

COLD-BLOODED VERTEBRATES FROM FLORIDA, THE WEST INDIES,  
COSTA RICA, AND EASTERN BRAZIL.

BY HENRY W. FOWLER.

The Academy has received a number of small collections from the above countries during the past ten years, which I have recently studied. Some include interesting records or new species, and thus they are gathered together to form the present paper. I am indebted to Dr. Thomas Barbour for a review of the amphibians and reptiles listed.

FLORIDA.

The most important collections from this State were made during several winters, in 1904-5, 1906, and 1907, by the late George Bacon Wood, while at West Palm Beach. The marine species were all collected on the ocean front at Palm Beach. Mr. Wood sent photographs or drawings of many of the larger and more abundant and he also ascertained the vernacular names when possible, which are given below in quotations. Under date of March 26, 1909, Mr. Wood wrote me of an example of *Trachypterus* recently taken in a net in the sea. He says it measured 7 feet 2 inches in length and was 14 inches in depth. Later this example was noted in *Forest and Stream*, LXXII, May, 1909, p. 699, with a photograph, and doubtfully referred to as *T. gryphurus*. It was not secured for the Academy.

Lieutenant Hugh Willoughby made a collection at Stuart, in Dade County, in 1908. A small collection was made at Lake Kerr, in Marion County, and along the St. Johns River, in 1909, by Mr. John Trimble. Mr. Morgan Hebard collected some amphibians in southern Florida in 1910. In 1912 and subsequently, Mr. O. F. Baynard collected some interesting material at Clearwater, in Hillsboro County. Dr. H. A. Pilsbry obtained several species there in 1904, though unless otherwise indicated, the records pertain to Mr. Baynard. During the winter of 1914 Mr. F. J. Keeley collected a few fishes at Hawks Park, in Volusia County.

*Scoliodon terræ-novæ* (Richardson).

Clearwater.



**Sphyrna zygaena** (Linnaeus). "Hammer-head."

Palm Beach. Mr. Wood reports one obtained at Boca Grande Pass, thirteen feet long, which contained 35 young. Mr. Keeley also reports it and *Carcharias littoralis* at Hawks Park. Mr. Wood noted two other sharks, not preserved, *Ginglymostoma cirratum* and *Galeocerdo tigrinus*, at Boca Grande Pass, the first apparently not before recorded from the east coast. I may also mention that a large example of *Rhineodon typus* A. Smith, was taken at Knight's Key on June 1, 1912, though it has already been recorded by Dr. Gudger. I examined it while on exhibition, in August, 1913, at Atlantic City, N. J.

**Pristis pectinatus** Latham. "Saw-fish."

Two large examples taken at Fort Pierce, and the photograph sent by Mr. Wood.

**Aetobatus narinari** (Euphrasen). "Stingaree."

Mr. Wood obtained it at Boca Grande Pass and sent photographs.

**Lepisosteus osseus** (Linnaeus).

I have examined numerous examples in the Philadelphia markets alleged to have been obtained in Florida. Mr. Trimble reported it from the St. Johns River, and also *Amiatus calvus*, from the Ocklawaha.

**Tarpon atlanticus** (Valenciennes).

Mr. Wood obtained this species at New River, Indian River and Boca Grande Pass, and Mr. Keeley reports it from about Hawks Park.

During 1913, from April 25 to May 7, Mr. Herman T. Wolf made the following interesting measurements (in inches) from 21 examples, freshly killed, from Boca Grande and Captiva Pass, and the Caloosa-hatchee.



Head.	Depth.	Dorsal.	Anal.	L. l.	Sc. above l. l.	Sc. below l. l.	Predorsal sc.	Snout length.	Eye length.	Maxillary.	Interorbital.	Greatest width of tail.	Dorsal ray.	Maxillary extension front of eye.	Weight on official scales of I. Walton Club.	Calculated weight formula: $G \times G \times L \div 800 = \text{lbs.}$	Greatest girth.	Total length.
11	12	11?	20	45	5	6	22	9	1	5	2	14	...	1	...	56	28	55
12 $\frac{1}{2}$	14 $\frac{3}{4}$	13	20	46	5	6	25	8 $\frac{1}{2}$	1	7	3	15	10	1	96	93 $\frac{1}{2}$	34 $\frac{1}{2}$	62 $\frac{1}{2}$
16	20	13	20	50	5	6	24	9 $\frac{3}{4}$	9	4	5	20	17	2	187	190	43 $\frac{1}{2}$	79 $\frac{1}{2}$
15	16	12	20	46	6	6	22	9	2	9	3	13	17	2	150	149	39	78
9 $\frac{1}{2}$	14	13	21	48	6	7	21?	9	2	9	3	15	12	...	92	95 $\frac{1}{2}$	34	66
14	17	13	20	50	6	6	22	8	2	8	...	18	15	2	152	156	40	78
10	15	13	21	49	6	6	23	9	2	...	3	17	11	2	...	121	35	77
12	15	12	21	48	6	6	23	8	1	8	...	15	10	...	95	97 $\frac{1}{2}$	35	64
12	16	13	20	48	6	6	24	9	1	...	4	...	12	2	111	116	36	72
13	...	13	22	48	6	6	25	9	2	8	...	16	...	1	133	135	38	75
...	12	...	21	50	6	6	24	9	...	9	4	17	16	2	...	126	35	78
10	14	13	21	50	5	6	23	8	...	6	...	14	...	2	53	52	29	50
...	15	...	21	49	5	6	25	8	2	...	...	...	13	...	65	68	34	58
13	...	13	20	48	6	7	24	8	...	8	4	16	12	2	...	113	36	68
16	12	...	...	49	6	6	23	...	2	...	3	15	14	2	116	121	37	71
11	18	13	20	50	6	6	...	...	1	5	3	...	10	1	...	52	28	52
...	...	13	...	49	6	7	...	8	...	9	4	...	15	2	150	154	41	73
12	...	12	21	50	6	...	...	8	...	7	...	15	13	1	...	90	34	60
12	13	13	20	...	6	...	25	...	2	6	...	...	...	...	84	85	34	57
13	...	13	20	50	6	6	24	9	2	9	4	19	16	2	140	140	38	76
13	16	13	20	50	6	6	25	9	2	8	...	16	14	2	...	...	37	74

In all these examples Mr. Wolf found the belly rounded, the tubes of the l. l. much branched, the dorsal always inserted behind the ventrals, and but few color variations. He writes: "River fish are darker in color and may be distinguished at once: the scales are yellowish or yellow, in marked contrast to the brilliant mat-silver of the fish taken in the Gulf and passes. The color is not due to a nuptial change, more probably a muddy-water discoloration or effect of fresh water. Fishes varying greatly in weight swim in the same schools. The smallest tarpon taken in these passes weighed 26 $\frac{3}{4}$  pounds, the record largest fish 210 pounds. It is girth and condition, more than length, that controls the weight of a tarpon. The best catches are made at full and new moon, day and night fishing. From May 10 to the end of July they are most numerous in the passes. Tarpon have been observed cleaning spawning-beds, but no spawn or young have been taken. The beds are made in rivers and sheltered bays of brackish and fresh water, in the Caloosahatchee and Peace Rivers, etc."



**Elops saurus** Linnæus. "Ten-pounder."

Palm Beach. Several related forms, not preserved, were found in Florida by Mr. Wood. *Pomolobus pseudoharengus* and *Alosa sapidissima* were both found in the St. Johns River; the last also at Palm Beach. Mr. Wood also found *Albula vulpes* in Biscayne Bay, and Mr. Keeley reports it at Hawks Park, although not very plentiful.

**Harengula humeralis** (Valenciennes).

Clearwater and Palm Beach. Mr. Wood also found *Abramis crysoleucas* in fresh ponds near the latter locality, and *Erimyzon sucetta* in the St. Johns River.

