

II. *On some New Species of Nudibranchiate Mollusca from the Eastern Seas.*
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(Plates IX. & X.)

Read March 7th, 1878.

THE very considerable numbers of naked-gilled Mollusca which have been found upon our own shores would lead one to suppose that on other coasts, in which climatal conditions were more favourable, they would be very commonly met with. Having collected not fewer than twenty-eight species upon a very small section of our northerly coasts, I hoped that a careful search upon tropical shores would yield an abundant harvest of these highly interesting and beautifully-tinted animals. In any such research, however, seasonal changes must not be overlooked. There can be no doubt in the mind of any one who has ransacked tropical localities that in them the highest development of colour and the most curious vagaries of form are to be found; but I am persuaded that a zoologist who pays but a brief visit to a number of coasts in succession is far less likely to make a considerable collection of species of Nudibranchiata than is any one who, confined to a single favourable locality for a considerable period, is thus able to pursue his examination of the same spot through all the different seasons of the year. Hence it is that the collections of Sir W. Elliot on the Madras coast (32 species), of Dr. Kelaart on the Ceylon coast (42 species), and of Mr. Angas in New South Wales (21 species) are so large; while the voyage of the 'Astrolabe' yielded but 18 new species, that of the 'Samarang' half a dozen species, and my own researches (the fruits of every opportunity within my reach during a period of rather more than twelve months) resulted only in the discovery of the 16 new species described in the following paper.

The greater number of species of this group may be found upon stony shores near low-water mark, and especially at low spring-tide. They adhere to the *under* side of stones, and may be detected by turning them over. Although some of them appear to be capable of swimming, and most of them can float, branchiæ downwards, upon the surface of the water, I never saw them in this position in the sea, however calm. In fact they have invariably been found by me in a passive condition, like little shapeless masses of soft, coloured matter, in depressions and crevices of stones, where they have probably retired at that particular juncture, when the wash of low tide has disturbed the water and rendered it both turbulent and turbid; from both of which disadvantages the same spot would be free at all times, *except* at dead low-water. I have, however, dredged up a very beautifully-coloured and delicate species from a depth of 20 fathoms, which, notwithstanding the rough handling of the dredge and the company of shells, corallines, and sponges, seemed in no way incommoded or less lively. Again, some species of Nudibranchiata, as *Glaucus*, appear to be free ocean-swimmers, and such I have taken in the towing-net in the Formosa channel; while another species (*Scyllæa pelagica*) is

abundant in the open ocean of the Atlantic, but always adherent by its clasping foot to the fronds of the gulf-weed.

Nor do the exquisite colours of this group depend entirely upon geographical position. On our own northerly coasts richly tinted species occur, such as *Doris flammea*, *D. coccinea*, and many brilliant species of *Eolis*, &c.; while *Doris sordida* is a Red-Sea species, *D. tristis* is from the Madras coast, and *D. exanthema* from Ceylon; and the same remark also applies equally to other genera and families. Nevertheless, as a rule, the more brightly coloured species are more commonly met with on tropical shores; and of the genus *Chromodoris*, remarkable for their brilliancy, no species are found upon our own shores, but, although some occur on the Mediterranean coasts, the majority are characteristic of the hotter regions.

A very remarkable circumstance in the history of these delicate animals is their extraordinary geographical distribution. Mr. Abraham remarks (*l. c. postea*) that the well-known and almost first-described British species, *Doris tuberculata*, has also been found in New Zealand on the one hand, and at Vancouver's Island on the other; and my own experience has remarkably confirmed the widespread habitats of certain species. Interesting in this respect was the fact of my meeting with the same species, within a few days' or weeks' interval, on different sides of the China Sea. Thus a *Chromodoris* which I had already found in the Pescadores was the first thing I picked up, some time later, on the reef of Labuan (Borneo). Very soon after I met with a second species at Labuan, which I at once recognized as one I had already captured and figured in the Haitan Straits, a little south of the river Min, coast of China. A *Doris* which I found on a submerged reef in the centre of the China Sea, I afterwards found again on another island off the coast of Borneo, west of Sarawak river. A minute species also (probably an immature *Trevelyana*) I found on two occasions in localities separated by 150 miles of sea.

A circumstance due, I think, to what I have already mentioned about seasonal changes is worth recording. I had searched in vain upon some rocks in the harbour of Hong Kong, and having mentioned this to a resident gentleman, who occasionally himself made the same researches, he kindly offered to go with me and show me where he found them. But we were equally unsuccessful, and could obtain none. The same thing occurred at Labuan. Having showed my drawings to a gentleman interested in natural history, he at once recognized them as animals of which he assured me there were many beautiful species to be found; and he also kindly conducted me to his hunting-ground, but equally in vain, and to his surprise he could show me none where he had been in the habit of finding them. In fact, although I met at Labuan with species I had already found elsewhere, I only added one new species to my list at that place. In both these instances I imagine I was at the localities mentioned at unfavourable seasons of the year, and not at those seasons when my informants assured me they had met with numerous species.

I should mention, however, one other Labuan species which unfortunately I was unable to record, owing to the following curious circumstance. It was a large tuberculated *Doris*, of a mottled grey colour, 4 inches long, with capacious tentacles and expansive gill-tufts, of which I found two or three specimens upon a reef in one of these

expeditions. I brought them home, and placed them in water till the next day, intending by daylight to draw and describe them. But on visiting them in the morning, I found that they had performed a spontaneous amputation of the mantle close to the body all round. It was done as cleanly as if by a pair of scissors. A large *Pyrula* in the same vessel was at first credited with this act; but other specimens having been placed separate in clean water, not being able to attend to them immediately, I found on visiting them next day that they also had amputated their mantles and were destroyed. It appeared to be a suicidal act, or "happy despatch," similar to the self-evisceration of *Holothuriæ* and breaking up of *Comatulæ* under the influence of the gradual fouling of the water.

These delicate and beautifully tinted animals are so entirely altered as to their form and colour by spirit, that I can scarcely understand how new species can be satisfactorily described from spirit-specimens. Alcohol bleaches their colours, and contracts to shapelessness the most beautiful elements of their form, the mantle, but more especially the tentacles and branchiæ, so that they bear no resemblance whatever to the living animal. It keeps them, however, fit for dissection. The spicula, odontophores, buccal collars, and other important classificatory characters are thus well preserved. Glycerine, while it keeps for a considerable time their colour and form, renders them soft and comparatively useless for dissection. The only way to retain a correct idea of their living character is to make careful drawings of them in their active condition; and whatever value the present illustrations may have is founded upon this circumstance, for they are faithful to the life.

With regard to the two species of the Polybranchiate family of *Phyllidiadæ* (the only ones I met with, and found side by side in a rock-pool on the coast of Borneo), I have consulted Bergh's elaborate paper in the 'Naturhistorisk Tidsskrift' for 1868-69, and also that in Heft 10 of Semper's 'Reisen im Archipel der Philippinen,' in both of which papers species are described and figured; but although there is some resemblance, I cannot assure myself that the *Phyllidiella pustulosa* figured by him is the same as my *Phyllidia spectabilis*.

