LIST OF FISHES COLLECTED AT HAVANA, CUBA, IN DECEMBER, 1883, WITH NOTES AND DESCRIPTIONS.

By DAVID S. JORDAN.

In the Proceedings of the U. S. National Museum for 1884, pp. 103–150, is given an account of the collections of fishes obtained by me at Key West in December, 1883. After finishing the work there described I spent ten days in Havana, devoting all my time to making collections of fishes in the various markets of the city. Two hundred and five species were obtained. These are enumerated in the present paper, with such notes as seem to me worthy of preservation.

In connection with each species I give the Spanish names *as heard by myself in the market*, and in all cases where the specific name adopted by me is different from that used in Professor Poey's excellent "Enumeratio Piscium Cubensium," I have given Poey's name in the synonymy.

I have had especial opportunities to be sure of my identifications of Poey's species, as I spent almost every evening of this time at the professor's house, and my list of the day was commented on, and in all disputed cases specimens were compared directly with the descriptions and drawings of his MSS. Ictiologia Cubana.

In some cases I have not been able to agree with Professor Poey, who has regarded the Cuban fauna as in some degree distinct from that of the Antilles generally. This has been almost unavoidable on his part, as the descriptions extant of fishes from other parts of the West Indies are very unsatisfactory. There can be no doubt, however, that Cuba forms, with the other islands of the West Indies, a continuous fauna, the differences being, as a rule, only those due to differences in the character of the bottoms and the shores.

In some cases I have regarded species of Poey as nominal, two or more of them, perhaps, referring, in my opinion, to one species. As to this point I may here quote from a sketch of the work of Professor Félipe Poey, published by me in the Popular Science Monthly for 1884, p. 549.

"Of late the types of the new species described by Professor Poey have been, after being carefully studied by him and represented in life-size drawings, mostly sent to other museums. * * * Duplicates have been rarely retained in Havana, the cost of keeping up a permanent collection being too great. As a result of this, Professor Poey's work has sometimes suffered from lack of means of comparing specimens

taken at different times. There is no zoological laboratory in Cuba, e cept the private study of Professor Poey, and here, for want of roo and for other reasons, drawings have, to a great extent, taken the pla of specimens." * * * Poey's writings "give some evidence of t disadvantages arising from solitary work, without the aid of the ass ciation and criticism of others, and without the broader knowledge the relations of groups which comes from the study of more than o fauna. On the other hand, Professor Poey has enjoyed the great a vantage of an exhaustless supply of material, for there are few por where fishes are brought in in such quantities or in such profusion variety as in the markets of Havana."

Besides my many personal obligations to Professor Poey, I am al indebted for many favors to Señor Leonel Plasencia, a naturalist-c lector in Havana, a former pupil of Poey, and a very skillful taxidermis To two of the fish-dealers in the Pescaderia Grande, or wholesale marke Señores José Rodriguez and Félipe Guadalupe, I am also indebted f intelligent aid in the work of making collections.

A full series, including nearly all the species here mentioned, has bee sent to the U. S. National Museum. The rest of the collection is in t museum of the Indiana University. Duplicates from the Key West an Havana collections have also been presented to the British Museum.

Several of the more important genera of Cuban fishes, as *Epinephelu Hæmulon*, *Calamus*, *Lutjanus*, *Scarus*, &c., have formed the subject special papers by myself and my associates or students in these Pr ceedings or in those of the Academy of Natural Sciences at Philadelphi These groups are therefore but briefly noticed here.

SCYLLIDÆ.

1. Ginglymostoma cirratum Gmelin.

GALEORHINIDÆ.

2. Galeus canis Mitchill. *Boca Dulce.*

3. Carcharhinus falciformis Bibron. *Cazon.*

4. Carcharhinus terræ-novæ Richardson.
(? *Squalus punctatus* Mitchill, preoccupied. *Carcharias* (*Scoliodon*) *lalandi* Mü ler & Henle. *Scoliodon porosus* Poey.)

Specimens from Havana are exactly identical with others from Ke West, which belong unquestionably to *C. terræ-novæ*. *Sc. lalandi* without doubt the same, the difference in the form of the caudal bein doubtless, as Dr. Günther has suggested, due to age. *Carcharhinus lo gurio* of the Pacific coast is very closely allied to *C. terræ-novæ*, but ha a notably longer snout.

SPHYRNIDÆ.

5. Sphyrna tiburo Linnæus.
(*Reniceps tiburo* Poey.)

TRYGONIDÆ.

6. Urolophus torpedinus Desmarest.

7. Dasyatis sayi Le Sueur.

ALBULIDÆ.

8. Albula vulpes L. *Macabi.*
(*Albula conorhynchus* Poey.)

ELOPIDÆ.

9. Elops saurus L. *Carajo Reale.*

10. Megalops atlanticus Cuv. & Val. *Sabalo.*

CLUPEIDÆ.

11. Clupea pseudohispanica Poey. *Sardina de España.*

12. Clupea sardina Poey. *Sardina de Ley.*

I do not believe that this species is identical with any of those described by Cuvier & Valenciennes. Among the species called *Harengula*, this one, as Poey has stated, is well distinguished by the looseness of its scales.

13. Clupea clupeola. Cuv. & Val. *Sardina Escamuda.*

This species seems to be the *Harengula clupeola* C. & V. and the *Clupea humeralis* of Günther. The poorly-described *Alausa striata* C. & V. may be the same fish, and I do not see that it differs in any respect from the descriptions of the European *Clupea latulus*. *Harengula pensacolæ* Goode & Bean is a different species, having the body considerably deeper. Very similar to the latter is the *Harengula humeralis* of C. & V. and also *Harengula jaguana* of Poey. Possibly *humeralis jaguana* and *pensacolæ* may prove identical. The *Clupea macrophthalma* of Ranzani, as described by Günther, is different from any of these and the *Clupea maculosa* of Cuv. & Val. seems to be the same as the *macrophthalma*.

14. Opisthonema oglinum Le Sueur. *Machuelo.*
(*Opisthonemus thrissa* Poey.)

ENGRAULIDIDÆ.

15. Cetengraulis edentulus Cuvier. *Bocon.*
(*Cetengraulis brevis* Poey.)

There is no evident difference between *C. brevis* and *C. edentulus*. Our Cuban specimens have been compared with an example of the latter from Rio Janeiro.

16. Stolephorus browni Gmelin. *Bocon.*

Excessively common.

17. Stolephorus perfasciatus Poey.

SYNODONTIDÆ.

18. Synodus spixianus Poey. *Lagarto.*

19. Synodus intermedius Agassiz.

20. Synodus myops Forster.
(*Trachinocephalus brevirostris* Poey; probably based on an error in copying o perhaps on a mutilated example.)

CYPRINODONTIDÆ.

21. Gambusia punctata Poey. *Guajacon.*

Very abundant in the Rio Almendares.

MURÆNIDÆ.

22. Sidera ocellata Agassiz.

23. Sidera moringa Cuvier. *Morena Pintita.*
(*Gymnothorax rostratus* Agassiz, Poey. *Gymnothorax picturatus* Poey. ? *Gymnothorax versipunctatus* Poey.)

This common species is extremely variable in coloration. In som specimens the dark markings almost entirely obscure the ground colo confining it to scattered reticulations, while in others the pale greenis ground color predominates. There is also considerable variation in th length of the head, more than enough to account for the differences no ticed by Poey between his *picturatus* and *rostratus*. There is also con siderable difference in the size of the eye, it varying from one-third t one-half the length of the snout in specimens of similar size.