**Dorosoma cepedianum** (Le Sueur).

Clearwater.

**Synodus fœtens** (Linnaeus).

Clearwater.

**Ophichthus ocellatus** (Le Sueur).

Petersburg, in January, 1914 (D. McCadden).

**Felichthys marinus** (Mitchill). "Sea-cat."

Palm Beach and in salt-water at Sea Breeze. Mr. Keeley found it and *Galeichthys felis* at Hawks Park. Mr. Trimble found *Ameiurus catus* in the St. Johns and *Esox americanus* in sulphur springs near Lake Kerr.

**Fundulus seminolis** (Girard).

Lake Kerr.

**Lucania goodei** Jordan.

Lake Kerr.

**Jordanella floridae** Goode and Bean.

Big Cypress in Lee County (Baynard) and sulphur wells at Hawks Park (Keeley).

**Gambusia holbrooki** Girard.

Same localities as the preceding species.

**Heterandria formosa** Agassiz.

Sulphur wells at Hawks Park.

**Mollienisia latipinna** Le Sueur.

Clearwater.

**Tylosurus notatus** (Poey).

Palm Beach and Stuart.

**Tylosurus marinus** (Walbaum).

Tarpon Springs.



*Labidesthes sicculus* (Cope).

Lake Kerr.

*Mugil curema* Valenciennes.

Palm Beach.

*Mugil cephalus* Linnæus. "Mullet."

Palm Beach and Stuart.

*Sphyræna barracuda* (Walbaum).

Palm Beach.

*Sphyræna borealis* De Kay.

Palm Beach.

*Syngnathus louisianæ* Günther.

Palm Beach.

*Hippocampus hudsonius* De Kay.

Useppa Island, on west coast in Lee County (H. T. Wolf).

*Scomberomorus cavalla* (Cuvier). "Kingfish."

Palm Beach, Boca Grande Pass and Stuart. Mr. Wood also found *S. maculatus*, *Sarda sarda* and *Istiophorus nigricans* at Palm Beach.

*Trichiurus lepturus* Linnæus.

Palm Beach.

*Elagatis bipinnulatus* (Quoy and Gaimard).

Palm Beach.

*Caranx hippos* (Linnæus).

Clearwater. Reported at Palm Beach, and occasional at Hawks Park.

*Caranx latus* Agassiz.

Palm Beach. *Seriola lalandi* also reported from the same locality by Mr. Wood.

*Selene vomer* (Linnæus). "Moon-fish."

Palm Beach.

*Trachinotus glaucus* (Bloch).

Palm Beach. Mr. Wood also reports *T. falcatus* at this locality.

*Trachinotus carolinus* (Linnæus). "Pampano."

Palm Beach. Occasional at Hawks Park, according to Mr. Keeley. Mr. Wood found *Pomatomus saltatrix* at Palm Beach and *Rachycentron canadus* in Lake Worth.

*Pomoxis sparoides* (Lacépède).

Clearwater.



**Chænobryttus gulosus** (Valenciennes).

Clearwater.

**Lepomis incisor** (Valenciennes). "Bream."

West Palm Beach, Lake Kerr and Clearwater. Mr. Keeley reports it, and the large-mouth bass from near Hawks Park. Mr. Trimble found *Eupomotis holbrooki* in Lake Kerr.

**Micropterus salmoides** (Lacépède).

West Palm Beach and Lake Kerr.

**Centropomus undecimalis** (Bloch). "Snook."

Palm Beach.

**Epinephelus morio** (Valenciennes).

Palm Beach. Mr. Wood reported *E. striatus* at this locality.

**Promicrops guttatus** (Linnæus). "Jew-fish."

Stuart and Boca Grande Pass. Mr. Keeley says it has been reported near Hawks Park.

**Mycteroperca microlepis** (Goode and Bean). "Calico Grouper."

Palm Beach.

**Centropristis striatus** (Linnæus).

Hawks Park.

**Diplectrum formosum** (Linnæus).

Clearwater (Pilsbry, Baynard).

**Rypticus saponaceus** (Schneider).

Palm Beach.

**Priacanthus arenatus** Valenciennes.

Palm Beach. Previously only known in Florida from Key West.

**Lutianus griseus** (Linnæus). "Mango Snapper."

Palm Beach, Lake Worth and Hawks Park.

**Lutianus apodus** (Walbaum).

Palm Beach. Mr. Wood reported the "red snapper," *L. aya*, from Captiva Pass.

**Lutianus analis** (Cuvier). "Mutton-fish."

Palm Beach.

**Lutianus synagris** (Linnæus).

Clearwater.

**Hæmulon macrostoma** Günther.

Palm Beach.

**Hæmulon parra** (Desmarest).

Palm Beach.



**Anisotremus virginicus** (Linnæus). "Pork-fish."

Palm Beach.

**Orthopristis chrysopterus** (Linnæus).

Clearwater. Reported with the next two species from Hawks Park.

**Lagodon rhomboides** (Linnæus). "Sailor's Choice."

Palm Beach and Clearwater.

**Archosargus probatocephalus** (Walbaum). "Sheepshead."

Palm Beach and Stuart.

**Diplodus holbrooki** (T. H. Bean).

Stuart and Clearwater.

**Eucinostomus gula** (Valenciennes).

Stuart.

**Kyphosus sectatrix** (Linnæus).

Palm Beach.

**Upeneus maculatus** (Bloch).

Palm Beach.

**Cynoscion nebulosus** (Valenciennes). "Trout."

Palm Beach. Also reported at Hawks Park. Mr. Wood secured *Sciænops ocellatus* at Sea Breeze, and Mr. Keeley reports it, and the three following species at Hawks Park.

**Leiostomus xanthurus** Lacépède. "Spot."

Palm Beach.

**Micropogon undulatus** (Linnæus). "Croaker."

Palm Beach.

**Menticirrhus americanus** (Linnæus).

Palm Beach and Stuart.

**Pogonias cromis** (Linnæus).

Stuart.

**Harpe rufa** (Linnæus).

Palm Beach.

**Iridio radiatus** (Linnæus).

Stuart.

**Iridio bivittatus** (Bloch).

Palm Beach and Clearwater.

**Sparisoma flavescens** (Schneider).

Palm Beach.

**Pseudoscarus guacamaia** (Cuvier). "Green Parrot."

Palm Beach.



**Chætodipterus faber** (Broussonet).

Palm Beach.

**Hepatus bahianus** (Castelnau).

Palm Beach.

**Balistes carolinensis** Gmelin. "Trigger-fish."

Palm Beach and Stuart.

**Alutera schœpfi** (Walbaum).

Palm Beach.

**Lactophrys tricornis** (Linnæus).

Palm Beach.

**Lagocephalus lævigatus** (Linnæus).

Palm Beach.

**Spheroides spengleri** (Bloch). "Puffer."

Palm Beach. Pine Island in San Carlos Bay (Baynard). *S. maculatus* was also reported at Palm Beach and Hawks Park.

**Spheroides harperi** Nichols.

Pine Island in San Carlos Bay.

**Spheroides testudineus** (Linnæus).

Palm Beach. Mr. Wood also found *Diodon hystrix* at this locality.

**Chilomycterus schœpfi** (Walbaum).

Palm Beach.

**Scorpæna brasiliensis** Valenciennes.

Palm Beach.

**Scorpæna plumieri** Bloch.

Palm Beach.

**Echeneis naucrates** Linnæus. "Shark-sucker."

Palm Beach.

**Paralichthys lethostigmus** Jordan and Gilbert.

Stuart.

**Achirus lineatus** (Linnæus).

Palm Beach.

**Labrisomus nuchipinnis** (Quoy and Gaimard).

Palm Beach.

**Hypsoblennius hentz** (Le Sueur).

From among barnacles at Hawks Park.

**Ogcocephalus radiatus** (Mitchill).

Palm Beach.



