

**SUPPLEMENTARY NOTE ON THE ANATOMY OF *EUBRANCHUS*
VIRGINALIS (BABA, 1949) FROM JAPAN
(NUDIBRANCHIA: EOLIDOIDEA: EUBRANCHIDAE)¹⁾**

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With Plate I

There appeared a comprehensive review given by EDMUNDS and KRESS (1969) of the European species of *Eubbranchus* including the type species of that genus (see also BABA, 1960, p. 299), and the world genera of the family Eubbranchidae.

The present paper is offered to discuss anatomically a close affinity of *Eubbranchopsis virginalis* BABA, 1949 from Japan with *Eubbranchus* to which it is finally considered attributable.

I am willing to thank Dr. Akihiko INABA of the Mukaishima Marine Biological Station, Hiroshima University and Mr. Takeo ABE of Takaoka Senior High School, Toyama-ken for their kindness in providing me specimens for this comparative study.

Eubbranchus virginalis (BABA, 1949)

(Japanese name: Jo-o mino-umiushi)

Eubbranchopsis virginalis BABA, 1949, pp. 96-97, 173-174, pl. 40, fig. 142, text-figs. 121-122.—Sagami Bay; BABA, 1964, p. 287 (genitalia); ABE, 1964, p. 62, pl. 31, fig. 108.—Toyama Bay and Echizen, Japan Sea.

Material: Sp. No. 1. Mukaishima, the Inland Sea of Seto, March 12, 1960.
(H.S.)

Sp. No. 2. Mukaishima, the Inland Sea of Seto, March 12, 1960.

Sp. No. 3. Mera, Echizen, on the Japan Sea coast, July 29, 1959.

Total length of the animals 8-18 mm. Apparently this species is distinctive from the typical members of the genus *Eubbranchus* in the formation of the tentaculiform foot-corners and the branchial papillae marked each with 2-3 circlets of acutely pointed tubercles. But foot-corners produced in various length are known also in *Eubbranchus productus* (FARRAN, 1905) of India, *Eubbranchus misakiensis* BABA, 1960 of Japan, *Dunga nodulosa* ELIOT, 1902 of Zanzibar and Tanzania, and some others.

1) Contributions from the Mukaishima Marine Biological Station, No. 103.

Further, it is to be noted that some species of *Eubranchus* show some sign of circlets of conical but low tubercles on the surface of the branchial papillae; they are *Eubranchus coniclus* (MARCUS, 1958) of Brazil, *E. tanzanensis* EDMUNDS, 1969 and *E. rubropunctatus* EDMUNDS, 1969 of Tanzania, and *Dunga nodulosa* ELIOT, 1902.

In Sp. Nos. 1-2 of *Eubranchus virginalis* the body is ashy yellow, and there are a large number of blackish spots scattered on the head, back, sides and branchial papillae. Each of the cephalic structures is tinted with brown at about its half way. The liver diverticula of the branchial papillae are coloured ashy yellow. The sole is uniformly whitish. The animal Sp. No. 3 displays a general hue slightly more greenish than in two other specimens just referred to above.

Denticulations of the jaw-plates are greatly reduced in Sp. No. 3, while at most 6-8 of these feeble structures are discernible in Sp. No. 2. The radular formula seen in two specimens dissected is about $70 \times 1.1.1$. The central tooth bears 3-4 denticles on each side of the median cusp. The lateral tooth is broad and plate-like as usual.

In the general structure of the genital system *Eubranchus virginalis* does not differ essentially from the typical members of *Eubranchus* (see also BABA, 1964, p. 287; EDMUNDS, 1969, pp. 460, 461), and it is most closely related to *E. cingulatus* (ALDER & HANCOCK, 1847) from England in having (1) an armed penis, (2) a sack-like penial gland, (3) a prostatic vas deferens, and (4) a vaginal spermatocyst.

Conclusion

1. *Eubranchopsis* BABA, 1949 was known originally to be separated from *Eubranchus* FORBES, 1838 by having circlets of acutely pointed tubercles on each branchial papilla.

2. *Eubranchopsis* is assured here to agree with *Eubranchus* in the essential organization of the liver system and genitalia.

3. Laying stress on this latter statement and evaluating the mention of the formation of the branchial papillae as of less systematic importance, *Eubranchopsis* is suggested as synonymous with *Eubranchus*. The specific name *Eubranchopsis virginalis* BABA, 1949 is hence altered to *Eubranchus virginalis* (BABA, 1949).

4. As was indicated by EDMUNDS and KRESS (1969) *Dunga* ELIOT, 1902 is distinguished from *Eubranchus* by the possession of branched penial gland and complex accessory gland on the male genital tract.

