

# A New Species of *Eubranchus* Forbes, 1838, from the Sea of Cortez, Mexico

by

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*Abstract.* The nudibranch *Eubranchus cucullus* spec. nov. from the Sea of Cortez, Mexico is described. This description represents the second occurrence of the genus *Eubranchus* in the Sea of Cortez.

THE GENUS *Eubranchus* forms a group composed primarily of temperate species (EDMUNDS & KRESS, 1969). During the collection of opisthobranch mollusks in the Sea of Cortez a new species of aeolid nudibranch belonging to the genus *Eubranchus* Forbes, 1838, was discovered. To date the only other eubranchid nudibranch reported from the Sea of Cortez is *Eubranchus rustyus* (Marcus, 1961) (McDONALD, 1983:186). The description of a new species is presented here.

Family EUBRANCHIDAE Odhner, 1934

*Eubranchus* Forbes, 1838

*Eubranchus cucullus* Behrens, spec. nov.

(Figures 1 to 5)

**Material examined:** (1) **Holotype:** One specimen approximately 5 mm long (preserved) collected in 10 m of water at Puerto Refugio, Isla Angel de La Guarda, Baja

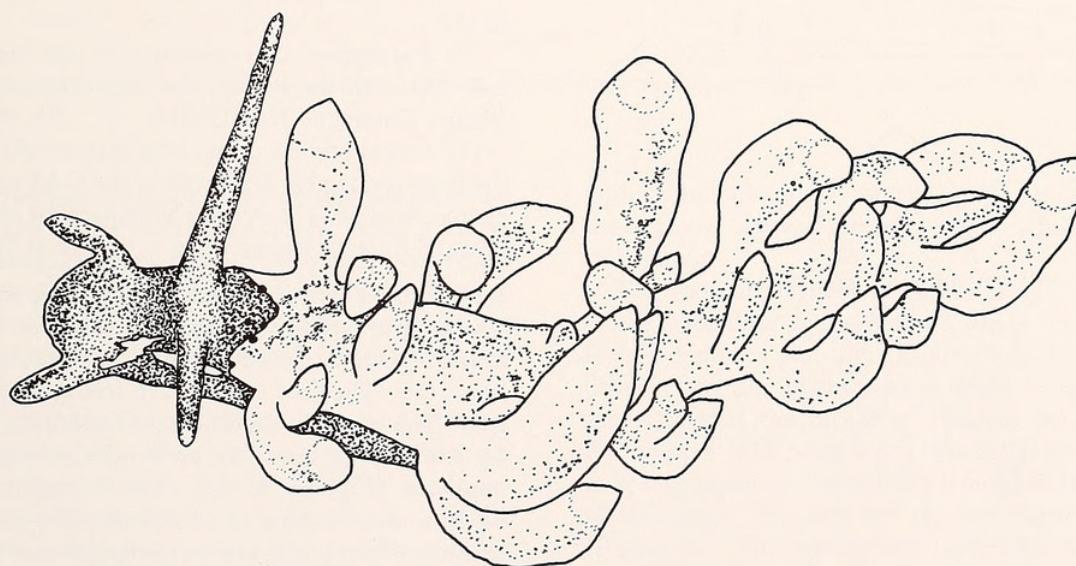


Figure 1

Dorsal view of *Eubranchus cucullus* spec. nov. Puerto Peñasco, Sonora, Mexico. April 21, 1978. Drawn from color transparency.





Figure 2

*Eubranchus cucullus* spec. nov. Puerto Refugio, Isla Angel de La Guarda, Baja California, Mexico. Approximately 10 mm. Photograph by Jeff Hamann.