***Siren lacertina* Linnæus.**

A larval example, with numerous examples of *Gammarus* and *Palæmonetes* from the Kissimmee River, about fifty miles below Kissimmee, by Mr. W. M. Meigs.

***Gastrophryne carolinense* (Holbrook).**

Found at Homestead by Mr. Morgan Hebard. They were discovered under a coquina boulder. Likely the many toads Mr. Hebard saw under stones and boards at Key West in March, 1910, were also this species.

***Acris gryllus* (Le Conte).**

Mr. Hebard found this species exceedingly plentiful in the prairie conditions of the everglades at Miami.

***Pseudacris nigritus* (Le Conte).**

Found under boards, in swampy places, about Miami.

***Hyla squirella* Bosc.**

Atlantic Beach. Only one beaten from the prairie grasses at Miami.

***Hyla cinerea* Daudin.**

Found at Atlantic Beach in the forest undergrowth, where specimens were taken while beating for insects.

***Rana sphenoccephala* Cope.**

Clearwater.

***Hemidactylus mabouia* (Moreau de Jounès).**

One taken at Key West, March 14, 1910, by Mr. Hebard. It was found on the plaster wall of a building, where the light shone directly on the wall. These animals hide in crevices during the day. Though three individuals were seen, only the above was captured.

***Anolis principalis* (Linnæus).**

Atlantic Beach.

***Eumeces fasciatus* (Linnæus).**

One found, dead, under a coquina boulder at Key West.

***Stilosoma extenuatum* A. E. Brown.**

Lake Kerr.

***Natrix fasciatus* (Linnæus).**

Clearwater.

***Opheodrys æstivus* (Linnæus).**

Palm Beach.

***Diadophis punctatus* (Linnæus).**

Clearwater. In life the belly was rich orange-yellow and vermilion on lower surface of the tail.



**Coluber constrictor** Linnæus.

Palm Beach.

**Coluber flagellum** Shaw.

Clearwater.

**Thamnophis sackeni** (Kennicott).

Orange Lake in Marion County (Baynard).

**Heterodon platirhinos** Latreille.

Clearwater.

**Agkistrodon piscivorus** (Lacépède).

Young from Lake Kerr. Adult from Orange Lake (Baynard).

**Sistrurus miliarius** (Linnæus).

Two from Lake Kerr.

**Crotalus adamanteus** Beauvais.

Palm Beach.

#### BERMUDA ISLANDS.

Mr. Stewardson Brown secured a small collection of fishes in Hungry Bay during September, 1905. Another small collection was made early in 1910 by Mr. E. G. Vanatta, and during July, 1914, Mr. C. S. Abbott, Jr., secured a few fishes near Hamilton.

**Holocentrus adscensionis** (Osbeck).

Two rosy examples from Harrington Sound.

**Amia sellicauda** (Evermann and Marsh).

One secured in 1905 and presented by Miss S. F. Streeter.

**Hæmulon sciurus** (Shaw).

Hungry Bay.

**Diplodus argenteus** (Valenciennes).

Hungry Bay. Many taken.

**Eucinostomus harengulus** Goode and Bean.

Common in Hungry Bay.

**Abudefduf mauritii** (Bloch).

One from near Hamilton.

**Chætodon capistratus** Linnæus.

One from Harrington Sound.

**Hepatus hepatus** (Linnæus).

Hungry Bay.

**Mapo soporator** (Valenciennes).

Hungry Bay.



**Labrisomus nuchipinnis** (Quoy and Gaimard).

Near Hamilton.

**Labrisomus lentiginosus** T. H. Bean.

One caught on hook, like last, and in same locality.

**Bufo marinus** (Linnæus).

Adult from Victoria Park and eight young from Hamilton.

**Eumeces longirostris** (Cope).

Two examples from the Ducking Stool, taken in February, 1910, and larger 125 mm. long.

#### CUBA.

Most of the material from this country was presented to the Academy during 1914 by Mr. Charles T. Ramsden, of Guantánamo. A small collection was also received recently from Dr. J. W. Ross, made at Varadero, on the north coast. In 1904 Dr. Henry A. Pilsbry made a small collection at Sancti Spiritus.

**Anguilla chrisypa** Rafinesque.

One adult from Guantánamo.

**Gambusia punctata** Poey.

Many from Bahia Honda, about ten miles south of Havana, were obtained by Dr. P. Wiksell, in June, 1913.

**Glaridichthys uninotatus** (Poey).

One female, same data as preceding. A dark blotch above the anal origin conspicuous.

**Girardinus metallicus** Poey.

Many examples of both sexes from the Arroyo Honda River at San Carlos in Guantánamo. My specimens show obscure darker vertical streaks in some cases, as in certain males and smaller females.

**Eleotris pisonis** (Gmelin).

Large example from the preceding locality.

**Hyla septentrionalis** Boulenger.

One adult from Guantánamo.

**Eleutherodactylus ricordii** (Duméril and Bibron).

Rio Seco at San Carlos, Guantánamo, in April, 1914. Also two from Bayate, and one from Arroyo de San Felipe, Monte Toro.

**Eleutherodactylus dimidiatus** (Cope).

San Felipe at Monte Toro and La Cueva de la Lichuzo, Guantánamo. April, 1913. Also one from Bayate, and said to be uncommon.



**Phyllobates limbatus** Cope.

Two examples of this rare toad were presented by Mr. Ramsden, who obtained them at Monte Libano in Guantánamo in 1913.

**Gonatodes albogularis** Duméril and Bibron.

Four from San Carlos in Guantánamo.

**Tarentola cubana** Gundlach and Peters.

One example of this rare species was secured July 6, 1914, by Mr. Ramsden at Puerto Escondido, Guantánamo.

**Anolis equestris** Merrem.

One from Varadero.

**Anolis lucius** Duméril and Bibron.

One from Sancti Spiritus, which agrees with Cocteau's figure, except that the occipital plate is large and with several scales interposed anteriorly. The occipital plate is also colored as a large conspicuous white spot.

**Anolis argenteolus** Cope.

Two from tree trunks at Sierra del Maguey at San Carlos.

**Anolis sagrae** Duméril and Bibron.

Two from Monte Libano in Guantánamo.

**Anolis loysiana** Cocteau.

One from La Victoria at Monte Toro in Guantánamo.

**Anolis argillaceus** Cope.

One from Bayate in Guantánamo.

**Anolis alutaceus** Cope.

One from La Union near Monte Libano and another from Bayate.

**Anolis porcatus** Gray.

One from Guantánamo in 1913.

**Anolis angusticeps** Hallowell.

Many from Guantánamo, at Bayate Cerza de Concepcioncita, La Coloura, La Colima, Mal Paso at El Palmar, Alto de La Union, and El Peru at Monte Libano. Dr. Pilsbry also obtained it at Sancti Spiritus.

**Leiocephalus carinatus** Gray.

Varadero.

**Leiocephalus vittatus** (Hallowell).

One received from the town Ceigo de Availlia, presented by Mr. E. R. Casey, and one from Sancti Spiritus.



*Cœlestus sagrae* (Cocteau).

One example of this rare species was obtained at Sancti Spiritus by Dr. Pilsbry. It is much paler than Cocteau's plate, and largely grayish above at present.

*Ameiva auberi* Cocteau.

Road from Guantánamo to Baracoa. Uncommon.

*Amphisbæna cubana* Peters.

One from Cienfuegos, obtained by Dr. Pilsbry in April, 1904. Mr. Ramsden also sent one from San Esteban, La Demejagua in Oriente Province. He says it is found under rubbish, and to a great extent under or in the ground, and comes up in ploughing and in deep hoeing.

*Typhlops lumbricalis* (Linnæus).

Cienfuegos, San Juan di Latran and Majajua, from Dr. Pilsbry in 1904. Mr. S. H. Hamilton also secured it at Santiago de Cuba.

