuv.

Called "Maman-baleine," at Martinique.

Serrana, PARRA, p. 2, pl. 2, lower figure.

Le Chevalier ponctué (*Eques punctatus*, BL.), CUV. et VAL., v. p. 167, pl. 116.

Eques punctatus, WILSON, Encyclop. Brit., Art. Ichth., pl. 229, fig. 14.

GENUS VII. UMBRINA, Cuv.

Distinguished from other *Sciænæ* by a cirrus under the symphysis of the lower jaw.

1. *Umbrina alburnus*, L.

Body elongated, slightly arched over the pectorals, gradually tapering towards the tail; dull gray, with silvery reflections upon the sides, ornamented with irregularly disposed dark bars; some passing obliquely forwards from the dorsal fin; others passing obliquely backwards from the nape of the neck; and one broader one pursues a straight course backwards through the middle of the body, from the extremity of the pectorals to the tail. Beneath, yellowish. Caudal fin emarginated at its upper portion, rounded beneath.

D. 9-26. P. 19. V. 5. A. 10. C. 17. Length, 8½ to 15 inches.

Massachusetts, STORER. New York, Carolina, Florida, MITCHELL, CUV., DEKAY.

Called "King-fish," at New York; and "Whiting," in Carolina and Florida.

Alburnus Americanus, Carolina Whiting, CATESBY'S Hist. Carol., ii. pl. 12, fig. 2.

Perca alburnus, L., GMEL.

" " Whiting Perch, SHAW'S Gen. Zool., iv. p. 543.

Sciæna nebulosa, King-fish, MITCHELL, Trans. Lit. and Phil. Soc. of N. Y., i. p. 403, pl. 3, fig. 5.

L'Ombre des Etats-Unis (*Umbrina alburnus*, CUV., *Perca alburnus*, LIN., *Centropomus alburnus*, LACÉP.), CUV. et VAL., v. p. 180.

Umbrina nebulosa, King-fish, STORER'S Report, p. 35.

Umbrina alburnus, King-fish, DEKAY'S Report, p. 78, pl. 7, fig. 20.

2. *Umbrina Martinicensis*, Cuv.

Very similar to the *U. alburnus*. Of an uniform brown color. No spots nor bands. Preopercular teeth prominent. Anterior teeth of the upper jaw, and the middle pharyngeal teeth, stout.

D. 10, 1-24. P. 22. V. 1-5. A. 1-10. C. 17. Length, 1 foot.

Caribbean Sea, CUV.

L'Ombre de la Martinique, *Umbrina Martinicensis*, CUV. et VAL., v. p. 186.

3. *Umbrina coroides*, Cuv.

Nine broad, dusky, vertical bands; anal fin with two spines; lobes in front of the mouth rounded.

D. 10, 1-29. P. 17. V. 1-5. A. 2-6. C. 17. Length, 8 inches.

South Carolina, DEKAY.

L'Ombrine coraïde, *Umbrina coroides*, CUV. et VAL., v. p. 187, pl. 117.
 " " Southern King-fish, DEKAY's Report, p. 79, pl. 72, fig. 231.

4. *Umbrina Broussonnetii*, CUV.

One fourth as high as long. Barbel short and pointed. All the teeth velvety. Preopercular teeth well marked. Dorsal spines slender.

D. 10, 1-25. P. (?). V. (?). A. 2-6. C. (?). Length, (?).

Caribbean Sea, CUV.

L'Ombrine de Broussonnet, *Umbrina Broussonnetii*, CUV. et VAL., v. p. 187.

GENUS VIII. POGONIAS, LACEP.

Resembles the *Umbrinae*, but instead of a single barbule under the jaw, there are several.

1. *Pogonias chromis*, LACEP.

Large; body compressed and deep. Brownish bronze, varying from blackish to reddish. A black spot behind the pectorals. Ten or eleven cirrhi suspended from about the chin.

D. 9, 1-22. P. 18. V. 6. A. 2-7. C. 17 $\frac{3}{4}$. Length, 24 inches.

New York, MITCHILL, CUV., DEKAY. New York to Florida, DEKAY.

Labrus chromis, LIN.

Sciæna fusca, Black Drum, *Sciæna gigas*, Red Drum, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., 1. pp. 403, 412, pl. 5, fig. 10.

Le grand *Pogonias*, *Pogonias chromis*, CUV. et VAL., v. p. 206.

" " Big Drum, DEKAY's Report, p. 80.

2. *Pogonias fasciatus*, LACEP.

Dusky, banded with four or five blackish vertical bands. The fishermen suppose this species to be the young of the preceding.

B. 7. D. 10-23. P. 17. V. 6. A. 7. C. 19. Length, 7 inches.

New York, MITCHILL. South Carolina, DEKAY.

Called "Grunter," "Young Drum," "Grunts," "Young Sheepshead."

Labrus grunniens, Grunts, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., 1. p. 405, pl. 3, fig. 3.

Le *Pogonias à bandes* (*Pogonias fasciatus*, LACEP.), CUV. et VAL., v. p. 210, pl. 118.

Pogonias fasciatus, WILSON, Encyclop. Brit., Art. Ichthyology, p. 176, pl. 299, fig. 13.

" " Banded Drum, DEKAY's Report, p. 81, pl. 14, fig. 40.

GENUS IX. MICROPOGON, CUV.

The prominent snout and general form of *Umbrina*, with a few scarcely apparent cirrhi or barbules under the lower jaw. Preoperculum dentated,

with two spines at the angle. Operculum with two flat points. Five pores under the chin. Dorsal fin deeply divided.

1. *Micropogon costatus*, MITCHILL.

Silvery; blackish upon the operculum; with about twenty narrow gray or blackish bands over the back and along the sides, directed obliquely forwards. In young specimens, two or three longitudinal bands are formed upon the dorsal fins by small brownish spots. Ventrals yellowish. The other fins gray.

D. 10, 1-28 or 29. P. 17. V. 1-5. A. 2-8. C. 17. Length, 10 to 15 inches.

New York, MITCHILL, CUV. Gulf of Mexico, Caribbean Sea, CUV.

Bodianus costatus, Middle Grunts, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 417.

Le Micropogon rayé (*Micropogon lineatus*, CUV., *Umbrina Fournieri*, DESMER, *Sciæna opercularis*, Q. et G.), CUV. et VAL., V. p. 215.

Micropogon costatus, Banded Corvino, DEKAY'S Report, p. 83, pl. 72, fig. 230.

2. *Micropogon undulatus*, CUV.

Neither vertical bands nor oblique lines, but indistinct brownish spots upon the back.

D. (?). P. (?). V. (?) A. (?). C. (?). Length, 13 inches.

Chesapeake and Delaware Bays, SCHEPFF. Carolina, CATESBY. New Orleans, CUV.

Called "Grunter," at New Orleans, and "Croker," in South Carolina.

Le Micropogon ondulé (*Micropogon undulatus*, CUV., *Perca undulata*, L.), CUV. et VAL., V. p. 219.

Micropogon undulatus, DEKAY'S Report, p. 84.

GENUS X. *HÆMULON*, CUV.

Have rather a lengthened profile, which has been thought to have some resemblance to that of a pig. The lower jaw is compressed, and opens wide, having under its symphysis two pores and a little oval dimple; teeth even; those parts of the lower jaw which are drawn in when the mouth shuts are generally of a bright red, from which they derive their name. Their single dorsal is a little emarginated; the soft part of it is scaly.

1. *Hæmulon formosum*, CUV.

Of a golden gray color; the head is marked with about a dozen steel-colored lines on each side. The second anal spine is very robust.

D. 12-16. P. 17. V. 1-5. A. 3-9. C. 17. Length, 11 inches.

New York, DEKAY. Carolina, LIN. Caribbean Sea, CUV.

Called "Crocro doré," at St. Domingo.

Perca marina capite striato, Grunt, CATESBY'S Hist. Carol., II. pl. 6, fig. 1.

Perca formosa, LIN., Sys. Nat. (12th edit.), p. 488.

La Belle Gorette (*Hæmulon formosum*, CUV., *Perca formosa*, L., *Labre Plumierien*, LACEP.), CUV. et VAL., v. p. 230.

Hæmulon formosum, Squirrel-fish, DEKAY'S Report, p. 86, pl. 20, fig. 59.

2. *Hæmulon chrysopteron*, CUV.

Silver-colored; darker above; obscure dark stripes upon the head. The ventrals and anal are tinged with yellow and orange. The other fins are of a brown horn-color.

D. 12-15. P. 17. V. 1-5. A. 3-9. C. 15½. Length, 11 inches.

New York, CUV., DEKAY. South Carolina, CATESBY.

Perca marina gibbosa cinerea, Margate-fish, CATESBY'S Hist. Carol., II. pl. 2, fig. 1.

Perca chrysoptera, LIN., Sys. Nat. (12th edit.), p. 488.

La Gorette à nageoires fauves, *Hæmulon chrysopteron*, CUV. et VAL., v. p. 240.

Hæmulon chrysopteron, Yellow-finned Red-mouth, DEKAY'S Report, p. 85, pl. 7, fig. 22.

3. *Hæmulon elegans*, CUV.

Yellow, with seven or eight silvery lines upon each side, which are continued on to the head; those towards the back irregular and more separated. Lips bright red. Ventrals orange. Pectorals rose-colored. Dorsal, anal, and caudal, olive.

D. 12-16. P. 17. V. 1-5. A. 3-9. C. 17. Length, 7 or 8 inches.

Caribbean Sea, CUV.

Called "Ronco," at Porto Rico; at St. Domingo, "Crocro gueule-rouge."

Anthias formosus, BL., p. 323.

La Gorette élégante, *Hæmulon elegans*, CUV. et VAL., v. p. 227.

4. *Hæmulon canna*, CUV.

Silvery, obliquely rayed with fifteen or sixteen wide brown bands. Fins more or less orange or brown.

D. (?). P. (?). V. (?). A. (?). C. (?). Weight, 1½ pounds.

Caribbean Sea, CUV.

Called "Canne-canne," at Martinique.

La Gorette canne-canne, *Hæmulon canna*, CUV. et VAL., v. p. 233.

5. *Hæmulon xanthopteron*, CUV.

Golden, with oblique steel-colored lines. Two horizontal brown lines above and beneath the lateral line. Pectorals yellow. A row of conical and pointed teeth in each jaw; the anterior, in the upper jaw, the larger. The second and third anal spine very stout.

D. 12-14. P. 18. V. 1-5. A. 3-9. C. 17. Length, 13 inches.

Caribbean Sea, CUV.

La Gorette à nageoires jaunes, *Hæmulon xanthopteron*, CUV. et VAL., v. p. 234.

6. *Hæmulon heterodon*, CUV.

Similar to the *H. canna* in its color, but the bands are less numerous than in that species. The soft portion of the dorsal and anal fins are entirely scaly, also the greater portion of the caudal fin. Some of the lateral teeth of the upper jaw, near the angle, are longer than the others, and slightly diverge.

D. 12-14. P. (?). V. (?). A. 3-8. C. (?). Length, (?).

Gulf of Mexico, Caribbean Sea, CUV.

La Gorette Chaponne, *Hæmulon heterodon*, CUV. et VAL., v. p. 235.

7. *Hæmulon aurolineatum*, CUV.

Silvery, with longitudinal lines; the first and fourth of these lines, which are one above and the other beneath the lateral line, at equal distances, are broader than the others. A brown spot at the base of the caudal fin. Fins yellowish gray.

D. 13-15. P. (?). V. (?). A. 3-8. C. (?). Length, 6 or 7 inches.

Caribbean Sea, CUV.

Called "Croco," at St. Domingo.

La Gorette rayée d'or, *Hæmulon aurolineatum*, CUV. et VAL., v. p. 237.

8. *Hæmulon quadrilineatum*, CUV.

Silvery; grayish towards the back, with four longitudinal lines, the two upper brown, the two lower golden; one is above the lateral line; the second includes this line; the third passes through the eye, beneath the lateral line; the fourth runs from the pectorals to the tail. Dorsal fin grayish brown. Caudal brown. The other fins whitish.

D. 13-14. P. (?). V. (?). A. 3-8. C. (?). Length, 6 or 7 inches.

Caribbean Sea, CUV.

Called "Crieri," at St. Domingo.

La Gorette à quatre lignes, *Hæmulon quadrilineatum*, CUV. et VAL., v. p. 238, pl. 120.

" " " " WILSON, Encyclop. Brit., Art. Ichth., pl. 300, fig. 1.

9. *Hæmulon album*, CUV.

Of a dull silvery-white color. No canines. Preopercular denticulations exceedingly fine. A row of compact, small, conical teeth in jaws.

D. 12-16. P. 18. V. 1-5. A. 3-9. C. 17. Length, 2 feet.

Caribbean Sea, CUV.

La Gorette blanche, *Hæmulon album*, CUV. et VAL., v. p. 241.

10. *Hæmulon chromis*, CUV.

Silvery, with a brown spot between each of the dorsal spines. Teeth similar to those of the *H. album*.

D. 12-17. P. (?). V. (?). A. 3-7. C. (?). Length, 6 inches.

Caribbean Sea, Cuv.

La Gorette de Broussonet, Hæmulon chromis, Cuv. et VAL., v. p. 242.

11. *Hæmulon fulvo-maculatum*, MITCHILL.

Rows of yellow-sprinkled oblique stripes above the lateral line, and horizontal stripes of a similar color beneath it.

D. 12-15. P. 18. V. 1-5. A. 3-12. C. 17. Length, 6 inches.

New York, MITCHILL, DEKAY.

Labrus fulvo-maculatus, Speckled Grunts, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., 1. p. 406.
Hæmulon fulvo-maculatum, Speckled Red-mouth, DEKAY'S Report, p. 84, pl. 7, fig. 21.

12. *Hæmulon arcuatum*, Cuv.

Body elevated. Of a dark blackish green color, with a brilliant gilded crescent on each scale. Fins blackish. The teeth, particularly of the lower jaw, very large.

D. 11-17. P. (?). V. (?). A. 3-9. C. (?). Length, 11 inches.

South Carolina, Cuv.

La Gorette à croissant, Hæmulon arcuatum, Cuv. et VAL., IX. p. 481.
" " DEKAY'S Report, p. 87.

GENUS XI. PRISTIPOMA, Cuv.

Have the same preoperculum, the same pores under the symphysis, as the *Hæmulons*; but their snout is thicker, their mouth smaller, their dorsal and anal fins have no scales; their operculum terminates in a blunt angle, hidden in its membranous edge.

1. *Pristipoma rodo*, Cuv.

The head and breast of this species are silvery, shaded with gray. A broad black band descends from the nape of the neck across the eye to the angle of the jaws; a second band, situated before the dorsal, descends to and terminates at the pectorals. Behind this, upon each side, the body is divided into fifteen longitudinal lines, alternately golden and steel-colored. The edges of the scales are silvery, and the fins are yellow.

D. 12-17. P. 16. V. 1-5. A. 3-10. C. 17. Length, 8 to 11 inches.

Virginia, Carolina, LIN. Gulf of Mexico, Caribbean Sea, Cuv.

Called "Rodo," at Martinique; "Fin," at St. Domingo; "Parapel," at Guadaloupe; "Catalineta," at Havana; "Juannita," "Mariquita," at Porto Rico.

Sparus Virginicus, Virginian Sparus, L., SHAW'S Gen. Zool., IV. p. 436.
Le Pristipome rodo (Pristipoma rodo, Cuv.), Cuv. et VAL., v. p. 274.

2. *Pristipoma coro*, Cuv.

Silvery, with eight transverse brown bands. The outer row of teeth conical; the four anterior, in each jaw, larger than the others; no teeth on the palatine bones. All the head, except the jaws, scaled. The second anal spine is large and very stout.

D. 12-13. P. 15. V. 1-5. A. 3-7. C. 17. Length, 6 inches.

Caribbean Sea, Cuv.

Sciæna coro, BL., SHAW'S Gen. Zool., iv. p. 538.
Le *Pristipome coro*, *Pristipoma coro*, Cuv. et VAL., v. p. 266.

3. *Pristipoma fasciatum*, Cuv.

Of a grayish brown color, with eight or nine clouded, blackish bands, alternately wider and narrower; oblique lines upon the back, and a longitudinal brown band upon the top of the operculum. Thirteen soft anal rays, of which the third is longer than the second.

D. 12-16. P. 16. V. 1-5. A. 3-13. C. 17. Length, 5 to 8 inches.

New York, Cuv.

Le *Pristipome à bandes* (*Pristipoma fasciatum*, Cuv.), Cuv. et VAL., v. p. 285.
Pristipoma fasciatum, Banded *Pristipoma*, DEKAY'S Report, p. 87.

4. *Pristipoma crocro*, Cuv.

Silvery brown. Dorsal brown, with a whitish line at its base; the edge of its spinous portion blackish. The other fins brown. Upper jaw slightly projecting. Teeth very fine; preopercular dentations delicate. The second anal spine stout.

D. 13-12 or 14-11. P. 16. V. 1-5. A. 3-7. C. 17. Length, 6 or 7 inches.

Caribbean Sea, Cuv.

Called "Crocro," at Martinique.

Le *Pristipome crocro*, *Pristipoma crocro*, Cuv. et VAL., v. p. 264.

5. *Pristipoma bilineatum*, Cuv.

Length two and a half times its height. Golden gray, lighter beneath, more silvery upon suborbitals. Two longitudinal dark-brown bands upon the sides; one arising upon the top of the head and passing above the lateral line to the posterior base of the soft portion of the dorsal; the other, arising at the eye, passes through the centre of the body to the tail, where it terminates in a black spot. The anterior teeth rather stouter than the others. Second anal spine very stout; the third spine as stout, but shorter.

D. 12-15. P. 17. V. 1-5. A. 3-9. C. 17. Length, 4½ inches.

Caribbean Sea, Cuv.

Called "Luppé," at Martinique.

Le *Pristipome à deux lignes*, *Pristipoma bilineatum*, Cuv. et VAL., v. p. 271, pl. 122.
" " " WILSON, Encyclop. Brit., Art. Ichth., pl. 300, fig. 3.

6. *Pristipoma serrula*, Cuv.

More elongated than the bilineatum; eyes larger. Violet-colored above, with four or five longitudinal yellow lines; beneath silvery. The second and third anal rays of equal length.

D. 12-13. P. 15. V. 1-5. A. 3-9. C. 17. Length, 7 inches.

Caribbean Sea, Cuv.

Le Pristipome petite-scie, Pristipoma serrula, Cuv. et VAL., v. p. 272.

7. *Pristipoma auratum*, Cuv.

Of an uniform golden color, throughout. The number of the fin rays the same as in the *P. serrula*.

D. 12-13. P. 15. V. 1-5. A. 3-9. C. 17. Length, 6 inches.

Caribbean Sea, Cuv.

Le Pristipome doré, Pristipoma auratum, Cuv. et VAL., v. p. 272.

NOTE. DeKay has admitted into his *extra-limital* species the *Pristipoma rubrum*, although he does not mention its habitat; and Cuvier, in his "Histoire Naturelle des Poissons," speaks of it as being found only in Brazil.

GENUS XII. LOBOTES, Cuv.

The snout is short, the lower jaw turned up in front, the body elevated; the dorsal and anal lengthen their posterior angle, so that, with their rounded caudal, their body seems to terminate in three lobes. Preoperculum with strong dentations. They have four clusters of very small spots towards the end of their jaw.

1. *Lobotes Surinamensis*, Cuv.

Elliptical, deepest opposite the first dorsal ray. The color of the back and sides is a rusty black; of the belly, a dirty clay, variegated with blackish and yellowish specks. Dorsal, anal, and ventral fins yellowish.

D. 12-15. P. 17. V. 1-5. A. 3-11. C. 17. Length, 13 inches or more.

New York, MITCHILL. This species is also found in Brazil, and of course along the whole coast.

Le Lobotes de Surinam (Lobotes Surinamensis, Cuv., Holocentrus Surinamensis, BL., p. 243, Bodianus triurus, MITCHILL?), Cuv. et VAL., v. p. 319.

Bodianus triurus, Triple-tailed Perch, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., t. p. 413, pl. 3, fig. 10. Lobotes Surinamensis, Black Triple-tail, DEKAY'S Report, p. 83, pl. 18, fig. 49.

2. *Lobotes somnolentus*, Cuv.

Silvery brown. The soft portions of the dorsal and anal fins, and the extremity of the

caudal fin, black. Pectorals yellowish; ventrals silvery. Dentations upon the preopercle short and wide, and those at its angle truncated and denticulated.

D. 12-16. P. (?). V. (?). A. 3-11. C. (?). Length, 16 inches.

Caribbean Sea, CUV.

Called "Dormeur," at St. Domingo.

Le Lobotes dormeur, *Lobotes somnolentus*, CUV. et VAL., v. p. 324, pl. 126.

" " WILSON, Encyclop. Brit., Art. Ichth., p. 300, fig. 4.

GENUS XIII. POMACENTRUS, LACEP.

Oblong; head obtuse; teeth in a single row; preoperculum denticulated, operculum unarmed; five branchial rays; the lateral line stops beneath the soft portion of the dorsal. Suborbitars sometimes dentated.

1. *Pomacentrus planifrons*, CUV.

Profile rectilinear. Brown; a black spot at the base of the pectorals, beneath; another back of the dorsal, above the tail. Dorsal and anal pointed.

D. 12-15. P. (?). V. (?). A. 2-13. C. 17. Length, 3 inches.

Caribbean Sea, CUV.

Called, at Martinique, "Petite-jaquette."

Le Pomacentre à front plat, *Pomacentrus planifrons*, CUV. et VAL., v. p. 431.

GENUS XIV. GLYPHISODON, LACEP.

Body compressed, oval, covered, as well as the head, with large scales. Profile rounded. Operculum and preoperculum smooth; a single row of trenchant and generally notched teeth.

1. *Glyphisodon saxatilis*, LACEP.

Silvery, with golden reflections towards the back, and blue towards the head. Fins bluish. Tail deeply forked. A single row of from thirty-six to forty compact, equal, straight teeth in each jaw. When preserved, it is of a yellowish gray color, with five broad, blackish vertical bands. Fins blackish.

D. 13-13. P. 18. V. 1-5. A. 2-12. C. 15. Length, 6 to 8 inches.

Caribbean Sea, CUV.

Chætodon saxatilis, BLOCH, pl. 206, fig. 2.

" " Rock *Chætodon*, SHAW'S Gen. Zool., IV. p. 364.

Le Glyphisodon saxatile (*Glyphisodon saxatilis*, LACEP.), CUV. et VAL., v. p. 446.

2. *Glyphisodon chrysurus*, Cuv.

Chocolate-colored. Caudal fin yellow. Dorsal and anal fins almost covered with scales, as in the true *Squamipennes*. At least fifty teeth in the lower, and nearly eighty teeth in the upper jaw.

D. 12-16. P. 18. V. 1-5. A. 2-13. C. 17. Length, 5½ inches.

Caribbean Sea, Cuv.

Le Glyphisodon à queue d'or, Glyphisodon chrysurus, Cuv. et VAL., v. p. 476.

GENUS XV. *HELIASUS*, Cuv.

Body ovate, compressed; mouth small, no denticulations upon the preoperculum; large scales; teeth small and rounded.

1. *Heliasus insolatus*, Cuv.

Grayish. Suborbitals circular and scaled. Eyes large. A narrow band of velvety teeth in each jaw. Caudal emarginated.

D. 13-12. P. 17. V. 1-5. A. 2-12. C. 17. Length, 4 inches.

Caribbean Sea, Cuv.

Called, at Martinique, "Chauffe-soleil."

L'Héliase chauffe soleil, Heliasus insolatus, Cuv. et VAL., v. p. 494, pl. 137.

FAMILY IV. SPARIDÆ.

This family is characterized by the opercular pieces being unarmed; the palate toothless; the jaws not protractile; scales large. Branchial rays not exceeding six.

GENUS I. *SARGUS*, Cuv.

Trenchant incisors in front of the jaws, almost similar to those of man; molars rounded.

1. *Sargus ovis*, MITCHILL.

Elliptical. White, or obscure silvery, with a smutty daubing over the face and chin, a greenish tinge above the brow, and six or seven dark bands or zones, of an inch or more in breadth, regularly slanting from back to belly; the latter a dull white, approaching in some places and individuals to cream-color. Anal black, with ten soft rays. In front of each jaw, six to eight quadrilateral incisors; inside of these, above and beneath, two or three series of numerous rounded, flattened, paved teeth. The form of the mouth, and a certain smuttiness of the face, have a distant resemblance to the physiognomy of the sheep.

D. 12-13. P. 14. V. 1-5. A. 3-11. C. 17. CUV.

D. 24. P. 6. V. 6. A. 13. C. 19. MITCHILL. Length, 14 to 20 inches.

Massachusetts, STORER. Connecticut, AYRES. New York, MITCHILL, CUV., DEKAY.
Lake Pontchartrain, Louisiana, LESUEUR.

Sparus ovis, Sheepshead, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 392, pl. 11, fig. 5.

Le Sargue tête-de-mouton, *Sargus ovis*, CUV. et VAL., VI. p. 53.

Sargus ovis, Sheepshead, STORER'S Report, p. 36.

" " " DEKAY'S Report, p. 89, pl. 8, fig. 23.

" " " AYRES, Bost. Journ. Nat. Hist., IV, 260.

2. *Sargus rhomboides*, CUV.

Silvery, rayed longitudinally with twenty-four or twenty-five gilded bands. Four or five brownish bands descend from the back upon the sides, being more or less visible as the rays of light glance upon the fish. Behind the shoulder, a blackish spot crosses the lateral line. The dorsal is grayish; the anal yellow, margined with violet; the caudal olive-yellow; the pectorals and ventrals of a brighter yellow than the other fins. Eight cutting teeth above, and eight below, notched on their summits.

D. 12-11. P. 17. V. 1-5. A. 3-10. C. 17. Length, 3 to 5 inches.

New York, Carolina, New Orleans, Lake Pontchartrain, CUV.

Sparus rhomboides, LIN., Syst. Nat. (12th edit.), p. 170.

" " Rhomboid Sparus, SHAW'S Gen. Zool., IV. p. 447.

Le Sargue rhomboide, *Sargus rhomboides*, CUV. et VAL., VI. p. 63, pl. 143.

" " Rhomboid Porgee, DEKAY'S Report, p. 93, pl. 71, fig. 228.

3. *Sargus arenosus*, DEKAY.

Small. Banded as in the preceding. A short spine directed forwards in front of the dorsal fin. A series of six flat, chisel-shaped teeth in front of the upper jaw, with their tips somewhat enlarged, and a row of eight similar shaped in the lower. Behind these, in both jaws, two or three series of small, rounded, molar-like teeth, which increase in size on the sides of the jaws.

D. 1-12, 11. P. 16. V. 1-5. A. 3-12. C. 20. Length, 6 inches.

New York, DEKAY.

Sargus arenosus, Sand Porgee, DEKAY'S Report, p. 91, pl. 22, fig. 67.

4. *Sargus flavolineatus*, CUV.

Back bluish, silvery beneath; thirteen or fourteen longitudinal lines upon the sides, scarcely visible upon the abdomen. Dorsal fin bluish; its soft portion reddish. Caudal and anal red, pectorals blackish, ventrals gray. The incisors are broad and vertical; molars of moderate size.

D. 13-11. P. 17. V. 1-5. A. 3-10. C. 17. Length, 9 inches.

Caribbean Sea, Cuv.

Called, at Cuba, "Grand-goré."

Le Sargue à lignes jaunes, *Sargus flavolineatus*, Cuv. et VAL., VI. p. 60.

5. *Sargus unimaculatus*, Cuv.

Silvery, grayish towards the back, with twenty narrow, golden, longitudinal bands upon each side. Back of the operculum, beneath the lateral line, a blackish spot. The soft portion of the dorsal fin, the anal and caudal, yellow; pectorals pale; ventrals blackish. Six incisors in the upper jaw, eight in the lower jaw, each of which is notched in the middle of its edge. Back of these, in the upper jaw, three rows of small, rounded molars; and two rows in the lower.

D. 13-10. P. 14. V. 1-5. A. 3-10. C. 17. Length, 3 to 7 inches.

Caribbean Sea, Cuv.

Le Sargue unimaculé, *Sargus unimaculatus*, Cuv. et VAL., VI. p. 62.

GENUS II. CHRYSOPHRIS, Cuv.

Round molars on the sides of the jaws, forming at least three rows on the upper one; a few conical or blunt teeth in front.

1. *Chrysophris aculeata*, Cuv.

Body elongated. A short, stout, recumbent spine before the dorsal. When preserved in spirits, this species is of a silvery white color, with a slight reddish tint upon the sides, which are marked by a score of golden longitudinal lines. The head is very showy, and has golden reflections. The suborbital bones, the dorsal and anal fins, are reddish. The ventrals are red. The caudal is gray.

D. 12-12. P. 16. V. 1-5. A. 3-12. C. 17. Length, 22 inches.

New York, Cuv.

La Daurade aiguillonnée, *Chrysophris aculeata*, Cuv. et VAL., VI. p. 137.

" " Aculeated Gilt-head, DEKAY'S Report, p. 94, pl. 71, fig. 229.

GENUS III. PAGRUS, Cuv.

Differs from *Chrysophris* in having but two rows of small, rounded molar teeth in each jaw.

1. *Pagrus argyrops*, LIN.

Body very much compressed at its sides; back gibbous, gradually curving towards the tail. General color, beautiful silvery, varying with brown, reddish, and blue. Head

scaleless, and of a purple color. Abdomen white. A large, semicircular scale, of a beautiful purple color, at the commencement of the lateral line; between this scale and the outer angle of a naked space, at the posterior angle of the eye, a band, half an inch or more in width, of smaller scales than those of the body, passes obliquely upwards to the anterior portion of the ridge of the back. A short recumbent spine in front of the dorsal fin. The second and third dorsal rays often filamentous.

D. 24. P. 15. V. 6. A. 15. C. 17. Length, 8 to 12 inches.

Massachusetts, STORER. Connecticut, AYRES. New York, MITCHILL, CUV., DEKAY.
South Carolina, LIN.

Sparus argyrops, LIN., Syst. Nat., GMEL., p. 1277.

" " Silver-eyed Sparus, SHAW'S Gen. Zool., IV. p. 426.

Labrus versicolor, Big Porgee of New York, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 404, pl. 3, fig. 7.

Le Pagre œil-d'argent, *Pagrus argyrops*, CUV. et VAL., VI. p. 164.

" " Big Porgee, Scapaug, Scup, STORER'S Report, p. 33.

" " Big Porgee, DEKAY'S Report, p. 95, pl. 9, fig. 25.

" " Porgee, AYRES, Bost. Journ. Nat. Hist., IV. p. 260.

GENUS IV. PAGELLUS, CUV.

Teeth nearly resembling those of *Pagrus*, but the molars, also in two rows, are smaller; the conical teeth in front are slender and more numerous; and the physiognomy is different, in consequence of a more elongated muzzle.

1. *Pagellus calamus*, CUV.

Forehead and neck more elevated than in any other species of this genus. Reddish; sub-orbitars spotted with bluish points. About twenty-two rows of sixty-five scales upon each side. In the upper jaw are two straight, pointed teeth, stouter than the others; molars in three rows upon the upper jaw, and in two rows upon the lower jaw, the inner row stoutest. This species derives its name from the first anal spine, which resembles a quill cut into a pen.

D. 12-12. P. 14. V. 1-5. A. 3-11. C. 17. Length, 1 foot.

Caribbean Sea, CUV.

Le Pagel à plume, *Pagellus calamus*, CUV. et VAL., VI. p. 206, pl. 152.

FAMILY V. MENIDÆ.

The individuals of this family are similar in their forms to the Sparoides, but they are distinguished from that family by their very protractile mouth, and, in some instances, by the presence of teeth on the vomer, or denticulations on the preoperculum.

GENUS I. SMARIS, CUV.

Body oblong, compressed, and somewhat similar to that of a herring; an elongated scale above each of the ventrals, and another between them. Teeth in jaws extremely fine, forming a very narrow band. Vomer destitute of teeth.

1. *Smaris Martinicus*, CUV.

Body rounded, contracted. Reddish upon the back, silvery beneath; a small black spot upon the side.

D. 11 - 11. P. (?). V. (?). A. 3 - 9. C. (?). Length, 4 inches.

Caribbean Sea, CUV.

Le Picarel de la Martinique, Smaris Martinicus, CUV. et VAL., VI. p. 424.

GENUS II. GERRES, CUV.

The mouth protractile, but when advancing it descends; the body is elevated, the anterior part of the dorsal in particular, along the base of whose posterior portion is a scaly sheath.

1. *Gerres aprion*, CUV.

Elongated. Silvery, with bluish reflections towards the back, as in the most beautiful herring. The dorsal, in the recent state, is a very pale yellow, finely dotted with blackish. This species receives its name from its preoperculum being unarmed; also the interopercle and suborbitar.

B. 6. D. 9 - 10. P. (?). V. (?). A. 3 - 7. C. (?). Length, 3 to 6 inches.

South Carolina, CATESBY. Caribbean Sea, CUV.

Turdus cinereus peltatus, Shad, CATESBY'S *Hist. Carol.*, II. pl. 2, fig. 2.

Le Gerres sans scie, *Gerres aprion*, CUV. et VAL., VI. p. 461.

“ “ “ DEKAY'S Report, p. 97.

2. *Gerres Brasilianus*, CUV.

Height equal to one fifth of its length. Silvery gray, with ten or eleven longitudinal lines upon the sides.

D. 9 - 10. P. 16. V. 1 - 5. A. 3 - 9. C. 17. Length, 8 or 9 inches.

Caribbean Sea, CUV.

Called, at Porto Rico, “Moharra.”

Le Gerres du Brésil, Gerres Brasilianus, CUV. et VAL., VI. p. 458.

3. *Gerres Plumieri*, Cuv.

Compressed; height one third of its length; length three and a half times its thickness. Silvery, with longitudinal grayish lines, seven or eight of which are distinct; the others disappear towards the abdomen. The lower edge of the suborbitals has a slight reëntering angle, and is denticulated.

D. 9-10. P. 15. V. 1-5. A. 3-9. C. 17. Length, 6 inches to a foot.

Caribbean Sea, Cuv.

Called, at Porto Rico, "El moharra."

Le Gerres de Plumier, Gerres Plumieri, Cuv. et VAL., VI. p. 452.

4. *Gerres rhombeus*, Cuv.

Height equal to one half of its length, not including the tail. Silvery; the membrane of the dorsal fin a very pale yellow; the ventrals, and the anterior portion of the anal fin in young specimens, are of a beautiful jonquille-yellow. The lower edge of the suborbitals is without denticulations.

D. 9-10. P. 16. V. 1-5. A. 2-9. C. 17. Length, 7 inches.

Caribbean Sea, Cuv.

Le Gerres rhomboide, Gerres rhombeus, Cuv. et VAL., VI. p. 459.

5. *Gerres gula*, Cuv.

Very similar to the *G. aprion* in its proportions; but the second anal spine is shorter in proportion; it is only a fifth of the height of the fish. In the *G. aprion*, it is one third. The third spine, also, is longer in this species than the second. Its snout is broader, and its profile more regular. Color same as that of *G. aprion*.

D. 9-10. P. (?). V. (?). A. 3-7. C. (?). Length, 5 inches.

Caribbean Sea, Cuv.

Le Gerres petite gueule, Gerres gula, Cuv. et VAL., VI. p. 464.

FAMILY VI. CHETODONTIDÆ.

Body compressed, scaly. The dorsal and anal fins covered with scales, especially on the soft portions. Teeth bristly or trenchant. Palatines smooth, or furnished with teeth. Preopercula occasionally spinous. Dorsals two, or one only.

GENUS I. CHÆTODON, LIN.

The body more or less elliptical; the spinous and soft rays continuing in an

uniform curve ; the snout projecting more or less, and sometimes a very fine denticulation on the preoperculum.

1. *Chætodon striatus*, LIN.

Roundish ovate. Whitish, tinged with yellowish brown, with five vertical dark-brown bands. Several narrow, longitudinal, dusky streaks between the rows of scales.

B. 6. D. 12-20. P. 15. V. 1-5. A. 3-16. C. 17. Length, 5 inches.

Caribbean Sea, Cuv.

Called "Zebre," or "Onagre," at Guadaloupe.

Chætodon striatus, LIN., GMEL., 1249.

" " BLOCH, VI. p. 66, pl. 205, fig. 1.

" " " Striped *Chætodon*, SHAW'S Gen. Zoöl., IV. p. 334.

Le *Chétodon barré*, *Chætodon striatus*, LIN., CUV. et VAL., VII. p. 10.

2. *Chætodon capistratus*, LIN.

Ovate. Violet-colored when fresh, with oblique brown lines directed forwards. A large, round, black spot, surrounded with a white margin, at the posterior part of the body. A brown and a whitish line parallel to their borders, upon the dorsal and anal, and two similar vertical bands upon the tail.

D. 13-19. P. (?). V. (?). A. 3-17. C. 17. Length, 3½ inches.

Gulf of Mexico, Caribbean Sea, Cuv.

Called "Striped Angel-fish," at Jamaica ; "Demoiselle," at Martinique ; "Young Girl," at St. Thomas.

Chætodon capistratus, LIN., Mus. Acad. Fred., pl. 33, fig. 4.

" " BLOCH, VI. p. 65, pl. 205, fig. 2.

Le *Chétodon bridé*, *Chætodon capistratus*, LIN., CUV. et VAL., VII. p. 64.

3. *Chætodon bimaculatus*, BLOCH.

Roundish ovate. White, fins yellow. The dorsal marked at the base of the hind part by a large, round, black spot, bordered with white, and at its extreme edge by a much smaller spot, of similar colors.

D. 12-21. P. 15. V. 1-5. A. 3-17. C. 17. Length, (?).

Gulf of Mexico, Caribbean Sea, Cuv.

Called "Catalineta," at Havana ; "Mariquita," at Porto Rico.

Chætodon bimaculatus, BLOCH, pl. 219? fig. 1?

" " " SHAW'S Gen. Zoöl., IV. p. 333.

Le *Chétodon à deux taches*, *Chætodon bimaculatus*, BL., CUV. et VAL., VII. p. 67.

GENUS II. EPHIPPUS, CUV.

Dorsal deeply emarginated between the spinous and soft rays ; the spinous

part, which has no scales, can be folded into a groove formed by the scales of the back.

1. *Ephippus faber*, BLOCH.

Orbicular. Brownish, with six broad, vertical, dusky bluish bands; fins of the same color as the bands. Sixty-five scales between the gills and tail, and forty-eight between the back and abdomen.

D. 9, 3-22. P. 18. V. 1-5. A. 3-18. C. 16. Length, 9 inches.

New York, MITCHILL, CUV., DEKAY. Carolina, Caribbean Sea, CUV.

Called "Three-tailed Sheepshead," "Three-tailed Porgee," and "Angel-fish."

Chaetodon faber, BLOCH, p. 80, pl. 212, fig. 2.

" " SHAW'S Gen. Zoöl., IV. p. 340.

" " Cloudy *Chaetodon*, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. pl. 5, fig. 4.

Chaetodon oviformis, MITCHILL, Amer. Month. Mag., II. p. 247.

L'Ephippus forgeron, *Ephippus faber*, CUV. et VAL., VII. p. 113.

" " DEKAY'S Report, p. 97, pl. 23, fig. 68.

2. *Ephippus gigas*, PARKINSON.

Oblong oval. Of a uniform silvery or leaden color. Crest of the cranium enlarged. The first interspinous bone of the anal fin is club or mallet-shaped. Much larger than the preceding species.

D. 8, 1-21. P. 17. V. 1-5. A. 3-17. C. 17. Length, 16 inches.

New York, CUV., DEKAY. Caribbean Sea, CUV.

Called "Moon-fish," in the Antilles.

Chaetodon gigas, PARKINSON.

L'Ephippus géant, *Ephippus gigas*, CUV. et VAL., VII. p. 121.

" " Moon-fish, DEKAY'S Report, p. 99, pl. 23, fig. 71.

GENUS III. *HOLACANTHUS*, LACEP.

Form oval or oblong. A large spine at the angle of the preoperculum, and the edges of the same bone in most species denticulated.

1. *Holacanthus ciliaris*, LACEP.

Greenish, with a golden tinge. The pectoral, ventral, and caudal fins of an orange-yellow color. An annular dark-brown spot, with a blue margin, upon the neck before the dorsal fin. Scales moderate, and ciliated round their edges with numerous hair-like processes.

D. 14-21. P. 18. V. 1-5. A. 3-20. C. 17. Length, 14 inches.

Carolina, CATESBY? RICHARDSON. Gulf of Mexico, Caribbean Sea, CUV.

Called "Hairy Angel-fish," by BLOCH; "Patate," at Martinique; "Polometa," at Porto Rico.

Isabelita, PARRA, p. 11, pl. 7, fig. 1.

Chaetodon ciliaris, BLOCH, VI. p. 83, pl. 214.

" " SHAW'S Gen. Zoöl., IV. p. 326.

L'Holacanthé ciliare (*Holacanthus ciliaris*, LACEP.), CUV. et VAL., VII. p. 154.

2. *Holacanthus tricolor*, BLOCH.

Head, neck, shoulders, throat, breast, and also the pectorals and ventrals, yellow. The rest of the body black, except the tail, which is yellow. The preopercular spine, the membrane between the anal spines, and, in the female, a portion of the lower edge of the same fin, a portion also of the dorsal, is of a vermilion-red.

D. 14-19. P. 18. V. 1-5. A. 3-18. C. 17. Length, 11 inches.

Gulf of Mexico, Caribbean Sea, PARRA, CUV.

Called "Moubin," at Martinique.

Catalineta, PARRA, p. 12, pl. 7, fig. 2 (male).

Chætodon tricolor, BLOCH, p. 425?

" " " SHAW'S Gen. Zoöl., IV. p. 360.

L'Holacanthus tricolor (*Holacanthus tricolor*, BL.), CUV. et VAL., VII. p. 162.

GENUS IV. POMACANTHUS, CUV.

Form more elevated than in the *Holacanthus*; more dorsal spines; no denticulations upon the suborbitals or preopercle.

1. *Pomacanthus aureus*, BLOCH.

Of a bright golden yellow, shaded with orange on the upper part. Ventrals brownish. The extended parts of the dorsal and anal fins reaching beyond the tail.

D. 9-30. P. 18. V. 1-5. A. 3-24. C. 17. Length, 15 inches.

Caribbean Sea, CUV.

Chirivita, PARRA, p. 10, pl. 6, fig. 2.

Chætodon aureus, BLOCH, pl. 193, fig. 1?

" " " Golden *Chætodon*, SHAW'S Gen. Zoöl., IV. p. 353.

Le Pomacanthus doré (*Chætodon aureus*, BL.), CUV. et VAL., VII. p. 202.

2. *Pomacanthus paru*, BLOCH.

Oval. Black, with a golden tinge, most conspicuous towards the edges of the scales; a yellow band at the base of the pectorals.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 15 inches.

Caribbean Sea, CUV.

Chirivita, PARRA, pl. 6, fig. 1.

Chætodon paru, BLOCH, p. 197?

" " " LIN., Syst. Nat., 1256.

" " " *Paru Chætodon*, SHAW'S Gen. Zoöl., IV. p. 325.

Le Pomacanthus noir (*Chætodon paru*, BL.), CUV. et VAL., VII. p. 205.

3. *Pomacanthus balteatus*, CUV.

Of a yellowish gray color, spotted with dark brown, with a curved white or yellow band upon the side; a whitish band surrounds the base of the tail, and also its three edges; sometimes a whitish line extends from the neck to the posterior edge of the preopercle.

D. 9-33. P. 18. V. 1-5. A. 3-23. C. 17. Length, 8 inches.

Caribbean Sea, Cuv.

Called "Palometta," at Porto Rico.

Le Pomacante à écharpe, Pomacanthus balteatus, Cuv. et VAL., VII. p. 208.

GENUS V. PIMELEPTERUS, CUV.

Oval, compressed. With a single dorsal fin. With cutting teeth in both jaws disposed in a single row; the teeth implanted in the jaws by means of a heel extended horizontally backwards.

1. *Pimelepterus Boscii*, LACEP.

Regularly oval. Brownish, with twenty to twenty-two longitudinal lines beneath, and ten to twelve above, the lateral line.

D. 11-12. P. 19. V. 1-5. A. 3-13. C. 17. Length, 5 inches.

South Carolina, Cuv.

Le Piméleptère de Bosc (Pimelepterus Boscii, LACEP.), Cuv. et VAL., VII. p. 259.
Pimelepterus Boscii, DEKAY's Report, p. 100, pl. 20, fig. 55.

FAMILY VII. SCOMBRIDÆ.

The fishes belonging to this family have small scales, causing the greater part of the skin to appear as if entirely smooth; the ventral fins are destitute of scales; the opercula are without spines or denticulations; in most of them the caudal fin is large and powerful, and generally they are furnished with numerous cœca.

GENUS I. SCOMBER, CUV.

Body fusiform, covered by scales which are uniformly small; sides of the tail not carinated, but merely raised into two small cutaneous crests; dorsal fins widely separated; some of the posterior rays of the second dorsal and the anal fin free, forming finlets; one row of small conical teeth in each jaw.

1. *Scomber colias*, GMEL.

Form cylindrical, plump, elongated, tapering towards the tail, at the origin of which it is very small. Upper part of the body of a light green color, with numerous contiguous beautifully undulating lines of a darker green passing down the sides, and just crossing the

lateral line; immediately beneath the lateral line, of a dull bluish color, with indistinct circular brown blotches. Abdomen lighter, but, as well as the sides, presenting cupreous reflections.

D. 9-12. P. 19. V. 5. A. 13. C. 22. Length, 1 foot.

Massachusetts, STORER. Connecticut, LINSLEY. New York to Carolina, DEKAY.

Scomber maculatus, Spanish Mackerel, COUCH? Mag. Nat. Hist., v. p. 22, fig. 3.

" " " " JENYNS'S Brit. Vert., p. 361.

Le Maquereau colias (*Scomber colias*, GMEI.), CUV. et VAL., VIII. p. 39, pl. 205.

Scomber colias, YARRELL'S Brit. Fishes (2d edit.), I. p. 148, fig.

" " Spanish Mackerel, STORER'S Report, p. 45.

" " " " DEKAY'S Report, p. 101, pl. 11, fig. 33.

2. *Scomber vernalis*, MITCHILL.

Body fusiform, cylindrical. Upper part of the body of a dark green color, marked throughout its whole extent, from occiput to tail, with beautiful transverse, more or less undulating, broken bands of a deeper hue, commencing on the side of the dorsal ridge and extending below the lateral line. Sides white, with cupreous reflections. Abdomen white. A wide fuliginous line beneath the lateral line. A black spot at the base of the pectoral and ventral fins.

D. 10-12. P. 17. V. 5. A. 12. C. 20. Length, 18 inches.

Maine, Massachusetts, STORER. Connecticut, LINSLEY, AYRES. New York, MITCHILL, DEKAY. The whole of the Atlantic coast, RICHARDSON.

Scomber vernalis, Spring Mackerel, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 423.

Le Maquereau printanier (*Scomber vernalis*, MITCH.), CUV. et VAL., VIII. p. 43.

Scomber vernalis, RICH., Fauna Boreal. Americ., III. p. 80.

" " Spring Mackerel, STORER'S Report, p. 41.

" " " " DEKAY'S Report, p. 101.

3. *Scomber grex*, MITCHILL.

Color as in the preceding; the dorsal bands are more tortuous; and there is a dark spot at the tip of the lower jaw.

D. 12, 13-5. P. 19. V. 1-5. A. 1, 12-5. C. 20½. Length, 9 inches.

New York, MITCHILL, CUV., DEKAY.

Scomber grex, Thimble-eyed, Bull-eyed, or Chub Mackerel, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 422.

Le petit Maquereau de l'Atlantique (*Scomber grex*, MITCH.), CUV. et VAL., VIII. p. 45.

Scomber grex et *vernalis*, Chub and Spring Mackerel, RICH., Fauna Boreal. Americ., III. p. 81.

Scomber grex, Fall Mackerel, DEKAY'S Report, p. 103, pl. 11, fig. 32.

GENUS II. PELAMYS, CUV.

The fishes of this genus differ from those of the *Thynnus*, in having strong, separate, and pointed teeth.

1. *Pelamys sarda*, Cuv.

Form similar to that of the Mackerel. Body of a dull greenish color; abdomen ash-colored. Ten or twelve dark-colored bands pass obliquely downwards and forwards from the dorsum towards the abdomen; the first of these bands commences at the posterior extremity of the dorsal fin; the last at the origin of the caudal fin. Some of these bands pass very low down upon the sides, even to the abdomen. Besides these, several indistinct, lighter colored bands cross the body transversely. Jaws even. Teeth sharp and distinct.

D. 20-14. P. 24. V. 6. A. 14. C. 24. Length, about 2 feet.

Massachusetts, STORER. Connecticut, LINSLEY. New York, MITCHILL, DEKAY.

Scomber sarda, BLOCH, x. p. 35?

" " SHAW'S Gen. Zool., iv. p. 584.

" " BONETTA, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., i. p. 428.

Le Pélamide commune, ou Bonite à dos rayé (*Pelamys sarda*, Cuv., *Scomber sarda*, BL.), Cuv. et VAL, VIII. p. 149, pl. 217.

Pelamys sarda, Skip-jack, STORER'S Report, p. 49.

" " Striped Bonito, DEKAY'S Report, p. 106, pl. 9, fig. 27.

GENUS III. THYNNUS, Cuv.

Form of the body like that of the Mackerel, but less compressed. A kind of corselet around the thorax, formed by scales larger and coarser than those of the rest of the body; a long, elevated crest on each side of the tail. The anterior dorsal reaching almost to the posterior one. Numerous finlets behind the dorsal and anal fins. A single row of small, pointed, crowded teeth in each jaw.

1. *Thynnus vulgaris*, Cuv.

Form elongated; gradually sloping from the beginning of the dorsal fin to the snout, and tapering from the dorsal to the tail. Color of the whole upper part of the body nearly black; sides silvery; beneath white. Scales on the back, in front of the first dorsal, at the base of and beneath the pectorals very large. Gill covers very large, perfectly smooth, of a silvery-gray color. Nine yellow finlets back of the second dorsal and anal fins.

D. 14, 13-9. P. 34. V. 1-5. A. 2, 12-9. C. 19. Length, 9 feet and 3 inches.

Massachusetts, STORER. Connecticut, LINSLEY. New York, DEKAY.

Scomber thynnus, LIN., BLOCH, II. p. 87, pl. 55.

" " Tunny, LIN., SHAW'S Gen. Zool., iv. p. 581.

Le Thon commun (*Thynnus vulgaris*, Cuv., *Scomber thynnus*, LIN.), Cuv. et VAL, VIII. p. 58, pl. 210.

Scomber thynnus, LIN., JENYNS'S Brit. Vert., p. 362.

Thynnus vulgaris, Cuv., YARRELL'S Brit. Fishes (2d edit.), i. p. 151.

" " WILSON, Encyclop. Brit., Art. Ichth., p. 182, pl. 302, fig. 3.

" " Common Tunny, STORER'S Report, p. 47.

" " GRIFFITH'S Cuv., x. p. 182, pl. 54, fig. 1.

" " Common Tunny, DEKAY'S Report, p. 105, pl. 10, fig. 28.

2. *Thynnus coretta*, Cuv.

Corselet truncate; scarcely emarginate behind. Second dorsal and anal fins low. Plumbeous above, silvery beneath.

D. 13-1 | 14-8. P. 31. V. 1-5. A. 2, 12-8. C. 35. Length, 11 inches.

Gulf of Mexico, Cuv.

Le Thon d'Amérique, *Thynnus coretta*, Cuv. et Val., VIII. p. 102.
Thynnus coretta, DEKAY'S Report, p. 106.

GENUS IV. *AUXIS*, Cuv.

Have, with the corselet and moderate-sized pectorals of the Tunny, the dorsals separated, like those of the Mackerel.

1. *Auxis vulgaris*, Cuv.

Similar in form to a Tunny, but more slender. Snout short and pointed, jaws equal. Teeth exceedingly small. The space between the dorsals greater than the length of the first dorsal. The lateral line is very small and hardly perceptible; it is lost at the anterior portion of the corselet. Above, this species is blue; with irregular blackish-blue lines and spots upon the sides. The corselet is greenish blue above; the sides and abdomen are silvery.

D. (?). P. (?). V. (?). A. (?) C. (?) Length, 15 inches.

Caribbean Sea, Cuv.

L'Auxide commune, ou *Bonitou* (*Auxis vulgaris*, Cuv., *Scomber bisus*, Raf., *Scomber Rochei*, Risso, No. 165), Cuv. et Val., VIII. p. 139, pl. 216.

2. *Auxis Sloanei*, Cuv.

Snout short; mouth slightly cleft; teeth small. Space large between the dorsals. Pectorals short. Second dorsal and anal higher and more pointed in proportion than in any other species of the genus.

D. (?). P. (?). V. (?). A. (?) C. (?) Length, (?).

Caribbean Sea, SLOANE.

L'Auxide de Sloane, *Scomber Sloanei*, Cuv. et Val., VIII. p. 149.

GENUS V. *CYBIUM*, Cuv.

These fishes have an elongated body without a corselet; and large, compressed, sharp teeth. Their palatines have only short and even teeth.

1. *Cybiium maculatum*, Cuv.

Cylindrical, elongated. The top of the head and the upper part of the sides of the body are of a dark leaden color; the sides are lighter; the jaws, opercula, and abdomen are of

a beautiful clear white, presenting a satin-like appearance; the dorsal ridge, throughout its whole extent, is of a beautiful dark green color; twenty or more bright yellow spots, the largest being three eighths of an inch in diameter, situated above and beneath the lateral line, ornament its sides; the most anterior of these spots is beneath the pectoral fins; the largest number of the spots is anterior to the dorsal fin. Lateral line undulating in its course. Eight finlets back of second dorsal and anal fins.

D. 18-2 | 15-9. P. 20. V. 4. A. 2 | 16. C. 26. Length, about 2 feet.

Massachusetts, STORER. Connecticut, LINSLEY. New York, MITCHILL. Gulf of Mexico, CUV.

Scomber maculatus, Spanish Mackerel, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 426, pl. 6, fig. 8.
Le Tassard tacheté (*Cybium maculatum*, CUV., *Scomber maculatus*, MITCH.), CUV. et VAL., VIII. p. 181.
Cybium maculatum, Spotted Mackerel, STORER, Bost. Journ. Nat. Hist., IV. p. 179.
" " Spotted *Cybium*, DEKAY'S Report, p. 108, pl. 73, fig. 232.

2. *Cybium regale*, CUV.

Back plumbeous, sides and abdomen silvery. A broad, brownish, longitudinal band, with oblong spots above and beneath it. Teeth compressed and trenchant.

D. 17-2 | 15-8. P. 22. V. 1-5. A. 2 | 14-8. C. 17 and 15. Length, 1 or 2 feet.

Caribbean Sea, CUV.

Scomber regalis, BLOCH, pl. 333.
" " Thazard Mackerel, SHAW'S Gen. Zool., IV. p. 583.
Le Tassard royal (*Cybium regale*, CUV., *Scomber regalis*, BL.), CUV. et VAL., VIII. p. 184.
Cybium regale, DEKAY'S Report, p. 108.

3. *Cybium acervum*, CUV.

Silvery, violet, or plumbeous upon the back. The fins are gray, except the first dorsal, which has a black spot extending from the first to the sixth or seventh ray; the commencement of the second dorsal is blackish. Teeth trenchant, as in *C. regale*, but less numerous.

D. 17-2 | 15-8. P. (?). V. (?). A. 2 | 15-8. C. (?). Length, 9 inches.

Gulf of Mexico, Caribbean Sea, CUV.

Le Tassard sierra, *Cybium acervum*, CUV. et VAL., VIII. p. 186.

4. *Cybium caballa*, CUV.

Above plumbeous; sides and abdomen silvery; plumbeous oval spots upon the sides; pectorals margined with black.

D. 14-2 | 15-9. P. (?). V. (?). A. (?). C. (?). Length, nearly 3 feet.

Caribbean Sea, CUV.

Le Tassard guarapucu, *Cybium caballa*, CUV. et VAL., VIII. p. 187.

5. *Cybium immaculatum*, CUV.

Body compressed. Of a russet-gray color; abdomen silvery; fins of a russet-gray. No black spot upon the dorsal.

B. 7. D. 15-2 | 12 or 13-9. P. 22. V. 1-5. A. 2 | 14-9. C. 30. Length, 6 or 7 inches.

Caribbean Sea, Cuv.

Le Tassard sans taches, *Cybium immaculatum*, Cuv. et Val., VIII. p. 191.

GENUS VI. GEMPYLUS, Cuv.

These fishes have their anterior teeth longer than the others; their palate is without teeth; and their ventrals are almost imperceptible.

1. *Gempylus serpens*, Cuv.

Skin smooth. Silvery or plumbeous. Upper part of the dorsal fin black. The pectorals are also dusky, except their inferior rays, which are whitish. Jaws with a row of compressed, trenchant, pointed teeth.

D. 31, 13-6. P. 14. V. 1-(?). A. 10-6. C. 17 and some accessories. Length, 2 to 3 feet.

Caribbean Sea, Cuv.

Le Gempyle serpent (*Gempylus serpens*, Cuv. *Scomber serpens*, Solander), Cuv. et Val., VIII. p. 207.

GENUS VII. TRICHIURUS, L.

Head pointed; body without scales, elongated, compressed, thin, riband-shaped. No ventral fins, nor scales instead; no anal fin; a single continuous dorsal fin; tail without rays, ending in a single elongated hair-like filament, from which the generic name is derived. Branchiostegous rays, seven. A single row of compound, cutting, and pointed teeth.

1. *Trichiurus lepturus*, L.

Silvery, with a golden lateral line. The dorsal fin, which has a yellowish tinge, reaches from the back of the head to the tail, which is finless, and ends in an attenuated point. Lower jaw projects, and has two teeth jutting beyond the upper, when the mouth is shut. The upper jaw has in front from three to six teeth larger than the rest. All the teeth of the larger order are jagged on the inner or hinder sides, with a single barb towards the points.

D. 133, 135, or 136. P. 11 or 12. Length, 2 to 3 feet.

Massachusetts, Storer. New York, Mitchill, Cuv., DeKay. Gulf of Mexico, Caribbean Sea, Cuv.

Called "Sword-fish," at Jamaica.

- Trichiurus lepturus*, LIN. BLOCH, v. p. 55, pl. 158.
Trichiurus argenteus, Silver Trichiure, SHAW'S Gen. Zool., iv. p. 90, fig. 12.
Trichiurus lepturus, STRACK'S Plates, xx. fig. 1.
 " " BROWNE'S Jamaica. pl. 45, fig. 4.
Trichiurus argenteus, MITCHELL, Trans. Lit. and Phil. Soc. of N. Y., t. p. 361.
 Le Trichiure de l'Atlantique (*Trichiurus lepturus*, L.). CUV. et VAL., VIII. p. 237.
Trichiurus lepturus, Silvery Hair-tail, YARRELL'S Brit. Fishes (2d edit.), t. p. 204.
 " " STORER, Bost. Journ. Nat. Hist., iv. p. 181.
 " " DEKAY'S Report, p. 109, pl. 12, fig. 35.

GENUS VIII. XIPHIAS, LIN.

Body fusiform, covered with minute scales ; a single elongated dorsal fin ; ventral fins wanting ; tail strongly carinated ; upper jaws elongated, forming a sword ; mouth without teeth ; branchiostegous rays, seven.

1. *Xiphias gladius*, LIN.

Body elongated, but slightly compressed. Surface of body smooth. Back and upper part of sides of a sky blue color, beneath silvery gray. Gill-covers silvery brown. Upper part of the head nearly flat, slightly descending to the base of the sword, which is formed by an extension of the vomer, maxillary, and intermaxillary bones ; extremity of sword pointed ; upper part of sword dark brown, almost black, having a dorsal ridge, within which is a groove ; under portion of the sword lighter colored, smooth, with a velvety feel. In the young fish, the dorsal fin is entire ; but in the adult fish a great part of the central portion of the fin is missing, supposed to be worn away by use.

D. 18 - 3. P. 15. A. 11 - 3. C. 17. Length, 10 to 12 feet.

Massachusetts, STORER. Connecticut, LINSLEY. New York, MITCHELL, DEKAY.

- Xiphias gladius*, LIN., Syst. Nat., p. 432.
 " " Common Sword-fish, SHAW'S Gen. Zool., iv. p. 99, fig. 14.
 " " " " STRACK'S Plates, XXI. fig. 1.
 " " " " PENNANT'S Arc. Zool., II. p. 113.
 " " " " GRIFFITH'S Cuv., x. p. 157, pl. 27, fig. 1, and Supplement, on the Acanthopterygii, p. 349.
 L'Espadon épée (*Xiphias gladius*, LIN.). CUV. et VAL., VIII. p. 255, pl. 225 and 226.
Xiphias gladius, WILSON, Encyclop. Brit. Art. Ichth., p. 184, pl. 202.
 " " JENYNS'S Brit. Vert., p. 364.
 " " YARRELL'S Brit. Fishes (2d edit.), t. p. 164, fig.
 " " STORER'S Report, p. 51.
 " " DEKAY'S Report, p. 111, pl. 26, fig. 79.

GENUS IX. NAUCRATES, RAF.

Body covered with small scales ; dorsal fin single, elongated ; free spinous rays before the dorsal and anal fins ; sides of the tail carinated ; teeth small, numerous ; branchiostegous rays, seven.

1. *Naucrates ductor*, L.

Form somewhat similar to that of the Mackerel. Of a silvery grayish-blue color, darkest on the back, much paler on the belly; five dark-blue transverse bands pass around the whole body; indications of two other bands, one on the head, the other on the tail; pectoral fins clouded with white and blue; ventrals nearly black.

D. 4-26. P. 18. V. 1-5. A. 2-16. C. 17. Length, 12 inches.

Caribbean Sea, Cuv.

The "Common Pilot-fish."

Gasterosteus ductor, LIN., Syst. Nat., I. p. 439.

Scomber ductor, BLOCH, p. 338.

" " SHAW'S Gen. Zool., IV. p. 556.

Le Pilote commun (*Naucrates ductor*, Cuv., *Scomber ductor*, LIN.), Cuv. et VAL., VIII. p. 312, pl. 232.

Naucrates ductor, GRIFFITH'S Cuv., p. 139, pl. 47, fig. 1.

" " WILSON, Encyclop. Brit., Art. Ichth., p. 134.

Centronotus ductor, Cuv., JENYNS'S Brit. Vert., p. 365.

Naucrates ductor, YARRELL'S Brit. Fishes (2d edit.), I. p. 170.

" " DEKAY'S Report, p. 113.

2. *Naucrates noveboracensis*, Cuv.

Four transverse blue bands, and four spines before the dorsal. Opercle not striated.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, (?).

Connecticut, LINSLEY. New York, MITCHILL, Cuv.

Scomber ductor, Pilot-fish, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 424.

Le Pilote de New York, *Naucrates noveboracensis*, Cuv. et VAL., VIII. p. 325.

Naucrates noveboracensis, DEKAY'S Report, p. 112.

GENUS X. *LICHIA*, Cuv.

Body compressed; detached spines in front of the dorsal fin, and anterior to these is one inclined forwards; two spines in front of the anal fin; tail without lateral keels.

1. *Lichia Carolina*, DEKAY.

Body compressed; its height to its length is nearly as one to two. First rays of the second dorsal and anal fins very large. Upper part of the head and body bluish. Gill-covers of a faint flesh-color mingling with yellowish and silvery reflections on the sides and beneath.

D. 1, 6-25. P. 27. V. 1-5. A. 2-20. C. 18 $\frac{1}{2}$. Length, 1 foot.

New York, Carolina, DEKAY.

Lichia Carolina, *Carolina Lichia*, DEKAY'S Report, p. 114, pl. 10, fig. 30.

GENUS XI. CHORINEMUS, Cuv.

In the general characters similar to the *Lichia*; but the rays of the second dorsal or anal are either entirely separated, or united by so delicate a membrane that it is easily destroyed, and they appear like the spinous fins of the Mackerel and Tunny.

1. *Chorinemus saliens*, Cuv.

Form of the Tunny. Darkish blue upon the back; silvery on the sides and abdomen; fins pale, with a yellowish cast. In spirit, a silvery brown, darker upon the back; the fins are gray or russet, excepting the ventrals, which are white. The anterior portion of the second dorsal brown. Four free spines upon the back, besides the horizontal one.

D. 4, 1-19. P. 17. V. 1-5. A. 2, 1-20. C. 23. Length, 20 inches.

Caribbean Sea, Cuv.

Called "Sauteur," at Martinique.

Scomber saliens, Salient Mackerel, Bloch, pl. 335?

" " " SHAW'S Gen. Zoöl., iv. p. 555.

Le Chorinème sauteur (*Scomber saliens*, BL., *Scomberoide sauteur*, LACEP.), Cuv. et VAL., VIII. p. 359.

2. *Chorinemus saltans*, Cuv.

Of a beautiful silvery, bluish upon the back. The profile is slightly concave, which makes the snout to appear a little pointed. The first dorsal composed of five free spines. It receives its specific name from its sudden motions. It is called the *Leather-coat* at Jamaica, on account of the thickness of its skin, which is of the consistence of leather.

D. 5, 1-19. P. 17. V. 1-5. A. 2, 1-19. C. 23. Length, 9 or 10 inches.

Caribbean Sea, Cuv.

Le Chorinème danseur (*Chorinemus saltans*, Cuv., *Gasterosteus occidentalis*, LIN.), Cuv. et VAL., VIII. p. 393.

3. *Chorinemus quiebra*, Cuv.

Of the same color as the preceding species. Its profile is slightly convex, instead of being concave as in the *saltans*. The second dorsal is proportionally shorter than in that species.

D. (?). P. (?). V. (?) A. (?). C. (?). Length, (?).

Caribbean Sea, Cuv.

Quiebra-acha, PARRA, p. 21, pl. 12, fig. 2.

Le Chorinème quiebre, *Chorinemus quiebra*, Cuv. et VAL., VIII. p. 396.

GENUS XII. TRACHINOTUS, Cuv.

Body elevated, compressed. Profile descending abruptly before the eyes. First rays of the dorsal and anal elongated. Free spines before the dorsal and anal fins.

1. *Trachinotus glaucus*, CUV.

Compressed, ovate. Of a beautiful silvery color; blue above; on each side, three, four, or five narrow, transverse black bands. Dorsal and anal fins blue, very long, and reaching to the centre of the tail, which is very widely forked.

D. 6, 1-19. P. 17. V. 1-5. A. 2, 1-18. C. 17. Length, 10 to 18 inches.

Gulf of Mexico, Caribbean Sea, CUV.

Called "Pampano," "Pampaneto," at Havana.

Chaetodon glaucus, BLOCH, VI. p. 76, pl. 219.
 " " *Glaucus chaetodon*, SHAW'S Gen. Zool., IV. p. 357.
Le Trachinote glauque, *Trachinotus glaucus*, CUV. et VAL., VIII. p. 400.

2. *Trachinotus rhomboides*, BLOCH.

Rhombic, ovate. Above of a gray or greenish blue color, on the sides white, and on the abdomen pale yellow; the blue of the upper parts breaks into the white of the sides in two or three acuminate bars, or fasciæ, reaching almost to the abdomen. Dorsal, anal, and caudal, blue, tinged with yellow at their base; pectorals and ventrals yellow.

