Opisthobranchia Of Kii, Middle Japan

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OPISTHOBRANCHIA OF KII, MIDDLE JAPAN

Kikutarô BABA

The following paper relates mainly to those forms which were secured by shore collecting in the vicinity of the Seto Marine Biological Laboratory, during my short stay there in March, 1937. It also brings out a list of species previously recorded by Prof. Iw. TAKI (1930, '32) from the same district. The list itself is extended greatly by referring to a considerable number of specimens which were derived from the following sources:

1. The specimens belonging to the Laboratory, a part of which were collected under the care of Messrs. F. HIRO and Y. MIYASHITA.

2. The private collections of Messrs. I. YAMAZI and Y. KADO from Kata and the adjacent sea coast.

3. Another series of collections of Mr. K. OKAMOTO from Gobō.

The geograghical area covered by these collections thus extends along the south-western coast of the Kii Peninsula. Here the influence of the Japan Current (Kuro-sio) is remarkable, making the fauna rich in southern forms, and we have even such forms as are pronouncedly characteristic of the tropic seas, namely *Chelidonura hirundinina*, *Hexabranchus marginatus*, *Casella atromarginata*, *Argus cruentus*, etc.

The following is a list of the species so far known to occur:

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1) Contributions from the Zoological Laboratory, Kyūsyū Imperial University, No. 114. Papers from the Amakusa Marine Biological Laboratory, No. 64.

Opisthobranchia

I. Order Pleurocoela (= Tectibranchia)

Aglaia gigliclii Tapparone-Canefri.
Chelidonura hirundinina (Quoy & Gaimard).
Chelidonura fulvipunctata n. sp.
Tethys dactylomela (Rang).
Tethys parvula (Mörch).
Tethys sibogae (Bergh).
Tethys kurodai Baba.
Notarchus (*Bursatella*) *leachii leachii* var. *freeri* (Griffin).
Notarchus (*Stylocheilus*) *longicaudus* (Quoy & Gaimard).
Notarchus (*Notarchus*) *indicus armatus* n. subsp.
Dolabella scapula (Martyn).

II. Order Sacoglossa

Stiliger (*Stiliger*) *boodleae* n. sp.
Hermaea dendritica (Alder & Hancock).
Elysia (*Elysia*) *obtusa* n. sp.

III. Order Acoela

A. Suborder Notaspidea

Berthella plumula delicata (Pease).
Pleurobranchaea novaezealandiae Cheeseman.

B. Suborder Nudibranchia

a. Tribe Holohepatica

Hexabranchus marginatus (Quoy & Gaimard).
Euphurus ornatus Baba.
Gymnodoris citrina (Bergh).
Gymnodoris alba (Bergh).
Gymnodoris inornata (Bergh).
Caloplocamus ramosus (Cantraine).
Plocamophorus imperialis Angas.
Plocamophorus tilesii Bergh.
Kalinga ornata Alder & Hancock.
Hopkinsiella hiroi n. g., n. sp.
Okadaia elegans Baba.
Glossodoris festiva (Adams).
Glossodoris pallescens (Bergh).
Glossodoris alderi (Collingwood).
Glossodoris clitonota (Bergh).
Glossodoris marginata (Pease).
Glossodoris setoensis n. sp.
Nournea nivalis Baba.
Cadlina japonica Baba.
Casella atromarginata (Cuvier).
Ceratosoma cornigerum Adams & Reeve.
Actynocyclus japonicus (Eliot).
Rostanga arbutus (Angas).
Ctenodoris aurantiaca (Eliot).
Neodoris tricolor n. g., n. sp.
Trippa intecta (Kelaart).
Thordisa parva n. sp.
Discodoris concinna (Alder & Hancock).
Discodoris pardalis (Alder & Hancock).
Discodoris yaeyamensis Baba.
Homoeodoris japonica Bergh.
Halgerda japonica Eliot.
Argus cruentus (Quoy & Gaimard).
Argus speciosus (Abraham).
Argus tabulatus (Abraham).

Dendrodoris (*Dendrodoris*) *nigra* (Stimpson).
Dendrodoris (*Dendrodoris*) *gemmacea* (Alder & Hancock).
Dendrodoris (*Dendrodoris*) *rubra* var. *nigromaculata* (Eliot).
Dendrodoris (*Doriopsilla*) *miniata* (Alder & Hancock).
Phyllidia (*Phyllidiella*) *nobilis* (Bergh).

b. Tribe Cladohepatica

Marionia olivacea Baba.
Dermatobranchus striatus van Hasselt.
Armina (*Armina*) *taeniolata* (Bergh).
Notobryon wardi Odhner.
Crosslandia viridis Eliot.
Cephalopyge orientalis Baba.
Melibe vexillifera Bergh.
Melibe japonica Eliot.
Cuthona (*Hervia*) *ceylonica* (Farran).
Cuthona (*Hervia*) *lineata* (Eliot).
Cuthona (*Hervia*) *inconspicua* n. sp.
Pteraeolidia semperi (Bergh).
Eolidina (*Eolidina*) *takanosimensis* (Baba).
Glaucus marinus (Dupont).

