SCIENTIFIC RESULTS OF EXPLORATIONS BY THE U. S. FISH COMMISSION STEAMER ALBATROSS.

[Published by permission of Hon. Marshall McDonald, Commissioner of Fisheries.]

No. IX.—CATALOGUE OF FISHES COLLECTED AT PORT CASTRIES, ST. LUCIA, BY THE STEAMER ALBATROSS, NOVEMBER, 1888.

BY

DAVID STARR JORDAN.

In the fall and winter of 1888–'89 the steamer *Albatross* made a voyage from Norfolk, Va., around Cape Horn to San Francisco, in the interests of the U. S. Fish Commission. During this trip large collections of fishes were made. In the present paper I give an enumeration of the species found at Port Castries on the island of St. Lucia, in the West Indies. The specimens collected are in the U. S. National Museum. A partial series is in the University of Indiana.

TORPEDINIDÆ.

1. **Narcine brasiliensis.**

STOLEPHORIDÆ.

2. **Stolephorus browni** (Gmelin).
   Abundant.
3. **Stolephorus perfasciatus** (Poey).

CLUPEIDÆ.

4. **Opisthonema oglinum** (Le Sueur).
5. **Harengula arcuata** (Jenyns).
6. **Harengula macrophthama** (Ranzani).

Two species of *Harengula* are abundant in this collection. These two species, and a third (*H. sardina* Poey), have been recognized by Poey and fairly well distinguished. It is probable that all the nominal species of this group in the West Indian fauna should be referred to the synonymy of these three. These may be generally recognized by the following characters:

a. Scales firm and very adherent, so that in ordinary specimens very few if any are lost. Each scale with one to four vertical striæ, well defined and more or less curved; ventral scutes about 16+12; scales on back before dorsal more or less laciniate.

b. Body deep, with the ventral outline forming an even curve from chin to vent; depth of body, 2¾ to 3 in length to base of caudal (3⅜ to 3¾ with caudal); head, 3⅘ in length, 1¼ to 1⅓ in depth of body; eye moderate, one-third longer than snout, 2⅔ in head; insertion of ventrals nearer tip of snout than base of caudal; dark humeral spot often obscure or wanting; usually a row of dark points extending backward from it along upper part of sides of body; caudal pale. (Specimens from Cedar Keys, Key West, Havana, and St. Lucia) ..... ARCUATA.

bb. Body more elongate, the ventral outline little convex, forming a weak arch; depth of body, 3⅖ in length to base of caudal (4⅕ with caudal); head, 3⅗ in length, 1 to 1⅕ in depth of body; eye large, 1⅕ longer than snout, 2⅔ in head; insertion of ventrals nearly midway between snout and base of caudal; dark humeral spot usually evident, sometimes wanting; above this spot a narrow dark streak extends, bounding the dark color of the back; just above this a pale streak; caudal dusky; scales a little less striate than in the others. (Specimens from St. Lucia) ..... MACROPHTHALMA.

aa. Scales less firm and little adherent, so that many of them are lost in ordinary museum or market specimens; each scale with about four wavy vertical striæ on its free edge; ventral scutes, 15+10; body rather elongate, the ventral outline little convex, forming a weak arch; depth of body, 3⅓ to 3½ in length (4⅓ with caudal); head, 3⅘ in length, 1$\frac{1}{10}$ in depth of body; eye very large, one-third longer than snout, 2½ in head; insertion of ventrals nearly midway between snout and base of caudal; color pale; no dark humeral spot; caudal pale. (Specimens from Key West and Havana) .... CLUPEOLA.

The following seems to be the synonymy of the species, most of the earlier descriptions being so loosely drawn as to be more or less uncertain. The nomenclature is therefore throughout only provisional.

HARENGULA ARCUATA.

Sardina Escamuda.

? *Clupea arcuata* Jenyns, Ichth. Voy. Beagle, 1842, 134. (Bahia Blanca).

Harengula humeralis Cuv. & Val., XX, 293, 1847. (Guadaloupe.)

Clupea humeralis Günther, VII, 422. (Bahia, Jamaica, Trinidad, Dominica, Barbadoes.)

Alosa striata Cuv. & Val., XX, 429. (Guadaloupe.)

Harengula (?) *clupeola* Poey, Enumeratio, etc. (Havana.)