Nothing more need be added in these introductory remarks concerning the species to be described in this paper. As to the works to which I have been indebted in the investigation, I would chiefly mention two, viz. the well-known and invaluable 'Monograph' of Messrs. Alder and Hancock, published by the Ray Society, which has been to me as a companion ever since its publication; and, secondly, the "Revision of the Anthobranchiate Nudibranchiate Mollusca," by Mr. P. S. Abraham, in the Proc. Zool. Soc. 1877: other memoirs are referred to in the text.

List of the Genera and Species enumerated in the present Paper.

Doris pecten.	Albania formosa.
— crescentica.	Triopa Principis-Walliaë.
Chromodoris iris.	Trevelyana felis.
— Bullockii.	Doridopsis arborescens.
— aureo-purpurea.	— rubra.
— tumulifera.	Phyllidia spectabilis.
— tenuis.	Fryeria variabilis.
— funerea.	Scyllæa pelagica.
— Alderi.	Bornella marmorata.

Order *NUDIBRANCHIATA*, Cuvier (1817).

Family DORIDIDÆ, Alder and Hancock (1855).

Genus DORIS, Linnæus (1758).

DORIS PECTEN, Coll., n. sp. (Plate IX. figs. 1-5.)

Length nearly $\frac{1}{2}$ inch. *Body* oval, of a deep greenish-blue colour all over, studded with minute papillæ of a darker tint. *Mantle* large, covering the foot entirely. *Dorsal tentacles* short, lamellated, dark-coloured, paler at the bases. *Branchiæ*, consisting of seven or eight simple leaflets, are ranged in a crescentic form, the horns of the crescent pointing forward and embracing a small crescentic area of a paler tint. *Under surface* of the mantle paler than the upper, and spotted; foot brownish below.

Two specimens of this little *Doris* were found in a rock-pool above low-water mark on Bush Island, entrance to the harbour of Ke-lung, North Formosa, May 29. When at rest, the posterior part of the mantle is drawn in, and the branchiæ are seen in profile, looking like a *comb* stuck in behind, whence its specific name.

DORIS CRESCENTICA, Coll., n. sp. (Plate IX. figs. 6-8.)

Length 3 inches; breadth 2 inches. *Body* broad, flat, tuberculated. *Mantle* capacious, covering the whole body, and largely projecting beyond the posterior extremity of the foot; very broad and round anteriorly, but about the middle of the body constricted on either side to about one half its diameter; edge very thin and flat, and puckered all round the margin with numerous large and small folds. Plentifully covered with large warty excrescences arranged crescentically and concentrically around the anterior and posterior margins, where they are but slightly elevated: an elongated irregular excrescence runs along the centre of the dorsum, commencing anterior to and between the tentacles, and terminating at the branchiæ, on either side of which are arranged large irregular bosses a quarter of an inch high. On either side of the branchiæ there is a plain and thinner irregular portion, larger on the left than on the right side. *Dorsal tentacles* large, club-shaped, acuminate, and arising from a projecting eye-like sheath with irregular opening; the club-shaped portions laminated, the peduncles smooth. *Branchiæ*, of six compound leaflets, much branched, and arranged in a wide, round, anal orifice; the plumes nearly equal in size. *Head* with two small oral tentacles, concealed beneath the mantle.

Colour and general appearance.—General colour a brownish olive, the elevations and bosses paler. Upon the large bosses is a tinge of pink, surmounted by a whitish apex; a similar pink tinge upon the thinner part of the mantle round the margin. The thin non-tuberculated parts of the mantle on either side of the branchiæ straw-colour. Tentacle-sheaths same as the body-colour on which they are situated, the tentacles themselves somewhat darker. Branchiæ pale brown, the stems darker, and the edges of the leaflets whitish. Anal orifice white. Under surface—anterior half of the mantle pale brown-pink; posterior half yellowish, a broad irregular reddish band immediately surrounding the whole body.

Of this remarkable species I found one specimen upon a coral block in a shallow patch about 3 feet deep on the Fiery Cross Reef, China Sea, August 4th. The animal crawled freely, but did not float on its back while under observation. When turned over on its back it at once regained its natural position. The posterior portion of the mantle varied in form from various spontaneous degrees of constriction; sometimes it appeared to be nearly of an oval form, at others it resembled a *Tethys* in shape.

Subsequently I obtained a specimen of this species on the island of Barundum, west coast of Borneo, of a gigantic size for Nudibranchiata, October 8th, upon coral blocks, between tide-marks. Of the two specimens found here, one was $6\frac{1}{2}$ inches long and $4\frac{1}{4}$ wide. In all respects they resembled the one figured, even, to a great extent, in the arrangement of the tubercles or bosses.

From a careful comparison of the description given by Kelaart* of his *Doris exanthemata* with my drawings and descriptions of this species, I have come to the conclusion that they are not identical, although evidently nearly allied. The form of the dorsal tentacles, the crescentic arrangement of the anterior tubercles, as well as several points in the colour, to say nothing of the constriction of the mantle posteriorly (which might be accidental), all point to different species; nor is the foot of the present species deeply grooved and notched in front, as is the species described by Kelaart. I have named my species from the crescentic arrangement of the tubercles on the anterior border of the notæum.

I am by no means certain, though, that the animal named *Doris cerebralis*, Gould†, may not be identical. The Nudibranch referred to, 5 inches long by $2\frac{3}{4}$ broad, is stated to have been taken from a reef in Sandalwood Bay, Feejee Islands. Comparing Dr. Couthouy's coloured sketch with my own, the two not being drawn exactly in a similar position, considerable difference is manifest; but if taken along with Dr. Gould's description in the text, it seems quite possible they may be the same species. Should further research prove this to be the case, *D. crescentica* must necessarily be regarded as a synonym.

Genus CHROMODORIS, Alder & Hancock (1855).

CHROMODORIS IRIS, Coll., n. sp. (Plate IX. figs. 9-14.)

Length $2\frac{1}{4}$ inches. *Body* elongated, slightly tuberculated in profile, presenting two rounded elevations, with depression between. *Mantle* scanty, disclosing the foot on either side and posteriorly; much waved at the margin. Anteriorly there is a thin-lobed fimbriated veil, and posteriorly it is also divided into three lobes immediately behind the branchial tufts. *Dorsal tentacles* slender, conical, and finely lamellated, situated upon slight elevations of the mantle. *Branchiæ* composed of eight or ten simple leaflets arranged in a cup-shaped form like the petals of a flower; the leaflets delicately pinnate. *Foot* large, projecting about $\frac{3}{4}$ inch behind the mantle, and tapering to a point posteriorly.

* Ann. & Mag. Nat. Hist. 3rd ser. vol. iii. p. 300 (1859).

† U. S. Exploring Expedition, Mollusca and Shells, Text, 1852, p. 298, and Atlas, 1856, pl. xxiii. figs. 393 a-c, and Abraham, P. Z. S. 1877, p. 212.

Colour and general appearance.—Mantle deep blue, with a narrow edging of bright yellow, and an irregular yellow stripe on either side of the median line, or broken up into yellow spots. Large black roundish spots are scattered irregularly over the surface. The foot is of a lighter blue colour, spotted irregularly with yellow and black spots; the black ones roundish, the yellow ones forming an irregular line. Branchiæ and tentacles rich vermilion, the latter arising from tricoloured bases.