I am glad of this opportunity of expressing my sincere thanks to Mr. F. Hiro, Lecturer in the Laboratory, not only for his willing cooperation in collecting material but also for his courtesy shown to me during my stay. Warm thanks must be extended to Messrs. I. Yamazi, Y. Kado and K. Okamoto, who generously placed at my disposal the specimens collected by them. To the authorities of the Laboratory—in particular, Prof. Yô K. Okada—I would express my gratitude for the facilities afforded me.

The study has been carried out by the financial aid of the Japan Society for the Promotion of Scientific Research to which I here acknowledge my indebtedness.

Family Aglaiidae

1. *Chelidonura fulvipunctata* n. sp.

(Fig. 1)

Total length of animal 10-15 mm. Body elongated, roughly cylindrical, very soft and smooth. Head-shield a little larger than the mantle-shield. The former ending in a blunt point behind, in

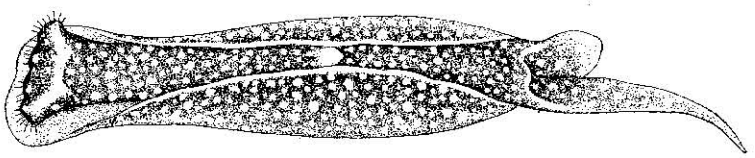

Fig. 1.—*Chelidonura fulvipunctata*. (L. 15 mm).

front indistinctly 3-lobed with the lateral lobes auriculate and forming short rudimentary tentacles. Mantle-shield 2-lobed behind, the left lobe long and tapering, the right one decidedly shorter and rounded. Foot large, abruptly truncated in front, laterally continued into fleshy parapodial lobes as usual.

General ground-colour glossy purplish black, with light brown spots of different sizes thickly scattered over the surface except on the sole. A W-shaped yellow band on the head-shield towards the anterior end. Posterior tip of head-shield yellow. Parapodial lobes margined with yellow.

Loc.: Seto, Kii (Mar. 1937; 2 sps.).

This new species is quite distinctive and differs from other species described elsewhere in having unmistakable body-colours and asymmetrical posterior lobes of the mantle-shield.

Another specimen of this species has been collected by Dr. Y. OKADA from Simoda, Izu (Apr. 1936).

Family Tethyidae

Subfamily Notarchinae

2. *Notarchus* (*Notarchus*) *indicus armatus* n. subsp.

(Figs. 2-3)

Body small, about 30-40 mm in length, in creeping more or less elongated and limaciform, but often capable of assuming a form of globular aspect in which condition the animal may rotate itself like a toy-balloon. Dorsal slit in the anterior part of the body, just behind the neck. Parapodial lobes small, overlapping, separated in front and united behind, each with a conical tuberculate papilla on the outer side. Neck and tail slightly produced in creeping. Common genital orifice within dorsal slit. Male orifice below and behind the right oral tentacle. A continuous row of conical tuberculate papillae in the mid-dorsal line from behind the dorsal slit to the posterior end of the body. Similar papillae irregularly set on sides of body. Also a large number of small conical tubercles everywhere on oral tentacles, rhinophores, neck and body. Foot narrow, but capable of expansion. In front it is abruptly rounded and bilabiate, often extensible forwards forming a sort of snout. Shell absent.

General body-colour translucent yellowish brown, often sprinkled with minute yellow spots borne upon some of the conical tubercles of the integument; a variable number of blackish patches

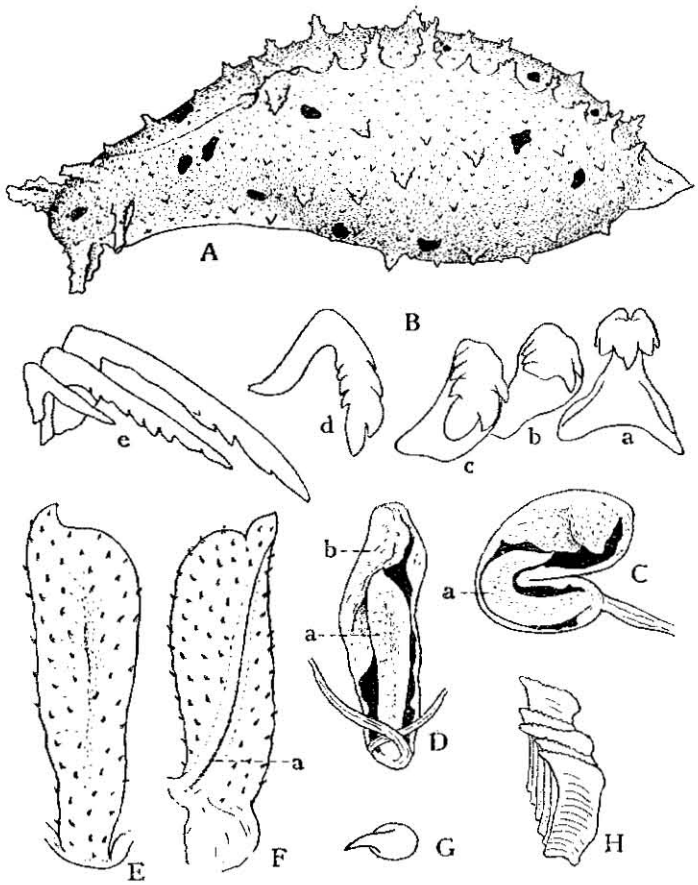

Fig. 2.—*Notarchus indicus armatus*. A. Entire animal (L. 30 mm); B. A half row of radula (× 250); a. central tooth, b. 1st lateral, c. 2nd lateral, d. 4th lateral, e. outermost laterals; C-D. Penis sheath, a. penis, b. cushions; E. Penis from dorsal side; F. The same from ventral side, a. seminal groove; G. Spiny armature of penis; H. Elements of jaw-plate.

irregularly scattered over the back, sides and head. Foot yellowish brown.