24. Sidera vicina Castelnau.

One specimen, agreeing very closely with Dr. Günther's descriptio but not with any of Poey's.

Color yellowish-brown, densely, closely, and irregularly marbled, an reticulated with dark brown or leather color, the surface being abou equally divided between this and the lighter ground color. Head, fin and inside of mouth similarly marked. Anal with a conspicuous pal edge. Angle of mouth with a brown spot. No dark spot around gil opening.

Other characters essentially as described by Dr. Günther. Head, 2 in trunk. Cleft of mouth 2⅛ in head. Eye, 2 in snout.

Many of the species of this genus described by Poey must be merel nominal, based on color variations, but none of them seems to corre spond to this.

CONGRIDÆ.

25. Conger conger L. *Congrio.*
(*Conger esculentus* Poey.)

ANGUILLIDÆ.

26. Anguilla anguilla rostrata Le Sueur. *Anguila.*
(*Muræna cubana* Poey.)

My specimens agree precisely with others from the United States.

BELONIDÆ.*

27. **Tylosurus hians** Cuv. & Val.
(*Belone maculata* Poey.)

28. **Tylosurus raphidoma** Ranzani. *Agujon.*
(*Belone crassa* and *B. melanochira* Poey.)

29. **Tylosurus notatus** Poey. *Agujon.*

30. **Tylosurus euryops** Bean & Dresel.
(? *Belone depressa*, Poey.)

Several specimens.

SCOMBERESOCIDÆ.

31. **Hemirhamphus pleei** Cuv. & Val. *Escribano.*
(*Hemirhamphus filamentosus* Poey.)

32. **Hemirhamphus unifasciatus** Ranzani. *Escribano.*
(*Hemirhamphus poeyi* Poey.)

SYNGNATHIDÆ.

33. **Hippocampus punctulatus** Guichenot. *Caballito.*

FISTULARIIDÆ.

34. **Fistularia tabaccaria** L. *Trompeta.*

MUGILIDÆ.†

35. **Mugil liza** Cuv. & Val. *Lebrancho.*
(*Mugil lebranchus* Poey.? *Mugil brasiliensis* Agassiz, not of later writers.)

36. **Mugil gaimardianus** Desmarest.

37. **Mugil curema** Cuv. & Val. *Liza.*
(*Mugil brasiliensis* Poey, not of Agassiz, which is probably *M. liza.*)

38. **Mugil trichodon** Poey.

39. **Joturus pichardi** Poey. *Joturo.*
(*Joturus stipes* Jordan & Gilbert.)

A large specimen from a river of the interior was obtained for me by Señor Leonel Plasencia.

Head, $4\frac{4}{5}$ in length; depth, $3\frac{3}{5}$. D. IV–1, 9; A. III, 9. Scales, 42—13 or 14. Length about 20 inches.

Color dull olivaceous, without distinct markings, paler below.

I have compared this specimen carefully with the description of *Joturus stipes* Jordan & Gilbert given in these Proceedings for 1882, p. 373. I find no difference at all which cannot be readily accounted for by the greater size of the individual now before me. I have there-

*An account of the species of this group will be given elsewhere.

†See Jordan & Swain, Proc. U. S. Nat. Mus., 1884, for an account of the species of *Mugil.*

fore no doubt that *Joturus stipes* is specifically identical with *Joturus pichardi*. The teeth appear on cursory examination to be, as stated by us, "coarse, bluntly conical," but a lens shows that, as Poey has stated, they are broad truncate incisors, with their free edges serrate.

ATHERINIDÆ.

40. Atherina stipes Müller & Troschel. *Cabezota.*
(*Atherina laticeps* Poey.)

Rather common. Our specimens agree entirely with others from Key West, which are *A. reliana* Goode & Bean.

SPHYRÆNIDÆ.*

41. Sphyræna picuda Bloch & Schneider. *Picuda.*

42. Sphyræna guaguanche Cuv. & Val. *Guaguanche Pelon.*

43. Sphyræna picudilla Poey.

POLYNEMIDÆ.

44. Polynemus virginicus L. *Barbudo.*
(*Trichidion plumieri* Poey.)

SCOMBRIDÆ.

45. Scomberomorus regalis Bloch *Pintada.*

Scomberomorus maculatus Mitchill, also called *Pintada*, is occasionally sent over to the market from Key West.

46. Scomberomorus cavalla Cuvier. *Sierra Serrucho.*
(*Cybium caballa* Poey.)

47. Acanthocybium solandri Cuv. & Val. *Peto.*
(*Acanthocybium petus* Poey.)

CARANGIDÆ.

48. Decapterus punctatus Agassiz.

49. Trachurops crumenophthalmus Bloch. *Chicharro.*
(*Trachurops plumieri* Poey.)

50. Caranx ruber Bloch. *Cibi Mancho ò Carbonero.*
(*Carangoides iridinus* Poey.)

51. Caranx bartholomæi Cuv. & Val. *Cibi Amarillo.*
(*Carangoides cibi* Poey.)

52. Caranx chrysos Mitchill. *Cojinúa.*

53. Caranx sexfasciatus Quoy & Gaimard. *Jurel.*
(*Caranx latus* and *C. lepturus* Agassiz. *Carangus fallax* Cuv. & Val.)

54. Caranx hippos Linnæus. *Jiguagua.*

55. Caranx lugubris Poey. *Tiñosa.*

* For notes on the *Sphyræniдæ* of this collection see a paper by Meek & Newland, in Proc. Ac. Nat. Sci. Phila., 1884.

56. **Caranx crinitus** Mitchill. *Pámpano.*
(*Blepharis crinitus* and *Scyris analis* Poey.)

57. **Vomer setipinnis** Mitchill. *Jorobado.*

In the Proc. U. S. Nat. Mus., 1885, 196, Messrs. Goode & Bean adopt for this species the name of *Vomer vomer*, regarding it as the *Zeus vomer* of Linnæus, which has been hitherto considered as belonging to a species with falcate dorsal (*Selene vomer*). We may, therefore, inquire into the history of the name *Zeus vomer*.

In the tenth edition of the Systema Naturæ the name *Zeus vomer* is first given, and it is based on the *Rhomboida alepidota argentea*, &c., of Sloan, and the *Zeus cauda bifurca* of the Museum Adolphi Frederici. In the twelfth edition of the Systema Naturæ the description of *Zeus vomer* is somewhat lengthened, and the reference to Brown disappears. It is evident that we should consider the fish described by Linnæus himself in his account of the museum of Adolphus Frederic as the type of his species, rather than the fish of Brown, erroneously included in the synonymy. It seems also that the later omission of the reference to Brown shows that Linnæus had become aware that Brown's fish was not identical with his *Zeus vomer*.

The *Rhomboida alepidota*, &c., of Brown is apparently *Vomer setipinnis*, while the *Zeus cauda bifurca*, the basis of *Zeus vomer*, is evidently *Selene vomer*, as is shown by the very good figure and by the description which I here quote in full:

"**Zeus cauda bifurca.** Art. gen. 50, syn. 28.
"*Gallus marinus f. Faber indicus.* Will. app't. 7.
"*Abaeatuaja.* Margr. bras., 161.
"*Brasile* Bristle Fin. Pet. gaz., 3, t. 59, f. 3.

