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A New Species of *Eviota* with Vertical Trunk Bars from the Loyalty Islands (Teleostei: Gobiidae)

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With 1 figure and 1 table

Summary

Eviota corneliae n.sp. is described on the basis of two specimens from the west coast of Maré Island, Loyalty Islands, New Caledonia, Southwest Pacific. The species is characterized within the *Eviota-epiphanes* species-group by having a bright yellow body, 5 thin vertical blackish brown trunk bars, the last trunk bar developed as a saddle on the caudal peduncle, the other bars reaching three-fourths across the sides of the body, trunk bars discrete, uniform; head with three additional bars, the mark on the fleshy pectoral fin base developed as a narrow streak, equal in intensity to trunk bars.

Zusammenfassung

Die Korallengrundel *Eviota corneliae* n.sp. wird auf Grund von 2 Exemplaren von der Westküste der Insel Maré, Loyalty Islands, Neukaledonien, Südwestpazifik beschrieben. Die neue Art ist innerhalb der *Eviota-epiphanes*-Artengruppe charakterisiert durch ihren hellgelben Körper, 5 dünne vertikale Streifen auf der Körperseite, den letzten Streifen nur als dorsalen Sattel auf dem Schwanzstiel ausgeprägt, die übrigen Streifen 3/4 über die Körperseite reichend, ihren Kopf mit 3 zusätzlichen Vertikalstreifen, Brustflossenbasis mit einem dünnen Streifen, der genauso breit wie die Seitenstreifen ist.

1. Introduction

The family Gobiidae contains of 5 subfamilies (Oxudercinae, Amblyopinae, Sicydiinae, Gobionellinae and Gobiinae (NELSON, 1994: 414–417). The Gobiinae lives worldwide in marine, occasionally also in brackish and freshwater habitats; it comprises about 130 genera with approximately 1,800 described species. *Eviota* is a genus of small, Indo-Pacific coral reef or coralline rock associated gobiine species.

The *Eviota-epiphanes* species-group was revised by KARNELLA & LACHNER (1981). They characterized the group by its colour pattern with vertical trunk bars, and distinguished four species:

- 1) *Eviota disrupta* Karnella & Lachner, 1981 (KARNELLA & LACHNER, 1981: 266–268, fig. 1) from Tonga, Samoa, Society Islands and Mangareva; holotype USNM 220912.
- 2) *Eviota epiphanes* Jenkins, 1904 (JENKINS, 1904: 501–502, fig. 42) from Hawaiian and Line Islands; holotype USNM 50720.
- 3) *Eviota fasciola* Karnella & Lachner, 1981 (KARNELLA & LACHNER, 1981: 268–272, figs 2–3) from Queensland/Australia, Palau, Micronesia, Marianas Islands, Marshall Islands, and Gilbert Islands; holotype USNM 220560.
- 4) *Eviota irrasa* Karnella & Lachner, 1981 (KARNELLA & LACHNER, 1981: 272–274, figs 4–5) from the Philippines; holotype USNM 220566.

KARNELLA & LACHNER (1981) discussed that these species could not be differentiated by meristical characters, but exclusively by colour markings.

During an expedition to the Loyalty Islands, New Caledonia in November 1997, the author of the present paper collected material of an additional species of the *Eviota-epiphanes* species-group on the west coast of Maré Island. This species is described in the present paper.

2. Methods and Materials

Methods follow KARNELLA & LACHNER (1981), except that proportions are given in thousands of standard length (SL). Fin rays are counted following FRICKE (1983). Data of the paratype follow those of the holotype, in parentheses.

Materials are deposited in the Staatliches Museum für Naturkunde, Stuttgart (SMNS) and the National Museum of Natural History, Smithsonian Institution, Washington D.C. (USNM).

3. Systematics

Eviota corneliae n.sp. (Fig. 1)

Material

Total: 2 specimens, 10–14 mm SL.