Spawn, a spiral ribbon of a pale straw-colour, deposited under observation.

Two specimens of this splendid species I obtained in a basaltic rock-pool under a large stone, at Makung, Pescadores Islands, May 12th, about midway between high- and low-water marks. In August of the same year I obtained one specimen of the same species from a reef on the shore of Labuan Island. From the beautiful combination of the three primary colours presented in this species, I have given it the name of the rainbow-goddess Iris.

Gould's *Doris smaragdina** bears a distant resemblance, but is a smaller animal, more greenish, with an indigo-blue margin and mantle, tentacles and branchiæ yellow.

Under *Chromodoris runcinata*† and *C. Semperi*‡ Dr. Rudolph Bergh has described two new species from the Philippines; but though in some points as to coloration and markings there is an approach to *C. iris*, the distinction, in absence of dorsal and marginal yellow stripes, with greyish tentacles and branchiæ and other particulars besides geographical distribution, warrants specific separation.

CHROMODORIS BULLOCKII, Coll., n. sp. (Plate IX. figs. 15-17.)

Length $2\frac{3}{4}$ inches. *Body* rather compressed, translucent. *Mantle* broad and square in front, narrowing behind, and having the sides and posterior portion of the foot uncovered. *Dorsal tentacles* $\frac{4}{10}$ inch long, slender, consisting of a cylindrical pedicle, smooth, and supporting a club-shaped, spirally laminated head. *Branchiæ* consisting of seven simple leaflets arranged in three sets, and arising from a thick retractile peduncle situated in a cylindrical sheath of the mantle, a little more than halfway from the anterior edge of the mantle to the posterior point of the foot. This peduncle gives off one leaflet in front, and two lateral branches, each of which gives rise to three leaflets. The leaflets are angular posteriorly, and edged with delicate papillæ upon the anterior aspect. *Head* concealed by the mantle, and bearing two small oral tentacles. *Foot* long and fleshy, extending nearly three fourths of an inch beyond the posterior edge of the mantle.

Colour and general appearance.—Body semitransparent. Head of a deep amethystine tint, shading behind the dorsal tentacles through paler amethyst to reddish upon the back; an opaque white edging all round the mantle. Peduncles of the tentacles and branchiæ deep amethyst; laminated portion of the tentacles and leaflets of the branchiæ deep orange-yellow. Foot pale amethyst, becoming deeper at the posterior portion, where it is as deep as at the anterior part of the mantle.

* U. S. Exploring Expedition, vol. xii. p. 296; Atlas, pl. xxii. figs. 390 a-c.

† Semper's 'Reisen im Archipel der Philippinen,' 1877, Band ii. Heft 11, p. 479, and Heft 10, pl. 53. figs. 5-12.

‡ Bergh, *op. cit. supra*, Heft 11, p. 482, pl. 55. figs. 2-7.

Of this magnificent species I dredged one specimen in 60 fathoms, off Recruit Island, North Pacific, about 150 miles N.E. of Formosa. It was quite lively, and lived several days, moving freely about, and floating foot uppermost, but never showing any tendency to leave the surface of the water. I have named it after Captain Charles Bullock, R.N., a gentleman greatly interested in these studies, and from whom I met with much assistance and courtesy.

CHROMODORIS AUREO-PURPUREA, Coll., n. sp. (Plate IX. figs. 18-22.)

Length $1\frac{1}{4}$ inch. *Body* entirely covered by the mantle, except a small portion of posterior end of the foot. *Mantle* ample, entire, smooth, broad anteriorly. In a second specimen the edge of the mantle was somewhat indented in one or two places. *Dorsal tentacles* small, club-shaped, upon cylindrical footstalk, curving backwards and outwards; the club-shaped portion finely laminated. *Branchiæ* of ten leaflets, forming a small double ring; the leaflets conical, pinnate, and diminishing in size from before backwards. *Foot* slightly projecting behind mantle. *Head* rounded in front, with two minute oral tentacles at the sides.

Colour and general appearance.—Upper surface with a general yellow tinge, and covered over with small, irregular blotches of bright yellow, of a roundish or elliptical form. Mantle edged with faint violet, and an irregular row of deep violet-shaded spots running all round upon the faint edging, both being equally distinct upon the upper and under side. The laminated portions of the tentacles dark violet, shading off at the footstalk to the colour of the mantle. Branchiæ, leaflets, and midribs deep violet at their distal ends, becoming paler below, where they merge into the colour of the mantle. Underside yellowish white, with a bright yellow spot invisible from above.

Two specimens were obtained under moderate-sized rough stones upon the inner shore of Slut Island, Haitan Straits, on the Chinese coast, near low-water mark, June 30th.

These animals were very active, moving rapidly along with a gliding motion, at which time their mantles were broad and flowing over the sides, the anterior portion somewhat square. The tentacles were in constant and graceful motion, and they also frequently floated, foot uppermost, on the surface. When at rest, however, the animal assumed a nearly round form.

Mr. Andrew Garrett* has described and figured a new species (his *Goniodoris Tryoni*), 71 millims. long, from the Society Islands (Mus. Godeffroy, Hamburgh), which suggests likeness to my *Chromodoris aureo-purpurea*. His example is mentioned as creamy white, margined with violet, and umber or tawny flesh-coloured branchial plumes and tentacles tipped with violet. The body-spots, however, are deep black ocelli surrounded with white. The branchial plume has 24 divisions, the posterior shorter than those in front, and each terminally divided. Dr. R. Bergh later † refers to Garrett's species under the designation *Chromodoris Tryoni*, and further describes and gives the anatomy of other specimens collected by Prof. Semper, these differing slightly in tint and markings. The

* Proc. Acad. Nat. Sci. Philad. 1873, p. 232, pl. iv.

† In 'Reisen im Archip. d. Philipp.' 1877, Band ii. Heft 11, p. 490, and in Journ. d. Mus. Godeffroy, 1877, Heft 14, pl. iv. figs. 12-23.

clearly defined black spots of *Chromodoris Tryoni*, as compared with the yellow blotches in *C. aureo-purpurea* and other particulars noted by Bergh, give me reason to regard that now described from the China coast as entitled to specific rank.

CHROMODORIS TUMULIFERA, Coll., n. sp. (Plate IX. figs. 23-26.)

Length $\frac{4}{5}$ inch. *Body* oblong, depressed, obtuse at either end. *Mantle* ample, covering the whole body, except the posterior portion of the foot; entire, tuberculated. *Dorsal tentacles* smooth and delicate, club-shaped, the club-shaped extremities very finely laminated, and twice as long as the cylindrical pedicle. *Branchiæ* small, consisting of nine simple leaflets, the anterior largest, and diminishing in size posteriorly, the two hindmost being rudimentary. *Head* crescentic, with two acute angles forming small tentacles, one on either side.

