

# Papéis Avulsos de Zoologia

## REDESCRIPTION OF THE GENUS *ROESTES* (PISCES, CHARACIDAE)

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### INTRODUCTION

Kner (1860:51) described *Cynopotamus molossus* and although referring it to the genus *Cynopotamus*, he noticed his species had only one row of teeth on the premaxillary and suggested it could represent a distinct genus, for which he proposed the name *Lycodon*. Géry & Vu-Tân-Tuê (1963a:143) pointed out that this name is preoccupied by *Lycodon* Fitzinger, 1826 (Reptilia).

Günther (1864:341) placed Kner's species in his inclusive genus *Anacyrtus* and divided this genus in four groups, one of which, *Roestes*, characterized by the presence of a single series of teeth on the intermaxillary (= premaxillary) and scales very small, included only *R. molossus*. Eigenmann (1910:444), accepted *Roestes*. Géry & Vu-Tân-Tuê (1963b:243) proposed a fuller diagnosis of *Roestes*, extracted from Kner's original description.

Thus, the only data based on actual specimens are Kner's, all other authors using his description to place the species in systematic context. However, during a study of certain genera of the subfamily Characinae, I examined a specimen on loan from the American Museum of Natural History, New York, identified as *Roestes molossus*, and four specimens in the fish collection of the Museu Nacional, Rio de Janeiro, and they proved to belong to Kner's species.

Morphological comparison of *Roestes* with *Gilbertolus* and *Xiphocharax*, revealed no significant differences at the generic level and they are here considered synonymous with *Roestes*.

The purpose of this study is to redefine and redescribe the genus *Roestes*, and to discuss its relationships.

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### Methods and materials

This study is based on the examination of 5 specimens of *Roestes molossus* (4 specimens from the Museu de Zoologia da

Universidade de São Paulo, N.º 9701-04, collected by Dr. José Cândido de Carvalho in June 1950, in the Rio Juruá, Eirunepé, State of Amazonas, Brazil, and 1 specimen from the American Museum of Natural History, N.º 12734, collected in 1934-35 in the Rio Livramento, Brazil; 2 specimens of *Xiphocharax ogilviei* from the Museu de Zoologia da Universidade de São Paulo. N.º 9699-9700, collected by Mr. Emílio Dente in April 1962, in the Rio Mucajá, south of Boa Vista, Territory of Roraima, Brazil; 4 specimens of *Gilbertolus alatus* from the California Academy of Sciences N.º 13072, collected by Wilson in the Rio Atrato, Quibdó, Colombia,

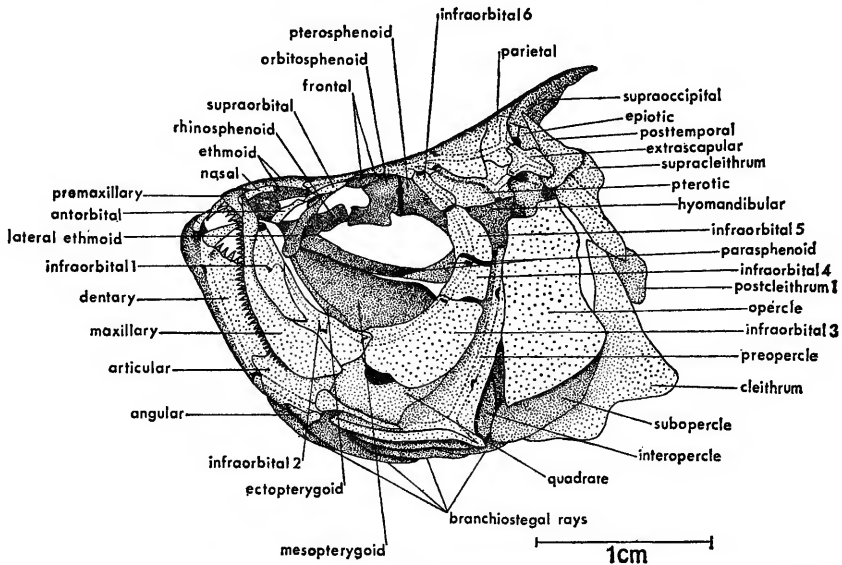


FIG. 1. Lateral view of the cranium of *Roestes molossus*, MZUSP 2704.

Specimens for osteological studies were cleared and stained according to Taylor (1967). Osteological drawings were made from direct observation of specimens. The names of bones are those of Weitzman (1962).

### Genus *Roestes* Günther, 1864

(Figs. 1-3)

*Roestes* Günther, 1864: 345. Type-species: *Cynopotamus molossus* Kner, 1860: 51, by monotypy.

*Lycodon* Kner, 1860: 51 (*nec Lycodon* Fitzinger, 1826). Type-species: *Cynopotamus molossus* Kner, 1860: 51, by monotypy.

*Gilbertella* Eigenmann, 1903: 147. Type-species: *Anacyrtus (Roestes) alatus* Steindachner, 1878: 65, subsequently designated by Eigenmann, 1910: 445.