"Habitat in Brasilia.

"Corpus compressum and fere membranaceum ut in Pleuronecte. Color argenteus absque squamis, nitidissimus. Humeri valde gibbi. Linea lateralis valde sursum incurvata in medio.

"Caput maxime declive, a summis humeris linea recta ad os. Membrana branchiostega radiis 6. Maxilla inferior transversa ad os. Pinna dorsi anterior radiis 8, quorum 1 brevis, 2 longissimus, 3 and 4 connexi praecedentibus; 5, 6, 7, 8 brevissimi non connexi. Posterior radiis 22, quorum 1 brevis spinosus, 2 longissimus mollis; 3, 4, 5 minores, reliqui ad huc minores aequales. Pectorales radiis 18 mollibus, lanceolatæ. Ventrales radiis 4, longiores pectoralibus, apice nigricantes. Ani radiis 19, quorum 1 spinosus brevis; 2, 3, 4 longiores, lanceolati. Reliqui aequales. Caudæ radiis 20, valde bifurca. Spina in medio abdominis prominet inter pinnas ventrales, pone anum, bidentata. Spina prima in pinna ani antrorsum prominet basidente aucta." (Linnæus. Museum Adolph. Frederici, p. 67.)

Widely distributed and common as this fish is, it seems to have received no binomial name prior to that given by Mitchill.

58. **Chloroscombrus chrysurus** Linnæus. *Casabe.*

59. **Trachynotus rhomboides** Bloch. *Palometa.*
(*Trachynotus ovatus* Poey.)

As already stated by Meek & Goss, the *Trachynotus carolinus* of Poe is the species for which these writers have adopted the name of *Trach notus rhodopus* Gill. The true *T. carolinus* has not yet been found i Cuba.

60. **Oligoplites saurus**, Bloch & Schneider. *Zapatero.*
(*Oligoplites occidentalis* Poey.)

CORYPHÆNIDÆ.

61. **Coryphæna hippurus** L. *Dorado.*

PEMPHERIDÆ.

62. **Pempheris schomburgki** Muller & Troschel. *Catalufa de lo Alto.*
(*Pempheris mulleri* Poey.)

Four examples obtained. These agree well with Poey's descriptio of *Pempheris mulleri* and also fairly with Steindachner's description *Pempheris schomburgki*, both of these accounts being from Cuban spec mens. The original description of *Pempheris schomburgki* is very bri and inadequate, but as it agrees tolerably well with the present speci it seems necessary to regard it as identical with it. *Pempheris poe* Bean appears to be unquestionably different.

In my Catalogue of the Fishes of the Pacific Coast of the United State in the current volume of these Proceedings, I have inadvertently omitte *Pempheris mexicanus*, described from Acapulco by Cuvier & Valencienne An unnamed species of *Microspathodon*, obtained by Professor Gilbe at Panama, should also have been included.

HOLOCENTRIDÆ.

63. **Holocentrum ascensione** Osbeck. *Carajuelo.*
(*Holocentrum matajuelo* Poey.)

This species exhibits much variation in the depth of the body and i the prolongation of the soft parts of the vertical fins. None of the n merous species described by Poey seem to be identical with *H. ascension* but I doubt if all are distinct from each other.

In life this fish is bright silvery red with pearly streaks above alon the rows of scales; some specimens somewhat darker and tinged wit olive above. Head quite red above. Fins light red, the spinous dors largely golden olive, its edge scarlet. An oblique white stripe acro the cheeks, disappearing in alcohol.

64. **Myriopristis jacobus** Cuv. & Val. *Candil.*
(*Myriopristis lychnus* Poey.)

My numerous specimens of this beautiful fish agree fairly well wit the accounts of *M. jacobus*, and I feel warranted in regarding *M. lychn*

as identical with *M. jacobus*. *Rhinoberyx chryseus* Cope, based on a young *Myriopristis*, is probably not different from *M jacobus*.

In life, deep crimson, paler below; a deep blood-red bar across opercle and base of pectoral, becoming black in spirits. Vertical fins blood-red, with whitish edge. Pectorals and ventrals pale red.

CENTROPOMIDÆ.

65. Centropomus undecimalis Lac. *Robálo.*
(*Centropomus appendiculatus* Poey.)

There seems to be no evidence that this species is not the original *undecimalis* of Lacépède. According to Dr. Vaillant, the specimens examined by Cuvier & Valenciennes have the appendages to the air-bladder which are characteristic of this species.

66. Centropomus pedimacula Poey.

67. Centropomus ensiferus Poey.
(*Centropomus affinis* Steindachner.)

Allied to *C. armatus* Gill of the Pacific coast, but distinct from the latter.

SERRANIDÆ.*

68. Serranus phœbe Poey.

69. Serranus tabacarius Cuv. & Val. *Jacome.*
(*Haliperca jacome* Poey.)

Color in life brownish-red above, with areas of light yellow on sides of back; yellow below eye; sides bright orange-yellow; belly and lower parts of head red; lower fins light orange; caudal red, with two stripes of deep red; dorsal red-shaded, a maroon blotch on each part extending upward from a similar blotch on back; iris yellow.

70. Serranus formosus L. *Serrano.*
(*Diplectrum radians* Poey.)

71. Hypoplectrus indigo Poey. *Vaca.*
(*Hypoplectrus indigo* and *borinus* Poey.)

In life everywhere deep clear blue; body with about eight cross-bars of sky-blue on a ground color of indigo. A broad deep-blue band below the eye, with a paler area on each side of it; fins nearly plain, the pectoral palest, tinged with yellowish. The *H. borinus* of Poey is certainly the adult of this species.

72. Paranthias furcifer Cuv. & Val. *Rabirubia de lo Alto.*
(*Brachyrhinus furcifer* Poey; the name *Brachyrhinus* is preoccupied.)

73. Mycteroperca falcata Poey. *Abadejo.*

74. Mycteroperca tigris Cuv. & Val. *Bonaci Gato.*
(*Trisotropis camelopardàlis* Poey; red variety.)

75. Mycteroperca interstitialis Poey.

* See Jordan & Swain, Proc. U. S. Nat. Mus., 1884, for notes on *Epinephelus* and allied genera.

76. **Mycteroperca bonaci** Poey. *Aguaji Bonaci.*
(*Trisotropis bonaci, brunneus,* and *aguaji* Poey.)

Mycteroperca microlepis Goode & Bean (*Aguaji*) was also seen in som numbers in the markets, but all the specimens had been shipped fro Key West.

77. **Mycteroperca venenosa** Linnæus. *Bonaci de Piedra.*
(*Trisotropis petrosus* Poey.)

78. **Mycteroperca venenosa apua** Bloch. *Bonaci Cardenal.*
(*Trisotropis cardinalis* Poey.)

In a review of the genus *Epinephelus* (Proc. U. S. Nat. Mus., 188 389), Professor Swain and the writer have adopted the name *apua* for species of *Epinephelus*, *E. catus* C. & V.

A careful recomparison of the accounts given by Bloch & Mar grave have convinced me that the original *Bodianus apua* of Bloch i the red variety of *Mycteroperca venenosa*, as suggested by us on pag 391 of the paper cited. The name *apua* has therefore priority ov *Johnius guttatus* Bloch & Schneider, as a varietal name for the Bona Cardenal.

The *Bodianus marginatus* Bloch & Schneider, based on the *Pira apia* of Marcgrave, is also the same fish, without doubt.