Colour and general appearance.—Mantle translucent yellowish white, the upper surface irregularly strewed with large, roundish, well-defined tubercles of a rich carmine colour and tumuliform profile. Round the mantle runs a broadish band of chrome-yellow, defined exteriorly, but somewhat fimbriated interiorly, leaving a narrow edging of the mantle tint all round the outside; upon this edging are two carmine spots on the anterior and two on the posterior angles of the mantle. The tentacles and *branchiæ* are of the same tint as the mantle, the latter delicately formed and difficult of observation.

One specimen of this handsome species found under a moderate-sized rough stone on the south side of Slut Island, Haitan Straits, coast of China, in June. It was a somewhat inactive animal, moving but slowly, but swimming occasionally foot uppermost on the surface.

In August of the same year, being on the island of Labuan, on the very opposite side of the China Sea, I met with this species more than once, at Pulo Pappan and Pulo Daat, two islets between Labuan and the mainland of Borneo. These specimens were about the same size as the Chinese one, but differed in that the carmine tubercles were more numerous and encroached upon the chrome border; the *branchiæ* also were more developed, and I was led to imagine that the specimen figured was a young individual.

In colouring, this animal bears some resemblance to the *Doris petechialis*, Gould*; but this latter is $2\frac{1}{2}$ inches long, $1\frac{1}{4}$ inch broad, has vermilion-coloured tentacles, pinkish *branchiæ*, a more lemon-coloured margin and partially slate-coloured dorsum, and its habitat is Honolulu, Sandwich Islands. Dr. Gould admits his drawings are somewhat imperfect, but sufficient for identification of the species.

The deep carmine spots recall the black ones of Garrett's *Chromodoris Tryoni*, l. c., but in other respects the two cannot well be confounded.

CHROMODORIS TENUIS, Coll., n. sp. (Plate IX. figs. 27-29.)

Length $\frac{3}{4}$ inch. *Body* long and slender, very attenuated when in motion. *Mantle* entire, covering the whole body, excepting the posterior portion of the foot; broad and squarish in front, and narrower from behind the tentacles backwards, bluntly pointed posteriorly. *Dorsal tentacles* short and club-shaped, laminated, the suture anterior.

* U. S. Explor. Exped. Moll. vol. xii. p. 296; Atlas, pl. 22. fig. 391.

Branchiæ small, consisting of seven small and simple leaflets arranged in a circle, the anterior leaflet somewhat larger than the others, and the posterior pair smallest. *Foot* long and narrow, slightly tubular, projecting beyond the mantle posteriorly.

Colour and general appearance.—Mantle opaque white with a slight tinge of yellow, especially on the anterior portion, edged with chrome-yellow, slightly shading off interiorly. The whole mantle is covered with minute roundish spots of carmine, irregularly distributed, absent only from the most anterior portion, the spots varying in size from mere specks to roundish definite spots. Tentacles yellowish, but not so bright as the border of the mantle; the bases whitish. *Branchiæ* pale yellow. Foot edged with chrome posteriorly, like the mantle. *Under surface* yellowish, foot and mantle with a faint edging of chrome-yellow, the carmine spots showing through at the sides of the head.

Two specimens were found on the under surface of a block of coral in a shoal patch of reef in the midst of the China Sea, named Fiery Cross Reef. It is possible the spot might be uncovered occasionally at low spring tides, but was now 3 feet under water. Notwithstanding this, however, these little creatures when captured were continually crawling out of the water and resting upon the dry edge of the vessel in which they were contained, under which circumstances they had a short and stumpy aspect. When placed in the water they were very lively and at once commenced crawling, having first stretched themselves to double their previous length, with a proportionate tenuity. While crawling they had a remarkably slender and linear appearance. They also swam freely on the surface, foot uppermost. (August.)

In most respects the *Chromodoris tenuis* agrees with the *Doris aspersa*, Gould*, save size, his specimen being $1\frac{1}{2}$ inch long by $\frac{1}{2}$ an inch broad, and its habitat Vincennes Island, Paumotu group. It may be questionable in this case whether we have specific distinction, or whether size and other slight variation may not be attributable to difference of age, sex, or geographical range. The *D. aspersa*, *D. cerebralis*, &c., given by Gould, were drawn from nature by Mr. Joseph P. Couthouy, Naturalist to the U. S. Explor. Exped., and therefore may be deemed reliably correct.

CHROMODORIS FUNEREA, Coll., n. sp. (Plate IX. figs. 30–33.)

Length $1\frac{3}{4}$ inch. *Body* simple, stout, except when actively in motion, when it becomes attenuated, obtuse in front. *Mantle* smooth and entire, having the posterior portion of the foot exposed during progression, well rounded anteriorly. *Dorsal tentacles* small, arising from a small simple sheath, laminated, with scarcely any pedicle. *Branchiæ* composed of seventeen or eighteen leaflets arranged in a convoluted form, the larger leaflets in front, the smaller behind, leaflet irregularly branched. *Head* concealed by the mantle and supporting a pair of oral tentacles.

Colour and general appearance.—Border of mantle narrowly edged with orange; general aspect of the upper surface a rich dark brown, with yellowish-white or white lines, following the direction of the border of the mantle, but in some places slightly ramifying and sometimes anastomosing. The posterior and exposed portion of the foot

* U. S. Explor. Exped. Mollusca and Shells, p. 304; and Atlas, pl. 25. figs. 399 a-c.

is bordered and streaked like the mantle. The tentacles have a white ring, sometimes two rings, round the sheaths; they are reddish above, deepening to dark brown below; rows of opaque white spots are arranged nearly regularly, parallel with the laminae; at the apex is a small whitish ring. The branchiæ are reddish, the inner side of the stems of the leaflets marbled below with brown and white; the whole branchial tuft studded like the tentacles with minute spots of opaque white, having a very beautiful appearance. The *under surface* of the foot is white, with an orange border, like the mantle; the sides of the foot striped as above, only the white lines are whiter, but less distinct, and the dark body-colour paler.

This is a remarkably handsome species. The longitudinal white striæ become widened when the animal is at rest, and very much attenuated when in progression. The branchiæ and tentacles look as though studded with little pearls. It is somewhat remarkable that these animals never floated upon the surface of the water while under observation, and if placed upon their backs always immediately turned over.

These specimens were taken upon a reef east of the island of Labuan, Borneo, and one on the adjacent islet, Pulo Pappan, in August.

CHROMODORIS ALDERI, Coll., n. sp. (Plate IX. figs. 34-37.)

Length 2 inches. *Mantle* capacious, covering the head, squarish in front, slightly emarginated. *Dorsal tentacles* very small, and placed upon very short pedicles, finely laminated, having the commissure anterior; they have precisely the appearance of small cochineal insects. *Branchiæ* of ten simple four-sided angular leaflets, some of them bifurcating near the apex, arranged in an imperfect circle, curving outwards and surrounding the anal orifice. *Head* with two small white oral tentacles. *Foot* somewhat tubular posteriorly, and extending about $\frac{1}{4}$ inch beyond the mantle.

Colour and general appearance.—General body-colour an opaque yellowish white or cream-colour, a border of bright orange running all round the edge of the mantle and projecting portion of the foot. Back beautifully marbled with reddish brown, an irregular row of carmine spots placed all round the marbled portion, between it and the orange border. Tentacles laminated alternately with crimson and white. Branchiæ reddish, the angles crimson. Under surface of a delicate transparent white.