D. 6, 1-19. P. 18. V. 1-5. A. 2, 1-19. C. 17. Length, 20 inches.

Caribbean Sea, CUV.

Chaetodon rhomboides, BLOCH, VI. p. 75, pl. 209.
 " " *Rhomboid Chaetodon*, SHAW'S Gen. Zool., IV. p. 358.
Le Trachinote rhomboide, *Trachinotus rhomboides*, CUV. et VAL., VIII. p. 407.

3. *Trachinotus cupreus*, CUV.

Oblong. Of a copper color, with golden reflections upon the opercula and breast.

D. 5 or 6, 1-24. P. (?). V. (?). A. 2, 1-21. C. (?). Length, 4½ inches.

Caribbean Sea, CUV.

Le Trachinote cuivré, *Trachinotus cupreus*, CUV. et VAL., VIII. p. 414.

4. *Trachinotus spinosus*, MITCHILL.

Body very much compressed, suborbicular; olive-green on the sides above; with metallic reflections beneath. Seven free spines before the dorsal, and three before the anal fin.

D. 7-19. P. 19. V. 1-5. A. 3-19. C. 18. Length, 3 inches.

New York, MITCHILL.

Spinous Dory, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. pl. 6, fig. 10, no description.
 " " *Zeus spinosus*, MITCHILL, Amer. Month. Mag., II. 246.
Trachinotus spinosus, *Spinous Trachinote*, DEKAY'S Report, p. 117.

Dr. Dekay considers this distinct from the *T. fuscus*, CUV. et VAL., VIII. p. 410.

5. *Trachinotus argenteus*, CUV.

Body elevated; height to its length as one to two. Silvery, with blackish at the extrem-

ity of the dorsal, and on the middle of the pectoral. Five or six free spines on the back, besides the recumbent spine and that which is attached to the dorsal.

D. 5 or 6-24. P. 18. V. 1-5. A. 2, 1-21. C. 17 $\frac{3}{4}$. Length, 6 inches.

New York, CUV.

Le Trachinote argenté, Trachinotus argenteus, CUV. et VAL., VIII. p. 413.
Trachinotus argenteus, DEKAY'S Report, p. 116.

6. *Trachinotus pampanus*, CUV.

Of a grayish brown color, changing to a deeper brown upon the back, as appearing when preserved in spirits. Scales very small. The fins are brown, without spots. Five or six very small free spines upon the back. Lateral line almost imperceptibly undulated.

D. 5, 1-24. P. 18. V. 1-5. A. 2, 1-21. C. 17 et 8. Length, 13 or 14 inches.

South Carolina, CUV.

Le Trachinote pamplé, Trachinotus pampanus, CUV. et VAL., VIII. p. 415, pl. 237.

GENUS XIII. PALINURUS, DEKAY.

Preopercle serrated, with spines on its margin. Opercle with one or more flat spines, more or less distinctly serrated beneath. Anal with one or more spines in front. Teeth small, pointed, subequal. Body compressed, oblong. The anterior portion of the single dorsal spinous.

1. *Palinurus perciformis*, MITCHILL.

Body oblong, compressed. Seven short spines precede the fleshy rays of the dorsal, which are connected with each other by a low membrane; the posterior is united throughout, about its entire height, to the membrane of the dorsal. Color, in the living fish, a bright bronze black, with obscure reddish hues. Abdomen light colored. When preserved in spirits, it is of a bluish white upon the sides, looking as if covered with black dots, owing to the dark outline of the scales; beneath, of a dull white color.

D. 7, 1-19. P. 19. V. 1-5. A. 2, 1-17. C. 20. Length, 9 inches.

Massachusetts, STORER. New York, MITCHILL, DEKAY.

Called "Rudder-fish," at Martha's Vineyard.

Rudder-fish, or Perch Coryphene, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. pl. 6, fig. 7, no description.

" " " Coryphæna perciformis, MITCHILL, Amer. Month. Mag., II. p. 244.

Trachinotus argenteus, STORER'S Report, p. 55.

Palinurus perciformis, Black Pilot, DEKAY'S Report, p. 118, pl. 24, fig. 25.

GENUS XIV. NOTACANTHUS, BLOCH.

The body is very long, compressed, covered with soft small scales; the snout is obtuse, projecting beyond the mouth, which is furnished with fine and

close teeth. A series of free spines, unconnected by a membrane, in place of a dorsal fin; free spines before the anal, which is long, and joins the caudal; ventrals remote from the pectorals, under the abdomen.

1. *Notacanthus nasus*, BLOCH.

Its form is riband-like, being greatly elongated and compressed. The anus is about one seventh of the total length nearer to the snout than to the tip of the caudal. There are about eighty rows of scales in a longitudinal line. There are about thirty cylindrical, slightly flattened teeth crowded into a single row on each side of the upper jaw, and more slender, pointed, and slightly curved ones in the lower jaw, disposed in three or four rows anteriorly, and in one, on the sides.

D. 10. P. 17. V. 1-8. A. 13-116. C. 8. Length, 2½ feet.

Greenland, O. FABRICIUS.

Acanthonotus nasus, BLOCH, XII. p. 115, pl. 431.

" " Shouted *Acanthonotus*, SHAW'S Gen. Zool., v. p. 93, fig. 106.

Le *Notacanthé nez* (*Notacanthus nasus*, Bl.), CUV. ET VAL., VIII. p. 467, pl. 241.

Notacanthus nasus, Beaked *Notacanth*, RICH., Fauna Boreal. Americ., III. p. 82.

GENUS XV. *CARANX*, CUV.

Body covered with small scales, with the exception of the lateral line; lateral line armed with a series of broad scales, those on the posterior half of the body having an elevated horizontal keel in the centre, forming a continuous ridge, each scale ending in a point directed backwards; two distinct dorsal fins; free spines before the anal fin; teeth exceedingly minute; branchiostegous rays, seven.

1. *Caranx Plumieri*, CUV.

Above bluish black; beneath silvery; golden reflections upon the sides, forming bands. The lower edge of the operculum is slightly concave, and it has a semicircular emargination. Thirty to thirty-six bony plates upon the lateral line, which is but very slightly curved.

D. 8, 1-26. P. 20. V. 1-5. A. 2, 1-22. C. 17. Length, 8 or 9 inches.

Caribbean Sea, CUV.

Called "Coulirou," at St. Bartholomew and Guadeloupe.

Scomber Plumieri, BLOCH, pl. 344?

" " *Plumier's Mackerel*, SHAW'S Gen. Zool., IV. p. 533.

Le *Caranx de Plumier*, *Caranx Plumieri*, CUV. ET VAL., IX. p. 65.

2. *Caranx Blochii*, CUV.

Silvery, tinged with blue or green above. The head is less than a quarter of its whole length; the inferior edge of the operculum convex, and slightly emarginated.

D. (?). P. (?). V. (?) A. (?). C. (?). Length, 11 to 14 inches.
Gulf of Mexico, Cuv.

Scomber ruber, Bloch, pl. 312?
" " Red Mackerel, SHAW'S Gen. Zool., iv. p. 600, pl. 56.
Le Caranx de Bloch, *Caranx Blochii*, Cuv. et VAL., ix. p. 69.

3. *Caranx carangus*, Cuv.

Body compressed; its greatest height is one third its whole length; its thickness is equal to one third its height. Of a beautiful silver-color, plumbeous or violet above; a black spot upon the operculum. The fins are yellow. The posterior edge of the extremity of the dorsal fin bluish; the margin of the tail brownish. A round black spot at the base of the pectoral fin. Twenty-nine or thirty plates upon the lateral line.

D. 7 or 8, 1-19 to 20. P. 22. V. 1-5. A. 2, 1-17. C. 17. Length, 2½ feet.

Gulf of Mexico, Caribbean Sea, Cuv.

Called "Jiguagua," at Havana.

Scomber carangus, Bloch, pl. 310?
" " Carang Mackerel, SHAW'S Gen. Zool., iv. p. 599.
Le Carangue, *Caranx carangus*, Cuv. et VAL., ix. p. 91.

4. *Caranx punctatus*, Cuv.

Cylindrical, with a single finlet behind the dorsal and anal fins. Greenish blue on the back; yellowish along the lateral line and on the caudal fin; silvery white on the throat, and belly whitish. A smutty oblong spot under each eye, and a dark spot on the margin of the operculum. Dorsals brownish. About twelve black points along the unarmed portion of the lateral line.

D. 10-7, 21-1. P. 19. V. 5. A. 2-~~0~~, 23-1. C. 19. Length, 8 inches.

Caribbean Sea, Cuv. New York, MITCHILL.

Called "Quiaquia," at Martinique.

Hippos Mackerel, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., i. pl. 5, fig. 5.
Scomber hippos, MITCHILL, Amer. Month. Mag., ii. p. 246.
Le Caranx punctué, *Caranx punctatus*, Cuv. et VAL., ix. p. 33.
Caranx punctatus, Spotted Caranx, DEKAY'S Report, p. 122, pl. 73, fig. 233.

5. *Caranx chrysos*, MITCHILL.

Elongated, compressed. A naked, recumbent spine anterior to the first dorsal. No finlet. Of a greenish blue color upon the back and upper portion of the sides; the greater portion of the sides of a bright yellow color. An obscure dark-brown blotch at the posterior superior angle of the operculum. Abdomen yellowish white. Dorsal and pectoral fins yellowish brown. Ventral and anal fins the color of the sides. Caudal fin yellowish throughout the greater extent. Lateral line armed with about forty-eight bony plates.

D. 8, 1-24. P. 21. V. 1-4. A. 2, 1-20. C. 19½. Length, 8 inches.

Massachusetts, STORER. New York, MITCHILL, Cuv., DEKAY.

Scomber chrysos, Yellow Mackerel, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., 1. p. 424.
 Le Carangue jaune (*Scomber chrysos*, MITCH., *Scomber hippos*, LIN.), CUV. et VAL., IX. p. 98.
Caranx chrysos, Yellow Caranx, DEKAY'S Report, p. 121, pl. 27, fig. 85.
 " " " " STORER, Proceed. Bost. Soc. Nat. Hist., p. 143.

6. *Caranx macarellus*, CUV.

Elongated. Pectorals moderate-sized; a finlet back of the dorsal and anal fins. Silvery, plumbeous above. A small black spot upon the operculum. Twenty-five small plates on the lateral line.

D. 8-1, 33-1. P. (?). V. (?). A. 2-1, 17-1. C. (?). Length, more than a foot.
 Caribbean Sea, CUV.

Le Caranx faux maquereau, *Caranx macarellus*, CUV. et VAL., IX. p. 40.

7. *Caranx fallax*, CUV.

Differs from the carangus in having no black spot upon the operculum; in the second dorsal fin always having twenty-one soft rays; in having the edge of its anterior and pointed portion black; and in having all the fins of a less bright yellow. The number of lateral plates, thirty-five or thirty-six. Breast scaled; in the carangus naked.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 2 feet.
 Gulf of Mexico, Caribbean Sea, CUV.

Le fausse Carangue, *Caranx fallax*, CUV. et VAL., IX. p. 95.

8. *Caranx pisquetus*, CUV.

Body more elongated than that of the carangus and fallax; the fins are greenish; the extremities of the caudal black. Forty-four or forty-five plates upon the lateral line.

D. 8, 1-24. P. (?). V. (?). A. 2, 1-20. C. (?). Length, 14 inches.
 Gulf of Mexico, Caribbean Sea, CUV.

Called "Pisquet," at St. Domingo; "Cojenudo," at Cuba.

Le Carangue pisquet, *Caranx pisquetus*, CUV. et VAL., IX. p. 97.

9. *Caranx Bartholomæi*, CUV.

Less elongated than the pisquetus. Silvery, without any black spot. Fins yellowish; thirty-three to thirty-five plates on the lateral line.

D. 8, 1-26. P. (?). V. (?). A. 2, 1-22. C. (?). Length, 5 inches.
 Caribbean Sea, CUV.

La Carangue de Saint-Barthélemi, *Caranx Bartholomæi*, CUV. et VAL., IX. p. 100.

10. *Caranx fasciatus*, CUV.

Above, greenish. Eight or ten vertical dull bands upon the sides. Lateral line with a high arch, assuming a straight course beneath the commencement of the second dorsal.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, (?).

Gulf of Mexico, Cuv.

Le Caranx à bandes, Caranx fasciatus, Cuv. et VAL., ix. p. 70.

This is described by Cuvier from a figure.

11. *Caranx defensor*, DEKAY.

Caranx defensor

Elliptical, much compressed. A recumbent spine before the dorsal. No finlet. Back bluish, with a resplendent golden yellow on the sides. Ventrals, anal, and caudal, wax-yellow; the tips of the latter dusky. A dark round spot on the posterior margin of the opercle; another on the inner base of the pectoral, and occasionally a short, black, vertical bar across the middle of the pectoral fin. Dorsals brownish above. Chin satin-white. The straight portion of the lateral line furnished with twenty-five bony plates, commencing obscurely at first, but becoming more elevated, and terminating in acute triangular spines, directed backwards.

D. 7, 1-20. P. 20. V. 1-5. A. 2-17. C. 19%. Length, 9 inches.

New York, DEKAY.

Caranx defensor, Southern Caranx, DEKAY's Report, p. 120, pl. 24, fig. 72.

GENUS XVI. BLEPHARIS, Cuv.

Body much compressed, trenchant, with a rapidly declivous front. Small and nearly concealed spines in advance of the dorsal fin. Anterior rays of the dorsal and anal fins prolonged into very long filaments. Ventrals elongated.

1. *Blepharis crinitus*, AKERLY.

Body almost circular, much compressed, scaleless. Bluish above, white beneath. Dorsal fin with seven filamentous, and eleven bifid rays. The first filamentous ray much the longest, the others successively shorter; the bifid portion low and subequal.

D. 18. P. 17. V. (?). A. 16. C. (?). Length, 5.5.

Connecticut, LINSLEY. New York, AKERLY.

Zeus crinitus, Hair-finned Dory, AKERLY, Amer. Journ. Sc., ii. p. 141, pl.
Blepharis crinitus, DEKAY's Report, p. 123, pl. 25, fig. 76.

2. *Blepharis sutor*, Cuv.

Rhomboidal; its length, including the caudal fin, is equal to once and a third its height. Plumbeous above, silvery upon the sides of the head, sides, and abdomen. Yellow spots upon the operculum. Fins of a yellowish brown. In immature specimens are seen four wide, vertical, dark bands upon the back.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, (?).

Caribbean Sea, Cuv.

Called "Cordonnier," at Martinique.

Le Blepharis des Antilles, Blepharis sutor, Cuv. et VAL., ix. p. 161.

3. *Blepharis major*, Cuv.

Its height equal to half its length. Silvery, fins of a dark gray color. A black spot at the upper part of the operculum. The first filament of the second dorsal extends beyond the tail. The plates upon the lateral line are angular only upon the sides of the tail.

D. (?). P. (?). V. (?) A. (?). C. (?). Length, (?).

Caribbean Sea, Cuv.

Le grand Cordonnier, Blepharis major, Cuv. et VAL., ix. p. 163.

GENUS XVII. ARGYREIOSUS, LACEP.

Body much compressed. Spines between the dorsal fins. Dorsal, ventral, and anal rays filamentous.

1. *Argyreiosus vomer*, LACEP.

Irregularly rhomboidal, compressed. Of a lustrous silvery color. Dorsal and ventral filaments blackish. One ray of the first dorsal elongated into a filament. The anterior rays of the second dorsal elongated, but not filamentous.

D. 1, 4-4. 2d D. 1-22. P. 17. V. 1-5. A. 2, 1-18. C. 17. Length, 3 inches.

New York, Gulf of Mexico, Caribbean Sea, Cuv.

Zeus vomer, Brazilian Dory, LIN., BLOCH, vi. p. 33, pl. 193, fig. 2.

" " " " SHAW'S Gen. Zool., iv. p. 281, pl. 41.

" " " " Silver-fish, STRACK'S Plates, xxxvii. fig. 3.

Zeus rostratus, Rostrated Dory, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., i. p. 384, pl. 2, fig. 1.

Argyreiosus vomer, LACEP., iv. p. 569.

Abacatuia, Argyreiosus vomer, Cuv. et VAL., ix. p. 177, pl. 255.

Argyreiosus vomer, Rostrated Argyreiose, DEKAY'S Report, p. 124, pl. 75, fig. 233.

2. *Argyreiosus capillaris*, MITCHILL.

Form very similar to the preceding species. Of a beautiful silvery lustre, with several dark, almost black, transverse bands crossing the upper part of the sides; these bands disappear in the dead fish. The membranous rays of the first dorsal filamentous, the first exceedingly elongated; the anterior rays of the second dorsal also filamentous.

D. 8, 1-22. P. 17. V. 1-5. A. 2, 1-18. C. 17. Length, 4 inches.

Massachusetts, STORER. New York, MITCHILL, DEKAY.

Zeus capillaris, Hair-finned Dory, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., i. p. 383, pl. 2, fig. 2.

Argyreiosus capillaris, Hair-finned Argyreiose, DEKAY'S Report, p. 125, pl. 27, fig. 82.

GENUS XVIII. VOMER, Cuv.

Body much compressed. Profile nearly vertical. No filaments nor prolongations of the fins.

1. *Vomer Brownii*, Cuv.

Compressed. Back carinate, horizontal, abruptly descending above the eye, and forming a concave profile. Of a lustrous silvery tint, passing into leaden on the back. Pectorals olive-green, verging to dusky. The membrane of the second dorsal minutely punctated with black, tinged at its base with light yellow. The first dorsal composed of seven spines. Ventrals minute.

D. 7, 1-23. P. 1-18. V. 1-3. A. 1-18. C. 16 $\frac{1}{2}$. Length, 1 foot.

Connecticut, AYRES. New York, MITCHILL, Cuv., DEKAY. Gulf of Mexico and Caribbean Sea, Cuv.

Zeus setapiinis, Bristly Dory, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., 1. p. 354, pl. 1, fig. 9.

Vomer de Brown, *Vomer Brownii*, Cuv. et VAL., IX. p. 189, pl. 256.

Vomer Brownii, Blunt-nosed Shiner, DEKAY'S Report, p. 127, pl. 25, fig. 73.

GENUS XIX. SERIOLA, Cuv.

Lateral line with scales not larger than those on the rest of the body. First dorsal fin with a continuous membrane. No finlets.

1. *Seriola zonata*, MITCHILL.

Fusiform, subcompressed. Of a bluish green color, with five or six broad, vertical, dusky bands over the body and tail; an oblique band on each side ascending from the nose through the eye to the first dorsal, and forming a sort of crescent in front. Dorsal fins deep olive; ventrals bright olive-green above; anal olive-green, margined with white.

D. 7, 1-34. P. 19. V. 6. A. 1-20. C. 15 $\frac{1}{2}$. Length, 7.5.

New York, MITCHILL, DEKAY.

Scomber zonatus, Banded Mackerel, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., 1. p. 427, pl. 4, fig. 3.

La Seriole à ceintures, *Seriola zonata*, Cuv. et VAL., IX. p. 213.

Seriola zonata, Banded Seriole, DEKAY'S Report, p. 123, pl. 9, fig. 26.

Cuvier, in his "Règne Animal," considered this species synonymous with the *Nomeus Mauriti*; subsequently, however, in the ninth volume of his "Histoire Naturelle des Poissons," he made no reference to it in his genus *Nomeus*, but arranged it among the *Seriolæ*.

2. *Seriola Boscii*, Cuv.

Silvery, with a brownish band upon the temples; faint striae on the opercles. The spines of the first dorsal fin very short and stout; the second dorsal far anterior.

D. 7, 1-31. P. (?). V. (?). A. 2, 1-20. C. (?). Length, 5 $\frac{1}{4}$ inches.

South Carolina, Cuv.

La Sériole de Bosc, *Seriola Boscii*, Cuv. et VAL., IX. p. 209.
Seriola Boscii, DEKAY'S Report, p. 129.

3. *Seriola fasciata*, BLOCH.

The back of a beautiful brown, with greenish metallic reflections. Sides beneath the lateral line a bright yellow. Sixteen narrow ribands in pairs over the body. A black transverse band from one eye to the other. Caudal yellowish; its upper lobe tinged with green; pectorals gray, tinged with green; ventrals green upon their superior face.

D. 7, 1-30 or 31. P. (?). V. (?). A. 2, 1-20 or 21. C. (?). Length, 6½ inches.

South Carolina, Cuv.

La Sériole rubanée, *Seriola fasciata*, Cuv. et VAL., IX. p. 211.
Seriola fasciata, DEKAY'S Report, p. 129.

4. *Seriola leiarchus*, Cuv.

Silvery, plumbeous on the back. Three black spots on the dorsal and two on the anal. The ventral rays are whitish, their connecting membrane is black.

D. 7, 1-35. P. (?). V. (?). A. 2, 1-20. C. (?). Length, 9 inches.

Delaware, Cuv.

La Sériole à anus désarmé, *Seriola leiarchus*, Cuv. et VAL., IX. p. 213.
Seriola leiarchus, DEKAY'S Report, p. 129.

5. *Seriola cosmopolita*, Cuv.

Body elevated and very much compressed. Silvery; back greenish, plumbeous, or violet-colored. A dark-colored spot upon the caudal fin near its base, and also a black spot at the origin of the pectoral fin, and another upon the edge of the operculum; the ventrals are very small.

D. 7, 1-28. P. 18. V. 1-5. A. 2, 1-27. C. 17. Length, 10 inches.

New York, Gulf of Mexico, Caribbean Sea, Cuv.

Called "Pot-pot," at St. Domingo.

La Sériole cosmopolita, *Seriola cosmopolita*, Cuv. et VAL., IX. p. 219.
Seriola cosmopolita, DEKAY'S Report, p. 129.

6. *Seriola falcata*, Cuv.

Body elongated. Silvery, bluish upon the back. The anterior portion of the second dorsal, and of the second anal fin, rises up into a point, and is, in the first of these fins, almost as high as the body.

D. 7, 1-31. P. (?). V. (?). A. 2, 1-21. C. (?). Length, 28 inches.

Gulf of Mexico, Caribbean Sea, Cuv.

Called "El-mereal," at Porto Rico.

La Sériole à dorsale en faux, *Seriola falcata*, Cuv. et VAL., IX. p. 210.

GENUS XX. CORYPHÆNA, LIN.

Body compressed, elongated, covered by small scales ; head compressed, profile circular ; eyes low, approaching the angle of the mouth ; dorsal fin rising from the cranium, and stretching continuously to the tail, towards which it decreases in elevation.

1. *Coryphæna globiceps*, DEKAY.

Body compressed, elongated. Head prominent, rounded, and much compressed above. Length of the lobes of the caudal fin to the whole length as 1 to 4-8. According to the colored figure of this species in Dr. Dekay's Report, it is of a bluish green color, with yellow and reddish blotches. The dorsal, pectoral, and ventral fins are reddish brown. The caudal is green at its base, and blue at its extremities.

D. 63. P. 21. V. 7. A. 29. C. 19 $\frac{1}{2}$. Length, 42 inches.

New York, MITCHILL, DEKAY.

Coryphæna hippuris, Common Coryphene, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., t. p. 378.
Coryphæna globiceps, Bottle-headed Dolphin, DEKAY'S Report, p. 132, pl. 10, fig. 29.

2. *Coryphæna Sueurii*, CUV.

The height of the anterior rays of the dorsal fin to its length as one to seven and a half.

D. 64. P. (?). V. (?). A. 26. C. (?). Length, 3 feet.

Coast of the United States, CUV.

La Coryphène de Lesueur, *Coryphæna Sueurii*, CUV. et VAL., IX. p. 302.

3. *Coryphæna virgata*, CUV.

Back blue or green, spotted with yellow ; the sides of the head and the abdomen white. The lower portion of the dorsal fin yellow, the upper blue ; all the other fins yellow.

D. 44. P. (?). V. (?). A. 25. C. (?). Length, (?).

Caribbean Sea, CUV.

La Coryphène rayée, *Coryphæna virgata*, CUV. et VAL., IX. p. 303.

4. *Coryphæna dorado*, CUV.

Much more elongated than the *C. Sueurii*. Spotted with black. The longest rays of the dorsal nearly equal to one sixth the length of the fin. The oblong scales are larger than those of any other Coryphene.

D. 60 or 61. P. (?). V. (?). A. 27. C. (?). Length, 3 feet, 8 inches.

Caribbean Sea, CUV.

La Coryphène dorade, *Coryphæna dorado*, CUV. et VAL., IX. p. 303.

5. *Coryphæna dolfyn*, Cuv.

The crest is lower, the rays of the dorsal fin are more slender, the ventrals are narrower and shorter, and the scales are smaller, than in the *C. dorado*. Green above, beneath yellow, sprinkled over the entire surface with blue spots; dorsal fin blue, anal yellow.

D. 59. P. (?). V. (?). A. 27. C. (?). Length, 3 feet, 3 inches.

Caribbean Sea, Cuv.

La Coryphène dauphin, Coryphæna dolfyn, Cuv. et VAL., IX. p. 305.

GENUS XXI. TEMNODON, Cuv.

Has the tail unarmed, the little fins or the detached spines before the anal, as in *Seriola*; the first dorsal is fragile and low, the second and the anal are covered with small scales; but the principal character consists in a row of separated, pointed, and cutting teeth at each jaw; behind the upper ones is a row of smaller teeth, and there are some fine as velvet on the vomer, palate, and tongue. The operculum terminates in two points, and there are seven rays to the gills.

1. *Temnodon saltator*, Cuv.

Body oblong, subcylindrical, compressed. All the upper part of the body of a bluish color; lower part of the sides, as well as of the abdomen, whitish. Pectorals, second dorsal, and caudal fins, greenish brown. Ventral and anal fins white, tinged with blue.

D. 7-26. P. 17. V. 6. A. 23. C. 19. Length, 18 inches.

Massachusetts, STORER. Connecticut, AYRES, LINSLEY. New York, MITCHILL, DEKAY. South Carolina, LIN., Cuv.

Saltatrix, Skipjack, Green-fish, LIN., CATESBY'S Hist. Carol., II. pl. 14.

Gasterosteus saltatrix, Skipping Stickleback, SHAW'S Gen. Zool., IV. p. 609.

Scomber plumbeus, Horse Mackerel, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 421, pl. 4, fig. 1.

Le Temnodon sauteur, *Temnodon saltator*, Cuv. et VAL., IX. p. 225, pl. 260.

Temnodon saltator, Blue-fish, STORER'S Report, p. 57.

“ “ “ DEKAY'S Report, p. 130, pl. 26, fig. 81.

GENUS XXII. LAMPUGUS, Cuv.

Head oblong; central crest of the forehead much lower than in the *Coryphæna*; dorsal fin equal, and low throughout its whole extent.

1. *Lampugus punctulatus*, Cuv.

Sea-green above the lateral line; silvery on the sides, with metallic reflections on the opercles. Dark reddish-brown stripes across the head; a series of distant rounded spots

along the base of the dorsal fin ; a few scattering ones on the back part of the head, and confused series of similar spots on the sides below the lateral line. Dorsal, pectorals, and ventrals, brown ; anal and caudal light colored. The last ten or twelve rays of the dorsal somewhat elevated.

D. 53. P. 20. V. 5. A. 25. C. 18 $\frac{1}{4}$. Length, 2 feet.

New York, DEKAY.

Le Lampuge ponctué, *Lampugus punctulatus*, CUV. et VAL., IX. p. 327.
Lampugus punctulatus, Spotted Lampugus, DEKAY'S Report, p. 134, pl. 11, fig. 31.

GENUS XXIII. PTERACLIS, GRONOV.

Head and teeth as in the *Coryphæna*, but the scales are larger ; the ventrals are very small, and placed upon the throat ; the dorsal and anal fins are very much extended, and as high as the fish itself.

1. *Pteraclis Carolinus*, CUV.

Silvery, with bluish reflections. The fourth dorsal ray longest.

D. 52. P. (?). V. (?). A. 44. C. (?). Length, 4 inches.

South Carolina, CUV.

Le *Pteraclis* de la Caroline, *Pteraclis Carolinus*, CUV. et VAL., IX. p. 368.
Pteraclis Carolinus, DEKAY'S Report, p. 133.

GENUS XXIV. RHOMBUS, LACEP.

Head and body compressed. Body covered with minute scales. Extremity of the pelvis forming, anterior to the anus, a small, pointed, and cutting blade, which resembles a vestige of the ventral fins. A horizontal, partially concealed spine before the dorsal and anal fins.

1. *Rhombus longipinnis*, MITCHILL.

Form elevated, oval, and compressed. Silvery, with tints of blue, green, and iridescent ; dusky on the head, and with inky patches on the belly towards the tail, which, in certain lights, appear beautifully red and purple ; back bluish, with occasional clouds. Anterior rays of the dorsal and anal fins more than half the length of their respective bases.

D. 3-44. P. 23. A. 4-43. C. 19 $\frac{3}{4}$. Length, 7 inches.

New York, MITCHILL, DEKAY. South Carolina, LIN., CUV.

Chaetodon alepidotus, LIN., Syst. Nat.
" " SHAW'S Gen. Zool., IV. p. 370.
Stromateus longipinnis, Harvest-fish, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 366.
Le Rhombe à longues nageoires, *Rhombus longipinnis*, CUV. et VAL., IX. p. 401, pl. 274.
Rhombus longipinnis, Long-finned Harvest-fish, DEKAY'S Report, p. 136, pl. 75, fig. 239.

2. *Rhombus triacanthus*, PECK.

Body ovate, very much compressed, particularly at the abdomen; more elongated than the preceding; its anterior dorsal and anal rays slightly elevated. Of a leaden color upon the back, lighter on the sides, silvery upon the abdomen. Cheeks, intermaxillaries, chin, base of pectorals, and base of caudal fin, together with more or less of the abdomen, sprinkled with very minute black dots. Opercles cupreous. Besides the lateral line are two others, one above and the other beneath the lateral, which curve backwards with the body and terminate at the fleshy portion of the tail. Twenty or thirty small circular black punctures, the orifices of numerous ducts, on each side of the base of the dorsal fin.

D. 45. P. 21. A. 43. C. 20. Length, 10 inches.

New Hampshire, PECK. Massachusetts, STORER. Connecticut, AYRES, LINSLEY. New York, MITCHILL, CUV., DEKAY.

Stromateus triacanthus, PECK, Mem. Amer. Acad., II. p. 48, pl. 2, fig. 2.

Stromateus cryptosus, Cryptous Broad Shiner, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 365, pl. 1, fig. 111.

Peprilus cryptosus, CUV., GRIFFITH'S CUV., X. p. 203.

Le Rhombe à fossettes, *Rhombus cryptosus*, CUV. et VAL., IX. p. 403.

Peprilus triacanthus, Three-spined Peprilus, STORER'S Report, p. 60.

Rhombus triacanthus, Short-finned Harvest-fish, DEKAY'S Report, p. 137, pl. 75, fig. 80.

If all the species of this genus have the *three spines* which are so well marked in this species, it may be thought necessary to change Peck's specific name, which now has the priority; in which case Mitchill's specific name will be very appropriately substituted.

GENUS XXV. *LAMPRIS*, RETZIUS.

Body oval, greatly compressed, scales small; a single elevated and elongated dorsal fin, which has but one small spine at the base of its anterior edge; there are ten very long rays to each ventral; the lobes of their caudal are also very long, but all these prolongations become worn away with age. Sides of the tail carinated; teeth wanting; branchiostegous rays, seven.

1. *Lampris guttatus*, RETZIUS.

The upper part of the back and sides are of a rich green, reflecting both purple and gold in different lights, passing into yellowish green below; above and beneath the lateral line are various round yellowish-white spots, from which the fish received the name of *Luna*; the irides are scarlet; all the fins are bright vermilion.

D. 2-52. P. 28. V. 1-9. A. 1-25. C. 30. Length, 4 to 5 feet.

Newfoundland, PENNANT.

- Zeus Luna, Gmel., Lin., Syst. Nat., p. 1225.
 Zeus opah, Penn., Brit. Zool.
 " " Opah Dory, Shaw's Gen. Zool., iv. p. 287, pl. 42.
 Zeus imperialis, Shaw, Nat. Miscellany, pl. 140.
 Lampris Luna, Opah, or King fish, JENYNS'S Brit. Vert., p. 369.
 Lampris guttata, Retz., Griffith's Cuv., x. p. 200, pl. 58, fig. 2.
 Le Lampris tacheté (Lampris guttatus, Retz.), Cuv. et Val., x. p. 39, pl. 232.
 Lampris guttatus, Rich., Fauna Boreal. Americ., III. p. 83.
 " " Wilson, Encyclop. Brit., Art. Ichth., p. 189, pl. 303, fig. 6.
 " " Yarrell's Brit. Fishes (2d edit.), i. p. 194, fig.

GENUS XXVI. ELACATE, Cuv.

Head depressed. No carina on the sides of the tail. No finlets. No free spines before the anal. Ventral fin thoracic.

1. Elacate Atlantica, Cuv.

General form of an Echineis. Black above; lighter on the sides. Beneath the lateral line, a slate-colored longitudinal band extends from the pectoral fin to the tail. Beneath silvery white. Eight triangular spines anterior to the dorsal fin. Dorsal long, triangular anteriorly, situated midway between the base of the pectoral and the origin of the anal fin. Pectorals long, falciform. Caudal deeply lunate, its upper lobe longest, and its rays projecting beyond the membrane.

D. 8-34. P. 20. V. 1-5. A. 23. C. 21. Length, 32 inches.

Massachusetts, South Carolina, DEKAY. New York, MITCHILL.

- Scomber niger, Black Mackerel, Bloch, Shaw's Gen. Zool., iv. p. 593.
 Centronotus spinosus, Crab-eater, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., i. p. 490, pl. 3, fig. 9.
 L'Ecate d'Amérique, Elacate Atlantica, Cuv. et Val., VIII. p. 334.
 Elacate Atlantica, Northern Crab-eater, DEKAY'S Report, p. 113, pl. 25, fig. 77.

FAMILY VIII. TEUTHIDÆ.

Body compressed, ovate, oblong. Mouth small, not protractile. Teeth often dentated, and disposed in a single row in both jaws. Palate and tongue smooth. A single dorsal, usually long.

GENUS I. ACANTHURUS, Bloch.

Teeth cutting and serrated. A movable spine on the side of the tail. Head deep, compressed. Eyes placed high up on the head. The skin thick, and usually covered with small scales.

1. Acanthurus phlebotomus, Cuv.

Deep brown. Pectorals partly yellow. Opercles deeply striated; the scapular bone also striated. Tail nearly even.

D. 9-24. P. 15. V. 1-5. A. 3-23. C. 16. Length, 7 to 12 inches.

New York, Gulf of Mexico, Caribbean Sea, Cuv.

Barbero, PARRA, p. 45, pl. 21, fig. 2.

L'Acanthure saigneur, *Acanthurus phlebotomus*, Cuv. et VAL., x. p. 176, pl. 237.

Acanthurus phlebotomus, Surgeon, DEKAY'S Report, p. 139, pl. 73, fig. 234.

2. *Acanthurus cœruleus*, BLOCH.

Of a bright blue color. Dorsal and anal rayed alternately with light and dark blue.

D. 9-27. P. 15 or 12. V. 1-5. A. 3-25. C. 16. Length, 4 to 8 inches.

South Carolina, Florida, CATESBY. Caribbean Sea, Cuv.

Turdus rhomboidalis, Tang, CATESBY'S Hist. Carol., II. pl. 10, fig. 1.

" " " BROWNE'S Jamaica, p. 451.

L'Acanthure bleu (*Acanthurus cœruleus*, BL.), Cuv. et VAL., x. p. 179.

Acanthurus cœruleus, DEKAY'S Report, p. 140.

3. *Acanthurus chirurgus*, BLOCH.

Brown, tinged with yellow. Vertical blackish lines upon the flanks, which do not reach either the back or the belly; in some specimens, where they are most marked, twelve or thirteen exist, which commence back of the ear and terminate in front of the spines anterior to the tail; in some specimens these bands do not exist. Ventrals blackish, pectorals yellowish; very fine, blackish, radiating lines upon the dorsal.

D. 9-23. P. 15. V. 1-5. A. 3-22. C. 16. Length, 10 or 11 inches.

Caribbean Sea, Cuv.

Chætodon chirurgus, BLOCH, VI. p. 74, pl. 203.

Acanthurus chirurgus, Lancet *Acanthurus*, SHAW'S Gen. Zool., IV. p. 379, pl. 52.

L'Acanthure chirurgien (*Acanthurus chirurgus*, BL., SCHN.), Cuv. et VAL., x. p. 168.

FAMILY IX. TÆNIDÆ.

Very similar to the Scombridæ. They often have the elongated dorsal fin, as well as the anal when it exists, united to the caudal. The articulated rays are generally simple. The ventrals are frequently a single ray, or less than five; the position of these fins beneath the throat causes them to resemble the *Blennius*.

GENUS I. STYLEPHORUS, SHAW.

Body very long, compressed. Snout lengthened, directed upwards, retractile towards the head by means of a membrane. Mouth without teeth. Eyes pedunculated, standing on a short, thick cylinder. Branchiæ, three pairs beneath the throat. Pectorals small; dorsal nearly as long as the back.

1. *Stylephorus chordatus*, SHAW.

Body elongated, compressed, destitute of scales, of a silvery or pearly color. The caudal fin, looking like a second dorsal, is composed of six rays, the first five of which are short; the sixth forms a hair-like cord, concave upon its sides, rounded above and beneath, which is more than twice the length of the body.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 10 to 11 inches, exclusive of tail.
Caribbean Sea, SHAW.

- Stylephorus chordatus*, SHAW, Lin. Trans., i. p. 90, pl. 6.
" " " Nat. Miscellany, VIII. pl. 274.
" " " Chordated *Stylephorus*, SHAW'S Gen. Zool., iv. p. 87, pl. 11.
" " " BLAINVILLE, Journ. de Physique, LXXXVII. p. 60, pl. 1, fig. 1.
" " " GRIFFITH'S CUV., x. p. 211.
Stylephore à corde, *Stylephorus chordatus*, CUV. et VAL., x. p. 351.

FAMILY X. ATHERINIDÆ.

Mouth protractile; no notch on the upper jaw, nor tubercle on the lower. Suborbital not dentated. A broad silvery band on the side. Very small crowded teeth on the pharyngeals. The first branchial arch with long pectinations. Two dorsal fins, most commonly distant. Ventrals behind the pectorals.

GENUS I. ATHERINA, LIN.

Body elongated. Two dorsals widely separated; ventrals further back than the pectorals; the mouth highly protractile, and furnished with very minute teeth. A broad silvery band along each flank on all the known species.

1. *Atherina menidia*, LIN.

Light colored, the black points in the edge of the scales very small. Height one seventh of its length; its head is three tenths its whole length. Dorsals distant; the second dorsal nearly over the middle of the anal. One of the most elongated of the genus.

D. 5, 1-9. P. 15. V. 1-5. A. 1-25. C. 19. Length, 5 inches.

New York, CUV. South Carolina, LIN., DEKAY.

Called "Silver-fish," in Carolina.

- Atherina menidia*, LIN., Syst. Nat. (12th edit.), p. 519.
Atherina viridescens, Green-striped Silver-side, MITCHELL, Trans. Lit. et Phil. Soc. of N. Y., i. p. 447.
L'Athérine menidie (*Atherina menidia*, LIN.), CUV. et VAL., x. p. 462.
Atherina menidia, Slender Silver-side, DEKAY'S Report, p. 142, pl. 74, fig. 226.

2. *Atherina notata*, MITCHILL.

Of a greenish brown color. Black points at the base of the anal rays. Dorsals contiguous, the second coterminal with the anal; height one sixth its length; length of head one fifth its whole length.

D. 5-9. P. 14. V. 1-5. A. 25. C. 17. Length, 3 to 5 inches.

Massachusetts, STORER. Connecticut, AYRES, LINSLEY. New York, MITCHILL, CUV., DEKAY. South Carolina, CUV.

Atherina notata, Small Silver-side, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., 1. p. 446, pl. 4, fig. 6.

L'Athérine de Bosc (*Atherina Boscii*, CUV., *Atherina notata*, MITCH.), CUV. et VAL., x. p. 465.

Atherina Boscii, Small Silver-side, STORER'S Report, p. 62.

Atherina notata, Dotted Silver-side, DEKAY'S Report, p. 141, pl. 28, fig. 83.

3. *Atherina Carolina*, CUV.

Snout pointed. Height to its total length as one to six and three quarters.

D. 8, 1-12. P. 15. V. 1-5. A. 1-15 or 16. C. 17. Length, 4 inches.

South Carolina, CUV.

Le Roséré de la Caroline, *Atherina Carolina*, CUV. et VAL., x. p. 445.

Atherina Carolina, DEKAY'S Report, p. 143.

4. *Atherina Martinica*, CUV.

Elongated; head small and slightly pointed. Scales large, with their edges crenulated. Eighteen or nineteen soft rays to the anal.

D. 6, 1-7. P. 15. V. 1-5. A. 1-18 or 19. C. 17. Length, 4 inches.

Caribbean Sea, CUV.

L'Athérine de la Martinique, *Atherina Martinica*, CUV. et VAL., x. p. 459.

5. *Atherina Humboldtiana*, CUV.

Similar in form to the Perch, but the snout is more pointed and more depressed. The lower jaw the longer. Greenish, with silvery reflections upon the back, and a broad silvery ray upon each side. Caudal edged with blackish. Its greatest height one fifth of its entire length; the length of the head one fourth the length of the body.

D. 5, 1-10. P. 14. V. 1-5. A. 1-19. C. 17. Length, 11 inches.

Mexico, CUV.

L'Athérine de Humboldt, *Atherina Humboldtiana*, CUV. et VAL., x. p. 479, pl. 306.

6. *Atherina vomerina*, CUV.

Very similar to the above; but it has small asperities upon the vomer, which are readily distinguished by the finger, and an additional soft ray to the dorsal and anal fins.

D. 5, 1-11. P. (?). V. (?). A. 1-20. C. (?). Length, 8 inches.

Mexico, CUV.

L'Athérine vomérine, *Atherina vomerina*, CUV. et VAL., x. p. 481.

FAMILY XI. MUGILIDÆ.

The body is almost cylindrical, covered with large scales, and furnished with two distinct dorsal fins, the first of which has only four spinous rays. The ventrals are attached somewhat behind the pectorals. The gills have six rays. The head is rather depressed, also covered with large scales or polygonal plates. The muzzle is very short. The teeth are very fine, sometimes scarcely perceptible.

GENUS I. MUGIL, LIN.

Ventrals placed a short distance behind the pectorals. The first dorsal with four spinous rays. The middle of the under jaw tuberculated within, and a corresponding cavity in the upper jaw. Teeth very small.

1. *Mugil albula*, LIN.

General hue whitish. Caudal with a blackish border. Lips finely pectinated.

D. 4-18. P. 15. V. 1-5. A. 1-7. C. 15. Length, 9 inches.

Connecticut, LINSLEY. New York, MITCHILL, CUV., DEKAY. Virginia, SCHOEPPF.
South Carolina, LIN., CATESBY, SCHOEPPF.

Albula Bahamensis, Mullet, CATESBY'S Hist. Carol., II. p. 6, pl. 5.

Mugil albula, LIN., Syst. Nat. (12th edit.), p. 520.

" " American Mullet, SHAW'S Gen. Zool., v. p. 137.

" " New York Mullet, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 447.

Le Muge blanquette (*Mugil albula*, LIN.), CUV. et VAL., XI. p. 94.

Mugil albula, White Mullet, DEKAY'S Report, p. 146.

2. *Mugil lineatus*, MITCHILL.

Lower jaw equalling or exceeding the upper in length. Ten or twelve dark longitudinal stripes. Dorsal outline convex.

D. 4-8. P. 16. V. 1-5. A. 3-8. C. 12 $\frac{1}{2}$. Length, 6 to 8 inches.

Connecticut, LINSLEY. New York, CUV., DEKAY.

Le Muge rayé (*Mugil lineatus*, MITCH.), CUV. et VAL., XI. p. 96.

Mugil lineatus, Striped Mullet, DEKAY'S Report, p. 144, pl. 15, fig. 42.

3. *Mugil petrosus*, CUV.

The second dorsal and anal covered with scales. No spot at the base of the pectorals. The edge of the caudal fin blackish.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 6 to 7 inches.

New York, Gulf of Mexico, Cuv.

Le Muge des Roches, *Mugil petrosus*, Cuv. et VAL., XI. p. 89.
Mugil petrosus, Rock Mullet, DEKAY'S Report, p. 147.

4. *Mugil Plumieri*, Cuv.

The edges of the scales golden yellow ; a blackish-blue spot at the base of the pectorals, and a small spot of the same color on every scale. The second dorsal and anal without scales. Height of the body to its length as one to four and a half, nearly. Scales small.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, (?).

New York, Caribbean Sea, Cuv.

Le Muge de Plumier, *Mugil Plumieri*, Cuv. et VAL., XI. p. 90.
Mugil Plumieri, Spotted Mullet, DEKAY'S Report, p. 147.

5. *Mugil liza*, Cuv.

Of a silvery gray, tinted with golden. Head one fifth its length ; height, at middle, equal to one sixth its length. Thirty-five scales upon the side in a longitudinal series. The skin around the eye naked for some extent.

D. 4, 1-8. P. 14. V. 1-5. A. 3-8. C. 14. Length, 2½ feet.

Caribbean Sea, Cuv.

Le Muge liza, *Mugil liza*, Cuv. et VAL., XI. p. 83.

6. *Mugil curema*, Cuv.

Silvery, slightly gilded. Caudal edged with blackish. Second dorsal and anal covered with scales. The angle of the suborbitals truncated and denticulated.

D. 4, 1-9. P. (?). V. (?). A. 3-9. C. (?). Length, 9 to 10 inches.

Caribbean Sea, Cuv.

Le Muge curema, *Mugil curema*, Cuv. et VAL., XI. p. 87.

GENUS II. *DAJAUS*, Cuv.

The cleft of the mouth longitudinal. Velvety teeth upon the palatines and vomer.

1. *Dajaus monticola*, BANCROFT.

Greenish gray, slightly gilded and silvery upon the belly, according to M. Ricord. The figure inserted in Griffith's Cuvier, drawn by Dr. Bancroft, is reddish brown upon the back, gilded upon the side, white beneath ; opercles and fins yellowish. Length of the head equal to the height of the body. About forty scales upon the side in a longitudinal series.

D. 4, 1-8. P. 14. V. 1-5. A. 3-9. C. 17. Length, 4 to 8 inches.

Caribbean Sea, Cuv.

Called "El dajao," at Porto Rico.

Mugil monticola, BANCROFT, GRIFFITH'S CUV., x. p. 367, pl. 36.

Dejao des Montagnes, *Dajaus monticola*, CUV. et VAL., xi. p. 164, pl. 316.

FAMILY XII. GOBIDÆ.

Body more or less elongated. Scales small, or entirely wanting. The spines of the dorsal fin slender and flexible. Branchial aperture small. Ventrals, when present, placed in advance of the pectorals. Many viviparous.

GENUS I. BLENNIUS, Cuv.

Head rounded and blunt; body smooth, unctuous, compressed; a single elongated dorsal fin; ventral fins placed before the pectorals, and containing generally but two rays, united at their base; teeth slender, in a single row.

1. *Blennius fucorum*, Cuv.

Greenish brown, with brown spots above the lateral line. Bifid cirrhi over the eyes, as long as the head.

D. 11-17. P. 14. V. 3. A. 18. C. 14. Length, 2 inches.

Coast of New York, DEKAY.

Le Blennie des fucus, *Blennius fucorum*, CUV. et VAL., xi. p. 263, pl. 324.

Blennius fucorum, Sea-weed Blenny, DEKAY'S Report, p. 149, pl. 22, fig. 66.

2. *Blennius geminatus*, Wood.

Head with a three-rayed cirrhus over each eye; body with several pairs of brownish spots on the sides, above which are confluent marks on the back, extending a little way upon the dorsal fin. Dorsal fin with an irregular blackish spot anteriorly.

D. 27. P. 13. V. 2. A. 17. C. 14½. Length, 2½ inches.

South Carolina, WOOD.

Blennius geminatus, Wood, Journ. Acad. Nat. Sc., iv. p. 278.

Le Blennie geminé (*Blennius geminatus*, Wood), CUV. et VAL., xi. p. 265.

Blennius geminatus, DEKAY'S Report, p. 149.

3. *Blennius punctatus*, Wood.

A bifurcated cirrhus over each eye; dorsal fin with an irregular blackish spot between the first and third rays; body thickly covered with small blackish spots, which are confluent on the sides; caudal fin with five obscure brownish bands.

D. 27. P. 14. V. 3. A. 18. C. 11½. Length, 3 inches.

South Carolina, WOOD.

Blennius punctatus, WOOD, Journ. Acad. Nat. Sc., IV. p. 279.

Le Blennie tacéhté (*Blennius punctatus*, WOOD), CUV. et VAL., XI. p. 267.

Blennius punctatus, DEKAY's Report, p. 149.

GENUS II. PHOLIS, FLEMING.

Neither cirrhi nor fleshy crests upon the orbits.

1. *Pholis subbifurcatus*, STORER.

Dorsal fin extending to the tail; filaments upon the nostrils; three dark-colored bands passing from the eyes; lateral line subbifurcated.

D. 43. P. 13. V. 3. A. 30. C. 14. Length, 5 inches, 5 lines.

Massachusetts, STORER.

Pholis subbifurcatus, Subbifurcated *Pholis*, STORER's Report, p. 63.

" " Radiated Shanny, DEKAY's Report, p. 150.

2. *Pholis Carolinus*, CUV.

Greenish, with four or five irregular clouded spots along the back. Brown points irregularly scattered upon the fins. Sixteen teeth in the upper, fourteen in the lower jaw, with stout canines.

D. 12-18. P. (?). V. (?). A. 18. C. (?). Length, 4 inches.

South Carolina, CUV.

Le *Pholis Carolin*, *Pholis Carolinus*, CUV. et VAL., XI. p. 276.

Pholis Carolinus, DEKAY's Report, p. 151.

GENUS III. CHASMODES, CUV.

The branchial aperture open only above the pectoral fin. Mouth deeply cleft, with teeth only on the anterior part of the jaws; these are firm, regular, and in a single row.

1. *Chasmodes Bosquianus*, CUV.

With six clouded vertical bands. Dorsal united with the caudal. A minute filament over the eye.

D. 29. P. 14. V. 2. A. 19. C. 15. Length, 3 inches.

Chesapeake Bay, MITCHILL. New York, CUV., DEKAY. South Carolina, LESUEUR.

Blennius Bosquianus, LACEP., SHAW's Gen. Zööl., IV. p. 173.

Blennius Pholis, Smooth Blenny, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 374.

Blennius Hentz, LESUEUR, Journ. Acad. Nat. Sc., IV. p. 363.

Le *Chasmodes Bosquien* (*Chasmodes Bosquianus*, CUV.), CUV. et VAL., XI. p. 295, pl. 327.

Chasmodes Bosquianus, Six-banded *Chasmodes*, DEKAY's Report, p. 151, pl. 24, fig. 73.

2. *Chasmodes novemlineatus*, Wood.

Body with nine whitish longitudinal bands ; dorsal fin with an irregular blackish spot between the first and second rays ; remainder of the fin clouded with dusky brown.

D. 30. P. 13. V. 2. A. 20. C. 12 $\frac{3}{4}$. Length, 3 $\frac{1}{4}$ inches.

South Carolina, Wood.

Pholis novemlineatus, Wood, Journ. Acad. Nat. Sc., iv. p. 250.

Le *Chasmodes* à neuf raies, *Chasmodes novemlineatus*, Cuv. et VAL., xi. p. 299.

Chasmodes novemlineatus, DEKAY'S Report, p. 152.

3. *Chasmodes quadrifasciatus*, Wood.

Body with four distinct brownish bands, and an interrupted obscure broad band on the neck ; belly with four yellowish spots over the anal fin ; ventral fin fasciate with brown Dorsal fin not joining the tail.

D. 27. P. 11. V. 2. A. 15. C. 9. Length, 2 $\frac{1}{2}$ inches.

Maryland (?), Wood.

Pholis quadrifasciatus, Wood, Journ. Acad. Nat. Sc., iv. p. 282, pl. 17, fig. 1.

Le *Chasmodes* à quatre bandes, *Chasmodes quadrifasciatus*, Cuv. et VAL., xi. p. 293.

Chasmodes quadrifasciatus, DEKAY'S Report, p. 152.

Chasmodes Boscianus?

GENUS IV. *SALARIAS*, Cuv.

Species whose teeth, forming a single range and placed close to each other, are compressed laterally, hooked at the end, exceedingly slender, and very numerous. They move, in the living subject, like the keys of a harp-sichord. Their head, strongly compressed above, is very broad below ; their lips are thick and fleshy ; their profile is completely vertical, and their spirally convoluted intestines are longer and thinner than in the common Blenny.

1. *Salarias Atlanticus*, Cuv.

Chocolate-brown, lighter towards the abdomen ; caudal blackish in its middle, yellowish upon its upper and lower edge. A black spot back of the eye. Head one fifth the whole length. A simple and very slender tentacle upon the eyebrow, the height of the eye.

D. 11-21. P. 15. V. 2. A. 24. C. 11. Length, 3 $\frac{1}{2}$ inches.

Caribbean Sea, Cuv.

Le *Salarias* de l'Atlantique, *Salarias Atlanticus*, Cuv. et VAL., xi. p. 321.

2. *Salarias periophthalmus*, Cuv.

Olive-green above, with small red points ; abdomen whitish ; dorsal dotted with red, violet at its base, and having six blackish spots upon its anterior portion ; the caudal is orange

towards its extremity. Head compressed, a little longer than high. A simple, slender tentacle upon the eyebrow, half the height of the head; and a small one, with five divisions, at the nostril.

D. 12-20. P. 13. V. 2. A. 21. C. 11. Length, 4 to 7 inches.

Caribbean Sea, Cuv.

Le Salaria periphthalmus (*Salaria periphthalmus*, Cuv.), Cuv. et VAL., XI. p. 311.

GENUS V. CLINUS, Cuv.

Short, pointed teeth, scattered in several ranges, the first of which is the largest. Their muzzle is less obtuse, their stomach wider, and their intestines shorter than in the *Salaria*.

1. *Clinus gobicus*, Cuv.

Russet-gray, with traces of clouded brownish bands; one dark-brown band at the base of the tail. Head large; diameter of eyes equal to two fifths the length of the head. Preopercle and opercle rounded. Twenty-six equal teeth in the upper jaw, extending to the angle; sixteen in the lower jaw, occupying half of the length of the jaw on each side, the two last stouter and more hooked.

D. 18-9. P. 14. V. 2. A. 2-17. C. 15. Length, 2 inches.

Caribbean Sea, Cuv.

Le Clinus chabot, *Clinus gobicus*, Cuv. et VAL., XI. p. 395.

GENUS VI. GUNNELLUS, FLEMING.

Body elongated, much compressed. Head oblong. Mouth small. Teeth velvet-like, or in cards. Dorsal rays spinous throughout. Ventrals excessively small, and reduced often to a single spine.

1. *Gunnellus vulgaris*, FLEMING.

Deep olive, with a row of dark ocellated spots, varying in number, but generally from ten to twelve, along the line of the back, extending partly on to the dorsal fin; belly whitish; pectorals yellow. Dorsal united to the caudal. Ventrals mere spines.

D. 76 or 77. P. 11 or 12. V. 1-1. A. 2-40. C. 15. Length, 4 to 12 inches.

Greenland, FABRICIUS.

Blennius gunnellus, LIN., *Syst. Nat.*, I. p. 443.
 " " FABRICIUS, *Fauna Groenlandica*, p. 149.
 " " BLOCH, II. p. 162, pl. 171, fig. 1.

- Blennius gunnellus*, Spotted Blenny, PENNANT'S Brit. Zool., III. p. 282, pl. 60.
" " Gunnel Blenny, SHAW'S Gen. Zool., IV. p. 179.
" " Spotted Gunnel, JENYNS'S Brit. Vert., p. 383.
Gunnellus vulgaris, FLEM., Brit. An., p. 297, sp. 124.
Muraenoides guttata, Spotted Gunnel or Butter-fish, LACEP., YARRELL'S Brit. Fishes (1st edit.), I. p. 239, fig.; (2d edit.), I. p. 269.
Le Gonnelle vulgaire (*Gunnellus vulgaris*, CUV., *Blennius gunnellus*, LIN.), CUV. et VAL., XI. p. 419.

2. *Gunnellus punctatus*, FAB.

Tawny; the head dotted with white; the throat, pectorals, and caudal striped with the same; about seven brown streaks on the cheeks; five black spots, joined to as many white ones, on the dorsal, and about twelve less conspicuous black spots on the anal. The dorsal and anal fins are continued to the caudal, the former being joined to it by a membrane, but the anal is distinct.

D. 50. P. 17. V. 4. A. 38. C. 18. Length, 6 inches.

Greenland, FABRICIUS.

Called "Akulliakitsoc," by the Greenlanders.

- Blennius punctatus*, FAB., Fauna Groenlandica, p. 153.
Blennius (*Clinus*) *punctatus*, FAB., AKOOLIAKEETSOK, RICH., Fauna Boreal. Americ., III. p. 88.
Le Gonnelle ponctué, *Gunnellus punctatus*, CUV. et VAL., XI. p. 428.

3. *Gunnellus Fabricii*, CUV.

Back and sides palish, marked irregularly with brown spotted circles. Head and pectorals yellowish; belly white, with a yellowish tint behind the anus. The even dorsal occupies the entire back, but is distinct from the obovate caudal. Ventrals with three rays, the lower of which is longest; the upper ray scarcely perceptible.

D. 63. P. 15. V. 3. A. 41. C. 18. Length, 1 foot.

Greenland, FABRICIUS.

Called "Teyarnak," by the Greenlanders.

- Blennius lumpenus*, FAB., Fauna Groenlandica, p. 151.
Blennius (*Clinus*) *lumpenus*, LUMPER, FAB., RICH., Fauna Boreal. Americ., III. p. 90.
Le Gonnelle de Fabricius, *Gunnellus Fabricii*, CUV. et VAL., XI. p. 431.

4. *Gunnellus anguillaris*, PALLAS.

Olive-yellow, lighter beneath, with five longitudinal, parallel, interrupted brown bands, alternately darker and paler; base of the caudal black; caudal fawn-colored, crossed with brown lines; dorsal yellowish brown; anal yellowish; ventrals four-rayed, the external longest.

D. 67 to 70. P. 14. V. 1-3. A. 45-50. C. 14. Length, 1½ foot.

Northwest Coast of America, east of the Aleutian Islands, CUV.

Called "Kanaise," at Kamtschatka.

- Le Gonnelle anguillaire* (*Blennius anguillaris*, PALLAS, *Gunnellus anguillaris*, CUV.), CUV. et VAL., XI. p. 431.

5. *Gunnellus dolichogaster*, PALLAS.

Olive-brown, clouded with greenish and yellowish. Green spots above the lateral line, and a yellow band along the lower edge of the belly. The dorsal and anal fins are brown, with pale vertical bands. The caudal and pectorals are tinged with yellowish. The lower jaw is the longer. The anus is situated before the middle of the body, but the ovaries are extended far behind it. The ventrals are two small bony tubercles projecting through the skin.

D. 93. P. 14. A. 2-50. C. 30. Length, 1 foot.

Northwest Coast, CUV.

Le Gonnelle à long ventre (*Gunnellus dolichogaster*, CUV., *Blennius dolichogaster*, PALLAS), CUV. et VAL., xi. p. 436.

6. *Gunnellus Groenlandicus*, REINHARDT.

Yellowish gray, marbled with brown upon the back, with a dozen yellowish points above the lateral line between the pectorals and the anus; back of the anus the spots are more numerous, and disposed beneath as above the lateral line in ten or twelve vertical bands. A dozen vertical brown bands anterior to anal fin. Along the base of the dorsal fin a series of ten large, roundish, yellowish spots, which are marbled with blackish spots. Three black lines upon the head. Fins yellowish. Scales very small. Neck and cheeks covered with pores.

D. 89. P. 12. V. 1. A. 2-43. C. 24. Length, 5 inches, 9 lines.

Greenland, REINHARDT.

Le Gonnelle du Groenland (*Gunnellus Groenlandicus*, REINHARDT), CUV. et VAL., xi. p. 442, pl. 340.

7. *Gunnellus mucronatus*, MITCHILL.

Yellowish brown, presenting a waved appearance, with twelve or more ocellated black spots along the base of the dorsal fin, surrounded with a lighter circle. Dorsal continued nearly to, but not united with, the anal fin. Two short spines in the place of the ventrals.

D. 75 to 78. P. 11 or 12. V. 1. A. 2-36 to 40. C. 16 to 18. Length, 4 to 12 inches.

Massachusetts, STORER. New York, MITCHILL, DEKAY.

Ophidium mucronatum, Spinous Ophidium, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., i. p. 361, pl. 1, fig. 1.

Le Gonnelle épineux (*Gunnellus mucronatus*, CUV., *Ophidium mucronatum*, MITCH.), CUV. et VAL., xi. p. 427.

Blennius (*Centronotus*) *gunnellus*, LIN., Spotted Gunnelle, RICH., Fauna Boreal. Americ., iii. p. 91.

Muraenoides guttata, Spotted Gunnel, LACEP., STORER'S Report, p. 65.

Gunnellus mucronatus, American Butter-fish, DEKAY'S Report, p. 153, pl. 12, fig. 36.

GENUS VII. ZOARCES, CUV.

Body elongated, and covered with a mucous secretion, in which are imbedded very small scales. Dorsal, anal, and caudal united; no spinous rays

in the dorsal, except on its posterior part. Ventrals jugular, small. Vent with a tubercle. Teeth conical; in two or three rows in front; in a single row on the sides; none on the palate or tongue. Branchial rays, six.

1. *Zoarces anguillaris*, PECK.

Elongated, compressed posteriorly. Yellowish brown, mottled with darker blotches; two more or less distinct oblique bands upon operculum. In the living specimen, the dorsal is almost white, salmon-colored at its edge. Pectorals and ventrals salmon-colored. Anal salmon-colored at edge, flesh-colored at base, with seven distinct white blotches in its extent. Lips very large; the upper projects much beyond the lower.

D. 118 or 120. P. 19 or 20. V. 2. A. 100. C. 19. Length, 3 feet.

New Hampshire, PECK. Maine, Massachusetts, STORER. New York, MITCHILL, CUV., DEKAY.

Blennius anguillaris, PECK, Mem. Amer. Acad., II. pt. 2, p. 46, fig.

Blennius labrosus, Large-lipped Blenny, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 375, pl. 1, fig. 7.

Le Zoarcès à grosses lèvres, *Zoarces labrosus*, CUV. et VAL., XI. p. 466, pl. 341.

Zoarces anguillaris, Eel-shaped Blenny, STORER'S Report, p. 66.

" " Thick-lipped Eel-pout, DEKAY'S Report, p. 155, pl. 16, fig. 45.

2. *Zoarces fimbriatus*, CUV.

Head greenish brown. Body and tail salmon-colored. Dorsal fin dark green, margined with yellowish.

D. 95-16, 16-127. P. 20. V. 4. A. 115. C. 20. Length, 20 inches.

New York, MITCHILL.

Blennius ciliatus, Fringed Blenny, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 374, pl. 1, fig. 6.

Le Zoarcès frangé, *Zoarces fimbriatus*, CUV. et VAL., XI. p. 463.

Zoarces fimbriatus, Bordered Eel-pout, DEKAY'S Report, p. 156.

3. *Zoarces Gronovii*, CUV.

Brown; teeth fine and sharp, disposed in a single row in the upper jaw, and in the angles of the lower jaw; but in the front of each jaw a double row. Scales small. Dorsal not emarginated. Caudal pointed. Pectorals very large. Ventrals round.

D. more than 80. P. 16. V. 2. A. more than 6. C. (?). Length, 6 inches.

Precise locality not mentioned.

Le Zoarcès de Gronovius (*Zoarces Gronovii*, CUV., *Blennius Americanus*, BL., SCHN.) CUV. et VAL., XI. p. 469.

GENUS VIII. ANARRHICAS, LIN.

Head smooth, rounded, muzzle obtuse; body elongated, covered with minute scales; dorsal and anal fins long, distinct from the caudal; no ventral

fin. Teeth of two kinds ; those in front elongated, curved, pointed ; the others on the vomer, as also on the jaws, truncated or slightly rounded ; branchiostegous rays, six.

1. *Anarrhicas lupus*, LIN.

Purplish brown, with ten or twelve transverse, nearly black bars, passing from the abdomen high up on the dorsal fin. Pectorals and anal leaden gray. Dorsal rays black. Caudal slate-colored, reddish at extremity. The jaws, vomer, and palatines are covered with large bony tubercles, which support on their summits little enamelled teeth, but the anterior teeth are conical and larger.

D. 74. P. 20. A. 46. C. 161. Length, 3 to 5 feet.

Greenland, FABRICIUS. Maine and Massachusetts, STORER. New York, MITCHILL, DEKAY.

- Anarrhicas lupus*, LIN., Syst. Nat., p. 430.
 " " FABRICIUS, Fauna Groenlandica, p. 138.
 " " BLOCH, III. p. 18, pl. 74.
 " " SHAW'S Gen. Zoöl., IV. p. 93, pl. 13.
 " " Wolf-fish, PENN., Brit. Zoöl., III. p. 201, pl. 27.
 " " Sea-wolf, MITCHILL, Amer. Month. Mag., v. p. 242.
 L'Anarrhique loup (*Anarrhicas lupus* LIN.). CUV. et VAL., XI. p. 473, pl. 342.
Anarrhicas lupus, Wolf-fish, FLEM., Brit. An., p. 203, sp. 127.
 " " " JENYNS'S Brit. Vert., p. 384.
 " " Sea-wolf, WILSON, Encyclop. Brit., Art. Ichth., p. 193, pl. 304, fig. 2.
 " " Common Wolf-fish, RICH., Fauna Boreal. Americ., III. p. 95.
 " " Wolf-fish, YARRELL'S Brit. Fishes (2d edit.), I. p. 277.
 " " " STORER'S Report, p. 69.
 " " Sea-wolf, DEKAY'S Report, p. 158, pl. 16, fig. 43.

GENUS IX. GOBIUS, CUV.

Ventrals joined together, forming a hollow disk, placed under the thorax. Two dorsals. Teeth velvet-like, or in cards.

1. *Gobius lanceolatus*, BLOCH.

Grayish brown, with three or four blackish points before the first ray of the anterior dorsal ; an indistinct black spot on the sides back of the pectorals. Height about one eleventh its length, of which the caudal is nearly a third. The caudal is so much pointed, that the outer rays are only one eighth the length of the middle rays. The base of the tongue pearly, clouded with green or bluish.

D. 5, 1-13. P. 19. V. 1-5. A. 1-14. C. 15. Length, (?).

Gulf of Mexico, Caribbean Sea, CUV.

Called "Emerelda," or "Emeraude," in Cuba ; "Endormi," at Martinique.

- La Lancette, *Gobius lanceolatus*, BLOCH, II. p. 7, pl. 38, fig. 1 and 2.
Gobius lanceolatus, LIN., Syst. Nat., GMEIN., p. 1263.
" " Lance-tailed Goby, SHAW'S Gen. Zool., IV. p. 233, pl. 34.
Le Gobie lancette (*Gobius lanceolatus*, BL.), CUV. et VAL., XII. p. 114.