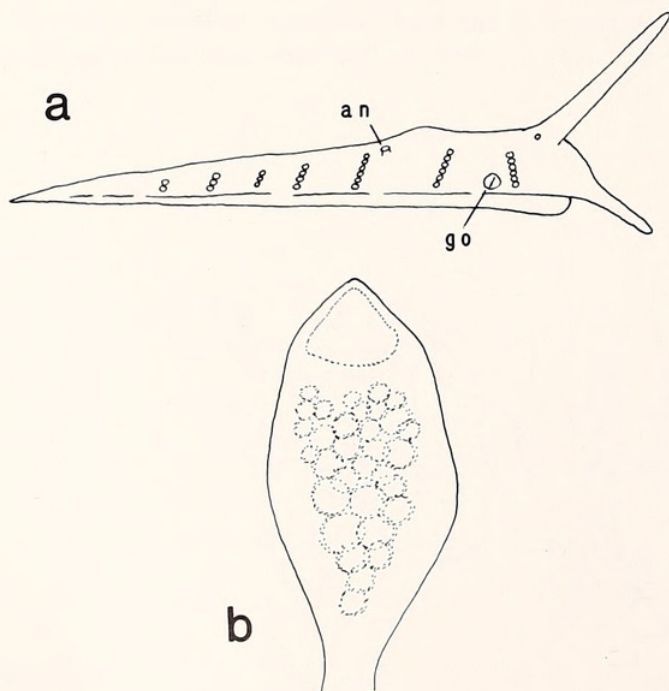


Figure 3

a. Diagrammatic right lateral view of body of *Eubranchus cucullus* spec. nov.; an = anus, go = genital orifice. b. Detail of ceras of *Eubranchus cucullus* spec. nov.

California, Mexico (Lat. 29°32'50"N; Long. 113°35'55"W) in August 1982 by Jeff Hamann. This specimen is deposited in the collection of the California Academy of Sciences, Department of Invertebrate Zoology and Geology (CAS), San Francisco, California, CAS Catalogue No. 055515.

(2) **Paratypes:** One specimen, 4 mm long (preserved) collected with the holotype is deposited in the CAS collection, Catalogue No. 055516.

(3) One specimen, 3 mm long (preserved) collected with the holotype is also deposited in the CAS collection (Catalogue No. 055517). A color transparency of a living specimen of *Eubranchus cucullus* is on file at CAS.

**Description:** The living animals were up to 10 mm long. The body is typically aeolidiform (Figures 1, 2). The foot is narrow, linear, and tapering posteriorly into a short blunt tail. The foot corners are triangular but not elongate. The cephalic tentacles are cylindrical with a blunt tip and slightly less than one-half the length of the rhinophores (Figures 1, 3a). The rhinophores are long, smooth, and tapering to a blunt tip (Figures 1, 3a). The cerata are cylindrical and irregularly inflated (Figure 3b). The liver diverticulum is nodular within each ceras. The cerata are arranged in 6 oblique rows dorsolaterally on either side of the dorsum. An example of the branchial half formula is I 5-8, II 6-7, III 6, IV 3-4, V 3, VI 2.