A most beautiful species, slow in its movements, which were confined to crawling and floating upon its back. One specimen only, found between tide-marks in a sandstone rock-basin in Ke-lung Harbour, North Formosa, May 31st. I have named it after the late Mr. Joshua Alder, whose name will always be connected with the history of this elegant order of Mollusca.

Genus ALBANIA, Collingwood, nov. gen. (1878).

Corpus depressum, molle, semipellucidum. Notæum amplissimum, undulatum et inversum. Rhinophoria flexibilia, sine vaginulis. Caput velo bilobato obsitum. Branchiæ e circa 7 foliolis, separatim retractilibus, compositæ.

Body depressed, soft, semitransparent. Notæum (mantle) ample, undulated, and turned up at the sides. Dorsal tentacles (rhinophoria) flexible, without sheaths.

Branchiæ consisting of about seven compound leaflets, each separately retractile. Head with a bilobated crenated veil.

I have named this genus after the late Mr. Albany Hancock, a gentleman so well known in connexion with the history of these animals. For euphony's sake I have so adapted the name as to make it agree with Formosa, the native island of this elegant species. The genus must be placed near *Hexabranchnus*.

ALBANIA FORMOSA, Coll., n. sp. (Plate X. figs. 1-5.)

Length 2 inches. *Body* extremely delicate, almost semitransparent. *Mantle* broad and capacious, forming, as it were, wings or fins on either side; the edges turned over the back when at rest. *Dorsal tentacles* large and rather thick, consisting of a conical, bluntly pointed, finely laminated portion, with the commissure anterior, mounted upon a cylindrical pedicle of equal length, without a sheath, non-retractile. *Branchiæ* consisting of seven compound leaflets, each having three or four or five branches, and arising from a common thick pedicle, but separately retractile, the whole forming a ring near the posterior extremity of the mantle; very delicate and almost transparent. *Head* with a bicrescentic veil, and studded round with a fringe of minute papillæ. *Foot* extending $\frac{1}{4}$ inch beyond the mantle posteriorly, somewhat rounded.

Colour and general appearance.—General tint a pale rose, darker and richer on the back, forming a vandyke pattern nearly regular on either side. Edge of the mantle opaque white, with a wide inner border of crimson, the whole studded with minute whitish translucent points, the greater or lesser abundance of which effects the gradation of colour. Laminated portion of the tentacles crimson; pedicles pale rose. Fringe of the veil orange; veil and posterior portion of the foot yellowish; under surface pale rose.

One specimen of this singular and beautiful Nudibranch was taken in a red sandstone rock-pool in Ke-lung Harbour, North Formosa, May 31st. When placed in a vessel of sea-water it commenced swimming freely with a *vertical* vermicular movement and extreme grace. The mantle was spread out wide, the tentacles thrown back, like ears, and the anterior and posterior extremities of the body thrown upward till they met above, then partially thrown back, the mantle waving in a vermicular manner from anterior to posterior edge. It continued swimming like this for a considerable time. It did not crawl about like other Nudibranchs, but when not swimming remained in a more or less contracted form, the mantle constantly changing its aspect. When, however, I turned it over, it floated on its back like its congeners. I have called the species *formosa*, both from its beauty and the island of which it is a native.

Family POLYCERIDÆ, Alder & Hancock (1855).

Genus TRIOPA, Johnston (1838).

TRIOPA PRINCIPIS-WALLIÆ, Coll., n. sp. (Plate X. figs. 6-11.)

Length $\frac{4}{5}$ inch. *Body* slender, narrow, rounded in front, obtusely pointed behind. *Mantle* scanty, just covering the body, smooth, and furnished with papillæ round the anterior portion and along the sides. The anterior papillæ, eight in number, arranged

in a crescentic form as a veil; the lateral papillæ five on either side. These papillæ consist each of a conical stem with pinnæ, the lateral papillæ being about twice the length of those round the head. *Dorsal tentacles* club-shaped, the upper half swollen and finely laminated, upon a cylindrical pedicle. *Branchiæ* of five leaflets arranged round the anal orifice upon an elevated portion of the body; the anterior leaflet much the largest, and the two posterior minute. Each leaflet simply pinnatifid, and feather-like in general aspect.

Colour and general appearance.—Body of a general pale orange-yellow, darker between the tentacles and along the median line, spotted irregularly with minute dots of orange. Upper half of the papillæ with larger spots of orange. Pinnæ translucent yellowish. Branchiæ pale orange-yellow. Tentacles spotted with orange about the central parts of the laminated portion.

One specimen found beneath stones near low-water mark, on Slut Island, Haitan Straits, coast of China, June 30th. It was rather sluggish in its habits, but swam on the surface, foot uppermost. I have named the species from the resemblance of the branchiæ to the well-known crest of the Prince of Wales.

Genus TREVELYANA, Kelaart (1858)*.

TREVELYANA FELIS, Coll., n. sp. (Plate X. figs. 12–14, immature.)

Length $\frac{1}{8}$ inch. *Body* simple, smooth, of a uniform scarlet colour, the intestines showing darker upon the dorsal surface. *Mantle* indistinct, covering the entire body. *Dorsal tentacles* two, perfectly simple, conical, scarlet. *Branchiæ*, none visible.

Several specimens of this little animal occurred upon a stone in a tide-pool on the basaltic shore of Makung, Island of Pong-hou, Pescadores, in May; and in June, six weeks later, I also found it on Slut Island, Haitan Straits. It was very active and flexible, assuming at different times the most singular forms, resembling in turn a fox, a rabbit, a cat, according to its different attitudes. It swims like the other nudibranchs on the surface of the water, foot uppermost. I cannot speak with great certainty of it, but believe it to be an immature species of *Trevelyana*, the trivial name being added to call other observers' attention to it. *Qu.* In what respects does it stand to the *T. (Stenodoris) rubra*, Pease†, from the Pacific?

Family DORIDOPSISIDÆ, Alder and Hancock (1864).

Genus DORIDOPSIS ‡, Alder and Hancock (1864).

DORIDOPSIS ARBORESCENS, Coll., n. sp. (Plate X. figs. 15–17.)

Length $1\frac{3}{4}$ inch. *Mantle* capacious, enveloping the body, and overlapping the foot laterally and anteriorly; the edges deeply cut and puckered all round; smooth and

* *Trevelyana*, Kel. Journ. Asiatic Soc., and Ann. & Mag. Nat. Hist. 3rd ser. (1858) vol. i. p. 257. Messrs. Alder and Hancock, Trans. Zool. Soc. vol. v. p. 132 (footnote) suggest that "this genus may possibly be synonymous with the *Gymnodoris* of Stimpson, Proceed. Philad. Acad. Nat. Sc. 1855."

† Amer. Journ. Conch. vol. ii. p. 206, pl. 4. fig. 2.

