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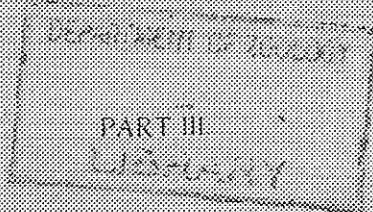
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SMITHSONIAN INSTITUTION.
UNITED STATES NATIONAL MUSEUM.

THE FISHES
OF
NORTH AND MIDDLE AMERICA:
A DESCRIPTIVE CATALOGUE
OF THE
SPECIES OF FISH-LIKE VERTEBRATES FOUND IN THE
WATERS OF NORTH AMERICA, NORTH OF
THE ISTHMUS OF PANAMA.

BY
DAVID STARR JORDAN, PH. D.,
FREDERICK OF THE LELAND STANFORD JUNIOR UNIVERSITY AND OF THE
CALIFORNIA ACADEMY OF SCIENCES.
AND
BARTON WARREN EVERMANN, PH. D.,
ICHTHYOLOGIST OF THE UNITED STATES FISH COMMISSION.



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LIST OF NEW NAMES.

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THE FISHES

OF

NORTH AND MIDDLE AMERICA.

BY DAVID STARR JORDAN AND BARTON WARREN EVERMANN.

PART III.

PREFATORY NOTE.

This volume is the third of a descriptive catalogue of the fishes and fish-like vertebrates of North and Middle America. For the sake of greater completeness the marine fishes of the Galapagos Islands and the South American coast north of the equator have been included, as all of these are sure, sooner or later, to be found within our limits. For the same reason the few species known from Kamchatka and the Kuril Islands are included as a part of the fauna of the Alaskan Sea.

The pagination and the numbering of the species, genera, and higher groups are continuous throughout the three parts.

Part I, *Branchiostomidae* to *Prismacanthidae* inclusive (pages 1 to 1240), was published October 3, 1895; Part II, *Lutjanidae* to *Cephalacanthidae* inclusive (pages 1241 to 2183), was published October 3, 1896; and Part III, *Callionymidae* to *Chirocentridae* appears on November 26, 1896. Parts I, II, and III have each their own table of contents, while in Part IV (the Atlas) is given a table of contents complete for the entire work and corrected to include the Addenda.

The present part includes also an artificial key to the families of true fishes, an addendum containing species overlooked or described subsequently to the publication or casting of the part to which they belong, a glossary of scientific terms, and a general index complete for the entire work.

A fourth volume, or Atlas of plates, containing illustrations of one or more species of each of the more important genera, will follow within the year.

The preparation of the manuscript for this work was begun by the senior author in 1891. In 1893 the junior author became associated with him, and since then both have given to it such of their time and energy as could be spared from engrossing official duties to which systematic ichthyology bears no relation.

The insertion of the comma between generic and specific names and the authorities for them, as practiced in this publication, is in accordance with the views held by the authorities of the United States National Museum, and does not express the views of the authors of this work.

interorbital width greater than eye. Origin of dorsal fin over middle of base of anal; $\frac{1}{2}$ distance from snout to base of caudal; origin of anal fin midway between head and caudal, the last ray nearly as far back as that of dorsal; caudal elongate, pointed, as long as head. Light olivaceous, with a dark blotch at base of dorsal and another on back above or in front of first anal ray; apparently a light, transverse streak at base of caudal. Rio San Jose, Costa Rica.

Rivulus sathraensis, GARMAN, The Cyprinodonts, Mem. Mus. Comp. Zool., XIX, No. 1, July, 1895, 140, Rio San Jose, Costa Rica. (Type in M. C. Z.)

Page 663. *Lucania ornata* is wrongly referred to the synonymy of *Heterandria formosa* by Garman.

Page 664. The species called *Lucania goodii* in the text has 2 rows of teeth and is a true *Fundulus*, or rather *Zygocentrus*, as Garman has shown. It may stand as *Fundulus goodii*.