Jaws two, their elements compressed plate-like with more or less serrulated edge. Radula formulae in 2 specimens, 26 × 21-25.

1.21-25 and 25 × 25-33.1.25-33, respectively. Central tooth trapezoid, always with 2 denticles on both sides of a median cusp. First lateral hamate having 2-3 flanking denticles on both edges, the

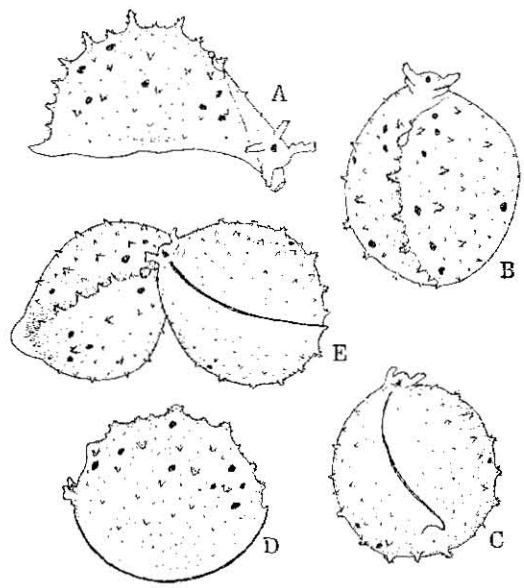

Fig. 3.—*Notarchus indicus armatus*. Animal in creeping (A), and in swimming (B-D). E shows two individuals in copulation.

successive laterals of much the same general form, greatly increasing in size towards the middle of the row and then decreasing towards the edge. Penis sheath consisting of 2 sacs, the basal sac containing the penis, the distal sac the dilatable cushions. Penis compressed, roughly lanceolate in shape, the surface sparsely set with spiny armatures.

Loc.: Seto, Kii (Mar. 1937; 2 sps.).

In general appearance and habitus the present specimens are closely allied to *N.* (*N.*) *indicus* SCHWEIGGER from Mauritius and other districts, for which MARTENS (1880) gave good figures, and ENGEL (1936) anatomical details of the penis, radula and jaw-plates. The last-named author says that in *indicus* from Mauritius the lateral teeth of the radula have denticulations only on one edge of the blade, and the penis is of spiral form without armatures. Obviously such is not the case in the specimens before me, and

so it seems better to regard them as belonging to the distinct form, *N. (N.) indicus armatus* subsp. n. I am informed that the specimens of this new subspecies are found fairly commonly every year at Seto.

Family Stiligeridae

3. *Stiliger (Stiliger) boodleae* n. sp.

(Figs. 4-5)

Total length of animal 4-5 mm. Body slender, aeolidiform, the surface smooth. Head large, slightly sinuous in front. Rhinophores long and slender, without an external groove. Branchial papillae long fusiform when extended and nearly conical when contracted; deciduous, arranged on both sides in 7-8 closely set oblique rows, about 1 to 3 in each row. The outer papillae short and the innermost largest. Anus in the posterior region of the pericardial prominence, slightly to the right of the middle line. Nephroproct closely behind anus. Genital orifice on the right side immediately below the 1st branchial row. Foot large, as broad as body, its anterior end simple and the corners abruptly rounded.

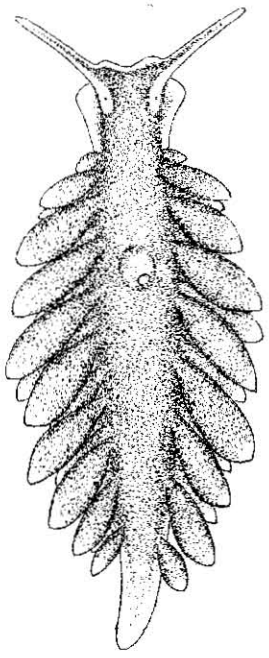

Fig. 4.—*Stiliger boodleae* (L. 4 mm).

General body-colour black, foot-brim, anterior edge of head, eye region and sole lighter grayish. Branchial papillae always tipped with brown.

Radula composed of a single row of Sacoglossan teeth, nearly always 4-5 in the ascending series, 5-6 in the descending series, and about 15 in an irregular heap. Each tooth roughly spoon-shaped, depressed in the middle of the back and the anterior edge smooth without denticles.

Loc.: Seto, Kii (Mar. 1937; very common on an alga, *Boodlea coacta*).