Clupea clupeola Jordan, Proc. U. S. Nat. Mus., 1886, 33. (Havana.)

Harengula pensacolæ,* Goode and Bean. Proc. U. S. Nat. Mus., 1879, 152. (Pensacola.)

Clupea pensacolæ Jordan, Proc. U. S. Nat. Mus., 1884, 107. (Key West.)

HARENGULA MACROPHTHALMA.

? *Clupea macrophthalma* Ranzani, "Nov. Com. Ac. Sc. Inst. Bonon., V, 1842, 320, tab. 23" (*fide* Günther): Günther, VII, 421. (Cuba, St. Croix, Jamaica, Barbadoes.)

? *Harengula maculosa* Cuv. & Val., XX, 292, 1847. (Martinique.)

Harengula jaguana Poey, Repertorio, I, 190, 1866. (Jagua, near Cienfuegos.)

---

*Specimens from Florida seem to average a little deeper in body than those from Cuba. This difference becomes, however, inappreciable on the examination of large numbers of specimens.

HARENGULA CLUPEOLA.

Sardina De Ley.

? *Harengula clupeola* Cuv. & Val., xx, 289, 1847. (Martinique.)
Harengula sardina Poey, Memorias, II, 310, 1861. (Havana.)
Clupea sardina Jordan, Proc. U. S. Nat. Mus., 1884, 106 (Key West); *ibid.*, 1886, 33 (Havana).
Harengula callolepis Goode, Proc. U. S. Nat. Mus., 1879, 152. (Bermuda.)

EXOCŒTIDÆ.

7. Hemiramphus unifasciatus Ranzani.

BELONIDÆ.

8. Tylosurus raphidoma (Ranzani).
9. Tylosurus euryops (Bean).

A single specimen, agreeing with the description given by Jordan and Fordice (Proc. U. S. Nat. Mus., 1886, 347).

SYNGNATHIDÆ.

10. Siphostoma rousseau (Kaup).

Syngnathus elucens Poey, Synopsis, 1867, 443.

A small, slender species, with the snout one-fourth longer than the rest of the head; top of head with a slight keel; rings $16 + 34 = 50$. Dorsal rays 26 to 28, the fin covering $1\frac{1}{2} + 5$ rings. Vent midway between tip of snout and twenty-third caudal segment. Head almost three times in distance from tip of snout to vent. Lateral line interrupted above the vent. Head $7\frac{1}{5}$ in length.

This specimen agrees very closely with the short account given by Kaup of a specimen sent by Alexandre Rousseau from Martinique. The *Syngnathus elucens* of Poey seems to be the same. Poey counts $1\frac{1}{2} + 4$ rings under the dorsal. This species is close to the European *Siphostoma pelagicum*, but the latter is more slender, with longer snout and longer head, $6\frac{4}{5}$ to $7\frac{1}{4}$ in length to base of caudal. The European *Siphostoma agassizi* is also closely related, but that species is stouter than *S. rousseau*, with shorter snout.

MURÆNIDÆ.

11. Gymnothorax funebris (Ranzani).

A young specimen.

12. Echidna catenata (Bloch).

Several young specimens in good condition.

MUGILIDÆ.

13. Mugil curema Cuv. & Val.

Common.

14. Querimana gyrans Jordan & Gilbert.

Several specimens about $1\frac{1}{2}$ inches in length. Teeth in upper jaw comparatively strong; apparently no teeth in the lower. Anal rays II, 9 or II, 10, not II, 7 or 8, as counted in the original types.

SPHYRÆNIDÆ.

15. Sphyræna guaguanche (Cuv. & Val.

POLYNEMIDÆ.

16. Polydactylus virginicus (L.)

SCOMBRIDÆ.

17. Auxis thazard (Lacépède).
18. Scomberomorus cavalla (Cuvier).

CARANGIDÆ.

19. Oligoplites saurus (Bloch & Schneider).
20. Chloroscombrus chrysurus (L.).
21. Trachurops crumenophthalmus (Bloch).
22. Caranx latus Agassiz.
23. Vomer setipinnis (Mitchell).
24. Selene vomer (L.).
25. Trachinotus falcatus (L.).
    (*Trachynotus ovatus* authors.)

HOLOCENTRIDÆ.