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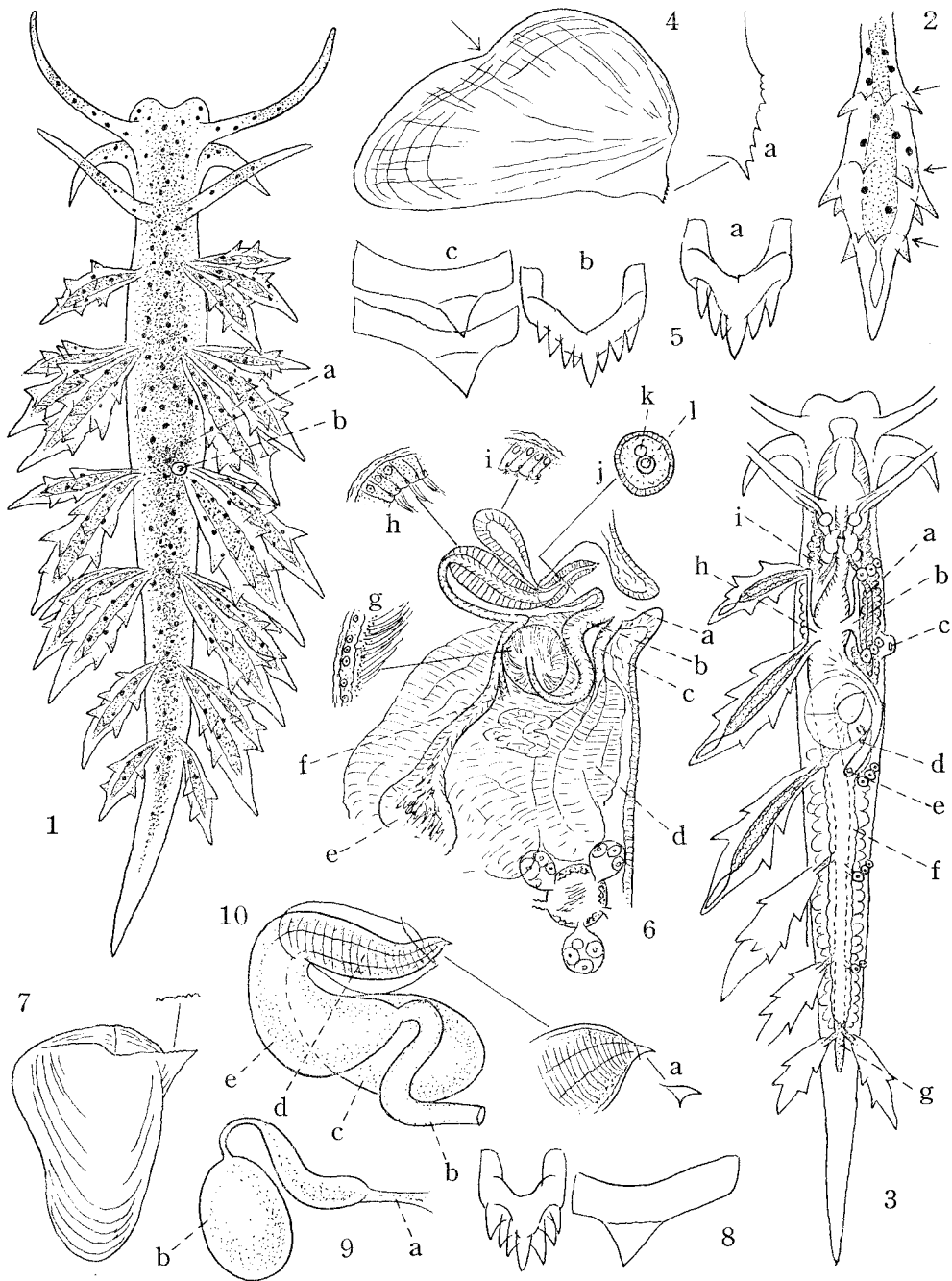
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EXPLANATION OF PLATE I

Eubranchus virginalis BABA, 1949, Figs. 1-3, 6 for Sp. No. 1. Figs. 4-5 for Sp. No. 2. Figs. 7-10 for Sp. No. 3.

- Fig. 1. Crawling animal from above. Length (Ac) 8 mm. a. nephroproct, b. anus.
- Fig. 2. A branchial papilla with 3 circlets of acutely pointed tubercles which are indicated by arrows.
- Fig. 3. Digestive system, diagrammatic. a. salivary gland, b. right liver, c. common genital orifice, d. nephroproct, e. anus, f. kidney, g. posterior extremity of the left posterior liver, h. left anterior liver, i. oral gland.
- Fig. 4. Right jaw-plate from outside ($\times 25$). a. denticulations on the jaw-edge.
- Fig. 5. Part of radular row ($\times 200$). a. central tooth from the distal end of the radular ribbon, b-c. central tooth and lateral teeth from the proximal end of the radular ribbon.
- Fig. 6. Genital organs from above ($\times 30$). a. common genital atrium, b. vagina, c. outer oviduct, d. accessory female glands, e. ampulla, f. inner oviduct, g. spermatocyst, h. prostatic part of the vas deferens, i. penial gland, j. penis in cross section, k. duct of the penial gland, l. vas deferens passing into the penis.
- Fig. 7. Left jaw-plate from inside ($\times 20$).
- Fig. 8. Part of radular row ($\times 200$).
- Fig. 9. Spermatocyst (b) and vagina (a).
- Fig. 10. Distal part of the male copulatory organ. a. stylet, b. muscular part of the vas deferens, c. penial gland, d. penis proper, e. prostatic part of the vas deferens.



K. BABA: *Supplementary Note on Anatomy of Eubranchius virginalis*