In external form, colours and radula type this new species

closely resembles the North-Atlantic species, *S. nigra* LEMCHE, but

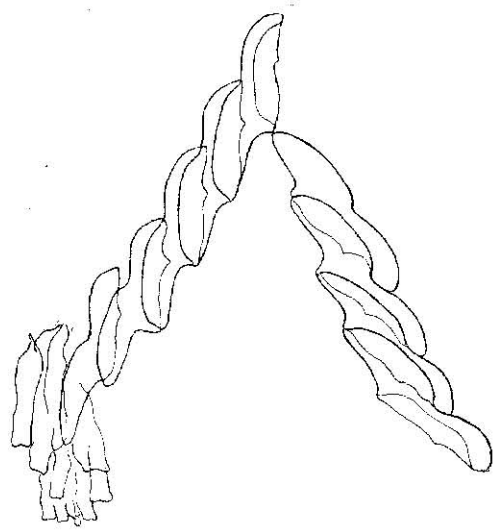

Fig. 5.—*Stiliger boodleae.* Entire row of radula (× 200).

differs in the position of the anus and genital orifice. In the latter species the anus is situated on the right side below the 1st row of papillae and the genital orifice just below the eye.

4. *Elysia (Elysia) obtusa* n. sp.

(Fig. 6)

Total length of animal 10-13 mm. Body cylindrical, smooth, the tail obtusely rounded behind. Parapodia not wide, separated in front and behind. Rhinophores conical, auriculate. Pericardial prominence elongate-oval, without a median constriction. Antero-lateral corners of foot obtusely angulated.

General body-colour yellow, somewhat deeper on head, the whole upper surface sparsely set with clusters of white dots. Parapodia edged with white, their bodies with an olive hue shining through the surface integument.

The radulae in 2 specimens are:

	Ascending series	Descending series	Heap
A.	7	15	8
B.	8	12	10

Teeth blade-like, the edges smooth without serrulations.

Loc.: Seto, Kii (Mar. 1937; 3 sps.).

This new species resembles *E. viridis* (MONTAGU) in certain

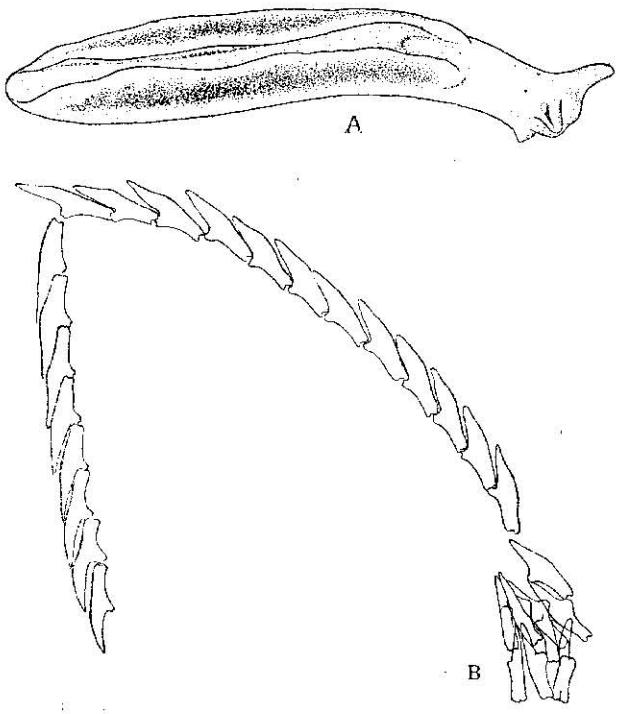

Fig. 6.—*Elysia obtusa*. A. Entire animal (L. 13 mm); B. Entire row of radula (×350).

respects but the latter species has a darker colour, the tail pointed and the radula teeth finely serrulated.

Family Euphuridae

Subfamily Okeniinae

Hopkinsiella n. g.

Body small, elongate-elliptical, much depressed; without a pallial flange, the mantle gradually sloping down into the foot. Head-veil broad semicircular, without an outer posterior slit; marked off ventrally from foot by a transverse groove. Rhinophores non-retractile, perfoliate. Branchiae 3, non-retractile, simply pinnate. Long fusiform papillae on pallial margin and around branchiae. Foot broad.

Labial armature (?). Radula very narrow, formula for one row 1.1.0.1.1; inner lateral tooth large, always bifid at the tip, and with a row of denticulations at the edge of the hook; the outer one small, simply scale-like.

Type: *H. hiroi* n. sp.

In many respects this new genus is most closely allied to *Hopkinsia*, but in the latter genus the papillae are thickly set everywhere on the back, and the hook of the inner lateral tooth is simple without denticulations.

5. *Hopkinsiella hiroi* n. sp.

(Fig. 7)

Somewhat aeolidiform in appearance. Body small, 5-7 mm in length, elongate-elliptical and much depressed. Mantle densely