*Tropidophis melanura* (Schlegel).

Two from Guantánamo, one reddish and the other dark brown.

*Tretanorhinus variabilis* Duméril and Bibron.

Varadero.

*Alsophis angulifer* (Bibron).

La Vigia hill at Trinidad, from Dr. Pilsbry.

*Leimadophis andreae* Reinhardt and Lütken.

Sancti Spiritus.

*Arrhyton vittatus* (Gundlach and Peters).

Sancti Spiritus.

#### ST. THOMAS ISLAND, WEST INDIES.

The following fishes were obtained by Mr. Henry Warrington in 1900:

*Gymnothorax moringua* (Cuvier).

*Trachurops crumenophthalmus* (Bloch).

*Vomer spixii* (Swainson).

*Epinephelus maculosus* (Cuvier).

*Bathystoma rimator* (Jordan and Swain).

*Spheroides testudineus* (Linnæus).

#### ST. VINCENT ISLAND, WEST INDIES.

Mr. R. M. Abbott secured a small collection of fishes here in February of 1914. *Ocypode albicans* (also found by him at St. Kitts) and *Remipes scutellatus* were taken with the fishes.



*Harengula macrophthalmus* (Ranzani).

*Holocentrus adscensionis* (Osbeck).

*Decapterus punctatus* (Agassiz).

*Trachurops crumenophthalmus* (Bloch).

*Caranx latus* Agassiz.

*Upeneus maculatus* (Bloch).

*Upeneus martinicus* Valenciennes.

*Cryptotomus roseus* Cope. Fig. 1.

Head  $2\frac{3}{4}$  to 3; depth  $3\frac{4}{5}$  to 4; D. IX, 10; A. II, 8, 1 or II, 9, 1; scales 23 or 24 in l. l. to caudal base and 1 or 2 more on latter;  $1\frac{1}{2}$  scales above l. l.; 5 scales below l. l. to anal origin; snout  $2\frac{3}{4}$  to 4 in head; eye  $3\frac{7}{8}$  to  $5\frac{2}{5}$ ; maxillary  $3\frac{3}{4}$  to  $4\frac{1}{2}$ ; interorbital  $5\frac{1}{5}$  to  $5\frac{2}{3}$ .

The two larger examples, when fresh in alcohol were generally olivaceous above and brighter or more brilliant on sides. Just

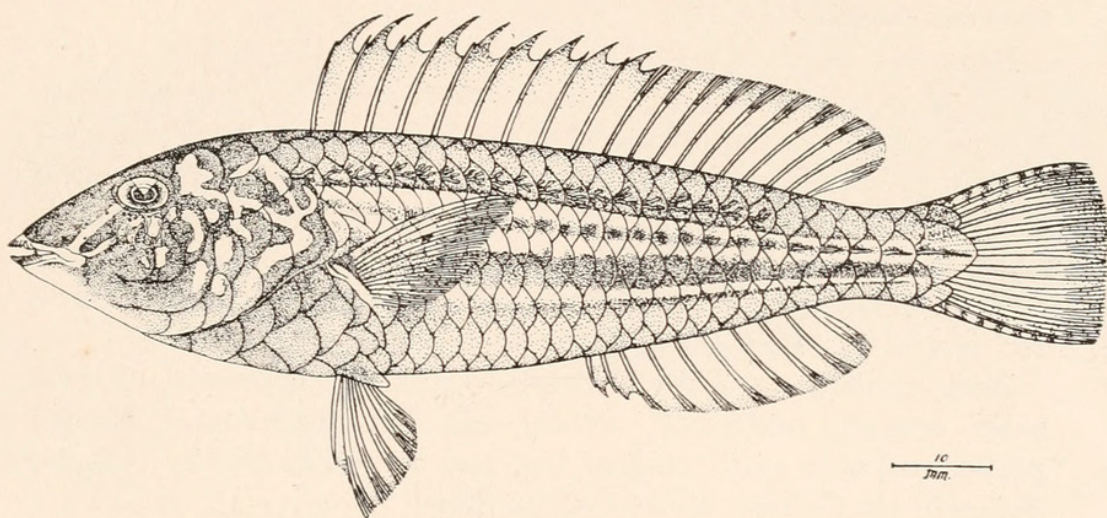


Fig. 1.—*Cryptotomus roseus* Cope.

below lateral line two lengthwise parallel brick-red to deep rosy streaks, upper of which obsolete after falling of l. l. In similar fashion, though reversed, a similar pair of more or less yellowish lengthwise parallel streaks, lower more or less obsolete, especially behind, or broken irregularly into small ill-defined spots. Head dark above, with a reddish streak from front of eye to maxillary, and another parallel one more inferior. Postorbital region with rosy or red blotches, irregular, rather large and well spaced. Upper lip dusky-olive, lower pale or whitish. Each of teeth with median warm brown streak or blotch. Branchiostegal region on throat brilliant rosy-carmine. Obliquely parallel with pectoral base, above or inside and below outside a reddish streak fading out below. Origin



of pectoral above with blackish spot. Dorsal reddish. Pectoral, ventral and anal mostly yellowish. Caudal olivaceous-green with faint vertical streaks. Iris reddish. Color later faded, generally brownish above, whitish below. Fins all brownish. Iris slaty. Teeth whitish. The smaller examples lack most of the brilliant colors of the adults. Length 64 to 110 mm.

This brilliant species was taken in a large seine near Kingston on February 12, 1914. As it is apparently rare and little known, I have given the above notes, and also a figure of the largest example. Cope originally gave a very crude figure and incomplete account of the coloration. His type has been examined and compared in the present study, and although greatly faded there is no doubt as to the identification. *Cryptotomus crassiceps* T. H. Bean,<sup>1</sup> from Bermuda, is also a synonym.

*Sparisoma abbotti* sp. nov. Fig. 2.

Head  $3\frac{1}{5}$ ; depth  $2\frac{4}{5}$ ; D. IX, 10, 1; A. II, 9; P. II, 11; V. I, 5; scales 25 in l. l. to caudal base, and 2 more on latter; 2 scales above l. l. to spinous dorsal origin; 6 scales below l. l. to anal origin; 3 median predorsal scales; 3 median scales on breast before ventral origins; head width 2 in its length; head depth at occiput about 1; snout  $2\frac{2}{3}$ ; eye  $4\frac{1}{5}$ ; maxillary 4; interorbital 4; first dorsal spine 3; first dorsal ray  $2\frac{3}{7}$ ; first anal ray  $2\frac{7}{8}$ ; least depth of caudal peduncle  $2\frac{1}{3}$ ; caudal  $1\frac{1}{3}$ ; pectoral  $1\frac{3}{5}$ ; ventral  $1\frac{7}{8}$ .

Body moderately ovoid in general contour, compressed, deepest about opposite middle of pectoral, edges mostly rounded, though postventral with slight median keel and one on each side. Caudal peduncle compressed, about long as deep.

Head compressed, deep, profiles similarly convex, and flattened sides very slightly constricted above. Snout convex over surface, slightly so in profile, and length about  $\frac{7}{8}$  its width. Eye rounded, high, close to upper profile, and hind edge midway in head length. Mouth terminal, with commissure extending about half way to front eye edge, and inclined slightly down anteriorly. Maxillary mostly concealed. Lips thin, little free. Teeth as nearly even cutting-edges, incisor-like, smaller in upper jaw, and in lower as about 4 oblique appressed series along each mandibular ramus as seen externally. Upper dental area with 6 external canines placed on outer surface, all flare outward, canine-like, slightly curved, inner pair

<sup>1</sup> Proc. Biol. Soc. Wash., XIX, February 26, 1906, p. 37; Field Columb. Mus. Pub., 108, Z. Ser., VII, No. 2, 1906, p. 70, fig. 9.



smallest and somewhat approximated, and posterior on each side largest and flare backward. Both inner buccal folds broad. Tongue large, thick, fleshy, not free. Nostrils simple pores, slightly separated, level with upper part of eye and anterior about last fourth in snout length. Interorbital slightly convex. Preopercle ridge not very distinct, inclined little forward.