2. *Gobius alepidotus*, Bosc.

Entirely destitute of scales. Height one sixth its length. Greenish brown, with seven vertical dusky bands. Fins brown.

D. 6-14. P. 17. V. 12 or 13. A. 11. C. 19. Length, $2\frac{1}{2}$ inches.

New York, MITCHILL, CUV., DEKAY. South Carolina, CUV.

- Gobius alepidotus*, Bosc. BL., SCHNEIDER, p. 547?
Le Gobie de Bosc, LACEPEDE, Hist. Pois., II. p. 556, pl. 16, fig. 1.
Gobius viridi-pallidus, Variegated Goby, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 379, pl. 1, fig. 8.
Le Gobie de Bosc (*Gobius Boscii*, LACEP.), CUV. et VAL., XII. p. 96.
Gobius alepidotus, Variegated Goby, DEKAY'S Report, p. 160, pl. 23, fig. 70.

3. *Gobius soporator*, Cuv.

Of a deep bistre-brown color; grayish brown beneath. Fins brown; transverse marks upon the caudal. Jaws nearly equal. The horizontal mouth is cleft to beneath the middle of the eye; the anterior row of teeth project but little beyond the others. The last ray of the second dorsal and anal fins elongated.

D. 6, 1-9. P. 15, and 5 filaments. V. 1-5. A. 1-8, the last double. C. 15. Length, 4 inches.

Gulf of Mexico and Caribbean Sea, CUV.

Called "Mapo," at Havana.

- Le Gobie endormeur, *Gobius soporator*, CUV. et VAL., XII. p. 56.

4. *Gobius banana*, Cuv.

Brown, with small brown marblings; the points of the dorsal and caudal brown; those of the anal and ventral white; of the pectorals gray. Body elongated. Scales moderate; those on the neck small. Snout elongated; upper jaw quite protractile.

D. 6, 1-10. P. (?). V. (?). A. 1-10. C. (?). Length, 5 inches.

Caribbean Sea, CUV.

- Le Gobie banane, *Gobius banana*, CUV. et VAL., XII. p. 103.

5. *Gobius Martinicus*, Cuv.

Gray, with brown spots upon the dorsal and caudal rays, and brown clouds in the intervals between the rays. This species is very similar to the *G. banana*, perhaps a mere variety.

D. 6-10. P. (?). V. (?). A. 1, 1-10. C. (?). Length, 6 to 7 inches.

Caribbean Sea, CUV.

- Le Gobie de la Martinique, *Gobius Martinicus*, CUV. et VAL., XII. p. 105.

6. *Gobius bacalaus*, Cuv.

The lateral spot more obvious than in the *G. lanceolatus*, and one still better marked, which is often triangular, at the base of the tail. In young specimens, the first dorsal and caudal are sometimes each one third its entire length.

D. (?). P. (?). V. (?) A. (?). C. (?). Length, (?).

Gulf of Mexico, Cuv.

Called "Emeralda," in Cuba.

Le Gobie bacalaou, Gobius bacalaus, Cuv. et VAL., XII. p. 119.

7. *Gobius smaragdus*, Cuv.

Head almost as wide as high. Body and fins of a deep greenish brown, more particularly the head; sprinkled with small, yellow, round spots. Its tongue has the same colored base as the *G. lanceolatus*.

D. 6-11. P. 16. V. 1-5. A. 1-11. C. 15. Length, 4 inches.

Gulf of Mexico, Cuv.

Called "Cabezona," in Cuba.

Le Gobie émeraude, Gobius smaragdus, Cuv. et VAL., XII. p. 120.

8. *Gobius crista galli*, Cuv.

Fawn-color; the first dorsal black, particularly towards the middle of its margin; the second blackish; the other fins gray. Numerous brownish points between the rays of the caudal. Scales large, smaller on the forepart of the back. A small, low membranous crest commences between the eyes, and terminates at the neck.

D. 6, 1-9. P. 18. V. 1-5. A. 1-8. C. 15. Length, 2½ inches.

Gulf of Mexico, Cuv.

Called "Mapo," in Cuba.

Le Gobie à crête de coq, Gobius crista galli, Cuv. et VAL., XII. p. 130.

GENUS X. *SICYDIUM*, Cuv.

The ventrals form a sort of bell, or round, concave basin, almost equally adherent throughout. The jaws have a single row of equal, compact, flexible teeth, and some stronger teeth within, upon the lower jaw. The teeth are somewhat like those of the *Salarias*; the ventrals resemble those of the *Cyclopterus* more than those of the *Gobius*; but in other respects the fishes of this genus resemble the *Gobius*, with a round tail.

1. *Sicydium Plumieri*, Cuv.

Deep olive, tinged with yellow upon the sides, and whitish towards the belly. Dorsals,

pectorals, and anal tinged with blackish. The third, fourth, and fifth rays of the first dorsal are prolonged into flexible filaments; the third and fourth are double the height of the body. Second dorsal higher than the body. The head, throat, and shoulders near the pectorals, and all the fins, are naked. Scales moderate upon the back and sides, becoming very small upon the belly.

D. 6, 1-10. P. 19. V. 1-5. A. 1-10. C. 17. Length, 5 inches.

Caribbean Sea, Cuv.

Called "El Olivo," at Porto Rico.

Gobius Plumieri, Bloch, pl. 178, fig. 3.

Le Siciidium de Plumier, Sicydium Plumieri, Cuv. et Val., XII. p. 168.

GENUS XI. ELEOTRIS, GRON.

Ventrals entirely distinct. Six branchial rays. Head obtuse and slightly depressed; eyes at a distance from each other.

1. *Eleotris gyrinus*, Cuv.

Deep, uniform olive-brown, with small lines or brown points upon the rays of the vertical fins. Two brown lines upon the temples, back of the eyes. The scales upon the sides of the head are very small, and scarcely to be seen; the cheeks are capable of being inflated in a remarkable manner.

D. 6, 1-8. P. 16. V. 1-5. A. 1-8. C. 15. Length, 6 inches.

Caribbean Sea, Cuv.

Called "Dormeur," at Martinique.

L'Éléotris tétard, *Eleotris gyrinus*, Cuv. et Val., XII. p. 220, pl. 356.

2. *Eleotris guavina*, Cuv.

Deep blackish brown, slightly russet upon the throat, chest, and belly. Fins nearly black, or spotted and dotted with black upon a blackish ground. The edge of the second dorsal, anal, ventrals, and upper and lower edges of the caudal, whitish gray. Scales smaller than in the *E. gyrinus*. More than ninety scales in a longitudinal line from the branchiæ to the tail, and nearly forty in a vertical line. First dorsal not quite equal to half the height of the body; the second two thirds its height, the last ray elongated.

D. 7, 1-10. P. 16. V. 1-5. A. 1-10, the last double. C. 15, and some small ones. Length, 9 inches.

Caribbean Sea, Cuv.

Guavina, Parra, p. 105, pl. 33, fig. 1.

L'Éléotris guavina, *Eleotris guavina*, Cuv. et Val., XII. p. 223.

3. *Eleotris mugiloides*, Cuv.

Blackish brown; bands or series of black spots upon the fins; upon the dorsal there are six or seven rows arranged obliquely; there are three or four rows upon the anal towards its base, and eight or nine upon the caudal. The extremities of the rays of the second dorsal and anal, whitish. Height, at the origin of the dorsal, one fourth its length; thickness half its height. The number of scales in a longitudinal line upon the side not more than thirty-five; in a vertical line, rarely more than twelve.

D. 7, 1-8. P. 14. V. 1-5. A. 1-9 or 10. C. 15. Length, 7 inches.

Caribbean Sea, Cuv.

Called "Mulet," at Martinique.

Sciæna maculata, Bloch, p. 299.

L'Éléotris mulet, *Eleotris mugiloides*, Cuv. et Val., XII. p. 226.

4. *Eleotris smaragdus*, Cuv.

More elongated than any other of the genus. Deep brown, slightly gray beneath; fins paler; browner points upon the dorsal rays. Height one tenth its length. The first dorsal has only very delicate rays. None of the three vertical fins exceed the height of the body. Scales very small.

D. 6-16. P. (?). V. (?). A. 1-9. C. (?). Length, 5 to 8 inches.

Gulf of Mexico, Cuv.

Called "Esmeralda negro," at Cuba.

L'Éléotris émeraude, *Eleotris smaragdus*, Cuv. et Val., XII. p. 231.

5. *Eleotris sima*, Cuv.

The whole body greenish or blackish; fins gray, with russet dots upon the rays. Snout obtuse. Lower jaw the longer. Thirty-two rows of scales upon the sides. The excretory milt orifice is situated before the genital papilla.

D. 8-9. P. 14. V. 1-5. A. 10. C. 15. Length, 3 inches.

Mexico, Cuv.

L'Éléotris à museau obtus, *Eleotris sima*, Cuv. et Val., XII. p. 232.

GENUS XII. *PHILYPNUS*, Cuv.

Differs from the *Eleotris* in having card-like teeth upon the vomer.

1. *Philypnus dormitator*, Cuv.

Elongated, cylindrical, head depressed. Lower jaw longer. Preopercular angle rounded at its entire edge. Back and sides of a deep brown, verging to olive, with large, irregular, blackish cloudings. Beneath yellowish. Fins olive; the vertical fins have three or four

rows of blackish spots between the rays ; six or seven pairs of blackish lines along each pectoral. Five or six blackish spots upon each ray of the ventral. Scales at the base of the caudal and pectorals. Back of the anus is the genital papilla, obtuse and slightly denticulated, flattened from before backwards.

D. 6, 1-9. P. 16. V. 1-5. A. 1-9. C. 13. Length, 12 or 14 inches.

Caribbean Sea, Cuv.

Called "Guavina," at Porto Rico.

Le Philypœ dormeur (Philypnus dormitor, Cuv., Platescephalus dormitor, Schn.), Cuv. et Val. XII. p. 255, pl. 253.

FAMILY XIII. LOPHIDÆ.

Scales usually absent, or replaced by bony plates, or by small grains armed with spines. The two carpal bones elongated, and forming a kind of arm to support the pectoral fin. Branchial aperture round, or a vertical slit behind the pectorals. Suborbital bone wanting, except in the genus *Malthea*.

GENUS I. LOPHIUS, ARTEDI.

Head enormously large, broad, and depressed. Mouth large, armed with slender conical teeth on the jaws, palatines, vomer, and pharyngeals. Tongue smooth. Branchial rays, six ; branchial arches, three. Dorsal fins, two ; the anterior rays distant, detached, forming long filaments, supporting fleshy slips.

1. *Lophius Americanus*, Cuv.

Intermaxillary teeth smaller, and those of the vomer larger, than in the European species.

D. 3-11. P. 25. V. 5. A. 9. C. 8. Length, 2 to 3 feet.

Maine, Massachusetts, STORER. New York, MITCHILL, Cuv., DEKAY. Delaware, Cuv.

Lophius piscator, Bellows-fish or Common Angler, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 465.
Lophius piscatorius, Angler, Frog-fish, Sea-devil, Goose-fish, Wide Gab, STORER'S Report, pp. 71 and 401.
La Baudoire d'Amérique, *Lophius Americanus*, Cuv. et Val., XII. p. 330.
Lophius Americanus, American Angler, DEKAY'S Report, p. 162, pl. 23, fig. 87.

NOTE. In a notice of Dekay's Report in Silliman's Journal, I doubted whether our species was distinct from the European. It appeared in that report as a *new species*, Cuv. et Val. not being cited. As I had not seen their twelfth volume, I was not aware that it had been there described under the above-mentioned name. As, however, Cuvier describes ours as distinct from the European species, after having undoubtedly seen both species, I can have no hesitation in admitting it as such.

GENUS II. CHIRONECTES, Cuv.

Head vertically compressed. Three free rays on the summit of the head. Mouth cleft more or less vertically; opening to the gills by a round aperture behind the pectorals. Tongue edentate. Intermaxillaries, lower jaw, vomer, palatines, and pharyngeals with minute card-teeth. Dorsal long.

1. *Chironectes gibbus*, MITCHILL.

Pale brown, variegated along the sides with dark yellowish and ruddy, so as to resemble some sorts of iron-stones or fractures of ferruginous earth; the deeper dark markings cross the dorsal rays obliquely and transversely, and the caudal in concentric curves. Surface of the body granulate. Tail rounded, with concentric bars. Posterior portion of the dorsal fin rounded.

D. 12. P. 10. V. 5. A. 7. C. 9. Length, 2 inches.

New York, MITCHILL, DEKAY.

Lophius gibbus, Mouse-fish, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. pl. 4, fig. 9.

" " " " Amer. Month. Mag., II. p. 325.

Chironectes gibbus, Gibbous Mouse-fish, DEKAY'S Report, p. 164, pl. 24, fig. 71.

2. *Chironectes lævigatus*, Cuv.

A dull white, with irregularly distributed dark-brown blotches, or partially formed longitudinal bands, which are margined with a clear white; clear white spots upon the abdomen. Surface of the body smooth. Posterior portion of the dorsal highest.

D. 11. P. 18. V. 4. A. 6. C. 8. Length, 2 inches.

Massachusetts, STORER. New York, DEKAY. South Carolina, Cuv.

Chironectes lævigatus, Cuv., Mémoires du Muséum, III. p. 423, pl. 16, fig. 1.

Le Chironectes uni, *Chironectes lævigatus*, Cuv. et VAL., XII. p. 399.

Chironectes lævigatus, Smooth *Chironectes*, STORER'S Report, p. 73.

" " Smooth Mouse-fish, DEKAY'S Report, p. 165, pl. 27, fig. 83.

3. *Chironectes scaber*, Cuv.

Yellowish brown, with black spots or lines irregularly distributed. Skin rough; tubercles upon the eyebrow, cheeks, and lateral line. The first free ray of the dorsal terminates in two long slits or membranous leaves.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, (?).

Caribbean Sea, Cuv.

Le Chironecte rude, *Chironectes scaber*, Cuv. et VAL., XII. p. 412.

4. *Chironectes ocellatus*, Cuv.

White, with three ocellated dark spots encircled with white; one at the middle of the

base of the dorsal ; one vertically beneath this, opposite the anus ; a third at the base of the caudal ; numerous black points distributed over the surface of the body. Dorsal and caudal fins irregularly banded.

D. (?). P. (?). V. (?) A. (?) C. (?). Length, (?).

Gulf of Mexico, PARRA.

Pescador, PARRA, p. 1, pl. 1.

Le Chironecte à ocelles, *Chironectes ocellatus*, CUV. et VAL., XII. p. 419.

5. *Chironectes multiocellatus*, CUV.

Red, with various black or blackish spots and lines. Upon the eighth, ninth, and tenth rays of the dorsal is a black ocellus, surrounded with a white circle ; between the third and fourth ray a half-ocellus, bordered like the former ; another upon the anal ; three in the form of a triangle upon the caudal, and one upon the side, back of the pectorals. Its first ray is very long and slender, and without a tuft.

D. (?). P. (?). V. (?) A. (?) C. (?). Length, (?).

Caribbean Sea, CUV.

Le Chironecte à beaucoup d'ocelles, *Chironectes multiocellatus*, CUV. et VAL., XII. p. 420.

GENUS III. *MALTHEA*, CUV.

Body with a hard and tubercular skin, and furnished with fleshy filaments. Mouth small, prominent, protractile, and placed under the snout. From beneath the snout arises a process supported by a bony ray and terminating in several fleshy threads.

1. *Malthea vespertilio*, CUV.

Pale reddish-brown above, lighter beneath. Skin rough, covered with numerous pointed tubercles. Snout elongated into a point.

D. 4. P. 11. V. 5. A. 4. C. 9. Length, 8 to 18 inches.

Newfoundland, Caribbean Sea, CUV.

Diablo, PARRA, p. 5, pl. 4.

Lophius vespertilio, LIN., Syst. Nat.

" " BLOCH, IV. p. 8, pl. 110.

" " Sea-Bat, BROWNE'S Jamaica, p. 457, pl. 43.

Lophius rostratus, LIN., Beaked Angler, SHAW'S Gen. Zool., v. p. 383, pl. 163.

La Malthée vespertilion, *Malthea vespertilio*, CUV. et VAL., XII. p. 410.

Malthea vespertilio, Bat-Malthea, DEKAY'S Report, p. 167.

2. *Malthea nasuta*, SEBA.

Preserved in spirits, of a grayish white above, with brown blotches. Caudal and pectorals whitish, with small round spots. Grayish white beneath. Skin granulated throughout

with more or less distinct grains and tubercles. Head very wide. A rounded knob on the forehead; beneath this is a deep circular cavity; from within this proceeds a long barbel, composed of a bony ray, with a thickened tip. Snout short.

D. 5. P. 11. V. 5. A. 4. C. 9. Length, 8 inches.

Labrador, RICHARDSON. New York, DEKAY. Caribbean Sea, CUV.

Lophius (Malthé) cubifrons, Square-browed Malthus, RICH., Fauna Boreal. Americ., III. p. 103, pl. 96.
La Malthée à nez court, *Malthea nasuta*, CUV. et VAL., XII. p. 452.
Malthea nasuta, Short-nosed Malthea, DEKAY'S Report, p. 166.

3. *Malthea notata*, CUV.

Three or four round black spots on each side of the spine, midway between the eye and branchial orifice. Snout, in its proportions, resembling the preceding.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 3½ inches.

New York, CUV.

La Malthée à stigmates, *Malthea notata*, CUV. et VAL., XII. p. 453.
Malthea notata, Dotted Malthea, DEKAY'S Report, p. 167.

GENUS IV. BATRACHUS, SCHNEIDER.

Head depressed, broader than the body. Ventrals jugular, with three rays; the first elongated. First dorsal small; second low and long. Base of the pectorals elongated. Branchial aperture small, with six rays. Subopercle as large as the opercle, and both spinous. No suborbital. Teeth on the jaws, front of the vomer and palatines.

1. *Batrachus tau*, LIN.

Head and body olive-green, mottled with darker green. Yellowish after death. Pectorals, ventrals, and caudal fins, orange, the latter with interrupted bars of brown; ventrals uniform; pectorals with two or more concentric bars of deep blackish brown, becoming obsolete towards the base. Dorsals connected; the first with three, the posterior with from twenty-five to twenty-eight spines. Three spines upon operculum.

D. 3-25. P. 16. V. 3. A. 24. C. 14. Length, 1 foot.

Maine, Massachusetts, STORER. New York, MITCHILL, CUV., DEKAY. Gulf of Mexico, CUV.

Called "Sapo," at Havana.

Gadus tau, LIN., Syst. Nat. (12th edit.), p. 440.
 " " BLOCH, II. p. 150, pl. 67, fig. 2 and 3.
 " " Toad *Gadus*, SHAW'S Gen. Zool., IV. p. 159.
Lophius bufo, Toad-fish, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 463.
Batrachoides variegatus, var. a. b., LESUEUR, Journ. Acad. Nat. Sc., III. pp. 399, 401.
Batrachus variegatus, Toad-fish, STORER'S Report, p. 74.
Le Batrachoïde tau, *Batrachus tau*, CUV. et VAL., XII. p. 478.
Batrachus tau, Common Toad-fish, DEKAY'S Report, p. 163, pl. 29, fig. 86.

2. *Batrachus variegatus*, LESUEUR.

Second dorsal distinct and with twenty-one rays. Lacinated processes on the jaws, eyes, and opercles.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 5½ inches.

New Jersey, LESUEUR.

Batrachoides variegatus, LESUEUR, Journ. Acad. Nat. Sc., III. p. 398.
Le *Batrachioïde varié*, *Batrachus variegatus*, CUV. et VAL., XII. p. 484.
Batrachus variegatus, DEKAY'S Report, p. 171.

3. *Batrachus celatus*, DEKAY.

Head dark olive-brown. Body, on the side, greenish, pale-colored, with irregular dusky-brown transverse bars, which are frequently extended through the vertical fins. Dorsal fins separate. Opercle with two spines.

D. 3-28. P. 18. V. 3. A. 23. C. 15. Length, 1 inch.

New York, DEKAY.

Batrachus celatus, Two-spined Toad-fish, DEKAY'S Report, p. 170, pl. 50, fig. 161.

Dr. Dekay, whose species this is, says, in his description of the preceding species, that he is doubtful whether that and this are not identical.

FAMILY XIV. LABRIDÆ.

Body oblong and scaly; a single dorsal is supported in front by spines, each of which is generally furnished with a membranous appendage; the jaws are covered with fleshy lips; there are three pharyngeals, two upper ones attached to the cranium, and a large lower one, all three armed with teeth, sometimes *en pavé*, sometimes in points or laminæ, but generally stronger than usual; an intestinal canal without cæca, or with two very small ones, and a strong natatory bladder.

GENUS I. COSSYPHUS, VAL.

Maxillaries large; back of the external row of pointed teeth, there are some small, compact granulations. Opercles generally more scaly than in the genus *Labrus*. The vertical fins are covered at their base by scales, which are raised or depressed with the rays, and which conceal the rays when they are closed. But they do not form a deep groove, similar to that of the *Perches*. In most species, deep denticulations upon preopercle.

1. *Cossyphus Bodianus*, CUV.

Purple, sometimes orange-red upon the back ; beneath gray ; sides and fins citron-yellow. A black spot upon the dorsal and the extremity of the anal. Scales large, finely carved ; thirty-four in a horizontal line between the branchiæ and tail. Four conical teeth at the extremity of each jaw ; the two middle are straight and directed forward ; the other teeth are small and like tubercles, even to the angle of the jaw, where there are two others long and prominent, the last stoutest.

D. 13 - 9. P. 16. V. 1 - 5. A. 3 - 12. C. 15. Length, 14 inches.

Gulf of Mexico, PARRA. Caribbean Sea, CUV.

Perro colorado, PARRA, p. 3, pl. 3, fig. 1.

Lutjanus verres, BLOCH, 255 ?

Labrus fulvus, CATESBY'S Hist. Carol., XI. fig. 1 ?

" " LIN, Syst. Nat. (12th edit.).

Le Cossyphé Bodian, *Cossyphus Bodianus*, CUV. et VAL., XIII. p. 103.

GENUS II. *CTENOLABRUS*, VAL.

Body elongated, scaly. Preopercle denticulated. A band of velvet-like teeth in front ; behind, the conical teeth, in the jaws. Three spinous rays to the anal fin.

1. *Ctenolabrus ceruleus*, MITCHILL.

Color very variable, generally bluish ; sometimes, however, of a uniform brown or rust-color ; while the ground of others is greenish, with copper-colored spots, or red, with black points or dots sprinkled over their entire surface, including oftentimes the fins.

D. 18 - 11. P. 15. V. 6. A. 12. C. 16. Length, 6 to 12 inches.

Newfoundland, CUV. Maine, Massachusetts, STORER. Connecticut, AYRES. New York, MITCHILL, CUV., DEKAY.

Tautoga cerulea, Blue-fish or Bergall, MITCHILL, Report in part, p. 24.

Labrus chogset, Bergall of New York, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 402, pl. 3, fig.

Crenilabrus burgall, SCHOEPPF., GRIFFITH'S CUV., X. p. 258.

" " Conner, Blue Perch, Chogset, STORER'S Report, p. 73.

" " " " AYRES, Bost. Journ. Nat. Hist., IV. p. 263.

Le Ctenolabre chogset, *Ctenolabrus chogset*, CUV. et VAL., XIII. p. 237.

Ctenolabrus ceruleus, DEKAY'S Report, p. 172, pl. 29, fig. 93.

Le Ctenolabre mouché, *Ctenolabrus unnotatus*, CUV. et VAL., XIII. p. 239.

Ctenolabrus unnotatus, Spotted Bergall, DEKAY'S Report, p. 174, pl. 29, fig. 90.

GENUS III. *ACANTHOLABRUS*, VAL.

The external row of teeth conical and stout ; the posterior are small, forming a narrow band. Numerous spinous rays to the anal fin.

1. *Acantholabrus exoletus*, VAL.

Uniform brilliant blue, or with blue lines upon the body. Nineteen spinous rays to the dorsal fin. Five spines to the anal fin.

D. 19-8. P. 13. V. 1-5. A. 5-8. C. 13. Length, (?).

Greenland, FABRICIUS.

Called "Keblernak," in Greenland.

Labrus exoletus, LIN., Syst. Nat.

" " FABRICIUS, Fauna Groenlandica, p. 166.

L'Acantholabre du Nord, *Acantholabrus exoletus*, CUV. et VAL., XIII. p. 247.

GENUS IV. *CLEPTICUS*, CUV.

Mouth small, protractile, received under the arch of the suborbitars ; a small number of scarcely visible teeth in a single row ; the pharyngeal teeth forming, by their union, small plates, serrated at their edge ; the vertical fins covered throughout their greater portion with scales similar to those upon the rest of the body. Preopercle denticulated. Lateral line continuous.

1. *Clepticus genizara*, PARRA.

Head obscure carmine ; back brighter, passing to rose ; sides orange ; pectorals black. Scales upon the operculum large ; upon preoperculum small. Portion of head between the nostrils and snout destitute of scales. Posterior portion of the dorsal and anal fins pointed. Caudal lunated.

D. 14-8. P. 18. V. 1-5. A. 5-10. C. 19. Length, 10 inches.

Gulf of Mexico, PARRA. Caribbean Sea, CUV.

Rabirubia genizara, PARRA, p. 44. pl. 21, fig. 1.

Clepticus genizara, GRIFFITH'S CUV., x. p. 259.

Le Cleptique créole, *Clepticus genizara*, CUV. et VAL., XIII. p. 267, pl. 377.

GENUS V. *LACHNOLAIMUS*, CUV.

The general character of a true *Labrus*, but the pharyngeals have no teeth *en pavés*, except at their posterior part ; the remainder of their extent, as well as a part of the palate, covered with a villous membrane. Their first spinous rays are continued into long flexible filaments. Lateral line parallel to the back, continuous. The anterior teeth strong, projecting forwards ; behind them a series of small, equal teeth.

1. *Lachnolaimus aigula*, Cuv.

Purple-brown, with a round deep-brown spot at the posterior base of the dorsal fin. When alive, according to Plée, the back is red; the sides red, clouded with white; the lower jaw white; small, oblique blue lines upon the temples and cheeks; the long, spinous rays of the dorsal are very red, and the spot at the posterior angle of this fin deep black. The first three dorsal rays nearly half the length of the body; the fourth is only one third as long as these; the remaining spinous rays are one half as long as the latter. Three short, stout spines to the anal fin; the third and fourth membranous rays of the anal most projecting. The external rays of the caudal are prolonged into sharp points.

D. 15 - 11. P. 15. V. 1 - 5. A. 3 - 10. C. 14. Length, 11 inches.

Caribbean Sea, Cuv.

Called "Aigrette," at St. Bartholomew.

Le Lachnolème aigrette, *Lachnolaimus aigula*, Cuv. et VAL., XIII. p. 277, pl. 378.

2. *Lachnolaimus dux*, Cuv.

When recent, red, with yellow fins. The fourth dorsal ray only one third shorter than the third ray. In spirit, of an aurora color, with a black spot at the dorsal, blackish tints upon the border of the anal, and a triple series of blackish points upon the membrane of the caudal.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 8 inches.

Caribbean Sea, Cuv.

Called "Capitaine," at St. Bartholomew.

Le Lachnolème capitaine, *Lachnolaimus dux*, Cuv. et VAL., XIII. p. 285.

3. *Lachnolaimus suillus*, Cuv.

Edge of scales red, their base yellow; top of head purple; sides of the lower jaw of a bright blood-red color; scales of the cheeks of a bright blue upon an orange ground, covered with small red, undulating lines. The spinous portion of the dorsal brown; their long points red or orange, with brownish filaments; the second dorsal margined anteriorly with deep gray, red above; pectorals yellow; ventrals black at their extremities, and yellow spotted with red at their base; caudal half-black, the crescent yellow; its extremities black. The dorsal has three elongated rays; the fourth is as short as the ten succeeding. The angles of the caudal elongated into narrow, sharp points. The anterior teeth very strong, except the intermediate ones below. Besides the row of small teeth on each side, there are upon the internal faces of each jaw two or three rows of irregular, still smaller teeth.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 3 to 4 feet.

Caribbean Sea, Cuv.

Called "Hog-fish," at St. Thomas.

Suillus, Great Hog-fish, CATESBY'S *Hist. Carol.*, II. p. 15. pl. 15.

Le Lachnolème à grouin de cochon, *Lachnolaimus suillus*, Cuv. et VAL., XIII. p. 286.

4. *Lachnolaimus caninus*, CUV.

Uniform red, without spots upon the sides, or brown upon the dorsal, or purple upon the neck. The three elongated dorsal spines reaching to the spot at the base of the fin. The fourth ray a short spine. In the middle of the upper jaw four very strong, conical, pointed teeth; in the lower, four stouter, the two exterior projecting beyond the others. A single row of teeth along the jaws.

D. (?). P. (?). V. (?). A. (?) C. (?) Length, 10 to 22 inches.
Caribbean Sea, CUV.

Porro, PARRA, p. 4, pl. 3, fig. 2.
Le Lachnolème petit chien, *Lachnolaimus caninus*, CUV. et VAL., XIII. p. 238.

5. *Lachnolaimus psittacus*, CUV.

Rose-red; besides the black spot at the angle of the dorsal, another smaller one at the corresponding angle of the anal fin, which disappears after death.

D. (?). P. (?). V. (?). A. (?) C. (?) Length, (?).
Caribbean Sea, CUV.

Called "Cotorra," at Porto Rico.

Le Lachnolème perroquet, *Lachnolaimus psittacus*, CUV. et VAL., XIII. p. 291.

GENUS VI. TAUTOGA, MITCH.

Jaws with a double row of teeth. Opercle and preopercle without spines or denticulations, and with few or no scales.

1. *Tautoga Americana*, BLOCH.

Bluish black above, diversified with bands and blotches, mottled with darker spots towards the abdomen, which is whitish. Fleishy rays of dorsal fin considerably higher than the spinous portion. Small, floating, fleshy tentaculæ attached to extremities of spinous rays of dorsal.

D. 17-11. P. 15. V. 1-5. A. 3-8. C. 15. Length, 6 to 18 inches.

Maine, Massachusetts, STORER. Connecticut, AYRES. New York, MITCHILL, CUV., DEKAY. South Carolina (introduced), DEKAY.

Labrus Americanus, BLOCH, SCHN., p. 261?
Tautoga niger, MITCHILL, Report in part, p. 23.
Labrus tautoga, Black-fish or Tautog, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., i. p. 399.
Labrus Americanus, Black-fish or Tautog, STORER's Report, p. 76.
" " " " AYRES, Bost. Journ. Nat. Hist., iv. 263.
Le Tautogue noir (*Tautoga nigra*, MITCH.), CUV. et VAL., XIII. p. 293.
Tautoga Americana, New York Tautog, DEKAY's Report, p. 175, pl. 14, fig. 39.

GENUS VII. MALACANTHUS, Cuv.

Body elongated, but little compressed; scales small; the anal almost as long as the dorsal; the other fins moderate; head oblong; the forehead slightly convex; eyes moderate, and situated far back; the mouth quite cloven; lips fleshy. In each jaw a single row of teeth, among which some are stout and curved; pharyngeal teeth like those of a card; a strong spine at the angle of the operculum.

1. *Malacanthus Plumieri*, Cuv.

Variiegated with yellow and lilac, or bluish. Before the eyes and upon the temple, the yellow and lilac are disposed in longitudinal lines. Yellow marblings upon a lilac ground on the operculum. The dorsal is of a reddish lilac, with three longitudinal series of yellow spots. Caudal yellow, its posterior edge bluish and transparent, and tinged with blue at its upper and lower edges. The upper and lower rays of the caudal elongated into slender points, as long again as the rest of the fin. Six strong, pointed teeth in the front of the upper jaw, with two small intermediate ones; behind these, on each side, a row of fifteen small, conical, and pointed ones, and at the angle a stout one directed slightly forwards. In the lower jaw, in front, six and two small ones; and then, on each side, five curved, pointed, compressed, increasing to the fifth; the sixth is one half as large, and after it are ten or twelve, very fine, and a stouter one at the angle, slightly directed forwards, less than the corresponding one in the upper jaw.

D. 6-55. P. 16. V. 1-5. A. 1-50. C. 17. Length, 15 to 18 inches.

Gulf of Mexico, PARRA. Caribbean Sea, Cuv.

Matajuelo blanco, PARRA, p. 22, pl. 13, fig. 1.

Coryphæna Plumieri, LIN., Syst. Nat., GMEL., p. 1191.

" " BLOCH, 175?

" " Plumier's *Coryphæna*, SHAW'S Gen. Zool., iv. p. 215.

Malacanthus Plumieri, GRIFFITH'S Cuv., x. p. 263.

Le Malacanthé de Plumier (*Malacanthus Plumieri*, Cuv., *Sparus oblongus*, BL., SCHN.), Cuv. et VAL., XIII. p. 319, pl. 320.

GENUS VIII. JULIS, Cuv.

Head smooth; cheeks and gill-covers without scales; the lateral line bent suddenly downwards when opposite the end of the dorsal fin; in other respects the generic characters are similar to those of the genus *Labrus*.

1. *Julis psittaculus*, Cuv.

Brown, more or less red upon the back, lighter beneath; two longitudinal, parallel violet or lilac bands upon the sides. The upper band arises at the angle of the operculum; the lower

at the suboperculum, and passes beneath the pectoral. A violet band passes from the eye over the occiput, and unites with that of the opposite side, forming an angle upon the top of the head. From the top of this angle, a wide, short bone descends vertically, which anastomoses with another horizontal line, passing from the eye to the angle of the opercle. A transverse bridle passes beneath the lower jaw, and is prolonged in a lighter band, which divides the preopercle and extends to the opercle. Scales large; twenty-four in a longitudinal line between branchiæ and tail.

D. 9-11. P. (?). V. (?). A. 3-12. C. (?). Length, 6 inches.

Caribbean Sea, Cuv.

Called "Patate," at Martinique.

La Girelle perruche (*Julis psittaculus*, Cuv., *Labrus psittaculus*, LACÉP.). Cuv. et Val., XIII. p. 287.

2. *Julis Garnoti*, Cuv.

Body blue or greenish, bright red along the back; the spinous portion of the dorsal blackish blue; the soft portion gray, with red spots; the anal of a tint approaching to the lees of wine, with deep blue spots between each ray, near the body; caudal rounded and grayish, rayed transversely with ten alternately narrow and wide rays; pectorals bluish; ventrals greenish.

D. 9-11. P. (?). V. (?). A. 3-11. C. (?). Length, 6 inches.

Caribbean Sea, Cuv.

La Girelle de Garnot, *Julis Garnoti*, Cuv. et Val., XIII. p. 390.

3. *Julis cyanostigma*, Cuv.

Head clouded with blue or violet and red. Seven or eight longitudinal rows of azure spots upon the sides; three large black spots at the base of the dorsal; one upon the first simple rays; one at the termination of the fin; the central one includes the first four soft rays. A violet ray along the middle of the base of the anal. The caudal and the dorsal have some traces of violet spots.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 6 inches.

Caribbean Sea, Cuv.

La Girelle aux taches bleues, *Julis cyanostigma*, Cuv. et Val., XIII. p. 391.

4. *Julis opalina*, Cuv.

The color of this species is a mixture of blue, green, yellow, orange, and red, which gives it an opaline or iridescent tint. The blue is disposed in four well marked lines upon the belly. Head blue or flesh-color, with deeper blue rays. Dorsal blue. Anal with two violet-colored rays upon a deeper ground; caudal blue, with violet bands, which are vertical or longitudinal.

D. 9-11. P. 12. V. 1-5. A. 3-12. C. 15. Length, 15 inches.
Caribbean Sea, Cuv.

La Girelle opaline, Julis opalina, Cuv. et VAL., XIII. p. 392.

5. *Julis crotaphus, Cuv.*

Green, brownish upon the back ; a well marked green spot at the top of the operculum ; head rayed with red ; an oblique band crosses the top of the opercle, descends upon the anterior portion of the pectoral, and terminates upon the belly, a little back of the insertion of the ventrals ; dorsal red ; caudal green, with three red bands. Small, distant pores upon suborbitals.

D. 9-11. P. 12. V. 1-5. A. 3-12. C. 13. Length, 7 inches.
Gulf of Mexico, Cuv.

Doncella, PARRA, pl. 37, fig. 1.

La Girelle aux tempes noires, Julis crotaphus, Cuv. et VAL., XIII. p. 395.

6. *Julis patatus, Cuv.*

Greenish, tinged with yellow. Large brown spots along the base of the dorsal, mingled with yellow. Wide longitudinal bands upon a yellow ground on the body. The top of the head green, its sides yellow, sprinkled with spots or small lines of a beautiful ultramarine blue color. Similarly colored rays upon the caudal, dorsal, and anal fins. Pectorals and ventrals bluish. Eyes small. Two canines in upper jaw, followed by a series of small, conical teeth, and at the angle of the mouth are two projecting hooks. Four canines in lower jaw. Two or three rows of rounded tubercles back of the conical teeth in both jaws.

D. 9-11. P. 14. V. 1-5. A. 3-12. C. 13. Length, 15 inches.
Gulf of Mexico, Cuv.

Called "Doncella," at Havana.

La Girelle patate, Julis patatus, Cuv. et VAL., XIII. p. 393.

7. *Julis Principis, Cuv.*

Covered with a violet-colored network. Three violet rays upon the neck ; large violet rays upon operculum. Dorsal and caudal also rayed with violet. Two violet rays upon anal. Twenty-five longitudinal rows of strongly striated scales upon sides.

D. 9-11. P. (?). V. (?). A. 3-12. C. (?). Length, 11 inches.
Caribbean Sea, Cuv.

La Girelle du Prince, Julis Principis, Cuv. et VAL., XIII. p. 402.

8. *Julis dimidiatus, AGASS.*

Of a deep rose-color upon the back and along the sides. A broad violet band extends from the snout to the caudal. Dorsal rose-colored along its edge to the fifth spine ; the rest is

violet. Anal violet, margined with rose; upper lobe of caudal blue, lower, rose; pectorals blue, yellow at their base; ventrals rose-colored. The middle canines are strong and curved; three rows of granulated teeth back of the conical ones, upon the external edge.

D. 9-13. P. 12. V. 1-5. A. 3-13. C. 12. Length, 1 foot.

Caribbean Sea, Cuv.

La Girelle partagée (*Julis dimidiatus*, AGASS.), Cuv. et VAL., XIII. p. 407.

9. *Julis detersor*, Cuv.

Head and breast of a beautiful violet, almost black; the rest of the body a brilliant green. The anterior portion of the dorsal, the extremity of the pectorals, and the forks of the caudal, violet; the rest of the body and anal green; the middle of lunation of the tail gray. The spinous portion of the dorsal is low, and covered with scales.

D. 8-13. P. (?). V. (?). A. 3-11. C. (?). Length, 7 inches.

Caribbean Sea, Cuv.

Called "Dégraisseur," at Martinique.

La Girelle dégraisseur, *Julis detersor*, Cuv. et VAL., XIII. p. 408.

GENUS IX. XIRICHTHYS, Cuv.

Body compressed, head trenchant. Head higher than long, truncated in front. A single long, uniform dorsal. Teeth in a single row in the jaws; the anterior longest. Tongue and palate smooth; pharyngeals tessellated.

1. *Xirichthys Martinicensis*, Cuv.

Fawn-colored, with violet tints upon the head and anterior portion of the dorsal.

D. 9-12. P. 11. V. 1-5. A. 3-12. C. 13. Length, 8 inches.

Caribbean Sea, Cuv.

Called "Patate," at Martinique.

Le Rason de la Martinique, *Xirichthys Martinicensis*, Cuv. et VAL., XIV. p. 49.

2. *Xirichthys lineatus*, Cuv.

A milk-white spot on the sides, from which descend alternately pale and deep red lines. Cheeks with bluish lines. Fins red.

D. 4-17. P. 11. V. 1-5. A. 3-12. C. 13. Length, 5 or 6 inches.

South Carolina, LIN. Caribbean Sea, Cuv.

Coryphæna lineatus, LIN., Syst. Nat., GMEL., p. 1195.

" " SHAW'S Gen. Zool., IV. p. 224.

Le Rason rayé, *Xirichthys lineatus*, Cuv. et VAL., XIV. p. 50.

Xirichthys lineatus, DEKAY'S Report, p. 177.

3. *Xirichthys vitta*, CUV.

No lines nor spots upon the body or fins. Fawn-colored, with a pale longitudinal band passing through the middle of the body, from the angle of the operculum to the caudal fin.

D. 9-12. P. 11. V. 1-5. A. 3-12. C. 13. Length, 6 inches.

Caribbean Sea, CUV.

Le Rason bandelette, *Xirichthys vitta*, CUV. et VAL., XIV. p. 51.

GENUS X. SCARUS, LIN.

Jaws convex, rounded, and furnished with teeth arranged like scales upon their edge and upon their anterior surface; during life, the jaws are covered by fleshy lips, but there is no double one adhering to the suborbital. They have the oblong form of a *Labrus*, large scales, and an interrupted lateral line; three pharyngeal plates, two above and one below, furnished with teeth as in the *Labrus*; but these teeth are transverse blades, and not rounded like paving-stones.

1. *Scarus Abildgaardii*, BLOCH.

Back of a beautiful blood-red color, sides paler red; belly a pale rose-color; the edge of the scales brownish, and the operculum edged with black. Scales large, hexagonal, almost smooth; striæ scarcely visible. There is no trunk to the venations of the lateral line, and they divide, from the base, into six or seven branches, which give off branches and extend over almost the whole scale.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 15½ inches.

Caribbean Sea, CUV.

Called "Red-fish," at St. Thomas.

Sparus Abildgaardii, BLOCH, pl. 259.

VIEJA, PARRA, p. 53, pl. 23, fig. 2.

Sparus Abildgaardii, ABILDGAARD'S *Sparus*, SHAW'S *Gen. Zoöl.*, IV. p. 412.

Le Scare rouge, *Scarus Abildgaardii*, CUV. et VAL., XIV. p. 175.

2. *Scarus guacamaia*, PARRA.

Bluish green beneath the pectorals, along the sides, and upon the whole posterior portion; head, anterior and upper part of the back, and the belly, yellowish gray; base of the jaws of a verdigris-green color; dorsal and anal fins brown, with green spots along their base; the caudal with green rays in its middle, upon a yellowish gray ground; pectorals and ventrals with green tints. Dorsal spines not very stout. Caudal, when extended, has a slight point at its centre, but its extremities project much beyond this. Scales with granular striæ.

A long trunk to the venations of the lateral line, which is slightly raised, and terminating in a small bouquet of short, irregular branches.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 2 to 3 feet.

Caribbean Sea, Cuv.

Called "Cacabelly," and "Great Parrot-fish," at St. Thomas.

Guacamaia, PARRA, p. 54, pl. 26.

Le Guacamaia, ou grand Scare à machoires bleues, *Scarus guacamaia*, Cuv. et VAL., XIV. p. 178.

3. *Scarus cœlestinus*, Cuv.

Blue; the lower jaw nearly all green; the upper green near the edges. The extremities of the caudal fin not half the length of the rest of the fin. Scales granulated like the preceding, but the bouquets produced by the arbuscules of the lateral line more elongated.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 21 inches.

Caribbean Sea, Cuv.

Le Moyen et le petit Scare à machoires bleues, *Scarus cœlestinus*, Cuv. et VAL., XIV. p. 180.

4. *Scarus turchesius*, Cuv.

Deep green; belly rose-colored; the extremities of the dorsal and anal rays blue. Jaws turquoise-blue. Scales slightly striated. The arbuscules of the lateral line have a trunk terminated by three or four small branches, one or two of which are forked.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 13 inches.

Caribbean Sea, Cuv.

Called "Cotorra," at Porto Rico.

Le Scare cotorra, *Scarus turchesius*, Cuv. et VAL., XIV. p. 181.

5. *Scarus Catesbæi*, LACEP.

Body and caudal green, with a red band upon this fin parallel to its margin; dorsal reddish; anal red, margined with green; ventrals red, edged with blue; pectorals violet, upper edge blue; head deep gray, tinged with violet, with purple at the edges of the opercle and preopercle; a yellow spot upon the suprascapular scale; a purple band upon the temples; a yellow spot upon the side of the tail.

D. (?). P. (?). V. (?). A. (?). C. (?), Length, (?).

Hispaniola, Cuba, and the Bahama Islands, CATESBY.

Psittacus piscis-viridis Bahamensis, Parrot-fish, CATESBY'S Hist. Carol., II. pl. 29.

Le Scare Catesby (*Scarus Catesbæi*, LACEP.), Cuv. et VAL., XIV. p. 183.

6. *Scarus chrysopterus*, BLOCH.

Greenish blue; dorsal and irides red. Scales large, striæ scarcely perceptible. The arbuscules of the lateral line consist of a short trunk and six or seven branches, which bear still

smaller ones extending over almost the entire scale. When the fish is dry, it is of a green color, changing to blue; fins yellow; a wide green band upon the upper and lower edge of the caudal; the outer edge of the ventrals green, with a brown or bluish spot above, at the base of the pectorals.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 1 foot to 14 inches.

Caribbean Sea, Cuv.

Called "Snoper," at St. Thomas.

Scarus chrysopterus, BLOCH, p. 286, No. 5?

Le Scare à nageoires dorées (*Scarus chrysopterus*, BL.), Cuv. et VAL., XIV. p. 185.

7. *Scarus cœruleus*, Cuv.

When dry, the whole body appears green or greenish gray. The scales and fins margined with brighter green. Forehead prominent. The points of the caudal fin more than one third of its whole length. Scales with a dead surface, smooth at their edges; the punctations scarcely seen without the lens. The arbuscules of the lateral line have a simple trunk, and three or four unequal, tortuous branches, which do not extend to the sides of the scales.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 16 to 20 inches.

Gulf of Mexico, PARRA. Caribbean Sea, Cuv.

Called "Bleu Serin," or "Peau bleue," at St. Thomas.

Trompa, PARRA, p. 57, pl. 27, fig. 2.

Mormyrus ex cinereo nigricans, Bone-fish, CATESBY'S Hist. Carol., II. pl. 13.

Le Scare à front bombé, ou le Scare bleu, *Scarus cœruleus*, Cuv. et VAL., XIV. p. 186.

8. *Scarus aurofrenatus*, Cuv.

Crimson, tinged with brown upon the back, mingled with green towards the belly. Chest greenish, an orange band passes from the angle of the mouth beneath the eye, backwards, and a small one upon the temple parallel to it. The dorsal is orange, grayish anteriorly; anal red, edged with violet, and violet at its base. Caudal red, with a broad white edge, and extremities black. Pectorals pale orange, first ray violet or blackish; ventrals light red, irides rose-colored. Scales very feebly striated; the arbuscules of the lateral line, with five or six slightly ramified branches, occupying all the exposed part of the scale. Back of the head one and one third longer than high; two spines at the angle of upper jaw. Caudal crescent-shaped.

D. 10-9. P. (?). V. (?). A. (?). C. (?). Length, 10 inches.

Caribbean Sea, Cuv.

Le Scare bridé d'or, *Scarus aurofrenatus*, Cuv. et VAL., XIV. p. 191.

9. *Scarus quadrispinosus*, Cuv.

When preserved, olive-brown; lighter upon the sides and beneath the belly. The inferior fins tinged with yellow; no lines nor bands upon the head or fins. Four sharp points

placed longitudinally upon each side of the upper jaw. Scales feebly striated; the trunks of the venations of the lateral line nearly undivided.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 13 inches.

Caribbean Sea, Cuv.

Called "Cacabari," at St. Thomas.

Le Scare à quatre pointes, Scarus quadrispinosus, Cuv. et VAL., XIV. p. 157.

10. *Scarus vetula*, BLOCH.

Back olive-green; a wide yellow band arises at the shoulder, and extends upon the side to the middle of the body; belly greenish; a bright green surrounds the lips, forming two bands, which pass from the snout towards the eye, and are continued upon the temple, and also upon the trunk above the yellow band. The dorsal has a longitudinal yellow band between two bands of a bright green. Caudal bright green, with a yellow band above and below. Pectorals and ventrals yellow. Scales smooth to the touch; under the glass they appear finely striated and granulated. The arbuscules of the lateral line are divided into two or three small, short tufts.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 9 or 10 inches.

Gulf of Mexico, PARRA. Caribbean Sea, Cuv.

Vieja, PARRA, p. 53, pl. 23, fig. 1.

Scarus vetula, BLOCH, p. 289, No. 1.

Le Scare à raies vertes, Scarus vetula, BL., Cuv. et VAL., XIV. p. 153.

11. *Scarus punctulatus*, Cuv.

The middle of the vertical fins yellowish, dotted with green; the edges of the caudal green. Two points on each side of the upper jaw.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 6 inches.

Caribbean Sea, Cuv.

Le Scare pointillé, Scarus punctulatus, Cuv. et VAL., XIV. p. 155.

12. *Scarus tæniopterus*, DESMAREST.

Brown, tinged with olive; no green lines upon the head, nor yellow nor orange margins to the tail. An opaque, yellowish-gray band at the base of the dorsal and anal, and a narrow brown line upon their margin.

D. (?) P. (?). V. (?). A. (?). C. (?). Length, 10 inches.

Gulf of Mexico, Cuv.

Le Scare à bandelettes (Scarus tæniopterus, DESMAREST), Cuv. et VAL., XIV. p. 155.

13. *Scarus diadema*, Cuv.

Greenish gray; a yellow band across the forehead, and continued back to the top of the

temples; a second parallel band beneath this. A line at the base, and upon the edge of the dorsal; round and oval violet spots between these two lines. A row of spots, also, between two lines upon the anal. The arbuscules of the lateral line very slightly divided.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 6 inches.

Caribbean Sea, Cuv.

Called "Perroquet," at Martinique.

Le Scare diadème, Scarus diadema, Cuv. et VAL., xiv. p. 193.

14. *Scarus alternans, Cuv.*

Silvery; head rose-colored, with three brighter-colored, wide bands. All the fins yellow. Scales finely striated and dotted. The arbuscules of the lateral line are simple trunks, having two or three very short branches along the trunk.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 7 to 8 inches.

Caribbean Sea, Cuv.

Called "Perroquet," at Martinique.

Le Scare à raies rouges et blanches, Scarus alternans, Cuv. et VAL., xiv. p. 200.

15. *Scarus rubripinnis, Cuv.*

Olive-green, brownish towards the back, mingled with rose-color upon the breast and belly; ventrals and anal red; dorsal olive-gray, the rays with brownish spots; caudal ash-colored, marbled towards the base with deeper ash-brown; pectorals tinged with olive. Scales large and almost entire. Each arbuscule of the lateral line has four or five branches, which extend in irregular rays upon the scale.

D. 9-10. P. (?). V. (?). A. 1-10. C. (?). Length, 10 inches.

Caribbean Sea, Cuv.

Le Scare à ventrale et anale rouges, Scarus rubripinnis, Cuv. et VAL., xiv. p. 190.

16. *Scarus flavo-marginatus, Cuv.*

Yellowish green, with neither lines nor bands upon the body or head. Dorsal is spotted with violet, with a yellow line near the edge, and another along the base. Anal similar; no spots upon the caudal.

D. (?). P. (?). V. (?). A. (?). C. (?). Weight, 2 or 3 pounds.

Caribbean Sea, Cuv.

Le Scare rayé de jaune, Scarus flavo-marginatus, Cuv. et VAL., xiv. p. 202.

17. *Scarus virens, Cuv.*

Pale green, with reddish ventrals and caudal. When dried, greenish gray, with brownish tints; pectorals and ventrals yellowish. Small brownish spots upon the caudal, forming ir-

regular bands. The arbuscules of the lateral line composed of one short and concealed trunk, with three or four long and straight branches.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, (?).

Caribbean Sea, Cuv.

Called "Cotorra," at Porto Rico.

Vieja, PARRA, p. 53, pl. 28, fig. 3.

Le Scare vert d'eau, *Scarus virens*, Cuv. et VAL., XIV. p. 203.

18. *Scarus radians*, Cuv.

Greenish brown, or deep blue, with deeper reflected lines along the rows of scales. The arbuscules of the lateral line have concealed trunks, and three very slightly ramified branches which spread over almost all the scale. Four teeth on each side, occupying the whole circumference of the upper jaw, are directed horizontally and divergent.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, (?).

Mexico, Cuv.

Le Scare à machoire rayonnée, *Scarus radians*, Cuv. et VAL., XIV. p. 206.

GENUS XI. *CALLYODON*, GRONOV.

Anterior teeth in several imbricated rows; the lateral teeth of the upper jaw separate and pointed, and upon each side of this jaw an inner row of much smaller teeth.

1. *Callyodon flavescens*, Cuv.

Yellow, with flesh-colored spots; fins rose-colored, with a black spot at the base of the pectorals.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, (?).

Gulf of Mexico, PARRA.

Vieja, PARRA, p. 53, pl. 28, fig. 4.

Le Callyodon jaunâtre, *Callyodon flavescens*, Cuv. et VAL., XIV. p. 259.

2. *Callyodon auro-punctatus*, Cuv.

Greenish. The three vertical fins are sprinkled with small aurora-colored spots, which unite in oblique and irregular bands. Spots of the same color upon the lower jaw. An aurora-colored line passes from the angle of the mouth to the eye, and another extends upon the cheek and towards the temple, where there is still another. Scales nearly smooth; their arbuscules have one principal branch, and four or five lateral branches, which are also but little ramified.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 6 inches.

Caribbean Sea, Cuv.

Le Callyodon à points dorés, *Callyodon auro-punctatus*, Cuv. et VAL., XIV. p. 290.

ORDER II. MALACOPTERYGII. SOFT RAYED.

All the fin rays soft and cartilaginous, with the exception sometimes of the first in the dorsal and the first in the pectoral fins. These rays are of an articulated structure, and generally more or less branched at their extremities.

ABDOMINALES.

The ventrals behind the pectorals, and not attached to the humeral bone.

FAMILY XV. SILURIDÆ.

Skin naked, and covered with a mucous secretion. In some genera, the body is nearly covered by osseous plates. Head depressed, and generally enlarged, with several fleshy filaments. A second adipose dorsal often present. The intermaxillaries, suspended under the ethmoid bone, form the edge of the upper jaw. First ray of the dorsal and pectoral fins usually a strong, articulated spine, with a complicated movement.

GENUS I. BAGRUS, Cuv.

Behind the intermaxillary band of velvety teeth, another band, sometimes velvety and sometimes in a single range. The number of their barbels, and the form of their head, serve as characters for subdivision.

1. *Bagrus mesops*, Cuv.

Eye at half the distance between the extremity of the snout and the edge of the preopercle; the interparietal is only a sixth the length of the head, and its edges diverge. The entire helmet with compact granulations; the opercle is granulated near the articulation, and has closely crowded veins. Ventrals as long as the pectorals, and their rays singularly knotted. The maxillary barbel does not extend beyond the middle of the pectorals.

D. 1-7. P. (?). V. (?). A. 18. C. (?). Length, 16 to 17 inches.

Caribbean Sea, Cuv.

Le Bagre mesops, *Bagrus mesops*, Cuv. et VAL., XIV. p. 456.

2. *Bagrus proöps*, Cuv.

Of a beautiful plumbeous slate-color, beneath white. The eyes three times nearer to the tip of the snout than to the edge of the preopercle. The opercular angle granulated, sharp,

and as long as high ; dorsal and pectoral spines granulated upon their anterior face, dentated slightly behind. Jaws equal. The maxillary barbel extends only to the first quarter of the pectoral.

D. 1-7. P. 1-11. V. 6. A. 19. C. 15. Length, 6 inches to 2 feet.

Caribbean Sea, Cuv.

Le Bagre proöps, *Bagrus proöps*, Cuv. et VAL., xiv. p. 457.

GENUS II. GALEICHTHYS, Cuv.

Head rounded, smooth, unarmed. Dorsal and pectoral fins long ; the first ray of each roughened, and ending in filaments. An adipose dorsal. Teeth on the jaws and vomer. Branchial rays, six. Mouth wide, with from four to six barbels.

1. *Galeichthys marinus*, MITCHILL.

Blue above, tinged with green ; sides silvery ; abdomen opaque white. Maxillary barbels not extending to the ventrals. Filament of the pectoral fin reaching to, and occasionally extending beyond, the ventrals. Caudal lunate, with pointed tips.

D. 1-6. P. 1-11. V. 6. A. 22. C. 17. Length, 6 inches to 2 feet.

New York, MITCHILL, DEKAY. New Orleans, South Carolina, Cuv. Gulf of Mexico, PARRA.

Bagre, PARRA, p. 63, pl. 31, fig. 1.

Silurus marinus, Salt-water Cat-fish, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., i. p. 433.

Le Galeichthe de Parra, *Galeichthys Parra*, Cuv. et VAL., xv. p. 33.

Galeichthys marinus, Oceanic Cat-fish, DEKAY's Report, p. 175, pl. 37, fig. 118.

GENUS III. ARIUS, Cuv.

With the general form of the *Galeichthys*, but the palatine teeth form two distinct and distant plates ; rarely any on the vomer. Branchial rays, five or six.

1. *Arius Milberti*, Cuv.

Brownish, steel-blue, verging to blackish above ; silvery beneath. Adipose dorsal blackish ; the others gray or brown. Casque granulated all over, and not in radiating striæ. The maxillary barbels extend a little beyond the extremity of the operculum.

D. 1-7. P. 1-10. V. 6. A. 17. C. 15. Length, 5 to 15 inches.

New York, South Carolina, Cuv.

L'Arius de Milbert, *Arius Milberti*, Cuv. et VAL., xv. p. 74.

Arius Milberti, *Milbert's Arius*, DEKAY's Report, p. 179.

GENUS IV. PIMELODUS, CUV.

Palate smooth and without teeth. Barbels varying from six to eight. Casque occasionally present.

1. *Pimelodus catus*, LIN.

Fuliginous, darker upon the head and back, approaching to black; lighter upon the sides, tinged with cupreous; white beneath, in front of the ventrals. Upper jaw the longer. Caudal nearly even, rounded. The barbels at the angle of the upper jaw the longest.

D. 1-5. P. 1-8. V. 8. A. 21. C. 19. Length, 7 to 9 inches.

Maine, New Hampshire, Massachusetts, STORER. Connecticut, AYRES. New York, MITCHILL, CUV., DEKAY. Lake Ontario, LESUEUR. South Carolina, CUV.

Cat-fish, CARESBY'S Hist. Carol., II. p. 23, pl. 23.

Silurus catus, LIN., Syst. Nat.

" " Common Fresh-water Cat-fish, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 433.

Pimelodus nebulosus, LESUEUR, Mémoires du Muséum, v. p. 149.

" " Horned Pont, STORER'S Report, p. 102.

Le Pimélode chat, *Pimelodus catus*, CUV. et VAL., XV. p. 124.

Le Pimélode nébuleux, *Pimelodus nebulosus*, CUV. et VAL., XV. p. 132.

Pimelodus catus, Common Cat-fish, DEKAY'S Report, p. 182, pl. 37, fig. 119.

2. *Pimelodus cænosus*, RICHARDSON.

Greenish above, marbled with deeper green; paler beneath; fins blackish. Labials ending in a tapering barbel, which reaches to the gill-opening. Pectoral spine serrated at its posterior edge by ten or eleven acute teeth. The outline of the dorsal, anal, and caudal rounded.

B. 9. D. 1-7. P. 1-8. V. 8. A. 24. C. $17\frac{3}{12}$. Length, 10 inches.

Lake Huron, RICHARDSON.

Silurus (Pimelodus) cænosus, Huron Pimélode, RICH., Fauna Boreal. Americ., III. p. 132.

Le Pimélode saïi (*Pimelodus cænosus*, RICH.), CUV. et VAL., XV. p. 129.

Pimelodus cænosus, DEKAY'S Report, p. 186.

3. *Pimelodus borealis*, RICHARDSON.

Dark greenish brown on the back and sides; on the belly, whitish. Head flat and broad. Neither pectoral nor dorsal spine serrated. Dorsal subquadrangular. Caudal has a wide, shallow fork, with obtusely rounded lobes.

D. 1-6. P. 1-6. V. 9. A. 25. C. $17\frac{3}{3}$. Length, 30 inches.

Northern regions, RICHARDSON.

Silurus (Pimelodus) borealis, Martenag, RICH., Fauna Boreal. Americ., III. p. 135.

Le Pimélode boréal (*Pimelodus borealis*, RICH.), CUV. et VAL., XV. p. 130.

Pimelodus borealis, DEKAY'S Report, p. 187.

4. *Pimelodus albidus*, LESUEUR.

Whitish ash. Fins red, excepting the adipose fin, which is brown.

B. 10. D. 1-6. P. 1-10. V. 8. A. 22. C. 10. Length, 12 to 15 inches.
Delaware, LESUEUR.

Pimelodus albidus, LESUEUR, Mémoires du Muséum, v. p. 143.
Le *Pimélode blanchâtre* (*Pimelodus albidus*, LESUEUR), CUV. et VAL., xv. p. 131.
Pimelodus albidus, DEKAY'S Report, p. 125.

5. *Pimelodus nigricans*, LESUEUR.

Large. Olive-brown; sides of the body, towards the tail, ash-white, with occasionally large, confluent black spots; a few irregular, distant, round black spots on the upper part of the body. Beneath bluish white, varied with darker. Caudal forked.

D. 1-6. P. 1-9. V. 1-8. A. 26. C. 17 $\frac{1}{2}$. Length, 2 to 4 feet. Weight, 6 to 30 pounds.

Lakes Erie and Ontario, LESUEUR.

Le *Pimélode noirâtre*, *Pimelodus nigricans*, LESUEUR, Mémoires du Muséum, v. p. 152, pl. 16.
Silurus (*Pimelodus*) *nigrescens*, Black *Pimélode*, LESUEUR, REICH., Fauna Boreal. Americ., III. p. 131.
Le *Pimélode noirâtre* (*Pimelodus nigricans*, LESUEUR), CUV. et VAL., xv. p. 133.
Pimelodus nigricans, Great Lake Cat-fish, DEKAY'S Report, p. 180.

6. *Pimelodus punctulatus*, CUV.

Above brown, punctured with black; beneath whitish. Fins brown. When fresh, silvery gray. Branchial rays, twelve. The lower jaw the longer. The maxillary barbel does not extend beyond the middle of the operculum. Caudal even.

D. 1-6. P. 1-10 or 11. V. 8. A. 16. C. 17. Length, 2 to 3 feet.

Louisiana, CUV.

Called "Black Cat-fish," or "Mud-fish."

Le *Pimélode piqueté*, *Pimelodus punctulatus*, CUV. et VAL., xv. p. 134.
Pimelodus punctulatus, DEKAY'S Report, p. 157.

7. *Pimelodus æneus*, LESUEUR.

Copper-colored, marbled with black. Lower jaw the longer. Caudal truncated. Dorsal spine without teeth; pectoral spine denticulated at its edges.

D. 1-6. P. 1-8. V. 9. A. 11. C. 25. Length, 2 to 3 feet.

Ohio, CUV.

Pimélode cuivre, *Pimelodus æneus*, Mémoires du Muséum, v. p. 150.
Le *Pimélode cuivre* (*Pimelodus æneus*, LESUEUR), CUV. et VAL., xv. p. 135.
Pimelodus æneus, DEKAY'S Report, p. 157.

8. *Pimelodus furcatus*, LESUEUR.

Silvery; dull towards the back. Elongated. Tail furcated. Adipose fin small and narrow. Upper jaw longer than the lower. The maxillary barbel scarcely extends beyond the preoperculum. Pectoral and dorsal spines denticulated posteriorly.

D. 1-7. P. 1-10. V. (?). A. 32-33 or 34. C. 15. Length, 1 to 4 feet.

Ohio, Louisiana, LESUEUR.

Pimelodus à queue fourchue, *Pimelodus cauda-furcatus*, LESUEUR, Mémoires du Muséum, v. p. 152.
 Le *Pimélode fourchu* (*Pimelodus furcatus*, LESUEUR), CUV. et VAL., xv. p. 136.
Pimelodus furcatus, DEKAY'S Report, p. 187.

9. *Pimelodus pullus*, DEKAY.

Uniform dusky brown above, approaching to black; beneath bluish white. Fins and cirrhi black, the former tinged with red. Pectorals pointed; ventrals subacute; caudal fins emarginate.

D. 1-5. P. 1-7. V. 8. A. 17. C. 19 $\frac{3}{4}$. Length, 9 inches to 1 foot.

New York, DEKAY.

Pimelodus pullus, Brown Cat-fish, DEKAY'S Report, p. 184, pl. 37, fig. 117.

10. *Pimelodus atrarius*, DEKAY.

Deep black, occasionally blackish brown above and on the sides; ashen-gray beneath. Adipose dorsal long and slender; the rays of the fins passing beyond the membrane. Caudal emarginate, round, with numerous accessory rays.

D. 1-6. P. 1-7. V. 8. A. 20. C. 17 $\frac{3}{4}$. Length, 4 to 5 inches.

New York, DEKAY.

Pimelodus atrarius, Black Cat-fish, DEKAY'S Report, p. 185, pl. 36, fig. 116.

11. *Pimelodus cupreus*, RAF.

The upper surface of the head and back is olivaceous; the sides and beneath coppery yellow, and the fins often orange or reddish. Upper jaw projecting. Maxillary barbels short, reaching only half the length of the head. Adipose small and narrow, and does not reach as far back as the termination of the base of the anal fin. Anal rounded anteriorly; acute at its posterior angle.

D. 1-7. P. 1-7. V. 1-7. A. 24. C. 24 $\frac{1}{4}$. Length, 1 to 4 feet.

Lake Erie, Ohio River, and their tributaries, RAF., KIRTLAND.

Pimelodus cupreus, Yellow Cat-fish, RAF., Ichth. Ohien., p. 65.
 " " " " KIRTLAND'S Report, pp. 169, 194; catalogued, not described.
 " " " " DEKAY'S Report, p. 187; catalogued, not described.
 " " " " KIRTLAND'S Manuscript for publication in Bost. Journ. Nat. Hist.

12. *Pimelodus limosus*, RAF.

Dusky, clouded with irregular muddy spots on the head and back, and lighter gray on the abdomen and throat. Maxillary barbels extend to the pectoral fin. Lower jaw the longer. Anal rounded; caudal nearly even.

D. 1-7. P. 1-10. V. 9. A. 1. C. 20. Length, 18 inches.

Ohio River, RAF., KIRTLAND.

- Pimelodus limosus*, Mud Cat-fish, RAF., Ichth. Ohien., p. 66.
Pimelodus nebulosus, Mud Cat-fish, RAF. (a variety from age), Ichth. Ohien., p. 64.
 " " " " KIRTLAND'S Report, pp. 169, 194; catalogued, not described.
 " " " " DEKAY'S Report, p. 187; catalogued, not described.
Pimelodus limosus, Mud Cat-fish, KIRTLAND'S Manuscript for publication in Bost. Journ. Nat. Hist.

13. *Pimelodus natalis*, LESUEUR.

Color of the fins deep red, mingled with yellow. The top of the head is of a deep olive, which is lighter upon the back, passing into yellow upon the sides, and becoming a bright yellow upon the abdomen. Body equal. Caudal fin truncated in a straight line; anal long, rounded. The barbels of the inferior jaw are unequal; the central two the shorter.