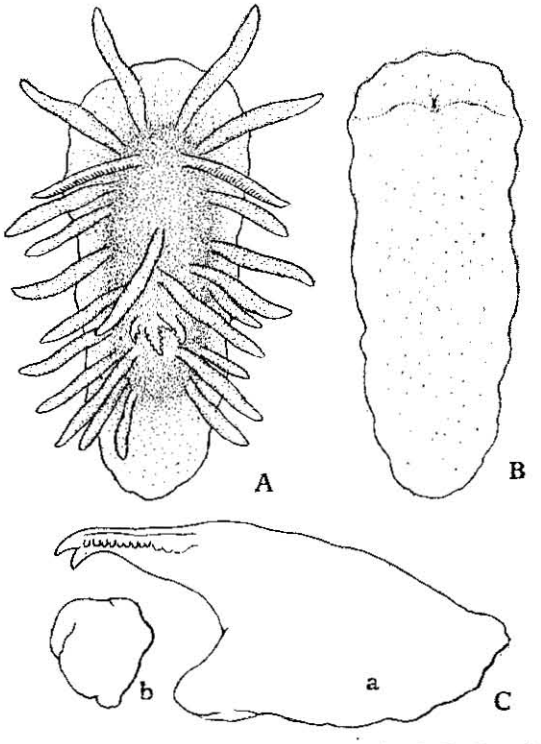

Fig 7.—*Hopkinsiella hiroi*. A. Entire animal (L. 7 mm); B. Head and sole; C. A half-row of radula (× 500), a. inner lateral, b. outer lateral.

spiculate, gradually sloping down to the thin margin of the foot, no pallial flange being formed. Head-veil broad semicircular without an outer posterior slit; ventrally it is marked off from foot by a transverse groove. Rhinophores perfoliate, cylindro-conical, without sheaths. Branchiae non-retractile, simply pinnate, always 3 in number, and arranged in a shallow arc. Papillae long fusiform, about 7-9 of them on the pallial margin on both sides, and about 5-6 around the branchial arc. Anal papilla behind the middle one of the branchial plumes. Genital orifice on the right side just below the 3rd pallial papilla. Foot broad, abruptly rounded behind, in front with a shallow emargination just behind the mouth-slit.

Colour almost everywhere a rose red, slightly yellowish at the tip of the papillae.

Labial armature (?). This organ was very hard to see in all the specimens dissected. Radula narrow, containing 35-50 rows of teeth with the formula 1.1.0.1.1. Inner lateral tooth large, blade-like, always bifid at the tip, and with a row of 10-15 denticulations on the edge of the hook. Outer one small, almost scale-like, without denticulations.

Loc.: Seto, Kii (Mar. 1937; 2 sps.)

Another specimen of this species has been collected from Oniike, Amakusa (Apr. 1937).

Family Doridiidae

Subfamily Glossodoridinae

6. *Glossodoris marginata* (PEASE)

(Fig. 8)

Doris marginata PEASE, 1860, p.30.—Hawaii.

Chromodoris marginata BERGH, 1905, pp. 150-151, pl. 3, fig. 13; pl. 16, figs. 13-15—Saleyer; RISBEC, 1928, pp. 133-135, pl. 6, fig. 4; text-fig. 33.—New Caledonia.

Body small, about 10 mm in length, the mantle narrow, entirely smooth. Branchiae 4-7, simply pinnate. Oral tentacles digitate.

General body-colour snow-white, rhinophores and branchiae reddish purple. Mantle surrounded by a double border. Usually the outer line is reddish purple and the inner chrome yellow, in one specimen, however, the extreme edge is found to be chrome

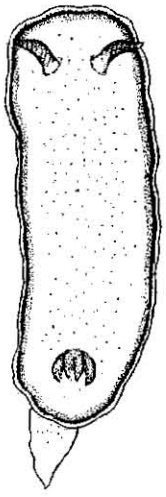

Fig 8.—*Glossodoris marginata.* (L. 10 mm).

yellow with the intramarginal line discontinuous and reddish purple.

Elements of labial armature bifid at the tip. Radula formula 50 × 30-35.0.30-35. Rachidian plate small, triangular in shape. First lateral with 3-5 denticles on both edges. Second lateral hamate with 3-5 denticles on the outer edge. The successive laterals increasing in number of denticles up to 6-7, towards the outside the teeth bocoming saw-like in shape.

Loc.: Seto, Kii (Mar. 1937; 3 sps.).

7. *Glossodoris setoensis* n. sp.

(Fig. 9)

A small glossodorid measuring about 5 mm in length. Body elongated, mantle narrow, entirely smooth. Branchiae 5 in number, simply pinnate. Oral tentacles small, digitate.

General body-colour yellowish white. Back with 3 longitudinal stripes of opaque white, one mid-dorsal and the others lateral in position. The mid-dorsal stripe, extending from between the rhinophores, bifurcates posteriorly at about the middle of the body-

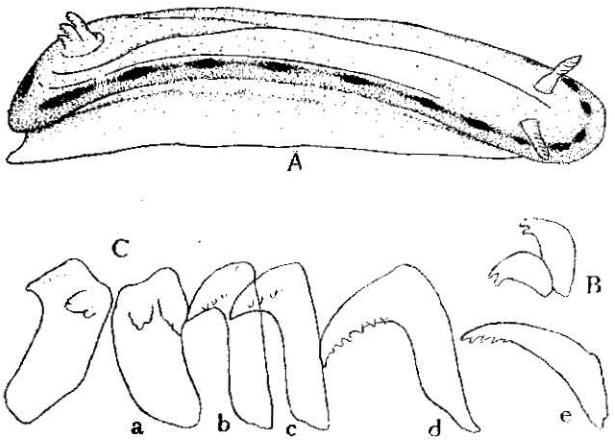

Fig. 9.—*Glossodoris setoensis.* A. Lateral view of entire animal (L. 5 mm); B. Elements of labial armature (× 600); C. A half-row of radula (× 1000), a. 1st lateral, b-c. successive laterals, d. 5th lateral, e. outermost lateral.

length, and the two legs thus formed are incompletely united behind the branchiae. The lateral stripes which extend from behind the rhinophores are also incompletely united beind the branchiae. Margin of mantle with an interrupted band of reddish purple, extreme edge chrome yellow. Rhinophores and branchiae white. Under surface white.