*Gilbertolus* Eigenmann, in Eigenmann & Ogle, 1907: 3, new name for *Gibertella* Eigenmann, preoccupied by Waite, 102. Type-species: *Anacyrtus (Raestes) alatus* Steindachner, 1878: 65, subsequently designated by Eigenmann, 1910: 445.

*Xiphocharax* Fowler, 1941: 251. Type-species: *Xiphochara ogilviei* Fowler, 1914: 251, by original designation.

### Description

Body elongate, compressed. Dorsal outline from the occipital region to origin of dorsal fin convex, ventral outline strongly curved.

Mouth almost superior, lower jaw projecting when mouth is open. Snout largely obtuse and depressed. Premaxillary small, with one series of 8-11 conical teeth, the first being longer than the remaining. Maxillary curved, almost vertical, with one series of small conical teeth; the point where the borders of the premaxillary and maxillary meet is an almost straight angle. Dentary with 3 spaced canines in front, graduating in size backward, the third being notably developed and followed by a short row of 9-14 small conical teeth; an inner row, represented by 1, 2 or 3 small conical teeth is usually found near the symphysis.

Eyes large, much larger than snout; the upper part of the eye almost enters into the dorsal profile of the head.

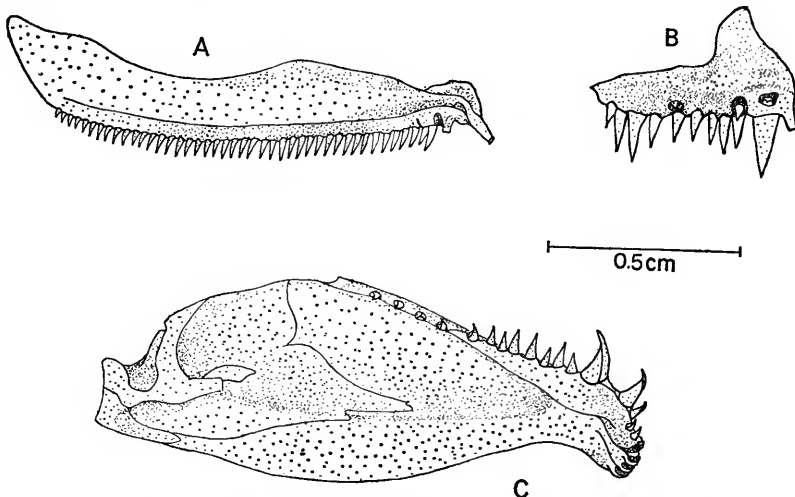


FIG. 2. Inner view of left maxillary (A), premaxillary (B), and mandible (C) of *Roestes molossus*, MZUSP 9704.

Circumorbital series complete, with 8 bones, the supraorbital and antorbital reduced; first infraorbital partially covering the maxillary; third infraorbital not covering cheek completely. Rhinosphenoid present, in contact with lateral ethmoid anteriorly and

with orbitosphenoid posteriorly. Lower posterior corner of preopercle ending in a spiny projection directed backward. Cleithrum deeply notched. Laterosensory canal present on infraorbitals, nasals, frontals, parietals, extrascapulars, pterotics, supraleithra, preopercles, and dentaries. Gill membranes separate and free from the isthmus. 4 branchiostegal rays.

Dorsal fin situated almost in the middle of the body, with 11 rays, the first 2 unbranched. Pectorals long, much longer than ventrals, their tips reaching a little beyond origin of anal fin. Anal fin long, with 40-49 branched rays. Caudal fin truncate or furcate.

#### Discussion

*Roestes*, *Gilbertolus* and *Xiphocharax* have been considered as distinct genera, related to each other and to some other genera within the subfamily Characinae. Steindachner (1878: 65) noticed some similarities between *Gilbertolus alatus* and *Roestes molossus*. Fowler (1914: 251) considered *Xiphocharax* to be related to *Acanthocharax* and *Heterocharax*. Böhlke (1955: 1-14) found *Gnathocharax* to be closely related to *Gilbertolus*. Géry & Vu-Tân-Tuê (1963b: 244) suggested some affinities between *Roestes* and *Xiphocharax* and more recently (1966: 281) considered *Xiphocharax* close to *Gilbertolus*, *Gnathocharax* and *Roestes*.

Close osteological and morphological comparisons of *Roestes molossus*, *Gilbertolus alatus* and *Xiphocharax ogilviei*, revealed that they are so closely related that there is no reason to keep them in distinct genera. They have in common the following characteristics: (1) body moderately large (Standard length = 80-120 mm); (2) mouth almost superior; (3) premaxillary small with a single row of conical teeth; (4) maxillary curved, almost vertical; (5) maxillary-premaxillary junction forming an almost right angle; (6) dentary with 3 spaced canines in front, graduating in size backward and usually 1, 2 or 3 small teeth near the symphysis, representing an inner row; (7) circumorbital series complete, with 8 bones; (8)

