THE ANNALS

AND

MAGAZINE OF NATURAL HISTORY.

No. 120. NOVEMBER 1846.

XXIX.—*Notices of some new and rare British species of Naked Mollusca.* By Joshua Alder and Albany Hancock *.

[With a Plate.]

1. *Description of a small Mollusk belonging to the order* Inferobranchiata (Pl. IV. figs. 1, 2, 3).

In the month of May 1845 we found on the shores of Torbay a very minute molluscous animal of a peculiar appearance, which we had not before met with. It was feeding upon a small green conferva in pools near high-water mark, and was only discernible to the naked eye as a small black spot. On taking a piece of the conferva home, and placing it in a glass of sea-water, two or three of these little creatures crept out of their ambush, and were found on the sides of the glass, or swimming inverted upon the top of the water. On applying a lens we were immediately struck with the similarity of their appearance to the animals figured by M. de Quatrefages in the 'Annales des Sciences Naturelles,' under the generic names of *Pelta* and *Chalidis*, and placed as the lowest forms of his new order *Phlebenterata*. As these were the genera upon which that naturalist founded his theory of extreme degradation from the typical form in the Mollusca, we immediately saw that our little animal must prove interesting in that point of view, and deserving of a careful examination. A slight inspection of its external characters, however, was sufficient to show that our captive at least did not partake of that degradation from the Molluscan type which M. de Quatrefages describes in his species, and that, tentacles excepted, it possessed all the external organs usually found in the class *Gasteropoda*. The branchiæ formed three small plumes, placed under the posterior part of the cloak a little to the right of a central tubular anus; thus bringing the species within the order *Inferobranchiata* of Cuvier. Its characters are as follows:—

Body limaciform, elongated, smooth, about two lines long.

* Read at the Meeting of the British Association, Sept. 14, 1846; and communicated by the authors.

Cloak a little indented in front, nearly straight at the sides, and slightly rounded behind: the general colour is black, sprinkled with minute points of brown, but the front part of the cloak corresponding to the head is buffish fawn-coloured towards the sides, and black in the centre only. On this part are placed two largish eyes, surrounded by a pale ring. Behind the eyes and at the termination of the fawn-coloured part, a curved line of small white spots crosses the cloak, giving the animal the appearance of having the head detached from the back; but this is in appearance only, the surface of the cloak being continuous. A suboval fawn-coloured patch, also bordered with white spots, terminates the cloak behind. Under the posterior margin of the cloak in the medial line is situated the anus, and close to it on the right side are three small, slightly pinnate branchial plumes, generally projecting a little beyond the cloak. The tail extends about one-fourth the length of the body beyond this, and terminates in an obtuse point. *Foot* yellowish, tinged with brown or black, and with a few opake white spots. It is rounded in front and does not extend so far forward as the cloak: its sides are nearly parallel, broader than the cloak and usually folded up towards it. Organs of generation on the right side.

The head and shoulders are clothed with large vibratile cilia, the action of which could be observed with a powerful pocket-lens: the sides of the foot are also ciliated as well as the back. A regular pulsation was observed through the cloak, confined to a small portion of the back a little in advance of the branchial plumes,—the usual position of the heart,—from which we inferred the presence of that organ. The pulsations were fifty to sixty in a minute. As we had the opportunity of examining only one specimen microscopically, we were not able to make out the whole of the internal anatomy. The nervous ganglions had much the general appearance of those of the Nudibranchs; the eyes had a lens, and were regularly formed; the auditory capsules were closely attached to the ganglions, and contained one large otolithe each. The tongue was strap-shaped and covered with spines; and a little behind it was a curious dental apparatus, similar to what is described by M. de Quatrefages in the stomach of his genus *Pelta*, and apparently constituting a kind of gizzard. It consisted of four portions, each bearing six denticulated teeth. We cannot speak with certainty respecting the biliary organ, though from the manner the creature slipped when pressed between the plates of the compressor, we have little doubt that it possessed a firm and bulky liver. The other viscera were not made out.

On comparing our animal with the genus *Pelta*, we find the resemblance of external form so great as almost to amount to identity. The head in that genus, however, is described to have