‡ See "Indian Nudibranchiate Mollusca," Trans. Zool. Soc. vol. v. p. 124.

velvety. *Dorsal tentacles* rather large, consisting of a thickish footstalk pointing forwards and a laminated club-shaped portion curving backwards; the whole seated within the rim of a narrow retractile sheath. *Branchiæ* very large, consisting of about seven compound ramified leaflets, radiating from around the anal aperture, and situated near the posterior edge of the mantle. The anterior leaflets (pointing forward), when fully expanded, reach nearly halfway over the back; the posterior leaflets smaller. Each leaflet finely pinnatifid, and the whole forming a beautiful star nearly an inch in diameter, concealing the posterior portion of the animal. *Foot* large, occasionally visible beyond the posterior edge of the mantle; deeply cleft posteriorly.

Colour and general appearance.—The whole of the mantle a rich deep velvety blackish brown, edged with light chestnut. The peduncles of the tentacles blackish, translucent; the laminated portion like the mantle, and tipped with chestnut; branchial leaflets dark brown, tipped with light greyish at the edges. Underside of the mantle blackish, translucent; and foot light brown, shading to chestnut along the margin.

Two specimens of this handsome Nudibranch were found among rough stones on Slut Island, Haitan Straits, coast of China, near low-water mark, June 30th.

The animals were sluggish, not moving much, nor fast; they floated readily, foot uppermost, on the surface. The mantle was so capacious that in some attitudes they appeared as broad as long; but when ordinarily crawling, the large and beautiful branchiæ were very conspicuous, occupying nearly the posterior half of the body, and concealing the posterior margin of the mantle and end of the foot, which at that time projects beyond the mantle.

Messrs. Alder and Hancock * have shown that in the case of *Doridopsis nigra* there are at least three or more varieties with gradation of tints and markings, and inhabiting the coasts of the Loochoo Islands, Madras, and Ceylon. Our species, *D. arborescens*, appears quite distinct; but nevertheless, with such tendency to variation in a form closely related, careful comparison with a series might cause a different view to be taken as to its separation or identity with species already described by other authors.

DORIDOPSIS RUBRA, Kelaart. (Plate X. fig. 18.)

Length $1\frac{4}{5}$ inch; *breadth* 1 inch. *Body* thick, sluggish, opalescent. *Mantle* capacious, thin, covering the whole body, except the posterior portion of the foot; smooth, semi-transparent, folded posteriorly during progression. *Dorsal tentacles* pyramidal, short and thick, curved laterally, the footstalks smooth, as long as the upper portions, which are swelled, pointed at the extremities, and laminated. *Branchiæ* consisting of six compound leaflets, like feathers, somewhat unequal in size, surrounding the anus, retractile. *Head* small, covered with the mantle. *Foot* left uncovered posteriorly during progression.

Colour and general appearance.—Mantle of a rich rose-colour, darker in the thicker parts of the back, and paler upon the thinner portions of the sides, marbled on the back when contracted, from corrugation of the surface. Branchiæ of the same rose-tint as

* Ind. Nudib. Moll., Trans. Zool. Soc. vol. v. p. 128.

the mantle. Dorsal tentacles of a rich rose-colour, the footstalks paler. Underside of mantle pale rose, and underside of the foot inclining to yellowish.

One specimen, found under a stone between tide-marks in Singapore harbour, immediately west of the town, in December. It was sluggish in habit, and crawled slowly, but floated upon the surface foot uppermost.

This specimen died in the vessel of water, discolouring the fluid of a pink tinge, which, however, did not appear to injure two Planariæ in the same water.

Two figures of this species occur in Sir W. Elliot's 'Madras Nudibranchs'*. One of these, with black markings on the mantle, is supposed to be the typical specimen, and one of a more pure rose-colour the variety. I am disposed to think, however, that the present description will be found typical, and that those diverging into markings are varieties.

Family PHYLLIDIADÆ, Lamarck (1809).

Genus PHYLLIDIA, Cuvier (1798).

PHYLLIDIA SPECTABILIS, Coll., n. sp. (Plate X. figs. 19-23.)

Length 2 inches; greatest breadth $\frac{3}{4}$ inch. *Body* oval, tuberculated, covered with the mantle. *Tentacles* two, short, placed near together, rather more than $\frac{1}{4}$ inch from the anterior extremity of the mantle, tapering, slightly curved, laminated, black, retractile within a simple fixed sheath, which is situated on one of the tubercles of the mantle.

Upper surface covered with numerous irregularly-shaped tubercles, arranged in groups of from one to ten or twelve, these clusters each perfectly distinct and similarly coloured. The ground of the mantle is jet-black and smooth, forming a network which ramifies among the groups of tubercles; the bases of these groups polygonal, of a pale emerald-green colour, the most elevated knobs being whitish. A narrow, black, irregular edging surrounds the dorsal surface, enclosing all the groups of tubercles, outside which is a smoother and paler, irregular, and very slightly tuberculated margin. *Under surface*—Foot greyish, oval; a small bitentaculated head in front, the tentacles immovable. A narrow cleft bisects the posterior half-inch of the foot. Mantle ample, surrounding the head and foot on all sides. At the junction of the mantle with the foot and on the under edge of the mantle is a close row of lamelliform branchiæ, small in size, the series surrounding the whole body, except the head.

This beautiful *Phyllidia*, in captivity, deposited a long, irregular, and narrow ribbon of spawn, of a whitish colour, from an aperture in the side of the body. One specimen, found under a block of coral between tide-marks on Pulo Barundum (or Marundum), west coast of Borneo.

Doubts might be expressed whether this species may not come under that named *Phyllidia pustulosa*, Cuv., *P. verruculosa*, Cuv., and *Phyllidiella pustulosa*, Bergh†. If

* Alder and Hancock, Trans. Zool. Soc. vol. v. p. 126, pl. xxxi. figs. 1 and 2.

† See Cuvier, Ann. du Mus. (1804) vol. v. p. 268, pl. xviii. A. fig. 8; Mem. p. 3, fig. 8; also Bergh, Monog. p. 511, and in Semper's Reisen im Archip. d. Philipp. Band ii. Heft 10, p. 382.

such should be the case, this Nudibranch has a wide distribution. As I cannot, however, myself regard them as identical, I prefer to give that now described a separate specific designation.

Genus *FRYERIA*, Gray (1853).

FRYERIA VARIABILIS, Coll., n. sp. (Plate X. figs. 24–28.)

Length $2\frac{1}{4}$ inches; breadth $1\frac{1}{4}$ inch. *Body* convex, elongated, thickly tuberculated. *Tentacles* two, situated $\frac{3}{8}$ of an inch from the anterior margin of the body, arising from simple sheaths, in which they are retractile; the sheaths and tentacles black, the latter being also finely laminated. *Mantle* covering the head and sides of the foot, but leaving the posterior point of the foot exposed during progression.

Colour.—The smooth ground-portion black, but supporting a number of irregularly-scattered roundish tubercles, mostly single, a few double or treble; the tubercles largest and most loosely scattered over the central dorsal region, smaller and more closely clustered along the sides. The colour of these tubercles was in one specimen pinkish, in others of a pale emerald-green. In all respects, however, they are evidently the same species. *Foot* smooth, black above where visible. *Under surface*.—Foot dark grey beneath, blackish at the sides. Head small, with two small black tentacles concealed by the mantle. Underside of the mantle blackish. A row of lamelliform branchiæ occupying the junction of the foot and mantle beneath all round the body, excepting only the head. Anus situated under the mantle on the right side, about $\frac{3}{4}$ inch from the anterior margin.

