Labrisomus cricota, a new scaled blenny from the coast of Brazil
(Perciformes: Labrisomidae)

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West South Atlantic; reef fish; new labrisomid

Abstract
Labrisomus cricota, a scaled blenny from the coast of Brazil, is described. The new species differs from its nine West Atlantic congeners by the combination of the following characters: opercle with a dark ocellus, 64 to 68 lateral line scales, first and second dorsal fin spines noticeably longer than the third, and not flexible.

Resumo
O labrisomídeo Labrisomus cricota é descrito da costa do Brasil. A nova espécie difere de seus nove congêneres do Atlântico ocidental pela seguinte combinação de caracteres: opérculo com ocelo escuro, 64 a 68 escamas na linha lateral, primeiro e segundo espinhos da nadadeira dorsal distintamente maiores que o terceiro e não flexíveis.

Zusammenfassung

Résumé
Description de Blennie à écailles de la côte du Brésil. La nouvelle espèce diffère de ses neuf congénères de l'Atlantique ouest par la combinaison des caractéristiques suivantes: opercule à ocelle foncée, 64 à 68 rangées d'écailles latérales, premier et deuxième rayons de la dorsale nettement plus longs que le troisième et non flexibles.

Introduction
The scaled blennies of the genus Labrisomus Swainson, 1893, which occur throughout the tropical and sub-tropical Atlantic and East Pacific, were reviewed by Hubbs (1953) and Springer (1959a) who recognized eight species in the West Atlantic. Since Springer's (1959a) revision only one additional species has been described from the West Atlantic (Springer, 1959b). Recently another distinct species of Labrisomus was found on coastal reefs and rocky shores along the Brazilian coast, which we describe herein as new. Two other species are recorded from Brazil's continental waters, Labrisomus nuchipinnis (Quoy and Gaimard, 1824) and Labrisomus kalisherae (Jordan, 1904) (Greenfield and Johnson, 1981; Menezes and Figueiredo, 1985). A third species, Labrisomus guppyi (Norman, 1922), is recorded from the Fernando de Noronha Archipelago (Greenfield & Johnson, 1981), an oceanic island 345 km off north-east Brazil.

Methods
Measurements and counts follow Springer (1959a). Vertebral counts were obtained from x-rays of five specimens. The description of teeth is based on two dried, dissected specimens (ZUEC 3454, male and female). In the description ranges of counts and proportional measurements are followed by holotype values in brackets. The preserved colour is that after fixation in formalin and storage in ethanol. Type specimens are deposited at the Museu de Zoologia da
Universidade de São Paulo (MZUSP), Departamento de Sistemática e Ecologia, Universidade Federal da Paraíba (UFPB), and the Museu de História Natural, Universidade Estadual de Campinas (ZUEC). Additional specimens were examined in the National Museum of Natural History, Smithsonian Institution (USNM). Coordinates are given when a locality first appears within the text; the latitude for coastal localities, and both the latitude and longitude for islands.

**Labrisomus cricota n. sp.**

Mock blenny
(Figs. 1-2; Tables I-II)

*Labrisomus* sp. Carvalho-Filho, 1999: 199, fig. 198 (Brazil).

**Holotype:** ZUEC 3434, male, 69.2mm SL, Três Ilhas, Guarapari (20°40’S), Espírito Santo, SE Brazil, collected by J. L. Gasparini, 09 November 1997.