D. (?). P. (?). V. (?) A. (?). C. (?). Length, 8 inches.

Habitat, (?). Lesueur does not mention, although probably a southerner.

Pimelode noel, *Pimelodus natalis*, LESUEUR, Mémoires du Muséum, v. p. 155.

14. *Pimelodus lemniscatus*, LESUEUR.

Pale and russet-colored. The first dorsal, anal, caudal, and pectorals, edged with black. Skin smooth, with small pustules upon the back. Its long and low adipose fin is united to the caudal fin. Tail round, wide, and united to anal fin by a membrane. The dorsal spine not denticulated; that of the pectorals short, and denticulated anteriorly.

D. 8. P. 12. V. 9. A. 20. C. 50. All the fin rays subdivided. Length, 4 to 8 inches.

Southern States, DEKAY.

Pimelodon livrée, *Pimelodus lemniscatus*, LESUEUR, Mémoires du Muséum, v. p. 155.
Pimelodus lemniscatus, DEKAY'S Report, p. 187.

15. *Pimelodus cœrulescens*, RAF.

Back, head, and sides of the belly, dusky or lead color; forehead dark brown, sides of the head yellowish; belly and throat white. The maxillary barbels extend beyond the pectoral fins. Adipose fin broad, oblong-oval. Caudal fin merely lunate in old specimens; deeply and acutely forked in the young. Pectoral spine serrated upon its posterior edge.

D. 1-6. P. 1-7. V. 8. A. 30. C. 20. Length, 22 inches.

Lake Erie and the Ohio River, KIRTLAND. Alabama, STORER.

Pimelodus cœrulescens, Blue Cat-fish, RAF., Ichth. Ohien., p. 63.
 " " " " KIRTLAND'S Report, pp. 169, 194.
Pimelodus maculatus, Spotted Cat-fish, RAF., Ichth. Ohien., p. 62 (the young).
Pimelodus pallidus, White Cat-fish, RAF., Ichth. Ohien., p. 63 (the middle-aged).
 " " " " KIRTLAND'S Report, pp. 169, 194.
Pimelodus argyrus, Silvery Cat-fish, RAF., Ichth. Ohien., p. 64 (variety from locality).

16. *Pimelodus xanthocephalus*, RAF.

Iron gray, with the whole or part of the head yellow. Belly white. Upper jaw the longer. Barbels shorter than the head. Tail entirely truncate?

D. 1-6. P. (?). V. (?). A. 22. C. 24. Length, 1 foot.

Ohio River and tributaries, **RAF.**

The "Small Black Bull-head" of the northern streams and lakes.

Pimelodus xanthocephalus, Yellow-head Cat-fish, **RAF.**, *Ichth. Ohien.*, p. 66.
 " " " " " **KIRTLAND'S** Report, pp. 169, 194.
 " " " " " **DEKAY'S** Report, p. 187.

GENUS V. **NOTURUS**, **RAF.**

Adipose dorsal fin very long, decurrent, and united with the tail, which is decurrent on each side, but unconnected with the anal fin. It differs from the genus *Plotosus* of Lacepede by having the anal fin free, and from *Pimelodus* by the connection of the tail with the second dorsal fin.

1. *Noturus flavus*, **RAF.**

Back and head yellowish olive; sides yellow; nose, throat, and abdomen, white. Fins diaphanous, slightly dusky. Maxillary barbels not as long as the head. Rudiments of an immature adipose fin. Anal elongate, widened behind.

D. 1-7. P. 1-7. V. 8. A. 1-7. C. (?). Length, 4 to 12 inches.

Ohio, Mahoning River, and Lake Erie, **RAF.**, **KIRTLAND.**

Noturus flavus, Yellow Back-tail, **RAF.**, *Ichth. Ohien.*, p. 63.
 " " " " " **KIRTLAND'S** Report on the Zool. of Ohio, pp. 169, 195.
Pimelodus flavus, Young Cat-fish, with the rudiments of an adipose fin, **DEKAY'S** Report, p. 187.
Noturus flavus, **RAF.**, **KIRTLAND'S** Manuscript for publication in the *East. Journ. Nat. Hist.*

Dr. Kirtland considers this a full grown species, and distinct; and has, therefore, adopted Rafinesque's genus.

FAMILY XVI. **CYPRINIDÆ.**

Mouth but slightly cleft; weak jaws, most frequently without teeth, and the edge of which is formed by the intermaxillaries; pharyngeals strongly dentated. Branchial rays not very numerous. Body scaly. One dorsal fin. No adipose dorsal. Their stomach has no cul-de-sac, nor their pylorus any cœcal appendages. They are the least carnivorous of all fishes.

GENUS I. **CYPRINUS**, **LIN.**

Body covered with large scales; a single elongated dorsal fin; lips fleshy; mouth small; teeth in the pharynx, but none on the jaws; branchial rays, three.

1. *Cyprinus carpio*, LIN.

Golden olive-brown, head darkest; belly yellowish white; fins dark brown. Dorsal fin long, emarginate; the second dorsal ray and first anal ray serrated posteriorly. Two barbels at the angle of the mouth. Tail forked. Twelve rows of scales between the ventral and dorsal fins.

D. 22. P. 17. V. 9. A. 8. C. 19. Length, 6 to 12 inches.

Introduced into Newburgh, Orange County, New York, from France, DEKAY.

- Cyprinus carpio*, LIN., Syst. Nat.
 La Carpe, *Cyprinus carpio*, BLOCH, I. p. 77, pl. 16.
Cyprinus carpio, Common Carp, SHAW'S Gen. Zool., v. p. 179, pl. 121.
 " " " " PENNANT'S Brit. Zool., III. p. 167, pl. 51.
 " " " " GRIFFITH'S Cuv., x. p. 376.
 " " " " JENYNS'S Brit. Vert., p. 401.
 " " " " YARRELL'S Brit. Fishes (2d edit.), I. p. 349.
 " " " " STORER'S Plates, p. 134, fig. 1.
 " " " " DEKAY'S Report, p. 138.
 La Carpe vulgaire, *Cyprinus carpio*, Cuv. et VAL., XVI. p. 23.

2. *Cyprinus auratus*, LIN.

Blackish at first, it assumes by degrees the fine golden red by which it is characterized; but some are found of a silvery hue, and others variegated with these shades of color. Some individuals have no dorsal, others a very small one; others have a very large caudal, divided into three or four lobes; the dorsal and anal spines are denticulated as in the common Carp.

D. 16. P. 15. V. 9. A. 18. C. 17. Length, 4 to 10 inches.

A native of China. Introduced. Breeds freely in ponds in New York, DEKAY, and in some portions of Massachusetts, STORER.

- Cyprinus auratus*, LIN., Syst. Nat.
 " " BLOCH, III. pl. 93, 94.
 " " Gold Carp, PENNANT'S Brit. Zool., III. p. 490.
 " " Golden Carp, JENYNS'S Brit. Vert., p. 403.
 " " Gold Carp, YARRELL'S Brit. Fishes (2d edit.), I. p. 361.
 " " Golden Carp, Gold-fish, GRIFFITH'S Cuv., x. p. 377.
 " " " " STORER'S Report, p. 52.
 " " Gold Carp, DEKAY'S Report, p. 190.
 La Carpe dorée, *Cyprinus auratus*, Cuv. et VAL., XVI. p. 101.

GENUS II. *GOBIO*, CUV.

Dorsal and anal short, and without spines. Pharyngeal teeth conic, feebly bent at their summits, and in two series. Barbels at the angles of the mouth.

1. *Gobio cataractæ*, VAL.

Body elongated and rounded. The dorsal, in the middle of its length, is small; caudal emarginate, and with rounded lobes; anal rounded, and larger than the dorsal; ventrals small; pectorals large. A barbel, very small, at each angle of the mouth. Scales small,

smooth, not striated, with seventy in a longitudinal series. Back deep gray, passing into plumbeous, and becoming silvery on the belly. Pectorals, dorsal, and caudal, gray; ventrals and anal slate.

D. 3-6. P. (?). V. (?). A. 2-6. C. 19. Length, 5 inches.

Niagara Falls, VAL.

Le Goujon des cataractes (*Gobio cataractæ*, VAL.), CUV. et VAL., XVI. p. 315, pl. 483.
Gobio cataractæ, Niagara Gudgeon, DEKAY'S Report, p. 394.

GENUS III. LEUCISCUS, KLEIN.

The dorsal and anal fins short, without strong rays at their commencement. No cirrhi nor barbels on the head. The dorsal either above the ventrals, or between them and the anal.

1. *Leuciscus Americanus*, LACEP.

Blackish, with shining white scales. Gill-covers golden, with a tinge of the same along the belly. Head often greenish; and when the scales fall off, the back is frequently tinged with green and blue. Dorsal and abdominal outlines convex.

D. 9. P. 17. V. 9. A. 14. C. 19. MITCHILL.

D. 9. P. 17. V. 9. A. 13. C. 19. STORER. Length, 5 to 7 inches.

D. 10. P. 15. V. 10. A. 14. C. 19 $\frac{1}{2}$. DEKAY.

Massachusetts, STORER. New York, MITCHILL, DEKAY. Ohio River, KIRTLAND. Pennsylvania, South Carolina, CUV.

Cyprinus Americanus, LACEPEDE, v. pl. 15, fig. 3. *p. 199. Carolina sp.*

" " American Carp, SHAW'S Gen. Zool., v. p. 204.

Cyprinus crysoleucas, New York Shiner, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 459.

Luxilus cryso-cephalus? RAF., Ichth. Obien., p. 43.

Cyprinus (*Leuciscus*) *crysoleucas*, RICH., Fauna Boreal. Americ., III. p. 122.

Leuciscus crysoleucas, STORER'S Report, p. 83.

Stilbe crysoleucas, New York Shiner, DEKAY'S Report, p. 204, pl. 29, fig. 91.

Leuciscus crysoleucas, Gold Shiner, KIRTLAND, Bost. Journ. Nat. Hist., IV. p. 305, pl. 15, fig. 1.

L'Able de Bosc (*Leuciscus Boscii*, VAL.), CUV. et VAL., XVII. p. 313. *pl. 504. N York. - Car. (very broad)*

2. *Leuciscus atronasmus*, MITCHILL.

Above greenish. A broad dark-brown or blackish band passes from the nose, including the lower half of the eyes, and proceeds in a straight line to the tail. Abdomen silvery, with a few blackish stains. Tail forked.

D. 7. P. 12. V. 9. A. 7. C. 19. MITCHILL. Length, 3 inches.

D. 8. P. 15. V. 8. A. 8. C. 19 $\frac{1}{2}$. DEKAY. " "

Massachusetts, STORER. New York, MITCHILL, DEKAY.

Cyprinus atronasmus, Brook Minnow, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. 460.

" " Black-nosed Dace, DEKAY'S Report, p. 205, pl. 33, fig. 69.

L'Able à nez noir (*Leuciscus atronasmus*, MITCH.), CUV. et VAL., XVII. p. 376.

3. *Leuciscus cornutus*, MITCHILL.

Above blackish brown, with metallic reflections; sides brilliant cupreous. Dorsal and caudal fins dark brown, sometimes mottled with darker clouds; ventrals and pectorals light colored; all the fins and the opercles margined with crimson. Numerous tubercles on the head.

D. 8. P. 15. V. 8. A. 9. C. 19 $\frac{1}{2}$. Length, 5 inches.

Massachusetts, STORER. Connecticut, LINSLEY. New York, MITCHILL, DEKAY.

Cyprinus cornutus, Red-fin, or Rough-head, MITCHILL, Amer. Month. Mag., II. p. 324.

Leuciscus cornutus, Red-fin, STORER'S Supplement, Bost. Journ. Nat. Hist., III.

“ “ “ DEKAY'S Report, p. 207, pl. 29, fig. 92.

Called, also, “Red Dace.”

4. *Leuciscus atromaculatus*, MITCHILL.

Above dark olive-green, with a broad, dark, longitudinal band extending from the gill-covers to the tail. Flanks golden-yellow. Beneath silvery-white. Head deep brownish-black. Dorsal fin with a dark spot at the anterior portion of its base. Back, anterior to the dorsal, with a depression in the vertebral line. Lips fleshy.

D. 7. P. 13. V. 7. A. 7. C. 21.

D. 9. P. 15. V. 8. A. 9. C. 18 $\frac{3}{4}$. Length, 10 inches.

New York, MITCHILL, DEKAY.

Called “Lake Chub,” and “Lake Dace.”

Cyprinus atromaculatus, Mud-fish, MITCHILL, Amer. Month. Mag., II. p. 324.

Leuciscus atromaculatus, Black-headed Dace, DEKAY'S Report, p. 210, pl. 32, fig. 102.

5. *Leuciscus Hudsonius*, DE WITT CLINTON.

A broad satin stripe extending from the gill-covers to the tail, and a dark, rounded spot at the base of the tail. Opercles silvery. Tips of the ventrals nearly reaching to the anal fin.

D. 8. P. 11. V. 8. A. 8. C. 20 $\frac{3}{4}$. DE WITT CLINTON.

D. 8. P. 15. V. 8. A. (?). C. 19 $\frac{6}{10}$. DEKAY. Length, 4 inches.

New York, CLINTON, DEKAY.

Clupea Hudsonia, Spawn-eater, CLINTON, Annals of Lyc. Nat. Hist. of N. York, I. p. 49, pl. 2, fig. 2.

Leuciscus Hudsonius, Spawn-eater, DEKAY'S Report, p. 206, pl. 34, fig. 109.

6. *Leuciscus compressus*, RAF.

Head and back yellowish brown, sides and beneath silvery; pectorals yellow; abdominal fins bright orange. Body very much compressed. Scales moderate size. Abdomen slightly carinated at the base of the anal fin.

D. 9. P. 14. V. (?). A. 9. C. 30. Length, 2 to 4 inches.

Ohio, RAF., KIRTLAND.

Rutilus compressus, Fall-fish, RAF., Ichth. Ohien., p. 51.

“ “ Flat Shiner, KIRTLAND'S Report, p. 169.

Leuciscus compressus, Fall-fish, KIRTLAND, Bost. Journ. Nat. Hist., IV. p. 306, pl. 15, fig. 2.

7. *Leuciscus erythrogaster*, RAF.

Two longitudinal black stripes upon sides; the space between the stripes white and silvery; abdomen white, occasionally tinged with carmine in some specimens, and wholly of a bright carmine in others. Head short.

D. 8. P. 12. V. 8. A. 8. C. 20. Length, 3 to 6 inches.

All the small brooks and rivulets of the West, KIRTLAND. Alabama, STORER.

Luxilus erythrogaster, Red-bellied Shiner, RAF., Ichth. Ohien., p. 47.
 " " " " KIRTLAND'S Report, Catalogue, p. 169.
 " " " " " Bost. Journ. Nat. Hist., iv. p. 23, pl. 11, fig. 2.

8. *Leuciscus plargyrus*, RAF.

Olivaceous and brown on the back and head; white and silvery on the sides and operculum, occasionally iridescent. A brown band extends from the base of the head to the caudal fin, and involves the lateral line in its posterior half; beneath this band, a delicate blue or purplish tint is finally lost in the pure white of the abdomen. Mouth diagonal. Eyes large.

D. 9. P. 15 to 20. V. 9. A. 9. C. 20. Length, 4 inches.

Kentucky, RAF. Every permanent stream in the State of Ohio, KIRTLAND.

Rutilus plargyrus, Silver-side Fall-fish, RAF., Ichth. Ohien., p. 50.
 " " Common Shiner of Ohio, KIRTLAND, Bost. Journ. Nat. Hist., v. p. 26, pl. 8, fig. 2.

9. *Leuciscus cephalus*, RAF.

Silvery. Back brownish. Sometimes the base of the caudal fin is marked like the dorsal, with a round black or olive spot. The upper surface of the head and upper jaw often ornamented with prominent spines, varying in height and number.

D. 9. P. 15. V. (?). A. 9. C. 20. Length, 6 to 8 inches.

Ohio, RAF., KIRTLAND.

Semotilus cephalus, Big-head Chubby, RAF., Ichth. Ohien., p. 49.
 " " Horned Chub, KIRTLAND'S Report, p. 169.
 " " " " " Bost. Journ. Nat. Hist., III. p. 345, pl. 5, fig. 2.
Leuciscus cephalus, Horned Chub, DEKAY'S Report, p. 214.

10. *Leuciscus Kentuckiensis*, RAF.

Upper surface of the head and back dark umber, running into a lighter brown as it descends the sides, which are of a faint blue, that fades into a silvery white on the abdomen. Head of the male studded with minute tubercles above. Scales large. Caudal fin large, acutely lobed.

D. 8. P. 12. V. (?). A. 8. C. 22. Length, 3 to 5 inches.

Kentucky, RAF. Ohio, KIRTLAND.

Luxilus Kentuckiensis, Kentuckian Shiner, RAF., Ichth. Ohien., p. 45.
 " " White and Yellow-winged Shiner, KIRTLAND'S Report, Catalogue, p. 169.
 " " Kentucky Shiner, KIRTLAND, Bost. Journ. Nat. Hist., v. p. 27, pl. 8, fig. 3.

11. *Leuciscus diplemia*, RAF.

Back olive, abdomen white and silvery, the sides iridescent and violaceous, marked with irregular and interrupted black lines on the posterior edges of the scales. Fins orange-colored in the females, violet or red in the males. Head flat between the eyes. Snout rounded, and in the males warty. Opercular angle with a diaphanous membrane. Under jaw slightly projecting. Back elevated in front of the dorsal.

D. 9. P. 14. V. 8. A. 9. C. 22. Length, 2 to 4 inches.

All the Western streams, KIRTLAND.

- Semotilus diplemia*, Warty Chubby, RAF., Ichth. Obien., p. 50.
 " " Red-sided Chub, KIRTLAND's Report, Catalogue, p. 169.
 " " Red-sides, Warty Chub, KIRTLAND, Bost. Journ. Nat. Hist., v. p. 276, pl. 22, fig. 3.

12. *Leuciscus dorsalis*, RAF.

Head and back bronzed. A brown stripe extends from the base of the tail to the head above the lateral line. Abdomen white and silvery. Fins fulvous, the anterior part of the base of the dorsal and the centre of the base of the caudal marked with a dark brown or black spot. Back gibbous anterior to the dorsal fin.

D. 8. P. (?). V. 8. A. 8. C. 20. Length, 6 to 10 inches.

All the Western streams, KIRTLAND.

- Semotilus dorsalis*, Big-back Chubby, RAF., Ichth. Obien., p. 49.
 " " Smooth-headed Chub, KIRTLAND's Report, p. 169.
 " " Common Chub, KIRTLAND, Bost. Journ. Nat. Hist., v. p. 274, pl. 22, fig. 1.

13. *Leuciscus gracilis*, RICHARDSON.

Pale oil-green on the back, fading to white on the belly. Sides of the head nacreous. Head small. Scales large and thin. Lateral line straight, with fifty-five scales; seventeen scales in a vertical row under the dorsal, of which seven are above the lateral line.

D. 9. P. 17. V. 8. A. 10. C. 19½. Length, 12 inches.

Northern regions, RICHARDSON.

- Cyprinus (Leuciscus) gracilis*, Saskatchewan Dace, RICH., Fauna Boreal. Americ., III. p. 120, pl. 78.
 Nohatcheegaes, CREE INDIANS.
 L'Abbe grêle (*Leuciscus gracilis*, RICH.), CUV. et VAL., XVII. p. 321.

14. *Leuciscus caurinus*, RICH.

Moderately compressed. Head one fourth of its entire length, exclusive of caudal. Scales suborbicular, crenated exteriorly, and impressed with from fourteen to twenty fine but conspicuous lines, radiating from near the base, which is neither furrowed nor crenated. Seventy-five on the lateral line, twenty-four in a vertical line before the dorsal, and ten in a linear inch measured on the fore part of the sides. Caudal deeply forked.

D. 10. P. 18. V. 10. A. 9. C. 19½. Length, 12½ inches.

Columbia River, RICHARDSON.

Cyprinus (*Leuciscus*) *caurinus*, Northwest Dace, RICH., Fauna Boreal. Americ., III. p. 304.
Leuciscus caurinus, DEKAY'S Report, p. 215.
L'Able du Nord-ouest (*Leuciscus caurinus*, RICH.), CUV. et VAL., XVII. p. 325.

15. *Leuciscus Oregonensis*, RICH.

Brownish, belly silvery white. More elongated than the preceding; head longer. Scales more perfectly orbicular than those of the *L. caurinus*, and those on the belly are proportionally smaller.

D. 10. P. 15. V. 9. A. 9. C. 19 $\frac{3}{4}$. Length, 13 inches.

Columbia River, RICHARDSON.

Cyprinus (*Leuciscus*) *Oregonensis*, Columbia River Dace, RICH., Fauna Boreal. Americ., III. p. 305.
Leuciscus Oregonensis, DEKAY'S Report, p. 215.
L'Able de l'Oregon (*Leuciscus Oregonensis*, RICH.), CUV. et VAL., XVII. p. 326.

16. *Leuciscus Smithii*, RICH.

Lateral line straight, containing sixty scales. Scales commencing on the forehead above the eyes, rather large, shining, and pellucid, reflecting a brilliant green on the back, but having a silvery lustre on the sides and abdomen. Tongue toothed. Caudal forked. Eyes very large. Under jaw longest. Nostrils on the tip of the snout.

D. 1-12. P. 12. V. 7. A. 1-27. C. 18. Length, 9 to 10 inches.

St. Lawrence River, LIEUT. COL. C. H. SMITH.

Cyprinus (*Abramis*?) *Smithii*, La Quesche, RICH., Fauna Boreal. Amer., III. p. 110, fig.
Abramis Smithii, DEKAY'S Report, p. 192.
L'Able à baudrier (*Leuciscus Smithii*, RICH.), CUV. et VAL., XVII. p. 327.

17. *Leuciscus balteatus*, RICH.

Back of the head and body mountain-green, with iridescent tints of yellow and blue. Belly silvery white. A bright golden-yellow band behind the eye, on the margin of the operculum, and a broad scarlet-red stripe beneath the lateral line, extending from the gill-opening to the anal fin. Fins of a uniform greenish-gray color, without brilliancy. About fifty-seven scales on the lateral line. The head is exactly one fourth the length of the fish. Nostrils near the eyes.

D. 11. P. 17. V. 9. A. 19 to 22. C. 19 $\frac{7}{8}$. Length, 5 to 6 inches.

Columbia River, RICHARDSON.

Cyprinus (*Abramis*) *balteatus*, Red-sided Bream, RICH., Fauna Boreal. Americ., III. p. 301.
Abramis balteatus, DEKAY'S Report, p. 192.
L'Able de Smith (*Leuciscus balteatus*, RICH.), CUV. et VAL., XVII. p. 329.

18. *Leuciscus pulchellus*, STORER.

Back dark brown; sides and abdomen of a beautiful flesh-color, tinged with golden reflec-

tions. Head bluish on the top; gill-covers silvery, with cupreous and flesh-colored tints, and edged with a brown, membranous prolongation. Scales large, transparent, rounded at their summit, truncated at their base, striated; at the base of each scale is a fleshy, dark-colored membrane, which, projecting as far as the apex of the preceding scale, gives the appearance of indistinct oblique bands across the fish. The lateral line contains fifty-one scales; nine scales in an oblique line above the lateral line, and six below it. Dorsal nearly as high again as long. Anal higher than long.

D. 10. P. 17. V. 8. A. 10. C. 22. Length, 6 to 14 inches.

Massachusetts, STORER. New York, VALENCIENNES.

- Leuciscus pulchellus*, Beautiful Leuciscus, STORER'S Report, p. 91.
" " Roach Dace, DEKAY'S Report, p. 208.
Leuciscus argenteus, Silvery Leuciscus, STORER'S Report, p. 90.
" " Silvery Dace, DEKAY'S Report, p. 212.
Cyprinus corporalis? Corporal? MITCHILL, Amer. Month. Mag., VII. p. 324.
Leuciscus? *corporalis*, Corporaalen, DEKAY'S Report, p. 213.
L'Able gentil (*Leuciscus pulchellus*, STORER), CUV. et VAL., XVII. p. 329.
L'Able de Storer (*Leuciscus Storeri*, VAL.), CUV. et VAL., XVII. p. 319, pl. 505.

19. *Leuciscus biguttatus*, KIRTLAND.

Olive and bluish above the medial line; sides and abdomen faintly cupreous. Fins orange, tinged with ferruginous; a black spot at the base of the caudal fin. Body and fins irregularly punctated with small black dots, and a large vermilion dot behind each eye. The older individuals, especially the males, have the upper surface of the head and upper jaw studded with numerous spines in the spring of the year.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 6 inches.

Ohio, KIRTLAND.

Vulgar name, the "Jerker."

- Semotilus biguttatus*, Two-spotted Chub, KIRTLAND, Bost. Journ. Nat. Hist., III. p. 344, pl. 5, fig. 1.
Leuciscus biguttatus, DEKAY'S Report, p. 214.

20. *Leuciscus elongatus*, KIRTLAND.

Back a beautiful sky-blue, edged below with a gilt band; below this is an interrupted black band, extending from the point of the upper jaw to the tail, passing through the iris of the eye, but broken by a carmine, or, in others, a vermilion stripe terminating above the end of the ventrals. Sides and belly silvery. Body elongated, slim. Dorsal high; caudal deeply forked.

D. 8. P. (?). V. (?). A. 9. C. 20. Length, 3 inches.

Tributaries of Lake Erie, near Cleveland, and of the Mahoning River, Trumbull county, Ohio, KIRTLAND.

- Luxilus elongatus*, Red-bellied Shiner of the Lake, KIRTLAND'S Report, pp. 169, 193.
" " " " " KIRTLAND, Bost. Journ. Nat. Hist., III. p. 339, pl. 4, fig. 1.
Leuciscus elongatus, DEKAY'S Report, p. 214.

21. *Leuciscus dissimilis*, KIRTLAND.

Back brownish or olive ; a belt of gilt along the lateral line, with about twelve bluish dots, which enlarge towards the tail ; an ochreous band runs along the back, which is faintly marked with darker spots ; abdomen white and silvery ; fins pale, rays slightly marked with dark tints. Head flat between the eyes ; nose prominent ; lower lip slightly fleshy and projecting.

D. 8 or 9. P. (?). V. 8. A. 7. C. 20. Length, $4\frac{1}{2}$ inches.

Mahoning River and Lake Erie, KIRTLAND.

Luxilus dissimilis, Spotted Shiner, KIRTLAND, Bost. Journ. Nat. Hist., III. p. 341, pl. 4, fig. 2.
Leuciscus dissimilis, DEKAY'S Report, p. 214.

22. *Leuciscus nitidus*, DEKAY.

Olive-brown above ; sides silvery. Head with mucous pores. Tail deeply emarginate, not furcate. Scales large, forty-six along the lateral line. Seven scales in an oblique line from the first dorsal ray to the lateral line, and five below it.

D. 8. P. 16. V. 10. A. 9. C. $19\frac{5}{8}$. Length, 2 inches.

Lake Champlain, DEKAY.

Leuciscus nitidus, Shining Dace, DEKAY'S Report, p. 209, pl. 33, fig. 105.

23. *Leuciscus chrysopterus*, DEKAY.

A general silvery color, with a darker hue above. Fins yellowish. Ventrals with an accessory scale. Dorsal emarginate. Scales large, subequal. Forty-five scales in a longitudinal series. In a transverse series to the ventrals, seven above and six below the lateral line.

D. 9. P. 15. V. 9. A. 10. C. $19\frac{6}{8}$. Length, 6 inches.

New York, DEKAY.

Leuciscus chrysopterus, Bay Shiner, DEKAY'S Report, p. 211, pl. 30, fig. 95.

24. *Leuciscus vittatus*, DEKAY.

Olive-green, with a golden dorsal stripe ; silvery beneath, tinged with flesh-color. Caudal deeply forked. Scales moderate. Upper edge of the anal slightly emarginate.

D. 9. P. 15. V. 8. A. 8. C. $19\frac{4}{8}$. Length, 4 inches.

New York, DEKAY.

Leuciscus vittatus, Banded Dace, DEKAY'S Report, p. 212, pl. 34, fig. 108.

25. *Leuciscus pygmaeus*, DEKAY.

Very small. Head and back uniform dark brown or black above, and lighter towards the abdomen. One or more black ocellate spots on the base of the oblong, pointed tail. Scales soft, large in proportion to the size of the body. Caudal long, lanceolate.

D. 14. P. 16. V. 6. A. 13. C. 17. Length, 1 inch.

New York, DEKAY.

Leuciscus pygmaeus, Pigmy Dace, DEKAY'S Report, p. 214, pl. 42, fig. 131.

26. *Leuciscus versicolor*, DEKAY.

Silvery, varied with green, blue, and golden. Dorsal and abdominal outlines very convex. Scales very large, orbicular, with eccentric striæ. Pectorals broad, placed very low; anal with fourteen rays; caudal forked, base covered with scales.

D. 9. P. 14. V. 9. A. 14. C. 19 $\frac{1}{4}$. Length, 4 inches.

New York, DEKAY.

Called "Dace," at Peekskill. Known, also, by the names of "Yellow-bellied Perch," and "Wind-fish."

Abramis versicolor, Variegated Bream, DEKAY'S Report, p. 191, pl. 32, fig. 103.

27. *Leuciscus nasutus*, AYRES.

Above and on the sides dark bluish brown; beneath nearly white. Dorsal and caudal fins light brown; ventrals and anal nearly transparent; pectorals a little darker than the ventrals. Snout projecting. Mouth small, semicircular. Dorsal trapezoidal; pectorals situated very low, almost beneath the body; caudal beautifully lunated.

D. 10. P. 16. V. 9. A. 8. C. 19. Length, 3 $\frac{1}{2}$ inches.

Massachusetts, OLMSTED. Connecticut, AYRES.

Leuciscus nasutus, AYRES, Bost. Journ. Nat. Hist., IV. p. 299, pl. 13, fig. 3.

28. *Leuciscus gardoneus*, VAL.

Height of the body equal to one fourth its whole length; length of the head equal to about one sixth the length of the body. Five pharyngeal teeth in a single row. The trapezoidal dorsal fin arises half way between the extremity of the snout and the base of the caudal fin. Anal short; caudal slightly forked. Thirty-nine rows of scales upon the sides, seven above and three beneath the lateral line. Striæ upon the upper portion of the operculum; but one or two striæ upon the scales.

D. 11. P. (?). V. (?). A. 10. C. (?). Length, 6 inches.

L'Able gardonnet (*Leuciscus gardoneus*, VAL.), CUV. et VAL., XVII. p. 316.

29. *Leuciscus vandoisulus*, VAL.

Body elongated and compressed; lower jaw longer than the upper; pharyngeal teeth hooked, in two rows, one with five, the other with two teeth. Height equal to one fourth the length of the body, not including the tail. Head equal in length to height of body.

Caudal short ; the dorsal and anal similar to the same fins in the *L. vulgaris*. Scales small ; forty-seven longitudinal rows upon the sides, eight above, and three beneath the lateral line.

D. 10. P. (?). V. (?). A. 11. C. (?). Length, 7 inches.

L'Able vandoisule (*Leuciscus vandoisulus*, VAL.), CUV. et VAL., XVII. p. 317.

30. *Leuciscus rotengulus*, VAL.

Back much arched ; abdomen nearly straight ; jaws equal ; pharyngeal teeth in two rows, five and two. Three and a half times as long as high. The dorsal slightly posterior.

D. 11. P. (?). V. (?). A. 11. C. (?). Length, 6 inches.

L'Able rotengule (*Leuciscus rotengulus*, VAL.), CUV. et VAL., XVII. p. 318.

Valenciennes has not given the *habitat* of the last three species ; but as they are all contained in Bosc's collection, they were probably obtained in South Carolina.

31. *Leuciscus spirilingulus*, VAL.

Body compressed, outline straight along the back, curved beneath the belly ; its height a little more than one fifth its whole length. The dorsal is situated upon the anterior half of the body. There are thirty-five to thirty-nine rows of very thin, caducous scales, which are concentrically striated, but are not longitudinally furrowed or rayed. Back reddish brown, with a silvery band ; belly silvery. Fins colorless, irregularly variegated with black. Pharyngeal teeth curved and sharp pointed, in two rows, one with four, the other with two.

D. 9. P. (?). V. (?). A. 10. C. (?). Length, (?).

New Jersey, Ohio, VALENCIENNES.

L'Able éperlanule (*Leuciscus spirilingulus*, VAL.), CUV. et VAL., XVII. p. 321, pl. 506.

32. *Leuciscus tincella*, VAL.

Similar in appearance to a Tench. Head small, snout slightly pointed ; lower jaw shorter than the upper ; four pharyngeal teeth. Caudal scarcely emarginated. Scales small and very finely granulated ; seventy in a longitudinal series ; fifteen above the lateral line, and twelve beneath it. Lateral line nearly straight. A very deep golden-green upon the back, brilliant upon the sides, yellowish beneath. Dorsal, caudal, and pectorals, green ; ventrals and anal paler.

D. 9. P. 17. V. 9. A. 7. C. 21. Length, 5 inches.

Mexico, VAL.

L'Able petite tanche (*Leuciscus tincella*, VAL.), CUV. et VAL., XVII. p. 323.

33. *Leuciscus productus*, STORER.

Head broad, flattened above, and rather longer than the height of the body. Scales

Certainly Leuciscus

small; seventy-five in a longitudinal row up the sides. Dorsal fin upon the posterior portion of the body. Silvery, with a bluish longitudinal line.

D. 9. P. (?). V. (?). A. 8. C. (?). Length, 4 inches.

Wabash, LESUEUR.

L'Able alongé (*Leuciscus elongatus*, VAL.), CUV. et VAL., XVII. p. 494.

This species is called *elongatus* by Valenciennes, in the seventeenth volume of the "Histoire Naturelle des Poissons," but as that name has previously been applied by Kirtland to a species from the West, I have felt compelled to change it here.

34. *Leuciscus Storerianus*, KIRTLAND.

Back and upper surface of the body and head olivaceous; sides silvery, and of a brilliant metallic lustre, with a brownish band extending the whole length of the lateral line. Pectoral and ventral fins yellowish, anal white and translucent. Snout obtuse, projecting beyond the mouth. Back convex in front of the dorsal. The lobes of the caudal acute.

D. 9. P. 15. V. 9. A. 9. C. 23. Length, 8 inches.

Lake Erie, KIRTLAND.

Leuciscus Storerianus, Storer's *Leuciscus*, KIRTLAND, Bost. Journ. Nat. Hist., v. p. 36, pl. 9, fig. 2.

35. *Leuciscus croceus*, STORER.

Body oblong, convex in front of the dorsal fin. Lateral line straight. Head large. All upper portion of body greenish, throat flesh-colored. An indistinct brown band runs along the middle of the sides from the operculum to the base of the tail; at its termination is seen a small black blotch. All the fins orange. Surface of body covered with a slimy secretion.

D. 8. P. 14. V. 8. A. 7. C. 19. Length, 3½ inches.

Alabama, STORER.

Leuciscus croceus, STORER, Proceed. Bost. Soc. Nat. Hist., July, 1845.

36. *Leuciscus prolixus*, STORER.

Body much elongated. Head flattened above. Lateral line descends obliquely to a point above posterior extremities of the pectorals, then pursues a straight course to the tail. Top of head brown, with numerous minute tubercles; dorsum greenish; upper portion of sides blue, with lilac tints; lower portion of sides white. Dorsal fin brown, the other fins yellowish.

D. 9. P. 14. V. 8. A. 9. C. 19. Length, 4 inches.

Alabama, STORER.

Leuciscus prolixus, STORER, Proceed. Bost. Soc. Nat. Hist., July, 1845.

37. *Leuciscus obesus*, STORER.

Body short, chubby. Head large. Abdominal arch very convex. Dorsal ridge green; sides yellow, with deep lilac intermixed, so as to appear like a longitudinal band of the latter color; lower portion of the sides bluish; top of the head fuliginous. Pupils black, irides golden. Lateral line assumes the curve of the body. Fins straw-colored.

D. (?). P. (?). V. (?). A. (?) C. (?) Length, 3½ inches.

Florence, Alabama, STORER.

Leuciscus obesus, STORER, Proceed. Bost. Soc. Nat. Hist., July, 1845.

38. *Leuciscus gibbosus*, STORER.

Body very convex above. All upper portion of body green; lower portion of sides a light lilac color; fins greenish yellow; opercles light, with lilac tints.

D. (?). P. (?). V. (?). A. (?) C. (?) Length, 4 inches.

Tuscaloosa, Alabama, STORER.

Leuciscus gibbosus, STORER, Proceed. Bost. Soc. Nat. Hist., July, 1845.

GENUS IV. *PIMEPHALES*, RAF.

Body oblong, thick, scaly. Vent posterior, nearer to the tail. Head scaleless, fleshy all over, even over the gill-covers, rounded, convex, and short. Mouth terminal, small, toothless, with hard, cartilaginous lips. Opercle double, three branchial rays. Nostrils simple. Dorsal fin opposite the abdominals, with the first ray simple and cartilaginous. Abdominal fins with eight rays.

1. *Pimephales promelas*, RAF.

Diameter one fourth of the length, body olivaceous-silvery, head blackish, snout truncated and with soft warts; fins whitish; dorsal with a large, irregular black spot at its anterior base, with eight forked rays, and one simple, shorter, obtuse, hard; anal with eight rays; lateral line flexuous and raised at the base; tail lunulate.

D. 1-8. P. 15. V. 7. A. 8. C. 20. Length, 3 inches.

Kentucky, Ohio, RAF., KIRTLAND.

Pimephales promelas, RAF., Ichth. Ohien., p. 53.

" " KIRTLAND's Report, p. 194.

" " Black-headed Flat-head, KIRTLAND, Bost. Journ. Nat. Hist., III. p. 475, pl. 27, fig 2.

GENUS V. *CATOSTOMUS*, LESUEUR.

Back with a single dorsal fin. Gill-membrane three-rayed. Head and opercula smooth. Jaws toothless and retractile. Mouth beneath the snout,

lips plaited, lobed, or carunculated, suitable for sucking. Throat with pectinated teeth.

1. *Catostomus Hudsonius*, LESUEUR.

Back and sides bluish gray, with considerable lustre, the back being darkest, and the tint of the sides gradually passing into the pearl-white of the belly. Dorsal and caudal fins bluish gray; pectorals and ventrals ochre-yellow, tinged with red; anal flesh-red. Irides saffron-yellow, with pearly lustre. Scales for the most part broadly oval, or nearly orbicular, and of a medium size; large towards the tail, and smaller on the belly, particularly between the pectorals. The anal extends to within its own length of the caudal. When this fin is turned backwards, its tip reaches the base of the caudal. Dorsal quadrangular.

D. 12 to 14. P. 17. V. 10. A. 7. C. 18 $\frac{3}{4}$. Length, 21 inches.

Hudson River, FORSTER. Columbia River and its tributaries, RICHARDSON.

Cyprinus catostomus, FORSTER, Phil. Trans., LXIII. p. 153, pl. 6.

Naymaypeeth, and Sucker, PENNANT'S Arc. Zool., Introduct., p. 299, and II. p. 402.

Catostomus Hudsonius, LESUEUR, Journ. Acad. Nat. Sc., I. p. 107.

" " RICH., Franklin's Journal, p. 717.

" " Gray Sucking Carp, RICH., Fauna Boreal. Americ., III. p. 112.

Gray Sucker, FUR-TRADERS. Carpe blanche, CANADIANS. Namaypeeth, CREES.

Le Catostome Hudsonien (*Catostomus Hudsonius*, LESUEUR), CUV. et VAL., XVII. p. 459.

2. *Catostomus Forsterianus*, RICH.

Color of the back intermediate between honey-yellow and olive-green (like old olive-oil); the sides are occupied by a series of patches of light lake-red, more or less continuous, forming a broad, irregular stripe; belly white. The under fins are tinged with ochre-yellow, and at some seasons have a red hue; the dorsal and upper part of the caudal have nearly the tint of the back. Scales broadly oblong, radiated. From ninety-eight to one hundred and seven scales on the lateral line; thirty in a vertical row behind the pectorals, and twenty-three just before the ventrals. Dorsal fin higher than long; anal does not reach quite to the base of the caudal.

D. 12 to 14. P. 18. V. 10. A. 8 or 9. C. 18 $\frac{3}{4}$. Length, 22 inches.

Northern Regions, RICHARDSON.

Cyprinus catostomus, var., FORSTER, Phil. Trans., LXIII. p. 153.

Mithomapeeth, PENNANT'S Arc. Zool., Introduct., p. 299.

Catostomus Forsterianus, RICH., Franklin's Journal, p. 720.

Cyprinus (*Catostomus*) *Forsterianus*, Red Sucking Carp, RICH., Fauna Boreal. Americ., III. p. 116.

Catostomus Forsterianus, Red Sucker, DEKAY'S Report, p. 203.

Le Catostome de Forster (*Catostomus Forsterianus*, RICH.), CUV. et VAL., XVII. p. 463.

Red Sucker, FUR-TRADERS. Meethqua-maypeeth, CREES.

3. *Catostomus Suctei*, LACEP.

Fins and back brown; sides silvery, with brown spots at the base of the scales. Head compressed and flat. Lower lip very thick, crenated and curved outwardly. Scales semi-rhomboidal.

D. 12. P. 13. V. 9. A. 9. C. 18. Length, 2 feet.

South Carolina, Bosc.

Cyprinus Sucetta, LACEPEDE.

Catostomus Sucetta, LESUEUR, Journ. Acad. Nat. Sc., I p. 109.

" " DEKAY'S Report, p. 203.

Le *Catostome Sucet* (*Catostomus Suceti*, VAL.), CUV. et VAL., XVII. p. 466.

4. *Catostomus gibbosus*, LESUEUR.

Back elevated in front of the dorsal fin, which is almost as high as broad, and rounded; anal fin bilobated. Back deep blue, with golden reflections; pectoral, ventral, and anal fins of a fine reddish-orange color; caudal fin tinted with carmine and violet; dorsal bluish green; abdominal scales red at their base. Body marked with four or five faint transverse bands. At some seasons of the year, three or four prominent horns or tubercles are seen on each side of the head, between the eyes and snout.

D. 15, 16, or 17. P. 16. V. 8 or 9. A. 8, 9, or 10. C. 18 or 19½. Length, 5 to 14 inches.

New Hampshire, Connecticut, New Jersey, DEKAY. Massachusetts, LESUEUR, STORER. Pennsylvania, LESUEUR.

Catostomus gibbosus, Chub Sucker, LESUEUR, Journ. Acad. Nat. Sc., I. p. 92, fig.

" " Gibbous Sucker, STORER'S Report, p. 83.

Catostomus tuberculatus, LESUEUR, Journ. Acad. Nat. Sc., I. p. 93, fig.

" " Horned Sucker, STORER'S Report, p. 85.

Labeo gibbosus, Gibbous Chub Sucker, DEKAY'S Report, p. 194, pl. 32, fig. 101.

Catostomus tuberculatus, Horned Sucker, DEKAY'S Report, p. 199, pl. 31, fig. 97.

Le *Catostome bossu* (*Catostomus gibbosus*, LESUEUR), CUV. et VAL., XVII. p. 443.

Le *Catostome aux tubercules* (*Catostomus tuberculatus*, LESUEUR), CUV. et VAL., XVII. p. 444.

5. *Catostomus macrolepidotus*, LESUEUR.

Back dark blue, base of the scales brown; sides whitish, with yellow reflections; opercula yellowish. Head reddish brown. Dorsal, anal, and ventral fins tinged with blue and yellow; caudal gray. Dorsal fin short, deeply emarginated, upper lobe elevated and pointed, lower lobe rounded. Scales large, and disposed in a lozenge form.

D. 16. P. 18. V. 9. A. 9. C. 18½. Length, 14½ inches.

Delaware River, LESUEUR. Lake Ontario, VAL.

Catostomus macrolepidotus, LESUEUR, Journ. Acad. Nat. Sc., I. p. 94, fig.

" " Large-scaled Sucker, DEKAY'S Report, p. 202, pl. 77, fig. 242.

Le *Catostome aux grandes écailles* (*Catostomus macrolepidotus*, LESUEUR), CUV. et VAL., XVII. p. 447.

6. *Catostomus aureolus*, LESUEUR.

Body of a beautiful orange-color, deepest on the back; the base of the scales dark red; the sides are heightened with golden reflections; pectorals, ventrals, and anal, of a fine red orange-color; caudal of a deep carmine. Anal fin long, pointed, and passing considerably

beyond the base of the caudal, which is forked with pointed lobes, the inferior of which is the larger; abdominal fin truncated.

D. 14. P. 18. V. 9. A. 8. C. 18. Length, 12 to 18 inches.

Lake Erie, LESUEUR, DEKAY.

Known, at Buffalo, under the names of "Mullet," "Golden Mullet," "Red-Horse."

Catostomus aureolus, LESUEUR, Journ. Acad. Nat. Sc., I. p. 95, fig.

Cyprinus (*Catostomus*) *aureolus*, Gilt Sucking Carp, LESUEUR, RICH., Fauna Boreal. Americ., III. p. 119.

Catostomus aureolus, Mullet Sucker, DEKAY'S Report, p. 201, pl. 42, fig. 133.

" " Mullet of the Lake, KIRTLAND, Bost. Journ. Nat. Hist., III. p. 349, pl. 6, fig. 2.

" " " " " " Report, pp. 169, 192.

Le Catostome doré (*Catostomus aureolus*, LESUEUR), CUV. et VAL., XVII. p. 429.

7. *Catostomus communis*, LESUEUR.

General color of the head and back a reddish brown, in some specimens darker than in others; sides reflecting golden tints; abdomen whitish; pectoral, ventral, and anal fins reddish brown; caudal reddish violet; dorsal blue and yellow. Dorsal quadrangular; anal narrow, and extends as far as the base of the caudal fin.

D. 14. P. 18. V. 10. A. 9. C. 24. Length, 14 to 16 inches.

Maryland, LESUEUR. New York, DEKAY.

Catostomus communis, LESUEUR, Journ. Acad. Nat. Sc., I. p. 95, fig.

" " Common Sucker, DEKAY'S Report, p. 196, pl. 33, fig. 106.

Catostomus gracilis, KIRTLAND'S Report, pp. 169, 193.

Catostomus communis, Brook Sucker, KIRTLAND, Bost. Journ. Nat. Hist., V. p. 265, pl. 19, fig. 1.

Le Catostome commun (*Catostomus communis*, LESUEUR), CUV. et VAL., XVII. p. 426.

8. *Catostomus longirostrum*, LESUEUR.

Above reddish, paler on the sides; abdomen white, with a bluish tint. Head horizontal, terminated in a long snout. The extremity of the anal does not reach the base of the caudal. Scales very small and roundish.

D. 12. P. 16. V. 9. A. 7. C. 18. Length, 5 inches.

Vermont, LESUEUR.

Catostomus longirostrum, LESUEUR, Journ. Acad. Nat. Sc., I. p. 102.

Catostomus longirostris, DEKAY'S Report, p. 203.

Le Catostome longirostre (*Catostomus longirostrum*, LESUEUR), CUV. et VAL., XVII. p. 453.

9. *Catostomus nigricans*, LESUEUR.

Back black; sides reddish yellow, with black blotches; beneath white, with golden reflections. Pectoral, ventral, and anal fins reddish; caudal and dorsal fins blackish. Head large, quadrangular. Anal fin straight, its extremity reaching the base of the caudal fin. Dorsal fin small and quadrangular.

D. 11. P. 18. V. 9. A. 8. C. 18. Length, 13 inches.

Massachusetts, STORER. Lake Erie, LESUEUR. Every permanent stream in the West, KIRTLAND.

Called "Shoemaker," at Lake Erie.

- Catostomus nigricans, LESUEUR, Journ. Acad. Nat. Sc., 1. p. 102.
 Cyprinus (Catostomus) nigricans, Black Sucking Carp, RICH., Fauna Boreal. Americ., III. p. 120.
 Catostomus nigricans, Black Sucker, STORER'S Report, p. 86.
 " " Mud Sucker, KIRTLAND'S Report, pp. 169, 193.
 " " Black Sucker, DEKAY'S Report, p. 202.
 " " Mullet, Mud Sucker, KIRTLAND, Bost. Journ. Nat. Hist., v. p. 273, pl. 21, fig. 3.
 Le Catostome noirâtre (Catostomus nigricans, LESUEUR), CUV. et VAL., XVII. p. 453.

10. *Catostomus maculosus*, LESUEUR.

Reddish, with irregular black blotches; pectorals and ventrals reddish, dashed with black; anal and caudal reddish white; dorsal bluish, with black marks on the rays. Head large, quadrangular, declivous; eyes small; the lateral line straight, and runs from the operculum on a line with the eye.

D. 12. P. 16. V. 9. A. 9. C. 18. Length, 8 inches.

Maryland, LESUEUR.

Called "Black Sucker," in Maryland.

- Catostomus maculosus, LESUEUR, Journ. Acad. Nat. Sc., 1. p. 103.
 " " DEKAY'S Report, p. 203.
 Le Catostome tacheté (Catostomus maculosus, LESUEUR), CUV. et VAL., XVII. p. 454.

11. *Catostomus elongatus*, LESUEUR.

Head dusky above, coppery on its sides; back black, often slightly mottled; sides and beneath dusky and cupreous. Fins dusky and livid. Body subcylindric, very long. Dorsal fin very long, low, its anterior part high and falciform. Anal fin very small, and truncated. Scales large, flexible on the flanks, and a little quadrangular towards the tail.

D. 35. P. 15. V. 9. A. 8. C. 18. Length, 2 to 3 feet.

Ohio River, LESUEUR, KIRTLAND.

- Catostomus elongatus, LESUEUR, Journ. Acad. Nat. Sc., 1. p. 103, fig.
 Catostomus niger, RAP., Ichth. Ohien., p. 56.
 Catostomus elongatus, Missouri Sucker, Black-Horse, Black-Buffer, KIRTLAND'S Report, pp. 169, 192.
 " " " " KIRTLAND, Bost. Journ. Nat. Hist., v. p. 267, pl. 19, fig. 3.
 " " " " DEKAY'S Report, p. 203.
 Le Catostome alongé (Catostomus elongatus, LESUEUR), CUV. et VAL., XVII. p. 455.

12. *Catostomus vittatus*, LESUEUR.

Back pale yellowish-red, abdomen and lower fins white. A black stripe passes from the snout, through the eye, to the caudal fin, dividing the body equally; dorsal fin quadrangular; tail forked. Scales very small, rounded.

D. (?). P. 16. V. 9. A. 8. C. 18. Length, 2 inches.

Pennsylvania, LESUEUR.

- Catostomus vittatus, LESUEUR, Journ. Acad. Nat. Sc., 1. p. 104.
 " " DEKAY'S Report, p. 203.
 Le Catostome à bandelettes (Catostomus vittatus, LESUEUR), CUV. et VAL., XVII. p. 459.

13. *Catostomus Duquesnii*, LESUEUR.

Back and forehead dusky olive and coppery, sometimes iridescent with pale blue; sides coppery; abdomen white. Head about one fifth the length of the entire fish. Scales strong, greatly radiated, and as wide again as long; scales nearly of same size over the entire body. The anal fin extends as far as the base of the caudal fin, which is greatly forked. Mouth wide.

D. 14. P. 17. V. 10. A. 9. C. 18 $\frac{1}{4}$. Length, 19 inches.

Ohio River, Pennsylvania, LESUEUR.

- Catostomus Duquesnii*, LESUEUR, Journ. Acad. Nat. Sc., I. p. 105, fig.
" " White Sucker, KIRTLAND'S Report, pp. 169, 192.
" " " " DEKAY'S Report, p. 203.
" " Pittsburg Sucker, Red-Horse of the fishermen, KIRTLAND, Bost. Journ. Nat. Hist., v. p. 268, pl. 20, fig. 1 (male), pl. 21, fig. 2 (female).
Le Catostome de Duquesne (*Catostomus Duquesnii*, LESUEUR), CUV. et VAL., XVII. p. 458.

14. *Catostomus Bostoniensis*, LESUEUR.

Brownish, darker towards the head, which is nearly olive-colored; sides reddish brown, presenting a beautiful metallic lustre; beneath white. Pectoral, ventral, and anal fins, reddish; dorsal and caudal dark brown. Caudal deeply forked. Mouth very small. Sixty-four scales along the lateral line. Scales on the anterior portion of the body smaller than those on the posterior portion.

D. 13. P. 18. V. 10. A. 9. C. 18. Length, 8 to 15 inches.

New Hampshire, PECK. Massachusetts, LESUEUR, STORER. New York, Pennsylvania, CUV.

- Cyprinus catostomus*, FORSTER, PECK, Mem. Amer. Acad., II. pt. 2, p. 55.
Catostomus Bostoniensis, LESUEUR, Journ. Acad. Nat. Sc., I. p. 106, fig.
" " STORER'S Report, p. 54.
Le Catostome Bostonien (*Catostomus Bostoniensis*, LESUEUR), CUV. et VAL., XVII. p. 432.

15. *Catostomus teres*, MITCHILL.

Back and sides a speckled black and white. Belly whitish. Pectoral, abdominal, and anal fins yellowish. Dorsal and caudal dark brown. Elongated, round body. Tail almost even.

D. 13. P. 17. V. 9. A. 8. C. 19. Length, 12 to 15 inches.

New York, MITCHILL.

- Cyprinus teres*, Fresh-water Sucker, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 453.
Catostomus teres, Fresh-water Sucker, LESUEUR, Journ. Acad. Nat. Sc., I. p. 103.
Le Catostome grêle (*Catostomus teres*, LESUEUR), CUV. et VAL., XVII. p. 463.

16. *Catostomus oblongus*, MITCHILL.

Upper part of head a dark slate-color. Back greenish, fading into brilliant lemon-yellow on the sides. Four to six vertical obsolete bands, resplendent bluish green on the back, and becoming effaced on the sides. Dorsal, caudal, and anterior portion of anal brown;

pectorals brownish, red at the base; ventrals yellow. Second lobe of anal dull red. Head somewhat depressed. Back arched, approaching to gibbous.

D. 14. P. 15. V. 9. A. 8. C. 19. Length, 6 to 12 inches.

New York, MITCHILL, DEKAY. Charleston, South Carolina, VAL.

Cyprinus oblongus, Chub of New York, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., 1. p. 459.

Catostomus oblongus, Chub of New York, LESUEUR, Journ. Acad. Nat. Sc., 1. p. 108.

Labeo oblongus, Brilliant Chub Sucker, DEKAY'S Report, p. 193, pl. 42, fig. 136.

Le Catostome chub (*Catostomus oblongus*, LESUEUR), CUV. et VAL., xvii. p. 411.

17. *Catostomus anisurus*, RAF.

Body and head brownish above; sides and abdomen silvery; dorsal and caudal fins olive; anal reddish; ventrals and pectorals orange. A deep transverse sulcation before the eyes. Snout gibbous. Anal reaches the base of the caudal.

D. 17. P. 15. V. (?). A. 8. C. 22 $\frac{1}{2}$. Length, 1 to 2 feet.

Ohio, and most of its tributaries, RAF., KIRTLAND.

Catostomus anisurus, Ohio Carp-Sucker, RAF., Ichth. Ohien., p. 54.

" " White Sucker, White-Nose of the fishermen, KIRTLAND, Bost. Journ. Nat. Hist., v. p. 269, pl. 20, fig. 2.

18. *Catostomus melanops*, RAF.

Back olivaceous; sides whitish, with scattered black dots; a black spot on the gill-cover, and a large one between the dorsal and caudal fins. Caudal slightly lunated; anal fin reaches the base of the caudal. Scales large.

D. 14. P. 18. V. 9. A. 9. C. 18 $\frac{1}{2}$. Length, 18 inches.

Ohio and Big Miami Rivers, RAF., KIRTLAND.

Catostomus melanops, Black-faced Sucker, RAF., Ichth. Ohien., p. 57.

" " Spotted Sucker, KIRTLAND'S Report, pp. 169, 193.

" " Black-nosed Sucker, Spotted Sucker, KIRTLAND, Bost. Journ. Nat. Hist., v. p. 271, pl. 20, fig. 3.

19. *Catostomus bubalus*, RAF.

Back and head brown, sides bronzy and metallic; abdomen whitish. Back gibbous. Dorsal long, terminating over the middle of the anal fin; its anterior portion elevated, the posterior low. The lower lobe of the caudal fin the broader. Anal extends as far as the base of the caudal. Scales large, somewhat radiate with minute lines.

D. 28. P. 16. V. (?). A. 11. C. 18 $\frac{2}{3}$. Length, 1 to 3 feet.

Ohio, Mississippi, Missouri, and their tributaries, RAF. Ohio River, KIRTLAND.

Catostomus bubalus, Brown Buffalo-fish, RAF., Ichth. Ohien., p. 55.

" " KIRTLAND'S Report, pp. 169, 192.

" " Buffalo Sucker, Brown Buffalo, KIRTLAND, Bost. Journ. Nat. Hist., v. p. 266, pl. 19, fig. 2.

20. *Catostomus Sueurii*, RICH.

Back, sides, and gill-covers wood-brown, reflecting, when opposed to the light, many brilliant tints, in which emerald-green and gold-yellow predominate; bases of the scales bluish gray, producing an appearance of reticulation; belly reddish white. The dorsal has the hue of the back, with a reddish margin; the other fins are almost all entirely red. Scales very large, quadrangular. Forty-seven scales on the lateral line. Air-bladder divided into three portions, the central one the largest.

D. 14. P. 16. V. 9 or 10. A. 9. C. 18 $\frac{3}{4}$. Length, 19 inches.

Northern Regions, RICHARDSON.

Cyprinus (*Catostomus*) *Sueurii*, PICCONOW, RICH., *Fauna Boreal. Americ.*, III. p. 118.

Catostomus Sueurii, DEKAY'S Report, p. 203.

Le Catostome de Lesueur (*Catostomus Sueurii*, RICH.), CUV. et VAL., XVII. p. 465.

21. *Catostomus elegans*, DEKAY.

Above dark bluish; beneath whitish, with pinkish suffusions along the abdomen. Head brilliant green, passing into yellowish and golden on the opercles. Dorsal and anal brown; pectorals and ventrals faint orange; caudal rosaceous. Dorsal subquadrate, rounded above. Scales large, with from three to six radiating impressed lines, crossed by others waved and concentric.

D. 12. P. 15. V. 9. A. 8. C. 17. Length, 8 inches.

New York, DEKAY.

Labeo elegans, New York Chub Sucker, DEKAY'S Report, p. 192, pl. 31, fig. 100.

22. *Catostomus esopus*, DEKAY.

Back elevated. Scales large, oblong, the triangular area on the free portion with four radiating lines, the interstices between these lines with concentric wrinkles. Lateral line not obvious. Snout prominent.

D. 12. P. 16. V. 9. A. 7. C. 19 $\frac{3}{4}$. Length, 10 inches.

New York, DEKAY.

Labeo esopus, Round-backed Chub Sucker, DEKAY'S Report, p. 195.

23. *Catostomus Oneida*, DEKAY.

Dark bluish brown above; lighter on the sides; whitish beneath. Back gibbous, with two short subspinous rays to the dorsal fin. Head smooth, with numerous mucous pores. Scales very large. Seventeen in an oblique series from the dorsal fin.

D. 2-13. P. 15. V. 9. A. 8. C. 18 $\frac{3}{4}$. Length, 12 inches.

Lake Oneida, DEKAY.

Called "Sucker," and "Mullet," at Lake Oneida.

Catostomus Oneida, Oneida Sucker, DEKAY'S Report, p. 193.

24. *Catostomus pallidus*, DEKAY.

Back light bluish, becoming mixed with yellow, and paler on the sides; abdomen white; dorsal and caudal dark brown, mixed with yellow; anal with a faint tinge of yellow; pectorals and ventrals orange. Caudal fin falcate. Scales small on the back and shoulders, becoming gradually larger towards the tail. The two portions of the air-bladder united by a wide aperture.

D. 13. P. 16. V. 9. A. 8. C. 18 $\frac{1}{2}$. Length, 9 inches.

New York, DEKAY.

Catostomus pallidus, Pale Sucker, DEKAY'S Report, p. 200, pl. 33, fig. 104.

25. *Catostomus fasciatus*, LESUEUR.

Body elongated, four times and three quarters longer than high. Height of dorsal equal to its length. Caudal deeply emarginated. Anal as high as the dorsal. Scales large and striated; forty-five to forty-eight in a longitudinal series. The fish, when dried, is gray or plumbeous, variegated with green upon the back, with ten or twelve deeper gray lines, made more conspicuous with large blackish dots; beneath white, unspotted.

D. 14. P. (?). V. (?). A. 9. C. (?). Length, 15 $\frac{1}{2}$ inches.

Mississippi, VAL.

Le Catostome rayé (*Catostomus fasciatus*, LESUEUR), CUV. et VAL., XVII. p. 449.

26. *Catostomus planiceps*, VAL.

Body rounded anteriorly, slender, compressed posteriorly; height equal to one sixth its length. Profile rectilinear from the neck to the eye, from whence it descends in a very convex curve towards the mouth. Abdomen arched. Preoperculum very broad; operculum narrow at its insertion, enlarging as it descends towards the angle of the pectorals. Dorsal short, height equal to three quarters its length. Anal rounded, height a little more than twice its length. Caudal emarginated, its lobes rather longer than the anal. The pectorals and ventrals are truncated. Forty-eight scales in a longitudinal series upon the sides; the radiating striæ upon them are very conspicuous; the circular ones very numerous and delicate. A green marbling, deep upon the back and sides; in scattered points upon the white belly. Fins greenish and dotted.

D. 13. P. 13. V. 8. A. 8. C. 4, 19-4. Length, 13 $\frac{1}{2}$ inches.

Wabash River, VAL.

Le Catostome à tête plate (*Catostomus planiceps*, VAL.), CUV. et VAL., XVII. p. 450.

27. *Catostomus carpio*, VAL.

Body elongated, rounded. The third ray of the dorsal two thirds the length of the base of the fin. Dorsal longer than in the other species. The length of the anal equal to one fifth its

height; this fin is higher than that of any other species of the genus, exceeding in length the caudal lobes. Pectorals very broad. Scales large, rounded, very strongly striated circularly, slightly in rays; forty-five in a longitudinal series. Golden green.

D. 16. P. 16. V. 8. A. 8. C. 4, 19-4. Length, 25 inches.

Lake Ontario, VAL.

Le Catostome carpe (*Catostomus carpio*, VAL.), CUV. et VAL., xvii. p. 457.

GENUS VI. SCLEROGNATHUS, VAL.

Snout slightly advanced beyond the mouth; the extremity of the mouth is supported, as in the *Catostomi*, by the intermaxillary, which is furnished in front with a well developed, projecting, cartilaginous ethmoid. The upright branch is long, and of a styloid form, while the horizontal one is shortened, and a mere keel, the inferior edge of which serves merely to support the superior angle of the mouth. The remainder of the maxillary arch is formed by a fibrous ligament covered by a thin, undilated lip, reduced to a thin and fleshy protuberance. The upper jaw is a wide, very solid bony piece, under which the upper lip is partly drawn; this bone is concealed by the first two suborbitars, being wider and no less advanced than those of the *Catostomi*. The lower lip is straight and delicate; hence the mouth of the fish cannot exercise suction in the manner of the *Catostomi*. As to its lips, it is a *Leuciscus*; but the osteology of its mouth resembles that of the *Catostomi*. The dorsal is long, like that of the *Carps*. The head is naked, marked by lines of mucous pores. Pharyngeal teeth comb-like, finer and more equal than those of the *Catostomi*. The air-bladder is divided into two large lobes; the anterior is large and rounded, with a slight depression at its superior face; the second conical, twice as long as the first, and followed by two small lobes; the second communicates with the œsophagus by an air-pipe.

1. *Sclerognathus cyprinus*, LESUEUR.

Body compressed, elliptic, sharp at the base of the dorsal fin, which is very long and falci-form on its anterior part, and low behind. Fins of a gray-blue color. Anal fin lunated. Caudal forked, with pointed lobes. Scales very large, semirhomboidal, and variegated with blue, yellow, and green reflections; thirty-five in a longitudinal series; seven rows of scales above, and six rows below, the lateral line.

D. 31. P. 18. V. 9. A. 10. C. 18 $\frac{1}{2}$. Length, 20 inches.

Ohio River, Lake Erie, RAF., KIRTLAND. The fresh-water tributary streams of Chesapeake Bay, LESUEUR. Lake Pontchartrain, VAL.

Called "Sailor-fish," "Flying-fish," and "Skimback."

- Catostomus cyprinus, Carp, LESUEUR, Journ. Acad. Nat. Sc., 1. p. 91, fig.
 Catostomus velifer, Sailing Sucker, RAF., Ichth. Ohien., p. 56.
 Labeo cyprinus, GRIFFITH'S CUV., x. p. 380.
 Catostomus velifer, Carp of the Ohio, KIRTLAND'S Report, pp. 169, 192.
 Labeo cyprinus, Long-finned Chub Sucker, DEKAY'S Report, p. 194, pl. 77, fig. 243.
 Le Sclérogathe cyprin (Sclerognathus cyprinus, VAL.), CUV. et VAL., xvii. p. 474.
 Sclerognathus cyprinus, KIRTLAND, Bost. Journ. Nat. Hist., v. p. 275, pl. 22, fig. 2.

2. Sclerognathus cyprinella, VAL.

Body similar in form to that of the preceding species. The dorsal fin resembles that of the preceding; but the anal fin is more pointed. The scales are much smaller; there are forty-one in a longitudinal series, ten above and seven below the lateral line. Greenish gold, fins of a deeper color.

D. 33. P. (?). V. (?). A. 12. C. (?). Length, (?).

Lake Pontchartrain, VAL.

Le Sclérogathe cyprinelle (Sclerognathus cyprinella, VAL.), CUV. et VAL., xvii. p. 477.

GENUS VII. EXOGLOSSUM, RAF.

Body elongated, slightly compressed, covered with small scales, vent nearest to the tail. Head scaleless, flattened above, mouth terminal, toothless; lower jaw shorter, with three or five lobes, the middle one larger, simulating a tongue; lips very small. Ventral fins with nine rays; dorsal fin opposed to them.

1. Exoglossum Lesueurianum, RAF.

Head large, snout very short, broad, and convex; lateral line curves regularly to the middle of the body, and descends thence in nearly a straight line to the tail. The dorsal fin is large, quadrangular, in the centre of the body; the caudal is forked. Back brownish olive; sides blue, with a brownish band; a black spot at the base of the caudal fin; beneath silvery gray.

D. 9. P. 18. V. 8. A. 9. C. 9 principal rays. LESUEUR.

D. 9. P. 15. V. 7. A. 8. C. 19 $\frac{1}{2}$. VALENCIENNES. Length, 4 inches.

Maryland, LESUEUR. Lake Owaska, VAL.

- Cyprinus maxilingua, Little Sucker, LESUEUR, Journ. Acad. Nat. Sc., 1. p. 86.
 Exoglossum Lesueurianum, RAF., Journ. Acad. Nat. Sc., 1. p. 420.
 Catostomus maxilingua, Little Sucker, DEKAY'S Report, p. 203.
 L'Exoglosse de Lesueur (Exoglossum Lesueurianum, RAF.), CUV. et VAL., xvii. p. 483.

2. Exoglossum macropterus, RAF.

Head nearly square, forehead truncate, tuberculated, mouth protractile, lower lip five-lobed,

pyramidal, silvered, variegated, and reticulated with blackish; lateral line straight, but faint. All the lower fins elongated; the pectorals reaching the abdominal, the anal reaching the tail, dorsal fin with twelve rays; tail forked. Scales very minute.