Labial armature composed of short rods bifid at the tip. Radula formula 42 × 20.0.20. Rachidian plate scarcely visible. First lateral stout with 2 cups (the inner one being smaller than the outer), themselves bearing irregular denticles at the edge. The successive laterals a little smaller than the first one but typically hamate in form, the number of denticles upon outer margin increasing up to 5-6, towards the outside the teeth becoming saw-like in form.

Loc.: Seto, Kii (Mar. 1937; 1 sp.).

This is a new species which is very characteristic in body-colours and in the shape of the first lateral tooth of the radula.

Subfamily Doridinae

Neodoris n. g.

Body elongate-elliptical, typically doridiform, back closely set with rounded tubercles. Oral tentacles auriculate with an external groove. Branchiae 5, tri- or quadripinnate. Margins of rhinophorial and branchial cavities tuberculate. Foot bilabiate in front, the upper lip having no median notch. Labial disk without armatures. Radula formula ∞.0.∞; laterals hamate, smooth. Salivary glands long band-like; stomach present; liver covered with hermaphrodite gland. Vas deferens long, unarmed, without a glans, arising at its proximal end from the prostate gland. Vagina unarmed. Spermatheca and spermatocyst belonging to the vagina.

Type: *N. tricolor* n. sp.

This new genus is classed within the Doridinae mainly on account of the general structure of the genitalia which develop no glans penis. It is closely allied to *Austrodoris* in the general body-form but differs in having a prostate gland and band-like salivary glands. It is less closely allied to *Doris* (= *Staurodoris*), the latter having generally simply pinnate branchiae and a prostata which is

represented by a mere widening of the vas deferens, not forming a concentrated gland. In some respects this new genus recalls *Archidoris* (Archidoridinae) and *Anisodoris* (Discodoridinae) but differs mainly from the former in having a prostate gland, from the latter in the auriculate oral tentacles, and from both of them in wanting a glans penis.

8. *Neodoris tricolor* n. sp.

(Fig. 10)

Total length of animal 30-40 mm. Body elongate-elliptical, the ends nearly equally rounded, back everywhere closely set with rounded tubercles of various sizes, the larger ones mainly on the median part of it and decreasing in size towards the sides, the smaller ones intermingled all over the back. Rhinophore-sheath with several marginal tubercles, the lateral two being the largest and approximately valve-like in shape. Branchiae 5, tri- or quadripinnate, retractile within a tuberculate cavity. Foot broad, the anterior margin bilabiate with no median notch. Oral tentacles auriculate with an external groove.

General ground-colour chrome yellow with a number of purplish patches along the mantle-margin. Median part of back purplish white, defined externally by a dark green line shading off to the chrome yellow of the ground-colour. Within this area a broad band of dark purple runs from between rhinophores to branchiae, always widely interrupted by purplish white midway. Tips of dorsal tubercles dark purple. Rhinophores yellow above, white below. Branchiae ashy yellow dotted with dark brown.

Cuticular labial disk without armatures. Radula formulae in 2 specimens, 40 × 60.0.60, and 40 × 70.0.70, respectively. Laterals hamate, smooth, increasing in size towards the middle of the half row. Outermost laterals reduced, mostly smooth, but sometimes with serrulated edge. Salivary glands long band-like. With a large stomach and a small gall-bladder. Liver covered with hermaphrodite gland. Vas deferens long, slender, without glans, arising at its proximal end from a well-marked prostate gland. Vagina with spermatheca and spermatocyst. Both vas deferens and vagina unarmed.

Loc.: Seto, Kii (Mar. 1937; 6 sps.).

The specimens of this species have been found to be fairly common on shore at Sunosaki, Bôsyû (May 1930.).