For the "*Cabrilla*," called by us *Epinephelus apua*, we must eith adopt the name *guttatus* L., for the reasons given by Goode & Bea or else we must take the name *catus* C. & V., which seems to be th earliest tenable specific name ever given to the species. The nam *Lutjanus lunulatus* of Bloch & Schneider is not available, because it i preoccupied by the same authors higher up on the same page.

79. **Promicrops itaiara** Lichtenstein. *Guasa.*
(*Promicrops guasa* Poey.)

80. **Epinephelus morio** Cuv. & Val. *Cherna Americana; Cherna de Vivero.*

Most of the individuals of this species come into the Cuban marke from Key West; hence the common names heard in the markets.

81. **Epinephelus mystacinus** Poey. *Cherno de lo Alto.*

82. **Epinephelus striatus** Bloch. *Cherna Criolla.*

83. **Epinephelus ascensionis** Osbeck. *Cabra Mora.*
(*Epinephelus punctatus* Poey.)

84. **Epinephelus catus** Cuv. & Val. *Cabrilla.*
(*Epinephelus lunulatus* Poey.)

The reasons for discarding the specific names *apua* and *lunulatus* fo this species have been given above.

85. **Alphestes afer** Bloch. *Guaseta.*
(*Prospinus chloropterus* Poey.)

86. **Enneacentrus guttatus** Linnæus. *Enjambro*
(*Petrometopon apiarius* Poey.)

87. **Enneacentrus guttatus coronatus** Cuv. & Val. *Enjambro.*
(*Petrometopon guttatus* Poey.)

88. (a). **Enneacentrus fulvus** Linnæus. *Guativere Amarilla.*
(*Enneacentrus punctulatus* Poey.)

88 (b). **Enneacentrus fulvus ruber** Bloch & Schneider. *Guativere Colorada.*

88 (c). **Enneacentrus fulvus punctatus** L. *Guativere.*

These three forms differ strikingly in color and color only. Of these the yellow form is least common, perhaps inhabiting deepest water.

89. **Dermatolepis inermis** Cuv. & Val.

RHYPTICIDÆ.

90. **Rhypticus saponaceus** Bloch & Schneider. *Jaboncillo.*

PRIACANTHIDÆ.

91. **Priacanthus catalufa** Poey. *Catalufa.*
(*Priacanthus macrophthalmus* C. & V.; not *Anthias macrophthalmus* Bloch.)

SPARIDÆ.*

92. **Lutjanus caxis** Bloch & Schneider. *Caji.*

93. **Lutjanus jocú** Bloch & Schneider. *Jocú.*

94. **Lutjanus griseus** L. *Caballerote.*
(*Lutjanus caballerote* Poey.)

95. **Lutjanus cubera** Poey. *Cubera.*
(? *Genyoroge canina* Steindachner.)

96. **Lutjanus profundus** Poey. *Pargo de lo Alto.*

97. **Lutjanus buccanella** Cuv. & Val. *Sesi de lo Alto.*

98. **Lutjanus synagris** L. *Biajaiba.*

99. **Lutjanus mahogani** Cuv. & Val. *Ojanco.*
(*Lutjánus Ojanco* Poey.)

100. **Lutjanus aya** Bloch. *Pargo Guachinango.*
(*Bodianus aya* Bloch. *Mesoprion vivanus* C. & V. *Mesoprion campechianus* Poey. *Lutjanus blackfordi* Goode & Bean.)

Among the known species of *Lutjanus*, the only one which could be the *Bodianus aya* of Bloch is the present one, and except in the matter of the form of the anal, a detail to which Bloch's artist was not likely to have given close attention, the figure of Bloch represents very fairly the *L. vivanus*. The *Lutjanus aya* of C. & V., which is *L. profundus* Poey, cannot be *aya* of Bloch, as the iris is conspicuously bright yellow in *L. profundus*, while in the *aya* it is said to be red.

* See Jordan & Swain, Proc. U. S. Nat. Mus., 1884, for notes on *Hæmulon* and on the species of *Lutjanus* and allied genera. Also in the same volume of the Proceedings see a review of *Calamus* by Jordan & Gilbert.

101. Lutjanus analis C. & V. *Pargo criollo.*

102. Ocyurus chrysurus Bloch. *Rabirubia.*

103. Rhomboplites aurorubens C. & V. *Cagon.*
(*Rhomboplites elegans* Poey.)

104. Tropidinius dentatus Guichenot. *Arnillo.*
(*Tropidinius arnillo* Poey.)

105. Aprion macropthalmus Müller & Troschel. *Voraz.*
(*Platyinius vorax* Poey.)

106. Etelis oculatus Cuv. & Val. *Cachucho.*

107. Verilus sordidus Poey. *Escolar Chino*

A single specimen from deep water, procured for me by my friend Señor Leonel Plasencia.

108 Orthopristis chrysopterus L.
(*Orthopristis fulvomaculatus* Poey. *Orthopristis poeyi* Scudder.)

109. Anisotremus virginicus L. *Catalineta.*
(*Anisotremus virginicus* and *A. spleniatus* Poey.)

110. Hæmulon gibbosum Walbaum. *Jallao.*
(*Hæmulon album* Poey.)

111. Hæmulon acutum Poey. *Ronco blanco.*
(*Hæmulon acutum, albidum,* and *serratum* Poey.)

112. Hæmulon carbonarium Poey. *Ronco Carbonero.*

113. Hæmulon melanurum L. *Jenïguana.*
(*Hæmulon dorsale* Poey.)

114. Hæmulon sciurus Shaw. *Ronco Amarillo.*
(*Hæmulon luteum* and *Hæmulon multilineatum* Poey ; the latter a color variety.)

115. Hæmulon plumieri Lacépède. *Ronco Ronco.*
(*Hæmulon arara* Poey)

116. Hæmulon flavolineatum Desmarest. *Ronco Condenado.*

117. Hæmulon tæniatum Poey.

118. Hæmulon aurolineatum Cuv. & Val. *Jenïguano.*
(*Hæmulon jenïguano* Poey.)

119. Calamus bajonado Bloch & Schneider. *Bajonado.*

120. Calamus calamus Cuv. & Val.
(*Calamus orbitarius* Poey.)

121. Calamus proridens Jordan & Gilbert. *Pez de Pluma.*
(*Calamus megacephalus* Poey, in part, not of Swainson.)

122. Diplodus flavolineatus Cuvier & Valenciennes.

Very close to the next species and about equally common. The specimens from Key West formerly referred by me to *D. unimaculatus* all belong to *D. flavolineatus.*

123. Diplodus unimaculatus Bloch. *Salema.*
(*Sargus caribæus* Poey.)

A more elongate fish than the preceding, the depth $2\frac{1}{2}$ in body, instead of 2. *Diplodus probatocephalus* (*Sargo Raiado*) is occasionally brought into the Havana market from Key West. It does not seem to occur about the coast of Cuba.

APOGONIDÆ.

124. Apogon pigmentarius Poey.

Several specimens. Bright carmine-red, profusely and irregularly covered with small black dots like fly-specks.

MULLIDÆ.

125. Upeneus martinicus Cuv. & Val. *Salmonete Amarilla.*
(*Mulloides flavovittatus* Poey.)

126. Upeneus maculatus Bloch. *Salmonete Colorado.*

SCIÆNIDÆ.