Holotype: SMNS 19870, 14.0 mm SL, New Caledonia, Loyalty Islands, Maré Island, Cap Wabao, 150 m NNE of cape, Baie de Tadin, 6 km SW Tadin, W coast of island, 21°35'45"S 167°50'06"E, surge channel and deep open reef pool; rich coral growth, low and rising tide, 2.8–3.8 m depth, R. FRICKE, 12 Nov. 1997, 09:45–11:45 h.

Paratype: SMNS 19895, 1 specimen, 9.9 mm SL, same data as the holotype.

Etymology

The new species is named in honour of my wife, CORNELIA NUSS-FRICKE. Conny joined me on several collecting expeditions, and continuously supported my research on marine fishes.

Diagnosis

The species is characterized within the genus *Eviota* by having a bright yellow body, 5 thin vertical dark brown trunk bars, the last trunk bar developed as a saddle on the caudal peduncle, the other bars reaching three-fourths across the sides of the

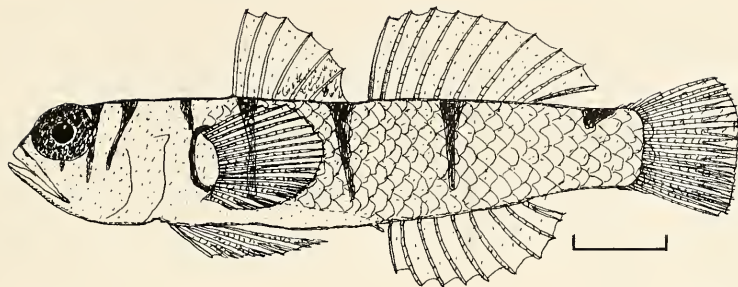


Fig. 1. *Eviota corneliae* n.sp.; holotype, SMNS 19870, 14.0 mm SL; Loyalty Islands, Maré; lateral view. – Scale indicates 5 mm.

body, trunk bars discrete, uniform; head with three additional bars, the mark on the fleshy pectoral fin base developed as a narrow streak, equal in intensity to trunk bars, branchiostegal mark and scale pocket pigmentation absent.

Description

D₁ VI (VI); D₂ I,viii,1 (I,viii,1); A I,vii,1 (I,vii,1); P₁ x, 7 (total 17) (x, 7; total 17); P₂ I,4 (I,4); C (vii),ii,13,ii(vi) [(vii),ii,13,ii,(vii)]. Lateral line scales 23 (22–23). Transverse scale rows 9 (9). Breast scaleless. Number of consecutive branches of fourth pelvic fin ray 3 (3). Male genital papilla not fimbriate.

Head length 243 (268). Snout length (preorbital) 21 (35). Orbit diameter 121 (136). Fleshy interorbital width 29 (34). Bony interorbital width 18 (28). Body width 154 (131). Body depth 207 (202). Caudal peduncle length 168 (177). Caudal peduncle depth 111 (101).

First dorsal fin spine not elongate, its length 139 (123). Predorsal (1) length 364 (402). First segmented dorsal ray length 136 (130). Last segmented dorsal fin ray length 111 (105). Second dorsal base length 264 (141). Predorsal (2) length 586 (601). Fifth second dorsal fin ray 100 (98). Last segmented anal fin ray length 57 (51). Pre-anal fin length 607 (601). Anal fin base length 236 (236). Pectoral fin ray length 182 (172). Pectoral fin base 93 (96). Prepectoral fin length 325 (330). Pelvic fin spine length 78 (71). Pelvic fin length 236 (220). Prepelvic length 279 (275). Caudal fin length 151 (184).

Colour in life: Head and body bright yellow. Head with 3 narrow vertical blackish brown bars, one across the eye, one right behind the eye, and one above the preopercle. Branchiostegal mark and scale pocket pigmentation absent. Sides of body with 5 thin vertical dark brown trunk bars, the last trunk bar developed as a saddle on the caudal peduncle, the other bars reaching three-fourths across the sides of the body, trunk bars discrete, uniform.

First dorsal fin distally dusky, other fins bright yellow. Anal fin in paratype dusky.

Colour in alcohol: Similar to life colour, but yellow fades to pale white.