**Paratypes:** MZUSP 51574 (3), 2 males and 1 female, 84.9-93.6mm SL, Praia do Gaibura, Guarapari, Espírito Santo, SE Brazil, collected by J. L. Gasparini and V. H. Gasparini, 12 April 1997; MZUSP 51590 (1), male, 11.4mm SL, Ilha do Boi, Vitória (20°19’S), Espírito Santo, SE Brazil, collected by J. L. Gasparini, 21 March 1997; MZUSP 52622 (5), 2 males and 3 females, 80.5-85.7mm SL, Praia da Fortaleza, Ubatuba (23°31’S), São Paulo, SE Brazil, 2 m depth, collected by C. Sazima, I. Sazima and C. B. Sazima, 10 July 1997; MZUSP 52624 (3), females, Pedra do Catavento, Guarapari, Espírito Santo, SE Brazil, collected by J. L. Gasparini and I. Sazima, 08 August 1996; ZUEC 4841 (1), female, 78.7mm SL, same locality as MZUSP 52624, collected by J. L. Gasparini, 01 January 1996; ZUEC 4842 (2), male and female, 72.4-79.3mm SL, same locality and collector as ZUEC 4841, 05 January 1996; ZUEC 4843 (3), 2 males and 1 female, 72.3-88.8mm SL, same locality as MZUSP 51574, collected by C. Sazima, J. L. Gasparini and I. Sazima, 05 August 1996; ZUEC 3073 (1), male, 79.2mm SL, same locality as MZUSP 51574, collected by C. Sazima, J. L. Gasparini and I. Sazima, 06 August 1996; ZUEC 3147 (8), 5 males and 3 females, 72.5-85.1 mm SL, same locality as MZUSP 52622, collected by C. Sazima, M. Sazima and I. Sazima, 10 December 1996; ZUEC 3403 (1), female, 103.1mm SL, same locality as MZUSP 52622, collected by T. Couvre and R. Sazima, 11 July 1997; ZUEC 3435 (2), females, 69.3-70.0mm SL, same data as holotype; ZUEC 5225 (1), female, 81.9 mm SL, Araçá, Porto Belo (27°09’S), Santa Catarina, S Brazil, 2 m depth, collected by J. P. Barreiros and I. Sazima, 02 April 2001.

**Additional specimens:** *Labrisomus cricota* : MZUSP 51575 (5), 74.1-81.1mm SL, Anchieta (20°50’S),

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**Fig. 1.** *Labrisomus cricota* n. sp., holotype ZUEC 3434, male 69.2 mm SL (upper); paratype ZUEC 3435, female 69.5 mm SL (lower). Photos by J. L. Gasparini.
Table I. Proportional measurements of (A) holotype (ZUEC 3434), (B) 11 female paratypes, and (C) 9 male paratypes of *Labrisomus cricota* n. sp. First three proportions are percentages of standard length; remainder are percentages of head length.

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
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<tbody>
<tr>
<td>Standard length (mm)</td>
<td>69.2</td>
<td>72.3-103.1</td>
<td>72.4-93.6</td>
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<tr>
<td>Head length</td>
<td>32.3</td>
<td>31.3-34.6</td>
<td>30.1-33.4</td>
</tr>
<tr>
<td>Body depth</td>
<td>26.6</td>
<td>25.0-30.2</td>
<td>24.7-29.3</td>
</tr>
<tr>
<td>Longest pectoral ray</td>
<td>26.0</td>
<td>23.7-27.4</td>
<td>22.2-27.0</td>
</tr>
<tr>
<td>Snout length</td>
<td>27.4</td>
<td>24.7-27.4</td>
<td>23.8-28.9</td>
</tr>
<tr>
<td>Orbit diameter</td>
<td>22.4</td>
<td>21.9-24.9</td>
<td>21.4-25.7</td>
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<tr>
<td>Maxillary length</td>
<td>40.8</td>
<td>37.6-42.6</td>
<td>41.4-47.5</td>
</tr>
<tr>
<td>Inter-orbital width</td>
<td>9.9</td>
<td>8.7-11.7</td>
<td>9.1-11.7</td>
</tr>
<tr>
<td>Middle pelvic ray</td>
<td>56.5</td>
<td>53.2-58.5</td>
<td>50.6-68.7</td>
</tr>
<tr>
<td>First dorsal spine length</td>
<td>35.0</td>
<td>29.9-38.6</td>
<td>29.6-38.6</td>
</tr>
<tr>
<td>Second dorsal spine length</td>
<td>32.3</td>
<td>28.6-40.4</td>
<td>30.7-40.3</td>
</tr>
<tr>
<td>Third dorsal spine length</td>
<td>27.4</td>
<td>24.7-33.7</td>
<td>27.3-33.7</td>
</tr>
<tr>
<td>Fourth dorsal spine length</td>
<td>28.3</td>
<td>26.3-36.9</td>
<td>29.2-36.8</td>
</tr>
<tr>
<td>Caudal peduncle depth</td>
<td>25.6</td>
<td>23.3-28.4</td>
<td>24.5-28.3</td>
</tr>
</tbody>
</table>

