

THE GENERA *POLYCERA*, *PALIO*, *GREILADA*
AND *THECACERA* FROM JAPAN
(NUDIBRANCHIA-POLYCERIDAE)

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With Plate VI

Two species of the genus *Polycera* have hitherto been recorded from our territory:

1. *Polycera fujitai* BABA, 1937 Fujita-umiushi
Loc.: Kanazawa near Yokohama; Sagami Bay; Osaka Bay; Amakusa;
Toyama Bay; Shishizu, W. coast of Noto Peninsula; Tsuruga Bay.
2. *Polycera japonica* BABA, 1949 Okan-umiushi
Loc.: Sagami Bay.

The genera *Palio*¹⁾, *Greilada*²⁾ and *Thecacera* are here added to our list of the nudibranch fauna.

Greilada abei BABA, n. sp.

Kosode-umiushi (n. n.)

(Pl. VI, Figs. 1A-1D)

Length about 15 mm. Body limaciform, smooth above (non-tuberculate), no pallial ridge on each side. Velar papillae 6, long and digitiform. Rhinophores perfoliate, non-retractile. Branchial plumes 7, simply pinnate, non-retractile; no exo-branchial appendage on each side of the gill. Oral veil semicircular; foot-corners angulated. General body-colour translucent yellowish white, the above with black spots interspersed among the orange ones. Rhinophores and velar papillae black; gills yellowish white with black tips; sole without markings. Jaw-plates with a wing as in the genus *Polycera*. Radula yellow, the formula $10 \times 2.2.0.2.2$. Teeth also as in *Polycera*: first lateral hamate, and with a hook about half way down; second lateral larger, with a spur near the base; outer

1, 2) Or the *Palio* and *Greilada* sections of the genus *Polycera* (see ODHNER, 1941, p. 18).

laterals simply scale-like.

Loc.: Amaharashi, Toyama Bay (June 1958, 1 sp., coll. by Mr. ABE; Aug. 1959, 1 sp., coll. by Mr. FUTATSUKA). On shore.

The present animal by lacking the exo-branchial appendage is to be referred to the genus *Greilada*. But it may be separated from the previously known species, *G. elegans* BERGH, 1894 from the Adriatic Sea and Banyuls (see PRUVOT-FOL, 1951, pp. 34-35, pl. 3, figs. 3-4) and *G. messinensis* (ODHNER, 1941) from Messina (see ODHNER, 1941, pp. 7-10, figs. 5-9), by having long digitiform velar papillae and an unmistakable body-colours.

Palio amakusana BABA, n. sp.

Ebisu-umiushi (n. n.)

(Pl. VI, Figs. 2A-2C)

Length 12-20 mm. With 4-6 exo-branchial appendages on each side; they are slightly larger than those on the back-margins. Papillae on velum-margin 12-14. Back, sides and tail covered with small conical papillae. Rhinophores non-retractile; gills 5, tripinnate, non-retractile; oral tentacles lobiform; foot-corners angulated. General body-colour yellowish brown, somewhat darker on back and sides. Rhinophores bright orange above, yellow at tip. Gills yellowish brown. Exo-branchial appendages white; other papillae on the pallial margin and on the integument also whitish. Sole yellowish brown. Jaw-plates triangular, yellowish brown, and without a wing (genus *Palio*). Radula colourless, the formula 18-20 × 5.2.0.2.5, the teeth shaped as in *Polycera*. First lateral small, with a hook about half way down; second lateral larger, and with a basal spur; outer laterals scale-like.

Loc.: Tomioka, Amakusa (Jan. and Feb. 1937, 3 sps.). Abugashima, Toyama Bay (June 1957, 5 sps., coll. by Mr. ABE). On shores.

Our specimens agree with the Atlantic and Mediterranean species, *Palio dubia* M. SARS, 1829 = *P. lessonii* (D'ORBIGNY, 1837) in the body-form, in the jaws and in the radula (see especially ALDER & HANCOCK, 1848, Fam. 1, pl. 24, figs. 1-8, *Polycera lessonii*). But they differ from it slightly in the detail of the colours (yellowish brown body-colour, bright orange rhinophores, and white appendages or papillae of the body). They are provisionally regarded here as forming a separate species.

Thecacera pennigera (MONTAGU, 1815)

Mizutama-umiushi (n. n.)

(Pl. VI, Figs. 3A-3C)

Doris pennigera MONTAGU, 1815, pp. 17-18, pl. 4, fig. 5.—England.

Thecacera pennigera ALDER & HANCOCK, 1855, fam. 1, pl. 21a, figs. 1-9.—England; MARCUS, 1957, pp. 426-429, figs. 91-102.—Brazil.

Length 12-25 mm. Shape of body and colours nearly as in the Atlantic *pennigera*. With elevated rhinophore-sheaths. Gills 5, bipinnate, non-retractile. With a single post-branchial process on each side; it is long and conical. No pallial ridge. Integument smooth above. Foot-corners produced into short horns. General ground-colour translucent yellowish white, the back and sides scattered with yellow or orange-yellow spots in varying number; there are additional black spots interspersed among the orange ones. Rhinophores and branchial plumes whitish. Sole also whitish without markings. Jaws and radula as in the Atlantic *pennigera*. Jaw-plates provided each with a wing. Radula formula 10-13×2.2.0.2.2; first lateral hamate with a hook about half way down; second lateral larger, with a spur near the base; outer laterals simply scale-like.