Gill-opening extends forward about opposite middle of eye. Gill-rakers about 5+11, slender, fine, scarcely pungent, nearly 3 in filaments, and latter about equal eye. Pseudobranchiæ large as filaments. Branchiostegals slender, graduated. Isthmus convex.

Scales large, cycloid, in even lengthwise series, more or less equal in size, though largest on middle of sides and breast. Ventral with

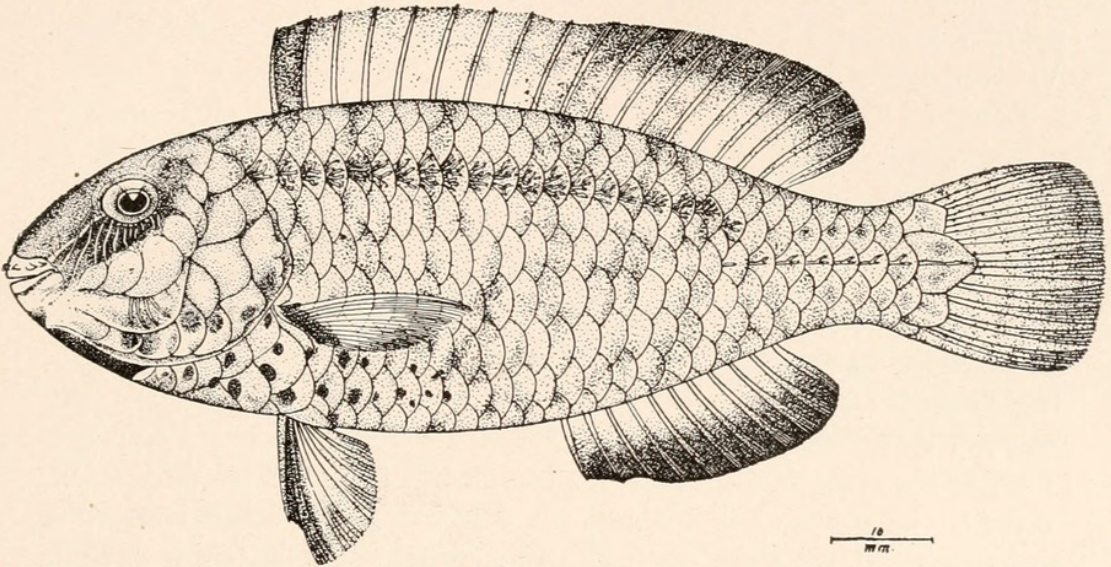


Fig. 2.—*Sparisoma abbotti* Fowler. (Type.)

free pointed axillary scaly flap, about  $\frac{1}{3}$  length of fin. Fins naked, except large scales covering caudal base. L. l. complete, high, mostly concurrent with dorsal profile, and falls midway along side of caudal peduncle. Scales in l. l. slightly smaller than those adjoining. Tubes all more or less branched.

Dorsal origin nearly at first third between snout tip and last dorsal ray base, spines all pungent, and edge of fin entire. Anal with spines small and mostly flexible, fin otherwise similar to dorsal. Caudal with hind edge rounded. Pectoral small, first rudimentary ray short and as concealed thorn, fin extending  $\frac{3}{4}$  to anal. Ventral inserted about opposite pectoral origin, fin reaching  $\frac{3}{5}$  to anal. Vent close before anal.

Color in alcohol generally dull olivaceous, much brighter and



with mottled appearance, due to obscure whitish spots and shades of brownish, when fresh. Lower surface of head and breast with ochraceous tints. Head with dull purplish-brown tints above. A narrow bluish line extends from lower front eye edge to corner of mouth. Iris greenish-yellow. Throat or branchiostegal region brownish or sooty-black. Breast clouded with deep brownish, this shade appearing as a few scattered spots also on lower surface of head and lower sides. Dorsals, caudal and anals dusky-brown. Membrane between first and second dorsal spines dusky, and rayed dorsal largely mottled with dusky on its greater outer portion. Anal pale basally, though outer portion of fin largely blackish its whole extent. Caudal with 5 obscure vertical dark cross-streaks. Pectoral with its entire base, both inside and outside, slaty, fin slightly yellowish basally otherwise, and becomes dusky terminally. Ventral dusky in front, whitish behind.

Length 113 mm.

Type, No. 39,868, A. N. S. P. Kingston, St. Vincent Island, West Indies. February 12, 1914. R. M. Abbott.

This species is allied, if not likely to prove identical, with *Scarus radians* Valenciennes, as interpreted by Jordan and Evermann. *Sparisoma radians*<sup>2</sup> thus differs in the presence of 4 posterior canines, its reddish-brown color, axil with little or no blue, but with a dusky blotch partly hidden by the fin, caudal nearly plain, and one or two more or less distinct whitish bars across the chin. *Scarus lacrimosus* Poey is too imperfectly described to permit of positive identification, though the pectoral is without an axillary spot. Jordan notes<sup>3</sup> a specimen sent by Poey to Cambridge, which had no dark axillary spot, the head plain, though it possessed two strong posterior canines with several smaller pointed teeth in front. At present *Sparisoma abbotti* has a dusky front and throat, on each side of the cheek below a whitish horizontal area which does not extend across the chin. Behind the dark area of the throat the scales on the isthmus form a pale or whitish transverse streak completely across.

(Named for Mr. Richard M. Abbott, who collected the type.)

**Chætodipterus faber** (Broussonet).

**Hepatus bahianus** (Castelnau).

**Balistes vetula** Linnæus.

---

<sup>2</sup> Bull. U. S. Nat. Mus., No. 47, II, 1898, p. 1631. Bahia, Brazil.

<sup>3</sup> Rep. U. S. F. Com., XV, 1887 (1891), p. 678.



## TRINIDAD.

Mr. Abbott also made a small collection from this island in February, 1914. *Grapsus maculatus* was obtained on the shore west of Port-of-Spain. *Bithynis ensiculus* and *Pseudothelphusa garmani* were secured in the San Juan River near San Juan.

**Pœcilurichthys bimaculatus** (Linnaeus).

Adult from the San Juan River near San Juan. When fresh the back was olivaceous, and lower surface paler. Sides of head silvery. Iris reddish. Blackish humeral blotch horizontally ellipsoid, and in pale area. Caudal blotch blackish, large, and includes middle caudal rays. Streak of leaden along middle of side. Dorsal and pectoral like back, also anal with exception of front edge which orange, like ventrals. Caudal yellowish basally, tips grayish.

**Lebistes reticulatus** (Peters).

Many females and a few males from the San Juan River near San Juan. Also three males from the Blue Basin in Blue Basin Falls. These examples are very variable.

**Conodon nobilis** (Linnaeus).

One secured by Mr. Warrington in 1900.

**Æquidens pulcher** (Gill).

Adult from the St. Joseph River near St. Joseph, and a young example from the Blue Basin.

**Eleutherodactylus urichi** (Boettger).

One from near Port-of-Spain. In life the throat was brilliant lemon-yellow, though has now faded white in alcohol.

## COSTA RICA.

Dr. Philip P. Calvert placed a small collection, made in 1909, in my hands for study. It has not been presented to the Academy. I am indebted to Dr. Calvert for the favor of examining the collection as well as for the notes pertaining to it. Several interesting crustaceans are also contained in it. These are *Palæmon jamaicensis* for the Rio Bananito, *Pseudothelphusia richmondi* from Quebrada Honda near Juan Viñas, and *Potamocarcinus nicaraguensis* from Peralta.

**Rivulus isthmensis** Garman.

Two from Laguna at Juan Viñas.