Espírito Santo, SE Brazil, collected by J. L. Gasparini and V. H. Gasparini, 05 April 1997; MZUSP 52496 (12), 57.5-80.6 mm SL, Parque Interlagos, Salvador (13°00’S), Bahia, NE Brazil, collected by C. E. Dawson, N. A. Menezes and V. G. Almeida, 01 May 1973; MZUSP 52608 (2), 69.7-71.2 mm SL, Pedra do Catavento, Guarapari (20°40’S), Espírito Santo, Brazil, collected by J. L. Gasparini, 01 January 1996; MZUSP 52610 (5), 64.8-89.2 mm SL, same locality and collector as MZUSP 52608, 05 January 1996; MZUSP 52612 (8), 60.6-81.7 mm SL, same data as MZUSP 52608; MZUSP 52623 (8), 53.3-76.7 mm SL, same locality as MZUSP 52608, collected by C. Sazima, J. L. Gasparini and I. Sazima, 07 August 1996; MZUSP 52626 (10), 76.1-89.8 mm SL, same locality as MZUSP 51575, collected by C. Sazima, J. L. Gasparini and I. Sazima, 07 August 1996; UFPB 3399 (5), 34.8-60.6 mm SL, Praia de Pajussara, Maceió (09°40’S), Alagoas, NE Brazil, collected by R. L. Teixeira.

*Labrisomus filamentosus*: USNM 197788 (2), 78-88 mm SL, Hispaniola (18°35’N, 68°13’W), West Indies, M/V Silver Bay, sta. 5187.


Fig. 2. *Labrisomus cricota* n. sp.: 2 photos of an adult male in its reef habitat, Ilha Grande, Rio de Janeiro, SE Brazil. Note reddish head and greenish cast on body, characteristic of breeding males. Photos by R. Z. P. Guimarães.
**Labrisomus nuchipinnis**

Labrisomus *nuchipinnis*: USNM 318559 (6), 70.6-123.5 mm SL, Tobago (11°10'N, 60°49'W), collected by J. T. Williams, 11 September 1990; MZUSP 48056 (13), 32.4-88.1 mm SL, Tamandaré (08°45'S), Pernambuco, NE Brazil, coll. R. L. Moura, C. L. B. Francini and B. P. Ferreira; 21 January 1995; MZUSP 48057 (5), 34.5-44.6 mm SL, Natal (24°06'S), Rio Grande do Norte, NE Brazil, coll. R. L. Moura and C. L. B. Francini, 23 January 1995.

**Labrisomus cf. nuchipinnis**: ZUEC 5370 (2), 92.8-95.2 mm SL, Praia do Boldró, Arquipélago de Fernando de Noronha (03°50'S, 32°25'W), Pernambuco, NE Brazil, collected by I. Sazima, 18 June 2001; ZUEC 5374 (2), 54.4-75.8 mm SL, same locality and collector as ZUEC 5370, 17 June 2001.

**Diagnosis**

A species of *Labrisomus* distinguished from its nine Atlantic congeners by the following combination of characters: opercle with a dark ocellus; 64 to 68 lateral line scales; first and second dorsal-fin spines noticeably longer than third spine and not flexible.

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**Fig. 3. Labrisomus nuchipinnis**, specimens from Anchieta, Espírito Santo, SE Brazil; male 106 mm SL (upper); female 113 mm SL (lower). Photos by J. L. Gasparini.