Distribution

Eviota corneliae n.sp. is known only from the type locality, at Maré, Loyalty Islands, Southwest Pacific. The type series was collected between corals on the wall of a surge channel in a fringing reef, at a depth of 2.8–3.8 m.

Tab. 1. Differences in colour pattern among five species of the *Eviota-epiphanes* species-group (modified, based on data of KARNELLA & LACHNER, 1981: tab. 1).

Character	<i>Eviota epiphanes</i>	<i>Eviota fasciola</i>	<i>Eviota disrupta</i>	<i>Eviota irrasa</i>	<i>Eviota corneliae</i>
Mark on P ₁ base	weak	well developed	well developed	well developed	narrow streak
Intensity of P ₁ base mark compared to body marks	equal or less than	darker than	darker than	equal to	equal to
Trunk bar length	reduced to saddles	to lower body	to lower body	at most to lower body	along 3/4 of body; last a saddle on PC
Trunk bar discreteness	not applicable	discrete	discrete	not discrete	discrete
Trunk bar uniformity	not applicable	uniform	interrupted anteriorly	uniform	uniform
Branchio-stegal mark	absent	present	present	present	absent
Scale pocket pigmentation	present; well developed	absent	absent	present; weakly developed	absent
Pale area on posterior opercle and anterior P ₁ base	absent	present	present	present	present
Number of trunk bars	14–15	15	13–14	15–16	5

Relationships

Eviota cornelia is a member of the *Eviota epiphanes* species-group which is characterized by having vertical trunk bars. It is mainly distinguished from other species of the group by its 5 vertical trunk bars (other species: 13–16 vertical bars), most of the bars reaching across 3/4 of the trunk, the last only being a saddle on the caudal peduncle. The species of the group are compared in Tab. 1.

Remarks

This interesting new species fills a distributional gap of the species-group's distribution range in the Southwest Pacific. It brings the number of species known in the species-group to five. The presently known distribution range of the species in the *Eviota-epiphanes* species-group seems to be incomplete; additional records are expected in the Southwest Pacific and in other areas.

4. Key to the species of the *Eviota-epiphanes* species-group

- 1 Trunk with 5 vertical dark bars, head with 3 additional trunk bars reaching 3/4 across the sides of the body, last bar reduced to a saddle on the caudal peduncle *Eviota corneliae* n.sp.
- Trunk with 13–16 dark bars (bars may be broken into spots), head with additional bars and/or spots; trunk bars either reduced to saddles or reaching to lower body 2
- 2 Mark on fleshy pectoral fin base weak; trunk bars reduced to saddles; branchiostegal mark absent; scale pocket pigmentation present, well developed; pale area on posterior opercle and anterior pectoral fin base absent *Eviota epiphanes*
- Mark on fleshy pectoral fin base well developed; trunk bars reaching lower body, at least anteriorly; branchiostegal mark present; scale pocket pigmentation absent or weakly developed; pale area on posterior opercle and anterior pectoral fin base present 3
- 3 Trunk bars not discrete; pectoral base mark intensity equal to intensity of body bars *Eviota irrasa*
- Trunk bars discrete; pectoral base mark intensity darker than body bars 4
- 4 Trunk bars interrupted anteriorly, broken into spots *Eviota fasciola*
- Trunk bars uniform, not interrupted anteriorly *Eviota disrupta*.

5. Acknowledgments

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6. References

- FRICKE, R. (1983): A method for counting caudal fin rays of actinopterygian fishes. – Braunschw. naturk. Schr., 1(4): 729–733; Braunschweig.
- JENKINS, O. P. (1904): Report on collections of fishes made in the Hawaiian Islands, with descriptions of new species. – Bull. U.S. Fish Commn, 22 (1902): 417–511, 4 pls; Washington D.C.
- KARNELLA, S. J. & E. A. LACHNER (1981): Three new species of the *Eviota epiphanes* group having vertical trunk bars (Pisces: Gobiidae). – Proc. biol. Soc. Wash., 94(1): 264–275; Washington D.C.
- NELSON, J. S. (1994): Fishes of the world. 3rd edition. – Pp. I–XVII + 1–600; New York (J. Wiley).

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