127. Eques punctatus Bloch. *Vaqueta.*

128. Larimus batabanus Poey.

The remarkable species, named by Poey, *Johnius batabanus*, seems to me related rather to *Larimus* than to any other of the current groups of *Sciænidæ*. It is one more of those troublesome intermediate forms which have come in to prevent a satisfactory subdivision of the *Sciænidæ*. I give here a detailed description.

Head, $3\frac{1}{5}$ in length ($3\frac{3}{4}$ with caudal); depth, $3\frac{1}{3}$ (4); D. XI, 27; A. II, 7. Scales 7–50–9 or 10.

Body oblong, rather strongly compressed, the depth about equal from the front of dorsal to opposite the anal, where it is abruptly contracted to the rather short, compressed caudal peduncle. Anterior profile nearly straight from above tip of snout to front of dorsal, the snout gently decurved.

Head rather small, compressed, not evidently cavernous or spongy. Cheeks vertical; interorbital width about equal to length of snout, a trifle more than diameter of eye, about 4 in head. Mouth rather large, terminal, oblique, but much less so than in *Larimus breviceps*, the premaxillary in front on the level of the lower part of pupil, the maxillary extending to below middle of eye. Gape $2\frac{1}{5}$ in length of head. Preorbital narrow, not wider than pupil. Lower jaw slightly included. Teeth slender, of moderate size, those of lower jaw mostly in a single series; those of upper jaw in a narrow band; those in the outer series somewhat enlarged and unequal; some on each side of the symphysis longer than the rest, but still small. Symphysis slightly raised. Chin with four distinct pores, the outer pair largest.

Preopercle entire, the skin on its edge scarcely denticulate.

Gill-rakers slender, of moderate length, about 12 on lower half of anterior arch, the longest a little more than half diameter of pupil.

Scales ctenoid, irregular in size, those on lower part of sides anteriorly and on belly large; scales on breast large; scales above lateral line considerably reduced in size, especially anteriorly. Scales on opercle large; scales on cheeks small; on top of head very small.

Soft parts of dorsal, anal, and caudal nearly covered with rows of small scales.

Lateral line not strongly curved, becoming straight above anal.

Dorsal spines very slender, the longest about half length of head. Soft rays of dorsal about one-third length of head. Caudal rounded, a little more than half length of head. Anal fin small, the second spine moderate, $2\frac{4}{5}$ in head. Last ray of anal a little before last ray of dorsal, the abdomen being very long, its length from ventrals to anal one-fourth more than length of head. Ventrals short, $1\frac{3}{4}$ in head; pectorals, $1\frac{3}{5}$.

Color dusky silvery, brighter below, grayish above, each scale with a narrow, sharply-defined blackish longitudinal mark, these forming more or less continuous streaks along the rows of scales, broadest on those parts of the body where the scales are largest. Those below lateral line, 7 or 8 in number, gently undulated; those above lateral line very irregular, extending backward and upward with sharp angles. Some dark spots behind eye. Fins all dusky, the vertical fins with dark points.

A single specimen, procured for me by Señor Leonel Plasencia.

129. Odontoscion dentex Cuv. & Val. *Corvina.*

130. Sciæna ronchus Cuv. & Val. *Corvina.*

131. Micropogon fournieri Desmarest. *Verrugato.*
(*Micropogon undulatus* Poey, not of Linnæus.)

GERRIDÆ.*

132. Gerres plumieri Cuv. & Val. *Patao.*

133. Gerres brasilianus Cuv. & Val. *Patao.*
(*Gerres brasilianus* and *G. patao* Poey.)

134. Gerres olisthostoma Goode & Bean. *Moharra.*

135. Gerres rhombeus Cuv. & Val. *Moharra.*

Both this species and the preceding are common in the Havana markets. The distinctions between them were overlooked by Poey, as the external resemblance of the two species is strong.

136. Gerres cinereus Walbaum. *Moharra de Casta.*
(*Eucinostomus zebra* Poey.)

137. Gerres gula Cuv. & Val. *Moharra de Ley.*
(*Eucinostomus gulula* Poey.)

* For an account of the species of *Gerrida* collected by me in Havana, see a paper by Evermann & Meek in the current volume of the Proc. Ac. Nat. Sci., Phila.

138. Gerres gracilis Gill. *Moharra de Ley.*

This species, apparently corresponding to Poey's No. 724, was not clearly distinguished by him from *E. pseudogula*, although perhaps more common than the latter.

139. Gerres dowi Gill.

Less common.

140. Gerres pseudogula Poey. *Moharra de Ley.*
(*Gerres jonesi Günther.*)

Not rare.

141. Gerres lefroyi Goode.
(*Eucinostomus productus* Poey.)

LABRIDÆ.*

142. Lachnolæmus maximus Walbaum. *Perro-perro.*

143. Bodianus rufus L. *Perro Colorado.*

Considered by the fishermen as a hybrid between *Lachnolæmus* and *Scarus*. ("Engente del Perro y de la Vieja.")

144. Clepticus genizara Cuvier. *Rabirubia Genizara.*

145. Platyglossus radiatus L. *Doncella.*
(*Chærojulis cyanostigma* Poey.)

This is the *Julis crotaphus* of Cuvier, Règne Animal, based on the Doncella of Parra. The *Julis crotaphus* of Cuv. & Val. seems to be *Platyglossus caudalis* Poey.

146. Platyglossus dimidiatus Agassiz.
(*Chærojulis internasalis* Poey.)

147. Platyglossus garnoti Cuv. & Val.
(*Julis cinctus* and *ruptus* Poey.)

148. Platyglossus bivittatus Bloch.
(*Chærojulis bivittatus, humeralis,* and *arangoi* Poey.)

My Cuban specimens are all much paler than any obtained in Florida, but are otherwise entirely similar. The changes in color due to age are in this species very great. Young specimens from Florida correspond to *Chærojulis arangoi* Poey.

149. Cryptotomus beryllinus Jordan & Swain.

150. Cryptotomus dentiens Poey.
Calliodon dentiens Poey. Memorias de Cuba, II, 1861, 422 (Havana). Synopsis, 1868, 344. Enumeratio, 1875, 115.
? *Calliodon retractus* Poey. Synopsis, 1868, 345 (Havana) Poey. Enumeratio, 1875, 116.

A single specimen of this species was obtained in Havana. It was overlooked at the time of the publication of our Review of the Scaroid

*For an account of the Cuban species of *Scarus, Sparisoma,* and *Cryptotomus,* see Jordan & Swain, Proc. U. S. Nat. Mus., 1884.

Fishes. I therefore give here the full synonymy and a description of the species:

Head, 3 in length ($3\frac{1}{2}$ with caudal); depth, 3 ($3\frac{1}{2}$). Length of specimen described, 8 inches.

Body less elongate than in *C. beryllinus*, more compressed, the back more elevated.

Jaws pale, the median suture in each more evident than in *C. beryllinus*; upper jaw laterally, with a continuous cutting edge of coalesced teeth, as in *C. beryllinus;* this edge is even for most of its length, but has anteriorly one or two small denticles and posteriorly three or four. In front are on each side two strong canines, directed forward and somewhat outward, and diverging. These are very much larger than the anterior teeth in *C. beryllinus* and quite different in form and direction. A strong posterior canine tooth directed outward and backward near the angle of the mouth. This canine is well developed on but one side in the specimen examined.