**Fig. 4. Labrisomus kalisherae**, ZUEC 3466 from Guarapari, Espírito Santo, SE Brazil; 57.1 mm SL. Photo by J. L. Gasparini.
Table II. Selected differential characteristics of *Labrisomus cricota* and *L. nuchipinnis*.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Labrisomus cricota</th>
<th>Labrisomus nuchipinnis</th>
</tr>
</thead>
<tbody>
<tr>
<td>First two dorsal spines</td>
<td>Longer than third spine</td>
<td>Shorter than third spine</td>
</tr>
<tr>
<td>Bars on body</td>
<td>Reaching dorsal fin tips</td>
<td>Not reaching dorsal fin tips</td>
</tr>
<tr>
<td>Supra-orbital cirri</td>
<td>Length &gt; to eye diameter</td>
<td>Length &lt; than eye diameter</td>
</tr>
<tr>
<td>blue spots on head (in life)</td>
<td>Present</td>
<td>Absent</td>
</tr>
<tr>
<td>Opercular spot (mostly males)</td>
<td>Well delimited by white rim</td>
<td>Diffusely delimited by orange rim</td>
</tr>
<tr>
<td>Dark spot on fin between 2nd and 3rd dorsal spines</td>
<td>Absent</td>
<td>Mostly present</td>
</tr>
</tbody>
</table>

Description

Dorsal-fin rays XVIII, 11-12, (12); anal-fin rays II, 17-19 (18); pelvic-fin rays 3; pectoral-fin rays 13-14 (14); caudal-fin rays 13. Gill rakers on first arch 10-11 (11); vertebrae 33-35. Lateral line scales 64-68 (66). Nuchal cirri 27-52 (35); nasal cirrus 7-18 (9) some of which are branched; supra-orbital cirri 19-45 (24). Males and females overlap in all proportions (Table I).

Body entirely scaled, except for interpelvic space, pectoral axilla, head and opercle; scales present on caudal and pectoral-fin bases, basal portion of dorsal fin membrane posterior to spines II to IV, and basal portion of anal fin membrane to the last 10 to 6 rays. Numerous branched canals and pores on head, one branch from pre-opercular series extending onto opercle.

Mouth subterminal. Single well-developed row of conical, slightly recurved teeth on each jaw, followed by a patch of much smaller, villiform teeth. Distal teeth on upper jaw larger than proximal ones; on lower jaw two medial teeth larger than remainder. Palatine teeth about same size as those in outer row on upper jaw and larger than those on vomer.

**Coloration in life:** Sexually dimorphic (Fig. 1), in adult males body olive-grey crossed by four conspicuous dark irregular bars and fainter ones between them, all bars extending onto dorsal and anal fins; head olive with greenish-blue spots on cheek and snout; lower side of head, chest and belly red, extending onto upper portion of head and anterior part of body in breeding individuals (Fig. 2); dark ocellus on opercle; dorsal, anal, and pectoral fins olive with greyish bars, caudal fin and upper portion of second dorsal fin with irregular greyish stripes; pelvic fins vivid red. In females, body violet-grey to greyish-brown, crossed vertically by five conspicuous, irregular grey bars with fainter ones between them, all bars extending onto dorsal and anal fins; dark ocellus on opercle; irregular pale blotches on lower side of head and throat; dorsal, anal and pectoral fins olive-grey with grey bars, caudal fin and upper portion of second dorsal fin with irregular greyish stripes; pelvic fins greyish-brown.

**Colour in alcohol:** In preservative (ethanol 70 %), the red coloration fades away and both sexes become brownish-grey with darker bars. Pale blotches on throat of females still visible and diagnostic of sex.