D. 12. P. 12. V. (?). A. 10. C. 20. Length, 2 to 3 inches.

Ohio River, RAF.

Exoglossum macropteron, Stone Toter, RAF., Journ. Acad. Nat. Sc., I. p. 421, pl. 17, fig. 3.
L'Exoglosse macroptère (*Exoglossum macropteron*, RAF.), CUV. et VAL., XVII. p. 456.

3. *Exoglossum annulatum*, RAF.

Head narrow, forehead smooth and convex, lower lip trilobated; body oblong, olivaceous, back blackish, a black ring at the base of the tail; lateral line curved downwards at the base. Fins olivaceous; pectoral fins elliptic, obtuse, not reaching the abdominal; dorsal fins in the middle of the back with nine rays; caudal fin forked. Scales larger than in the preceding.

D. 9. P. 15. V. (?). A. 9. C. 24. Length, 3 to 6 inches.

New York, RAF.

Exoglossum annulatum, Black Chub, RAF., Journ. Acad. Nat. Sc., I. p. 421, pl. 17, fig. 4.
L'Exoglosse à anneau (*Exoglossum annulatum*, RAF.), CUV. et VAL., XVII. p. 457.

4. *Exoglossum nigrescens*, RAF.

Head short, forehead smooth and convex, lower lip trilobated; body oblong; lateral line nearly straight; pectoral fins short, oval; dorsal fin in the middle of the back; tail slightly forked. Black, which color extends to the fins; no caudal ring.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 2 to 8 inches.

Lake Champlain, RAF.

Exoglossum nigrescens, Black Chub, RAF., Journ. Acad. Nat. Sc., I. p. 422.
L'Exoglosse noirâtre (*Exoglossum nigrescens*, RAF.), CUV. et VAL., XVII. p. 458.

5. *Exoglossum spinicephalum*, VAL.

Head short, less than one sixth the length of the body. Dorsal very small; anal larger; pectorals pointed. Scales smooth. Back greenish; the remainder of the body silvery.

D. 7. P. (?). V. (?). A. 9. C. (?). Length, 4 inches.

Wabash River, LESUEUR.

Leuciscus spinicephalus, LESUEUR, CUV. et VAL., XVII. p. 459.
L'Exoglosse spinicephale (*Exoglossum spinicephalum*, VAL.), CUV. et VAL., XVII. p. 459.

6. *Exoglossum dubium*, KIRTLAND.

Head and back olive; operculum iridescent; sides dusky, abdomen white. Fins fulvous. Head elongated. The upper jaw projects beyond the lower, which is small, semicircular.

and mostly concealed by the projection of the upper when the mouth is closed. Scales small, oval. The upper lobe of the caudal fin is acuminate, the lower is obtuse.

D. 8. P. 14. V. 8. A. 7. C. 20. Length, 4 to 6 inches.

Ohio, KIRTLAND.

Exoglossum Lesueurianum, Rough-nosed Dace, RAF., KIRTLAND'S Report, pp. 169, 193.

Exoglossum dubium, Sucker-mouthed Chub, KIRTLAND, Bost. Journ. Nat. Hist., v. p. 272, pl. 21, fig. 1.

GENUS VIII. PÆCILIA, SCHN.

Body but little elongated, the ventrals not very far back, and the dorsal just above the anal. Upper part of the head flat, the opercula large, rays three. Jaws flattened horizontally, protractile, but little cleft, furnished with a single range of small and very fine teeth.

1. *Pæcilia multilineata*, LESUEUR.

Body compressed, wider towards the operculum. Lines and black spots forming longitudinal bands upon the sides. Dorsal twice as long as high. Snout cuneiform seen in the profile, flat and wide seen from above. Scales moderate, rounded, and concentrically lined.

D. 14. P. 16. V. 6. A. 9. C. 26. Length, 1½ inches.

Florida, LESUEUR.

Pæcilia multilineata, LESUEUR, Journ. Acad. Nat. Sc., II. p. 4, pl. 1, fig. 1.

DEKAY'S Report, p. 215.

2. *Pæcilia olivacea*, STORER.

Body oblong, head flattened above. All the upper portion of the body olive-colored, sprinkled with minute black dots; a light spot on the top of the head. A broad black band, commencing at the angle of the jaws, is continued the whole length of the body to the caudal rays. The throat and abdomen are white. The fins yellowish green; the caudal rounded, and spotted like the upper portion of the body. This species is caught at all seasons, swimming on the surface of the water, catching at floating objects, and hence commonly called *Top minnow*.

D. 9. P. 13. V. 6. A. 12. C. 19. Length, 2½ inches.

Florence, Alabama, STORER.

Pæcilia olivacea, STORER, Proceed. Bost. Soc. Nat. Hist., July, 1845.

3. *Pæcilia catenata*, STORER.

Body oblong, compressed. Eight or ten interrupted longitudinal orange lines upon the sides; spots of a similar color upon opercles. Two bands passing from eyes to mouth; the upper yellowish green, the lower blue. Pectoral, dorsal, and anal fins yellow, and each of

them more or less dotted with deep orange, so arranged in the dorsal as to appear like a longitudinal band at its base. Base of caudal spotted with similar dots; its centre ash-colored; a black transverse band at its posterior extremity, margined with yellow. A bluish tint upon the body at the base of the pectorals, and upon the sides below the dorsal.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, $4\frac{1}{2}$ inches.

Florence, Alabama, STORER.

GENUS IX. LEBIAS, CUV.

Resemble *Pœcilia*, with the exception that their teeth are denticulated.

1. *Lebias ellipsoides*, LESUEUR.

Deep brown. Greatest thickness of body is between the opercula, very compressed towards the tail. Eyes large. Scales large. Dorsal high, rounded; anal small and round; caudal unequal, enlarged and elongated posteriorly, and obliquely truncated. The young pale, generally with white belly, and silvery gill-covers. A few faint traces of longitudinal lines, and brownish mottles or marks, not quite amounting to bands or zones, distinguishing the sides perpendicularly.

D. 11. P. (?). V. 6. A. 10. C. 20. Length, 2 inches.

Connecticut, AYRES. New York, MITCHILL, DEKAY. Florida, LESUEUR.

Esox ovinus, Sheeps-head, Killifish, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 411, pl. 4, fig. 7.

Lebias ellipsoides, LESUEUR, Journ. Acad. Nat. Sc., II. p. 6, pl. 2, figs. 1 and 2.

Cyprinodon ovinus, VAL., HUMBOLDT et BONPLAND, II. p. 161.

Lebias ellipsoides, AYRES, Bost. Journ. Nat. Hist., IV. p. 264.

Lebias ovinus, Sheeps-head *Lebias*, DEKAY's Report, p. 215, pl. 27, fig. 84; young.

Lebias ellipsoides, LESUEUR, DEKAY's Report, p. 216.

" " " AYRES, Bost. Journ. Nat. Hist., IV. p. 265.

GENUS X. FUNDULUS, LACEP.

Have many relations with *Pœcilia*; but their teeth are small and crowded, and those of the anterior range are bent; they have some conical teeth rather strong at the pharynx; there are but four rays to the gills.

1. *Fundulus fuscus*, AYRES.

Body rather rounded, somewhat compressed towards the tail. Above and on the sides very dark brown, striped longitudinally with narrow lines, which are lighter. Abdomen white. A transverse black band at the base of the caudal fin.

D. 15. P. 14. V. 6. A. 9. C. 13. Length, 2 to 3 inches.

Connecticut River, AYRES.

Fundulus fuscus, AYRES, Bost. Journ. Nat. Hist., IV. p. 266, pl. 13, fig. 3.

GENUS XI. HYDRARGYRA, LESUEUR.

Head flat, shielded above with large scales, the centre scale largest. Teeth in the jaws and throat; those of the jaws conic and recurved; none in the palate; jaws protractile; lower jaw the longer. Scales on the opercula and body. Branchial rays, four to five. Ventral fins six-rayed. The dorsal fin situated nearer to the tail than the head, opposite to the anal.

1. *Hydrargyra fasciata*, SCHN.

Back and sides greenish or olive. The sides are crossed by from ten to twenty vertical white lines or spots. Within these are numerous silvery-white and steel-blue dots, which extend over the dorsal and anal fins. In the spawning season, the abdomen is of a brilliant golden yellow; but during the rest of the year it is white.

D. 12. P. 15. V. 6. A. 11. C. 27. MITCHILL. Length, 4 inches.

D. 10. P. 17. V. 6. A. 10. C. 19½. DEKAY.

Connecticut, AYRES. New York, MITCHILL, DEKAY. Carolina, DEKAY.

Esox pisciculus, Yellow-bellied Killifish, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 441.

Fundulus fasciatus, VAL., HUMBOLDT et BONPLAND, II. p. 162. pl. 62, figs. 1, 4, 5.

Fundulus zebra, Barred Killifish, DEKAY's Report, p. 218.

Hydrargyra fasciata (SCHN.), AYRES, Bost. Journ. Nat. Hist., IV. p. 266.

2. *Hydrargyra pisculenta*, MITCHILL.

Olive-green above; lighter on the sides, and becoming whitish, tinged with yellowish on the abdomen. Opercles, pectorals, and ventrals light greenish-yellow. Caudal nearly even, round. In large specimens, the color of the sides is uniform; in very small specimens are black vertical bands, constituting the *Esox zonatus* of Mitchill.

D. 13. P. 15. V. 6. A. 11. C. 27. MITCHILL.

D. 11. P. 17. V. 6. A. 11. C. 25. DEKAY. Length, 1 to 4 inches.

Connecticut, AYRES. New York, MITCHILL, DEKAY.

Esox pisculentus, White-bellied Killifish, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 441.

Esox zonatus, Banded Killifish, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 443.

Fundulus viridescens, Big Killifish, DEKAY's Report, p. 217, pl. 31, fig. 99.

Hydrargyra pisculenta, AYRES, Bost. Journ. Nat. Hist., IV. p. 267.

3. *Hydrargyra flavula*, MITCHILL.

Female. Yellowish green above, lighter upon the sides, white beneath; opercles, and upper portion of abdomen, golden. Several interrupted longitudinal black bands, varying from one to four, upon the sides. From two to four transverse bands of a similar color, at the base of the caudal fin. Dorsal rather longer than high.

Male. Back and sides greenish black; sides crossed by numerous slate-colored, nearly

black, vertical bands, varying in their number from ten to twenty, or even more. Lower portion of sides, as well as of the abdomen, of a beautiful yellowish green. A large black blotch upon the operculum. A black spot upon the posterior rays of the dorsal fin, which is violet-colored; caudal orange-colored, margined at its extremity with black; anal emarginated posteriorly.

D. 14 to 16. P. 16 to 18. V. 6. A. 11. C. 18 to 23. Length, 1 to 4 inches.

Massachusetts, STORER. Connecticut, AYRES. New York, MITCHILL, DEKAY.

Esox flavulus, New York Gudgeon, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., i. p. 429, pl. 4, fig. 8.

Cyprinodon flavulus, VAL., HUMBOLDT et BONPLAND, II. p. 164, pl. 62, fig. 3.

Hydrargyra trifasciata, STORER, Bost. Journ. Nat. Hist., i. p. 417.

Hydrargyra flavula, STORER's Report, p. 95.

Hydrargyra formosa (male), STORER, Proceed. Bost. Soc. Nat. Hist., p. 76.

Fundulus fasciatus, Striped Killifish, DEKAY's Report, p. 216, pl. 31, fig. 93.

Hydrargyra flavula, MITCH., AYRES, Bost. Journ. Nat. Hist., iv. p. 267.

4. *Hydrargyra diaphana*, LESUEUR.

Body diaphanous, with sixteen irregular transverse brown bands confluent on the back. Back and upper part of the head brown-olive, lower parts white; sides with delicate blue tints. Dorsal almost double the size of the anal fin.

D. 13. P. 18. V. 6. A. 12. C. 18½. Length, 5 inches.

Saratoga Lake, New York, LESUEUR.

Hydrargyra diaphana, LESUEUR, Journ. Acad. Nat. Sc., i. p. 130.

" " Transparent Minnow, DEKAY's Report, p. 219.

5. *Hydrargyra multifasciata*, LESUEUR.

Fifty transverse bands on the sides, alternately olive-brown and blue. Dorsal and anal almost equal. Extremities of pectorals extending beyond the base of the ventrals.

D. 14. P. 18. V. 6. A. 12. C. 16½. Length, 3 inches.

New York, LESUEUR.

Hydrargyra multifasciata, LESUEUR, Journ. Acad. Nat. Sc., i. p. 131.

" " Barred Minnow, DEKAY's Report, p. 220.

6. *Hydrargyra ornata*, LESUEUR.

Sides of a bright blue, with small white spots, and ornamented with fifteen or sixteen transverse, narrow silvery stripes; dorsal clear blue, with yellow spots, posteriorly marked with a large, deep-blue patch, surrounded with a white band, and another of blue. Back elevated. Dorsal and anal large.

D. 11. P. 18. V. 6. A. 12. C. 18½. Length, 3 inches.

Massachusetts, LESUEUR, STORER. Delaware River, LESUEUR.

Hydrargyra ornata, LESUEUR, Journ. Acad. Nat. Sc., i. p. 131.

" " Ornamented Minnow, STORER's Report, p. 94.

" " DEKAY's Report, p. 221.

7. *Hydrargyra nigro-fasciata*, LESUEUR.

Body above, a reddish yellow, deeper on the back; abdomen yellowish white; caudal greenish blue, the other fins yellow; body with thirteen or fourteen transverse black bands. Back considerably elevated opposite the pectorals. Dorsal and anal fins long and narrow.

D. 12. P. 18. V. 6. A. 10. C. 16 $\frac{3}{4}$. Length, 2 inches.

Massachusetts, STORER. Rhode Island, LESUEUR.

Hydrargyra nigro-fasciata, LESUEUR, Journ. Acad. Nat. Sc., I. p. 133.
 " " Banded Minnow, STORER'S Report, p. 94.
 " " DEKAY'S Report, p. 221.

8. *Hydrargyra limi*, KIRTLAND.

Body uniformly cylindrical, fusiform, slightly compressed behind the dorsal and anal fins. Dark olive, irregularly waved with fuscous; abdomen free from the olive; an irregular transverse black band on the body, near the base of the caudal fin.

D. 13. P. (?). V. (?). A. 10. C. 14. Length, 2 to 3 inches.

Ohio, KIRTLAND.

Hydrargyra limi, KIRTLAND, East. Journ. Nat. Hist., III. p. 277, pl. 2, fig. 4.

9. *Hydrargyra fusca*, THOMPSON.

Above dark olive, mottled with blackish; sides mottled with brown, green, and golden, with faint indications of yellowish bars; belly dull brownish, bronzy yellow; fins dusky yellow; sides yellowish at the base of the tail, crossed by a vertical black bar, with a brownish crescent-shaped line along the base of the caudal rays, marking, with a vertical line, the form of the letter D. Scales large; thirty-six along the lateral line.

D. 14. P. 15. V. 6. A. 10. C. 16. Length, 2 to 4 inches.

Lake Champlain, THOMPSON.

Hydrargyra fusca, Mud-fish, THOMPSON'S Hist. of Vermont, p. 137, fig.
Hydrargyra atricauda, Champlain Minnow, DEKAY'S Report, p. 220.

GENUS XII. *MOLLINESIA*, LESUEUR.

Head flat; operculum large; branchial rays or gills, four or five. Jaws flattened; mouth horizontal, very small, furnished with small and slender teeth, anteriorly hooked, and with minute posterior ones resembling velvet. Body short, thick, and compressed. Anal between the ventrals.

1. *Mollinesia latipinna*, LESUEUR.

Reddish. Scales posteriorly spotted with black, forming interrupted lines. Body most elevated anteriorly. Dorsal very large and long.

D. 14. P. 16. V. 6. A. 16. C. (?). Length, $2\frac{1}{2}$ inches.

Fresh water, Louisiana, LESUEUR.

Mollinesia latipinna, LESUEUR, Journ. Acad. Nat. Sc., II. p. 3, pl. 3, fig. 1.
" " DEKAY'S Report, p. 221.

GENUS XIII. CYPRINODON, LACEP.

Have fine and crowded teeth, and six rays to the gills ; in other respects they resemble the Lebias, Fundulus, and Mollinesia.

I. Cyprinodon variegatus, LACEP.

Body subovate, variegated with brown spots and bands.

D. 12. P. 14. V. 6. A. 11. C. 20. Length, (?).

Rivers of Carolina, VAL.

Cyprinodon variegatus (LACEP.), VAL., HUMBOLDT et BONPLAND, II. p. 165.

FAMILY XVII. HYPSEIDÆ,* STORER.

The jaws of this family are provided with lips ; the intermaxillaries and lower jaw are armed with minute, slender, and slightly recurved teeth, most abundant a short distance from the median line ; upper maxillaries destitute of teeth. The intermaxillaries form the borders of the mouth above, and extend nearly to its angles. No eyes to be seen on dissection. Body covered with circular scales, which are so imbedded in the cuticle as not to present free edges. No adipose dorsal. Intestinal canal shorter than the body ; stomach cylindrical, terminating posteriorly in a short triangular *cul de sac* ; pylorus situated near the posterior extremity of the stomach, has a distinct valve which projects into the cavity of the duodenum ; two short, pyriform cæcal appendages open by distinct orifices on opposite sides of the intestine. Air-bladder cordiform, deeply cleft anteriorly.

This family, which I have formed in a great measure from the dissection of the only known species (*Amblyopsis spelæus*) by my friend, Jeffries Wyman, M. D., published in Silliman's Journal, appears to be more nearly allied to the Cyprinidæ than to any other family of the Malacopterygii. It differs, however, from it, in the existence of a *cul de sac* to the stomach, and

* *Hypsæa cæcior.* Hor.

We are glad our acknowledgment of the reception of four fine specimens of the Longe, or Vermont Salmon, from Lake Magog, has drawn the following interesting communication from our friend Mr. THOMPSON, whose merits as a Naturalist are no less extraordinary than his attainments, in every branch of the great science of Natural History. We always feel honored when Mr. THOMPSON makes our columns the medium for the publication of the results of his observations or experiments, on any subject, and this feeling is naturally stronger when we find that our own crude reflections on any topic become suggestive of methodical and well-digested thought to him. We know he will scarcely pardon us for these terms of slight praise,—which every body *except* himself knows to be far less decided than they might be without any just implication of flattery.

We have only a word to add, and that is, if the Maskalonge is not hereafter known and spoken of, in the scientific world, as the *Esox nobilior*, we hook-and-line naturalists, whose "investigations" rarely extend beyond the gills and throat, in the *live* specimen, and the muscular integuments in the *cooked* ditto, will know and speak of it as "*nothing else!*" We lay it down as a good general rule, that a fish that Mr. THOMPSON finds himself obliged to name, has not been named before,—and Professor AGASSIZ himself "may put that in his pipe and smoke it!"—[Ed. F. P.]

For the Daily Free Press.

Mr. EDITOR:—In one of your Daily's of last week I observed a notice, which was highly commendatory, of a Fish, which is very common in Lake Memphremagog and many of the ponds in the Northeastern part of the State, and is there called the *Longe*. This is the same fish which was formerly caught in Lake Champlain, and was in early times called the *Salmon Trout*. It is called at the West the *Great Lake Trout*, and specimens have been taken weighing nearly 100 lbs.

Now while I would abate nothing of your commendation of the *Longe*, I desire to say a word respecting the *Maskalonge*. I had been often told by the fishermen previous to the publication of my History of Vermont in 1842, that we had in our waters a fish resembling, but, at the same time, specifically distinct from, the Lake Pickerel, which they called the *Maskalonge*, and I received two or three specimens which were sent me as *Maskalonge*, but as they all proved to be overgrown Pickerel, I concluded the fishermen were mistaken.

Nothing occurred to change this opinion till May 1847, when I received from my friend A. G. WHITTEMORE, Esq., of Milton, a fish caught in Lamolle River in that town, which he called a *Maskalonge*.—It weighed about 6 lbs., and, as I saw at once that it was distinct from our Pickerel, (the *Esox estor*), I made out a very full description of it and gave to it the scientific name of *Esox nobilior*, regarding it as superior to all the known species of the Pike or Pickerel family, both in size and quality.

In April 1848, Mr. WHITTEMORE was so good as to send me another specimen, which weighed 19 lbs., and last week two others, caught also in Milton, were brought along, one of which weighed 27 and the other 40 lbs. I purchased the specimen, which weighed 27 lbs. and made from it a very full description, a few of the terms of which are as follows:—

*MASKALONGE, *Esox nobilior*.

Weight 27 lbs. Total length 48 inches, length of the head 8 inches, and contained six times in the total length. *Color*. Back nearly black, sides bluish gray, mostly covered with dark brown roundish spots from the size of a half dime to about one inch in diameter, with a few meandering lines of dull yellow. Belly grayish white with rudely tinged. Fins dark brown, pectorals ruddy. Eyes moderately large, pupils black, surrounded by a bright yellow ring, which fades outward over the irides into grayish orange.

This fish differs from the *E. estor* in all its colors and markings. It is much thicker and heavier, and its head is much shorter in proportion to the total length. The space on the head between the orbits is flat and not grooved as in the *E. estor* and the lower half of the cheek in front of the preoperculum is naked or without scales.

The *Longe* and *Maskalonge* belong to entirely distinct families of fishes; the former belonging to the Trout, or Salmon family, and the latter to the Pike, or Pickerel family. The fish commonly known in this neighborhood as the *Pike*, is not a true Pike, but a *Perch* and its proper name is the *Pike Perch*, from the resemblance of the teeth to those of a Pike. The Pikes, or Pickerels, (the latter meaning little Pikes) are distinguished by having only one fin on the back and that situated far backwards towards the tail.

Z. THOMPSON.

May 18, 1849.

184 Storer's Synopsis of the Fishes of North America.

cæcal appendages to the pylorus, and in possessing a cordiform natatory bladder. From the *Esoces*, it is distinguished by the presence of cæcal appendages. From the *Siluridæ*, it differs in the existence of scales and cæca, and by the absence of cirrhi. From the *Salmonidæ*, by the existence of but two cæcal appendages, and by the absence of the adipose dorsal fin.

GENUS I. AMBLYOPSIS, DEKAY.

Body with scales. Vent anterior to the base of the pectorals. Eyes not apparent, even upon careful dissection. Ventrals minute. A single dorsal. Teeth on the jaws and palatines. No scales upon head, but slightly elevated, transverse ridges are observed upon it. No barbels.

1. *Amblyopsis spelæus*, DEKAY.

Whitish. Head broad and flattened. Mouth large. Most of the fins with filamentous tips.

D. 7. P. 12. V. 5. A. 8. C. 16½. Length, 3½ inches.

Mammoth Cave, Kentucky, DEKAY.

Amblyopsis spelæus, DEKAY's Report, p. 187.

" " WYMAN, Silliman's Journal, XLV. p. 94.

FAMILY XVIII. ESOCIDÆ.

Body elongated. One dorsal, and generally opposite to the anal. Edge of the upper jaw either formed solely by the intermaxillaries, or if the labials enter at all into its composition, they are destitute of teeth. Intestinal canal short, without cæca. Branchial rays vary from three to eighteen. Mouth large, and without sharp teeth.

GENUS I. ESOX, Cuv.

Head depressed, large, oblong, blunt; intermaxillaries small, with small pointed teeth at the middle of the upper jaw, of which they form two bands. The maxillaries forming the sides have no teeth. The vomer, palatines, tongue, pharyngeals, and branchial arches, bristled with card-like teeth. Sides of the lower jaw with a row of long, pointed teeth.

1. *Esox estor*, LESUEUR.

Back deep greenish-brown; sides with numerous rounded and oblong pale-yellowish spots:

abdomen white. Fins reddish yellow, marbled with blackish and deep green. Scales small: about one hundred and sixty along the lateral line, and forty-five in a vertical row before the ventrals. Caudal large, lunated, with equal and rounded lobes.

D. 22. P. 18. V. 11. A. 20. C. 20 $\frac{7}{10}$. LESUEUR. Length, 1 to 3 feet.

D. 21. P. 14. V. 11. A. 17. C. 26. MITCHILL. " " "

D. 21. P. 12. V. 11. A. 21. C. 19 $\frac{7}{10}$. DEKAY. " " "

Lake Erie, LESUEUR. Lake Huron, RICHARDSON. Ohio River, KIRTLAND.

Esox estor, Pike, Pickerel, Maskallongé, LESUEUR, Journ. Acad. Nat. Sc., I. p. 413.

" " GRIFFITH'S CUV., x. p. 390.

" " Maskinongé, RICH., Fauna Boreal. Americ., III. p. 127.

" " Muskallonge, KIRTLAND'S Report, pp. 169, 194.

" " Muskellunge, DEKAY'S Report, p. 222.

" " Muskallonge, KIRTLAND'S Manuscript for Bost. Journ. Nat. Hist.

2. *Esox reticulatus*, LESUEUR.

Yellowish green, with more or less distinct irregularly-distributed longitudinal black lines. Beneath white. Fins greenish. Pectorals, anal, and ventrals become reddish after death. A vertical black band beneath the eye. Caudal deeply emarginated.

D. 18. P. 13. V. 11. A. 17. C. 19. Length, 1 to 2 feet.

Massachusetts, STORER. Connecticut, LINSLEY, AYRES. New York, DEKAY. Ohio, KIRTLAND.

Esox lucius, Pickerel, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 440.

Esox reticulatus, LESUEUR, Journ. Acad. Nat. Sc., I. p. 414.

" " Common Pickerel, STORER'S Report, p. 97.

" " Pike, KIRTLAND'S Report, p. 194.

" " Common Pickerel, DEKAY'S Report, p. 223, pl. 34, fig. 107.

Esox fasciatus, Varied Pickerel, DEKAY'S Report, p. 234, pl. 34, fig. 110 (young).

Esox reticulatus, Pickerel, THOMPSON'S Hist. of Vermont, p. 138.

" " LESUEUR, AYRES, Bost. Journ. Nat. Hist., IV. p. 269.

" " Pickerel, Pike, KIRTLAND, Bost. Journ. Nat. Hist., IV. p. 233, pl. 10, fig. 2.

Esox tredecem-lineatus, Federation Pike, MITCHILL, Mirror, 1825, p. 361.

Esox tredecem-radiatus, Federation Pike, DEKAY'S Report, p. 225.

3. *Esox niger*, LESUEUR.

Golden yellow upon sides, with numerous black bands interrupted into about three parts, more distinct towards the head. Belly white, immaculate. Back and head deep black, immaculate. Pectoral and anal fins orange-yellow; dorsal and caudal bluish, the latter slightly emarginate, lobes acute; dorsal and anal fins opposite, subequal, rounded.

D. 14. P. 15. V. 9. A. 14. C. 19 $\frac{10}{10}$. Length, 8 or 10 inches.

Saratoga Lake, LESUEUR.

Esox niger, Black Pike, LESUEUR, Journ. Acad. Nat. Sc., I. p. 415.

Dr. Dekay thinks this may be the young of the *E. reticulatus*.

4. *Esox phaleratus*, SAY.

Body dusky, with a vertical fulvous vitta, and three or four fulvous fasciæ.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, (?).

East Florida, SAY.

Esox phaleratus, SAY, Journ. Acad. Nat. Sc., I. p. 416.
 " " " DEKAY'S Report, p. 226.

5. *Esox lucius* (?), LIN.

Back tinged with blackish green, which changes on the sides to light greenish-gray, and on the belly to pearl-white; on the tip of each scale, there is a bright speck having the form of the letter V, and there are seven or eight longitudinal rows of oblong yellowish-gray spots on the sides of the head, body, and tail. Scales thin, broadly oval, their outer edge semi-circular, their covered portion deeply divided by fissures into three or four lobes, whose edges overlap; one hundred and twenty-four on the lateral line, thirty-six in a vertical row before the ventrals.

D. 20. P. 16. V. 10. A. 18. C. 18 $\frac{3}{4}$. Length, 26 inches.

Northern regions, RICHARDSON.

Esox lucius, Common Pike, RICH., Fauna Boreal. Americ., III. p. 124.
 " " " (?), DEKAY'S Report, p. 226.

Richardson says, "One specimen, taken in Lake Huron, was submitted to Cuvier's inspection, and it has also been carefully compared with the English Pike, without any specific differences having been detected."

GENUS II. *BELONE*, Cuv.

Head and body greatly elongated; the latter covered with minute scales. Both jaws very much produced, straight, narrow, and pointed; armed with numerous small teeth, those of the pharynx paved. Scales not very apparent, except a longitudinal range, carinated on each side, near the inferior edge.

1. *Belone truncata*, LESUEUR.

Above light green, beneath clear silvery-white. Just above the base of the pectorals a deep blue band arises and passes in a straight line to the origin of the dorsal fin. Lower mandible the longer. Caudal fin obliquely truncated. Ventrals small.

D. 16. P. 16. V. 6. A. 19. C. 20. LESUEUR. Length, 1 to 2 feet.

D. 15. P. 12. V. 6. A. 18. C. 19. MITCHILL. " " "

D. 15. P. 12. V. 6. A. 19. C. 20. STORER. " " "

D. 16. P. 12. V. 6. A. 19. C. 19 $\frac{3}{4}$. DEKAY. " " "

Massachusetts, STORER. Connecticut, LINSLEY, AYRES. New York, LESUEUR, MITCHILL, DEKAY. Pennsylvania, Rhode Island, LESUEUR.

- Esox belone*, Bill-fish, MITCHELL, Trans. Lit. and Phil. Soc. of N. Y., i. p. 443.
Esox longirostris, Long jawed Fresh-water Pike, MITCHELL, Amer. Month. Mag., ii. p. 322.
Belone truncata, Gar or Bill-fish, LESUEUR, Journ. Acad. Nat. Sc., ii. p. 126, fig.
" " Gar-fish, STORER'S Report, p. 98.
" " Banded Gar-fish, DEKAY'S Report, p. 227, pl. 35, fig. 112.

2. *Belone argalus*, LESUEUR.

Bright blue upon the back ; the under side and opercula silvery. Dorsal and anal fins unequal ; tail deeply forked, lobes rounded, the inferior the longer ; pectorals small. Lateral line very low, interrupted by the ventral fins, and beginning to rise above the base of the anal, is then continued along the middle of the tail.

D. 16. P. 18. V. 6. A. 19. C. 26. Length, (?).

Island of Guadaloupe, LESUEUR.

Belone argalus, LESUEUR, Journ. Acad. Nat. Sc., ii. p. 125.

3. *Belone Caribbœa*, LESUEUR.

Back deep blue ; whitish beneath. Mandibles equal, slender, and pointed ; dorsal continued farther back than the anal fin, the last rays also longer ; caudal scolloped, lobes rounded, the inferior twice as long as the superior ; ventrals rather long.

D. 24. P. 13. V. 6. A. 22. C. 30 $\frac{1}{2}$. Length, (?).

Caribbean Sea, LESUEUR.

Belone Caribbœa, LESUEUR, Journ. Acad. Nat. Sc., ii. p. 127.
" " BENNETT, Sowb. Zool. Journ., v. p. 88.

GENUS III. *SCOMBERESOX*, CUV.

Have the same structure of the jaws as those of the *Belone* ; and are similar, also, in the form of the body and scales, with a keel-like edge to the belly ; but the posterior portions of the dorsal and anal fins are divided, forming finlets, as in the Mackerel.

1. *Scomberesox Storeri*, DEKAY.

Back olive-green ; a silvery band half an inch wide, almost as strongly marked as in the *Atherines*, runs the whole length of the body, divided in its centre by a narrow longitudinal line of the color of the back. Abdomen silvery, with a cupreous tinge. The lower jaw the longer. Five or six finlets back of the dorsal fin ; five to seven finlets back of the anal fin. A longitudinal furrow along the sides.

D. 10. P. 14. V. 6. A. 12. C. 20. Length, 10 inches.

Newfoundland, LESUEUR. Massachusetts, STORER. New York, DEKAY.

Scomberesox equirostrum, LESUEUR, Journ. Acad. Nat. Sc., II. p. 132.
Scomberesox scutellatum, " " " " " "
Scomberesox equirostrum, Bill-fish, STORER'S Report, p. 100.
Scomberesox Storeri, Bill-fish, DEKAY'S Report, p. 229, pl. 35, fig. 111.

In my "Report on the Fishes of Massachusetts," I pointed out the error into which all ichthyologists might be led by Lesueur's specific name; unquestionably it should be changed. Dr. DeKay has thought proper to affix mine; I retain it, until some future ichthyologist prefers another.

GENUS IV. EXOCETUS, LIN., CUV.

Head and body covered with scales; pectoral fins very large, nearly as long as the body; dorsal fin placed over the anal; upper half of the tail the smaller; both jaws furnished with small teeth.

1. *Exocetus comatus*, MITCHILL.

Above brown, beneath white. Scales deciduous. Pectorals reach as far back as the posterior extremity of the dorsal; ventrals long. A long black cirrus depending from the chin.

D. 11. P. 12. V. 6. A. 6. C. (?). Length, 5 inches.

New York, MITCHILL.

Exocetus comatus; Single-bearded Flying-fish, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 418, pl. 5, fig. 1.

Exocetus appendiculatus (?), WOOD, Journ. Acad. Nat. Sc., IV. p. 283, pl. 17, fig. 2.

Exocetus comatus, Single-bearded Flying-fish, DEKAY'S Report, p. 231, pl. 36, fig. 115.

2. *Exocetus furcatus*, MITCHILL.

Bluish above, silvery on the sides. Pectorals and ventrals with brown bands. Abdomen carinated. Scales small. Two cirrhi or tough appendages suspended from the lower jaw.

D. 15. P. (?). V. 10. A. 8. C. 17. Length, (?).

New York, MITCHILL. Gulf of Mexico, LESUEUR.

Exocetus furcatus, Double-bearded Flying-fish, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 449, pl. 5, fig. 2.

Exocetus Nuttallii (?), LESUEUR, Journ. Acad. Nat. Sc., II. p. 10, pl. 4, fig. 1.

Exocetus furcatus, Double-bearded Flying-fish, DEKAY'S Report, p. 231.

Cuvier suspects the *E. furcatus* and *E. Nuttallii* to be one species.

3. *Exocetus Noveboracensis*, MITCHILL.

Dark green above; beneath white and silvery. Abdomen carinated on its sides. Ventrals very long. Caudal forked, the lower lobe almost twice as long as the upper. Teeth very minute. No filaments to lower jaw.

D. 14. P. 15. V. 6. A. 8. C. (?). Length, 12 inches.

New York, MITCHILL.

Exocetus Novboracensis, New York Flying-fish, MITCHELL, Amer. Month. Mag., II. p. 323.
 " " " " " " " " DEKAY'S Report, p. 230, pl. 36, fig. 114.

4. Exocetus exiliens, BLOCH.

Bright silvery, with a blue or dusky tinge on the upper part; fins dusky. Pectorals lanceolate, and scarcely extend to caudal; anal and dorsal straight, low, and about equal; caudal deeply forked, lower lobe nearly twice the length of the upper; ventrals large, situated a little beyond the middle of the abdomen. In young specimens, there are brown bands on the pectorals and ventrals.

D. 12. P. 18. V. 16. A. 10. C. 20. Length, 12 to 16 inches.

Gulf of Mexico, LESUEUR.

Exocetus exiliens, BLOCH, 397.
 " " LIN., Syst. Nat., p. 1409.
 " " Mediterranean Flying-fish, SHAW'S Gen. Zoöl., v. p. 142, pl. 116.
 " " RICH., Fauna Boreal. Americ., III. p. 129.
 Exocetus fasciatus, LESUEUR, Journ. Acad. Nat. Sc., II. p. 9; young (?).

Cuvier, in his "Règne Animal," says, he thinks the *Exocetus fasciatus* of Lesueur is the young of Bloch's *E. exiliens*. DeKay is of the same opinion; therefore I have thus arranged them.

5. Exocetus mesogaster, BLOCH.

Silvery blue, with the ventral fins situated on the middle of the abdomen; they are moderately large, and rounded.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 4 inches.

Caribbean Sea, PLUMIER.

Exocetus mesogaster, BLOCH, 399?
 " " American Flying-fish, SHAW'S Gen. Zoöl., v. p. 146, pl. 116.
 " " Middling Flying-fish, MITCHELL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 448.

Although Cuvier observes, that "it is not easy to distinguish the *exiliens* and *mesogaster* in the relations and the figures given by travellers," and Richardson (*Fauna Boreal. Americ.*, p. 131) observes that Dr. Mitchill's notice of the *E. mesogaster* "is too slight to prove that he has applied the name rightly," I have introduced this species here, because it was noticed by Plumier in the Caribbean Sea, and by Mitchill's using, in his description of this species, the very words of Shaw when describing this species (*Gen. Zoöl.*, v. p. 146), it is evident they answer perfectly to the description of his fish. Richardson is in error when he says, "Dr. Mitchill mentions the *mesogaster* as an inhabitant of the sea of New York"; for although this might be inferred from the fact of its being contained in his "Memoir," yet Mitchill says, "The specimen I examined was brought from the ocean, somewhere to the south."

GENUS V. HEMIRAMPUS, Cuv.

The upper jaw short, lower jaw elongated and pointed; both furnished, on

their edges, with minute teeth ; in other respects the species, in their fins, viscera, and general aspect, resemble the Gar-fish.

1. *Hemiramphus Brasiliensis*, BLOCH.

Upper part of the body blue, paler along the sides, and silvery upon the abdomen. Head a clear blue and silvery ; tail yellow and bluish ; beak brown and deep blue. Body three times the length of the lower jaw ; pectoral fins shorter than the half of the lower jaw ; posterior fins almost equal. Caudal deeply cleft. The upper mandible shorter than the semidiameter of the eye. The inferior very long and flexible. Scales large.

D. 14. P. 10. V. 6. A. 12. C. 20 to 24. Length, 12 or 15 inches.

Caribbean Sea, near Guadeloupe and Martinique, LESUEUR.

Called "Balao," at Guadeloupe and Martinique.

Esox Brasiliensis, BLOCH, 391.

" " LIN., Syst. Nat., p. 517.

" " PIPER, BROWNE'S Jamaica, p. 443, pl. 45, fig. 2.

" " BRAZILIAN PIKE, SHAW'S Gen. Zool., v. p. 109.

Esox marginatus (?), LACEPEDE, v. pl. 7, fig. 2.

Hemiramphus marginatus, LESUEUR, Journ. Acad. Nat. Sc., II. p. 135.

Hemiramphus Brasiliensis (Cuv.), GRIFFITH'S Cuv., x. p. 395.

2. *Hemiramphus balao*, LESUEUR.

Color a little deeper than that of preceding, and tail bluish. Body four times the length of the lower jaw ; pectoral fin a third part shorter than the lower mandible ; anal fin as long as the dorsal.

D. 14. P. 10. V. 6. A. 12. C. 20 to 24. Length, (?).

Caribbean Sea, near Guadeloupe, Martinique, and St. Domingo, LESUEUR.

Also called "Balao."

Hemiramphus balao, LESUEUR, Journ. Acad. Nat. Sc., II. p. 136.

FAMILY XIX. FISTULARIDÆ.

Characterized by a long tube in the fore part of the cranium, formed by the prolongation of the ethmoid, vomer, preopercula, interopercula, pterygoideals, and tympanals, and at the extremity of which is the mouth, composed, as usual, of the intermaxillaries, maxillaries, and the palatine and mandibular bones. Their intestine has neither great inequalities nor many folds, and their ribs are short or wanting. Some of them, the *Fistulariæ*, have a cylindrical body ; in others, the *Centrisci*, it is oval and compressed.

This family concluded the order *Acanthopterygii* in the "Règne Animal."

But in the "Histoire Naturelle des Poissons," of Cuv. et Val., it does not appear in that family. That work is not yet sufficiently advanced for us to learn where Valenciennes will place it; but as it has been considered by some ichthyologists a subfamily of the Scombridae, I follow the arrangement of DeKay, although he observes, "Its true place is probably near or among the Syngnathidae."

GENUS I. FISTULARIA, LACEP.

Body elongated, cylindrical. Dorsal opposite to the anal. The intermaxillaries and the lower jaw are armed with small teeth. From between the two lobes of the caudal proceeds a filament which is sometimes as long as the body. The tube of the snout is very long and depressed. The natatory bladder excessively small, and the scales are invisible.

1. *Fistularia serrata*, BLOCH.

Upper part of the body of a reddish-brown color; a narrow bluish band upon the sides, through the centre of which runs the lateral line; back of the dorsal, this line is quite strongly serrated. Tube hard, horny, and strongly serrated laterally. Caudal deeply forked, with a filament between them, strong at its origin, very delicate at its termination.

D. 14. P. 16. V. 6. A. 14. C. 16. Length, including filament, 27 inches.

Jamaica, CATESBY. Massachusetts, STORER.

Petimbuato Brazil, Tobacco-pipe Fish, CATESBY'S Hist. Carol., II. p. 17.

Fistularia serrata (?), BLOCH, variety of *tabacaria*.

" " SHAW'S Gen. Zool., v. pl. 107, fig. of tube.

" " Tobacco-pipe Fish, STORER'S Report, 80.

" " American Pipe-fish, DEKAY'S Report, p. 232, pl. 35, fig. 113.

2. *Fistularia tabacaria*, BLOCH.

Brownish, with a row of pale spots. Belly white in the middle, and semidiaphanous on the right and left. Orbits of the eye with angular processes or spines.

D. 16. P. 16. V. 6. A. 16. C. 16 $\frac{3}{4}$. Length, 14 inches.

New York, MITCHILL.

Fistularia tabacaria, BLOCH, 387.

" " LIN., Syst. Nat., p. 515.

" " Slender *Fistularia*, SHAW'S Gen. Zool., v. p. 96, pl. 107.

Fistularia noveboracensis, New York Trumpet-fish, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 437, pl. 3, fig. 8.

Fistularia tabacaria, Spotted Pipe-fish, DEKAY'S Report, p. 233.

FAMILY XX. SALMONIDÆ.

Body scaly. First dorsal with soft rays, the second small and adipose. Numerous cœca, and a natatory bladder. The structure and armature of the jaws vary surprisingly. Almost all of them ascend rivers.

GENUS I. SALMO, LIN.

Head smooth; teeth on the vomer, both palatine bones, and all the maxillary bones; branchiostegous rays varying in number, generally from ten to twelve, but sometimes unequal on the two sides of the head of the same fish.

1. *Salmo salar*, LIN.

A beautiful, brilliant bluish silver-color above; lighter upon the sides, white beneath; black blotches upon the sides, much more numerous above the lateral line. Dorsal, pectorals, and caudal, bluish; ventrals dusky; anal white.

D. 12. P. 15. V. 9. A. 10. C. 19. Length, 2 to 3 feet.

Labrador, Canada, Newfoundland, and Nova Scotia, RICHARDSON, DEKAY. Maine, Massachusetts, STORER. Connecticut, LINSLEY. New York, MITCHILL, DEKAY.

- Salmo salar*, LIN., Syst. Nat. (12th edit.), p. 509.
 " " BLOCH, I. pl. 20 (female); III. p. 98 (male).
 " " SALMON, PENNANT'S Brit. Zool., VIII. p. 382.
 " " Common Sea-Salmon. SHAW'S Gen. Zool., v. p. 40, fig. 102.
 " " SALMON, FLEMING'S Brit. An., p. 179, sp. 40.
 " " " JENYNS'S Brit. Vert., p. 421.
 " " " GRIFFITH'S Cuv., x. p. 416.
 " " " FABRICIUS, Fauna Groenlandica, p. 170.
 " " Common Salmon, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 435.
 " " " " DE WITT CLINTON, Trans. Lit. and Phil. Soc. of N. Y., I. pp. 147, 498.
 " " " " RICH., Fauna Boreal. Americ., III. p. 145.
 " " Salmon, STORER'S Report, p. 104.
 " " Common Sea Salmon, DEKAY'S Report, p. 241, pl. 38, fig. 122.
 " " Salmon, THOMPSON'S Hist. of Vermont, p. 140.

salmo salar, 21. 1845

2. *Salmo fontinalis*, MITCHILL.

Above pale brown; a large number of circular yellow spots, varying in their size, often having in their centres a bright red spot; sometimes, the yellow color surrounding them having partially disappeared, they seem distinct from the circular spots. In some specimens but three or four red spots are observable, while in others are seen twenty or more. Gill-covers golden, with fuliginous. Scales very small, those on the lateral line largest.

D. 11. P. 13. V. 8. A. 11. C. 19. Length, 8 to 14 inches.

Maine, Massachusetts, STORER. Connecticut, LINSLEY, AYRES. Vermont, THOMPSON. New York, MITCHILL, DEKAY. Pennsylvania, DEKAY. Ohio, KIRTLAND. Lake Huron, RICH.

- Salmo fontinalis*, Common Trout, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., i. p. 435.
Salmo nigrescens, Black Trout, RALPH, Ichth. Ohioen., p. 45.
 Red-spotted Trout, DOUGHTY, Cabinet of Nat. Hist., i. p. 145, pl. 13.
Salmo fontinalis, New York Char, MITCHELL, Rept., Fauna Boreal. Americ., III. p. 176, pl. 53, fig. 1; pl. 57, fig. 2 (head).
Salmo fontinalis, Common Brook-Trout, STORER'S Report, p. 166.
 " " Speckled Trout, KIRTLAND'S Report, pp. 169, 171.
 " " Brook Trout, THOMPSON'S Hist. of Vermont, p. 141.
 " " " " DEKAY'S Report, p. 225, pl. 37, fig. 120.
Salmo fontinalis, Spotted Troutlet, DEKAY'S Report, p. 241, pl. 29, fig. 58.
Salmo fontinalis, Brook Trout, AYRES, Bost. Journ. Nat. Hist., IV. p. 253.
 " " Common Brook-Trout, KIRTLAND, Bost. Journ. Nat. Hist., IV. p. 305.
Wal. 21. 266. 1848

3. *Salmo amethystus*, MITCHILL.

Head, back, and sides of a dark greenish-gray color, which, when examined closely, is resolved into small, roundish, yellowish-gray spots on a bluish-gray ground, which covers less space than the spots. Teeth, gums, and roof of the mouth have a tinge of purple. Scales small; one hundred and thirty-three on the lateral line; a vertical row beneath the commencement of the dorsal contains eighty-two, of which thirty two are above the lateral line.

D. 14. P. 14. V. 9. A. 11. C. 19½. Length, 2 to 5 feet.

All the great lakes that lie between the United States and the Arctic Sea, RICHARDSON.

Called "Nannécoos," by Cree Indians; "Thlooesinneh," by Chippewayans; "Key-teeleek," by Esquimaux; "Salmon Trout," by Canadians.

- Namaycush Salmon, PENNANT'S Arct. Zool., II. Suppl., p. 139.
Salmo amethystus, Great Trout of the Lakes, MITCHILL, Journ. Acad. Nat. Sci., I. p. 410.
Salmo namaycush, Namaycush (PENN.), RICH., Fauna Boreal. Americ., III. p. 179, pl. 79.
 " " KIRTLAND'S Report, pp. 163, 165.
 " " Namaycush, Great Trout of the Lakes, KIRTLAND, Bost. Journ. Nat. Hist., IV. p. 25, pl. 3, fig. 2.
Salmo amethystus, Mackinaw Salmon, DEKAY'S Report, p. 240, pl. 76, fig. 241.
Salmo namaycush Wal. 21. 345. (copied)

4. *Salmo erythrogaster*, DOUGHTY.

Above, mottled with dark olive-green and light horn-color. Sides of the abdomen reddish orange, separated by a distinct line from the pearl-color beneath. Tail broadly margined with bright red. Scales very small and rounded. Dorsal varied with dark green and opaque or horn-color.

D. 10. P. 14. V. 8. A. 10. C. 17½. Length, 15 to 20 inches.

New York, Pennsylvania, DEKAY.

- Creek Trout (?), DOUGHTY, Cabinet of Nat. Hist., I. p. 134, pl. 13, fig. 2.
Salmo erythrogaster, Red-bellied Trout, DEKAY'S Report, p. 236, pl. 39, fig. 136.
Fans erythrogaster Wal. 21. 308. 1848. Original descrip. of Ontario

5. *Salmo confinis*, DOUGHTY.

- Upper portion of the head and body bluish black. Sides of the head and body, base of the first dorsal, of the caudal, and anal fins, with numerous round, crowded, irregular, light-

gray spots. Body stout, thicker and shorter than the common Salmon. Scales small, orbicular, and minutely striate. Caudal furcate, with a sinuous margin.

D. 14. P. 14. V. 9. A. 12. C. 21 $\frac{3}{4}$. Length, 2 to 4 feet.

New York, Pennsylvania, DEKAY.

Called "Lake Salmon," "Lake Trout," and "Salmon Trout," in the State of New York.

Lake Trout, DOUGHTY, Cabinet of Nat. Hist., I. p. 115, pl. 13, fig. 1.
Salmo confluis, Lake Trout, DEKAY'S Report, p. 233, pl. 33, fig. 123.

6. *Salmo Scouleri*, RICH.

Back anterior to the dorsal fin gibbous. Jaws elongated; the upper jaw much incurved and arched. Nine very strong incurved teeth in a row on each intermaxillary, exclusive of four smaller ones which occupy the tip of the snout on both sides of the principal rows. Scales small; some oval, others four-sided, with the corners rounded; one hundred and seventy scales on the lateral line, and seventy in a vertical row anterior to the ventrals, of which thirty are above the lateral line.

D. 14. P. 16. V. 11. A. 17. C. 19 $\frac{3}{4}$. Length, 2 feet.

Northwest Coast, RICHARDSON.

Salmo Scouleri, Observatory Inlet Salmon, RICH., Fauna Boreal. Americ., III. p. 158, pl. 93.

" " DEKAY'S Report, p. 242.
Salmo scouleri Wal. 21. 345 non Rich.

7. *Salmo Rossii*, RICH.

Long, cylindrical. Back, top of the head, dorsal and caudal fins, have a hue intermediate between oil-green and hair-brown; cheeks are nacreous, and the sides pearl-gray, with a blush of lilac and a silvery lustre; a number of carmine dots in the vicinity of the lateral line; beneath red. Scales small, ovate or oval, each scale surrounded by a distinct space of smooth skin; one hundred and thirty-four on the lateral line; seventy-eight in a vertical row under the dorsal, thirty of them being above the lateral line; between two hundred and forty and two hundred and fifty rows on the sides.

D. 13. P. 14. V. 10. A. 11. C. 21 $\frac{1}{2}$. Length, 2 to 3 feet.

Arctic Seas, RICHARDSON.

Called "Eekalook," by the Esquimaux of Boothia Felix.

Salmo Rossii, RICH., Nat. Hist., Appendix to Ross's Voyage, p. 56.

" " Ross's Arctic Salmon, RICH., Fauna Boreal. Americ., III. p. 163, pl. 89.

" " DEKAY'S Report, p. 242.

Salmo Rossii Wal. 21. 310. 1846 cop. for Rich = *Salmo pensilvanicus*? Pacific Fauna Boreal. Americ. July 76

8. *Salmo Hearnii*, RICH.

Olive-green above; belly bluish; several longitudinal rows of large flesh-red spots on the back and sides. Scales small, pearly. Teeth subulate, in a thin row on the labials and lower jaw; a solitary tooth of the same size stands on each side of the intermaxillary notch.

D. (?). P. (?). V. (?). A. 10. C. (?). Length, 12 inches.

Coppermine River, RICHARDSON.

- Salmo Hearnii*, RICH., Franklin's First Journal, p. 706.
 " " Coppermine River Salmon, RICH., Fauna Boreal. Americ., III. p. 167.
 " " DEKAY'S Report, p. 212.
Pal. 269, 1848.

9. *Salmo alipes*, RICH.

Slender. Hair-brown above, sides paler, with yellowish marks, belly white or yellow, and the under fins orange, with some darker streaks. Scales small, thin, and roundish; one hundred and twenty-six compose the lateral line. Labials, intermaxillaries, and lower jaw are armed with short conical, acute, and very slightly curved teeth, in a single series. A projecting cluster of six or seven on the knob of the vomer. Fins very long.

D. 13. P. 15. V. 9. A. 10 or 11. C. 19½. Length, 2 feet.

Arctic regions, RICHARDSON.

- Salmo alipes*, RICH., Nat. Hist., App. to Ross's Voyage, p. 57.
 " " Long-finned Char, RICH., Fauna Boreal. Americ., III. p. 169, pl. 81.
 " " DEKAY'S Report, p. 212.
Pal. 21, 270, 1848 copy.

10. *Salmo nitidus*, RICH.

Deep green above; orange-red beneath, with several rows of ocellate red spots along the course of the lateral line. Form less elongated than preceding. Scales small, roundish; one hundred and twenty on the lateral line; ninety-two in a vertical row, of which thirty-six are above the lateral line, forty-two betwixt it and the ventral, and twelve or fourteen below the first ray of the latter. Teeth as in *S. alipes*.

D. 14. P. 17. V. 10. A. 12. C. 19¾. Length, 20 inches.

Arctic regions, RICHARDSON.

- Salmo nitidus*, RICH., Nat. Hist., App. to Ross's Voyage, p. 57.
 " " Angmalook, RICH., Fauna Boreal. Amer., III. p. 171, pl. 82.
 " " DEKAY'S Report, p. 212.
Pal. 21, 271, 1848 copy.

11. *Salmo Hoodii*, RICH.

Slender, cylindrical. Olive-green above, and covered with numerous yellowish-gray spots; beneath white. Scales like those of *S. nitidus*; one hundred and twenty-six on the lateral line; fifty-three in a vertical row before the ventrals, of which twenty-eight are above the lateral line. A single row of teeth on each side of the tongue, which meet in a curve at the tip.

D. 12. P. 15. V. 10. A. 11. C. 19¾. Length, 2 feet.

Northern Regions, RICHARDSON.

- Salmo Hoodii*, RICH., Nat. Hist., App. to Ross's Voyage, p. 58.
 " " Masamachus, RICH., Fauna Boreal. Americ., III. p. 173, pl. 83.
 " " DEKAY'S Report, p. 212.
Pal. 21, 271, 1848 copy.

12. *Salmo Mackenzii*, RICH.

Head long, compressed, flattened above. Grayish, tinged with blue on the sides and beneath. Scales suborbicular. Teeth *en velours*. Dorsal obliquely quadrangular; anal slightly crescentic; caudal large, and forked.

D. 15. P. 17. V. 12. A. 18. C. 22 $\frac{5}{6}$. Length, 20 inches.

Arctic Sea, RICHARDSON.

INCOMBU, MACKENZIE'S Voyage in North America, p. 9.

Salmo Mackenzii, RICH., Franklin's Journal, p. 707, plate.

" " INCOMBU, RICH., Fauna Boreal. Americ., III. p. 1-3, pl. 81.

" " DEKAY'S Report, p. 242.

Stenodus m. Rich. Alpp. Backe's voyage.

Rep. N. Am. Zool. (1856)

13. *Salmo quinnat*, RICH.

Bluish gray; dark spots along the lateral line; whole body below the lateral line unspotted. Scales large. Teeth disappearing on the medial line of the upper jaw. Branchial rays, seventeen.

D. 14. P. 16. V. 10. A. 16. C. 19 $\frac{1}{2}$. Length, 2 to 3 feet.

Columbia River, RICHARDSON.

Called "Quinnat," by the natives of the banks of the Columbia River.

Salmo quinnat, Quinnat, RICH., Fauna Boreal. Americ., III. p. 219.

" " DEKAY'S Report, p. 242.

14. *Salmo Gairdnerii*, RICH.

Dorsal line nearly straight. Back of head and body bluish gray; sides ash-gray; belly white. A few faint spots at the base of the caudal. Jaws fully armed with strong hooked teeth, except a small space in the centre of the upper jaw.

D. (?). P. 13. V. 11. A. 12. C. (?). Length, 2 to 3 feet.

Columbia River, RICHARDSON.

Called "Queachts," by the natives of the banks of the Columbia.

Salmo Gairdnerii, Gairdner's Salmon, RICH., Fauna Boreal. Americ., III. p. 221.

" " DEKAY'S Report, p. 243.

15. *Salmo paucidens*, RICH.

Back of head and body bluish gray; sides ash-gray, with a reddish tinge; belly white. No spots on body or fins. Teeth sparsely scattered and feeble on the jaws; only a few short, weak ones on the anterior extremity of the vomer, and on the palatine bones.

D. 12. P. 17. V. 12. A. 17. C. (?). Length, 2 feet.

Columbia River, RICHARDSON.

Called "Quannich," by the natives of the banks of the Columbia.

Salmo paucidens, Weak-toothed Salmon, RICH., Fauna Boreal. Americ., III. p. 222.

16. *Salmo tsuppitch*, RICH.

Back of body and head studded with oval and circular spots; sides and fins destitute of spots. General color of the fins ash-gray. Back convex in front of dorsal. Snout pointed. Minute sharp teeth in jaws. Caudal forked.

D. 12. P. 13. V. 10. A. 13. C. (?). Length, 21 inches.

Columbia River, RICHARDSON.

Called "Tsuppitch," by the natives of the banks of the Columbia.

Salmo tsuppitch, Tsuppitch, RICH., Fauna Boreal. Americ., III. p. 231.

17. *Salmo Clarkii*, RICH.

Brownish purple-red above, passing on the sides into ash-gray, and into reddish white on the belly. Large patches of dark purplish red on the back. Back, dorsal, and caudal fins studded with semilunar spots. A large patch of arterial red on the opercle and margin of the preopercle. Jaws with strong, hooked teeth. Caudal nearly even.

D. 11. P. 12. V. 8. A. 13. C. (?). Length, 14 inches.

Columbia River, RICHARDSON.

Salmo Clarkii, Clark's Salmon, RICH., Fauna Boreal. Americ., III. p. 225.

18. *Salmo Canadensis*, HAMILTON SMITH.

Above olive-green, sides lighter; abdomen scarlet; throat white. White ocelli along the sides, with a blood-red central dot. Pectorals, dorsal, and caudal barred with black.

D. (?). P. (?). V. (?). A. (?). C. (?) Length, 10 inches.

River St. Lawrence, H. SMITH.

Salmo Canadensis, GRIFFITH'S CUV., x. p. 474, pl. 41.

" " DEKAY'S Report, p. 213.

GENUS II. OSMERUS, ARTEDI.

Body elongated, covered with small scales; two dorsal fins, the first with rays, the second fleshy, without rays; ventral fins in a vertical line under the commencement of the first dorsal fin; teeth on the jaws and tongue very long, two distinct rows on each palatine bone, none on the vomer, except at the most anterior part; branchiostegous rays, eight.

1. *Osmerus viridescens*, LESUÈUR.

Yellowish-green above the lateral line; silvery-white beneath; a longitudinal satin band on the side. Lower jaw longer than the upper. Dorsal brownish. Scales equal, rhomboidal. Air-bladder fusiform, swollen at the middle. Stomach with a few short cœca.

D. 11. P. 14 or 16. V. 9. A. 15. C. 19. Length, 10 inches.

Maine, Massachusetts, LESUEUR, STORER. New York, MITCHELL, DEKAY. "From the waters of Hudson River to the coast of Labrador," DEKAY.

Salmo eperlanus, Smelt, MITCHELL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 423.

Osmerus viridescens, LESUEUR, Jour. Acad. Nat. Sc., I. p. 230.

Salmo (*Osmerus*) *eperlanus*, RICH., Fauna Boreal. Americ., III. p. 182.

Osmerus eperlanus, Smelt, ART., STORER'S Report, p. 108.

Osmerus viridescens, American Smelt, LESUEUR, DEKAY'S Report, p. 243. pl. 39, fig. 124.

As Cuvier, in his "Règne Animal," did not acknowledge our fish to be distinct from the *Osmerus eperlanus*, I arranged it as that species in my "Report upon the Fishes of Massachusetts." Dr. Dekay, in his "Report on the Fishes of New York," considers it as a distinct species, without stating, however, that he had ever seen the European Smelt, or giving any reason for doubting the opinion of Cuvier. To determine this matter definitely, I wrote to Mr. Yarrell upon the subject, who kindly sent me several specimens of the *Osmerus eperlanus*. Upon examination, they differ from our species, which, of course, will bear Lesueur's name of *O. viridescens*. With specimens of both the foreign and our fish, of the same size, before me, the difference was quite perceptible. Mr. Yarrell writes me as follows respecting the two species. "Our fish is considerably lighter in color, particularly on the back and on the dorsal and caudal fins. The double series of transverse lines on the sides in our fish are wider apart, and the lozenge-shaped spaces are in every sense larger. Our fish is deeper for the same length than yours; the body thicker, but the head, particularly the parts about the jaws, is narrower. Our fish has the gape opening more freely vertically. The eye in our fish is smaller, the preopercle deeper, and its posterior edge more truly forming a vertical line."

GENUS III. SCOPELUS, Cuv.

Body long, slender; the principal dorsal fin over the interval between the ventral and anal fins; a second dorsal fin so small as to be scarcely perceptible. The head short; the mouth and gill-aperture large; small teeth on both jaws; palate and tongue smooth.

1. *Scopelus Humboldtii*, Cuv.

Back greenish; sides, including gill-covers, silvery. A row of circular, brilliant metallic-colored spots runs along the belly, from before the pectorals to the anus; just above, parallel to them, extending to the ventral, a second row, commencing on the os hyoides. Behind these, a single row of smaller dots is continued to the base of the tail. An insulated spot between the anus and lateral line. Five oblong spots of a similar appearance upon the preoperculum. A slight ridge on the dorsum, back of dorsal fin, (adipose?). Body much compressed. Lateral line almost imperceptible, nearly straight. Mouth widely cleft. Eyes large.

D. 10. P. 17. V. 8. A. 15. C. 19. Length, 2 inches, 1 line.

Massachusetts Bay, STORER.

Scopelus Humboldtii, CLARKE, Magazine of Natural History, 1823.

" " CUV., YARRELL'S Brit. Fishes (2d edit.), II. p. 162.

Dr. Clarke's description and figure, which Yarrell gives on pages 162 *et seq.*, Vol. II., agree so perfectly with my specimen as to leave no doubt of the identity of the European and American species.

GENUS IV. COREGONUS, CUV.

Body in appearance herring-like ; with two dorsal fins, the first higher than long, the second adipose ; the scales large ; the mouth small, sometimes with minute teeth on the jaws or tongue, or both.

1. *Coregonus albus*, LESUEUR.

Bluish-gray on the back, lighter on the sides, and white on the belly. Scales large, orbicular. About eighty scales in the course of the lateral line, and twenty in an oblique series from the dorsal. Teeth on jaws scarcely to be felt ; vomer and palate smooth. Jaws equal.

D. 15. P. 16. V. 11. A. 15. C. 19 $\frac{1}{2}$. RICHARDSON. Length, 17 to 20 inches.

Lake Champlain, THOMPSON. Lake Erie, LESUEUR. All the interior lakes of America, from Erie to the Arctic Sea, RICHARDSON.

Called "White-fish," by the fur-traders ; "Poisson blanc," by the Canadians ; "At-tihhawmegh," by the Cree Indians ; "Lake Shad," in Vermont.

Salmo lavaretus (Guiniad and Tickomeg), PENNANT'S Arct. Zool., Introd., p. 298, and II. p. 293.

Coregonus albus, White-fish, LESUEUR, Journ. Acad. Nat. Sc., I. p. 232, pl.

Salmo (*Coregonus*) *albus*, At-tihhawmeg, RICH., Fauna Boreal. Americ., III. p. 195, pl. 89, fig. 2.

Coregonus albus, White-fish, KIRTLAND'S Report, pp. 169, 195.

" " " KIRTLAND, Bost. Journ. Nat. Hist., III. p. 477, pl. 28, fig. 3.

" " Lake Shad or White-fish, THOMPSON'S Hist. of Vermont, 143, fig.

" " White-fish, DEKAY'S Report, p. 247, pl. 76, fig. 240.

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2. *Coregonus Artedi*, LESUEUR.

Ash-blue upon the back ; paler and silvery on the rest of the body, with yellow tints on the tail, head, and dorsal. Form of the body elongated in the males, deeper and more compressed in the females. Scales large, ascending high up on the caudal fin. No teeth on margin of jaws.

D. 12. P. 16. V. 12. A. 14. C. 19 $\frac{3}{4}$. Length, 10 to 15 inches.

Lake Ontario, DEKAY. Lake Erie, LESUEUR. Lake Huron, Cayuga Lake, MITCHELL.

- Coregonus Artedii*, Herring-Salmon, LESUEUR, Journ. Acad. Nat. Sc., i. p. 231.
Salmo clupeiformis, White-fish of the Lakes, MITCHILL, Amer. Month. Mag., ii. p. 321.
Salmo (Coregonus) Artedii, Lesueur's Herring-Salmon, RICH., Fauna Boreal. Americ., III. p. 203.
Coregonus Artedii, Shad of the Lakes, KIRTLAND's Report, pp. 169, 195.
 " " Herring-Salmon, KIRTLAND, Bost. Journ. Nat. Hist., iv. p. 231, pl. 9, fig. 1.
Coregonus clupeiformis, Common Shad-Salmon, DEKAY's Report, p. 218, pl. 60, fig. 193.
 " " " *Val. 21. 523. /1843/*

To Dr. Mitchill is due the credit of first distinguishing this from the preceding species. His notice was published in March, 1818. Lesueur's scientific description appeared the same month, a week or two afterwards; and his must be the acknowledged one among scientific men.

3. *Coregonus Otsego*, DE WITT CLINTON.

Elongate, subcylindrical, compressed. Back arched. Dusky above the lateral line; silvery beneath it. Six or eight dusky longitudinal lines upon the sides. Scales very small. Upper lip protuberant and bifid.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 17 inches.

Otsego Lake, DE WITT CLINTON.

- Salmo Otsego*, Otsego Bass, CLINTON, Med. and Phil. Register, III. p. 158, pl.
Coregonus Otsego, Otsego Shad-Salmon, DEKAY's Report, p. 218. *Feb. 21. 513.*

4. *Coregonus tullibee*, RICH.

Much compressed, belly rounded, back rather more acute. When exposed to light, the whole body is silvery. In the shade, the back is greenish-gray, the belly white, the sides of an intermediate hue. Scales large, oblong, of an uniform size; eighty-eight on the lateral line; twenty-three in a vertical row under first ray of dorsal. A small plate of minute teeth on the centre of the tongue. Lower jaw the longer. Caudal slightly forked.

D. 14. P. 16. V. 12. A. 14 or 15. C. 19 $\frac{1}{2}$. Length, 14 inches.

Northern Regions, RICHARDSON.

Called "Ottonneebies," by the Cree Indians; "Tullibee," by the fur-traders.

- Salmo (Coregonus) tullibee*, Tullibee, RICH., Fauna Boreal. Americ., III. pp. 201, 309.
Coregonus tullibee, DEKAY's Report, p. 249. *Feb. 21. 526*

5. *Coregonus quadrilateralis*, RICH.

Subcylindrical, quadrilateral. Color of back and sides intermediate between horny-yellow and wood-brown, with a narrow blackish gray border to each scale. Sides paler, belly white. Scales rhomboidal. The lower jaw the shorter. Edentate. Ninety-six scales along the lateral line; twenty-three or twenty-four in a vertical line before the dorsal, of which nine are above the lateral line, and eight between it and the ventrals.