Lower jaw with its teeth larger, less regular, and less closely set than in *C. beryllinus;* some of those in front and those toward the angle of the mouth larger than the others; those in front in two irregularly alternating series and directed strongly forward. These largest teeth have each a central brown spot.

Jaws subequal. Upper lip double for its entire length. Lips and isthmus as in *C. beryllinus.*

Eye moderate, 6 in head, the head deeper and the profile considerably steeper than in *C. beryllinus.* This is associated with the greater depth of the preorbital, the distance from the eye to the angle of the mouth being $2\frac{3}{5}$ in the length of the head, while in *C. beryllinus* the same distance is contained $3\frac{2}{5}$ times. Mouth lower than in *C. beryllinus*, the maxillary reaching but half way to front of eye.

Structure and numbers of scales, fin-rays, &c., exactly as in *C. beryllinus.* Caudal truncate rather than rounded, the length of the outer rays $1\frac{3}{5}$ in head.

Color in spirits olive-green, greener than in *C. beryllinus*, each scale of back and sides with a brown central blotch; these blotches less conspicuous than in *C. beryllinus.* Head nearly plain brownish-olive. Lower jaw plain brown, with indistinct darker oblique streaks. Vertical fins greenish, blotched with brown, the membrane of the first and second dorsal spines blackish. Pectorals pale, the upper rays somewhat dusky.

According to Poey (*denticns*) the colors in life are as follows: "Body bluish rather than greenish, white below; dorsal and anal wine-color, with dashes of deeper hue; caudal wine-color, with bluish vertical bars; pectoral greenish; ventrals pale."

This is, I think, the species described by Poey under the name of *Calliodon denticns*, although Poey's description of the teeth does not fully agree with the example before me. As, however, in this specimen

there is considerable difference in the dentition of the two sides of the jaw, it is probable that the number, size, and direction of the canine teeth is variable.

The description of *Calliodon retractus*, Poey is very scanty and contains nothing whatever which is tangible. It probably refers to the same species.

The *Calliodon auropunctatus* of Cuv. & Val. seems to be a different species, more nearly allied to *C. beryllinus*, from which it would appear to be distinguished by the presence of a posterior canine.

The specimen from San Domingo mentioned by Cuvier & Valenciennes as destitute of canines, probably belongs to *C. beryllinus*, or perhaps to *C. roseus*, Cope.

151. Sparisoma xystrodon Jordan & Swain.

152. Sparisoma abildgaardi Bloch. *Vieja.*
(*Scarus abildgaardi* and *S. oxybrachius* Poey.)

153. Sparisoma aurofrenatum Cuv. & Val.
(*Scarus miniofrenatus* Poey.)

154. Sparisoma lorito Jordan & Swain.

155. Sparisoma chrysopterum Bloch & Schneider.
(*Scarus lateralis* Poey.)

156. Sparisoma frondosum Cuv. & Val.
(*Scarus brachialis* Poey.)

157. Sparisoma flavescens Bloch & Schneider. *Vieja.*
(*Scarus squalidus* Poey.)

158. Scarus tæniopterus Desmarest.
(*Scarus punctulatus* C. & V. *Pseudoscarus diadema* Poey.)

The descriptions of Desmarest's type of *Scarus tæniopterus*, as given by Valenciennes, and by Guichenot, agree fairly with *Scarus punctulatus* except in regard to the markings of the head and in the coloration of the fins.

The markings on the head grow faint in specimens long preserved in alcohol, and they are perhaps less distinct in adult examples than in the young. The changes due to the alcohol may also account for the markings on the fins being brown in *tæniopterus*, while in *punctulatus* they are bright green, even in alcoholic specimens.

It is probably safe to adopt the name *tæniopterus* in place of the less characteristic *punctulatus*, under which name it is described by Jordan & Swain. *Scarus diadema* C. & V. may be the same species, but this is less certain.

159. Scarus virginalis Jordan & Swain. *Loro.*
(*Pseudoscarus psittacus* Poey; not of Linnæus nor of Forskål.)

160. Scarus croicensis Bloch. *Bullon.*
(*Pseudoscarus sanctæ crucis* and *Ps. lineolatus* Poey.)

161. Scarus cœruleus Bloch. *Loro.*
(*Pseudoscarus cœruleus, obtusus,* and *nuchalis* Poey.)

162. Scarus guacamaia Cuvier. *Guacamaia.*

CICHLIDÆ.

163. Astronotus tetracanthus Cuv. & Val. *Viajaca.*
(*Acara fuscomaculata* Poey.)

If Steindachner is correct in uniting the groops called *Heros*, *Acara*, *Uaru*, *Hygrogonus*, &c., in one genus, the earliest name for the group is *Astronotus* Swainson (= *Hygrogonus* Gthr.). If the groups be separated, the name *Cichlasoma* should be retained for the present species and its Brazilian allies.

EPHIPPIDÆ.

164. Chætodipterus faber Broussonet.

CHÆTODONTIDÆ.

165. Chætodon capistratus L. *Parche. Isabelita.*

166. Chætodon ocellatus Bloch. *Parche o Isabelita de lo Alto.*
(*Sarothrodus bimaculatus* Poey.)

167. Holacanthus tricolor Bloch. *Vaqueta de dos Colores.*

168. Pomacanthus aureus Bloch. *Chirivita.*

ACANTHURIDÆ.

169. Acanthurus cœruleus Block. *Barbero.*
(*Acanthurus cœruleus, Acanthurus brevis,* and *Acronurus cœruleatus* Poey.)

170. Acanthurus tractus Poey.
(*Acronurus nigriculus* Poey.)

171. Acanthurus hepatus L. *Barbero.*
(*Acanthurus chirurgus, Acanthurus phlebotomus,* and *Acronurus carneus* Poey.)

A young specimen referable to *Acronurus carneus* I regard as without doubt a larval form of *Acanthurus hepatus*. For the synonymy of these species and notes on the material collected by me, see a paper by Meek & Hoffman, Proc. Ac. Nat. Sci. Phila., 1884. The change of the name of this genus from *Acanthurus* to *Teuthis*, as made by Gill and by Meek seems unnecessary. The name *Teuthis* was based by Linnæus on *T. hepatus* and *T. javus*. Its first restriction was to the latter species, a representative of the *Teuthis* of Günther, the *Siganus* of Forskål.

MALACANTHIDÆ.

172. Malacanthus plumieri Bloch. *Carajuelo Blanco.*

GOBIIDÆ.

173. Gobiomorus dormitator Lacépède. *Guavina.*

174. Guavina guavina Cuv. & Val. *Guavina.*

175. Eleotris pisonis Gmelin. *Guarina.*
(*Eleotris gyrinus* Poey. *Culius perniger* Cope.)

These three species are common in the Rio Almendares near Havana, from which locality many specimens were obtained. My material has been discussed in a paper on the *Eleotridinæ* by Eigenman and Fordice in the Proc. Ac. Nat. Sci. Phila., 1884.

176. Erotelis smaragdus Cuv. & Val.
(*Erotelis valenciennesi* Poey.)

A marine species.

177. Gobius oceanicus Pallas. *Esmeralda*
(*Gobionellus lanceolatus* and *Gobionellus bacalaus* (♂) Poey.)

178. Gobius smaragdus Cuv. & Val.

Less common. A specimen identical with these from Cuba was obtained at Saint Augustine, Fla., by Prof. O. P. Hay. This is the first record of the species from the coast of the United States.