**Priapichthys annectens** (Regan).

Three from the Rio Bananito.



**Dendrobates typographus** Keferstein.

Two examples, one in life a bright vermilion color and the other gray. Both taken at Philadelphia South Farm.

**Dendrobates tinctorius** (Schneider).

Holanda Farm.

**Agalychius helenæ** Cope.

Cartago. Dr. Calvert gives the following note:

"There was an exceedingly handsome frog here, one of which we took to the hotel and kept for some days. When "asleep" its body, exclusive of legs, is 63 mm. ( $2\frac{1}{2}$  ins.) long. Ordinarily the upper surface of body and legs is a bright pea-green, below the body is speckled white and reddish-brown, with a band of brilliant beautiful blue on each side of the abdomen. We photographed it as we noticed great color changes. When first caught it was pale green. When we took it out of the vasculum at the hotel it was a dark dirty green with pale spots on the back. While we photographed it, it grew light again with paler spots over the back. After night-fall it was again very dark, but although it spent the night in a dark cupboard it was pale green when we first looked at it in the morning and again at 4.30 P.M. When caught it secreted a quantity of sticky mucus having a powerful and disagreeable odor, which it was difficult to remove from the hands. It was able to cling without other support than its toes on the vertical side of our glass graduate. The tips of all the toes (4 on front, 5 on hind feet) are expanded into large fleshy disks with which the frog climbs."

**Homalocranium virgatum** (Günther).

Juan Viñas.

**Leptodeira albofusca** (Lacépède).

La Emilia.

## STATE OF CEARÁ, BRAZIL.

During November of 1913, Mr. C. F. Derby made a small collection in the Rio Jaguribé at Barro Alto, in the municipality of Igatu, and about 413 kilometers due south from Fortaleza. When the fishes were captured the water in the river was a trifle salty, owing to a very light rainy season the year before.

**Curimatus cyprinoides** (Linnæus).

Two examples 137 and 152 mm. long.

**Prochilodus nigricans** Agassiz.

Two examples 135 and 129 mm. long. They show dark vertical streaks, as well as the dark lengthwise lines, like those of *P. stein-*



*dachneri*. In the earlier accounts of *P. nigricans* little note is taken of the color. Prof. Starks states that Madeira River specimens have the lengthwise lines and cross-bars more distinct than those from Para.

***Pœcilurichthys bimaculatus* (Linnaeus).**

Head 3 to  $3\frac{1}{4}$ ; depth  $2\frac{1}{4}$  to  $2\frac{4}{5}$ ; scales 32 to 35 in l. l. to caudal base and 2 or 3 more on latter; 7 scales above l. l., rarely 6; 7 scales below l. l., rarely 6; 12 to 15 predorsal scales; snout  $3\frac{3}{4}$  to 4 in head; eye  $2\frac{3}{4}$  to 3; maxillary  $2\frac{2}{5}$  to  $2\frac{4}{5}$ ; interorbital  $2\frac{3}{4}$  to 3; length 45 to 58 mm. Six examples.

Among my earlier material belonging to this species, the specimens from the Tocantins headwaters each have a cluster of dusky dots at base of each lateral scale, no other dots on outer portions of scales, where apparently none were ever present, and thus lengthwise series of inconspicuous spots are evident. In these the predorsal scales are interrupted on the anterior median line, though closely and irregularly approximated, several being saddled over the ridge of the posterior half. In the larger of my examples of *Astyanax bartlettii* the predorsal line is more or less interrupted, though in the larger the squamation is mostly destroyed. The Paramaribo *A. orientalis* is pale in color, and in agreement with the Ceará material, though without pigmented dots on the sides at present, and the fallen predorsal scales have left pockets showing they were probably more or less completely placed as saddles. *A. lacustris* shows the scales of the predorsal closely approximated, though only those of the posterior half formed saddles. *A. jacuhiensis* shows the predorsal scales with a nearly complete naked strip in front and without the dark pigment dots, or only very faint sparse ones, at the bases of the scale exposures. The body is also much deeper. Prof. Starks mentions that Lake Extremos, Lake Papary and Ceara Mirim examples have fewer anal rays (25-27), while in the Para material they were more numerous (31-32).<sup>4</sup> Of the first he says: "These are perhaps referable to *Astyanax bimaculatus novæ* Eigenmann, though the lateral band is not so definite as in the picture of the original specimen." *A. bimaculatus novæ* I have been unable to find noticed elsewhere. Finally I have described *A. rupununi*<sup>5</sup> from British Guiana, which in no way differs from Ceará material. It shows the predorsal scales nearly completely forming saddles over the median

<sup>4</sup> Stanford Univ. Publ. (Fishes Stanford Exp. Brazil), March 17, 1913, p. 16.

<sup>5</sup> Proc. Acad. Nat. Sci., Phila., 1914, p. 242, fig. 6.



line, thus allowing for the error of its inclusion in *Astyanax*, though as a synonym of *P. bimaculatus* it must be suppressed.

**Serrasalmus rhombeus** (Linnæus).

One 112 mm. long from Barro Alto. The back, above the lateral line is marked with rather numerous, and in most cases more or less dark brownish or dusky vertical spots.

**Pygocentrus piraya** (Cuvier).

Two examples, 160 and 214 mm. In the smaller specimen the spots are larger, more distinct, and more sparse, also pale, and on basal region of tail larger.

**Pimelodella gracile** (Valenciennes).

One 172 mm. long. Maxillary barbel reaches anal origin. Outer mental barbel extends only for first fifth in depressed pectoral spine. Adipose fin  $2\frac{2}{5}$  in combined head and trunk length.

**Plecostomus jaguribensis** sp. nov. Fig. 3.

Head, measured to hind edge of occipital process, 3; depth  $4\frac{2}{3}$ ; D. I, 7; A. I, 4; P. I, 5; V. I, 5; lateral scutes from pectoral axilla 25 to caudal base and 2 more on latter; 5 scutes between dorsal base and that of anal; 3 predorsal scutes; head width equals its length, when measured from occipital process medianly behind; head depth at occiput  $1\frac{3}{5}$ ; snout  $1\frac{3}{4}$ ; eye  $6\frac{1}{5}$ ; mouth width  $3\frac{3}{4}$ , mandibular ramus  $6\frac{1}{2}$ ; interorbital  $2\frac{1}{3}$ ; adipose fin  $2\frac{7}{8}$ ; pectoral spine nearly 1; least depth of caudal peduncle  $3\frac{1}{4}$ ; ventral spine  $1\frac{1}{3}$ .

Body elongate, moderately depressed with convex surface above and lower surface flattened, anterior profile well convex, and greatest depth at dorsal origin. Caudal peduncle well compressed, and length little less than least depth.