Several specimens were found under blocks of coral on the reef of Pulo Barundum, west coast of Borneo. Animal very sluggish in its movements.

Family *SCYLLÆIDÆ*, Alder & Hancock (1855).

Genus *SCYLLÆA*, Linnæus (1758).

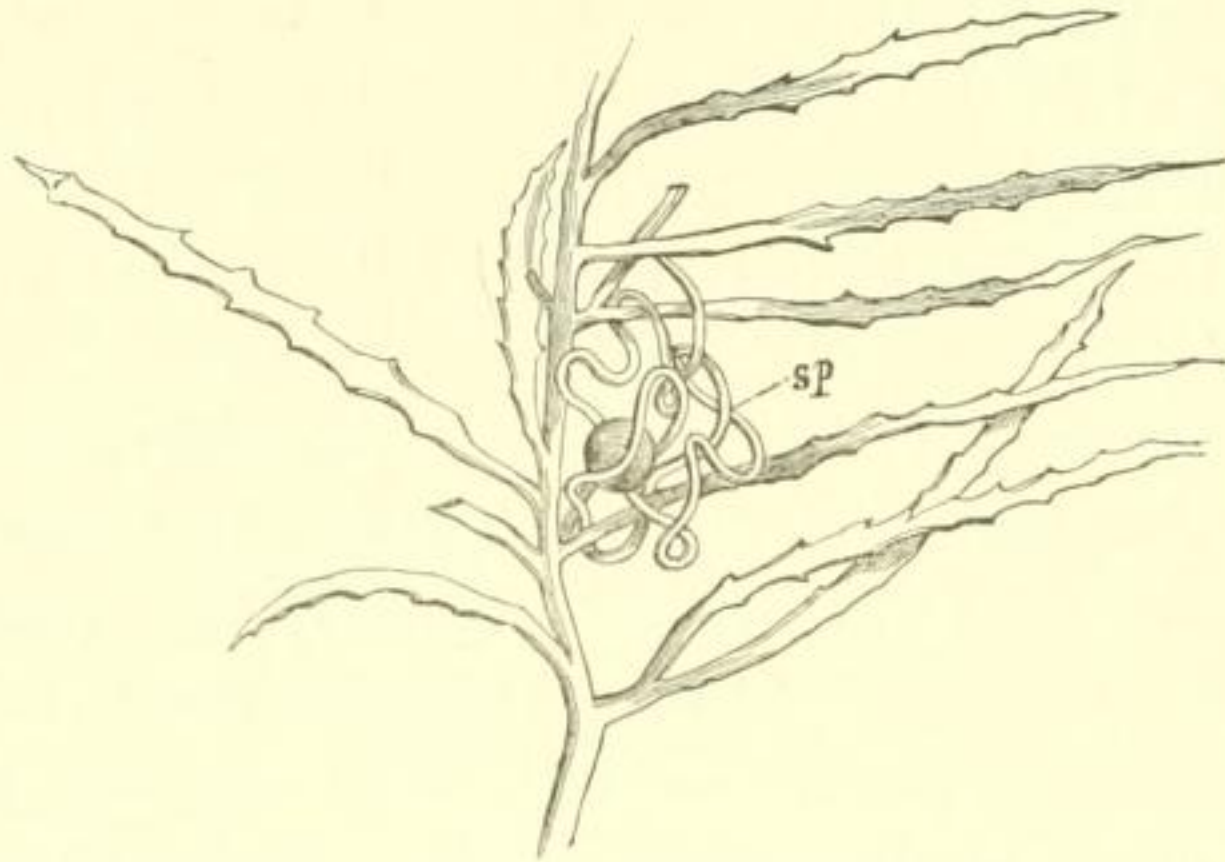
SCYLLÆA PELAGICA, Linn. (Plate X. figs. 29–33.)

Length $1\frac{1}{2}$ inch (average). *Body* smooth, opalescent, narrow, compressed, with two broad tentacle-sheaths and two pairs of broad branchial lobes; the posterior portion raised to a crest, wedge-shaped, and notched like a cock's comb. *Dorsal tentacles* two, lamellated, in broad and somewhat clavate compressed sheaths, straight in front and finely serrated and crenated behind, with smooth and entire broad footstalks, the apex somewhat flattened and depressed. *Branchial lobes* broad, flat, in two pairs, situated on broad entire peduncles of nearly equal size; externally smooth, internally having a number of very delicate tree-like tufts irregularly scattered, of varying size, the large below and the smaller above. *Head* with a projecting crenated veil. *Foot* narrow, the edges folding over inwardly, but when the animal crawls on glass a small portion of the foot appears flattened out for the purpose.

Colour and general appearance.—General colour yellowish brown, darker along the edges of the papillary prominences and the tentacles and their connecting ridges, inter-

spersed here and there with minute white spots. Tufts on papillæ light brown. On either side of the body is a row of opaque white projecting tubercles; and between them and the papillary prolongations are some minute turquoise spots, three or four in number. The body generally is opalescent, with faint brown markings.

Spawn, a loose straw-coloured coil, entwining the leaves and berries of *Sargassum bacciferum*, and imbedded in a mass of transparent jelly.



Portion of a branch of *Sargassum* bearing a floating bladder, and with (*sp*) a coil of spawn of *Scyllæa pelagica* attached. Nat. size.

Considerable numbers of this pelagic species were found upon the *Sargassum* floating in lat. 25° N., long. 37° W., most pieces of the weed having one or more specimens. The animals were in a constant movement of contraction and writhing. In the water they swam freely, moving the head and tail from side to side alternately, so as nearly to touch one another; and when thus swimming were always, owing to the weight of the papillary prolongations and tentacles, back downward, and bore a grotesque resemblance to a four-legged animal with long ears (such as a Skye terrier). They would also attach themselves to the surface of the vessel by a sort of sucker formed by a small cylindrical portion of the foot (fig. 33, Pl. X.). There is no figure of this species in Alder and Hancock's work, nor do I know of any good figure. The present ones are from life, and fig. 30, Pl. X. represents its peculiar falling aspect, as mentioned above.

Alder and Hancock (T. Z. S. v. p. 136) have described a *Scyllæa marmorata* and *S. viridis* as new species, the former of which, save in size, differs little, if at all, from the Linnean species *S. pelagica*; but they admit that it is difficult to decide as to what constitute specific differences in the genus. In Dr. Bergh's Monograph of *Scyllæa** there is an excellent *résumé* of the subject, and a number of varieties of *S. pelagica* described and referred to, as well as a good account of the anatomy of the genus given.

Family DENDRONOTIDÆ, Alder & Hancock (1855).

Genus BORNELLA, Gray (1847).

BORNELLA MARMORATA, Coll., n. sp. (Plate X. figs. 34-38.)