179. Gobius stigmaticus Poey.

Common.

Gobius encœomus Jordan & Gilbert is very close to this species, the only tangible differences being in the color.

180. Chonephorus* taiasica Lichtenstein.
(*Rhinogobius bucculentus* and *Rh. contractus* Poey. *Gobius banana* and *martinicus* C. & V.)

Common in the Rio Almendares.

I am unable to see any specific difference between my Cuban specimens and others from Lower California and the West Indies. Sexual variations in the size of the mouth and head seem to account for the supposed distinctions between *Gobius banana*, *Gobius martinicus*, *Gobius dolichocephalus* Cope, *Rhinogobius bucculentus*, and *Rhinogobius contractus*. The name *Arraous* has been adopted for this subgenus by Gill and defined by Bleeker, but "les Arraous" of Cuvier & Valenciennes is evidently a gallicised vernacular name, never intended as a scientific name of a genus.

181. Gobius soporator Cuv. & Val.
(*Gobius mapo* Poey.)

182. Lophogobius cyprinoides Pallas.

Common.

183. Microgobius signatus Poey.

Large numbers obtained with *Gobius oceanicus* from a fisherman who had taken them in a seine.

Dark gray in life, a vertical stripe at the shoulder light-blue, edged with dark. Sky blue and orange markings under the eye. Fins pale, dusky.

* The genera *Chonephorus* and *Lophogobius* are of doubtful value, but pending investigation we may admit them.

To this genus *Microgobius* should be referred *Gobius emblematicus* Jordan & Gilbert, from Panama, and *Gobius thalassinus* J. & G., from Charleston.

SCORPÆNIDÆ.

184. Scorpæna grandicornis Cuv. & Val.

185. Scorpæna plumieri Bloch & Schneider. *Rascacio.*
(*Scorpæna rascacio* Poey.)

TRIGLIDÆ.

186. Cephalacanthus volitans L. *Murcielago.*

187. Prionotus rubio Jordan, nom. sp. nov. *Rubio Volador.*
(*Prionotus punctatus* Cuv. & Val. (in part?). *Prionotus punctatus* Poey and late authors; not *Trigla punctata* Bloch, which is probably *P. scitulus* Jordan & Gilbert.)

A description of this species is given in Jordan & Gilbert's Synopsis Fish N. A., p. 956.

In life, dark olive, with rivulations of light green; sides shaded with pale salmon color. Edge of pectoral light blue; ventrals reddish. Upper fins marked with different shades of brown.

The *Trigla carolina* of Bloch (not L.), seems to me to be evidently our *Prionotus scitulus.* The *Trigla punctata* of Bloch, if we except the bright red coloration, which belongs to no known species of *Prionotus*, is, as has been suggested by Cuvier & Valenciennes, most probably intended for the same species as his other figure. If *Prionotus scitulus* occurs in the West Indies, the name *Trigla punctata* could be assigned to it without much hesitation. In any case, I do not believe that this name was given to the Rubio Volador of the Cuban waters, and for this species I suggest the name of *Prionotus rubio.*

BATRACHIDÆ.

188. Batrachus tau L. *Mapo.*

BLENNIIDÆ.

189. Scartella microstoma Poey. (Genus nova.)

Head, 4 in length (5 with caudal); depth, $3\frac{5}{6}$ ($4\frac{2}{3}$). D. XI, 14. A. 15 or 16. Length of specimen about $3\frac{1}{4}$ inches.

Body rather stout, compressed posteriorly. Head short, the anterior profile straight and very steep, almost vertical from tip of snout to above eye, where a sharp angle is formed with the straight line of the back. Eye large, longer than snout, $3\frac{1}{4}$ in head. Mouth moderate, the maxillary reaching to below front of pupil, its length $3\frac{1}{5}$ in head. Teeth as usual in *Isesthes.* No posterior canines in either jaw. A small tufted or multifid cirrus over each eye, its length less than diameter of pupil. A row of about 3 short, slender cirri along each side of nape. Gill membranes broadly united, free from the isthmus. Lateral line extending

about to end of pectoral, each pore with a short, simple branch above and below, directed outward and backward. Some conspicuous pores radiating from eye.

Dorsal fin low, subcontinuous, the spines rather slender, lower than the soft rays, the middle spines not much higher than the last. Longest rays of dorsal about half as long as head. Caudal free from dorsal and anal, a little shorter than head. Anal low. Pectorals slightly longer than head. Ventrals 1⅓ in head. The fins are somewhat shrivelled, so that the count of the rays is made with difficulty and may not be perfectly exact.

Color very dark olive-brown, paler below. Head and anterior half of body plain; posterior half sprinkled with sharply-defined dots of a vivid sky-blue color, becoming white in alcohol. About six obscure round darker blotches in a longitudinal series along sides posteriorly. Fins dusky olive, mottled with darker, the caudal obscurely barred, the anal with a pale edge. Spinous dorsal, nearly black.

A single specimen given me by a fisherman.

If the genera *Isesthes* and *Hypleurochilus* are to be retained as distinct from *Blennius*, this species will form the type of a fourth group, *Scartella* (σκαδτης, a leaper), having the free gill membranes of *Blennius* and the even teeth of *Isesthes*.

BROTULIDÆ.

190. Brotula barbata Bloch. *Brótula.*

PLEURONECTIDÆ.

191. Platophrys lunatus L. *Lenguado.*

Color dark olive, with many rings, partial rings, curved spots, and small round spots of sky-blue, edged with darker on body, these largest near middle of sides, where some of them are as large as the eye. Three obscure blackish blotches on straight part of lateral line. Head and vertical fins with sharply-defined blue spots, which are mostly round. Spots on opercle and interopercle larger and curved. Pectorals with dusky cross-bars.

Profile in advance of eyes not prominent, slightly concave, forming a conspicuous re-entrant angle with the projecting snout. No spines on preorbital in either sex. Snout with a blunt projection in the male. Pectoral filamentous in the male, shorter in the female, the interorbital space rather narrower in the latter. Teeth small, in one irregular series in each jaw.

Dorsal rays about 93; A. 70. About 90 tubes in lateral line. Head, 3⅓ in length; depth, 2. Maxillary, 3 in head. Arch of lateral line about half length of head, its chord three times its height.

192. Platophrys ellipticus Poey.

A second species of *Platophrys* probably corresponds to Poey's *ellipticus*, although its coloration differs somewhat from Poey's description.

Color reddish-gray, much paler than in *Platophrys lunatus*, the body everywhere covered with rings formed of round sky-blue spots, which are not confluent and not edged with black. These are smaller than in *P. lunatus* and less sharply defined. There are besides these very few detached blue spots or other blue markings. Head with similar blue spots, but no rings. Area inclosed in the blue rings, not different from the ground color. Caudal with blue spots. Other vertical fins with none, the dorsal and anal mottled and with faint round dark blotches placed at intervals. A large diffused dusky blotch at beginning of straight part of lateral line. Another better defined on middle of lateral line, a very faint one toward base of caudal peduncle. Pectoral grayish, with dark cross-bars.

General form elliptical ovate, more regular than in *P. lunatus*, as the profile in front of the interorbital area is regularly convex, scarcely forming an angle at the base of the very short snout. Mouth small, oblique, the maxillary $3\frac{2}{5}$ in head. Teeth in a narrow band above, in two series below. Snout very short, 4 in head. Interorbital area $3\frac{3}{4}$ in head. Eye 4.