two lobes, which meet in the medial line behind. This is not exactly the case with ours, but the front is very variable in outline, according to the will or position of the animal; and as it is a little sinuated in the centre, it frequently assumes a bilobed appearance, and the line of white spots mentioned above gives an apparent continuation of the outline of the head across the medial line, similar to what is represented in M. de Quatrefages' figure. The form of the cloak and the dark line passing from it to the tail are the same in each. On turning to the internal characters we find the same peculiar gizzard, or dental armature of the stomach, as described in the French species, and some of the other parts are not very dissimilar. But M. de Quatrefages states that his genus *Pelta* has neither branchiæ, heart nor anus, thus reducing it to a level with the inferior zoophytes. We must confess that we have always looked upon this extreme degradation of the Molluscan type with great suspicion, and the discovery of this species has tended not a little to strengthen our conviction that M. de Quatrefages' views are founded upon imperfect observations. We cannot indeed prove that our mollusk belongs to the same genus as the *Pelta ornata*, but sufficient has been stated to raise a presumption that it does so; and considering the great difficulty of examining these minute objects anatomically, the inability to detect an obscure organ must not be hastily taken as a proof of its non-existence. Indeed in one or two of the smaller specimens of our mollusk, we were ourselves unable to detect either branchial plumes or anal aperture. The latter we have no doubt existed; but with regard to the former, we think it probable that these animals in a young state undergo a progressive development, and that it is not until they have arrived at maturity that the branchial organs are fully developed, respiration in the meantime being carried on chiefly through the ciliated surface of the body.

There is yet another mollusk to which our species bears a very strong resemblance,—the *Limapontia nigra* of Dr. Johnston, described in Loudon's Magazine of Natural History, vol. ix. p. 79. The figure there given is a pretty fair representation of our animal, and the colour appears to be the same. Dr. Johnston was unable to detect any branchiæ, and the cloak, though mentioned as distinct from the foot, is not so represented in the figure. It is possible, however, that the species may turn out to be identical.

Were we inclined to construe generic characters rigorously, we should be quite justified in establishing a new genus for an animal so differently organized as we have shown this to be; but believing as we do that we see in our little mollusk the representative of two genera already described by naturalists, though, camelion-like, when again produced it turns out to be something different from what either party had supposed, we shall leave it

for the present to the decision of other umpires, only premising, that should our suspicions prove correct, the genus *Limapontia* of Johnston will take precedence of the *Pelta* of Quatrefages.

2. *Descriptions of some new species of* Nudibranchiata.

Nearly the whole of the species here described were obtained on an excursion to the Isle of Arran in May and June last. Among them is a second species of our new genus *Eumenis*, which, having been founded on a single individual, may by some have been considered to be imperfectly established. It is satisfactory therefore to have obtained another species, sufficiently distinct from that found in Torbay last year, yet at the same time confirming the characters we had previously given to the genus. Unfortunately in this instance again we only procured a single specimen.

Besides the Nudibranchs described below, we met with some other rare species, particularly the *Ægires punctilucens*, hitherto only claiming a place in the British fauna from a specimen found on the south coast of Ireland by Professor Allman. Several specimens of this curious and beautiful mollusk were found among the rocks at Ardrossan on the Ayrshire coast, and on the shores of the Isle of Arran. It would thus appear to be diffused over the estuary of the Clyde, and this circumstance, together with some occasional variation in its colour, induces us to think that the *Doris Maura*, found by Professor E. Forbes on Devar Island, near Campbeltown, will prove to be a variety of this species. One of the most plentiful species of *Eolis* on the western coast of Scotland is the *E. Drummondi* of Mr. Thompson, first discovered by Dr. Drummond in Belfast Lough. *Eolis alba*, hitherto considered a rare species, was not uncommon in the same localities. Some curious varieties occurred, especially one with the branchial papillæ of a brown colour and a few brown markings on the body, which, had we not found intermediate varieties, might almost have induced us to think it distinct. Some fine specimens of *Goniodoris castanea*, not the least interesting of our recent acquisitions, were procured at Saltcoats by Mr. David Landsborough, jun., to whose kind assistance we are also indebted for two of the new species of *Eolis* described below. Two specimens of *Doris flammea* and several of *D. Johnstoni* were found in Lamlash Bay.

Doris planata.—Body elliptical, much-depressed. *Cloak* extending much beyond the foot, thickly covered with obtuse warty tubercles, mostly minute, but of very unequal sizes, the largest ones being arranged at irregular intervals along each side of the back. Colour reddish brown, interspersed with dull lemon-yellow and purple-brown; the whole sprinkled with minute dark brown spots. A few irregular patches of dull yellow run down

each side. *Dorsal tentacles* stout, subclavate, yellowish, mottled with dark brown; laminæ twelve or thirteen. *Branchiæ* very small, retractile within a cavity; they consist of seven imperfectly bipinnate plumes pointed at the top and strongly blotched with opake yellowish white and dark brown. *Head* indistinct, with long linear oral tentacles. *Foot* deep lemon-coloured, grooved and rounded in front, with the upper lamina notched in the centre. Length nearly an inch.

We found one specimen of this new *Doris* inside an old shell of *Pecten opercularis* dredged in Lamlash Bay. It is very unlike any of the other British species.

Doris sparsa.—*Body* ovate, much-depressed. *Cloak* of an obscure pale yellow, with a few reddish brown freckles and distant spiculose tubercles. *Dorsal tentacles* slightly conical, with eight or nine broad distant laminæ, blotched with olive-brown; the margins of the cavities furnished with three or four tubercular points. *Branchiæ* very small, colourless, consisting of nine pinnate plumes arranged in the shape of a horse-shoe. *Head* with a large semicircular veil. *Foot* nearly as broad as the cloak, colourless; the front slightly bilobed. Length half an inch.