**Comparison with West Atlantic congeners**

*Labrisomus cricota* most closely resembles *L. nuchipinnis* (Quoy and Gaimard, 1824) (see our Fig. 3) and *L. filamentosus* Springer, 1959 (see Springer, 1959b; Humann, 2002 for figures), with which it shares a conspicuous dark opercular ocellus and a high number of lateral line scales (64-69). It is distinguished from *L. filamentosus* (a rare species restricted to the Caribbean, see Springer and Rozemblatt, 1965; Emery and Labelle, 1981) by the absence of three long, flexible anterior spines on the dorsal fin (although the new species has the first two dorsal spines longer than the third one, the spines are not flexible and are much shorter than those of *L. filamentosus*) and by the presence of branched nasal cirri. The new species is distinguished from the sympatric *L. nuchipinnis* by having the first two dorsal spines longer than the third. Breeding males of the latter two species are yellowish to greenish and have reddish chin and belly (Figs. 2-3), features which add to their similarity. The new species differs from the oceanic and allopatric *L. guppyi* (Norman, 1922) in having a higher number of lateral line scales (see Springer, 1959a) and the first two dorsal spines longer than the third. It differs from the continental, sympatric *L. kalisherae* (Jordan, 1904) (see our Fig. 4) in having an opercular spot and a higher number of lateral line scales (Springer 1959a). It is readily distinguished from the remaining West Atlantic congeners, *L. albigenys* Beebe and Tee-Van, 1928, *L. bucciferus* (Poey, 1868), *L. gobio* (Valenciennes, 1836), and *L. haitiensis* Beebe and Tee-Van, 1928, by the presence of a dark ocellus in the opercle, and from *L. nigrinctus* Rivero, 1936 by the higher number of lateral line scales (see Rivero, 1936; Springer, 1959a).

**Remarks**

Due to their overall similarity and size, *L. cricota* and *L. nuchipinnis* may be confused with each other both in the field and in collections. These two species were mixed in jars labelled as *L. nuchipinnis* in the MZUSP and ZUEC collections; most probably they are mixed in other collections as well. However, a few selected features may be used to readily distinguish between the two species both in the field and in museum collections (Table II).
**Labrisomus cricota**, a new scaled blenny from the coast of Brazil (Perciformes: Labrisomidae)

**Etymology**
The specific name is a noun in apposition and refers to the childhood nickname of our diver companion Cristina Sazima, who collected the first specimen shown to be distinct from the more widespread *L. nuchipinnis*. The suggested common name "mock blenny" indicates that it is easily confused with *L. nuchipinnis*.

**Distribution and natural history**
*Labrisomus cricota* is a continental, coastal species (sensu Gilbert, 1972), presently recorded from Maceió (09°40'S), Alagoas, NE Brazil (UFPB 3399) south to Porto Belo (27°09'S), Santa Catarina, S Brazil (ZUEC 5225). It is a bottom dweller found on rocky reefs, usually near sites where there is dense algal growth, in depths from 0.1 to 4.0 m. The new species is common in shallow coastal habitats with the exception of the Abrolhos Archipelago (17°31'S, 38°58'W), Bahia, NE Brazil, where it was seen just once at a depth of about 3.0 m at Santa Bárbara Island. In Guarapari *L. cricota*, *L. nuchipinnis*, and *L. kalisherae* occurred together at several sites, the former two found in similar numbers but the latter always rare, and in Ubatuba the new species occurred in approximately the same numbers as *L. nuchipinnis*.

Males of *L. cricota* defend territories and probably tend harems, as we have observed for *L. nuchipinnis*. The tendency of males to have larger maxillaries than the females (Table I) is possibly related to territorial defence and/or to subduing females during courting. The males may fight by locking jaws and may bite females during courting, as recorded for *L. nuchipinnis* (pers. obs.). The red head and anterior part of the body displayed by breeding males of these two species is presumably related to both sexual and territorial advertisement (see Emery and Labelle 1981, for comments on territoriality in *L. filamentosus* and other species of the genus).

*Labrisomus cricota* feeds mostly on crustaceans. Gut contents of five specimens (ZUEC 3405) from Praia da Sununga, Ubatuba, February 1997, yielded gammaridean amphipods, a xanthid crab and a littoral snail; two specimens (ZUEC 3402) from Praia da Fortaleza, July 1997, had eaten gammaridean amphipods, a hermit crab, and an unidentified isopod. Notwithstanding its small size, *L. cricota* is sometimes eaten by children in Ubatuba, south-east Brazil, and the larger *L. nuchipinnis* by fishermen in south-east (Begossi and Richerson, 1993) and north-east Brazil (B. P. Ferreira pers. comm.).

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**References**