D. 15. P. 15. V. 11. A. 13. C. 19 $\frac{1}{2}$. Length, 18 inches.

Polar Sea, RICHARDSON.

Called "Kathèh," by the Copper Indians; "Okeugnak," by the Esquimaux.

Coregonus quadrilateralis, RICH., Franklin's Journal, p. 714.
Salmo (Coregonus) quadrilateralis, Round-fish, RICH., Fauna Boreal. Americ., III. p. 201.
Coregonus quadrilateralis, DEKAY'S Report, p. 249.

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6. *Coregonus lucidus*, RICH.

Body compressed. Mouth large; when the jaws are extended, the intermaxillaries are brought into a line with the forehead, instead of dropping vertically, as in the *C. quadrilateralis*; lower jaw the longer; no teeth. Scales pearly and iridescent, transversely oval; eighty-eight scales on the lateral line; ten rows above that line at the dorsal, eight between it and the ventral, and three or four from thence to the mesial line of the belly. Scales on sides larger than on back.

D. 14. P. 19. V. 11. A. 14. C. 19 $\frac{3}{4}$. Length, 18 inches.

Northern regions, RICHARDSON.

Salmo (Coregonus) lucidus, Bear-Lake Herring-Salmon, RICH., Fauna Boreal. Americ., III. p. 207, pl. 90. fig. 1.

Coregonus lucidus, DEKAY'S Report, p. 249.

Coregonus clupeiformis (urtedi) fide Vol. 21. 523

7. *Coregonus harengus*, RICH.

Body compressed, back rounded, belly slightly flattened. Olive-green on the back, silvery on sides and belly, and blackish green on top of the head. Gill-covers, cheeks, and irides are whitish and nacreous. Lower jaw the longer. No teeth on the jaws; but three rows of microscopic teeth on the tongue. Scales of same form as those of *C. lucidus*; eighty-four on lateral line; twenty-two in a vertical row under the dorsal, of which nine are above lateral line, and eight between it and ventrals.

D. 12 or 13. P. 16. V. 12. A. 13. C. 19 $\frac{3}{4}$. Length, 13 or 14 inches.

Lake Huron, RICHARDSON.

Salmo (Coregonus) harengus, Lake Huron Herring-Salmon, RICH., Fauna Boreal. Americ., III. p. 210, pl. 90. fig. 2.

Coregonus harengus, DEKAY'S Report, p. 249.

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8. *Coregonus Labradoricus*, RICH.

Body much like that of *C. quadrilateralis*. Head small. Jaws toothless; four longitudinal rows of teeth on the tongue. Adipose fin corresponds with the end of the anal. Scales orbicular; seventy-eight on the lateral line; eight scales between the dorsal and lateral line, and as many between the latter and the ventrals.

D. 15. P. 15. V. 12-11. A. 15. C. 19 $\frac{3}{4}$. Length, 14 inches.

Musquaw River, RICHARDSON.

Salmo (Coregonus) Labradoricus, Musquaw River Coregonus, RICH., Fauna Boreal. Americ., III. p. 206

GENUS V. *MALLOTUS*, Cuv.

With the cleft mouth of the preceding, have only even, small, and crowded teeth at the jaws, palate, and tongue. Their first dorsal and ventrals are farther back than the middle; their broad, round pectorals almost touch each other underneath.

1. *Mallotus villosus*, Cuv.

Back and top of head dull leek-green, with bright green and yellow reflections when moved in the light. Sides and belly covered with delicate and very bright silvery scales, which are dotted on the margins with black specks. Back covered with small smooth grains like shagreen. In the male, a prominent obtuse ridge, composed of soft, tumid, semilanceolate, acute, diaphanous processes, minutely spotted with black, and densely tiled, with three points turned towards the tail, extends along the lateral line. Six cæca of unequal length.

D. 14. P. 17. V. 8. A. 22. C. 19. Length, 6 to 7 inches.

Greenland, FABRICIUS. Newfoundland, RICHARDSON.

Called "Angmaggeuck," by the Esquimaux; "Angmagsak," "Sennersulik" (male), by the Greenlanders.

Clupea villosa, LIN., GMEL., p. 1409

" " MÜLL., Prod., p. 425.

Salmo arcticus, FABRICIUS, Fauna Groenlandica, p. 177, No. 125.

Capelin, PENNANT'S Arctic Zool., II. p. 141, No. 175.

Salmo Groenlandicus, BLOCH, 381.

" " Greenland Salmon, SHAW'S Gen. Zool., v. p. 70.

" " RICH., Franklin's Journal, p. 710.

Mallotus Groenlandicus, GRIFFITH'S Cuv., x. p. 420.

Salmo (Mallotus) villosus (Cuv.), Capelin, RICH., Fauna Boreal. Americ., III. p. 187.

Sal. 21. 392.

2. *Mallotus Pacificus*, RICH.

Silvery white, passing on the back into a blackish tinge. Large, irregular, but generally oval spots of yellowish white, and blackish gray on the back. A bluish black spot over each orbit. Margin of lips black. Back of head grayish white. Minute black dots on the silvery bases of the cheeks. Dorsal situated more anteriorly than in the *M. villosus*. Teeth scarcely perceptible. Nine cæca; three shorter than the others, which are equal in length. Ascends into fresh water to spawn.

D. 11. P. 11. V. 8. A. 20. C. (?). Length, 7 to 8 inches.

Columbia River, RICHARDSON.

Indian name, "Oulachan."

Salmo (Mallotus) Pacificus, Northwest Capelin, RICH., Fauna Boreal. Americ., III. p. 226.

GENUS VI. *THYMALLUS*, Cuv.

Distinguished from the 'Trouts by the smallness of the mouth, the fineness of the teeth, the great size of the dorsal fin, and the largeness of the scales.

1. *Thymallus signifer*, RICH.

Back dark ; sides bluish gray ; belly blackish gray, with irregular whitish blotches. Five or six quadrangular prussian-blue spots on the anterior part of the body, each tinging the margin of the four adjoining scales. Head brown ; a blue mark on each side of the lower jaw. Dorsal blackish-gray, with lighter blotches, and crossed by beautiful Berlin-blue spots ; it is edged with light lake-red ; ventrals streaked with reddish and whitish lines in the direction of their rays. Scales semioval, covered with an epidermis ; eighty-seven on the lateral line, including three or four small ones on the base of the caudal, and twenty-seven in a vertical row anterior to the ventrals, of which nine are above the lateral line. Dorsal very large ; its three last and longest rays exceed in height the greatest depth of the body.

D. 23. P. 15. V. 9. A. 13. C. 19 $\frac{2}{3}$. Length, 17 to 18 inches.

Northwestern regions, RICHARDSON.

Called "Hewlook-powak," by the Esquimaux ; "Poisson bleue," by Canadian Voyagers.

Coregonus signifer, RICH., Franklin's Journal, p. 714, pl. 26.

Salmo (Thymallus) signifer, BACK'S GRAYLING, RICH., Fauna Boreal. Americ., III. p. 190, pl. 88.

Coregonus thymalloides, RICH., Franklin's Journal, p. 714 (young).

Salmo (Thymallus) thymalloides, LESSER'S GRAYLING, RICH., Fauna Boreal. Americ., III. p. 194.

Thymallus signifer, BACK'S GRAYLING, JARDINE, Nat. Lib., Ichth., II. p. 120, pl. 11.

Val. 21.450

2. *Th. ontariensis*. *Val.*
21. 452. 1848. *E. Ontario.*

GENUS VII. SAURUS, CUV.

Have the muzzle short ; the mouth cleft as far as behind the eyes ; the edge of the upper jaw formed almost entirely by the intermaxillaries ; several very pointed teeth along both jaws, the palatines, the tongue, and the pharyngeals, but none on the vomer ; eight or nine, and frequently ten or fifteen, rays to the gills. The first dorsal is a little behind the ventrals, which are large ; scales on the body, cheeks, and opercula ; the viscera resemble those of Trouts.

1. *Saurus Mexicanus*, CUV.

Almost transparent.

D. (?). P. (?). V. (?) A. (?). C. (?). Length, (?).

Mexico, CUV.

Saurus Mexicanus (CUV., Règne Animal), GRIFFITH'S CUV., X. p. 421.

FAMILY XXI. CLUPEIDÆ.

No adipose fin. The upper jaw is formed as in the Trouts, at the middle by intermaxillaries, without pedicles, and on the sides by the maxillaries. Their body is always very scaly.

GENUS I. *CLUPEA*, CUV.

Body compressed; scales large, thin, and deciduous; head compressed; teeth minute or wanting; a single dorsal fin; abdominal line forming a sharp, keel-like edge, which in some species is serrated; branchiostegous rays, eight.

1. *Clupea elongata*, LESUEUR.

Body lengthened, fusiform, compressed. Above deep blue, tinged with yellow; sides silvery, with metallic reflections. Opercles yellow, oftentimes with a violet tint; beneath silvery. Abdomen carinated, the spines of which are scarcely perceptible. Scales large, silvery, nearly smooth, deciduous.

D. 18. P. 19. V. 9. A. 17. C. 22. Length, 12 to 15 inches.

Massachusetts, LESUEUR, STORER. Connecticut, LINSLEY. New York, MITCHILL, DEKAY.

Called "English Herring," in Massachusetts.

Clupea harengus, Herring of Commerce, MITCHILL, Amer. Month. Mag., II. p. 323.

Clupea elongata, LESUEUR, Journ. Acad. Nat. Sc., I. p. 250.

" " Common Herring of Massachusetts, STORER'S Report, p. 111.

" " Common American Herring, DEKAY'S Report, p. 250.

2. *Clupea fasciata*, LESUEUR.

Body compressed; back straight; breast and abdomen forming a bow downwards as far as the tail. Seven to eight blackish blue lines at the sides of the back. A rounded notch at the bottom of the divisions of the tail, of which the lower lobe is longest.

D. 18. P. 16. V. 9. A. 18. C. 22 $\frac{1}{2}$. Length, 1 to 9 inches.

Massachusetts, LESUEUR. Connecticut, LINSLEY.

Clupea fasciata, Fasciated Herring, LESUEUR, Journ. Acad. Nat. Sc., I. p. 233.

Clupea pusilla, Tiny Herring, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 452 (young).

Clupea fasciata, Fasciated Herring, STORER'S Report, p. 112.

" " Striped Herring, DEKAY'S Report, p. 251.

Dr. Dekay thinks the *C. pusilla* of Mitchill may be the young of this species.

3. *Clupea virescens*, DEKAY.

Body much compressed. Back green; a longitudinal green stripe above the lateral line; a black spot behind the upper angle of the gill-openings. Dorsal and caudal fins light olive-green. Abdomen serrated, with nineteen strong spines anterior to the ventrals, and twelve between these latter and the vent. Scales large, orbicular, deciduous.

D. 16. P. 16. V. 9. A. 17. C. 19 $\frac{1}{2}$. Length, 6 inches.

Connecticut, LINSLEY. New York, MITCHILL, DEKAY.

Called "Greenback," and "Fall Herring."

Storer's Synopsis of the Fishes of North America. 205

Clupea halec, New York Herring, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 451 (var.?).
Clupea virescens, Green Herring, DEKAY'S Report, p. 242, pl. 13, fig. 37.

Dr. Dekay considers the *C. halec* of Mitchill a variety of this species.

4. *Clupea parvula*, MITCHILL.

Delicate, semitransparent. Greenish about the head, gills, and eyes. Back of an unmixed brown, which passes through regular gradations of hue to a silvery whiteness on the sides and belly. Belly serrated. Tail forked.

D. 14. P. 14. V. 9. A. 18. C. 21. Length, 6 inches.

New York, MITCHILL.

Clupea parvula, Little Herring, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 452.
" " " " DEKAY'S Report, p. 253.
" " " " 26-258.

5. *Clupea vittata*, MITCHILL.

Large, projecting upper jaw, small lower jaw, silver-striped sides, and forked tail. Belly carinated and moderately serrated. Anal with about twenty-one rays.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 3½ inches.

New York, MITCHILL.

Clupea vittata, Slaty-striped Herring, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 456.
" " " " DEKAY'S Report, p. 254.

Engraulis and Mitchellii, Val. 21. 50 (1845)

6. *Clupea cœrulea*, MITCHILL.

With bluish complexion, large head, forked tail, and small pectoral and abdominal fins. Scales large. Jaws about even.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 3 inches.

New York, MITCHILL.

Clupea cœrulea, Blue Herring, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. 457.
" " " " DEKAY'S Report, p. 254.

Mitchill supposed this might be a variety of the preceding.

7. *Clupea minima*, PECK.

Back nearly black; upper part of sides dark green; sides silvery, with roseate and golden reflections; in the younger specimens, the dorsal ridge is a black line, and the distance between it and the lateral line is of a light green, sprinkled with darker points. Abdominal ridge serrated. Lower jaw projecting. Tail forked.

D. 10. P. 15. V. 5. A. 12. C. 18. Length, 1 to 4 inches.

New Hampshire, PECK. Massachusetts, STORER.

Clupea minima, PECK, Belknap's Hist. of New Hampshire, III. p. 130; catalogued, but not described.
" " Brit, STORER'S Report, p. 113.
" " " DEKAY'S Report, p. 253.

S. *Clupea harengus* (?), LIN.

Back green and gold; belly and sides white, with pearly lustre and violet reflections; sides of head deeply tinged with gold-yellow. The edge of the labials is minutely toothed, and there is a cluster of minute teeth on the vomer. Scales large, thin, orbicular.

D. 19. P. 16. V. 8. A. 16. C. (?). Length, 15 inches.

Arctic Seas, RICHARDSON.

Called "Kapisehk," by the Greenlanders.

- Clupea harengus*, LIN., Syst. Nat., p. 522
 " " FABRICIUS, Fauna Groenlandica, p. 182.
 " " Common Herring, SHAW's Gen. Zool., v. p. 156, fig.
 " " BLOCH, l. p. 49, pl. 29, fig. 1.
 " " RICH., Franklin's Journal, p. 716.
 " " FLEMING's Brit. An., p. 182.
 " " PENNANT's Arct. Zool., VIII. p. 335, pl. 29.
 " " RICH., Fauna Boreal. Americ., III. p. 229.
 " " (?), DEKAY's Report, p. 255.

It is exceedingly doubtful whether the Arctic species is the *harengus*, and I introduce it, as did DeKay into his Report, with a query.

GENUS II. *ALOSA*, Cuv.

Upper jaw with a deep notch in the centre; in other respects like the *Clupea*.

1. *Alosa sapidissima*, WILSON.

Body oblong, compressed. Bluish upon the top of the head and on the back; the upper portion of the sides, including the opercula, cupreous; beneath silvery. At the posterior angle of the operculum, a black blotch of considerable size, which is sometimes very indistinct. When the scales are removed from the sides, six or eight other similar spots are noticed. Upon the middle of the caudal fin are two membranous appendages on each side. Scales large, rhomboidal upon the sides, rounded on the abdomen. Abdominal ridge serrated.

D. 19. P. 16. V. 9. A. 20. C. 20 $\frac{3}{4}$. Length, 20 inches. Weight, 2 to 6 pounds.

Maine, LINSLEY. New Hampshire, BELKNAP. Massachusetts, STORER. Connecticut, LINSLEY. New York, MITCHILL, DEKAY. South Carolina, Virginia, DEKAY.

- Clupea sapidissima*, WILSON, Rees's Encycloped. (American edit.); catalogued, but not described.
 " " RAF., Amer. Month. Mag., II. p. 205.
Clupea alosa, Shad, BELKNAP's Hist. of New Hampshire, III. p. 130.
 " " MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 119.
Clupea indigena, Sprat Herring, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 451 (young).
Alosa vulgaris, Common Shad, STORER's Report, p. 116.
Alosa præstabilis, American Shad, DEKAY's Report p. 255. pl. 15, fig. 41.
Alosa sapidissima, Shad, WILSON, LINSLEY's Cat. of Fishes of Connecticut, Silliman's Journal, XLVII.

2. *Alosa tyrannus*, LATROBE.

Body elongated, strongly compressed. Of a bluish purple-color on the back ; the sides a light cupreous ; beneath silvery ; four or five, and sometimes even more, indistinct greenish longitudinal lines upon the sides. A deep black blotch just back of the posterior angle of the operculum. Scales very large and deciduous. Anal nearly even. Caudal deeply forked.

D. 17. P. 15. V. 9. A. 18. C. 21 $\frac{3}{4}$. Length, 8 to 10 inches.

New Hampshire, PECK. Massachusetts, STORER. Connecticut, LINSLEY. New York, MITCHILL, DEKAY. Chesapeake Bay, MITCHILL.

- Clupea serrata*, PECK, Belknap's Hist. of New Hampshire, III. p. 133.
Clupea tyrannus, Bay Alewife, LATROBE, Amer. Phil. Soc. Trans., v. p. 77, pl. 1.
Clupea vernalis, Spring Herring or Alewife, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 451.
Alosa vernalis, Spring Herring or Alewife, STORER's Report, p. 114.
Alosa tyrannus, American Alewife, DEKAY's Report, p. 258, pl. 13, fig. 38.
Alosa vernalis, LINSLEY's Cat. of Fishes of Connecticut, Silliman's Journal, XLVII.

3. *Alosa menhaden*, MITCHILL.

Body much compressed. Abdomen serrated ; serrations sharper behind the ventrals. Greenish brown upon the back, darker upon the top of the head and at the snout ; roseate upon the upper part of the sides ; silvery upon the abdomen ; gill-covers cupreous, with a rosy tint ; a more or less distinct black spot upon the shoulders. Scales large, elliptical, ciliate at edge. An accessory plate on each side of the ventrals.

D. 19. P. 15, 16, or 17. V. 6. A. 20, 21, or 22. C. 20 $\frac{1}{4}$. Length, 8 to 14 inches.

Maine, Massachusetts, STORER. Connecticut, AYRES, LINSLEY. New York, MITCHILL, DEKAY.

- Clupea menhaden*, Bony fish, Hard-heads, or Marsh-bankers of New York, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 453, pl. 5, fig. 7.
Alosa menhaden, Menhaden, Hard-head, STORER's Report, p. 117.
" " Moss-bonker, DEKAY's Report, p. 259, pl. 21, fig. 60.
" " AYRES, Bost. Journ. Nat. Hist., IV. p. 275.

4. *Alosa mattowacca*, MITCHILL.

Bluish green on the back ; silvery, with a series of dark rounded spots, on the sides. Back regularly arched throughout. Abdomen serrated. Tongue with a band of teeth. Caudal pouches.

D. 18. P. 16. V. 9. A. 20. C. 20 $\frac{3}{4}$. Length, 20 inches.

Connecticut, AYRES, LINSLEY. New York, MITCHILL, DEKAY.

Called " Autumnal or Fall Herring," " Shad Herring," or " Greenback."

- Clupea mattowacca*, Long Island Herring, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 451, pl. 5, fig. 8.
Clupea mediocris, Staten Island Herring, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 451.
Alosa mattowacca, Autumnal Herring, DEKAY's Report, p. 260, pl. 40, fig. 127.
" " AYRES, Bost. Journ. Nat. Hist., IV. p. 275.

5. *Alosa sadina*, MITCHILL.

Oblong, compressed. Abdomen indistinctly serrated. Greenish and blue above, with metallic reflections; sides and belly silvery; a dark, almost black spot upon the shoulder. No caudal pouches.

D. 18. P. 18. V. 7. A. 21. C. 16½. Length, 6 to 12 inches.

Connecticut, LANSLEY. New York, MITCHILL, DEKAY.

Clupea sadina, New York Shadine, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., 1. p. 457.

Alosa sadina, Spotted Shadine, DEKAY'S Report, p. 263, pl. 40, fig. 129.

Mr. Linsley considered this species the young of the *Alosa sapidissima* (see Silliman's Journal, Vol. XLVII.).

6. *Alosa teres*, DEKAY.

Body elongated, cylindrical. Ventrals behind the dorsal. Bright silvery; darker above, with a tinge of blue and yellow on the flanks. Dorsal and caudal tinged with yellow; the remaining fins transparent, feebly punctate with black.

D. 19. P. 15. V. 10. A. 12. C. 19½. Length, 7 inches.

New York, DEKAY.

Alosa teres, Slender Herring, DEKAY'S Report, p. 262, pl. 40, fig. 128.

GENUS III. *POMOLOBUS*, RAF.

Body nearly cylindrical, elongate, scaly. Vent posterior. Abdomen carinated and serrated from the head to the vent; but without plates or broad scales. Head scaleless, opercle lobed, with a rounded shield above. Jaws without teeth; upper, truncate, extensible; lower, horizontal and fixed. Abdominal fins with nine rays, and without any lateral appendage; dorsal fin opposite.

1. *Pomolobus chrysochloris*, RAF.

Body subcylindric, compressed on the sides; abdomen slightly carinate and serrate; back rounded. Top of the head and back bluish-purple, iridescent; the gill-covers and sides of the jaws golden and purple, sides of the body and the abdomen white.

D. 18. P. 16. V. 9. A. 18. C. 34. Length, 12 to 18 inches.

Ohio River, KIRTLAND.

Pomolobus chrysochloris, Ohio Gold Shad, RAF., Ichth. Ohien., p. 39.

Alosa chrysochloris, Gold Shad, Gold Herring, Skipjack, KIRTLAND, Bost. Journ. Nat. Hist., IV. p. 267, pl. 15, fig. 3.

GENUS IV. *CHATOËSSUS*, CUV.

The last ray of the dorsal is prolonged into a filament; some have the jaws

equal, and the muzzle not prominent; their mouth is small and without teeth.

1. *Chatoëssus oolina*, LESUEUR.

Back almost straight; throat and abdomen describing an inverted arch as far as the tail, and armed with from thirty-two to thirty-three serratures, of which fourteen or fifteen are placed between the ventral and anal fins. Back blue, with three black longitudinal bands; beneath white. No teeth. Dorsal not emarginate. Anal hardly visible, almost concealed by the scales which cover its base.

D. 18. P. 19. V. 9. A. 20 to 22. C. 18. Length, 8 inches.

Newport, Rhode Island, LESUEUR.

Called "Alewife," at Newport.

Megalops oolina, LESUEUR, Journ. Acad. Nat. Sc., i. p. 359.

Chatoëssus oolina, GRIFFITH'S CUV., x. p. 439.

" " DEKAY'S Report, p. 265.

2. *Chatoëssus Cepedianus*, LESUEUR.

Body subelliptical; back greatly elevated, almost sharp; abdomen very much arcuated, carinated, and armed with twenty-nine spines. Back grayish blue; pale silver on the sides; head of a burnt *terra de sienna*, mixed with golden; throat and abdomen white; extremity of the ventrals black; the remainder of the fins tinted with gray-blue, yellow, and green, blackish at their extremities. The extremity of the pectorals extending beyond the anterior part of the base of the ventrals, which are situated somewhat before the dorsal fin.

D. 15. P. 18. V. 8. A. 33. C. 19½. Length, 8 to 12 inches.

Delaware and Chesapeake Bays, LESUEUR.

Megalops Cepedianus, LESUEUR, Journ. Acad. Nat. Sc., i. p. 361.

Chatoëssus Cepedianus, GRIFFITH'S CUV., x. p. 439.

" " DEKAY'S Report, p. 265.

3. *Chatoëssus notatus*, LESUEUR.

Back almost straight; thorax and abdomen arcuated, carinated. Back blue, without blackish bands, but with five blue spots; sides of a pale blue color; abdomen and head white. Anal fin narrow, equal throughout; ventrals small, truncated; dorsal fin longer than high. Scales large.

D. 18. P. (?). V. (?). A. (?). C. (?). Length, 6 to 8 inches.

Guadaloupe, LESUEUR.

Megalops notata, LESUEUR, Journ. Acad. Nat. Sc., i. p. 361.

Chatoëssus notatus, GRIFFITH'S CUV., x. p. 439.

4. *Chatoëssus ellipticus*, KIRTLAND.

Body oval, elliptical; sides flattened, back rounded, abdomen compressed, carinate, and

serrate. Back and head olive and bluish, iridescent; sides silvery; abdomen white; fins dusky brown. Dorsal triangular; caudal deeply bilobed; anal narrow, slightly falciform; pectorals do not reach the commencement of the ventrals.

D. 13. P. 15. V. (?). A. 32. C. 22. Length, 12 to 18 inches.

Ohio River and its tributaries, KIRTLAND.

Chatoëssus ellipticus, Hickory or Gizzard Shad, KIRTLAND'S Report, pp. 169, 195.

Dorosoma notata (the young), RAF., Ichth. Ohien., p. 40, fig. 2.

Chatoëssus ellipticus, Hickory or Gizzard Shad, KIRTLAND, Bost. Journ. Nat. Hist., iv. p. 235, pl. 10, fig. 1.

“ “ “ “ “ DEKAY'S Report, p. 265.

5. *Chatoëssus signifer*, DEKAY.

Body compressed, elliptical. Bluish above, with a series of dark points along the sides of the back, forming four or five longitudinal lines. A round black spot behind the upper part of the branchial aperture. Pectorals, ventrals, and anal white; dorsal and caudal yellow. Abdomen serrate, with thirteen distinct rhomboidal acute scales between the ventrals and the vent, and eighteen smaller, scarcely prominent ones anterior to the ventral fins. Scales large. Dorsal subtriangular; dorsal filament equal in length to the greatest depth of the body; anal very low, but distinct.

D. 19. P. 18. V. 8. A. 21. C. 19½. Length, 8 inches.

New York, DEKAY.

Called “Shad-Herring,” “Thread-Herring,” and “Thread-fish,” in New York.

Chatoëssus signifer, Spotted Thread-Herring, DEKAY'S Report, p. 264, pl. 41, fig. 132.

GENUS V. HYODON, LESUEUR.

Body compressed as in the Herrings, but without abdominal serratures. Eyes very large. Teeth minute and curved on the jaws, tongue, vomer, and palatines. Branchial rays, eight or nine. Dorsal opposite the commencement of the anal. Scales large, deciduous.

1. *Hyodon tergisus*, LESUEUR.

Body lengthened, elevated; back almost straight, and parallel with the abdomen. Back bluish; sides silvery; fins tinted with yellow, with metallic reflections on the rays. Anal large, and rounded anteriorly, very narrow posteriorly. Lateral line nearly straight. Dorsal subquadrangular; ventrals with an accessory scale.

D. 15. P. 18. V. 7. A. 32. C. 18¾. LESUEUR. Length, 9 to 13 inches.

D. 15. P. 15. V. 7. A. 29. C. 18¾. DEKAY. “ “ “

New York, DEKAY. Lake Erie, Ohio River, LESUEUR.

Called “Moon-eye,” “Shiner,” “Lake Herring,” at Buffalo; it is known also by the names of “Herring,” “River Herring,” and “Toothed Herring.”

- Hyodon tergisus, LESUEUR, Journ. Acad. Nat. Sc., I. p. 366.
 " " Notch-finned Hydion, LESUEUR, RICH., Fauna Boreal. Americ., III. p. 235.
 " " Moon-eyed Herring, KIRTLAND'S Report, p. 170.
 " " River Moon-eye, DEKAY'S Report, p. 265, pl. 41, fig. 130.
 Hyodon clodalus, LESUEUR, Journ. Acad. Nat. Sc., I. p. 367, pl. 14.
 " " Larger Herring, KIRTLAND'S Report, pp. 170, 195.
 " " Lake Moon-eye, DEKAY'S Report, p. 266, pl. 51, fig. 164.

Lesueur, when he described the *H. tergisus* and *H. clodalus*, was not perfectly satisfied that they were distinct species. Kirtland, in his unpublished description of the *H. tergisus*, which will appear in the third number of the fifth volume of the "Journal of the Boston Society of Natural History," considers it as the male of the *H. clodalus*. With abundant opportunities of settling this question, his authority is deserving great respect; and I have accordingly adopted his views.

2. *Hyodon chrysopsis*, RICH.

Body greatly compressed; thickest above the lateral line, and thinning gradually into the very acute, even edge of the belly; the back thins off more suddenly, but its ridge is less sharp than the rim of the belly. Scales large, irregularly orbicular, of a bluish slate-color at the base, with bright silvery tips. The irides and sides of the head are tinged with honey-yellow. Teeth conical, in a single row on intermaxillaries; two rows in lower jaw. Tongue furnished on its margin with hooked teeth, which are the largest of all, and its centre is occupied by a crowd of small curved ones. Caudal crescentic; its lower lobe the longer.

D. 11. P. 12. V. 7. A. 34. C. (?). Length, 16 inches.

Northern regions, RICHARDSON.

Called "Oweepeecheesees," by the Crees; "Gold-eye," by the fur-traders; "Naccaysh," by Voyageurs.

Hyodon clodalus, RICH., Franklin's Journal, p. 716.

Hyodon chrysopsis, Naccaysh, RICH., Fauna Boreal. Americ., III. p. 232.

DEKAY'S Report, p. 267.

GENUS VI. *ELOPS*, LIN.

Jaws formed like those of the Herrings. Body cylindrical. There are as many as thirty rays, or more, to the membrane of the gills. A flat spine arms the upper and the lower edge of the caudal.

1. *Elops saurus*, LIN.

Body elongated, cylindrical, compressed towards the tail. Bright silvery, with a greenish tinge along the back; summit of the head bronzed. All the fins more or less punctate with black. Scales moderate, orbicular. Upper jaw longer than the lower. Dorsal subtriangu-

lar, covered at its base by a thick membrane; ventrals under the anterior part of the dorsal; caudal widely forked, with six accessory rays on each side, the first somewhat produced and flattened on the upper and under edges of the tail.

D. 21. P. 15. V. 14. A. 17. C. 20 $\frac{1}{2}$. Length, 11 to 22 inches.

New York, MITCHILL, DEKAY.

Elops saurus, LIN., Syst. Nat. (12th edit.), p. 518.

Elops inermis, Smooth *Elops*, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., i. p. 445.

Elops saurus, SAURY, DEKAY'S Report, p. 267, pl. 41, fig. 131.

NOTE. Dr. Dekay, in his account of the above species, says, — "I find an *Elops* (not named) among the drawings of the fishes of Carolina by my friend Dr. Holbrook, and suppose it to be a different species."

GENUS VII. BUTIRINUS, COMMERSON.

Body elongated and rounded. Muzzle prominent. Mouth but slightly cleft; close and even teeth in the jaws. Twelve or thirteen branchial rays. Tongue, vomer, and palatines paved with rounded teeth.

1. *Butirinus vulpes*, LIN.

Body much elongated; depth very slight just in front of tail. Greenish blue above; sides and fins reddish brown. Snout projects beyond the lower jaw. Scales large and rounded. Dorsal upon the middle of the back; caudal deeply forked.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, about 16 inches.

Carolina, West Indies, CATESBY.

Esox vulpes, LIN., Syst. Nat., p. 516.

Vulpes Bahamensis, CATESBY'S Hist. Carol., II. p. 1, pl. 1, fig. 2.

Macabi, PARRA, p. 83, pl. 35, fig. 1.

Esox vulpes, *Esox Pike*, SHAW'S Gen. Zool., v. p. 106.

Clupea macrocephala (LACEP.), SHAW'S Gen. Zool., v. p. 177.

Butirinus vulpes (CATESBY), DEKAY'S Report, p. 263.

GENUS VIII. AMIA, LIN.

Head flattened, naked, with conspicuous sutures. Twelve flat gill-rays. Small paved teeth behind the acute conical ones. A large, long buckler between the branches of the lower jaw. Dorsal long; anal short. Air-bladder cellular, like the lungs of reptiles.

1. *Amia calva*, LIN.

Body cylindrical anteriorly, compressed posteriorly. Back of head bluish-black; sides obscurely maculated in some specimens with olive spots; beneath white; a black spot at upper edge of caudal fin. Scales subcircular, flat, depressed somewhat in their centres.

D. 43. P. 17. V. 6. A. 9. C. 22. Length, 18 inches to 3 feet.

Lake Champlain, THOMPSON. Lake Erie, KIRTLAND. Lake Huron, RICHARDSON. Carolina, LIN.

Called the "Bowfin," at Lake Champlain.

Amia calva, LIN. Syst. Nat., p. 509.

" " Carolinian *Amia*, SHAW'S Gen. Zool., v. p. 9.

Amia ocellicauda, Marsh-fish, RICH., Fauna Boreal. Americ., III. p. 236.

Amia calva, Dog-fish of Lake Erie, KIRTLAND, Bost. Journ. Nat. Hist., III. p. 479, pl. 29, fig. 1.

Amia occidentalis, Western Mud-fish, DEKAY'S Report, p. 269, pl. 33, fig. 125.

Amia calva, DEKAY'S Report, p. 270.

Mr. Zaddock Thompson, the intelligent author of the "History of Vermont," writes me, that he compared his description of an *Amia* he took at Whitehall, Lake Champlain, with DEKAY'S *A. occidentalis*, RICHARDSON'S *A. ocellicauda*, and KIRTLAND'S *A. calva*, and is satisfied "they all belong to one and the same species."

FAMILY XXII. SAURIDÆ.

Body covered with scales of a stony hardness, which are extended into imbricated spines upon the first rays of all the fins. In some genera, dorsal finlets, each supported by a strong spine.

GENUS I. LEPISOSTEUS, LACEP.

Muzzle formed by the union of the intermaxillaries, maxillaries, and palatines to the vomer and the ethmoid; jaws slightly unequal; both jaws bristling over their whole interior surface with rasp-like teeth, have along their edge a row of long and pointed teeth. Dorsal and anal fins far back, and opposite one another. Their stomach is continued as far as a slender intestine, twice folded, having many short cœca to the pylorus; their natatory bladder is cellular, as in *Amia*, and occupies the length of the abdomen.

1. *Lepisosteus osseus*, LIN.

Body elongated, fusiform. Head more than one fourth of its total length; base of head less in circumference than any other section of the body anterior to the dorsal fin. Snout much elongated. Back and head brown or umber-colored, sides yellow, and body white: several circular black spots upon the caudal, a few smaller ones upon dorsal and anal fins. Scales smooth. Lateral line nearly straight.

D. 7. P. 10. V. 6. A. 6. C. 12. Length, 1 to 5 feet.

New York, MITCHILL, DEKAY. Lake Huron, RICHARDSON.

Called "Bony Pike," "Alligator," and "Alligator Gar," at Buffalo; also called "Buffalo-fish."

- Green Gar-fish, CATESBY'S Hist. Carol., II. p. 30, pl. 30.
Esox ossens, LIN., Syst. Nat., p. 516.
 " " BLOCH, 300.
 " " Bony-scaled Pike, SHAW'S Gen. Zool., v. p. 115.
 " " " " MITCHELL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 411.
 " " " " " Amer. Month. Mag., II. p. 321.
 ✓ *Lepisosteus oxyurus*, Ohio Gar-fish, RAF., Ichth. Ohien., p. 73.
 " " Common Gar, KIRTLAND'S Report, pp. 170, 196.
Lepisosteus Huronensis, Northern Mailed-fish, RICH., Fauna Boreal. Americ., III. p. 237.
Lepisosteus rostratus (Cuv.), RICH., Fauna Boreal. Americ., III. p. 238.
Lepisosteus oxyurus, Ohio Gar-fish, KIRTLAND, Bost. Journ. Nat. Hist., IV. p. 16, pl. 1, fig. 1.
 " " Common Bill-fish, THOMPSON'S Hist. of Vermont, p. 145.
 ✓ *Lepisosteus bison*, Buffalo Bony-Pike, DEKAY'S Report, p. 271, pl. 43, fig. 153.
Lepisosteus longirostris (Cuv.), RICH., Fauna Boreal. Americ., III. p. 237; DEKAY'S Report, p. 274.

Mr. Thompson describes and figures a species in his "History of Vermont," p. 145, under the name of *L. lineatus*, which he thinks may be the young of the above species; he is undoubtedly correct in this latter opinion.

Cylindrosteus

2. *Lepisosteus platostomus*, RAF.

Body cylindrical, flattened above. Head flattened above. Jaws hard, elongated; upper jaw about as long as the head; jaws furnished with numerous sharp, prominent teeth. Head and back dusky and umber; sides yellowish; abdomen white; iris golden yellow. Dorsal, caudal, and anal fins, maculate. A series of obscure circular spots on the medial line behind anal fin.

D. 8. P. 10. V. 6. A. 9. C. 12. Length, 26 inches.

Ohio, RAF., KIRTLAND. Florida, DEKAY.

- Lepisosteus platostomus*, Duck-bill Gar-fish, RAF., Ichth. Ohien., p. 72.
 " " " " KIRTLAND'S Report, pp. 170, 196.
 " " " " KIRTLAND, Bost. Journ. Nat. Hist., IV. p. 20, pl. 1, fig. 3
 — *Lepisosteus platyrhincus*, Flat-nosed Bony-Pike, DEKAY'S Report, p. 273, pl. 43, fig. 137.

DeKay's description of this species, having been drawn up from a preserved specimen, touches but slightly upon its colors; but in other respects it resembles Rafinesque's species so much, that I cannot doubt their identity!

attractans

3. *Lepisosteus ferox*, RAF.

Body fusiform, cylindrical, and flattened on the back. Head broad and flat above, and one fourth the whole length of the fish. Jaws nearly equal, not half the length of the head, and armed with numerous strong, prominent teeth. Scales imbricate, and sculptured on their external surface. In the prepared specimen, of a yellowish-brown color.

D. 8. P. 15. V. 6. A. 8 or 9. C. 11. Length, 4 to 6 feet.

Ohio River, KIRTLAND. Mississippi River, RAF.

- Lepisosteus ferox*, Alligator Gar-fish, RAF., Ichth. Ohien., p. 75.
 " " " " KIRTLAND'S Report, pp. 170, 196.
 " " " " KIRTLAND, Bost. Journ. Nat. Hist., IV. p. 13, pl. 1, fig. 2

JUGULARES.

Ventrals attached under the pectorals, and the pelvis immediately suspended to the bones of the shoulder.

Mitch. on Cod fishes of N. Y.
Med. & Phil. Register. IV, April 1844, p. 6

FAMILY XXIII. GADIDÆ.

Body elongated, but little compressed, covered with soft scales not very voluminous; their head well proportioned and without scales; all their fins soft; their jaws and the front of the vomer are armed with pointed, irregular teeth, middling, or small sized, in several rows, forming a sort of currycomb or rasp; their gills are large, with seven rays. Ventrals separate, jugular. Almost all have two or three fins on the back, one or two behind the anus, and a distinct caudal. Their stomach is in the form of a large and strong sac; their cœca are very numerous, and their caudal tolerably long. They have a large air-bladder, with strong parietes, and frequently dentated in the sides.

Gadus morrhua
Callarias
arenosus
upestrius
longicauda
æglefinus
biemaculatus
prunus
purpuraceus
mellicecus
lenis
longipes
parietatus

GENUS I. MORRHUA, Cuv.

Three dorsal fins; two anal; ventrals pointed; a barbel at the end of the lower jaw.

1. *Morrhua Americana*, STORER.

Body largest and deepest anterior to the dorsal fin. Color very variable; generally, back ash-colored; sides lighter; both back and sides covered with yellowish spots, larger and more distinct upon the sides. Beneath dusky white. Lateral line lighter-colored than the body throughout its whole extent. The second dorsal and first anal with twenty-two rays.

D 15, 22, 19. P. 19. V. 6. A. 22, 19. C 40. Length, 1 to 3 feet.

Maine, Massachusetts, STORER. Connecticut, LINSLEY. New York, MITCHILL, DEKAY.

Gadus callarias, Common Cod of New York. MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., 1. p. 367.
Morrhua Americana, American Cod, STORER's Report, p. 120.
 " " " " DEKAY's Report, p. 274, pl. 44, fig. 140.

2. *Morrhua æglefinus*, LIN.

Body robust, large in front, tapering behind. Above the lateral line, of a dark gray color; beneath this line, a beautiful silvery-gray, with a large, dusky, more or less circular patch on each side, on a line with the middle of the pectorals, its upper portion generally extending above the lateral line, its larger portion usually beneath it. Lateral line of a jet black color. First dorsal elevated; caudal emarginated.

D. 16, 24, 20. P. 21. V. 6. A. 26, 21. C. 35. Length, 1 to 2 feet.

Maine, Massachusetts, STORER. Connecticut, LINSLEY. New York, MITCHILL, DEKAY.

- Gadus aeglefinus*, LIN., Syst. Nat. (12th edit.), p. 435.
 " " HADDOCK, BLOCH, II. p. 125, pl. 62.
 " " " SHAW'S Gen. Zoöl., IV. p. 136.
 " " " PENNANT'S Brit. Zoöl., III. p. 241.
 " " " JENYNS'S Brit. Vert., p. 411.
 " " " MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 370.
Morrhua aeglefinus, HADDOCK, GRIFFITH'S CUV., X. p. 484.
 " " " YARRELL'S Brit. Fishes (1st edit.), II. p. 153, fig.; (2d edit.), II. p. 233 fig.
 " " " STORER'S Report, p. 124.
 " " " DEKAY'S Report, p. 279, pl. 43, fig. 138.

3. *Morrhua pruinosa*, MITCHILL.

Body oblong, fusiform; head small and flattened above; abdomen prominent. The color varies exceedingly; generally, it is brown, greenish, or yellowish brown, with deeper patches, spots, and blotches; beneath lighter. The first two rays of the ventrals free at their extremities, the second ray filamentous.

D. 13, 18, 19. P. 17. V. 6. A. 22, 18. C. 39. Length, 4 to 12 inches.

Maine, Massachusetts, STORER. Connecticut, LINSLEY, AYRES. New York, MITCHILL, DEKAY.

- Frost Cod, and Frost-fish, PENNANT'S Arct. Zoöl., Supplement, p. 114.
Gadus pruinosis, Tom Cod or Frost-fish, MITCHILL'S Report in part, p. 4.
Gadus tomcodus, Tom Cod, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 368.
Morrhua tomcodus, Tom Cod, STORER'S Report, p. 126.
Morrhua pruinosa, Tom Cod, DEKAY'S Report, p. 278, pl. 44, fig. 142.
 " " " AYRES, Bost. Jour. Nat. Hist., IV. p. 276.

4. *Morrhua vulgaris*, LIN.

Body oval, elongated, thickest behind the pectorals; somewhat tapering posteriorly. Back, head, and upper half of the sides, cinnamon-brown, obscurely spotted with yellow; lower half of the sides and abdomen white; lateral line forming a narrow white band; fins dusky; ventrals pale, approaching to white. Jaws nearly equal.

D. 12, 20, 19. P. 19. V. 6. A. 19, 17. C. 34, and several short ones. JENYNS. Length, 2 to 4 feet.

D. 10, 20, 18. P. 20. V. 6. A. 20, 16. C. 26. YARRELL. Length, 2 to 4 feet.

Greenland, FABRICIUS. Grand Bank, off Newfoundland.

Called "Saraudlirksoak," or "Ekalluarksoak," by the Greenlanders.

- Gadus morrhua*, LIN., Syst. Nat., I. p. 436.
 " " CODFISH, BLOCH, II. p. 131, pl. 64.
 " " FABRICIUS, Fauna Greenlandica, p. 146.
 " " Common Cod, SHAW'S Gen. Zoöl., IV. p. 131.
 " " Bank Cod, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 367.
 " " Common Cod, JENYNS'S Brit. Vert., p. 440.
Morrhua vulgaris, Cod, GRIFFITH'S CUV., X. p. 433.
 " " Common Cod, YARRELL'S Brit. Fishes (2d edit.), II. p. 221.
 " " Bank Cod, DEKAY'S Report, p. 289.
Gadus morrhua, CAPT. J. C. ROSS, Append., p. 48.
 " " Common Codfish, RICH., Fauna Boreal. Americ., III. p. 242.

5. *Morrhua minuta*, LIN.

Body cylindrical, fusiform. Depth one fifth of the length. First dorsal entirely before the first anal. Reddish yellow above; abdomen of a dirty white, or rather a yellowish white. covered with innumerable minute black points. Upper jaw the longer.

D. 13, 24, 20. P. 18. V. 6. A. 28, 24. C. (?). JENYNS.

D. 12, 19, 17. P. 14. V. 6. A. 25, 17. C. 18. YARRELL.

D. 12, 19, 17. P. 17. V. 6. A. 22, 17. C. 20. STORER. Length, 6 to 8 inches.

Massachusetts, STORER.

Gadus minutus, LIN., Syst. Nat., I. p. 435.

" " Poor, BLOCH, II. p. 113, pl. 67, fig. 1.

" " " JENYNS'S Brit. Vert., p. 441.

" " " SHAW'S Gen. Zool., IV. p. 141.

Morrhua minuta, Poor or Power Cod, YARRELL'S Brit. Fishes (2d edit.), II. p. 211, and plate.

" " " " STORER'S Report, p. 127.

" " " Power Cod, DEKAY'S Report, p. 277, pl. 44, fig. 141.

6. *Morrhua callarias*, LIN.

Body elongated, subventricose; head, back, and sides more or less spotted; lateral line white, bent; tail square; upper jaw much the longer; snout prominent, sharp; under jaw only half as long as the head, and ending on a line half way between the nose and the eye.

D. 15, 18, 20. P. 20. V. 6. A. 19, 18. C. 24. Length, 12 to 24 inches.

Greenland, FABRICIUS.

Gadus callarias, LIN., Syst. Nat., p. 436.

" " BLOCH, II. pl. 63.

" " FABRICIUS, Fauna Groenlandica, p. 144.

" " DORSE, SHAW'S Gen. Zool., IV. p. 138.

" " Variable Codfish, PENNANT'S Brit. Zool., III. p. 239.

" " DORSE, RICH., Fauna Boreal. Americ., III. p. 244.

Morrhua callarias, GRIFFITH'S CUV., X. p. 481.

" " " DORSE, or Variable Cod, YARRELL'S Brit. Fishes (2d edit.), II. p. 231, fig.

7. *Morrhua Fabricii*, RICH.

The color of the back is a soiled or livid white, the sides are minutely spotted with black. and the under parts are pure white. There is a short barbel under the chin.

D. 13, 15, 23. P. 19. V. 6. A. 17, 20. C. 32. Length, 14 inches.

Greenland, FABRICIUS.

Gadus æglefinus, FABRICIUS, Fauna Groenlandica, p. 142.

Gadus Fabricii, MEESARKORNAK, RICH., Fauna Boreal. Americ., III. p. 245.

8. *Morrhua ogac*, RICH.

Larger than the *Morrhua lusca*, the Whiting-pout of the British seas; no black spot at the base of the pectorals.

D. 15, 19, 16. P. 18. V. 6. A. 22, 17. C. 32. Length, 18 inches.

Greenland, FABRICIUS.

Called "Ogak," or "Owak" (the young, "Ogarak" or "Awarak," pl. "Ogarkaet" or "Owarkaet"), by the Greenlanders.

Gadus barbatus, FABRICIUS, Fauna Groenlandica, p. 146.
Gadus ogac, Ogak, RICH., Fauna Boreal. Americ., III. p. 246.

GENUS II. MERLUCIUS, CUV.

The head flattened; the body elongated; the back furnished with two dorsal fins, the first short, the second long; but one anal fin, also very long; no barbels at the chin.

1. *Merlucius albidus*, MITCHILL.

Body elongated, somewhat compressed in front of the anus, rounded posteriorly. The top of the head and upper part of the body of a reddish-brown color when the fish is first taken, which afterwards becomes of a dull lead-color. Lower parts of the sides and abdomen white, with metallic reflections. Preopercular, maxillary, and intermaxillary bones of a beautiful, shining silver-color. Lower jaw the longer. Prominent teeth on palatine bones. A deep emargination in second dorsal fin, causing it to appear like two fins.

D. 11, 18, 20. P. 15. V. 7. A. 21, 19. C. 34. MITCHILL.

D. 11, 39. P. 16. V. 7. A. 40. C. 17 $\frac{5}{8}$. DEKAY.

In two species I have before me, the fin rays are as follows:

D. 13, 41. P. 13. V. 7. A. 40. C. 23.

D. 13, 28. P. 13. V. 7. A. 40. C. 30. Length, from 18 to 24 inches.

Massachusetts, STORER. Connecticut, LINSLEY, AYRES. New York, MITCHILL, DEKAY.

Gadus albidus, New York Whiting, MITCHILL, Journ. Acad. Nat. Sc., I. p. 469.
Gadus merlucius, Hake, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 371.
Merlucius vulgaris, Hake, STORER'S Report, 132.
 " " AYRES, Bost. Journ. Nat. Hist., IV. p. 276.
Merlucius albidus, American Hake, DEKAY'S Report, p. 280, pl. 46, fig. 148.

GENUS III. LOTA, CUV.

Body elongated. Two dorsal fins. A single anal fin. One or more barbels on the chin.

1. *Lota maculosa*, LESUEUR.

Body oblong, compressed. Ground-color of the body reddish, marbled with brown, with roundish white spots scattered throughout. Dorsal, anal, and caudal fins also spotted. The first dorsal subtriangular.

D. 10 or 12, 70 or 74. P. 16 or 18. V. (?). A. 70. C. 44 to 50. Length, 18 to 28 inches.

Every lake and river from Canada to the northern extremity of the continent, RICHARD-

SON. Several of the small lakes in the Western District of New York, DEKAY. Lake Erie, LESUEUR.

- Gadus lota*, PENNANT'S Arct. Zool., Introd., p. 191.
 " " RICH., Franklin's Journal, p. 724.
Gadus lacustris, Codfish of the Lakes, MITCHELL, Amer. Month. Mag., II. p. 244.
Gadus maculosus, Eel-pout, Dog-fish, LESUEUR, Journ. Acad. Nat. Sc., I. p. 83.
 Le Molve tacheté (*Molva maculosa*), LESUEUR, Mémoires du Muséum, v. p. 159, pl. 16.
Lota maculosa, GRIFFITH'S CUV., x. p. 487.
Gadus (Lota) maculosus (Cuv.), Methy. RICH., Fauna Boreal. Americ., III. p. 248.
Lota maculosa, Eel-pout, KIRTLAND'S Report, pp. 170, 196.
 " " " KIRTLAND, Bost. Journ. Nat. Hist., IV. p. 24, pl. 3, fig. 1.
 " " Ling or Methy, THOMPSON'S Hist. of Vermont, p. 146.
 " " Spotted Burbot, DEKAY'S Report, p. 284, pl. 52, fig. 163.

NOTE. Kirtland, in his observations upon this species, in the "Boston Journal of Natural History," remarks that Lesueur is incorrect in giving this species the common name of *Dog-fish*; that term is exclusively applied to the *Amia calva*.

2. *Lota compressa*, LESUEUR.

Body, in front of the first dorsal, cylindrical; at extremities of pectorals, begins to be compressed; much compressed at posterior portion. Yellowish brown, variegated with darker brown spots; abdomen white. Upon the lower portion of the second dorsal, a row of dark-colored spots. Dorsal, anal, and caudal united together.

D. (?). P. (?) V. (?). A. (?). C. (?) Length, 6 to 8 inches.

New Hampshire, STORER. Massachusetts, LESUEUR. Connecticut, LINSLEY.

- Gadus compressus*, LESUEUR, Journ. Acad. Nat. Sc., I. p. 84.
 Le Molve Hunt (*Molva huntia*), LESUEUR, Mémoires du Muséum, v. p. 161.
Lota compressa, Eel-pout, STORER'S Report, p. 134.
 " " " THOMPSON'S Hist. of Vermont, p. 147.
 " " Compressed Burbot, DEKAY'S Report, p. 285, pl. 78, figs. 244, 245.

3. *Lota brosmiana*, STORER.

Body broad in front of the dorsal; compressed upon the sides, back of first dorsal, tapering to tail. Yellowish in the recent fish, with a reddish tint upon the back, between the back of the head and the origin of the dorsal. The top of the head and opercula fuliginous, the latter with golden reflections. The second ray of the ventrals is as long again as the first, and these two rays are disconnected from each other posteriorly, leaving the first free. Dorsals of nearly equal height.

D. 10, 71. P. 16. V. 6. A. 68. C. 34. STORER. Length, 27 to 29 inches.

D. 9, 71. P. 19. V. 7. A. 63. C. 45. DEKAY.

New Hampshire, STORER. New York, DEKAY.

- Lota brosmiana*, STORER, Bost. Journ. Nat. Hist., IV. p. 53, pl. 5, fig. 1 (1839).
Lota inornata, Plain Burbot, DEKAY'S Report, p. 283, pl. 45, fig. 145 (1842).

Notwithstanding the difference in the radial formula of the caudal fin in Dekay's fish and mine, I cannot but believe they are identical. Dekay's specimen being a preserved one, the color had faded.

GENUS IV. MERLANGUS, Cuv.

Three dorsal and two anal fins. No barbels to the chin.

1. *Merlangus carbonarius*, LIN.

Body fusiform, cylindrical. All the upper part of the body and head black; beneath the lateral line, of a bluish white; abdomen lighter than the sides. Lateral line of a beautiful silvery-white color. The lower jaw the longer. Scales on the top of the head very small.

D. 13, 20, 20. P. 19. V. 6. A. 24, 21. C. 32. STORER.

D. 13, 19, 19. P. 18. V. 6. A. 24, 19. C. 22 $\frac{3}{4}$. DEKAY. Length, 1 to 3 feet.

Davis's Straits, SABINE. Massachusetts, STORER. New York, DEKAY.

Called "Pollack," and "Black Pollack," in New York and Massachusetts.

Gadus carbonarius, LIN., Syst. Nat., p. 438.

" " Coal-fish, BLOCH, II. p. 146, pl. 66.

" " " PENNANT'S Brit. Zool., III. p. 250.

" " " SHAW'S Gen. Zool., IV. p. 145.

Merlangus carbonarius, Coal-fish, GRIFFITH'S Cuv., X. p. 455.

" " " JENYNS'S Brit. Vert., p. 416.

" " " YARRELL'S Brit. Fishes (2d edit.), II. p. 250 and fig.

Gadus (Merlangus) carbonarius, Coal-fish, RICH., Fauna Boreal. Americ., III. p. 247.

Merlangus carbonarius, Coal-fish, STORER'S Report, p. 129.

" " " DEKAY'S Report, p. 237, pl. 45, fig. 144.

2. *Merlangus purpureus*, MITCHILL.

Body oblong, cylindrical, subcompressed. Upper part of head and body greenish-brown color; sides lighter; abdomen white. Lateral line grayish. Caudal deeply concave.

D. 14, 19 or 22, 18 or 21. P. 16 or 20. V. 6. A. 22 or 24, 16 or 21. C. 36 or 40.

STORER.

D. 13, 21, 21. P. 20. V. 6. A. 25, 20. C. 24 $\frac{3}{4}$. DEKAY. Length, 1 to 3 feet.

Massachusetts, STORER. Connecticut, LINSLEY. New York, MITCHILL, DEKAY.

Gadus purpureus, New York Pollack, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 370.

Merlangus purpureus, Pollack, STORER'S Report, p. 130.

" " New York Pollack, DEKAY'S Report, p. 256, pl. 45, fig. 147.

3. *Merlangus polaris*, SABINE.

Distinguished from the *Gadus virens* of the European seas by the third dorsal being larger than the two anterior ones; the lower jaw rather exceeds the upper one; tail slightly forked.

D. 14, 16, 19. P. 18. V. 6. A. 17, 22. C. 42. SABINE. Length, 10 inches.

D. 13, 15, 20. P. 18. V. 6. A. 17, 21. C. 42 to 48. ROSS. " "

Baffin's Bay, SABINE.

Merlangus polaris, SABINE, PARRY'S First Voyage.

" " ROSS, Append. PARRY'S Third Voyage, p. 110.

" " PARRY'S Polar Voyage, p. 199.

Gadus (Merlangus) polaris, Polar Coal-fish, RICH., Fauna Boreal. Americ., III. p. 247.

4. *Merlangus leptocephalus*, DEKAY.

Body compressed, subcylindric. Deep green above the lateral line; silvery-white beneath, and minutely punctate with black. Lower jaw the shorter.

D. 12, 19, 19. P. 18. V. 6. A. 27, 20. C. 22½. Length, 12 to 18 inches.

New York, DEKAY.

Merlangus leptocephalus, Green Pollack, DEKAY'S Report, p. 288, pl. 45, fig. 146.

GENUS V. *BROSMIUS*, CUV.

Body elongated; a single dorsal fin extending the whole length of the back; one barbel at the chin; ventral fins fleshy.

1. *Brosmius flavescens*, LESUEUR.

Body cylindrical, compressed posterior to the anus. In the larger specimens the back is brownish, the sides yellowish and sometimes a decided yellow; occasionally, in very large specimens, the color is whitish, with brownish patches, looking as if the skin was abraded; the immature fish is of a uniform dark-slate color, or with transverse yellow bands. Dorsal, caudal, and anal bordered with bluish black, with a white margin. Dorsal and anal fins continued to and united with the base of the tail.

D. 96 or 98. P. 23, 24, or 25. V. 5. A. 71 or 73. C. 34 or 35. Length, 2 to 3 feet.

Massachusetts, LESUEUR, STORER.

Le Brosme jaune, *Brosmius flavescens*, LESUEUR, Mémoires du Muséum, v. p. 158, pl. 16.

Gadus (*Brosmius*) *flavescens* (?), LESUEUR, Yellow Tusk, RICH., Fauna Boreal. Americ., III. p. 252.

Brosmius vulgaris (CUV.), CUSK, STORER'S Report, p. 136.

" " (?), CUSK, DEKAY'S Report, p. 289.

GENUS VI. *PHYCIS*, ARTEDI.

Body elongated. Two dorsal fins, first short, second long; ventral fins with a single ray only at the base, afterward divided. Chin with one barbel.

1. *Phycis Americanus*, SCHNEIDER.

Body cylindrical; sides compressed. Grayish brown above, lighter beneath. The third ray of the first dorsal is filamentous, and considerably higher than the length of the fin. Ventrals composed of two rays, which, previous to dissection, appear as one; these fins extend to or beyond the vent.

D. 10, 54. P. 17. V. 2. A. 48. C. 20 or 21. Length, 1 to 3 feet.

Massachusetts, STORER. Connecticut, LINSLEY. New York, MITCHILL, DEKAY.

Called "Hake," by the fishermen of Massachusetts; "Codling," by those of New York.

- Enchelyopus Americanus* (SCHNEIDER), GRIFFITH'S CUV., x. p. 489.
Gadus longipes, Codling, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 372, pl. 1, fig. 4.
Phycis furcatus, STORER, Bost. Journ. Nat. Hist., I. p. 418.
Phycis Americanus, American Hake, STORER'S Report, p. 138.
 " " American Codling, DEKAY'S Report, p. 291, pl. 46, fig. 150.

2. *Phycis punctatus*, MITCHILL.

Body cylindrical, subfusiform. Back and sides brown, or whitish with lines between the scales. Lateral line alternately black and white. A black spot on the first dorsal; caudal emarginate.

D. 9 or 10, 47. P. 13. V. 1. A. 47. C. 23. Length, 10 inches.

Nova Scotia, HAMILTON SMITH. New York, MITCHILL, DEKAY.

- Gadus punctatus*, Spotted Cod, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 372, pl. 1, fig. 5.
Gadus (Phycis) punctatus, Spotted Phycis, RICH., Fauna Boreal. Americ., III. p. 253, and fig.
Phycis punctatus, Spotted Codling, DEKAY'S Report, p. 292, pl. 46, fig. 149.

3. *Phycis tenuis*, MITCHILL.

Back and sides brown, lighter above. Fins dark brown, excepting ventrals, which are whitish. Throat internally streaked with red and purple. Convex tail.

D. 11, 54. P. 16. V. 2. A. 44. C. 25. Length, 15 inches.

New York, MITCHILL, DEKAY.

- Gadus tenuis*, Slender Cod, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 371.
Phycis tenuis, Slender Cod, DEKAY'S Report, p. 293.

GENUS VII. MACROURUS, BLOCH.

The entire head and whole body furnished with hard scales, bristling with small spines. Their suborbitals unite together in front, and with the nasal bones, to form a depressed muzzle, which advances beyond the mouth, and under which the latter preserves its mobility. Ventrals small and a little jugular; pectorals moderate. The first dorsal short and elevated; the second dorsal and the anal are both very long, and unite in a point at the caudal; the jaws have only very fine and very short teeth.

1. *Macrourus rupestris*, BLOCH.

Body oblong, thick anteriorly, slender posteriorly. Head large. Eyes large and prominent. Scales silvery, hard, and armed on the head and forepart of the body with several longitudinal serrated ridges, on the posterior parts with only one ridge. Lateral line near the back.

D. 11, 112. P. 18. V. 8. A. 112. C. (?). FABRICIUS.

D. 1-11, 124. P. 19. V. 7. A. 148. C. 272. SCHNEIDER.

Greenland, FABRICIUS.

Called "Ingmingoak," by the Greenlanders.

Coryphæna rupestris, FABRICIUS, *Fauna Groenlandica*, p. 154.

Macrourus rupestris (SCHNEIDER), BLOCH, XXVI. p. 103.

" " Rock Grenadier, RICH., *Fauna Boreal. Americ.*, III. p. 254.

FAMILY XXIV. PLANIDÆ.

Body flat, compressed vertically. Upper surface dusky, and of various colors; beneath white. Dorsal single, extending the whole length of the back. Both eyes placed on the same side of the head. No air-bladder. Branchial rays six.

GENUS I. HIPPOGLOSSUS, CUV.

Both eyes and the color on the right side, and the fins are similar to those of the species of the following genus; the jaws and the pharynx are armed with teeth that are sharper and stronger, and the form of the body is more elongated.

1. *Hippoglossus vulgaris*, CUV.

Body oblong, very large, smooth. Of a dark-brown color on the right side, left side white. Lateral line arched above the pectorals.

D. 99. P. 17. V. 6. A. 73. C. 18. Length, from 3 to 6 feet.

Greenland, FABRICIUS. Maine and Massachusetts, STORER. Connecticut, LINSLEY. New York, MITCHILL, DEKAY.

Pleuronectes Hippoglossus, LIN., *Syst. Nat.*, p. 456.

" " Holybut, BLOCH, II. p. 44, pl. 47.

" " FABRICIUS, *Fauna Groenlandica*, p. 161.

" " Holibut, SHAW'S *Gen. Zool.*, IV. p. 295.

" " " PENNANT'S *Brit. Zool.*, III. p. 302.

" " Halibut, MITCHILL, *Trans. Lit. and Phil. Soc. of N. Y.*, I. p. 386.

Hippoglossus vulgaris, Holibut, JENYNS'S *Brit. Vert.*, p. 460.

" " GRIFFITH'S *CUV.*, X. p. 494.

" " Holibut, YARRELL'S *Brit. Fishes* (1st edit.), II. p. 230; (2d edit.), II. p. 321.

" " Halibut, STORER'S *Report*, p. 145.

" " " DEKAY'S *Report*, p. 294, pl. 49, fig. 157.

GENUS II. PLATESSA, CUV.

Body rhomboidal, depressed; both eyes generally on the right side of the head, one above the other; a row of teeth in each jaw, with others on the pharyngeal bones; dorsal fin commencing over the upper eye, that fin

and the anal extending nearly the whole length of the body; but neither of them joined to the tail; branchiostegous rays six.

Eyes on the Right Side of the Head.

1. *Platessa plana*, MITCHILL.

Form elliptical. The smaller and middling-sized specimens, when first taken from the water, are of a greenish-brown tinge, more or less spotted and blotched with rusty brown. The larger individuals are of a general rusty-brownish color, or a dark blackish-brown, or a dull slate-color, scarcely exhibiting any spots. White on left side. A spine at anus, nearly concealed. Lateral line makes a very slight curve only over the pectorals. The half of the jaw next to the colored portion, edentate. The fin rays vary somewhat.

D. 62. P. 9. V. 6. A. 46. C. 17. MITCHILL.

D. 65. P. 10. V. 6. A. 48. C. 17. STORER.

D. 61. P. 10. V. 6. A. 46. C. 17. “

D. 67. P. 10. V. 6. A. 46. C. 17 $\frac{2}{3}$. DEKAY.

Massachusetts, STORER. Connecticut, LINSLEY, AYRES. New York, MITCHILL, DEKAY.

Pleuronectes planus, New York Flat-fish, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., i. p. 387.

Platessa plana, Flounder of Massachusetts, STORER'S Report, p. 140.

“ “ New York Flat-fish, DEKAY'S Report, p. 295, pl. 48, fig. 154, and pl. 49, fig. 153.

“ “ AYRES, Bost. Journ. Nat. Hist., iv. p. 276.

2. *Platessa dentata*, MITCHILL.

Body elliptical. All the right side of the body and the fins of a uniform reddish-brown color. Mouth very large. The lower jaw has a blunt spine at the chin. Jaws furnished with a single row of prominent, sharp teeth, separated from each other.

D. 91. P. 11. V. 6. A. 70. C. 18. Length, 2 inches.

Massachusetts, STORER. New York, DEKAY, STORER.

Pleuronectes dentatus, Flounder of New York, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., i. p. 390.

Platessa dentata, Flounder of New York, STORER'S Report, p. 143.

“ “ “ “ “ DEKAY'S Report, p. 298.

3. *Platessa ferruginea*, STORER.

Body elliptical. Of a reddish slate-color, with a tinge of green, covered with numerous large, irregularly-formed ferruginous spots. The left side a clear white, except the posterior portion in front of the caudal fin, the caudal fin, and the margin of the dorsal and anal, which are of a lemon-yellow. Mouth small, lips tumid. Lateral line curves over the pectorals. Teeth in the jaws very small.

D. 84. P. 10. V. 6. A. 65. C. 16. STORER. Length, 12 to 20 inches.

D. 81. P. 10. V. 6. A. 59. C. 14 $\frac{2}{3}$. DEKAY.

Massachusetts, STORER. New York, DEKAY.

Platessa ferruginea, Rusty Dab, STORER's Report, p. 141.
" " Rusty Flat-fish, DEKAY's Report, p. 297.

4. *Platessa pusilla*, DEKAY.

Body more elongated than that of the *P. plana*. Nearly uniform olive-brown, with indistinct darker blotches towards the dorsal and anal fins. No anal spine. Jaws armed with minute conic teeth. Lateral line but very slightly curved over pectorals.

D. 67-69. P. 11. V. 6. A. 50. C. 15 $\frac{3}{4}$. Length, 5 inches.

New York, DEKAY.

Platessa pusilla, Pigmy Flat-fish, DEKAY's Report, p. 296, pl. 47, fig. 153.

5. *Platessa glabra*, STORER.

Body elliptical, perfectly smooth. Above grayish, mottled with dark brown. Dorsal, anal, and caudal fins, reddish yellow, with well marked, nearly black spots, more or less oval, differing in their size. A smooth ridge between the eyes. Lateral line scarcely deviates from the straight course over the pectorals. Teeth cylindrical, slightly conical at their points. Numerous blunt teeth upon the hyoid bone. The extremities of the ventrals do not reach the anal fin.

D. 54-62. P. 9. V. 6. A. 39-41. C. 16. Length, 8 inches.

Massachusetts, STORER.

Platessa glabra, STORER, Proceed. Bost. Soc. Nat. Hist., I. p. 131.

Eyes on the Left Side.

6. *Platessa oblonga*, MITCHILL.

Body oblong, smooth. Of a reddish-gray color, with more or less numerous circular, oval, or oblong blotches of a darker color, surrounded with a lighter margin, and also numerous white spots, which are distributed more copiously at the bases of and upon the fins. Right side white, without spots. A prominence at chin. Jaws with a single row of separated, quite large, sharp teeth; the front ones much the largest. The external and central rays of caudal longest; when unexpanded, the caudal appears roundish.