Page 665. *Lucania venusta* is wrongly referred by Garman to *L. parva*, to which, however, it is closely related.

Page 668. Garman wrongly refers *Characodon bilineatus* and *C. varietus* to the synonymy of *C. lateralis*.

Page 669. Add:

883(a). CHARACODON EISENI, Butler.

Head 3 $\frac{1}{2}$; depth 3 $\frac{1}{2}$; eye 3. D. 11 to 13; A. 13; scales 30 to 32-12. Snout shorter than eye, lower jaw projecting. About 9 teeth in upper jaw and about 14 in lower; teeth strongly bicuspid, the villiform teeth not developed. Mouth almost vertical when closed, mandible about $\frac{1}{2}$ length of eye; interorbital space flat, the anterior part equal to orbit, wider posteriorly. Insertion of dorsal in middle of total length; anal inserted under fourth ray of dorsal; pectoral reaching past insertion of ventral; tips of depressed dorsal and anal in vertical through middle of caudal peduncle; caudal broad, truncate, length of middle rays equal to length of top of caudal peduncle. Head about $\frac{1}{2}$ of total; greatest depth of body above ventrals; depth of caudal peduncle $\frac{1}{2}$ its length. Color in alcohol, male with a broad indefinite lateral band; female with dark blotches on sides which in 1 of 3 specimens form distinct cross bands. This species is most closely related to *Characodon cartatus*, Bean. It differs from that species in having fewer rays and scales, much fewer teeth, larger eye, much more posterior position of dorsal, and in color. Length 1 $\frac{1}{2}$ inches. Rio Grande de Santiago, Tepic, Mexico.

Characodon eiseni, BUTLER, Proc. Cal. Ac. Sci. 1890, 265, Rio Grande de Santiago, Tepic, Mexico. (Type No. 403, L. S. Jr. Univ. Mus.—Coll. Dr. Gustav Eisen.)

Page 670. Add the following:

The specimens from Parras, Mexico, referred by Garman to *C. lateralis*, appear to be new. They may be described as follows:

884(a). CHARACODON GARMANI, Jordan & Evermann, new species.

B. 4; D. 13; A. 12; V. 6; P. 17; scales 32-11 or 12; vertebrae 15+18. Body compressed, moderately stout, caudal peduncle deep, back gently

arched. Head about $\frac{1}{2}$ of length to base of caudal; very little arched transversely. Snout short, not as long as the eye; chin strap. Mouth medium; upper jaw protractile. Teeth in outer series bicuspid. Eye large, nearly equal to interorbital space, $\frac{1}{2}$ longer than snout, $\frac{1}{2}$ of head. The specimen examined had 4 branchiostegal rays on each side; whether this is normal must be decided from others. Fins small; dorsal origin about $\frac{1}{2}$ of the distance from snout to caudal; anal opposed to dorsal; posterior margin of caudal subtruncate. Olive to reddish brown, with scattered small spots of darker on the back, a darker band with or without spots of dark along the flank, more distinct posteriorly. Fins with fine dots of dark color. Parras, Coahuila, Mexico. (Named for Prof. Samuel Garman of the Museum of Comparative Zoology, in recognition of his valuable studies of the *Cyprinodonts*.)

Cyprinodon lateralis, GARMAN, The Cyprinodonts, Mem. Mus. Comp. Zool., xix, No. 1, pl. 1, fig. 9, 1893. Parras, Coahuila, Mexico; not of GÜNTHER.

984(b). *CHARACODON EITZOLDII*, Steindachner.