Arch of lateral line short and high, its length $1\frac{4}{5}$ times its height and $2\frac{2}{5}$ in head.

Numerous irregular sharp tubercles on orbital rim in front of each eye and on snout (characters of males).

Filamentous rays of pectorals reaching very nearly to last rays of dorsal.

Gill-rakers, as in *P. lunatus*, few, short, and small.

D. about 90; A. 70. Lat. l. about 88. Head, 4; depth, $1\frac{5}{6}$. Length of specimen about 10 inches.

Platophrys nebularis Jordan & Gilbert, from Key West, is allied to this species, but deeper in body and differently colored. It may prove to be the young of *P. maculiferus* Poey, but if so it must undergo a considerable change in color, and there is also some notable difference in the radial formula. In *P. nebularis* the depth is usually about $1\frac{2}{3}$ to $1\frac{3}{4}$ in the length; the outline of the snout is much as in *P. ellipticus*, and the curve of the lateral line is twice as long as high.

193. Citharichthys æthalion Jordan, sp. nov.
(Subgenus *Hemirhombus* Bleeker.)

Head, $3\frac{3}{5}$ in length ($4\frac{1}{8}$ with caudal); depth, $2\frac{1}{4}$ ($2\frac{3}{4}$). D. 92; A. 64. Scales, 18–65–18. Length of specimens, 6 to 7 inches.

Color in life dark brown, darker than in *Citharichthys spilopterus*, with many rings and spots of light gray and blackish, some of the black rings with a black central spot. A diffuse dusky blotch on lateral line above pectoral, and one near base of caudal peduncle. Fins with numerous small inky spots and dark mottlings. Blind side pale. Coloration less variegated than in *Platophrys nebularis*, but similar in style.

Form regularly elliptical, less compressed than in *Platophrys*, the profile evenly convex to the end of the snout.

Eyes large, separated by a narrow, sharp ridge, which, in specimen examined, is not so wide as the pupil. Anteriorly the interorbital ridge is widened, and has a second smaller ridge above the first. Eyes even in front, their diameter 4 in head.

Mouth small, the maxillary reaching to below middle of eye, its length 3 in head. Teeth small, slender, in two rows above, in one row below, the outer series in upper jaw somewhat enlarged, but hardly canine-like. Snout, 4¾ in head. Gill-rakers very short, hardly twice as long as broad, not one-fifth length of eye.

Lateral line nearly straight. Scales along lateral line with many accessory scales, those on other parts of body with very few or none. Fins scaly; snout naked; fins rather low. Pectoral, two-thirds length of head, its upper rays slightly filamentous.

This specimen is perhaps a female. If so, the male may have the pectoral longer and the interorbital area broader, or even concave, but this is to be doubted, as in this specimen the upper ridge becomes fully confluent with the lower above the middle of the eye.

Vertebræ, 9 + 24.

This species, of which I obtained three specimens in the markets of Havana, has been left unnoticed by Poey, who did not distinguish between it and his *Hemirhombus fuscus*, which is *Citharichthys spilopterus*. It is closely related to *Hemirhombus ovalis* Günther, from the Pacific coast of Mexico and Panama.

194. Citharichthys spilopterus Günther. *Lenguado.*
(*Hemirhombus fuscus* Poey.)

Very common. Not distinguishable from Pacific coast specimens. I have no doubt that this is Poey's *fuscus*, but the description of the teeth and the count of the scales of the lateral line do not agree with my specimens. I find no inner row of teeth in the upper jaw and the scales are from 45 to 50.

SOLEIDÆ.

195. Aphoristia plagiusa Linnæus. *Acédia.*
(*Aphoristia ornata* Poey.)

Common. As has been already elsewhere stated in these Proceedings, there is some reason for thinking this species the original *Pleuronectes plagiusa* of Linnæus. The original type of Linnæus, as stated by Goode & Bean, Proc. U. S. Nat. Mus., 1885, 196, may not have come from the Carolina coast. It is a slenderer fish than the one found on our coast (*A. fasciata* Holbrook), with larger scales, about 77 in a longitudinal series. A specimen before me, from Cuba, has 77 scales in the lateral line, and the depth 4 in length. I venture, therefore, to identify with this Cuban fish the *plagiusa* of Linnæus.

Omitting the aberrant *A. nebulosa* Goode & Bean from the Gulf Stream, a species with keeled scales, and probably the type of a dis-

tinct genus, the four American species of *Aphoristia* are very closely related, perhaps to be considered geographical varieties of a single one. Some of their salient characters are given in the following analysis:

a. Vertical fins jet black posteriorly, this color forming a strong contrast to the color in front.

b. Body most elongate the depth 4½ in length (to base of caudal); scales small; lat. l. 98. Panama ..... *elongata* Günther.

bb. Body less elongate; depth about 4 in length; scales larger; lat. l. 77. West Indies ..... *plagiusa* L.

bbb. Body still less elongate; depth 3⅓ in length; narrow longitudinal streaks along edges of rows of scales; scales small; lat. l. 105. Lower California. *atricauda* Jordan & Gilbert.

aa. Vertical fins not black posteriorly; body least elongate, the depth 3¼ in length; dark cross-bands more distinct than in other species; scales small; lat. l. about 90. South Atlantic and Gulf coasts of the United States. *fasciata* Holbrook.

The description of *Aphoristia ornata* given by Dr. Günther fits *A. fasciata* better than *A. plagiusa*. The scanty description of *Achirus ornatus* given by Lacépède may refer to either.

MALTHIDÆ.

196. Malthe vespertilio L. *Diablo.*

Two large specimens with the rostral projection very long.

OSTRACIIDÆ.

197. Ostracion bicaudale L. *Chapin.*

198. Ostracion trigonum L. *Chapin.*

199. Ostracion tricorne L. *Toro.*
(*Acanthostracion quadricorne* Poey.)

BALISTIDÆ.

200. Balistes vetula L. *Cochino.*

201. Balistes macrops Poey. *Sobaco.*

Apparently a valid species. *Balistes tæniopterus* and *B. nebulosus* Poey seem to correspond respectively to the adult and young of *B. carolinensis.*

TETRODONTIDÆ.

202. Sphæroides testudineus L. *Tambor.*
(*Tetrodon punctatus* Poey.)

203. Sphæroides spengleri Bloch.
(*Tetrodon turgidus* Poey; not of Mitchill. *Tetrodon nephelus* Goode & Bean.)

The *Tetrodon nephelus* of authors is one of the forms of *Sphæroides spengleri*, a species which is excessively variable in respect to the dermal appendages, spines and cirri.

DIODONTIDÆ.

204. Diodon hystrix L. *Erizo.*

(*Diodon holacanthus L. Diodon liturosus* Shaw. *Diodon maculatus* and *D. spinosissimus* Günther.)

The specimens here referred to are considered by Poey the young of *Diodon hystrix*, which they probably are.

Of the species above enumerated the following do not seem to have been noticed or properly distinguished by Professor Poey. They are therefore additions to the list of Cuban fishes:

Gerres dowi Gill.
Gerres gracilis Gill.
Gerres olisthostoma Goode & Bean.
Cryptotomus beryllinus Jordan & Swain.
Sparisoma xystrodon Jordan & Swain.
Sparisoma lorito Jordan & Swain.
Citharichthys œthalion Jordan.

INDIANA UNIVERSITY, *November* 5, 1885.