D. 73. P. 11. V. 6. A. 59. C. 17. MITCHILL.

D. 89. P. 12. V. 6. A. 68. C. 16. STORER. Length, 15 to 30 inches.

D. 89. P. 12. V. 6. A. 74. C. 16. "

D. 88. P. 12. V. 6. A. 66. C. 17. DEKAY.

D. 95. P. 12. V. 6. A. 72. C. 16 $\frac{3}{4}$. "

Massachusetts, STORER. New York, MITCHILL, DEKAY.

- Pleuronectes oblongus, Spotted Flounder, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., 1. p. 391.
 Rhombus aquosus, Watery Flounder, STORER, Bost. Journ. Nat. Hist., 1. p. 351.
 " " " " STORER'S Report, p. 146.
 Platessa oblonga, Oblong Flounder, DEKAY'S Report, p. 299, pl. 48, fig. 156.
 Platessa ocellaris, Long-toothed Flounder, DEKAY'S Report, p. 300, pl. 47, fig. 152.

I cannot but believe the species described and figured in Dekay's Report as the *P. oblonga* and *P. ocellaris* are identical. The following are Dekay's characteristics of the *P. oblonga*:—"Oblong, smooth. Nearly uniform brown; occasionally with spots. Caudal fin angulated. Length, fifteen to twenty inches." While the *P. ocellaris* is thus described:—"Dorsal fin with more than ninety rays. Chin prominent. Teeth long. Upper surface with ocellated and other spots. Tail rounded. Length, twelve to eighteen inches."

A specimen lies before me, while writing this, with ocellated spots upon its surface, an angulated caudal fin, a prominence at the chin, and less than ninety dorsal rays.

The ocellated spots upon its surface and prominent chin would mark it as the *P. ocellaris* of Dekay; but that species, according to Dekay, has a "rounded tail," and a "dorsal with more than ninety rays."

The angulated caudal fin and number of dorsal rays (less than ninety) would point it out as the *P. oblonga* of Mitchill. But Dr. Dekay would lead us to infer that it is without *ocelli*. He says this species is "nearly uniform brown, occasionally with spots."

I have, during the last season (1844), seen a large number of this species in the market at the same time, and they presented the following characteristics. *Some had distinct ocelli distributed over the greater portion of the body, while in others they were so dim as scarcely to be seen. They all had the chin prominent.* It will be observed, by examining the descriptions of the *P. oblonga* and *P. ocellaris*, by Dekay, he says of the former, "lower jaw prominent"; this is shown in his figure, but omitted in his *characteristics*! Of the latter species, he remarks, "*chin prominent*"; this character does not appear in the figure. *They all have an angular tail when unexpanded*, which is more rounded when fully expanded. I have counted eighty-eight, eighty-nine, ninety, and ninety-one rays in the first dorsal fin.

I cannot, with these facts before me, consider the two species as distinct from each other.

7. *Platessa stellata*, PALLAS.

Profile of the body broadly elliptical, terminated by a strap-shaped tail and a caudal fin scoloped between the rays. The dorsal and anal fins of the same form, and terminate opposite; these two fins conjointly give a rhomboidal outline to the fish. Color of the upper side liver-brown, without spots; of the under side white, tinged with red towards the tail. Fins reddish, with broad, vertical black stripes. Both sides of the body studded with stellated, bony tubercles. Under jaw the longer.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 1 foot.

Arctic Sea, RICHARDSON.

- Pleuronectes (*Platessa*) stellatus, Stellated Flounder, PALLAS, RICH., Fauna Boreal. Americ., III. p. 257.
Platessa stellata, DEKAY'S Report, p. 301.

GENUS III. PLEURONECTES, DEKAY. (RHOMBUS, CUV.)

With the jaws and pharynx of *Hippoglossus*, they have some close or even teeth, or pectiniform; but their dorsal advances towards the edge of the upper jaw, and extends, as well as the anal, very nearly to the caudal. The majority have the eyes to the left.

1. *Pleuronectes argus*, BLOCH.

Oblong. Of a pale brown color, with scattered blue, half-ocellate spots. Tail lunate.

D. 85. P. 16. V. 6. A. 79. C. 17. Length, 10 inches.

Precise locality not mentioned by CATESBY.

Pleuronectes argus, BLOCH, 48.

" " LIN., Syst. Nat., GMEL., p. 1239.

Solea lunata et punctata, Sole, CATESBY'S Hist. Carol., II. p. 27.

Pleuronectes argus, Argus Flounder, SHAW'S Gen. Zool., IV. pp. 319, 320, fig. 45.

Pleuronectes argus et lunulatus, TERTON'S LINNÆUS, I. pp. 767, 768.

Rhombus argus, GRIFFITH'S CUV., X. p. 497.

2. *Pleuronectes maculatus*, MITCHILL.

Orbicular. Body and fins pellucid, with numerous black spots. The anterior rays of the dorsal with membranous slips. Chin with a slight protuberance. Lateral line arched above the pectorals.

D. 68. P. 12. V. 6. A. 56. C. 15½. Length, 12 to 18 inches.

Massachusetts, STORER. New York, MITCHILL, DEKAY.

Pleuronectes maculatus, New York Plaice, MITCHILL, Report in part, p. 9.

Pleuronectes aquosus, Plaice of New York, MITCHILL, Trans. Lit. and Phil. Soc. of New York, I. p. 389. pl. 2, fig. 3.

Pleuronectes maculatus, Spotted Turbot, DEKAY'S Report, p. 301, pl. 47, fig. 151.

3. *Pleuronectes glacialis*, PALLAS.

Ovate. Color a mixture of yellowish-gray and dull greenish-gray, somewhat clouded, but without defined spots; belly bluish white; caudal fin irregularly spotted with red. Caudal cuneiform, entire. Scales small, rough on left side of the body. Lateral line straight.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, (?).

Arctic Sea, RICHARDSON.

Pleuronectes (Rhombus) glacialis (PALLAS), Arctic Turbot, RICH., Fauna Boreal. Americ., III. p. 258.

Pleuronectes glacialis, DEKAY'S Report, p. 302.

GENUS IV. ACHIRUS, LACEPEDE.

Destitute of pectoral fins. Both eyes and color on the right side. Mouth distorted to the side opposite the eyes. Dorsal and anal extend to the tail, but are not united with it.

1. *Achirus mollis*, MITCHILL.

Form oval. Dark brown, marked transversely with irregular black bands; left side white, with circular dark-brown blotches scattered over its entire surface; also, in a less marked manner, upon the fins. Scales small. A small, compressed spine, almost concealed, directly in front of the upper eye, just back of the commencement of the dorsal fin.

D. 52. V. 4. A. 40. C. 16. Length, 6 inches.

Massachusetts, north of Cape Cod, STORER. Nantucket to Carolina, DEKAY.

Pleuronectes mollis, New York Sole, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 388, pl. 2, fig. 4.

Achirus mollis, GRIFFITH'S CUV., X. p. 439.

" " New York Sole, STORER'S Report, p. 149.

" " " " DEKAY'S Report, p. 303, pl. 49, fig. 150.

2. *Achirus apoda*, MITCHILL.

Body nearly circular. With about twenty transverse black stripes and as many pale ones, and each pale one is divided by a narrow brown stripe, giving the upper side the appearance of variegated black, pale, and brown cross-bars. Beneath white; many soft caruncles or papillæ beneath, on both sides of the mouth.

D. (?). V. (?). A. (?). C. (?). Length (exclusive of caudal fin), 4 inches.

Straits of Bahama, MITCHILL.

Pleuronectes apoda, Apodal Sole, MITCHELL, American Monthly Review, II. p. 244.

Dr. Dekay, in his "Report on the Fishes of New York," considers this species, as described by Mitchill, a *Monochirus*. But as Mitchill distinctly remarks, "*there are no pectoral fins*," we must, until it is controverted by a recent specimen, consider it an *Achirus*.

GENUS V. *PLAGUSIA*, CUV.

No pectoral fins. Dorsal, caudal, and anal fins united.

1. *Plagusia fasciata*, HOLBROOK.

Body elongated, terminating in a point, with seven broad, transverse dusky bands.

D. (?). V. (?). A. (?) C. (?) Length, (?).

South Carolina, HOLBROOK.

Plagusia fasciata (HOLBROOK'S Illustrations), DEKAY'S Report, p. 304.

FAMILY XXV. CYCLOPTERIDÆ.

Ventrals suspended all around the pelvis, and united by a single membrane, forming an oval and concave disk, which the fish employs as a sucker to fix itself to the rocks. Mouth broad, furnished at the jaws and pharyngeals with

small pointed teeth; opercula small. Branchial rays, six. Pectorals very ample, and almost uniting under the throat, as it were to embrace the disk of the ventrals.

GENUS I. LUMPUS, Cuv.

Two dorsal fins; the first dorsal fin so enveloped by a thick and tubercular skin, that, externally, it might be taken for a simple hump of the back; second dorsal with branched rays, opposite the anal. Body deep and rough, with conical horny tubercles.

1. *Lumpus anglorum*, WILLOUGHBY.

Body suborbicular. All the upper part of the body of a bluish slate-color; beneath yellowish. The disk of a bright yellow color. The young fish is blue above, and almost entirely white beneath. The whole surface of the body covered with an immense number of small stellated tubercles, studding even the fin rays. Three rows of tubercles project from each side, and another row projects from the dorsal ridge.

D. —, 11. P. 20. A. 10. C. 12. Length, 8 to 20 inches. Weight, 1 to 18 pounds. Greenland, FABRICIUS. Maine, Massachusetts, STORER. New York, MITCHILL, DEKAY. Called "Neepees," "Angusedlok" (male), "Arnardlok" (female), by Greenlanders.

Cyclopterus lumpus, LIN., Syst. Nat., I. p. 414.

" " Lump, BLOCH, III. p. 92, pl. 90.

Lumpus anglorum, WILL., p. 208, No. 11.

Cyclopterus lumpus, Lump-Sucker, PENNANT'S Brit. Zool., III. p. 176, pl. 24.

" " " SHAW'S Gen. Zool., v. p. 388, pl. 166.

" " Common Lump-fish, JENYNS'S Brit. Vert., p. 471.

" " Lump, RICH., Fauna Boreal. Americ., III. p. 260.

" " FABRICIUS, Fauna Groenlandica, p. 131.

" " Lump-Sucker, YARRELL'S Brit. Fishes (2d edit.), II. p. 365, fig.

Cyclopterus ceruleus, Blue Lump-fish, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 480, pl. 2, fig. 7.

Lumpus vulgaris, Cuv., Règne Animal, II.

" " Lump-Sucker, STORER'S Report, p. 151.

Lumpus anglorum, Lump-Sucker, DEKAY'S Report, p. 305.

2. *Lumpus minutus*, PALLAS.

Body compressed, naked. Two white, unequal bony tubercles on each side. Snout marked, above the mouth, by three tubercles. Tail even. Color whitish.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 1 inch.

Greenland, FABRICIUS.

Called "Nepeesardloorksook," by the Greenlanders.

Cyclopterus minutus, LIN., GMEL.

" " (PALLAS), FABRICIUS, Fauna Groenlandica, p. 135.

" " ROSS, Appendix, p. xlvi.

" " Small Sucker, SHAW'S Gen. Zool., v. p. 396.

" " Diminutive Lump, RICH., Fauna Boreal. Americ., III. p. 262.

3. *Lumpus spinosus*, FAB.

Tubercles of the skin not arranged in rows, as in the *L. anglorum*; their bases are rough, and they rise into a longish spine in the centre, the largest being upon the upper parts, while the belly is smooth. The first dorsal neither so high nor so thick as in the *L. anglorum*, and its edge not armed with tubercles, but its soft rays sufficiently evident. The hue of the fish is blackish, the belly whitish, and the first twelve rays of the pectorals quite white.

D. 6, 11. P. 23. V. 6. A. 10. C. 10. Length, (?).

Greenland, FABRICIUS.

Called "Nepeesardlook," by the Greenlanders.

Cyclopterus spinosus, FABRICIUS, *Fauna Groenlandica*, p. 134.

" " Spiny Lump, RICH., *Fauna Boreal. Americ.*, III. p. 263.

4. *Lumpus ventricosus*, PALLAS.

Body naked; skin covered with livid mucus; abdomen ventricose; head thick, blunt, flattish above; eyes lateral, on the upper part of the head; dorsal fin whitish yellow, with black rays, of which the sixth is longer than the rest; pectoral fins wide; tail suddenly attenuated beyond the vent; disk orbicular.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 1 foot.

Seas between America and Kamtschatka, PALLAS.

Cyclopterus ventricosus (PALLAS), LIN., GMEL.

" " Ventricose Sucker, SHAW'S *Gen. Zoöl.*, v. p. 304.

" " Bellying Lump, RICH., *Fauna Boreal. Americ.*, III. p. 263.

GENUS II. *LIPARIS*, ARTEDI.

Body smooth, elongated, and compressed behind. A single dorsal, laterally long, as well as the anal.

1. *Liparis communis*, ARTEDI.

Body compressed, lengthened, soft, unctuous, subtransparent. Brownish above, with darker stripes; beneath white, with a cast of yellow on the head and sides. Head large, thick, and rounded; fins brown; eyes small; tail short and rounded. Disk bluish, marked with twelve radial spots.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, from 5 to 16 or 18 inches.

Northern Seas, RICHARDSON.

Called "Abapokeetsok," by the Greenlanders; "Sea-Snail," by the Yorkshire fishermen.

Cyclopterus liparis, ARTEDI.

" " LIN., *Syst. Nat.*, I. p. 414.

" " FABRICIUS, *Fauna Groenlandica*, p. 135.

" " Snail-Sucker, SHAW'S *Gen. Zoöl.*, v. p. 304.

" " BLOCH, IV. pl. 123, figs. 3, 4.

- Cyclopterus liparis, ROSS, Append. Parry's Polar Voyage, p. 199.
 " " Uctuous Sucker, PENNANT'S Brit. Zool., III. p. 179, pl. 21.
 " " Common Sea-Snail, JENYNS'S Brit. Vert., p. 472.
 Liparis communis, SABINE, Append. Parry's First Voyage, p. cccxii.
 " " ROSS, Append., p. xlvii.
 Cyclopterus (Liparis) communis (ARTEMI), RICH., Fauna Boreal. Americ., III. p. 263.

2. *Liparis gelatinosus*, PALLAS.

Body slender, oblong, compressed, thicker towards the head, gradually tapering to the tail. Color whitish, with a rosy tinge. Skin smooth; flesh very soft, trembling like jelly when touched. Dorsal and anal fins dark violet; pectoral fins flaccid and rounded.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 18 inches.

Seas between America and Kamtschatka, PALLAS.

- Cyclopterus gelatinosus (PALLAS), LIN., GMEL.
 " " Gelatinous Sucker, SHAW'S Gen. Zool., v. p. 323.

FAMILY XXVI. ECHENEIDÆ.

With a flattened disk upon the top of the head, composed of numerous cartilaginous transverse plates, directed obliquely backwards, dentated or spinous at their posterior edge, and movable, by means of which they are enabled to attach themselves to other substances.

GENUS I. ECHENEIS, LIN.

Body elongated, covered with very small scales. A single dorsal fin, placed opposite the anal. Head very flat, covered with a disk; mouth wide, with numerous small, recurved teeth on both jaws, tongue, and vomer.

1. *Echeneis albicauda*, MITCHILL.

Body cylindrical, elongated. Above of a grayish slate-color; lighter upon the sides, with a dark band, which, commencing at the tip of the lower jaw, as a small black point, runs along its margin to the angle of the jaw, then, assuming a band, passes to the tail, interrupted only by the eyes. All the fins margined with white. Disk upon head, with twenty-one transverse plates, divided by a fleshy median line.

D. 29. P. 18. V. 5. A. 30. C. 18. STORER. Length, 12 to 20 inches.

D. 33. P. 18. V. 7. A. 30. C. 18. DEKAY.

Massachusetts, STORER. New York, MITCHILL, DEKAY.

- Echeneis albicauda*, White-tailed Remora, MITCHILL, Amer. Month. Mag., II. p. 244.
Echeneis naucrates, Indian Remora, STORER'S Report, p. 153.
Echeneis albicauda, White-tailed Remora, DEKAY'S Report, p. 307, pl. 54, fig. 177.
 " " " " STORER, Bost. Journ. Nat. Hist., IV. p. 153

2. *Echeneis naucrates*, LIN.

Olive-brown, without stripes. A whitish longitudinal cloud on each side, near the belly.
Disk elliptical, inclining to oval, with twenty-two to twenty-four plates.

D. 34. P. 19. V. 5. A. 34. C. 21. Length, 31 inches.

Newfoundland, AUDUBON. New York, MITCHILL.

- Echeneis naucrates*, LIN., Syst. Nat., p. 446.
 " " Bloch, v. p. 106, pl. 171.
 " " Indian Remora, SHAW'S Gen. Zoöl., iv. p. 209, pl. 31.
 " " Big Oceanic-Sucker, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., i. p. 377.
 " " Ship-master *Echeneis*, RICH., Fauna Boreal. Americ., iii. p. 266.
 " " Indian Remora, DEKAY'S Report, p. 303.

3. *Echeneis remora*, LIN.

Body elongated. Dusky brown above; lighter beneath. Fins darker than the rest of the body. Disk with seventeen or eighteen plates. Caudal crescent-shaped.

D. 21. P. 22. V. 4. A. 20. C. 20. Length, 12 to 18 inches.

New York, MITCHILL.

- Echeneis remora*, LIN., Syst. Nat., i. p. 446.
 " " Sucking-fish, Bloch, v. p. 109, pl. 172.
 " " Mediterranean Remora, SHAW'S Gen. Zoöl., iv. p. 201, pl. 31.
 " " " " PENNANT'S Brit. Zoöl., iii. Append., p. 524.
 " " Small Oceanic-Sucker, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., i. p. 378.
 " " Common Remora, JENYNS'S Brit. Vert., p. 473.
 " " " " YARRELL'S Brit. Fishes (2d edit.), ii. p. 377, fig.
 " " " " DEKAY'S Report, p. 309.

4. *Echeneis quatuordecemlaminatus*, STORER.

Of a light reddish-brown color, rather darker beneath. Disk with fourteen plates. Caudal not emarginated.

D. 32. P. 14. V. 4. A. 30. C. 18. Length, 5½ inches.

Massachusetts, STORER.

- Echeneis quatuordecemlaminatus*, Fourteen-plated Remora, STORER'S Report, p. 155.
 " " (STORER), an juv.? DEKAY'S Report, p. 309.

APODES.

No ventral fins.

FAMILY XXVII. ANGUILLIDÆ.

Body very much elongated and cylindrical, for the most part of a serpentine figure. Scales scarcely apparent, being imbedded in a soft and thick skin. Air-bladder of various singular forms. No cœcal appendages.

GENUS I. ANGUILLA, Cuv.

The dorsal commencing considerably behind the pectorals, and uniting with the anal to form the caudal. Lower jaw the longer. Mouth with a row of teeth in each jaw, and a few on the anterior part of the vomer.

1. *Anguilla Bostoniensis*, LESUEUR.

Body cylindrical, compressed posteriorly. Head equal to about one tenth the length of the body. Lower jaw slightly projecting. Pectorals short and subovate. Greenish or olive-brown above; yellowish or yellowish white beneath, frequently having a reddish tinge along the margin of the anal fin; in the smaller specimens, the opercula, throat, and abdomen, anterior to the vent, are of a bluish slate-color, with scarcely a tint of yellow.

D. (?). P. (?). A. (?). C. (?). Length, 24 inches.

Massachusetts, LESUEUR, STORER. Connecticut, LINSLEY. New York, MITCHELL, DEKAY.

- Anguilla vulgaris*, Common Eel, MITCHELL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 360.
" " Fresh-water Eel, MITCHELL, Amer. Month. Mag., II. p. 241.
Muraena Bostoniensis, LESUEUR, Journ. Acad. Nat. Sc., I. p. 81.
" " Common Eel of Massachusetts, STORER's Report, p. 158.
Anguilla tenuirostris, Common New York Eel, DEKAY's Report, p. 310, pl. 53, fig. 173.
Anguilla Bostoniensis (LESUEUR), DEKAY's Report, p. 313.
" " " AYRES, Bost. Journ. Nat. Hist., IV. p. 279.

2. *Anguilla argentea*, LESUEUR.

Body much compressed. Pectorals very near the head. General color a silvery gray; darker upon its upper portion, with a clear satiny-white abdomen. Lateral line exceedingly distinct, appearing to divide equally the darker-colored back from the beautiful lighter abdomen.

D. (?). P. (?). A. (?). C. (?). Length, 12 to 24 inches.

Massachusetts, LESUEUR, STORER. Connecticut, LINSLEY.

- Muraena argentea*, LESUEUR, Journ. Acad. Nat. Sc., I. p. 82.
" " " Silver Eel, STORER's Report, p. 158.
Anguilla argentea, DEKAY's Report, p. 313.

3. *Anguilla rostrata*, LESUEUR.

Body tumid in the centre, and narrowed to a point at both extremities. Snout elongated, pointed, and straight. Upper parts varied with gray and olive, sometimes of a slate-blue, lower parts white; dorsal and anal fins reddish, which color deepens as it approaches the tail; pectoral fins small, acute, and bluish.

D. (?). P. (?). A. (?). C. (?). Length, from 18 to 24 inches.

Lakes Cayuga and Geneva, LESUEUR.

- Muraena rostrata*, LESUEUR, Journ. Acad. Nat. Sc., I. p. 81.
" " Beaked Eel, RICH., Fauna Boreal. Americ., III. p. 267.
Anguilla rostrata, Beaked Eel, DEKAY's Report, p. 312.

4. *Anguilla serpentina*, LESUEUR.

Anterior part of body larger than the posterior. Pectorals very large. Head large, snout short. Color a dark copper-brown, which is lighter on the sides and belly; the fins of the color of the body, though paler; the dorsal fin arises nearer the pectorals than that of the *A. argentea*.

D. (?). P. (?). A. (?). C. (?). Length, (?).

Rhode Island, LESUEUR.

Muraena serpentina, Snake-Eel, LESUEUR, Journ. Acad. Nat. Sc., 1. p. 81.

5. *Anguilla macrocephala*, LESUEUR.

Head very large and elevated. Snout short. Eyes large and prominent. Olivaceous-yellow above; from the angle of the mouth a golden band extends beyond the pectoral fins; beneath pure white.

D. (?). P. (?). A. (?). C. (?). Length, (?).

Saratoga Lake, New York, LESUEUR.

Muraena macrocephala, Bull-head Eel, LESUEUR, Journ. Acad. Nat. Sc., 1. p. 82.
Anguilla macrocephala, Bull-head Eel, DEKAY'S Report, p. 313.

6. *Anguilla oceanica*, MITCHILL.

Jaws equal. Tail pointed. Above brown; on the sides pale; belly smutty. A dark or somewhat bluish border on the vertical fins.

D. (?). P. (?). A. (?). C. (?). Length, 4 feet.

New York, MITCHILL.

Anguilla oceanica, Sea-Eel, MITCHILL, Journ. Acad. Nat. Sc., 1. p. 407.
" " " " DEKAY'S Report, p. 312.

As intimated by Dekay, in his Report, this will probably prove to be, upon further investigation, a species of Conger.

7. *Anguilla lutea*, RAF.

Head flattened above, abruptly elevated behind the eyes, ventricose beneath the throat. Lower jaw projecting. Tail carinate at its extremity. Yellowish-brown on its sides and back, and whitish on the belly; the two colors meeting abruptly on the sides of the abdomen.

D. (?). P. (?). A. (?). C. (?). Length, 2 to 3 feet.

Ohio, KIRTLAND.

Anguilla lutea, Yellow Eel, RAF, Ichth. Ohien., p. 73.
" " " " KIRTLAND, Bost. Journ. Nat. Hist., IV. p. 234, pl. 11, fig. 2.
Anguilla laticauda (?), Broad-tailed Eel, RAF, Ichth. Ohien., p. 77.

GENUS II. CONGER, CUV.

The dorsal fin commencing close to the pectorals or on them, and in some species even before the pectorals, or at least at their base. The upper jaw is longest in all the known species.

1. *Conger occidentalis*, DEKAY.

Dark olive-brown; chin, space behind the pectorals, and all beneath, soiled white. Dorsal and anal of a deep black hue along their margins. Dorsal arising two inches behind the base of the pectorals. Jaws with a single series of contiguous, equal teeth. Lateral line distinct, with a series of white dots.

P. 17. D., C., and A. 539. Length, 3 to 5 feet.

New York, MITCHILL, DEKAY.

Anguilla conger, Conger Eel, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., 1. p. 360.
Conger occidentalis, American Conger, DEKAY'S Report, p. 314, pl. 53, fig. 172.

GENUS III. MURÆNA, THUNB.

Have no vestige of pectorals; their branchiæ open on each side by a small hole; their opercula are so thin, and their branchiostegal rays so slender and concealed under the skin, that their existence has been denied. The stomach is a short sac, and the natatory bladder small, oval, and placed near the upper part of the abdomen.

1. *Muræna moringa*, CUV.

Black or green, sprinkled over its whole surface with innumerable black dots.

D. (?). A. (?). C. (?). Length, 4 feet.

Bahama Islands, CATESBY.

Muræna maculata nigra et viridis, Muray, CATESBY'S Hist. Carol., II. p. 20.
Muræna maculata nigra, Black Muray, CATESBY'S Hist. Carol., II. p. 21.
Muræna moringa, GRIFFITH'S CUV., x. p. 527.

GENUS IV. OPHIDIUM, CUV.

Head smooth. Body elongated, compressed; teeth in both jaws, the palate, and pharynx. Dorsal, caudal, and anal united. Gill-apertures rather large. Two pairs of small barbels adhering to the point of the hyoid bone.

1. *Ophidium marginatum*, DEKAY.

Body elongated, much compressed, tapering to an acute point. Gray, with three dusky

stripes along the body. Dorsal, caudal, and posterior portion of anal, edged with black on their margins. Pectorals yellow.

D. 120. P. 22. A. 75. C. 17. Length, 9 inches.

New York, MITCHILL, DEKAY.

Called "Little Cusk," by the fishermen.

Ophidium barbatum, Cirrhus *Ophidium*, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 362, pl. 1, fig. 2.

Ophidium marginatum, New York *Ophidium*, DEKAY's Report, p. 315, pl. 52, fig. 169.

2. *Ophidium stigma*, BENNETT.

Dilute brown, spotted, and with a purplish spot near the beginning of the dorsal fin. Snout obtuse, chin with a large gibbosity, teeth small.

D. (?). P. (?). A. (?). C. (?). Length, 5 inches.

Behring's Straits, BENNETT.

Ophidium stigma, Branded *Ophidium* (BENNETT, Append. Beechey's Voyage), RICH., Fauna Boreal. Americ., III. p. 273.

GENUS V. FIERASFER, CUV.

No barbels. Dorsal so thin as to resemble a simple fold of the skin. Their natatory bladder is supported by only two osselets; that of the middle is wanting.

1. *Fierasfer borealis* (?), DEKAY.

Body oblong, nearly round; the color of the body is nearly that of the human skin, with scattered blotches of a pale rust-color. Dorsal of a uniform color; caudal fin rounded, and marked with numerous black dots.

D. 76. P. 14. A. 49. C. 22. Length, 19 inches.

New Hampshire, PECK.

Ophidium (imberbe) maxillis imberbibus, cauda rotundata, pinna dorsi unicolore, PECK, Mem. Amer. Acad., II., part II., p. 46, pl. 2, fig. 1.

Fierasfer borealis (?), DEKAY's Report, p. 316.

With much doubt, I follow Dekay in locating this species in the genus *Fierasfer*.

2. *Fierasfer Parrii*, ROSS.

Greenish brown above. Pectoral fins large, with thirty-seven rays, and extending beyond the vent. Neck much arched.

D. (?). P. (?). A. (?). C. (?). Length, 4 to 8 inches.

Northern Seas, ROSS.

Ophidium Parrii, CAPT. J. C. ROSS, Append. Parry's Third Voyage, p. 109, and Polar Voyage, p. 199.

" " Append. Ross's Second Voyage, p. xlvii.

" " Parry's *Ophidium*, RICH., Fauna Boreal. Americ., III. p. 274.

Fierasfer Parrii, DEKAY's Report, p. 316.

GENUS VI. SACCOPHARYNX, MITCHILL.

The trunk, susceptible of being inflated like a thick tube, is terminated by a very slender and very long tail, along which proceed a very low dorsal and anal, and unite at its point. The mouth, armed with sharp teeth, opens far behind the eyes, which are quite near the very sharp point of the muzzle. Its gills open by a hole below the pectorals, which are very small.

1. *Saccopharynx chordatus*, MITCHILL.

Skin smooth and scaleless. Of a dusky brown color; a whitish line on each side of the back; interior of mouth black. Lower jaw without teeth; upper jaw, for about an inch and a half, furnished with a row of bony, hooked teeth. Head small; eyes small. Dorsal fin appearing like a narrow riband, and reaching to the tail; dorsal, caudal, and anal united. Filiform excrescences on each side of the whitish stripe all the way from the head down the back to the tail. Tail flexible enough to be tied into knots.

D. (?). P. (?). A. (?). C. (?). Length, 6 feet.

Lat. 52° N, Long. 30° W., MITCHILL.

Saccopharynx chordatus, MITCHILL, *Annals of Lyc. Nat. Hist. of N. York*, i. p. 82.
Ophiognathus ampullaceus, HARWOOD, *Phil. Trans.*, an. 1827, p. 49, pl. 7.
Saccopharynx flagellum, GRIFFITH'S *Cuv.*, x. p. 531.

GENUS VII. AMMODYTES, LIN.

Head and body elongated; gill-openings large; dorsal fin extending nearly the whole length of the back; anal fin of considerable length; dorsal and anal fins separated from the caudal fin. Lower jaw longest. Their stomach is pointed and fleshy; they have neither cœca nor natatory bladder.

1. *Ammodytes Americanus*, DEKAY.

Body elongated, slightly compressed. Back of a dirty yellowish-brown color. Top of the head, and upper part of the opercula, slate-colored; this slate or silvery-blue color passes down over the opercula in a broad band to the tail, giving the fish a beautifully brilliant appearance; beneath this, the sides and abdomen are silvery. The dorsal fin commences over the extremities of the pectorals. The anal fin is just one third the entire length of the fish.

Without the strong forked teeth on the vomer, which exist in the *Tobianus*.

D. 61. P. 13. A. 28. C. 14. Length, 6 to 12 inches.

Massachusetts, STORER. Connecticut, AYRES, LINSLEY. New York, MITCHILL, DEKAY.

- Ammodytes tobianus*, Sand-Launce, BLOCH, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., i. p. 363.
 " " Sand-Eel, STORER'S Report, p. 159.
Ammodytes Americanus, American Sand-Launce, DEKAY'S Report, p. 317, pl. 52, fig. 167.
Ammodytes lancea, AYRES, Bost. Journ. Nat. Hist., iv. p. 280.
Ammodytes tobianus, Little Sand-Eel, LINSLEY'S Cat. of Fishes of Connecticut.
Ammodytes lancea, Banded Sand-Launce, " " " "

Specimens of this *Ammodytes*, which in my Report I considered the *A. tobianus*, were sent to Mr. Yarrell, who writes me, — "I feel quite satisfied that it is distinct from both the *tobianus* and *lancea*." Never having seen the foreign species, I cheerfully prefix Dr. DeKay's specific name, after this careful comparison by the distinguished British ichthyologist.

2. *Ammodytes vittatus*, DEKAY.

Body oblong, subcompressed, slender. Greenish olive above, with a broad silvery band along the sides, which is margined above with blackish; belly white. Seven projecting spinous processes before the dorsal fin.

D. 7, 54. P. 15. A. 28. C. 19½. Length, 4 to 6 inches.

New York, DEKAY.

Ammodytes vittatus, Banded Sand-Launce, DEKAY'S Report, p. 318, pl. 60, fig. 197.

LOPHOBRANCHII.

Gills, instead of being, as usual, pectiniform, are divided into little round tufts, dispersed in pairs along the branchial arches.

FAMILY XXVIII. SYNGNATHIDÆ.

Body mailed with transverse angular plates. Opercle large; branchial opening very small, and formed by a membrane which only exhibits vestiges of rays. Dorsal single. No cœca; with an air-bladder.

GENUS I. SYNGNATHUS, LIN.

Body elongated, slender, covered with a series of indurated plates, arranged in parallel lines; head long; both jaws produced, united, tubular; no ventral fins. Males with a pouch for the reception of the female roe.

1. *Syngnathus Peckianus*, STORER.

Olive-brown, with darker-colored blotches or bars. The posterior portion of the body is darker than the anterior. Beneath, anterior to the vent, of a beautiful golden-yellow; portion back of vent nearly white. Body, anterior to vent, heptangular; in front of posterior extremity of the dorsal fin, hexangular; posteriorly quadrangular. Nineteen transverse plates in front of anus; forty plates between the anus and the caudal fin.

D. 45. P. 14. A. 3. C. 12. Length, 6 to 12 inches.

Massachusetts, STORER. Connecticut, LINSLEY. New York, MITCHILL, DEKAY.

Syngnathus typhle, Smaller Pipe-fish, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., i. p. 475.

Syngnathus Peckianus, Peck's Pipe-fish, STORER's Report, p. 163.

Syngnathus fuscus, Brown Pipe-fish, STORER's Report, p. 162.

Syngnathus fasciatus, Banded Pipe-fish, DEKAY's Report, p. 319, pl. 54, fig. 174.

Syngnathus viridescens, Green Pipe-fish, DEKAY's Report, p. 321, pl. 54, fig. 176.

Syngnathus fuscus (STORER), DEKAY's Report, p. 321.

Syngnathus Peckianus (STORER), DEKAY's Report, p. 321.

“ “ “ AYRES, Bost. Journ. Nat. Hist., iv. p. 282.

GENUS II. HIPPOCAMPUS, CUV.

The jaws united and tubular, like those of the *Syngnathi*; mouth placed at the end; body compressed, short and deep; the whole length of the body and tail divided by longitudinal and transverse ridges, with tubercular points at the angles of intersection; pectoral and dorsal fins; no ventral nor caudal fins; the females only have an anal.

1. *Hippocampus Hudsonius*, DEKAY.

Yellowish brown. Body heptangular, composed of twelve segments, banded by horny spines; tail tapering to a point made up of thirty-six segments. Tubular jaws more than half the length of the head. A spine at the base of the snout, anterior to the eyes. A bony protuberance on top of head, terminating in five points.

D. 18 to 20. P. 14 or 15. A. 3. Length, 3 to 6 inches.

Massachusetts, STORER. Connecticut, LINSLEY. New York, MITCHILL, DEKAY.

Syngnathus hippocampus, Sea-Horse Pipe-fish, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., i. p. 475.

Hippocampus brevirostris, Short-nosed Sea-Horse, STORER's Report, p. 167.

Hippocampus Hudsonius, Hudson River Sea-Horse, DEKAY's Report, p. 322, pl. 53, fig. 171.

Hippocampus brevirostris, LINSLEY's Cat. of Fishes of Connecticut.

PLECTOGNATHI.

The maxillary bone soldered or fixedly attached on the side of the intermaxillary, which alone forms the jaw, and to which the palatine arch is dovetailed by a suture within the cranium, and consequently has no power of motion. Opercula and the rays are concealed under a thick skin, which only permits a small branchial cleft to be visible externally.

FAMILY XXIX. GYMNODONTIDÆ.

Instead of apparent teeth, the jaws are furnished with an ivory substance,

divided internally into laminae, the general appearance of which somewhat resembles the bill of a parrot, and which is essentially composed of true teeth united together, and succeeding one another in proportion as there are any worn out by trituration. Opercula small; their rays five in number.

GENUS I. DIODON, LIN.

Jaws undivided, presenting but one piece above and below. Behind the trenchant edge of each is a round part, furrowed crosswise, which forms a powerful instrument of mastication. No ventral fins. Skin armed with slender prickles or stout spines.

1. *Diodon maculato-striatus*, MITCHILL.

Body subcubical. Greenish, with numerous meandering, olive-brown stripes, and a few dark-colored, large blotches, margined with green. The whole surface, except the chin and tail, covered with sharp, recurved, triangular, compressed spines, each with a trifid base. Tail even.

D. 13. P. 24. A. 12. C. 9. Length, 5 to 7 inches.

Connecticut, LINSLEY, AYRES. New York, MITCHILL, DEKAY.

Diodon maculato-striatus, Spot-striped Diodon, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., i. p. 470, pl. 6, fig. 3.

Diodon rivulatus, CUV., Mémoires du Muséum d'Hist. Nat., iv. p. 129, pl. 6.

Diodon maculato-striatus, Spot-striped Balloon-fish, DEKAY's Report, p. 323, pl. 56, fig. 185.

" " (MITCHILL), AYRES, Bost. Journ. Nat. Hist., iv. p. 234.

" " LINSLEY's Cat. of Fishes of Connecticut.

Diodon fuliginosus, Unspotted Balloon-fish, DEKAY's Report, p. 324, pl. 55, fig. 181 (young).

2. *Diodon pilosus*, MITCHILL.

Body oblong, cuboidal. Brownish above; ashy-white beneath; on the back and along the sides, several oblong, distant, blackish-brown spots. Every part of the body except a small space round the mouth and eyes, and another including the base of the caudal fin, furnished with soft, flexible bristles, of a metallic golden color. Caudal lanceolate.

D. 12. P. 20. A. 14. C. 9. Length, 2 to 4 inches.

New York, MITCHILL, DEKAY.

Diodon pilosus, Hairy Diodon, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., i. p. 471, pl. 6, fig. 4.

Diodon asper, CUV., Mémoires du Muséum d'Hist. Nat., iv. p. 138.

Diodon pilosus, GRIFFITH's CUV., x. p. 567.

" " Hairy Balloon-fish, DEKAY's Report, p. 326, pl. 55, fig. 180.

3. *Diodon verrucosus*, MITCHILL.

Body cuboidal, oblong, small. Cinereous-brown above; yellowish white beneath. With rounded areolæ, from which arise soft, flexible spines. Caudal long, emarginate.

D. 11. P. 22. A. 10. C. 10. Length, 1 to 4 inches.

New York, MITCHILL.

Diodon verrucosus, Warty Balloon-fish (MITCHILL), DEKAY'S Report, p. 325, pl. 56, fig. 184.

GENUS II. TETRAODON, LIN.

Jaws divided in the middle by a suture, presenting the appearance of four teeth in front, two above and two below. The skin over a portion or its whole extent covered with prickles.

1. *Tetraodon lagocephalus*, LIN.

Body orbicular. Yellowish brown above; whitish, with a silvery cast, beneath. Several short black or dark-brown bars of different sizes upon the back; many round blackish spots upon the sides; sides and abdomen beset with numerous short, radiated spines. Transverse brown bands upon the dorsal, anal, and caudal fins.

D. 10. P. 18. A. 8. C. 10. Length, 12 inches.

Virginia, CATESBY.

Tetraodon lagocephalus, LIN., Syst. Nat., TERTON'S Translat., i. p. 890.
" " Starry Globe-fish, BLOCH, IV. p. 127, pl. 140.
" " Hare Tetraodon, SHAW'S Gen. Zool., v. p. 441, pl. 177.
Orbis laevis variegatus, Globe-fish, CATESBY'S Hist. Carol., II. p. 28, pl. 28.
Tetraodon geometricus, GRIFFITH'S CUV., x. p. 563.

2. *Tetraodon laevigatus*, LIN.

Body elongated, cylindrical, tumid in front, gradually tapering behind. Abdomen pendulous. Olive-green above. Belly only furnished with sharp prickles. The upper part of the body with series of mucous pores, forming numerous lines.

D. 14. P. 17. A. 12, 13. C. 11, 13. Length, 1 to 2 feet.

Massachusetts, STORER. New York, MITCHILL, DEKAY. South Carolina, LIN. Gulf of Mexico, PARRA.

Tetraodon laevigatus, LIN., Syst. Nat., p. 411.
" " SHAW'S Gen. Zool., v. p. 446.
Tamboril, PARRA, p. 37, pl. 19.
Tetraodon laevigatus, Brown Globe-fish, MITCHILL, Report on the Fishes of New York, p. 28.
Tetraodon mathematicus, Mathematical Tetraodon, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 474, pl. 6, fig. 6.
Tetraodon mathematicus, Mathematical Tetraodon, STORER'S Supplement to Report, Bost. Journ. Nat. Hist., IV. p. 183.
Tetraodon laevigatus, Lineated Puffer, DEKAY'S Report, p. 329, pl. 56, fig. 182.

3. *Tetraodon turgidus*, MITCHILL.

Body oblong, cylindrical; when inflated, nearly globular. Olive-green above, beneath white. Several undefined black blotches on the back, which, as they approach the belly,

assume the appearance of bars, six to eight of which are noticeable. The whole surface of the body, save the space between the dorsal and caudal fins, and the anal and caudal fins, roughened by innumerable small spines. Caudal rounded.

D. 6. P. 15. A. 6, 7, 8. C. 7. Length, 6 to 14 inches.

Massachusetts, STORER. Connecticut, LINSLEY, AYRES. New York, MITCHILL, DEKAY.

- Tetraodon turgidus*, Puffer, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., 1. p. 473, pl. 6, fig. 5.
 " " Swell-fish, Puffer, STORER'S Report, p. 169.
 " " Common Puffer, DEKAY'S Report, p. 327, pl. 55, fig. 178.
 " " AYRES, Bost. Journ. Nat. Hist., iv. p. 235.

4. *Tetraodon curvus*, MITCHILL.

Back considerably arched and smooth. Dark brown above, variegated with faint bars across; beneath dull yellow, and roughened by short, sharp spines, disposed in quincunx. A smooth brass-colored stripe or riband on the side from the head to the tail. General complexion brassy. Tail tapering.

D. 13. P. 16. A. 13. C. 15. Length, 2½ inches.

New York, MITCHILL.

- Tetraodon curvus*, Curved Tetraodon, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., 1. p. 472.
 " " Curved Puffer (MITCHILL), DEKAY'S Report, p. 323.

GENUS III. ACANTHOSOMA, DEKAY.

Body globular, armed with spines, and susceptible of inflation. Dorsal, caudal, and anal united. Teeth as in *Diodon*.

1. *Acanthosoma carinatum*, MITCHILL.

Body vertically oval, small. Olive-brown above; silvery on the sides and beneath. Spines pointed, distant, and striated on their sides, with a dilated, rounded base. Eyes large, nostrils small, slightly before the eyes.

D. (?). P. (?). A. (?). C. (?). Length, (?).

New York, MITCHILL, DEKAY.

- Diodon carinatus*, MITCHILL, Ann. Lyc. of Nat. Hist. of New York, II. p. 264, pl. 5, fig. 1.
Acanthosoma carinatum, Small Globe-fish, DEKAY'S Report, p. 330, pl. 55, fig. 179.

GENUS IV. ORTHAGORISCUS, SCHN.

Jaws undivided, forming a cutting edge. Body compressed, without spines, not susceptible of inflation, and whose tail is so short, and so high, vertically, that they have the appearance of fishes from which the posterior part has

been cut away. Dorsal and anal, each high and pointed, are united to the caudal. No natatory bladder; stomach small, and immediately receiving the biliary canal.

1. *Orthogoriscus mola*, LIN.

Form oblong, elliptical, compressed, subtruncated behind. Depth two thirds of its length. Back dark gray; sides of a dusky white; abdomen nearly white; a broad black band at base of tail, running from origin of dorsal to origin of anal. Cuticle granulated, covered with a thick adhesive mucus. Dorsal and anal not united to caudal fin. Caudal formed of several digitations, varying in their height. Eyes moderate, convex; snout prominent.

D. 13. P. 12 or 13. A. 13 to 15. C. 9. Weight, 200 to 400 pounds.

Massachusetts, STORER. New York, MITCHILL, DEKAY.

- Tetraodon mola, LIN., Syst. Nat., p. 442.
- " " Short Tetraodon, PENNANT'S Brit. Zool., III. p. 172, pl. 22.
- Diodon mola, BLOCH, pl. 123.
- Cephalus brevis, Short Sun-fish, SHAW'S Gen. Zool., v. p. 437, pl. 175.
- " " MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 471.
- Orthogoriscus mola, Short Sun-fish (SCHNEIDER), JENYNS'S Brit. Vert., p. 490.
- " " GRIFFITH'S Cuv., x. p. 569.
- " " Short Sun-fish, YARRELL'S Brit. Fishes (2d edit.), II. p. 462 and fig.
- " " " " STORER'S Report, p. 170, pl. 3, fig. 1.
- " " Short Head-fish, DEKAY'S Report, p. 331, pl. 59, fig. 193.

FAMILY XXX. BALISTIDÆ.

Body compressed. Snout prolonged from the eyes. Mouth small, with a few distinct teeth in each jaw. Skin roughened with prickles or scales. Dorsals, two; the anterior sometimes represented by a single spine. Ventrals often wanting or indistinct. Pelvic bone prominent.

GENUS I. BALISTES, Cuv.

Entire body covered with large scales, very hard and rhomboidal, not imbricated. The first dorsal with three prickles or spines, the first of which is much the largest, the third very small, and separated, further back. The extremity of their pelvis is always salient and prickly, and behind it are some spines engaged in the skin, which, in the long species, have been considered as rays of the ventrals.

1. *Balistes fuliginosus*, DEKAY.

Body oblong, elliptical. Dusky brown, unspotted. Caudal fin doubly emarginated; a single spine between the first and second dorsals; first dorsal spine is roughened with asperities upon its anterior edge, and broadly channelled behind.

D. 2, 1, 28. P. 14. V. 7. A. 26. C. 12. Length, 12 inches.

New York, DEKAY.

Balistes fuliginosus, Dusky Balistes, DEKAY's Report, p. 339, pl. 57, fig. 183.

GENUS II. MONACANTHUS, Cuv.

Body covered with very small scales, bristling with stiff excrescences, and extremely crowded. The extremity of their pelvis projecting and spiny, as in the *Balistes*, but they have only one large dentated spine to their first dorsal, or at least the second is almost imperceptible.

1. *Monacanthus aurantiacus*, MITCHILL.

Oval. Of an orange-yellow, except the chin, lips, and belly, which are bluish-white. Dorsal and anal tinged with dusky. Tail doubly emarginate. Abdomen tumid. Lower jaw largest, with eight thin, flattened teeth, of which those in front are long and large, with emarginated edges; upper jaw with smaller flat and lanceolate teeth. A rounded prominence anterior to second dorsal fin; anal extends further back than dorsal fin.

D. 1, 36. P. 12. V. 0. A. 39. C. 12. Length, 1 to 2 feet.

Maine, Massachusetts, STORER. Connecticut, LINSLEY. New York, MITCHILL, DEKAY.

Balistes aurantiacus, Orange File-fish, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 468, pl. 6, fig. 1.
Monacanthus aurantiacus (?), Orange File-fish (MITCHILL), DEKAY's Report, p. 333, pl. 57, fig. 186.
 " " STORER, Proceed. Bost. Soc. Nat. Hist., II. p. 72.

2. *Monacanthus broccus*, MITCHILL.

Body subovate. Uniform brown. Covered with asperities. Dorsal fin with an equal, convex margin. Mouth prominent, projecting; six to eight sharp incisorial teeth in both jaws. Anal not as high as the dorsal; caudal long and rounded.

D. 1, 32. P. 13. V. 0. A. 32. C. 13. Length, 8 inches.

Connecticut, LINSLEY. New York, MITCHILL, DEKAY.

Balistes broccus, Tut-mouthed File-fish, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 467.
Monacanthus broccus, Long-finned File-fish, DEKAY's Report, p. 335, pl. 56, fig. 183.

3. *Monacanthus Massachusettensis*, STORER.

Body elliptical, much compressed. Yellowish brown, variegated over its entire extent with brownish markings and blotches, which are less obvious beneath. Anal and dorsal yellowish green; caudal light olive-green; pectorals light reddish. Faint, abbreviated, dark oblong streaks along the sides. Surface rough, with numerous minute cilia suspended from its sides. Dorsal emarginated posteriorly; ventral fold roughened by sharp stellated spines.

D. 1, 34. P. 12 to 15. V. (?). A. 30 to 34. C. 13. Length, 3 to 4 inches.

Massachusetts, STORER. Connecticut, LINSLEY. New York, DEKAY.

Monacanthus Massachusettensis, Massachusetts File-fish, STORER'S Report, p. 174.
" " " " DEKAY'S Report, p. 336, pl. 57, fig. 157.

4. *Monacanthus signifer*, STORER.

Body elongated. Of a reddish-brown color, with greenish reflections. The second dorsal ray very much elongated. The whole surface minutely granulated, with the exception of the fleshy portion of the tail and a very small space anterior to it, which are studded with stiff setæ looking and feeling like the teeth of a card; the points of these setæ incline forwards.

D. 1, 32. P. 13 to 16. A. 32 or 33. C. 10 or 13. Length, 5 to 7 inches.

Massachusetts, STORER. New York, DEKAY.

Monacanthus setifer, DEKAY'S Report, p. 337, pl. 59, fig. 194.

I supposed, previous to the appearance of Dr. Dekay's Report, this species to be Mitchell's *M. broccus*, and thus I called it in the "Proceedings of the Boston Society of Natural History," p. 84 (Sept. 1842). Dr. Dekay's specific name has been previously applied to another species of the genus by Bennett (Proceed. Zool. Soc. of London, Pt. 1., p. 112, 1830).

GENUS III. ALUTERES, CUV.

An elongated body, covered with small and scarcely visible granules; a single spine in the first dorsal; the chief character is in the pelvis, which is completely hidden under the skin, and is without that spinous projection observed in the other *Balistes*.

1. *Aluterus monoceros*, LIN.

Elongated. Olive-brown, with many irregularly distributed bluish lines, between which are sprinkled numerous black dots.

D. 1, 46. P. 14. A. 50. C. 12. Length, 3 feet.

Bahama Islands, CATESBY.

Unicornis piscis Bahamensis, Bahama Unicorn-fish, CATESBY'S Hist. Carol., II. p. 19.
Balistes monoceros, TURTON'S LINNÆUS, I. p. 898.
" " Unicorn File-fish, SHAW'S Gen. Zool., v. p. 399, pl. 163.
Aluterus monoceros, GRIFFITH'S CUV., x. p. 575.

2. *Aluterus cuspicauda*, MITCHILL.

Elongated; yellowish brown, mottled by a darker brown. Tail lancet-shaped, nearly half the length of the body.

D. 1, 38. P. 13. A. 42. C. 12. Length, 8 inches.

Massachusetts, STORER. New York, MITCHILL, DEKAY.

Balistes cuspicauda, Sharp-tailed File-fish, MITCHILL, Amer. Month. Mag., II. p. 326.
Aluterus monoceros, Unicorn File-fish (SHAW), STORER'S Report, p. 175.
Aluterus cuspicauda, Long-tailed Unicorn-fish, DEKAY'S Report, p. 338, pl. 59, fig. 192.

3. *Aluteres angusticauda*, MITCHILL.

Shades of brown over entire surface. Gibbous before the eyes; belly prominent and flabby; snout projecting; mouth small. Tail isthmus-shaped, narrow immediately behind the anal and dorsal fins, and wider towards the origin of the caudal fin.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, (?).

Balistes angusticauda, Narrow-tailed File-fish, MITCHILL, Amer. Month. Mag., II. p. 327.
Aluteres angusticauda, Narrow-tailed File-fish, DEKAY'S Report, p. 339.

FAMILY XXXI. OSTRACIONIDÆ.

Body triangular or four-sided, enveloped in a hard, bony case, composed of numerous plates, soldered together in such a manner that only the mouth and fins are movable. No ventral fins; a single dorsal.

GENUS I. LACTOPHRYS, DEKAY.

Body triangular; with strong spines directed backwards before the anal fin. Orbits usually spinous.*

1. *Lactophrys sex-cornutus*, MITCHILL.

With six spines; two in front of the eyes, two on the sides of the abdomen, and two at the extremity of their bony corselet, one above and one below the tail. Skin somewhat clouded or streaked lengthwise. Beneath white.

D. (?). P. (?). A. (?). C. (?). Length, 7 inches.

Gulf of Mexico, MITCHILL.

Ostracion sex-cornutus, Six-horned Trunk-fish, MITCHILL, Amer. Month. Mag., II. p. 323.
Lactophrys sex-cornutus, Six-horned Trunk-fish, DEKAY'S Report, p. 313.

2. *Lactophrys Yalei*, STORER.

Back convex; no spines upon the orbits; two abdominal spines. Of a uniform light, lurid color above; back of dorsal fin darker-colored; body beneath much lighter.

D. 10. P. 12. A. 10. C. 10. Length, 14 inches.

Massachusetts, STORER.

Ostracion Yalei, STORER, Eost. Journ. Nat. Hist., I. p. 353, pl. 8.
 " " Yale's Trunk-fish, STORER'S Report, p. 176.
Lactophrys Yalei, Yale's Trunk-fish, DEKAY'S Report, p. 312.

* Although I have not seen the necessity of this genus, I am not disposed to reject it on that account only.

3. *Lactophrys camelinus*, DEKAY.

Back elevated into a spine. Eight spines along the sides, over the orbits and tail. Ashen-gray, with irregular black blotches on the dorsal hump and the sides. Abdomen soiled yellowish-white.

D. 9. P. 10. A. 10. C. 6. Length, 3½ inches.

New York, DEKAY.

Lactophrys camelinus, Dromedary Trunk-fish, DEKAY's Report, p. 341, pl. 53, fig. 190.

CLASS II. CARTILAGINOUS FISHES.

Skeleton cartilaginous. Cranium divided by indistinct sutures. Gills generally fixed; the membrane without rays. Maxillary and intermaxillary bones either wanting or rudimentary, the palatines or vomer alone supplying their place.

ORDER I. ELEUTHEROPOMI.

Gills pectinated, free, as in ordinary fishes, with one large external aperture on each side, furnished with a strong opercle; without rays. Upper jaw formed by the palatine bone, firmly united to the maxillary; intermaxillary rudimentary.

FAMILY XXXII. STURIONIDÆ.

The genera of this family approach to ordinary fishes, by their gills being attached only at one extremity. They have but one branchial aperture, which is very open; they have but one operculum, and are without rays to the membrane of the gills.

GENUS I. ACIPENSER, LIN.

Body elongated and angular, defended by indurated plates and spines, arranged in longitudinal rows; snout pointed, conical; mouth placed on the under side of the head, tubular, and without teeth.

1. *Acipenser oxyrinchus*, MITCHILL.

Body pentagonal. Of a grayish-brown color above; inferior portion of sides silvery; be-

Monograph of Genus
Acipenser. Fitzinger &
Heckel. *Annal. des Sci. Nat.*
Mus. vol. 1. p. 261. pl. 100
1836.

neath white. Snout elongated, rounded at tip, covered with bony shields. Dorsal series of plates, ten to twelve; lateral series, twenty-eight; abdominal series, eight plates.

D. 38. P. 28. V. 24. A. 23. C. 125. Length, 3 to 7 feet.

Massachusetts, STORER. Connecticut, AYRES, LINSLEY. New York, MITCHILL, DEKAY.

- Acipenser oxyrinchus, Sharp-nosed Sturgeon, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., i. p. 462.
 " " LESUEUR, Trans. Amer. Phil. Soc. (New Series), i. p. 394.
 " " Sharp-nosed Sturgeon, STORER's Report, p. 173.
 " " " " DEKAY's Report, p. 346, pl. 58, fig. 189.
 " " AYRES, Fishes of Brookhaven, L. I., Bost. Journ. Nat. Hist., iv. p. 257.
 " " Sharp-nosed Sturgeon, LINSLEY's Fishes of Conn., Amer. Journ. Sc., XLVII., No. 1.
 " " *Sig. Hechel. Mon. Acip. Ann. Univ. Mus. 1. 186.*

2. *Acipenser rubicundus*, LESUEUR.

Body convex at origin of dorsal plates. Forehead broad and flat between the eyes. Head and body olive-brown above, white beneath. Fins reddish. Younger specimens maculated on the body and sides. Dorsal plates, from nine to fifteen; lateral plates, thirty-five to thirty-nine; abdominal plates, nine.

D. 40 to 42. P. 50. V. 28. A. 22. C. (?). Length, 4 feet.

Lakes Ontario, Erie, Huron, Michigan, LESUEUR. Lake Erie, Ohio River, KIRTLAND.

- Acipenser rubicundus, LESUEUR, Trans. Amer. Phil. Soc. (New Series), i. p. 388, pl. 12.
 Acipenser maculosus, LESUEUR, Trans. Amer. Phil. Soc. (New Series), i. p. 393.
 Acipenser Ohienis, RAF., Ichth. Ohien., p. 81.
 Acipenser scrotinus, RAF., Ichth. Ohien., p. 80.
 Acipenser macrostomus, RAF., Ichth. Ohien., p. 81. *Heckel - Fish. Annul. 1. p. 317*
 Acipenser rubicundus, Ruddy Sturgeon, RICH., Fauna Boreal. Americ., III. p. 284. *Heckel, Ichth. Mon. Ann. Univ. Mus. 1. 186*
 " " KIRTLAND's Report, p. 196.
 Acipenser maculosus, KIRTLAND's Report, p. 196. *H*
 Acipenser Ohienis, KIRTLAND's Report, p. 196.
 Acipenser nudus, KIRTLAND's Manuscript.
 Acipenser rubicundus, Lake Sturgeon, DEKAY's Report, p. 344, pl. 58, fig. 191.
 Acipenser maculosus, Lake Sturgeon, DEKAY's Report, p. 347.
 " " " " KIRTLAND, Bost. Journ. Nat. Hist., iv. p. 303, pl. 14, fig. 1.
 " " " " *Heckel & Fish. 1. 285.*

3. *Acipenser brevirostris*, LESUEUR.

Head large and convex. Snout short and blunt. Dusky above, with faint traces of oblique bands; beneath white. Dorsal series of tubercles, nine to twelve; lateral series, twenty-three to twenty-nine.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 2 to 5 feet.

New York, MITCHILL, DEKAY.

- Acipenser sturio, Round-nosed Sturgeon, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., i. p. 461.
 Acipenser brevirostrum, LESUEUR, Trans. Amer. Phil. Soc. (New Series), i. p. 590.
 Acipenser brevirostris, Short-nosed Sturgeon, DEKAY's Report, p. 345.
Heckel & Fish. Mon. Acip. Annul. (Ann. Mus. 1. 313, 186)
with many additional
Synonymes

4. *Acipenser transmontanus*, RICH.

Top of the head slightly convex, both longitudinally and transversely, with a shallow depression extending from between the orbits backwards on the mesial line; the profile shelves off suddenly before the nostrils into the greatly depressed snout, which, when seen from

above, is semilanceolate ; its breadth at the nostrils being equal to its length anterior to these openings ; in profile, the snout appears thin and horizontal, but its flexible point is readily turned up a little. Body and top of head of a hue intermediate between yellowish and bluish, partially iridescent ; shields ash-gray, giving a spotted appearance to the back. Sides silver-white, with faint vertical bluish-gray bands ; belly white. Dorsal row of plates, fifteen. Lateral plates, forty-two to forty-seven.

D. 52. P. 43. V. 34. A. 33. C. 27-86. Length, 11 feet. Weight, 600 pounds.
Columbia River, RICHARDSON.

Acipenser transmontanus, Columbia River Sturgeon, RICH., Fauna Boreal. Americ., III. p. 278, pl. 97.
" " " DEKAY'S Report, p. 347.

5. Acipenser Rupertianus, RICH.

Snout slender, but not acute ; its sides are flattened and have a vertical height equal to half the transverse breadth. Dorsal plates, fourteen in number ; lateral shields, thirty-five in number ; abdominal shields, nine or ten, smooth, and indented rather than spined at tip.

D. 40. P. 40. V. 30. A. 25. C. 28-84. Length, 26 inches.
Northern Regions, RICHARDSON.

Acipenser Rupertianus, Rupert Land-Sturgeon, RICH., Fauna Boreal. Americ., III. p. 311.
" " " DEKAY'S Report, p. 347.

6. Acipenser platyrhynchus, RAF.

Head one fifth its total length ; slightly convex above, entirely flat beneath. Head and body above brownish, beneath pure white. Dorsal plates, fifteen ; lateral plates, forty ; abdominal plates, eleven.

D. 25. P. 45. V. 20. A. 14. C. 18-60=78. Length, 1 to 2 feet.
Ohio River, KIRTLAND.

Acipenser platyrhynchus, Shovel-fish Sturgeon, Spade-fish, Shovel-head, Flat-head, RAF., Ichth. Ohien., p. 60.
" " " Shovel-nose Sturgeon, KIRTLAND'S Report, p. 196.
" " " KIRTLAND, Bost. Journ. Nat. Hist., v. p. 25, pl. 8, fig. 1

Calaphractus Gray, *Proc. Zool. Soc.* 1834, p. 122
Scaphyrhynchus Heckel, *Ann. Linn. Soc. Zool. Bot. Lond.* vol. 1, p. 173, 1835

GENUS II. POLYODON, LACEP.

Snout enormously prolonged, with a dilated middle, resembling a leaf. Their general form, and the position of the gills, similar to those of the Sturgeon ; but their gills are still more open, and their operculum is prolonged into a membranous point, which is extended as far as the middle of the body. Their mouth is very much cleft, and furnished with many small teeth. The upper jaw is formed by the union of the two palatines to the maxillaries.

1. Polyodon folium, LACEP.

Body subcylindric, flattened laterally. Head gibbous at its union with the body. The

head, including the operculum and snout, is longer than one half the total length of the fish, and the snout exceeds the united length of the head and operculum. Above, of a beautiful steel-blue; throat and abdomen white, and the gill-covers maculated by stellate impressions. Caudal fin bilobed; the lower lobe shorter, broader, and less oblique than the upper, which is serrated on its superior edge.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 1 to 5 feet.

Ohio River and its tributaries, HILDRETH, CLEMENS, KIRTLAND.

Polyodon senille (LACEPEDE), GRIFFITH'S CUV., x. p. 591.

Spatularia reticulata, Reticulated *Spatularia*, SHAW'S Gen. Zoöl., v. p. 362, pl. 156.

Polyodon folium, Western Spade-fish, RAF., Ichth. Ohien., p. 82.

" " WILSON, Encyclop. Brit., Art. Ichth. (7th edit.), p. 230.

" " Spoon-bill Sturgeon, Paddle-fish, MITCHILL, HILDRETH, CLEMENS, Silliman's Journal, XII. p. 201, plate.

" " " " KIRTLAND, Bost. Journ. Nat. Hist., IV. p. 21, pl. 2, fig. 1.

GENUS III. PLATIROSTRA, LESUEUR.

Jaws, tongue, and throat destitute of teeth. Snout flattened, elongated, and spatuliform. Fins and body closely resembling those of the Sturgeon, but without plates. The tail only is covered on each side by small bony plates, as in that genus.

1. *Platirostra edentula*, LESUEUR.

Snout not so long as one third of the body, dilated and rounded at the end. The skin supporting the gill-covers expanding and attenuating to a point posteriorly almost to the end of the pectoral fin. Tail large, notched with pointed lobes. Livid brown above, with small blackish spots upon the head; beneath white, with a few spots.

D. 58. P. 26. V. 40 to 50. A. 56. C. 15. Length, 4 to 5 feet.

Ohio River, LESUEUR, KIRTLAND. Mississippi River, KIRTLAND.

Platirostra edentula, LESUEUR, Journ. Acad. Nat. Sc., I. p. 223.

" " " SAY'S Append. Long's Expedition.

" " " KIRTLAND'S Report, p. 197.

" " " DEKAY'S Report, p. 347.

" " " Toothless Spoon-bill, KIRTLAND, Bost. Journ. Nat. Hist., v. p. 22, pl. 7, fig. 2.

ORDER II. PLAGIOSTOMI.

Gills fixed by their external edges, with five small external openings on each side. No opercle. Jaws represented by the palatine and postmandibular bones, which alone are armed with teeth. Pectorals and ventrals always present; the latter (in the male) furnished on their internal margins with long appendages.

FAMILY XXXIII. SQUALIDÆ.

Body elongated, cylindrical. Tail thick and muscular. Eyes lateral. Branchial openings on each side, never underneath.

GENUS I. CARCHARIAS, Cuv.

One anal and two dorsal fins, the first dorsal placed over the space between the pectoral and abdominal fins. Jaws and head depressed. Teeth flat, pointed, and cutting; serrated in the upper jaw, sometimes in both jaws. No temporal orifices in adults, but rudiments may be observed in the fœtus of some of the species.

1. *Carcharias ceruleus*, MITCHILL.

Small, body cylindrical. Teeth in several series, small, triangular, serrated. Pectorals broad; anal deeply notched. Slate-blue above; beneath whitish.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 2 to 6 feet.

New York, MITCHILL, DEKAY.

Carcharias ceruleus, Small Blue Shark, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., 1. p. 497.
" " " " " DEKAY'S Report, p. 349, pl. 61, fig. 200.

2. *Carcharias obscurus*, LESUEUR.

Head flat and broad. Snout rounded. A single row of triangular, serrate teeth in the upper jaw; two rows of similarly formed, but smaller, teeth in the lower jaw. Pectorals long, narrow, and falciform; ventrals subquadrangular, with no pointed process behind. Dark brown above, rather lighter than the *Lamna punctata*; beneath of a dirty white.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 9 to 10 feet.

Massachusetts, STORER.

Carcharias obscurus, Dusky Shark, LESUEUR, Journ. Acad. Nat. Sc., 1. p. 223, pl. 9.
" " " " STORER'S Report, p. 184.
" " " " STORER, Bost. Journ. Nat. Hist., 1. pp. 533, 558.
" " " " DEKAY'S Report, p. 350, pl. 61, fig. 201.

3. *Carcharias littoralis*, MITCHILL.

Body short, thick, wider towards abdomen. Fins large, not prolonged backwards. The second dorsal before the anal. Snout acute. Reddish ash-gray above, white beneath.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 3 to 8 feet.

New York, MITCHILL, LESUEUR, DEKAY.

Squalus littoralis, Ground Shark, MITCHILL, Amer. Month. Mag., 11. p. 329.
" " Ash-colored Shark, LESUEUR, Journ. Acad. Nat. Sc., 1. p. 224.
Carcharias littoralis, Ground Shark, DEKAY'S Report, p. 351.

4. *Carcharias griseus*, AYRES.

Above of a light bluish-gray color, sides lighter, beneath white. Back convex in front of the first dorsal fin. Numerous long, pointed teeth in jaws, in some instances with a small projection on each side near the base; edges of teeth smooth. Pectorals large; second dorsal arises just posterior to the origin of the anal fin.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 3 to 7 feet.

Brookhaven, Long Island, AYRES.

Carcharias griseus, AYRES, Bost. Journ. Nat. Hist., iv. p. 293, pl. 12, fig. 4.

GENUS II. LAMNA, Cuv.

Muzzle pyramidal, under the base of which are the nostrils. Branchial apertures all in front of the pectorals.

1. *Lamna punctata*, MITCHILL.

Body cylindrical, fusiform. Above greenish, becoming of a slate-color after death; lighter upon the sides; white beneath. Snout blunt. Each jaw is furnished with three rows of small, sharp, triangular teeth, smooth at their edges; the first two rows are straight; the back row recurved; the three teeth on each side of the middle of the lower jaw the largest. Anal fin opposite to the second dorsal. Caudal keeled on its sides; the upper lobe of the caudal considerably larger than the lower lobe. Head and sides of body punctured by series of mucous pores.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 3 to 10 feet.