26. Holocentrus ascensionis (Osbeck).

SERRANIDÆ.

27. Rypticus saponaceus (L.).
28. Bodianus cruentatus (Lacépède).
29. Mycteroperca venenosa guttata (Bloch).

SPARIDÆ.

30. Lutjanus jocu (Bloch & Schneider).
31. Lutjanus caxis (Bloch & Schneider).
32. Lutjanus synagris (L.).
33. Lutjanus analis (Cuv. & Val.).
34. Lutjanus vivanus (Cuv. & Val.).
    (*Lutjanus profundus* Poey).
35. Lutjanus buccanella (Cuv. and Val.).
36. Hæmulon parra (Desmarest).
    (*Hæmulon acutum* Poey).
37. Hæmulon plumieri (Lacépède).
38. Hæmulon flavolineatum (Desmarest).
39. Hæmulon schranki Agassiz.
    (*Hæmulon steindachneri* Jordan & Gilbert.)

Not before taken north of Brazil.

40. Hæmulon chrysargyreum Günther.
41. Hæmulon aurolineatum (Cuv. & Val.).
42. Hæmulon striatum (L.).
    (*Hæmulon quadrilineatum* Cuv. & Val.)
43. Conodon nobilis (L.).
44. Calamus bajonado (Bloch & Schneider).

MULLIDÆ.

45. Upeneus maculatus (Bloch).

SCIÆNIDÆ.

46. Larimus breviceps Cuv. & Val.

47. Odontoscion dentex (Cuv. & Val.).

48. Corvula sanctæ-luciæ sp. nov. (Type, No. 41732, U. S. N. M.).

Allied to *Corvula subæqualis* (Poey), but with a larger mouth, shorter pectoral, and different coloration.

Head, $3\frac{1}{4}$ in length; depth, $3\frac{1}{6}$; D. XI–I, 23 : A. II, 8; scales, 6–46–10. Length of type, $5\frac{3}{4}$ inches.

Body oblong, moderately compressed, the back moderately elevated. Head rather short and blunt, the anterior profile uniform, and slightly arched. Snout short, shorter than eye, $4\frac{3}{4}$ in head. Eye large, $3\frac{3}{5}$ in head, a little greater than interorbital space. Mouth considerably oblique, the jaws equal, the premaxillary in front on the level of lower part of pupil, the maxillary extending to beyond line of middle of pupil, $2\frac{1}{3}$ in head; teeth of upper jaw in a narrow band, the outer moderately enlarged; teeth of lower jaw moderate, not quite equal, almost in one series; preopercle with its membranous edge finely dentate; gill rakers long and slender, about x + 15. Scales large and firm, those above lateral line anteriorly in series parallel with the lateral line; at a point below last dorsal rays each series is suddenly bent upward, and then again becomes horizontal. Rows of scales below lateral line horizontal and nearly straight. Dorsal spines slender; soft dorsal and anal scaly at base; caudal (broken) apparently subtruncate; pectoral very short, in head, reaching about to eighth dorsal spine; anal small, inserted backward, its second spine moderate. Distance from insertion of ventral to first anal spine one and one-fifth times depth of body. Coloration silvery, with about fourteen horizontal dark stripes, as in some other species of *Corvula* and *Larimus*. These stripes are continuous, and those above bend upward underneath last dorsal spines; fins pale yellowish, all more or less soiled with dark points; a faint dark axillary spot; lining of gill cavity pale.

One specimen, from St. Lucia.

49. Umbrina broussoneti (Cuv. and Val.)

50. Micropogon fournieri (Desmarest.)

GERRIDÆ.

51. Gerres olisthostoma Goode & Bean.

52. Gerres rhombeus Cuv. & Val.

53. Gerres gula Cuv. & Val.

54. Gerres pseudogula (Poey.)

Very close to the Florida species, *Gerres harengulus*, but a little more slender, and with rather weaker anal spines. In the paper on this

genus by Evermann and Meek (Proc. Ac. Nat. Sci., Phila., 1886, 261), *Gerres harengulus*, as represented by specimens from Florida and Cuba, was referred to the synonymy of the west coast *Gerres gracilis*. The two species are very closely related. A comparison of specimens show that *G. harengulus* has a blunter snout, somewhat larger eye, and larger anal spines than *G. gracilis*. Eye, $2\frac{4}{5}$ in head; snout, $\frac{3}{4}$; second anal spine, $2\frac{2}{3}$ to $3\frac{1}{3}$ in head in *G. harengulus* from Key West; ($3\frac{1}{4}$, $3\frac{1}{4}$, $4\frac{1}{2}$ in *G. gracilis* from Guaymas). It is, however, not always possible to distinguish *G. harengulus*, *G. pseudogula*, *G. gracilis* and *G. dowi*, and perhaps all should be regarded as varieties of one, *G. gracilis*.