Found on *Cellepora pumicosa* from deep water, Cullercoats. It is allied to *D. depressa* and *D. pusilla*.

Eumenis flavida.—*Body* quadrilateral, pale lemon-yellow above, white beneath. *Dorsal tentacles* clavate and laminated; the sheaths set round the top with about six tubercles, the outside ones largest, each having a ring of fawn-colour. *Veil* very small, with about four tubercular points. *Branchiæ* papillose, mostly short, set in a waved line on the sides of the back, three on each side being larger than the rest and nearly linear; they are all ringed with fawn-colour. The branchiæ approach very near to the tail. Sides of the body with a few pale yellow markings. *Foot* nearly linear, transparent white, slightly tinged with purple brown at the margin; it is slit along the front and produced into tentacular points at the sides. Length about a quarter of an inch.

Dredged on a small coralline in Lamlash Bay.

Eolis Glotensis.—*Body* pale greenish-yellow. *Dorsal tentacles* of the same colour as the body, rather long, linear, smooth and thickened towards the top. *Oral tentacles* about two-thirds the length of the dorsal pair, and of a similar form and colour, set on the upper side of the lips: outline of the head semicircular. *Branchiæ* rather short and thick; their central vessel of a dark bottle-green, approaching to black, the apices deep orange-yellow. They are set in eight or nine transverse rows, three to five in each row; the first three rows are close together. *Foot* transparent white, the front notched in the middle and the angles slightly produced and rounded. Length four-tenths of an inch.

Dredged in Lamlash Bay upon *Pecten opercularis*.

Eolis lineata.—*Body* slender, transparent white, with three opake white lines running from head to tail; viz. one on the back bifurcating into the oral tentacles, and one on each side of the body below the papillæ. *Dorsal tentacles* rather long, linear, transparent white, with an opake white line down the back of each. *Oral tentacles* about the same length as the dorsal ones, linear, and swelling a little at the base. *Branchiæ* rose-coloured, with a line of opake white in front of each, terminating in a ring at the top. They are nearly linear, tapering a little above, and set in about four ill-defined clusters on each side of the back; the first clusters contain twelve to fourteen papillæ each, the rest fewer. *Foot* slender, with the front angles produced into short tentacular processes. Length upwards of a quarter of an inch.

Discovered by Mr. D. Landsborough, jun., among the rocks at Saltcoats, Ayrshire.

Eolis Landsbergii.—*Body* very slender, of a beautiful violet or amethyst colour. *Dorsal tentacles* slender, linear, violet tipped with white. *Oral tentacles* a little longer than the dorsal pair, and of the same colour. *Branchiæ* orange-red, the sheaths violet, with a ring of white at the apices; elliptical, short and rather stout, arranged in five or six clumps; the first containing eight to twelve papillæ, the second six to nine, the others not so many. Foot very narrow, finely pointed behind, arched in front, and with the lateral angles not much produced. Length rather more than a quarter of an inch.

Also found by Mr. D. Landsborough at Saltcoats.

EXPLANATION OF PLATE IV.

Figs. 1, 2, 3. Different views of the *Limapontia* taken at Torbay.
Fig. 4. Enlarged view of the anus.
Fig. 5. Enlarged view of branchia.
Fig. 6. A portion of the gizzard exhibiting the teeth.
Fig. 7. Auditory capsule and otolithe.

XXX.—*Notices in connexion with the Natural History of Corfu and its vicinity.* By Captain Portlock, Royal Engineers, F.R.S.*

An insular position must in most cases render it difficult to determine the fauna or the flora of a country in respect to their actual limits, and especially the fauna, as the slightest variation in the periodical directions of the currents, whether aërial or marine, may lead to the appearance of new objects both of the vegetable and animal kingdoms.

In the 12th volume of 'Annals of Natural History' is printed a valuable paper by Capt. Drummond, 42nd R.H. regiment, with

* Read at the Meeting of the British Association, Sept. 14th, 1846.

Alder, Joshua and Hancock, Albany. 1846. "XXIX.—Notices of some new and rare British species of naked Mollusca." *The Annals and magazine of natural history; zoology, botany, and geology* 18, 289–294. https://doi.org/10.1080/037454809496586.

View This Item Online: https://www.biodiversitylibrary.org/item/19556
DOI: https://doi.org/10.1080/037454809496586
Permalink: https://www.biodiversitylibrary.org/partpdf/23269

Holding Institution
Natural History Museum Library, London

Sponsored by
Natural History Museum Library, London

Copyright & Reuse
Copyright Status: Public domain. The BHL considers that this work is no longer under copyright protection.

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at https://www.biodiversitylibrary.org.

This file was generated 25 July 2025 at 07:23 UTC