Head $4\frac{1}{2}$ to $4\frac{3}{4}$; depth 3 to $3\frac{1}{2}$; eye 1 to $4\frac{1}{2}$ in head; snout 3 to $3\frac{1}{2}$; interorbital $1\frac{1}{2}$ to 2. D. 14; A. 15 or 16; P. 13 or 16; V. 6; scales 40-17. Body moderately slender; caudal peduncle strongly compressed; head short; upper profile slightly arched, somewhat depressed at occiput; ventral outline more convex; bases of anal and dorsal quite oblique. Dorsal rounded, longest ray $1\frac{1}{2}$ in head; anal somewhat smaller. Outer teeth slender, movable, broadened toward front of jaw which is notched; behind these a band of minute teeth, scarcely distinguishable. Two rows of scales below eye; preorbital, jaws, and narrow border of preopercle scaleless. Pectoral shorter than head, not reaching ventrals, which are nearer snout than base of caudal; origin of dorsal nearer base of caudal than gill opening; anal slightly behind dorsal. Color in alcohol, upper half of body light brown or brownish gray, lighter gray or silvery gray below, fading to yellowish white toward ventral line; a silvery gray band along middle of side, not well defined, its width that of 1 or 2 scales. Lake Patzcuaro, Mexico. (Steindachner.)

Characodon eitzoldii, STEINDACHNER, Fische Fischerei Mexica, 12, pl. 2, figs. 3-5b, 1895. Lake Patzcuaro, Mexico. (Coll. Princess Theresa von Bayern.)

Page 675. Garman refers *Cyprinodon elegans* to the synonymy of *C. aznatus* and *C. felicitatus* to that of *C. riccerdi*, both of which seem to be correct.

Page 680. *Gambusia tufana* is probably identical with *G. gracilis*, as indicated by Garman.

Page 681. Garman calls our *Gambusia affinis* *G. patzcuensis* and makes *G. knibbrocki*, the northern form, a distinct species, neither of which views seems to be justifiable.

Page 682. *Gambusia nobilis* and *G. nauraguensis* are referred by Garman to the synonymy of *G. gracilis*, which is questionable; but his reference to *G. punctulata* of *G. picturata* is probably correct.

in the 2 species is quite different. In the single known specimen of *P. woolmani* the number of gillrakers given is 5 + 11, which makes it probable that the present species is not the same. The more striking difference between *P. adspersus* and *P. sinaloa* lies in the scales, which in the latter are cycloid, while in the true *P. adspersus* they are strongly toothed as stated by Steindachner. The specimens from Callao referred by us in the text to *adspersus* belong to that species, but they are not original types of *adspersus*, belonging to the later collections of Agassiz and Steindachner.

Parabiskia sinaloa JORDAN & ANDERSON, new species, Mazatlan, Sinaloa, Mexico. (Type, No. 2330, U. S. Nat. Mus. Coll. Hopkins Exped. to Mazatlan.)

Page 686. After *Platycephalus maculatus* add:

1009(a). *PLATYCEILUS QUITZEENSIS*, R. A. COOK.

Head $3\frac{1}{2}$; depth $2\frac{1}{2}$; eye $3\frac{1}{2}$ in head; snout 1; interorbital width 2. D. 13; A. 13; scales 20, 10. Body compressed, back elevated, head small and depressed, flat on top; snout short. Mouth small, cleft oblique, the lower jaw heavy, projecting; teeth conic, those in upper jaw in an irregular series, those below very small, apparently irregularly arranged and close-set. Origin of dorsal fin in advance of that of anal, midway between tip of upper jaw and end of caudal rays, the first ray of anal being under sixth dorsal ray. Color in alcohol light brown, with traces of darker on back; interorbital space and edge of scales dark brown; 3 dark bars on posterior part of body, the first extending from median line to origin of anal, the second from median line to end of anal base, the third midway between end of anal and origin of caudal; 2 dark spots on end of caudal peduncle; fins all pale. Lake Quitzo, Michoacan, Mexico. Only the type known.

Platyceilus quitzeensis, R. A. COOK, Proc. U. S. Nat. Mus. 1895, 90, with text figure. Lake Quitzo, Michoacan, Mexico. (Type, No. 4809. Coll. F. W. Nelson.) 3030—103

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