EPHIPPIDÆ.

55. Chætodipterus faber (L.)

CHÆTODONTIDÆ.

56. Chætodon striatus Bloch.
57. Chætodon ocellatus Bloch.
58. Chætodon sedentarius Poey.
59. Chætodon capistratus L.
60. Holacanthus tricolor (Bloch).

ACANTHURIDÆ.

61. Acanthurus hepatus (L.)
62. Acanthurus bahianus Castelman.
(*Acanthurus tractus* Poey.)
63. Acanthurus cœruleus (Bloch & Schneider.)

LABRIDÆ.

64. Halichœres maculipinna (Müller & Troschel.)
65. Halichœres bivittatus (Bloch).
66. Platyglossus dimidiatus (Agassiz).
67. Sparisoma flavescens (Bloch & Schneider).
68. Sparisoma abildgaardi (Bloch).
69. Sparisoma aurofrenatum (Cuv. & Val.).
70. Sparisoma hoplomystax (Cope).
(*S. cyanolene* Jordan & Swain.)

Abundant, as is also the next species. The fact of the wide distribution of these two species is an interesting one, as until very lately both have been overlooked or else not intelligibly described.

71. Sparisoma xystrodon Jordan & Swain.
72. Scarus cœruleus (Bloch).
73. Scarus croicensis (Bloch).

One young specimen.

74. Scarus acutus Poey.

One specimen. In spirits, dark above, with a paler area extending from pectorals to base of caudal. Caudal subtruncate, with the angles slightly produced. No posterior canines. Scales on cheek in four rows, those of the first row largest, the third row with six or seven scales; body rather elongate, the depth $3\frac{2}{5}$ in length; snout comparatively sharp, $2\frac{3}{4}$ in length of head; eye small.

MALACANTHIDÆ.

75. Malacanthus plumieri (Bloch).

GOBIIDÆ.

76. Gobius soporator Cuv. & Val.

SCORPÆNIDÆ.

77. Scorpæna plumieri Bloch.
78. Scorpæna grandicornis Cuv. & Val.

DACTYLOSCOPIDÆ.

79. Dactyloscopus tridigitatus Gill.

Dactyloscopus poeyi Gill (Proc. Ac. Nat. Sci., Phila., 1861, 266) seems to be the same species.

PLEURONECTIDÆ.

80. Syacium micrurum Ranzani.
81. Platophrys lunatus (L.).
82. Symphurus pusillus (Goode & Bean).

Depth, 3 in length; scales, 88. Dark gray, with very obscure brown cross-bands. Fins, including caudal, pale, with dusky blotches at short intervals. This specimen is identical with the one taken by Dr. O. P. Jenkins at Beaufort, North Carolina, mentioned by Jordan and Goss, Review Pleuron., p. 326. It is decidedly different from the common *S. plagusia* of the West Indies, and seems to be specifically distinct from *S. plagiusa*. I may here note that the appearance of "keeled scales" on *Symphurus nebulosus* (Goode & Bean) is due to a black line on the skin under the center of each row of scales. There seems to be no real keel and the species is congeneric with the other species of *Symphurus*.

BALISTIDÆ.

83. Monacanthus pullus (Ranzani).

TETRAODONTIDÆ.

84. Spheroides testudineus (L.).

DIODONTIDÆ.

85. Diodon hystrix L.

OSTRACIIDÆ.

86. Ostracion bicaudale L.

ANTENNARIIDÆ.

87. Antennarius scaber (Cuvier).

One small specimen. Body light brown, clouded with darker. Fins all with round black spots, those at the base of the dorsal somewhat larger than others. Ventrals tipped with black.

UNIVERSITY OF INDIANA, *December* 11, 1889.