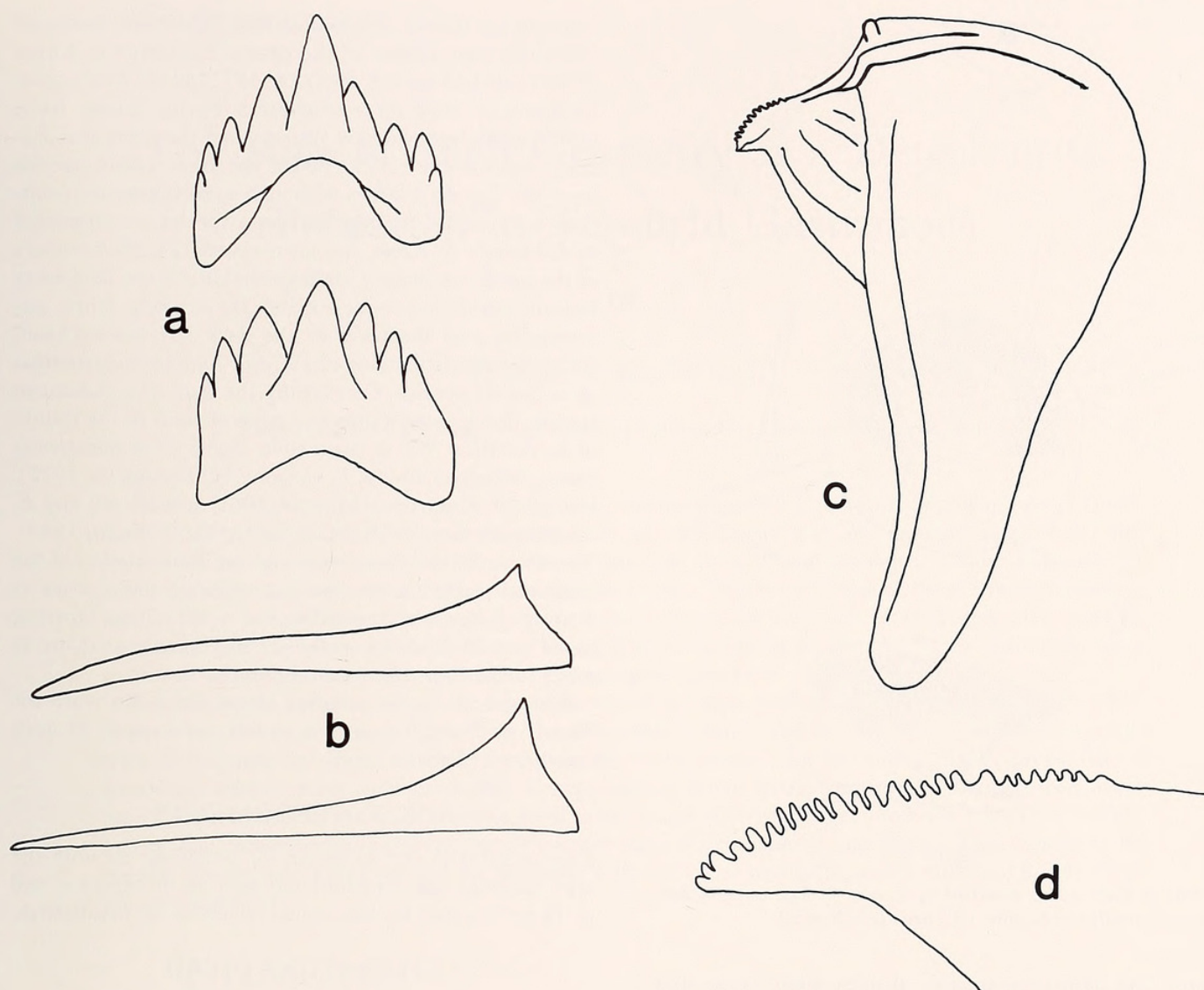


Figure 4

Radula and jaw of *Eubbranchus cucullus* spec. nov. a. Rachidian tooth. b. Lateral tooth. c. Jaw plate. d. Masticatory edge of jaw.

The first two rows are anterior to the pericardial elevation (Figure 3a). The largest cerata are closest to the midline, those at the margins being smaller. The anal pore is anterior to the medial ceras of the third row and ventral to the pericardial elevation (Figure 3a). The genital orifice lies posteroventrally to the first ceratal row on the right side (Figure 3a).

Except for the head region, rhinophores, and anterior margins of the foot, the entire body is encrusted with an opaque white pigmentation (Figure 2). The head, cephalic tentacles, rhinophores, and the anterior half of the foot margins are deep rust-brown. On the rhinophores this pigmentation diminishes, leaving them transparent. In some specimens, opaque white marks occur on the sides of the head and cephalic tentacles. Variable numbers of rust-brown specks and spots occur dorsomedially on the

notum and subapically on the cerata. In some specimens the cnidosac appears cream colored, while in others it is transparent.

The radular formula is  $82 \times 1.1.1$ . The central cusp of the rachidian tooth projects above the 3 or 4 large lateral denticles per side (Figure 4a). The lateral teeth, thin rectangular plates with a single triangular cusp directed toward the rachidian (Figure 4b), are typical of *Eubbranchus*. The basal leg of the lateral tooth is extremely long and tapering, measuring from 4–5 times the height of the cusp. The jaws are narrow, tapering posteriorly (Figure 4c). The masticatory border bears about 25 conical denticles (Figure 4d). The penis is conical and armed with a stylet (Figure 5a).

The egg mass is a white-cream colored coil of about  $1\frac{1}{8}$  whorls attached to the substrate at the center of the whorl