Loc.: Sugashima near Toba (June 1943, 2 sps., coll. by Dr. SUGIYAMA). Near Mukaishima, Inland Sea of Seto (May 1955, Apr. 1956 and '59, 4 sps., coll. by Dr. INABA). Abugashima and Amaharashi, Toyama Bay (May 1952 and Apr. 1957, 3 sps., coll. by Mr. ABE). Always on shores.

Dist.: Atlantic, Mediterranean and Brazil.

There are six species of *Thecacera* known from the world. Our specimens are referred to *pennigera* as above, but they do not have the brightness of the orange spots shown in the figures of ALDER and HANCOCK, 1855.

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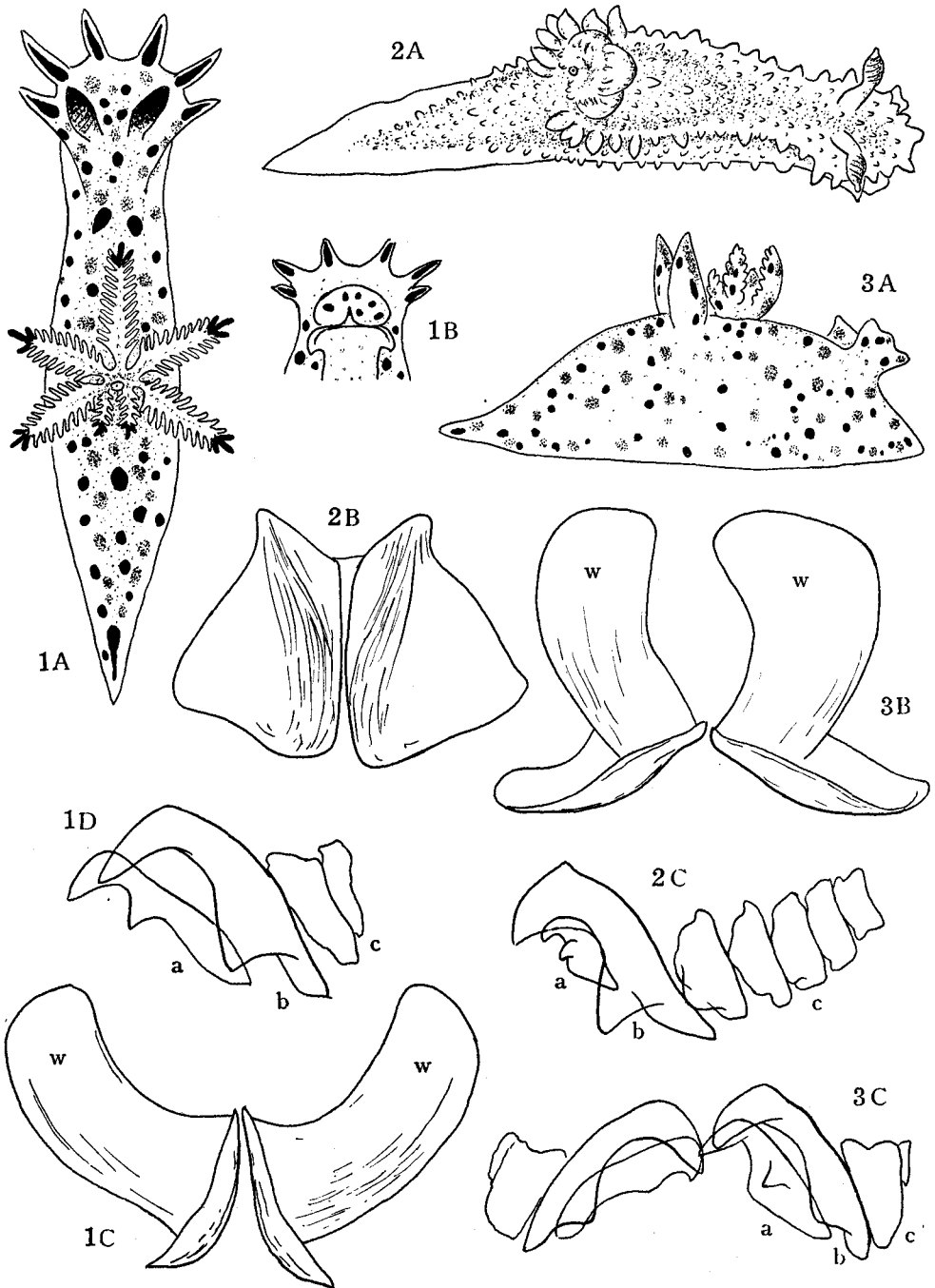
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EXPLANATION OF PLATE VI

- Figs. 1A-1D. *Greilada abei*. 1A. Animal from Amaharashi, Toyama Bay (June 22, 1958, length 15 mm, original fig. taken by Mr. ABE); 1B. Head and foot from below; 1C. Jaw-plates ($\times 45$), w. wing; 1D. A half-row of radula ($\times 140$), a. 1st lateral, b. 2nd lateral, c. outer laterals.
- Figs. 2A-2C. *Palio amakusana*. 2A. Animal from Tomioka, Amakusa (Jan. 31, 1937, length 12 mm); 2B. Jaw-plates ($\times 40$); 2C. A half-row of radula ($\times 240$), a. 1st lateral, b. 2nd lateral, c. outer laterals.
- Figs. 3A-3C. *Thecacera pennigera*. 3A. Animal from Sugashima near Toba (June 30, 1943, length 12 mm, original fig. taken by Dr. SUGIYAMA); 3B. Jaw-plates ($\times 40$), w. wing; 3C. A row of radula ($\times 100$), a. 1st lateral, b. 2nd lateral, c. outer laterals.



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