Head large, moderately depressed, lower surface flattened, with sides sloping up for about  $\frac{1}{2}$  greatest width of head, leaving wide and broadly triangular occipital region, as seen in vertical section. Snout wide, outline broadly triangular as seen from above, and its length  $\frac{3}{5}$  its greatest width opposite front edges of eyes. Eye rounded, well elevated or close to upper profile and center falls about  $\frac{3}{5}$  in head length as measured to occipital process. Pupil small, apparently vertical ellipsoid. Mouth moderately wide, anterior below. Buccal disk orbicular, its transverse diameter  $1\frac{4}{7}$  in snout length, edges entire, and surface of lower portion outside with numerous papillæ, of which innermost larger or better developed. Inside jaws apparently more or less smooth. Inside upper jaw large fleshy median papilla. Teeth slender, uniserial, long, bent over



at ends, bifid, 44 in upper jaw and 47 in lower jaw, one of bifurcations always shorter and smaller than other. Inner buccal folds rather wide. Tongue broad and fleshy. Each lateral corner of buccal disk with slender barbel about equal to eye in length. Nostrils large, together, dividing frenum falls little before last fourth in snout length, socket much less than that of eye, and both fall within confines of internasal space. Anterior nostril simple pore with

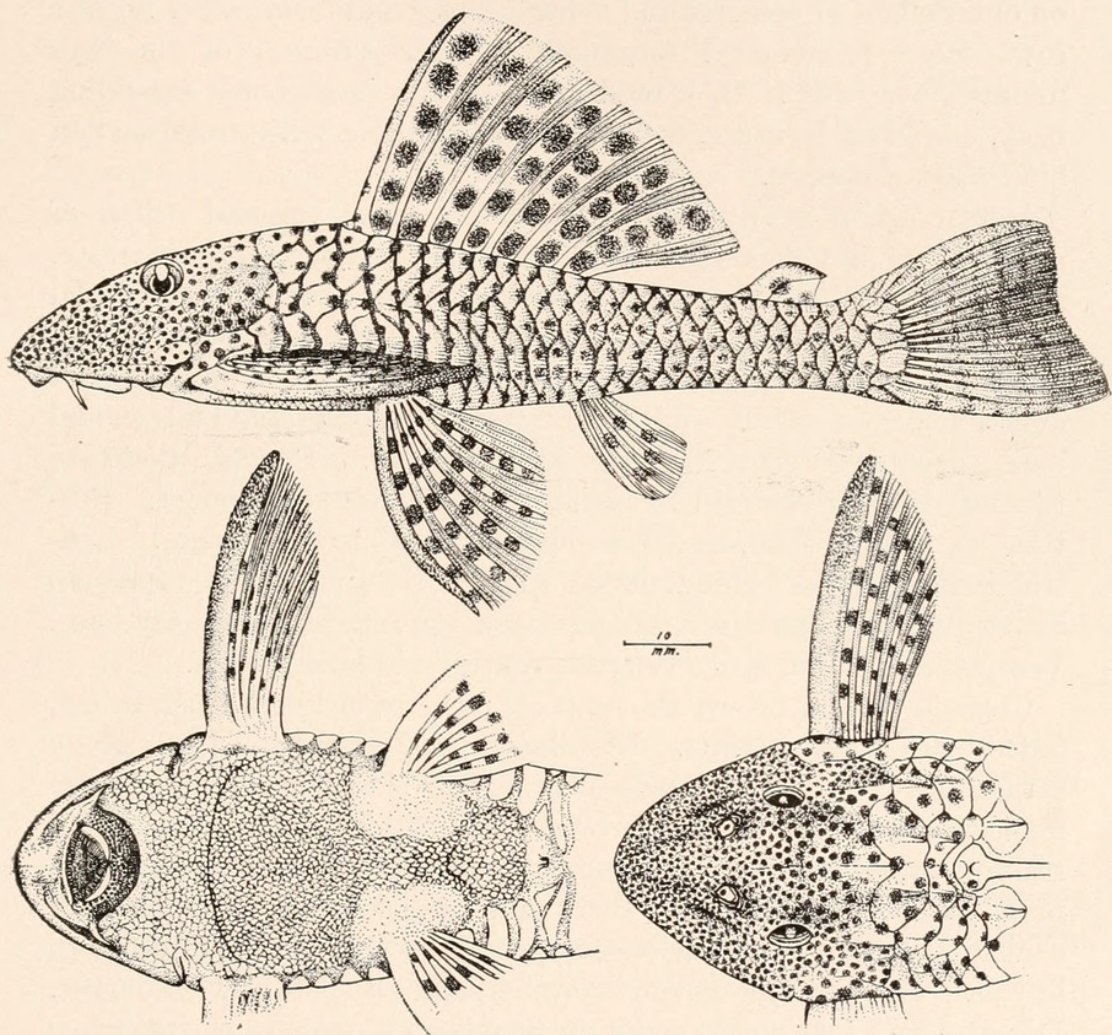


Fig. 3.—*Plecostomus jaguribensis* Fowler. (Type.)

cutaneous flap behind forming valve completely covering slightly larger posterior nostril. Interorbital rather wide, double concave, due to slightly elevated supraoccipital median ridge and each supra-orbital also being little elevated. Hind edge of occipital ridge broadly triangular. Opercle large, moderately porous.

Gill-opening small, lateral, oblique, and extends forward about opposite first third in eye. Isthmus broad, about  $1\frac{1}{10}$  in snout.



Body everywhere minutely spinulose. Scutes on back slightly carinate, and lateral series obsoletely so anteriorly. None of scutes carinate below adipose fin. Six scutes between dorsal and adipose fin. Occipital process bordered only by median scute behind. Edge of gill-opening bordered with slightly enlarged spinules. Lower surface of head and abdomen covered with small granular scales, all densely and minutely spinulose. Fin spines all spinulose, those on outer edges of pectoral and ventral larger and form rather regular rows more pronounced terminally. Outer surfaces of fin rays minutely spinulose. L. 1. evident as simple small pores extending back, one in each suture, between scutes forming series from median hind edge of opercle.

Dorsal origin nearly midway between snout tip and origin of adipose fin, and depressed spine (damaged) apparently moderate. Adipose fin with strongly compressed large bent spine,  $1\frac{2}{3}$  to caudal base, and inserted little behind last third in space between dorsal origin and caudal base. Anal inserted slightly before hind edge of dorsal base, or about midway between pectoral axil and caudal base, depressed fin extending  $2\frac{1}{5}$  to latter. Caudal moderate (damaged), well emarginate behind ? and lower lobe longer. Pectoral spine large, compressed, reaches about  $1\frac{2}{7}$  to anal origin. Ventral inserted close behind dorsal spine base, spine long, tapers to rather flexible point which extends back opposite hind anal ray base. Vent at last fifth in space between ventral and anal origins.

Color in alcohol brown above, paler or more or less whitish below, faded with creamy tints. Iris slaty, pupil darker. Head above rather finely spotted with pale dusky, spots closer, smaller and more numerous on muzzle, interorbital and cheek. Back and costal region marked with similar colored, though larger, spots and seldom more than one on a scute. Belly and lower surfaces of trunk with similar, though much more obscure, spots, mostly of very dull brown in tint. Fins all dull or pale brownish, and all spotted with darker. Dorsal with large dusky spots on membranes, usually a single row which may occasionally be slightly irregular on each. On front edge of dorsal spine series of small inconspicuous pale dusky spots. Caudal with median hind portion dusky, and with several obsolete transverse streaks. Membranes of pectoral and ventral with spots similar to those on dorsal, only smaller. Anal membranes with several dusky dots, also adipose fin.

Length 116 mm. (caudal tips damaged).

Type, No. 39,930, A. N. S. P. Rio Jaguribé at Barro Alto, Brazil. November, 1913. Mr. C. F. Derby.



Also No. 39,931, A. N. S. P., paratype, same data. Head 3; depth  $4\frac{1}{4}$ ; D. I, 7; A. I, 4; lateral scutes 26 to caudal base and 2 more on latter; snout  $1\frac{3}{4}$  in head; eye  $5\frac{3}{5}$ ; mouth width 3; interorbital  $2\frac{2}{5}$ ; length 103 mm.

Related to *P. auroguttatus* (Kner). In that species the dorsal spots are larger and ill-defined and the space between the ventrals is mostly granular. Kner's figure shows the granules sparsely irregular on the breast, whereas in the present species they are mostly uniform. Other allied species, which agree in having the occipital bordered by a single nuchal scute, are *P. wuchereri* Günther and *P. unæ* Steindachner. The former has two series of spots on each dorsal membrane and the region between the ventrals is naked or with but few granules. In the latter species the scutes on the belly are reduced to a minimum. *P. lexi* R. Von Ihering, *P. variipictus* R. Von Ihering and *P. ancistroides* R. Von Ihering all differ in coloration.

(Named for the Rio Jaguribé.)

*Loricariichthys derbyi* sp. nov. Fig. 4.