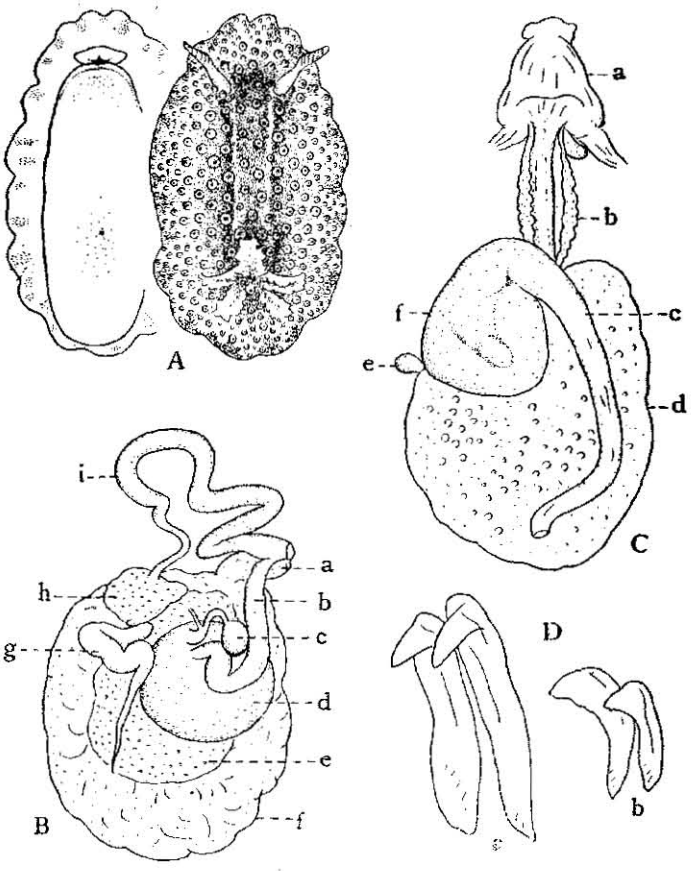

Fig. 10.—*Neodoris tricolor*. A. Entire animal in dorsal and ventral views (L. 40 mm); B. Reproductive organs, a. oviduct, b. vagina, c. spermatocyst, d. spermatheca, e. albumen gland, f. mucous gland, g. hermaphrodite gland, h. prostate gland, i. vas deferens; C. Digestive organs, a. pharynx, b. salivary gland, c. intestine, d. liver, e. gall-bladder, f. stomach; D. A half-row of radula (× 450), a. innermost laterals, b. outermost laterals.

Subfamily Discodoridinae

9. *Thordisa parva* n. sp.

(Fig. 11)

Total length of animal 6 mm. Body elongate-elliptical, de-

pressed, the sides nearly parallel, the ends of the body equally rounded. Back covered everywhere with small closely-set hispid papillae strengthened by divergent spicules. Margin of rhinophore-sheath papillate similar to general dorsum. Branchial plumes about 11, simply pinnate, completely retractile into a cavity, the

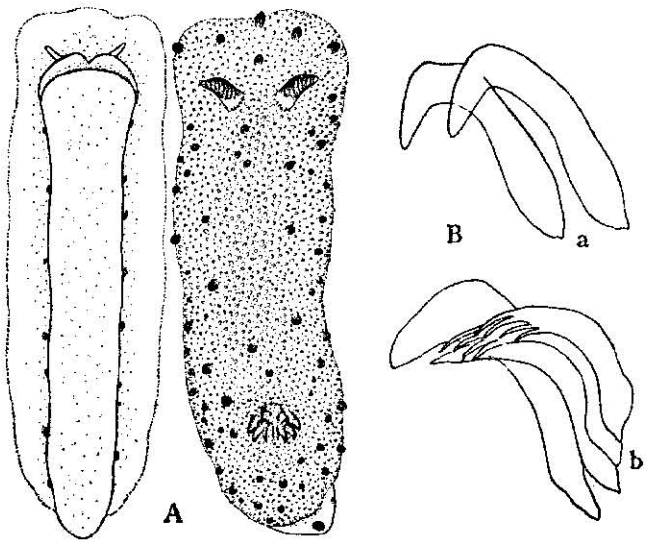

Fig. 11.—*Thordisa parva*. A. Entire animal in dorsal and ventral views (L. 6 mm); B. A half-row of radula (× 550), a. Innermost laterals, b. outermost laterals.

margin of which is similar to that of rhinophore-sheath. Oral tentacles digitiform. Anterior end of foot deeply bilabiate, the upper lip with a median notch.

General body-colour grayish yellow, black stains here and there on dorsal papillae and on foot-brim. Rhinophore-clavi and branchial veins black.

Cuticular labial disk without armatures. Radula formula 20 × 16-17.0.16-17. Lateral teeth hamate, without denticles, getting larger towards the middle of the half-row, the outermost 3-4 ones decrease very rapidly in size, fit closely together and become split at the tip.

Loc.: Seto, Kii (Mar. 1937; 1 sp.).

This new species in peculiar colours and in small radula type is marked off distinctly from all the species previously recorded.

Family Tergipedidae

10. *Cuthona (Hervia) lineata* (ELIOT)

(Fig. 12)

Hervia lineata ELIOT, 1904, pp. 286-287, pl. 16, figs. 2-3.—Zanzibar.

Total length of animal about 5 mm. Body slender with a long tapering tail. Oral tentacles long and slender, the rhinophores a little shorter and having slight constrictions on their surface.

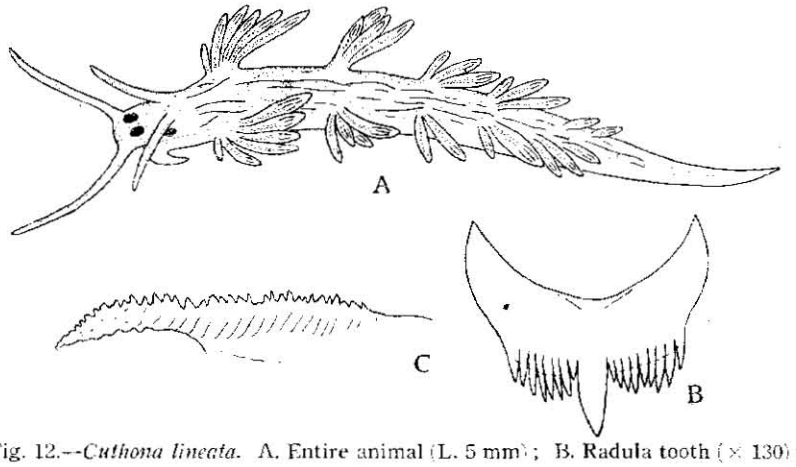

Fig. 12.—*Cuthona lineata*. A. Entire animal (L. 5 mm); B. Radula tooth (× 130); C. Masticatory edge of jaw-plate (× 250).