Body long and slender, with seven pairs of papillæ. *Head* small, with a veil of five

* Semper's Reisen, *l. c.*, Band ii. Heft 8, p. 315 *et seq.*

or six radiating papillæ on either side, deeply cleft in the middle. *Dorsal tentacles* situated upon thickish footstalks, from which spring one large branch (the uppermost) and four shorter branches, forming altogether a radiating sheath, in the midst of which is a slender laminated tentacle. *Marginal processes* in seven pairs, the anterior longest and most compressed, the posterior pair small and rudimentary. Each pair of papillæ varies in size and development: the first pair consists of three elongated bodies of the size of the largest branch in the radiating sheath of the tentacles; the second pair has two such; the third and fourth also, but smaller; the last pair has but one. On the inner side of each of these bundles is a finely ramified dendriform branchia, not so large as the processes, the processes and branchia all arising from a common stem. *Foot* long, and pointed behind. *Anus* situated on the right side, between the dorsal tentacles and first pair of papillæ.

Colour and general appearance.—Body beautifully marbled all over with streaks of vermilion, strongest on the back, and more delicate and faint on the sides of the foot. Papillæ tipped with vermilion, and also the radiating projections of the veil, but neither are marbled like the body. Dorsal tentacle-branches also tipped with vermilion, and the largest branch marbled.

Three specimens of this beautiful species rewarded a brief search among the rocks near the landing-place at Aden in March. They were under stones, not far from high-water mark. The animals were extremely active, often swimming with a lateral vermicular movement, at which time the body was laterally compressed. They were seldom quite at rest.

I here specifically distinguish this form, although previously* I inclined to regard it as the *B. digitata*, Adams †; but a more careful examination since discloses points of difference which had previously escaped my notice. *B. digitata* was first found at Sunda on floating fuci, but it has since been got on the Madras coast by Sir Walter Elliot ‡, and in the Philippines by Professor Semper §. Bergh § enumerates six species belonging to the genus, and he adds very considerably to the account of the anatomy furnished by our countrymen Messrs. Alder and Hancock ||.

DESCRIPTION OF THE PLATES.

The line beside certain of the figures denotes the natural size of the animal. The separate figures of tentacles, branchial tufts, and other parts are all considerably enlarged.

PLATE IX.

Figs. 1-5. *Doris pecten*, Coll., n. sp.: 1, general view of animal, its dorsum; 2, under surface of same; 3, a dorsal tentacle (rhizophore); 4, a branchial tuft; 5, outline of the animal at rest.

* "Observations on the Distribution of some Species of Nudibranchiate Mollusca in the China Sea," Ann. & Mag. Nat. Hist. 1868, ser. 4, vol. i. p. 91; and 'A Naturalist's Rambles in the China Seas' (London, 1868), p. 9.

† Voyage of the 'Samarang,' p. 67, pl. xix. fig. 1.

‡ Trans. Zool. Soc. vol. v. p. 131.

§ Reisen im Archip. d. Philipp. Band ii. Heft 7, p. 301.

|| *Loc. cit.* T. Z. S. *suprà*.

- Figs. 6-8. *Doris crescentica*, Coll., n. sp. : 6, general view of animal, its dorsum (nat. size) ; 7, a dorsal tentacle and its sheath, anterior view ; 8, a branchial tuft (or branch). Sketch taken from specimen obtained at the island of Barundum, west coast of Borneo.
- Figs. 9-14. *Chromodoris iris*, Coll., n. sp. : 9, lateral view of animal in progression, the branchiæ partly closed ; 10, another view of the same, with the branchiæ fully expanded ; 11, a side view of the animal contracted and at rest ; 12, a lamina of the branchiæ ; 13, a dorsal tentacle ; 14, the spawn.
- Figs. 15-17. *Chromodoris Bullockii*, Coll., n. sp. : 15, the animal in progression ; 16, the underside of the head ; 17, plan in outline of the branchial laminae.
- Figs. 18-22. *Chromodoris aureo-purpurea*, Coll., n. sp. : 18, dorsal surface of the animal in progression ; 19, outline from above of the animal at rest ; 20, diagram of the mode of arrangement of the branchiæ ; 21, a branchial lamina ; 22, a dorsal tentacle.
- Figs. 23-26. *Chromodoris tumulifera*, Coll., n. sp. : 23, dorsal surface of the animal in progression ; 24, a tubercle of the dorsum seen in profile ; 25, a branchial lamina ; 26, a dorsal tentacle.
- Figs. 27-29. *Chromodoris tenuis*, Coll., n. sp. ; 27, upper surface of the animal in progression ; 28, the under surface of the animal as seen swimming with foot ; 29, anterior view of a dorsal tentacle.
- Figs. 30-33. *Chromodoris funerea*, Coll., n. sp. : 30, animal in progression as seen from above ; 31, a dorsal tentacle ; 32, a branchial tuft ; 33, an outline plan of the branchiæ.
- Figs. 34-37. *Chromodoris Alderi*, Coll., n. sp. : 34, dorsal surface of the animal in progression ; 35, laminae of the branchiæ ; 36, a dorsal tentacle ; 37, the suctorial mouth.

PLATE X.

- Figs. 1-5. *Albania formosa*, Coll., nov. gen. et sp. : 1, animal in movement as seen swimming, its upper surface ; 2, the veil ; 3, a tuft of the branchiæ ; 4, a dorsal tentacle ; 5, an outline of the under surface.
- Figs. 6-11. *Triopa Principis-Wallia*, Coll., n. sp. : 6, animal in progression, upper surface, the branchiæ expanded ; 7, side view of the animal at rest ; 8, a papilla of the dorsum ; 9, a papilla of the head ; 10, a dorsal tentacle ; 11, outline of a branchial twig.
- Figs. 12-14. *Trevelyana felis*, Coll., n. sp., immature : 12, animal in progression ; 13, animal as contracted at rest ; 14, natural size.
- Figs. 15-17. *Doridopsis arborescens*, Coll., n. sp. : 15, the animal in progression ; 16, outline of the under surface of the body ; 17, a branchial tuft.
- Fig. 18. *Doridopsis rubra*, Kel. : diagram of the branchiæ.
- Figs. 19-23. *Phyllidia spectabilis*, Coll., n. sp. : 19, upper surface of the animal ; 20, outline of the under surface of the same ; 21, a dorsal tentacle and sheath ; 22, diagram portion of branchiæ ; 23, the spawn.
- Figs. 24-28. *Freyeria variabilis*, Coll., n. sp. : 24, animal, its upper surface ; 25, diagram of the under and lateral surfaces, showing position of branchiæ ; 26, an under view of the head ; 27, a dorsal tentacle ; 28, sketch portion of the branchiæ.
- Figs. 29-33. *Scyllæa pelagica*, Linn. : 29, dorsal surface of the animal ; 30, position which the animal assumes in falling through the water ; 31, a dorsal tentacle sheath ; 32, branchial tuft covering the inner surface of the body ; 33, the foot from below.
- Figs. 34-38. *Bornella marmorata*, Coll., n. sp. : 34, outline sketch of the head ; 35, a dorsal tentacle ; 36, the veil ; 37, a branchial lobe ; 38, markings on the mantle.