Massachusetts, STORER. New York, MITCHILL, DEKAY.

Squalus punctatus, Green-backed Shark, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., 1. p. 483.

Lamna punctata, Mackerel Shark, STORER's Report, p. 155, pl. 3, fig. 2.

" " " " STORER, Bost. Journ. Nat. Hist., II. 534.

" " Mackerel Porbeagle, DEKAY's Report, p. 352, pl. 63, figs. 206, 207.

2. *Lamna terræ-novæ*, RICH.

Body more elongated and cylindrical than in the *L. punctata*. Upper caudal lobe much elongated, and furnished with an accessory lobe at the tip. Teeth triangular, serrated. No caudal carina. Snout pointed, thin, and broad. Uniform dusky brown above, tinged with bluish; white beneath.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 7 feet.

Newfoundland, RICHARDSON. Rhode Island, DEKAY.

Squalus (Carcharias) terræ-novæ, Newfoundland Shark, RICH., Fauna Boreal. Americ., III. p. 239.

Lamna caudata, Long-tailed Porbeagle, DEKAY's Report, p. 354, pl. 62, fig. 205.

Aprion isodon Mull. & Hanb.
32, 189

GENUS III. ALOPIAS, BONAP.

Head, dorsal and anal fins, and spiracles, as in the genus Lamna; upper lobe of the tail very long, with a depression at the base. Teeth triangular, flat, with smooth cutting edges in both jaws, curving outwards on each side from the centre. Branchial openings small, the last over the pectoral fins.

1. *Alopias vulpes*, GMEL.

Body fusiform. The upper lobe of the tail nearly as long as the body. Teeth triangular, pointed, smooth upon their edges. A dark bluish lead-color above; beneath white, with light bluish blotches upon the outer edges of the abdomen.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 12 to 15 feet.

Massachusetts, STORER. New York, MITCHILL, DEKAY.

- Squalus vulpes*, GMEL., LIN., Syst. Nat., I. pt. 3, p. 1496.
Long tailed Shark, PENNANT'S Brit. Zool., III. p. 110, pl. 14.
Squalus vulpes, Fox-Shark, SHAW'S Gen. Zool., v. p. 333.
Thresher, MITCHILL, Medical Repository, VIII. p. 77.
Squalus vulpes, Thresher or Long-tailed Shark, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. p. 482.
Carcharias vulpes, Fox-Shark or Thresher, GRIFFITH'S Cuv., X. p. 559.
Squalus vulpes, Sea-Fox or Thresher, JENYNS'S Brit. Vert., p. 493.
Carcharias vulpes, Fox-Shark or Thresher, STORER'S Report, p. 182.
Alopias vulpes, Sea-Fox, Thresher, Sea-Ape, YARBELL'S Brit. Fishes (2d edit.), II. p. 523, fig.
Carcharias vulpes, Thresher or Fox-Shark, LINSLEY'S Cat. Fishes of Connecticut.
" " Thresher Shark, DEKAY'S Report, p. 318, pl. 61, fig. 199.

GENUS IV. MUSTELUS, CUV.

Teeth blunt, forming a closely compacted pavement in each jaw; with temporal orifices. First dorsal in advance of the ventrals. Lower lobe of the caudal short. No spines.

1. *Mustelus canis*, MITCHILL.

Body cylindrical, tapering, elongated. Back and sides of a uniform slate-color; abdomen a dusky white. Body rough, when the finger is passed towards the head. Head flat between the eyes.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 2 to 4 feet.

Massachusetts, STORER. New York, MITCHILL, DEKAY.

Called "Dog-fish Shark," by the fishermen of Massachusetts Bay.

- Squalus canis*, Dog-fish, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., I. 486, ~~pl. 64, fig. 200.~~
Mustelus canis, American Hound-fish, DEKAY'S Report, p. 355, pl. 64, fig. 209.

GENUS V. SELACHUS, CUV.

Two dorsal fins, the first placed but little behind the line of the pectorals,

the second over the interval between the ventral and anal fins. The skin rough. Snout short and blunt. Temporal orifices very small. Teeth very small, numerous, conical, edges smooth, no lateral denticles. Branchial openings large, nearly encircling the neck.

1. *Selachus maximus*, LIN.

Body cylindrical, fusiform. Above of a dark slate color, lighter beneath. Snout blunt. Eyes very small. Jaws furnished with a great number of small, conical, recurved teeth. In a specimen I examined a few years since, fourteen hundred teeth were counted in the lower jaw. A carina on each side of tail.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 30 feet.

Greenland, FABRICIUS. Massachusetts, STORER. New York, MITCHILL, DEKAY. New Jersey, LESUEUR.

- Squalus maximus*, LIN., *Syst. Nat.*, i. p. 400.
 " " Basking Shark, PENNANT'S *Brit. Zool.*, iii. p. 131, pl. 16.
 " " " " SHAW'S *Gen. Zool.*, v. p. 327, pl. 149.
 " " FABRICIUS, *Fauna Groenlandica*, p. 130.
 " " Basking Shark, JENYNS'S *Brit. Vert.*, p. 503, sp. 193.
Squalus peregrinus, BLAINVILLE, *Ann. du Mus.*, xviii. pl. 6, fig. 1.
Squalus maximus, Basking Shark, MITCHILL, *Trans. Lit. and Phil. Soc. of N. Y.*, i. p. 456.
Squalus elephas, LESUEUR, *Journ. Acad. Nat. Sc.*, ii. p. 345, pl.
Squalus (*Selache*) *maximus* (CUV.), Basking Shark, RICH, *Fauna Boreal. Americ.*, iii. p. 291.
Selachus maximus, Basking Shark, Sun-fish, Sail-fish, YARRELL'S *Brit. Fishes* (2d edit.), ii. p. 518, fig.
 " " " " GRIFFITH'S *Cuv.*, x. p. 603.
Squalus elephas (LESUEUR), STORER'S Report, p. 407.
Selachus maximus, Basking Shark, DEKAY'S Report, p. 357, pl. 63, fig. 208.

GENUS VI. *ACANTHIAS*, RISSO.

Two dorsal fins, with a spine before each; first dorsal behind the line of the pectorals; the second dorsal over the space between the ventral and caudal fins; no anal fin. Skin rough in one direction; the scales heart-shaped, with a central spine directed backwards. Temporal spiracles large. Several rows of teeth in both jaws, cutting and sharp, the points directed outwards and backwards.

1. *Acanthias Americanus*, STORER.

All the upper part of the body is of a slate color, which is deeper upon the head and lighter below the lateral line; beneath white. A row of circular white spots are situated just under the anterior portion of the lateral line, and a few similar spots are irregularly distributed upon the back. The first dorsal fin commences posterior to the anterior third of the body; the second dorsal is nearer to the first dorsal fin than it is to the extremity of the tail. Upper lobe of the caudal broad, and as long again as the lower portion.

D. (?). P. (?). V. (?). C. (?). Length, 1 to 3 feet.

Northerly, beyond the coast of Labrador, DEKAY. Massachusetts, STORER. Connecticut, AYRES. New York, DEKAY.

Spinax acanthias, Picked Dog-fish, STORER's Report, p. 187.

" " (?), Spinous Dog-fish, DEKAY's Report, p. 359, pl. 64, fig. 187.

" " Dog-fish, AYRES, Bost. Journ. Nat. Hist., IV. p. 289.

GENUS VII. SCYMNUS, Cuv.

All the fins small; two dorsal fins, the first but little before, and the second but little behind, the line of the ventrals; no anal fin. Skin rough. Temporal orifices or spiracles large, placed rather high up on the head, above as well as behind the eyes. Teeth in the lower jaw crooked at the point, equilateral at the base; in the upper jaw, lancet-shaped, but little curved; the points in both jaws diverging from the centre. Gill-openings small.

1. *Scymnus brevipinna*, LESUEUR.

Body elongated, very narrow at base of tail. Lateral line black, undulating at the head, and marked in its whole length with small transverse lines. Tail wide, emarginate.

D. (?). P. (?). V. (?). C. (?). Length, 6 feet 5 inches.

Massachusetts, LESUEUR.

Somniosus brevipinna, Nurse or Sleeper, LESUEUR, Journ. Acad. Nat. Sc., I. p. 222, pl.

" " " " STORER's Report, p. 189.

Scymnus brevipinna, Nurse, DEKAY's Report, p. 361, pl. 61, fig. 202.

Lesueur does not refer to the *teeth*, in his account of this species, and hence it is impossible to fix with certainty its *generic locality*. His general description, however, leads us to suppose that it is probably a *Scymnus*, and we therefore follow the opinion of Dekay, and place it in that genus, in preference to leaving it in Lesueur's "illegally-constructed genus *Somniosus*," as is well remarked by Dekay.

GENUS VIII. ZYGÆNA, Cuv.

Head depressed, more or less truncated in front; the sides extend horizontally to a considerable length, with the eyes at the external lateral extremity. Teeth of the same shape in the upper and lower jaw, namely, the points directed towards the corner of the mouth, with a smooth edge when young, but distinctly serrated in adult specimens. Branchial openings, five. Two dorsal fins; the first in a line close behind the pectorals; the second over the anal fin.

1. *Zygæna malleus*, VAL.

Body cylindrical, elongated. Head one third as long as broad. Grayish brown above, whitish beneath. Second dorsal arises slightly in front of the anal fin. Branchial openings all before the base of the pectorals.

D (?). P. (?). V. (?). A. (?). C. (?). Length, 2 to 12 feet.

Massachusetts, STORER. New York, MITCHILL, DEKAY. Caribbean Sea, BANCROFT.
"From Nantucket to Brazil," DEKAY.

- Squalus zygæna*, LIN., Syst. Nat., i. p. 339.
" " Hammer-headed Shark, SHAW'S Gen. Zool., v. p. 354, pl. 151.
" " " " MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., i. p. 482.
Zygæna malleus, Hammer-head, VAL., Mémoires du Muséum d'Hist. Nat., ix. p. 422, pl. 11, fig. 1.
" " " JENYNS'S Brit. Vert., p. 597, sp. 196.
" " " YARRELL'S Brit. Fishes (2d edit.), ii. p. 594, fig.
" " " STORER, Supplement to Report, Bost. Journ. Nat. Hist., iv. p. 185.
" " " DEKAY'S Report, p. 362, pl. 62, fig. 204.

GENUS IX. *SQUATINA*, DUMERIL.

Body very much depressed; head flat, rounded anteriorly; both eyes on the upper surface; temporal orifices large, behind the eyes; mouth at the end of the snout; pectoral fins large, attached anteriorly to the head, the posterior edge free; two dorsal fins, both behind the ventrals; no anal fin.

1. *Squatina Dumerili*, LESUEUR.

Head bordered on each side by a white membrane; head and fins a bluish ash-gray, with reddish tints upon the head and margin of the fins; abdomen, throat, and pectoral and anal fins, marked by large red spots; nostrils with a broad, ciliated skin on each side, as in the Barbel. Teeth lanceolate, rather gibbous in front; there are six or seven distinct rows, having each five teeth.

D. (?). P. (?). V. (?). C. (?). Length, 3 to 4 feet.

Dekay supposes Lesueur's specimen was from Florida, and thinks it is found on the coast of New York.

- Squatina Dumeril*, LESUEUR, Journ. Acad. Nat. Sc., i. p. 225, pl. 10.
Squatina Dumerili, American Angel-fish, DEKAY'S Report, p. 363, pl. 62, fig. 203.

GENUS X. *PRISTIS*, LATHAM.

They unite to the elongated form of the Squali, in general, a body flat in front, and gills pierced beneath, as in the rays. But their proper character consists in a very long, depressed muzzle, in the form of the blade of a sword; armed on each side with strong osseous spines, pointed and trenchant, and

implanted like teeth. The true teeth in the jaws are small and rounded, as in *Mustelus*.

I. *Pristis antiquorum*, LATH.

Dusky above; pale gray beneath. Elongated beak, with twenty-four teeth on each side. Skin fine shagreen.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 12 to 15 feet.

New York, SCHOEFFER.

- Squalus pristis*, LIN., Syst. Nat.
 " " PENNANT'S Arct. Zool., Supplement, p. 105.
 " " FABRICIUS, Fauna Groenlandica, p. 130.
 " " Saw-shouted Shark, SHAW'S Gen. Zool., v. p. 357.
 Pez de Espada (?), PARRA, p. 75, pl. 33.
Pristis antiquorum, Saw-fish, GRIFFITH'S Cuv., x. p. 408.
 " " Common Saw-fish, DEKAY'S Report, p. 365.

Besides the *Squalidæ* above referred to, Mitchill, in his paper on the "Fishes of New York," very concisely speaks of a species which he calls "*Squalus Americanus*, — short, with oblong, sharp teeth, each of which has a little one each side at its base." He remarks, that "both jaws have five rows of teeth in front, nearly an inch long, and not jagged at the sides." Subsequently, he considered it a new species, and in his Supplement, published, in 1818, in the "American Monthly Magazine," p. 328, has called it *Squalus macrodus*, or Long-toothed Shark. What this species is must be determined by further research. In a supplement to my "Report on the Fishes of Massachusetts," published in the "Boston Journal of Natural History," Vol. IV., p. 188, I spoke as follows of a fragment of a Shark's jaw, which either belonged to this or an undescribed species. "The portion of the jaw before me is six inches in length, and two inches wide at its tip. From the tip of the jaw to the posterior angle on each side are situated seven teeth; the two on each side of the chin are longer, narrower, and straighter than those exterior to them. Dr. Prescott observed, in his letter to me, that when taken 'it exhibited three, and in some places four, rows of long, narrow teeth.' Now that the soft parts are removed, the two teeth next the chin are seen continued back into the mouth seven rows deep; in the first row, the two exterior teeth are shorter than the third within them; this third tooth, with the two still within it, are about the same size; the outer tooth of the second row is of the same height as the third of the first row, and in this row they pass backwards, decreasing as in the first row. The teeth of the other five rows differ very much from those spoken of, in their form; they are shorter, wider, and less stout, curving towards the angle of the jaw; those of the sixth and seventh rows being shorter than those of the previous three rows."

FAMILY XXXIV. RAIIDÆ.

Body very much flattened out, resembling a disk. Pectorals very large, uniting in front with the snout, and extending backwards to near the base of the ventrals. Tail more or less long and slender. Mouth, nostrils, and branchial openings beneath. Eyes and temporal orifices above. Dorsals (when present) almost always on the tail.

GENUS I. RAIA, LIN.

Disk rhomboidal. Tail slender; with two small dorsals near the tip, and sometimes the vestige of a caudal fin. Teeth slender, close set, arranged in quincunx.

1. *Raia diaphanes*, MITCHILL.

Body rhomboidal. Of a light brown color, thickly sprinkled, over its entire surface, with more or less circular black spots or blotches. Sides, anterior to pectorals, concave. Snout slightly projecting. The space between the anterior orbital ridges and the snout is diaphanous. In the male, two rows of prominent sharp spines, pointed inwards, about a dozen in each row, towards the outer portion of the pectorals. Two rows of spines on each side of the tail above; between the two central rows a naked groove.

Length, 2 to 3 feet.

Massachusetts, STORER. Connecticut, LINSLEY. New York, MITCHILL, DEKAY.

Raia diaphanes, Clear-nosed Ray, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., 1. p. 478.
 " " " " DEKAY'S Report, p. 366, pl. 77, fig. 213.
 " " " " LINSLEY'S Cat. of Fishes of Connecticut.

2. *Raia ocellata*, MITCHILL.

Body rhomboidal, depressed, with the anterior margin of the pectorals slightly sinuous; the posterior margin undulated, rounded behind, and much attenuated at its junction with the body. Patches of spines on the nose, over the eyes, and near the centre of the pectorals. A series of minute spines upon the dorsum, and on each side of the tail. Snout prominent. Chocolate-brown above, with numerous ocellated dusky or black spots, which are sometimes confluent, surrounded by lighter margins; beneath dusky white, with light brown in the centre, and faint pink on the edges.

Length, 2 to 3 feet.

Connecticut, LINSLEY. New York, MITCHILL, DEKAY.

Raia ocellata, Ocellated Ray, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., 1. p. 477.
 " " Spotted Ray, DEKAY'S Report, p. 369, pl. 65, fig. 212.
 " " Ocellated Ray, LINSLEY'S Cat. of Fishes of Connecticut.

DeKay considers this and Lesueur's *R. Chanténay* synonymous. But the coloring of the

two species is very different. Lesueur, also, in his account of his *R. Chantenay*, speaks of the tail being "terminated by three rounded fins," and his figure exhibits them. Dekay, in his account of the above (*ocellata*), describes only "two small dorsals on the tail, near its extremity."

3. *Raia erinacea*, MITCHILL.

Form rounded; diaphanous. Pale brown, with dark-brown spots. Two dorsal fins, with the vestige of a third. Two series of prickles on the tail; a patch of about twenty erectile spines on the pectorals. Prickles upon the cheeks. Snout pointed.

Length, 17 inches.

New Jersey, MITCHILL.

Raia erinaceus, Hedge-hog Ray, MITCHILL, Amer. Journ. Sc., ix. p. 290, pl. 6.
" " " " DEKAY'S Report, p. 372, pl. 75, fig. 246.

4. *Raia lævis*, MITCHILL.

Body rhomboidal. Small spines on the orbits, and anterior margins of the pectoral fins; the rest of the body smooth. Three rows of spines on the tail. Snout blunted. In the *male*, the under surface of the snout and exterior to the nostrils to the angle of the jaws, roughened by innumerable minute tubercles. *Male* of a uniform light-brown color. *Female* with blackish ocelli.

Length, 2 to 5 feet.

Massachusetts, STORER. Connecticut, LINSLEY. New York, MITCHILL, DEKAY.

Raia lævis, Smooth-backed Skate, MITCHILL, Amer. Month. Mag., ii. p. 327.
Raia batis, Skate, STORER'S Report, p. 193.
Raia lævis, Smooth Skate, DEKAY'S Report, p. 370.
Raia batis, Skate, LINSLEY'S Cat. of Fishes of Connecticut.

When my Report was written, the supplement of Dr. Mitchill to his "Fishes of New York," contained in the "American Monthly Magazine and Critical Review," was unknown to me. Dr. Dekay is probably correct in supposing my *Skate* to be the *R. lævis* of Mitchill, and I cheerfully acknowledge it above.

5. *Raia Desmarestia*, LESUEUR.

Body subrhomboidal. Brownish above, whitish beneath. Snout prominent, rounded at tip, slightly emarginated each side. Many ranges of long, curved points exterior to the eyes, and upon the pectoral fins; a range of spines upon the dorsal line; three ranges on the tail, and a spine at each extremity of the dorsal disk; two approximate fins on the superior extremity of the tail; teeth discoidal, surmounted by a point.

Length, 18 to 19 inches. Breadth, 12½ inches.

Florida, LESUEUR.

Raia Desmarestia, LESUEUR, Journ. Acad. Nat. Sc., iv. p. 100, pl. 4.
" " DEKAY'S Report, p. 372.

Raia radiata Don for *Muller & Schull*, 1376. *Raia eglantiera*, Bosc.

Body flat, semiorbicular behind, with a wide, rounded emargination each side before, near the spiracles, anterior to which the edge is dilated opposite to the eyes, and then is contracted so as to form a short, rounded rostrum. Above reddish, sprinkled with small spots; beneath whitish, with reddish tints. A longitudinal series of from nine to twelve simple spines on each side upon the pectorals; tail longer than the body, with two fins at its tip.

Length, 19 inches. Width, 10 inches.

Delaware Bay and Southern coasts, Bosc, LESUEUR.

Raia eglantiera, LACEP., Hist. des Poissons, II. p. 105, pl. 4, fig. 1.
 " " LESUEUR, Journ. Acad. Nat. Sc., IV. p. 103.
 " " DEKAY'S Report, p. 373.

7. *Raia Chantenay*, LESUEUR.

Body flat, subrhomboidal, about one fifth broader than long. Above glabrous, excepting on the anterior margin of the pectoral fins, between the eyes, and on the extremity of the rostrum, which are rough to the touch; scattered reddish-brown spots of various sizes and forms, and a transversely-oblong subocellated spot each side of the middle; beneath whitish, slightly tinted with rosaceous; towards the anterior part of each side of the anus are six small black lines or spots. Three fins at the extremity of the tail; tail armed laterally with points.

Breadth, 2½ feet.

Delaware Bay, (?)

Raia Chantenay, LESUEUR, Journ. Acad. Nat. Sc., IV. p. 106, pl. 5.

Lesueur's description was made out from a dried specimen in the Philadelphia Museum.

8. *Raia Americana*, DEKAY.

Body rhomboidal. Uniform brown, unspotted. Snout elongated. Pointed groups of prickles on the upper surface; a vertebral series, and three series along the tail.

Length, 1 to 2 feet.

New York, DEKAY.

Raia Americana, Prickly Ray, DEKAY'S Report, p. 363, pl. 66, fig. 215.

GENUS II. TRYGON, ADANSON.

Head inclosed laterally by the pectorals; posterior portion of the disk of the body somewhat rounded; tail armed near its origin with a long and sharp

flattened spine, serrated on both edges ; the rest of the tail slender, without fins, and ending in a point ; teeth small.

1. *Trygon hastata*, DEKAY.

Body quadrilateral, rounded on the pectoral angles. Uniform olive-brown above ; white beneath. Upper surface partially smooth. Tail longer than the body, and armed with two or more spines.

Width, 3 feet. Entire length, 5 to 8 feet.

Rhode Island, DEKAY. Connecticut, LINSLEY.

Raja centroura (?), Prickly-tailed Sting-Ray, MITCHELL, Trans. Lit. and Phil. Soc. of N. Y., 1 p. 479.

Pastinaca hastata, Whip Sting-Ray, DEKAY's Report, p. 373, pl. 65, fig. 214.

Trygon centroura, Whip-tailed Sting-Ray, LINSLEY's Cat. of Fishes of Connecticut.

2. *Trygon Maclura*, LESUEUR.

Body oval, elliptical, broader than long. Tail short, one third of the length of the body. Above greenish blue, with small black vermicular, interrupted lines, and larger distant, pale spots ; beneath, pale red.

Length, 15 to 18 feet.

Rhode Island, LESUEUR. Connecticut, LINSLEY.

Raja Maclura, LESUEUR, Journ. Acad. Nat. Sc., 1. p. 41, plate.

Pastinaca Maclura, Broad Sting-Ray, DEKAY's Report, p. 375, pl. 65, fig. 213.

" " " " LINSLEY's Cat. of Fishes of Connecticut.

3. *Trygon sabina*, LESUEUR.

Body orbicular ; tail more than twice as long as the body ; ventral fins long, pointed ; a range of spines upon the back and the origin of the tail ; two spines on each side of the back. Upper part of the head rough ; appendices in the male slender, distinct, as long as the ventrals.

Length, (?).

Florida, LESUEUR.

Trygon sabina, LESUEUR, Journ. Acad. Nat. Sc., iv. p. 109.

Pastinaca sabina, DEKAY's Report, p. 375.

Cuvier, not having assigned any reason why he has substituted the genus "*Pastinaca*" for Adanson's "*Trygon*," I have followed Yarrell in retaining the latter.

GENUS III. MYLIOBATIS, DUM.

Head projecting from the pectorals, and the latter more broad transversely than in the other Rays, which gives them somewhat the appearance of a bird of

prey with the wings extended, and has caused them to be compared to the eagle. Their jaws are furnished with broad, flat teeth, arranged like the squares of a pavement, and of different proportions, according to the species; their tail, extremely long, is terminated in a point, and is armed, like that of Trygon, with a strong spine, serrated on both sides, and has above, towards its base, in front of the spine, a small dorsal. Sometimes there are two or more spines.

1. *Myliobatis Freminvillii*, LESUEUR.

Body rhomboidal. Above olivaceous, more or less deep in different specimens, paler on the margins, and sprinkled with distinct rounded spots; beneath white. Orbit salient, surmounted by an eminence. Ventrals rounded. Tail very long, filiform, triangular.

Length, 2 feet. Width, 2 to 3 feet.

Rhode Island, LESUEUR.

Myliobatis Freminvillii, LESUEUR, Journ. Acad. Nat. Sc., iv. p. 111.
 " " DEKAY'S Report, p. 366.

2. *Myliobatis Say*, LESUEUR.

Suborbicular. Olivaceous red above. Teeth dilated, and rhomboidal at the base. Two elongated vertical opposite fins on the tail, behind the spine.

Length, (?). Width, 17 inches.

New Jersey, LESUEUR.

Myliobatis Say, LESUEUR, Journ. Acad. Nat. Sc., i. p. 42, pl.
 " " DEKAY'S Report, p. 376.

3. *Myliobatis acuta*, AYRES.

Head rounded anteriorly, and extending backwards, widening but little for several inches, until opposite the eyes, where it joins the body. Body above smooth, entirely destitute of spines. Whole body and head above reddish brown; tail lighter at the base, but nearly black towards the tip; beneath whitish. Tail very slender, smooth to the tip, bearing two reversely serrated spines.

Length, 3 feet, 11 inches.

Massachusetts, STORER. Connecticut, AYRES.

Myliobatis bispinosus, STORER, Proceed. Bost. Soc. Nat. Hist., p. 53.
 " " " Bost. Journ. Nat. Hist., iv. p. 187.
Myliobatis acuta, AYRES, Proceed. Bost. Soc. Nat. Hist., p. 65.
Myliobatis bispinosus (STORER), AYRES, Bost. Journ. Nat. Hist., iv. p. 290, pl. 13, fig. 1.
Myliobatis acuta (AYRES), LINSLEY'S Cat. of Fishes of Connecticut, Silliman's Journal.

In the year 1840, Dr. Yale sent me the tail and a portion of a jaw of this species, and from these I named it *M. bispinosus* in the fourth volume of the "Boston Journal of Natural

History." Mr. Ayres afterwards found an entire specimen at Brookhaven, Long Island, and called it *M. acuta*; this name, however, he withdrew, and allowed mine the priority. As, however, he has fully described from a recent specimen what I merely named from fragments of one, I feel that his name should be retained, and mine erased from the list. The remarks of my lamented friend, Rev. Mr. Linsley, of Connecticut, contained in his "Catalogue of the Fishes of Connecticut," upon the impropriety of considering the number of caudal spines as specific characters, are very just, and conclusively show the impropriety of my specific name.

GENUS IV. AËTOBATIS, MÜLLER.

Have no marginal teeth; the jaws support only a single row of broad dental plates. In the upper jaw, these plates are arched, with the convexity turned forwards; in the lower jaw, they pass straight across, with the extremities only a little bent backwards. The upper jaw is shorter and more curved than the lower one, the anterior extremity of which projects beyond the upper jaw, and can be used like a spade in digging out shell-fish, &c., from the sandy bottoms frequented by these Rays.

1. *Aëtobatis guttata*, SHAW.

Subrhomboidal. Snout spatuliform. Above light brown, with regularly distributed, numerous yellowish-white ocelli; beneath white. The tail, which is nearly four times as long as the body, is small at its origin, and terminates in a mere thread. In the dried specimen, a deep concavity upon the top of the head, between and back of the eyes, dilated anteriorly. Adult very large.

Length of body, 17 inches; of tail, posterior to dorsal fin, 45 inches. Greatest width of body, across pectorals, 20 inches.

Porto Rico, STORER.

Raja guttata, SHAW's Gen. Zool., v. p. 285, pl. 142.

GENUS V. RHINOPTERA, KÜHL.

Have the muzzle divided into two short lobes, under which are two similar ones.

1. *Rhinoptera quadriloba*, LESUEUR.

Body rhomboidal, elevated along the dorsal line. Olive-brown above, beneath white. Pectorals acute. Tail slender, longer than the body.

Length, 3 feet. Width, 2 feet.

Connecticut, LINSLEY. New York, MITCHILL, DEKAY. New Jersey, LESUEUR.

- Raja bonasus*, Cow-nosed Ray, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., 1. p. 479.
Raja quadriloba, LESUEUR, Journ. Acad. Nat. Sc., 1. p. 44, pl.
Rhinoptera quadriloba, GRIFFITH'S CUV., x. p. 616.
 " " " " Cow-nosed Ray, DEKAY'S Report, p. 375, pl. 66, fig. 217.
 " " " " LINSLEY'S Cat. of Fishes of Connecticut.

GENUS VI. CEPHALOPTERA, DUMERIL.

The head truncated in front, and the pectorals, instead of embracing it, prolong each of them their anterior extremity into a salient point, which gives to the fish the appearance of having two horns. Teeth slender, slightly dentated. The slender tail, the spine, and the little dorsal, as in *Myliobatis*.

1. *Cephaloptera vampyrus*, MITCHILL.

Body dark brown above; beneath black, calicoed with milk-white. Skin rough. Tail longer than the body, and armed with one or more spines. Dorsal between the ventrals. Anterior margin of the pectorals convex; posterior concave.

Length, 17 feet, 3 inches. Width, 16 to 18 feet.

Delaware Bay, MITCHILL. South Carolina, CATESBY. Georgia, LESUEUR.

- Cephalopterus vampyrus*, Oceanic Vampire, MITCHILL, Annals of Lyc. Nat. Hist. of N. York, 1. p. 23, pl. 11, fig. 1.
Cephaloptera giorna (LACEP.), LESUEUR, Journ. Acad. Nat. Sc., iv. p. 115, pl. 6, fig. 1.
Cephaloptera vampyrus, Sea-Devil, DEKAY'S Report, p. 377, pl. 67, fig. 219.
Cephalopterus manta, BANCROFT, Sowerby's Zoological Journal, iv. p. 453.

GENUS VII. TORPEDO, DUMERIL.

The disk of the body nearly circular; pectoral fins large; two dorsal fins placed so far back as to be on the tail; surface of the body smooth; tail short and rather thick; teeth small and sharp.

1. *Torpedo occidentalis*, STORER.

Whole upper surface dark brown, with a few almost black dots distributed over it; beneath white. Very broad across the pectorals; length of pectorals rather less than half the entire length. Caudal fin is nearly triangular, straight at its posterior margin. Eyes very small. Spiracles oval, directed outwards and a little forwards.

Length, 4 feet, 2 inches. Width, 3 feet.

Massachusetts, STORER.

- Torpedo occidentalis*, STORER, American Journal of Arts and Sciences, xlv. p. 165, pl. 3.

ORDER III. CYCLOSTOMI.

Gills purse-shaped, fixed, opening outwards by several apertures. Jaws represented by an immovable cartilaginous ring, formed by the union of the palatine and mandibular bones. Intestinal canal straight and narrow.

FAMILY XXXV. PETROMYZONIDÆ.

Body elongated, cylindrical, eel-shaped. No pectorals nor ventrals. Fins without rays.

GENUS I. PETROMYZON, LIN.

Seven branchial apertures on each side of the neck. Maxillary ring armed with strong teeth. Mouth beneath.

1. *Petromyzon Americanus*, LESUEUR.

Body cylindrical anteriorly, compressed posteriorly, and terminating in an acute tip. A slight keel upon the back. Above olive-brown, mottled with dark-brown, almost black, confluent patches; beneath of a uniform dull brown. Three large teeth in the throat.

Length, 20 to 30 inches.

Massachusetts, STORER. Connecticut, LINSLEY. New York, MITCHILL, DEKAY.

Petromyzon marinus, Great Lamprey, MITCHILL, Trans. Lit. and Phil. Soc. of N. Y., 1. p. 461.

Petromyzon Americanus, LESUEUR, Trans. Amer. Phil. Soc. (New Series), 1. p. 382.

" " " Hist. N. A. Fishes, inel., plate.

" " American Lamprey, STORER's Report, p. 195.

" " American Sea-Lamprey, DEKAY's Report, p. 379, pl. 66, fig. 216.

2. *Petromyzon nigricans*, LESUEUR.

Body above of a deep blue color; beneath bluish white. Mouth with numerous incurved teeth, or bony spines, projecting from widened bases, resembling the spines with which the Raiae are armed. Dorsals white. Caudal triangular at its termination.

Length, 6 to 7 inches.

Massachusetts, LESUEUR, STORER. Connecticut, LINSLEY.

Petromyzon nigricans, LESUEUR, Trans. Amer. Phil. Soc. (New Series), 1. p. 385.

" " Bluish Lamprey, STORER's Report, p. 197.

" " Bluish Sea-Lamprey, DEKAY's Report, p. 381, pl. 79, fig. 247.

3. *Petromyzon Lamottenii*, LESUEUR.

Yellowish on the sides, with irregular patches of dark brown above; white beneath. The mouth pectinated on its margin. Dorsals continuous.

Length, (?).

Petromyzon Lamottenii, LESUEUR, Hist. N. A. Fishes, ined., plate.
 " " " DEKAY'S Report, p. 382.

4. *Petromyzon tridentatus*, GAIRDNER.

Back and sides bluish gray, with irregularly scattered yellowish patches; belly yellowish white. Three conspicuous and contiguous teeth on the upper side of the maxillary ring. Dorsals distinct.

Length, 21 inches, 6 lines.

Columbia River, RICHARDSON.

Called "Squaqual," by the Indians on the banks of the Wallamet.

Petromyzon tridentatus, Tridentate Lamprey, GAIRDNER, Rich., Fauna Boreal. Americ., III. p. 293.
 " " " DEKAY'S Report, p. 382.

5. *Petromyzon argenteus*, KIRTLAND.

Body cylindrical, compressed towards the back. Back ash-gray; sides and beneath silvery-gray, maculated with irregular rows of black dots. A black dot over each branchial opening. Dorsals continuous.

Length, 11 inches.

Big Miami River, Ohio, KIRTLAND.

Petromyzon argenteus, KIRTLAND'S Report, pp. 170, 197.
 " " " Lamprey, KIRTLAND, Bost. Journ. Nat. Hist., III. p. 342, pl. 4, fig. 3.
 " " " DEKAY'S Report, p. 382.

6. *Petromyzon appendix*, DEKAY.

Dorsals continuous, yellow. Anal fin with a thread-like appendix on its anterior portion.

Length, 4 to 6 inches.

Rhode Island, New York, DEKAY.

Petromyzon appendix, Small Lamprey, DEKAY'S Report, p. 351, pl. 64, fig. 211.

7. *Petromyzon fluvialis*, LIN.

Richardson, in his "Fauna Boreali Americana," says,— "A Lamprey, having teeth like *P. fluvialis*, was found in Great Slave Lake, adhering to an Inconnu (*Salmo Mackenzii*). It was very like Bloch's figure of the *P. argenteus*, which Cuvier thinks is not different from *fluvialis*."

GENUS II. AMMOCETES, DUMERIL.

Form of the body, the branchial apertures, and fins, like those of the Lampreys; upper lip semicircular, with a straight, transverse under lip; mouth without teeth, but furnished with numerous short membranous cirrhi.

1. *Ammocætes bicolor*, LESUEUR.

Back and sides reddish; abdomen white; the color separated by an undulating line. Nape of the neck elevated. Dorsal fins low, separated. On the inside of the upper lip are small granules, and at the opening of the throat, small ramified papillæ.

Length, (?).

Connecticut River, LESUEUR.

Ammocætes bicolor, LESUEUR, Trans. Amer. Phil. Soc. (New Series), 1. p. 356.

" " Mud-Lamprey, STORER'S Report, p. 198.

" " Colored Mud-Lamprey, DEKAY'S Report, p. 383, pl. 79, fig. 248.

2. *Ammocætes concolor*, KIRTLAND.

Body subcylindric, more compressed laterally behind the vent; transversely marked with numerous curved sulcations. Back and sides uniformly of a light olive, or sometimes a leaden hue; the belly and throat of a yellowish white; the fins pale and diaphanous. Irregular series of dark brown dots are imprinted on the whole length of the sides of the body, and more faintly above the branchial openings. Body convex above the branchial openings. Dorsal single, commencing over the middle of the body. Mouth semicircular, elongate; lower lip transverse; nose terminates in a short snout, projecting over the mouth.

Length, 4 to 5 inches.

Mahoning and Scioto Rivers, KIRTLAND.

Ammocætes concolor, Mud-Eel, Blind Eel, KIRTLAND, Bost. Journ. Nat. Hist., IV. p. 473, pl. 27, fig. 1.

3. *Ammocætes unicolor*, DEKAY.

Color nearly uniform throughout. Dorsal single. Opening to the throat very large, but accurately closed by six irregular and ragged subcartilaginous processes, which meet in the centre.

Length, 3 to 5 inches.

Vermont, THOMPSON. New York, DEKAY.

Ammocætes unicolor, Plain Mud-Lamprey, DEKAY'S Report, p. 353, pl. 79, fig. 250.

THE seven following species are added from Sowerby's "Zoological Journal."

GENUS HÆMULON, Cuv.

13. *Hæmulon obliquatum*, BENNETT.

Yellowish, with twelve bluish bands upon the head, and numerous oblique bluish lines upon the body.

D. 12 - 16. P. 15. V. 1 - 6. A. 3 - 12. C. 16. Length, (?).

Caribbean Sea, BANCROFT.

Diabasis obliquatus, BENNETT, Sowerby's Zoological Journal, v. p. 90.

GENUS CHROMIS, Cuv.

The lips, protractile intermaxillaries, pharyngeals, dorsal filaments, and general appearance of a *Labrus*; but the teeth of the pharynx and jaws resemble those of a card, and there is a range of conical ones in front. The vertical fins are filamentous, those of the belly being even frequently extended into long threads. The lateral line is interrupted; the stomach forms a *cul-de-sac*, but has no cœca.

1. *Chromis tænia*, BENNETT.

Blackish brown; fins blackish; tail rounded, banded with black dots; a round black spot beneath the eye, another at the base of the caudal beneath, and a band continued from the eye along the middle of the side to the tail.

D. 15 - 11. P. 13. V. (?). A. 4 - 9. C. 16. Length, (?).

Caribbean Sea, BENNETT.

Chromis tænia, BENNETT, Proceedings of Zoological Society of London, 1. 1830, p. 112.

GENUS HEMIRAMPHUS, Cuv.

3. *Hemiramphus apicalis*, BENNETT.

Body four times the length of the lower mandible. Dorsal and anal fins of equal length. A silver stripe extends horizontally along the middle of the body, from the operculum to the tail. Apex of the lower jaw of a bright flame color. Pectoral fins equal in length to

one half of the length of the lower jaw. Upper mandible scarcely exceeding one half of the diameter of the eye in length.

D. 15. P. (?). V. (?). A. 16. C. (?). Length, (?)

Caribbean Sea, BANCROFT.

Hemiramphus apicalis, BENNETT, Sowerby's Zoological Journal, v. pp. 84, 89.

GENUS ECHENEIS, LIN.

5. *Echeneis lunata*, BENNETT.

Body elongated, scaly. Twenty-two to twenty-five bars on the disk; caudal fin lunate; pectorals acute. Black on the upper and more anterior portion of the back; of a dark gray over the remainder of the body, with a lighter gray stripe from near the eye to near the vent. All the fins of a dark gray.

D. 30 or 32. P. 21. V. 6. A. 30 or 33. C. 16. Length, 34 inches.

Caribbean Sea, BANCROFT.

Echeneis lunata, BENNETT, Proceedings of Zoological Society of London, 1. 1830, 1831, p. 134.

“ “ “ Sowerby's Zoological Journal, v. p. 412, pl. 13.

GENUS CONGER, CUV.

2. *Conger Savanna* (?), CUV.

Dorsal fin arises before the origin of the pectorals. Anterior teeth conical; the side teeth disposed in many series, those of the middle series the greater, parallelopiped, wedge-shaped, those of the outer and inner series the smaller, granulated, rounded, and closely arranged; the middle series of those on the vomer the larger, triangular, somewhat recurved, compressed; those on the sides granulated.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, (?)

Caribbean Sea, BANCROFT.

Called “*Conger* or *Sea Eel*,” at Jamaica.

Conger Savanna (CUV.), BENNETT, Proceedings of Zoological Society of London, 1. 1830, 1831, p. 185.

“ “ “ Sowerby's Zoological Journal, v. p. 416.

GENUS SCYLLIUM, CUV.

An anal and two dorsal fins; the first dorsal fin placed behind or opposite, but never before, the abdominal fins. Head short and blunt; nostrils pierced near the mouth, and continued by a fissure in the upper lip, forming valves. Teeth small, triangular, pointed, with one or more lateral denticles at the base

on each side. Eyelids wanting. Spiracles distinct. Branchial openings, five, partly over the pectoral fins.

1. *Scyllium cirratum*, GMEL.

Rufous. The young brownish above, and somewhat fawn-colored beneath, marked on both surfaces, over the whole of the body and the fins, by small black, rounded spots, not closely set, and somewhat regular in their distribution. Spiracles small, just behind the eyes. It generally has ten rows of teeth.

D. (?). P. (?). V. (?). A. (?). C. (?). Length, 1 to 15 feet.

Caribbean Sea, BANCROFT.

Called "Nurse," at Jamaica; "Gata," at Havana.

Squalus cirratus, LIN., GMEL.

" " Cirrated Shark, SHAW'S Gen. Zool., v., p. 344.

Scyllium cirratum (GMEL.), BANCROFT, Sowerby's Zoological Journal, v. pp. 82, 86, 415.

GENUS CEPHALOPTERA, DUMERIL.

2. *Cephaloptera hypostoma*, BENNETT.

Smooth; mouth beneath; the anterior edge of the pectoral fins declivous. Spiracles situated in a groove at the anterior base of the pectorals.

Length to ventrals, 17 inches; length of tail, 21 inches. Extreme breadth of body, 28 inches.

Caribbean Sea, BANCROFT.

Cephalopterus hypostomus, BENNETT, Proceedings of Zoological Society of London, i. 1830, 1831, p. 134.

" " " Sowerby's Zoological Journal, v. p. 411, pl. 50.

SINCE this paper was prepared for publication, the following species have been discovered, and are described in the "Proceedings of the Boston Society of Natural History."

GENUS PRIONOTUS, CUV.

5. *Prionotus pilatus*, STORER.

Above of a reddish brown, beneath yellowish white. The first dorsal fin is crossed by two oblique white lines, with a black blotch upon the connecting membrane, between the fourth and fifth rays, above the upper oblique line. The entire head is roughened by elevated

striae. The lateral projections of the snout are prominent, and margined with very strong crenulations, which are longer than in either of the species contained in Cuvier's "Histoire Naturelle des Poissons." Two distinct spines at the anterior superior angle of the eye. Opercular spine of moderate size, not elevated at its base above the opercular plate. Preopercular spine large, naked at its posterior extremity, raised and crenulated along its whole outer edge. Length of the head equal to one fourth the length of the body. Length of the pectoral fins equal to nearly one third the length of the head. The caudal fin is quite deeply emarginated; the outermost rays projecting.

D. 10-13. P. 13. V. 6. A. 12. C. 12 $\frac{1}{4}$. Length, 12 inches.

Massachusetts Bay, STORER.

Prionotus pilatus, STORER, Proceed. Bost. Soc. Nat. Hist., II p. 77.

GENUS ARGYREIOSUS, LACEP.

3. *Argyreiosus unimaculatus*, BATCHELDER.

Body nearly circular, much compressed, being less than one tenth of an inch in thickness. Breadth, one and one tenth inches. Profile nearly vertical. Lower jaw the longer, and hooked. Eyes one tenth of an inch in diameter. A filament, half an inch in length, arises on the back in a vertical plane with the origin of the pectoral fin; three tenths of an inch back of this are three very minute spines. Several finlets upon the back and abdomen. Pectoral fins three-tenths of an inch long; caudal fin deeply forked.

Preserved in spirit, above the lateral line the color is dark; below it, silvery. Upon the lateral line, which passes in nearly a right line from the superior angle of the gill-covers to the base of the caudal rays, is a nearly circular black spot, the anterior edge of which is just touched by the pectoral fin when depressed.

D. (?). P. 16. V. (?). A. (?). C. 14. Length, 1 $\frac{3}{10}$ inches to the base of the caudal fin.

Maine, BATCHELDER.

Argyreiosus unimaculatus, BATCHELDER, Proceed. Bost. Soc. Nat. Hist., II p. 73.

GENUS LEPTOCEPHALUS, PENNANT.

Have the cleft of the gills open in front of the pectorals, and the body compressed like a riband. Their head is extremely small, with a short and rather pointed muzzle, the pectorals almost imperceptible or actually wanting; the dorsal and anal in like manner scarcely visible, united together at the point of the tail; the intestines occupy only an extremely narrow line along the inferior edge.

ADDITIONS AND CORRECTIONS.

IN consequence of having added several genera to the preceding paper after the first eight pages were printed, I find it necessary to make the following additions and corrections.

In the tables of Geographical Distribution of Genera, add to the family Scombridæ the genera *Palinurus* and *Notacanthus*, as peculiar to America.

To the family Labridæ, add the genus *Chromis*, as being found both in Europe and North America.

To the family Cyprinidæ, add the genera *Pimephales* and *Fundulus*, as peculiar to America.

To the family Salmonidæ, add the genera *Thymallus* and *Saurus*, as being found both in Europe and North America.

To the family Clupeidæ, add the genus *Pomolobus*, as peculiar to America.

To the family Anguillidæ, add the genera *Muræna* and *Leptocephalus*, as being found both in Europe and North America; and the genus *Saccopharynx*, as found in North America but not peculiar to it.

To the family Squalidæ, add the genera *Alopias* and *Scyllium*, as being found both in Europe and North America.

To the family Raiidæ, add the genera *Rhinoptera*, *Cephaloptera*, and *Torpedo*, as being found both in Europe and North America.

Add the two following species from Fabricius.

Genus *ANARRHICAS*, *A. minor*, OLAFSEN, FABR., *Fauna Groenl.*, p. 139; RICH., *Fauna Boreal. Americ.*, p. 96.

Genus *SQUALUS*, *S. Gunneri*, RICH., *Fauna Boreal. Americ.*, p. 313; *S. Carcharias*, FABR., *Fauna Groenl.*, p. 127.

To the catalogue of works consulted, add the following.

Bost. Journ. Nat. Hist. Boston Journal of Natural History. 8vo. Boston. 1834 *et seq.*

Proceedings of Boston Society of Natural History. 8vo. Boston. 1841 *et seq.*

Zool. Journal. Sowerby's Zoölogical Journal. 8vo. London.

Proceedings of Zoölogical Society of London. 8vo. London. 1830 *et seq.*

ERRATA.

Page	4,	line	6,	for	Percina,	read	Etheostoma.
"	5,	"	26,	"	Zoarcus,	"	Zoarcus.
"	6,	"	3,	"	Hypsocidæ,	"	Hypsæidæ.
"	9,	"	7,	"	Percina,	"	Etheostoma.
"	11,	"	6,	"	Zoarcus,	"	Zoarcus.
"	11,	"	22,	"	Hypsocidæ,	"	Hypsæidæ.
"	17,	"	19,	for	vii.,	"	ii.
"	31,	"	11,	after	Mesoprion,	"	Cuv.
"	31,	"	26,	for	Lane,	"	Lone.
"	33,	"	6,	"	p. 116,	"	p. 216.
"	41,	"	1,	"	Ravenelii,	"	Ravenel.
"	41,	"	7,	"	"	"	"
"	41,	"	9,	"	Holbrookii,	"	Holbrookii.
"	41,	"	14,	"	"	"	"
"	42,	to the <i>synonymes</i> of <i>Pomotis</i> appendix, add <i>Pomotis rubricauda</i> . Red-tailed <i>Pomotis</i> . STOREY, Post.					
		Journ. Nat. Hist., iv. p. 177.					
"	51,	line	16,	for	3,	read	5.
"	62,	"	24,	after	Gasterosteus,	"	aculeatus.
"	113,	"	26,	for	three tenths,	"	one eleventh.
"	124,	"	10,	"	C. 161,	"	C. 16.
"	129,	"	8,	"	Platyscephalus,	"	Platycephalus.
"	130,	"	5,	"	card-teeth,	"	card-like teeth.
"	202,	"	11,	"	three,	"	the.
"	203,	"	17,	"	Lesser's,	"	lesser.
"	224,	"	25,	"	Length, 2 inches,	"	Length, 21 inches.

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Lepidosiren paradoxa. found by Haller. as in
fish near Barba on Madeira river, the other in a
marsh on left bank of Amazon about little Nova,
and near in river beyond which den. name ~~Carac~~
Cararaucú führt. Length measured 3 feet 9".

Characters of some genera of gymnodal. Agassiz. *Magasin*
archiv. IV. p. 78

Phoxinus Body cylindrical, scales small. Pharyngeals pointed
tail forked

Chondrostoma Body elongated, cylindrical. Mund unterhalb
quer. D. 12 cart. 2 p. 12, se hundert. Schleimdrüsen sehr
zusammen, drückt, an e hrem innerwande sehr abgetrennt
in a single row. Tail forked. D. - A. small. C. nasus

Aspius Body compressed. Lanes jaw longer. Pharyngeals length
end. a little bent at posterior 2 rows. D. small. A. long.
Tail forked. A. rapax. A. Alpinus

Cottus gracilis. Heckel. *Ann. des Wien. Mus.* Vol. 2. Pt. 1. p. 148.
1839.

Pinnae ventralis radiis 4, linea laterali caudam non
attingente.

Der Körper ist im Ganzen schlanker u. weniger spindelförmig als bei dem gemeinen Cottus, sein grosser Höhenmesser hinter den Brustflossen ist 12mal, u. sein geringster vor der Schwanzflosse 13mal in der ganze Länge enthalten. Die grössten Dicke hinter den Brustflossen steht der Höhe wenig nach. Der Kopf beträgt den meisten Theil der gesamtlänge, er ist weniger niedergedrückt u. weniger stumpf als ~~am~~ C. gobio, der Mund etwas münderbreit. Die Linie zwischen den Augen ist kaum schmaler als ein Augendurchmesser. Die Samen an Prä u. Suboperculum liegen genügend unter der Haut verborgen, sind klein u. wenig merkbar. Die linea lat. weicht von jener des gemeinen Cottus und der nahe verwandten Arten vorzüglich darin ab, dass sie eigentlich vor dem Ende der zweiten Rückenflosse verschwindet, indem die 22-24 Schleimdrüsen, welche sie bis dahin bilden dann aufhören, und nur eine feine porulose Haut hinter ihnen schnell abwärts steigt, dann wieder horizontal den Körper aus bis zur Schwanzflosse fort läuft.

Die Brustflossen sind geschlossen länger u. spitzer als bei C. gobio, sie reichen zurückgelegt bis hinter den dritten Strahl der zweiten Rückenflosse, bestehen jede aus 13 rollkörnigen angehaltenen Strahlen wovon die vorderen 7 etwas dicker sind u. über die Membran hervorragen.

Die Bauchflossen setzen unter den Brustflossen, reichen zurückgelegt beinahe bis zum Anus; sie bestehen jede aus einem kurzem Stachelstahl, und nur drei ungetheilten weichen, deren erster etwas länger ist als die beiden andern, welche sich beinahe von Länge gleichen.

Die erste Rückenflosse entspringt nach den Bauchflossen, sie enthält 8 ungetheilte Strahlen, die aufgerichtet einen niedern Bogen bilden, der in seiner Mitte nur $\frac{1}{3}$ der Körperhöhe unter ihm beträgt; der letzte Stahl ist mit der Basis des ersten in den zweiten Rückenflosse durch eine Membran verbunden. Die zweite Rückenflosse beginnt über dem Anus, ist zweimal so lang und so hoch als die erste, und besteht aus 16 völlig ungetheilten Strahlen, wovon der erste mit dem letzten, der zweite mit dem 15 gleich lang, und niedriger sind als jene in der Mitte die der Körperhöhe, unter ihnen gleichen.

Die Anal flosse beginnt unter dem dritten Strahl der zweiten Rückenflosse, und endet unter ihrem 14, sie hat 12 völlig ungetheilten Strahlen, die in ihrer Länge mit jenen der zweiten Rückenflosse übereinkommen.

Die Schwanzflosse ist wenig abgerundet, ihre Länge ist $\frac{5}{2}$ mal in der Gesamtlänge enthalten sie besteht aus 16 Strahlen, wovon die 5 mittleren zweimal, davon zwei auf jeder Seite einmal getheilt sind, 4 ungetheilte, flügelweise kleiner werdend. Befinden sich über und drei unter diesen.

B. 6. P. 13. V. $\frac{1}{3}$. D. 8-10. A. 12. C. $\frac{4}{9}$. Size $3\frac{1}{2}$ "

Color in spirit ~~at~~ over whole body a fine coffee brown, uniformly dotted with black points, which show no markings on cloudy bands, ^{streaks} beneath dirty white: dorsal & caudal fins and mit dunkelbraunen schmalen Bändern zurchigogen, die nicht nur die Strahlen wie bei unserer gemeinen Art, der vorhergehenden Art, sondern auch die sie verbindende Membran überziehen: V. & A. white with a dark trace of spots.

New York. Bremen Mus
Cottar

Coltus cognatus Rich. ^{Sci. Bull.} is probably a distinct species distinguished from *gobio*, by the undivided pectoral fin rays. *C. cognatus* differs from it & all others by the suddenly bent lat. line & only 4 Rays in V.

ventral fin rays 25	Indinis	Pinnis pectoralibus radiis superiorem densis	<i>Ovis latilobus</i> interval- lum marginum sub- orbitalium superante, <i>C. gobio</i> Lin. & Val. <hr/> cauda crassa <i>Ovis latilobus</i> interval- lum marginum suborbitalium aequante, cauda attenuata <i>C. microstomus</i> Heck.
		P. pect. radiis omnibus indinis	Pinnis ventralibus va- riegatis, dorsalium radiis 9-16 <i>C. paucilopus</i> Heck <hr/> P. vent. unicoloribus, <i>C. cognatus</i> Rich dorsal. rad. 8-13 <hr/> --- --- --- --- --- <i>C. affinis</i> Heck. --- --- --- --- --- <i>C. gobio</i> Schlegel. <hr/> --- --- --- --- --- <i>C. gracilis</i> Heck.
	divisis		
	vent. fin rays 14		

Scopaenopsis. Heckel. (Colloidogy. 1b. 159.

Dentibus in utraque Maxilla et in vomere; in palato nullis; capite compresso, spinoso, alepedoti; corpore squamato, appendicibus cularibus lateralibus, et in capite; pinnis dorsalibus unca; Br. Rays 7.

Trachidermus. Heckel. 1b. 159. 1839

Corpus fusiformi; capite depresso, spinis variis instructo, appendicibus membranaceis nullis; dentibus in Maxilla utraque in vomere et in palato; Br. Rays 6; Squal fin 2, either separate or joined at base; V. 5 rays beneath pectorals, scales none, skin rough.

Distinguished by Gammargahner from *Coltus*
C. richardsoni Heck. = *C. asper* Rich

Aspius. Ag. Unterkiefer vorangetrieben, mit einer Erhöhung
an der Symphyse, welche in eine Ausbuchtung des Ober-
kiefers passt. Rückenflosse senkrecht nach dem Bauch
flüssen anfangend, mit weniger Strahlen than in A. Pharyn-
geals bones 11 points ventrally, in 2 parallel rows,
the outer with 5, inner with 3 ~~teeth~~.

Elongated fish, belly ter - gebückt between V. & A: in
an schmalen falten - ist ~~the~~ ^{the} ~~under~~ ^{point} of C. lower than upper:
the längere A liegt beneath end of D. - scales soft -
very caducous

Abramis Cur. Pharyngeal teeth, well compressed, sharply ab-
gezeichnet mit etwas hakigen Spitzen, die keine Längs-
linie bilden, 5 teeth in a row, rarely a row of 2 behind the
Pharynx. Ag - scales small & soft kaum bis zum Centralpunkt
des Fächers, sich überdeckend: upper jaw projecting: D.
senkrecht nach V. anfangend, short, same number of rays as
A: teeth subcylindrical at base, mit compressed schiefer
Krone, ~~seamant~~ gebogener Haken Spitze, in 2 parallel rows
5 in outer, 3 in inner

No keil in belly.

Abramis Cuv.

Parana

belula

Blicca

trucantii

Bugzenhagenii

Ballerus

Schreberii

Comba

Chela

Aspius

Chondrostoma

Ienciscus

Phoxinus

Yenica

Gobio

Barbus

Cyprinus

Cyprinopsis

Rhodanus

cultata

bipunctatus

alburnus

mentis

rapare

naseus

dobula

gustogum

Ides

Ides

Chrys.

erythrophthalmus

urticus

vulgaris

jaculus

aphya

caenis

marulii

vulgaris

vulgaris

nanoscopus

communis

carpio

hungaricus

kollaris

carassius

gibelio

amans

Ray, A = or + 1 thorny D.

Ray, A = 1 thorny D.

Belly sharp keeled
Anal very long

Abramis Cuv.
Scales prescribed on ridge of back

Chela Cuv.
Breast sharp keeled lower jaw projecting

Aspius Ag.
Breast round lower jaw projecting

Chondrostoma Ag.
Mouth wide in front
peritoneal & c. h. of upper jaw +

Ienciscus Cuv.
Scales mod. coarse beyond middle upper jaw + mouth in front upper jaw +

Phoxinus Ag.
Scales very small not coarse to middle upper jaw + mouth in front upper jaw +

Yenica Cuv.
D. neck den. V. 11.

Gobio Cuv.
D. 11 or den. V.

Barbus Cuv.
D. only spined 11

Cyprinus Cuv.
Caud. 4. Fins spined 11 rays

Cyprinopsis Fitz.
Caud. 11. Fins spined 11 rays

Rhodanus Ag.
Fins spined 11. 10 rays
Ray, A = or + 1 thorny D.

Back ridge keeled, covered with scales

No thorny rays in fins

Thorny rays in fins

A. 11 D.

Shat.

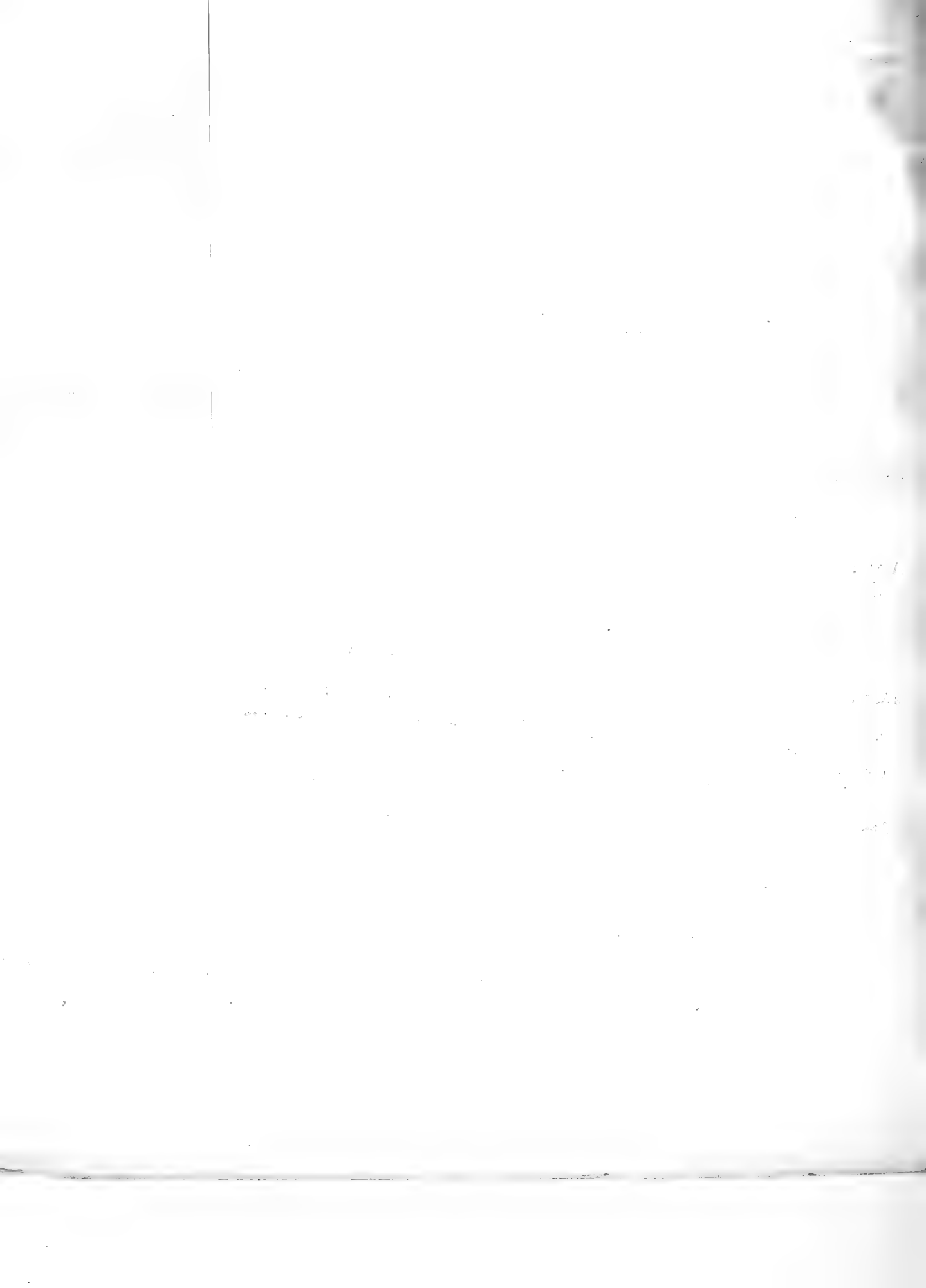
Scale, heads very small

Caudal rays long

Clupeoides
 Spratillidae
 Clupeosoma
 Clupeiformes

<u>Clupea</u>	on lower jaw	small teeth
Body elongated, neck rounded		
small, median		
very low, central canal	two folds, numerous	
<u>Sardinella</u>		No teeth
<u>Harengula</u>		Have teeth
<u>Pellone</u>		
Body very deep like last		
<u>Pristigaster</u>		like last
<u>Rajona</u>		no teeth
<u>Clupeomus</u>		no teeth
<u>Spratella</u>		no
<u>Ruvula</u>		Has teeth
<u>Alases</u>		
<u>Meletta</u>		no
<u>Alosa</u>		no

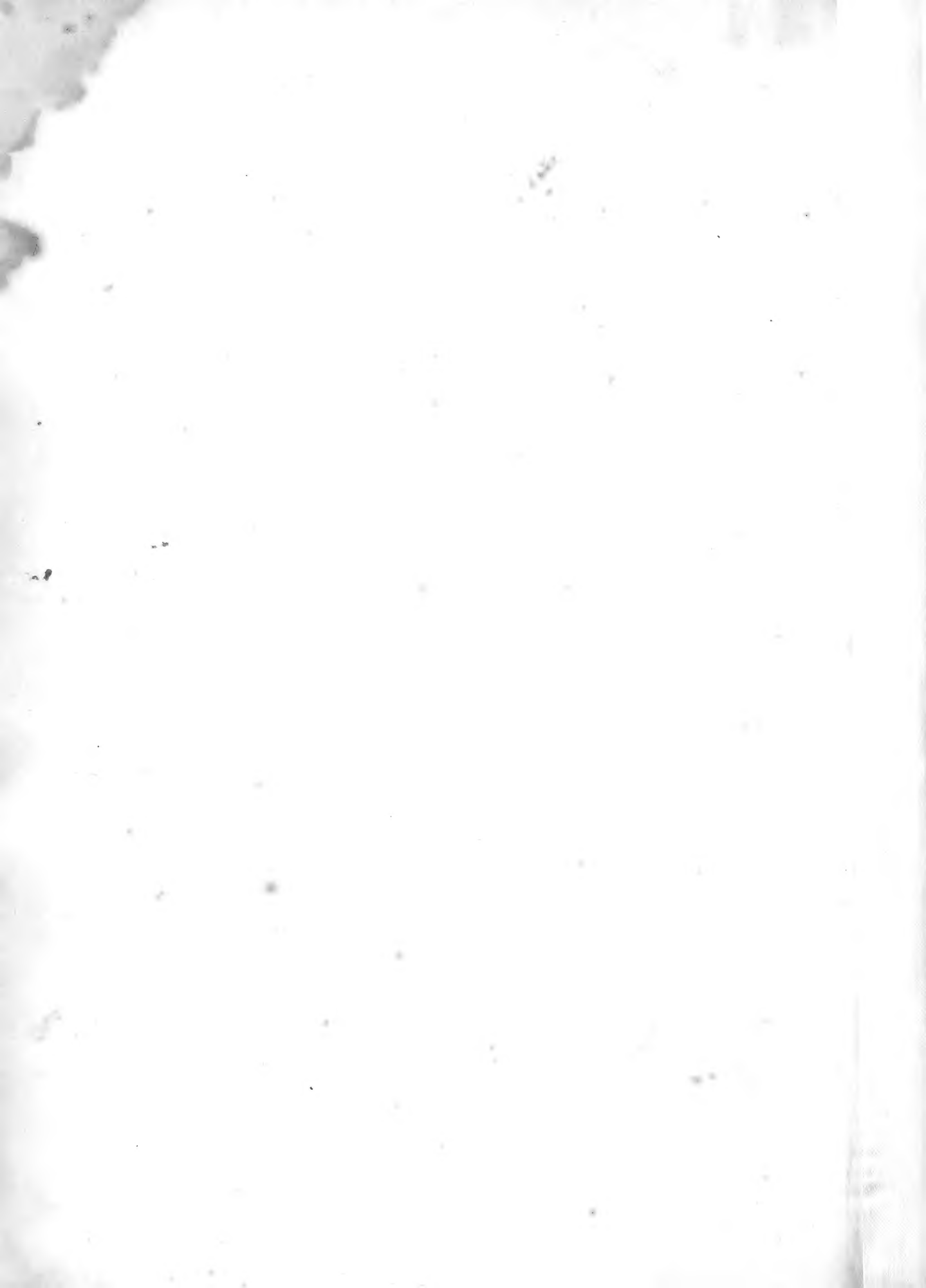
Teeth on upper jaws	Clupea, Harengula, Pellone, Pristigaster, Ruvula
No teeth	Sardinella, Rajona, Clupeomus, Spratella, Meletta, Alosa
Teeth on maxillary none	Clupea, Harengula, Pellone, Pristigaster, Ruvula, Sardinella, Rajona, Clupeomus, Spratella, Ruvula , Meletta, Alosa
Teeth on lower jaw, none	Clupea, Ruvula, Sardinella, Harengula, Pellone, Pristigaster, Rajona, Clupeomus, Spratella, Meletta, Alosa
Teeth on vomer	Clupea, Rajona, Sardinella, Harengula, Pellone, Pristigaster, Clupeomus, Spratella, Meletta, Alosa
Teeth on pharynx	Sardinella, Harengula, Pellone, Pristigaster, Rajona, Clupeomus, Ruvula
no	Clupea, Spratella, Meletta, Alosa
Palatine teeth none	Clupea, Sardinella, Harengula, Pellone, Pristigaster, Rajona, Clupeomus, Ruvula, Spratella, Meletta, Alosa
Tongue, toothed	Clupea, Sardinella, Harengula, Pellone, Pristigaster, Rajona, Spratella, Clupeomus, Ruvula, Meletta, Alosa
not toothed	Alosa





Amplexoides	Spiraloides	Chapalosa	Chapitaly
—	—		—
—	—		
—	—		
—	—	—	—
—	—		—
—	—	—	—
6	6	6	6

Detonant
 terminal
 300
 300
 300
 3.14 + 2







...on the left
speaks, by his Spirit in his word. And thus God
... through the strength before him,