Branchial papillae fusiform in 5 groups, about 6-8 in the 1st, 4-5 in the 2nd, 2-3 in the 3rd and 4th, and 1-2 in the last, the first two groups standing on horseshoe-shaped bases and the rest on simple oblique bases. Antero-lateral angles of foot produced, tentaculiform.

Body translucent yellowish white, back and sides irregularly streaked with fine lines of opaque white, oral tentacles and rhinophores opaque white on their upper half. Head with 4 conspicuous blotches of red colour, two of them lying between oral tentacles and rhinophores and the rest just below the latter organs. Branchial papillae with longitudinal, fine, opaque white lines, the vein reddish, turning to dark brown towards the end.

Jaw-plates with a single row of about 35 denticles. Radula formula 24 × 0.1.0. Tooth broad V-shaped, with a strong median cusp and 8-12 denticles on either side.

Loc.: Seto, Kii (Mar. 1937; 1 sp.).

I think this animal is safely referable to *Hervia lineata* of ELIOT, which has quite a distinctive coloration. Two other specimens of this species have also been collected from Tomioka, Amakusa (Oct. 1936).

11. *Cuthona (Hervia) inconspicua* n. sp.

(Figs. 13-14)

Total length of animal 25 mm. Body slender, typically aeolidiform. Oral tentacles slender, simple. Rhinophores also slender, but irregularly wrinkled almost throughout their length and seemingly annulate in the preserved specimen. Branchial papillae long fusiform, in 8 groups and on horseshoe-shaped bases, about 55 in the 1st, 45 in the 2nd, 15 in the 3rd, 14 in the 4th, 9 in the 5th, and 5-6 in the remaining groups, the outer papillae short, the innermost largest. The 1st group widely separated from the rest, which are rather close together, the intervals among them becoming gradually smaller towards the tail. Genital orifice immediately below the 1st, and the anal papilla in the middle of the 2nd group on the right side. Foot bilabiate at the front edge, the lateral angles produced, tentaculiform.

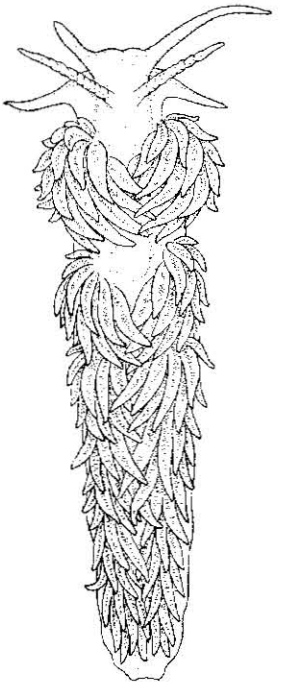

Fig. 13.—*Cuthona inconspicua* (L. 25 mm).

Head and back pale orange-yellow, with an opaque white line on oral tentacles. Branchial papillae with a yellowish white apex, towards the end a band of chrome yellow, the vein dark brown, turning to violet towards the end. Rest of body translucent fleshy white.

Jaw-plates with 45-50 denticles on the masticatory edge, some of them having bifid end. Radula formula 25 × 0.1.0. Tooth horseshoe-shaped, with a stout median cusp and 3 denticles on either side.

Loc.: Seto, Kii (Mar. 1937; 1 sp.).

In its general appearance this new species recalls *C.* (*H.*) *ceylonica* (FARRAN) to a certain extent, but differs from it in the

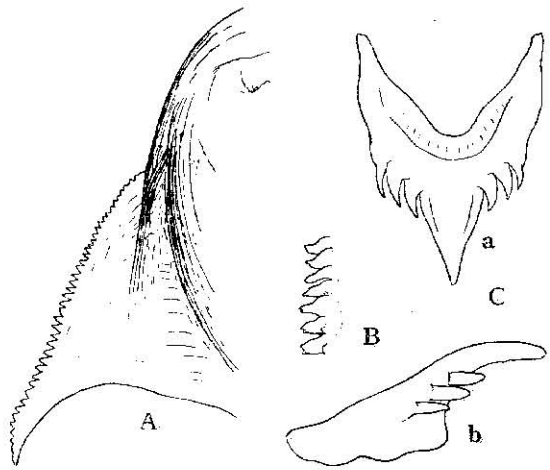

Fig. 14.—*Cuthona inconspicua*. A. Masticatory process of jaw-plate (×30); B. Denticles on masticatory process (× 80); C. Radula teeth in dorsal (a) and lateral (b) views (× 100).

position of the genital orifice, possessing wrinkled rhinophores, a stouter median cusp of the radula teeth, and a different coloration of the branchial papillae.

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