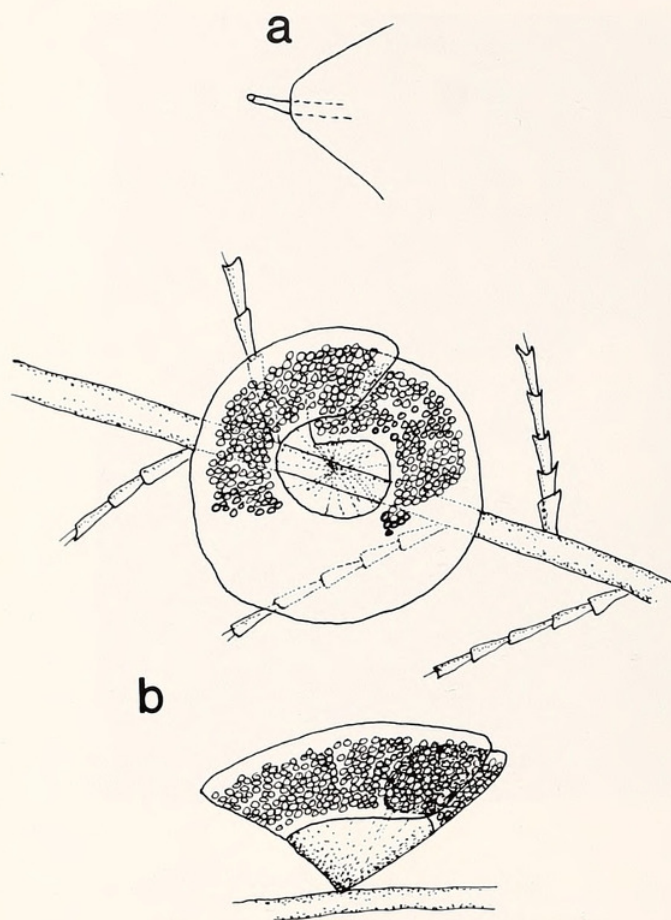


Figure 5

a. Penis of *Eubbranchus cucullus* spec. nov. b. Egg mass of *Eubbranchus cucullus* spec. nov. (All eggs not shown.)

(Figure 5a). This mass consists of more whorls than that described by HURST (1967) for *Eubbranchus olivaceus*. The outer edge of the coil is free of egg capsules. The egg capsules are closely arranged, each containing a single egg. The egg masses collected in August 1982 averaged 2 mm in diameter and less than 0.5 mm in height. One coil was 2–3 eggs thick and 8–10 eggs wide. Egg ribbons were encountered attached to the perisarc of an unidentified plumularid hydroid.

*Eubbranchus cucullus* is known intertidally and subtidally to depths of 10 m. Specimens are collected most commonly on plumularid hydroids. Localities within the northern and central Gulf of California where this species has been collected include Puerto Peñasco, Sonora, Mexico and Puerto Refugio, Isla Angel de La Guarda, and Loreto, Baja California, Mexico.

**Discussion:** The characteristics delineating the genus *Eu-*

*branchus* are concise and well defined (EDMUNDS & KRESS, 1969). In their review of the genus, EDMUNDS & KRESS (1969) listed 24 species. ROLLER (1972) added *Eubbranchus sanjuanensis* from the northeastern Pacific fauna. BABA (1975) described two new species from the northwest Pacific, and ORTEA (1979) added the most recent species from the Canary Islands. Although some taxonomic problems have existed among European species, as chronicled by Edmunds & Kress, the northeastern Pacific members of the genus are clearly distinguishable. Of the 28 species known worldwide, none exhibit the striking white encrustation over the body or the dark rust-brown head. This characteristic alone establishes *Eubbranchus cucullus* as a distinct species. Concerning the four west American species, the greater number of rows of teeth in the radula of *E. cucullus* (82) is distinctive. *Eubbranchus misakiensis* Baba, 1960, has 40–46; *E. olivaceus* (O'Donoghue, 1922), has 32–35; *E. rustyus* (Marcus, 1961) has 50–60; and *E. sanjuanensis* has 50 (ROLLER, 1972; McDONALD, 1983). The shape of the lateral teeth and the denticulation of the masticatory edge of the jaw also separate this species as distinct. *Eubbranchus cucullus* has a very long tapering tooth, and 25 denticles on the jaw edge, twice as many as occur in the four other west American species.

The specific name *cucullus*, from the Latin word for "hood" or "cowl," is chosen to call attention to its dark rust-brown cephalic hood.

#### ACKNOWLEDGMENTS

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#### LITERATURE CITED

- BABA, K. 1975. On two new species of *Eubbranchus* from Ayukawa, Echizen coast, Japan Sea side of middle Japan (Nudibranchia; Eolidioidea; Eubbranchidae). Jap. J. Malacol. (Venus) 34(3-4):65-72.
- EDMUNDS, M. & A. KRESS. 1969. On the European species of *Eubbranchus* (Mollusca: Opisthobranchia). J. Mar. Biol. Assoc. U.K. 49:879-912.
- HURST, A. 1967. The egg masses and veligers of thirty north-east Pacific Opisthobranchs. Veliger 9(3):255-288.
- McDONALD, G. 1983. A review of the nudibranchs of the California coast. Malacologia 24(1-2):114-276.
- ORTEA, J. 1979. Una nueva especie de *Eubbranchus* (Mollusca: Opisthobranchia) de Tenerife, Isla Canarias. Rev. Fac. Cienc. Univ. Oviedo (Ser. Biología) 20-21(1979-80):169-176.
- ROLLER, R. A. 1972. Three new species of eolid Nudibranch from the west coast of North America. Veliger 14(4):416-423.



Behrens, David W. 1985. "A NEW SPECIES OF EUBRANCHUS FORBES, 1838, FROM THE SEA OF CORTEZ, MEXICO." *The veliger* 28, 175–178.

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