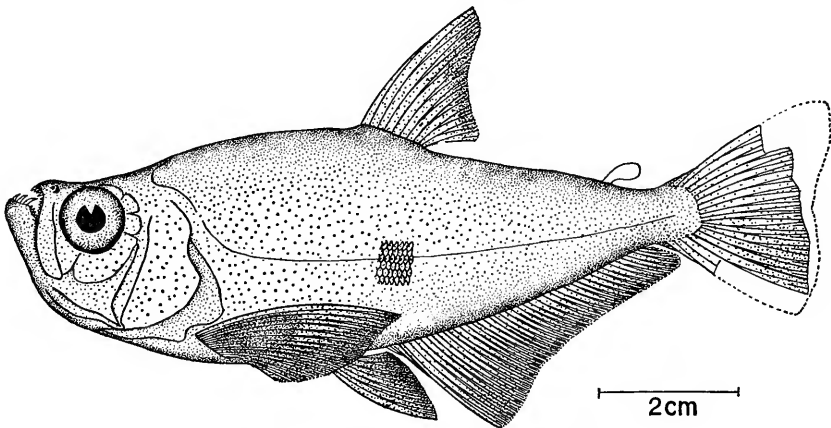


FIG. 3. *Roestes molossus*, MZUSP 9701.

rhinosphenoid present, in contact with lateral ethmoid anteriorly and with orbitosphenoid posteriorly; (9) cleithrum deeply notched; (10) lower posterior corner of preopercle ending in a spiny projection directed backward; (11) pectorals very long, much longer than ventrals.

The differences presented in the key, below, are not significant enough to be considered of generic value, therefore, *Gilbertolus* and *Xiphocharax* are considered synonymous with *Roestes*.

*Gnathocharax*, *Acanthocharax*, *Heterocharax* and *Lonchogenys* have been related to *Roestes* because they also have a spiny projection at the lower posterior corner of the preopercle but an examination of these genera showed that they differ considerably from *Roestes* in many important characters and none of them exhibit the above combination of characters.

Among the genera of the subfamily Characinae (sensu Eigenmann, 1909) *Roestes* is probably more closely related to *Heterocharax*, which has been included by Géry (*l.c.*) in the subtribe Heterocharacini but *Roestes* apparently does not belong in this subtribe.

Three species are assigned to the genus *Roestes*: *R. molossus* (Kner), *R. ogilviei* (Fowler), and *R. alatus* (Steindachner). They can be separated and recognized through the following key.

#### KEY TO THE GENUS ROESTES

1. Origin of the dorsal fin posterior to the origin of the anal fin; pectoral and abdominal regions of the body in form of a keel; 58-74 perforated scales in the lateral line; IV-V + 45-49 rays in the anal fin; 1 small conical tooth on the anterior part of the dentary, slightly behind the main series of canine teeth ..... *alatus*  
 Origin of the dorsal fin anterior to the origin of the anal fin; pectoral and abdominal regions of the body rounded; 77-84 perforated scales in the lateral line; IV-V + 41-45 rays in the dentary, slightly behind the main series of canine teeth ..... 2
2. Dorsal outline of the body, from the occipital region to the origin of the dorsal fin strongly convex; 82-84 perforated scales in the lateral line; IV-V + 40-45 rays in the anal fin; 0 or 1 small conical tooth on the anterior part of the dentary, slightly behind the main series of canine teeth .... *ogilviei*  
 Dorsal outline of the body, from the occipital region to the origin of the dorsal fin weakly convex; 77-80 perforated scales in the lateral line; IV-V + 41-45 rays in the anal fin; 2-3 small conical teeth on the anterior part of the dentary, slightly behind the main series of canine teeth .... *molossus*

Schultz (1950: 71) considered *Gilbertolus alatus* (= *R. alatus*) to be represented by three subspecies: *G. alatus alatus* (Steindachner), from the Magdalena River Basin, Colombia; *G. alatus atratoensis*

Schultz, from the Atrato River Basin, Colombia, and *G. alatus maracaiboensis* Schultz, from the Maracaibo Basin, Venezuela. Since all the species of *Roestes* are strictly freshwater fishes, we may conclude that these forms are geographically and reproductively isolated and apparently cannot be treated as subspecies. The data given by Schultz, indicates the three forms differ in a certain number of significant characters, but a final decision on their "status" can be reached only after a careful study of geographical differentiation, involving all the species of the genus *Roestes*.

*Roestes molossus* is hitherto known only from the Rio Guaporé, a tributary of the Rio Madeira, a large tributary of the Amazon. Its discovery in the Rio Juruá, indicates it can be possibly found also in the headwaters of other tributaries of the Rio Amazonas. The specimen from the American Museum of Natural History was collected in Rio Livramento but no further information was obtained on the exact location of this river. There are two or three rivers in Brazil bearing this name but taking into consideration the geographical distribution of the genus, Rio Livramento should more probably be a small stream (igarapé) which empties in the Rio Moas, a tributary of the Rio Juruá.

*Roestes ogilviei* was described from the Rupununi River, British Guiana. The two specimens from the Rio Mucujá, represent the first record of the species for the Amazon Basin.

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