Head, measured to hind edge of gill-opening  $5\frac{1}{4}$ ; depth  $9\frac{1}{4}$ ; D. I, 7; A. I, 5; P. I, 6; V. I, 5; scales 31 in lateral series to caudal base, lateral keels united or approximated after 19 scales; 22 scales behind dorsal; 3 predorsal scales; head width  $1\frac{1}{10}$  in its length; head depth at occiput  $2\frac{1}{8}$ ; snout  $1\frac{3}{4}$ ; eye 5; mouth width 4; interorbital  $3\frac{1}{2}$ ; dorsal spine  $1\frac{1}{8}$ ; anal spine  $1\frac{1}{5}$ ; pectoral spine  $1\frac{1}{3}$ ; ventral spine  $1\frac{2}{5}$ .

Body slender in profile, deepest at dorsal origin, and well depressed. Caudal peduncle well depressed, long, and surfaces similarly widely convex above and below.

Head moderately long, depressed, broadly convex above and more or less flattened below. Snout convex over surface, profile also very slightly convex, and length about  $\frac{3}{4}$  greatest width opposite front of eyes. Eye moderate, with eye-socket well notched behind, general form ellipsoid, and center falls about last third in head length. Mouth anterior or slightly before middle in snout length, transverse, and jaws firm. Inner edge of each mandibular ramus with 5 fine, slender teeth, close-set and uniserial. Upper jaw with 10 similar smaller, inconspicuous teeth. Buccal disk elongate, hind edge and outer surface of lower lip entire, though front edge of disk laterally and before each barbel fringed. Lateral barbel short, about  $\frac{3}{4}$  in eye. Tongue broad, fleshy, apparently not free. Nostrils together, within an aperture, but slightly less than eye length, also



extend well into front interorbital region. Internasal space  $2\frac{4}{5}$  in interorbital. Cheeks level or very slightly convex. Interorbital mostly flattened medianly, and as supraorbital ridges slightly elevated of somewhat concave appearance. Opercle large, rather porous. Supraoccipital wide, completely divides truly first predorsal scale.

Gill-openings lateral, extend forward about opposite hind edge of eye. Gill-rakers about  $3+8$  short, firm points, about  $\frac{1}{4}$  length of gill-filaments, and latter about 2 in eye. Isthmus broad. Branchiostegals broad.

Scales or scutes, all more or less minutely spinescent. Scutes on belly in rather irregular rows, anteriorly 5, antero-medianly 3,

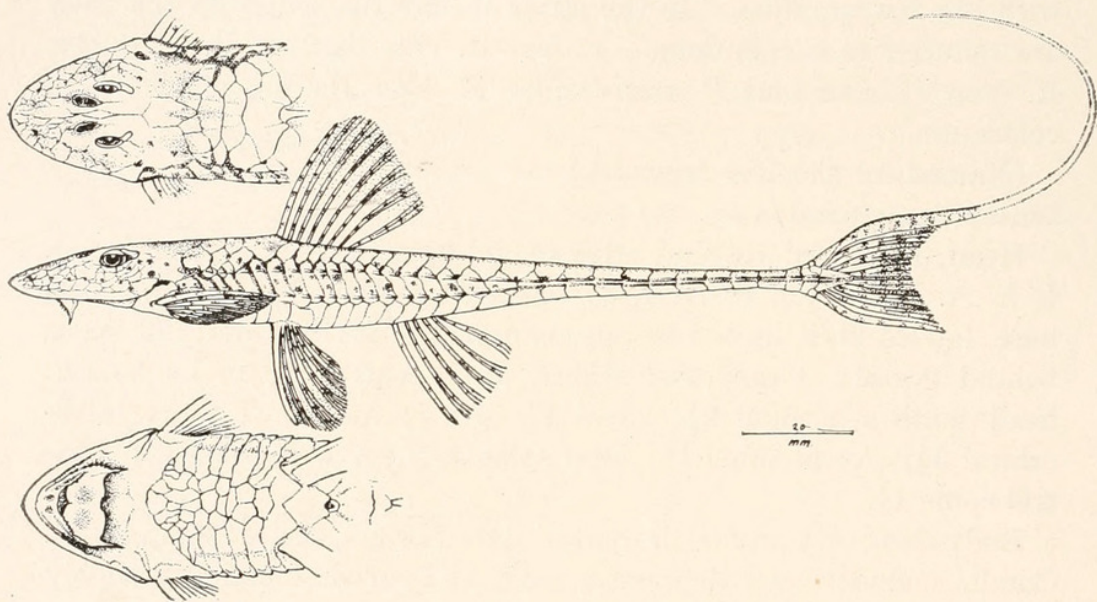


Fig. 4.—*Loricariichthys derbyi* Fowler. (Type.)

postero-medianly 2, and posteriorly 1. Single preanal scute. Lateral keels on each side made up of a series of minute denticles, straight in their arrangement, and graduated longer to last, which largest. Lateral belly scales with scarcely obsolete keels. Head all more or less roughened with minute asperities, though slightly larger along lower edge of snout. All fin spines and outer surfaces of fin rays finely spinescent.

Dorsal origin at first third in length between snout tip and caudal base, spine slender, and shorter than longest rays when depressed. Anal inserted well behind dorsal base or nearer snout tip than caudal base, and spine shorter than longest depressed rays, fin extending  $3\frac{1}{2}$  to caudal base. Caudal small, median rays short, and



outer or upper and lower enlarged, especially former, which conspicuously compressed and osseous. Pectoral reaches ventral, spine rather flexuous at tip, equals longest rays. Ventral inserted slightly before dorsal origin, spine long and flexuous, and extends back slightly beyond front of anal. Vent slightly nearer ventral than anal origin.

Color in alcohol dull brownish above, mottled obscurely with dark towards upper lateral regions. Lower surface of body immaculate whitish. Fins pale brownish, rays and spines all rather finely spotted dusky. Several dusky spots along side of head. Iris slaty.

Length 175 mm. (caudal tip damaged).

Type, No. 39,932, A. N. S. P. Rio Jaguribé at Barro Alto, Brazil. November, 1913. Mr. C. F. Derby.

Also No. 39,933, A. N. S. P., paratype same data. Head  $5\frac{1}{2}$ ; depth 9; D. I, 7; A. I, 5; scales 31 to caudal base and 1 more on latter; scales approximated after first 19; snout  $1\frac{3}{4}$  in head; eye  $4\frac{4}{5}$ ; mouth width 4; interorbital  $3\frac{3}{5}$ ; length 150 mm. (caudal tip damaged).

This species appears to be related to *Loricaria spixii* Steindachner, which differs in having the lateral keels approximated after the twenty-third scale, fewer scales in transverse series across the belly, and in the nasal sockets not extending into the anterior interorbital region. From most all other species *L. derbyi* differs in the enlarged uppermost caudal ray.

(Named for Mr. C. F. Derby.)

**Lebistes reticulatus** (Peters).

Three examples 15 to 30 mm. They all show a blackish ocellus on side of back just before dorsal fin. The largest example also has about a dozen vertical streaks made up of the darker olive ground-color and a dusky streak transversely over dorsal near base. These examples were obtained near the coast.

**Tropidurus torquatus** (Wied).

One example, 187 mm.





Fowler, Henry W. 1915. "Cold-blooded vertebrates from Florida, the West Indies, Costa Rica, and eastern Brazil." *Proceedings of the Academy of Natural Sciences of Philadelphia* 67, 244–269.

**View This Item Online:** <https://www.biodiversitylibrary.org/item/17758>

**Permalink:** <https://www.biodiversitylibrary.org/partpdf/16162>

**Holding Institution**

MBLWHOI Library

**Sponsored by**

MBLWHOI Library

**Copyright & Reuse**

Copyright Status: Public domain. The BHL considers that this work is no longer under copyright protection.

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.