

tex broad; front slightly impressed: eyes of moderate size, not prominent: ocelli disposed in a triangle on the vertex: antennæ slender, subclavate, inserted near the mouth, shorter than the thorax; first joint long, slender, slightly curved; second joint cyathiform; third, fourth and fifth joints equal in size; club 2-jointed, conical, acuminate, longer than the fifth joint: thorax elliptical: prothorax transverse, very short: scutum of the mesothorax broad; sutures of the parapsides distinct; axillæ not complete; scutellum obconic: metathorax transverse, very short: propodeon large, obconic, declining, excavated lengthwise: podeon very short: abdomen oval, smooth, depressed above, keeled beneath, much shorter and rather broader than the thorax; the disc purple; metapodeon occupying about one-third of the dorsum; octoon and following segments to the telum transverse, short, nearly equal in size: legs green, slender; trochanters and protibiæ piceous; knees fulvous; mesotarsi and metatarsi yellow, their tips piceous: wings limpid; nervures pale yellow; humerus rather short; ulna longer than the humerus; radius very short; cubitus rather longer than the radius; stigma very small.

Alten, Finmark.

LII.—*Notice of some additions to the British Fauna discovered by ROBERT MACANDREW, Esq., during the year 1844.* By Professor EDWARD FORBES of King's College, London.

[With a Plate.]

AMONG the many additions to the British Fauna laid before the Natural History Section of the British Association at York, some of the most interesting were exhibited by Mr. MacAndrew of Liverpool, who, though he has comparatively lately joined the ranks of Natural History, promises to do good service to British Marine Zoology. His researches have hitherto been conducted chiefly on the western coasts, especially among the Hebrides, where there is doubtless a fine field for discovery as yet but partially explored. He has entrusted to me the description of the following animals, which appear to be new to the natural history of our country.

MOLLUSCA.

1. *Emarginula crassa*, Sowerby, Min. Con. t. 33.

This is the largest European species of its genus and the most beautiful. Hitherto it has been noticed only as fossil.

The shell is ovate, about twice as long as high; the apex is subcentral and acute; the upper surface is sculptured by about forty radiating fasciculated ribs, each composed of four or five smaller ones, reticulated by close furrows of growth. The notch is broad and occupies about one-fourth of the fissural ridge, which is arched, slightly elevated, longitudinally striated and regularly and closely squamated; the internal cavity is smooth, and presents an elevated ridge with a central groove running from the sides

of the notch to the apex. The inner margin is undulated and toothed, the deeper impressions marking the compound ribs, the smaller those which are simple. The colour is white. The dimensions of the largest specimen are—

Length	$1\frac{5}{12}$ inch.
Breadth	$0\frac{11}{12}$.
Height	$0\frac{7}{12}$.
Apex to anterior margin ..	$0\frac{10}{12}$.
Length of notch	$0\frac{5}{24}$.

The animal is white, and resembles that of the other *Emarginulae*. Mr. MacAndrew dredged this species in Loch Fine near East Loch Tarbet in 25 fathoms, also a single dead specimen off Skipnish near the entrance to Loch Fine. It would appear that Mr. Jeffreys had previously taken it in Loch Carron, and Mr. Alder procured it this year also on the west coast of Scotland.

As a fossil it has long been known. It occurs earliest in the coralline crag. The specimens from that deposit which I have seen are more conical and have fewer fasciculations in the ribs. In the red crag it also occurs, exactly resembling the recent examples. Mr. Lyell has found it in the pleistocene beds of Opslo near Christiania, associated with *Terebratula caput serpentis* (with which it now lives in Loch Fine). His specimens exactly resemble those obtained by Mr. MacAndrew, some of them however attaining a larger size, and being slightly broader in proportion to the length and a very little more convex in form. Their ribs are grouped in the same manner and as numerous. The inner surface of the shell is exactly similar. The sculpture is generally sharper, but this is also the case with the specimens of *Emarginula fissura* from the same locality, and depends on fossilization. The characters of the young shell, as exhibited by the apex of the fossil specimens and compared with the fossil examples of *E. fissura*, are evident and distinct, consisting in the greater length and more depressed form of the shell of *E. crassa*, the obtuseness of the apex, the manner in which the ribs are grouped, and the greater proximity of the striæ between them; also the greater breadth of the fissural groove and the consequent proportions of the slit. I mention these differences because Dr. Beck told Mr. Lyell that he regarded the two species as one. The *Emarginula crassa* would appear to be still living in the Scandinavian seas, as Mr. Cuming has recent specimens from Sweden.

I offer the following diagnosis as a summary of the essential characters:—

Emarginula (crassa). Testa ovata, alba, convexa, costis longitudi-

nalibus numerosis (40—43) fasciculatis, striis transversis approximatis cancellatis ; vertice subcentrali.

2. *Eulima MacAndrei*.

Eulima testa elongata, conica, recta, lævi, polita, lactea; anfractibus 10—12, angustis, planis, ultimo subcarinato; apertura angulata, subquadrata; columella recta.

Length $0\frac{7}{24}$.

Breadth of last whorl. $0\frac{2}{24}$.

Length of aperture $0\frac{1}{24}$.

This beautiful little shell differs from all its allies in the narrowness and number of its whorls. In shape it is elongated, straight and turritid; the whorls, which are ten or eleven in number, being very narrow in proportion to their length, flat, smooth, polished, and of a subpellucid white; the aperture is half the length of the body-whorl, broad and somewhat square; the pillar-lip is quite straight, and forms a marked angle to the mouth. The last whorl is subcarinated. Its nearest ally is the *Eulima Scillæ* of Scacchi, a species found fossil in the pliocene tertiaries of Sicily; but the living shell has much narrower whorls, judging from the figure of the fossil given in the second volume of Philippi's *Enumeratio*, t. 24. f. 6. It was dredged in 12 fathoms water in Loch Fine.

3. *Pleurotoma teres*, Forbes in Reeve Conch. Icon. pl. xix. fig. 161, and Report of the Cork Meeting of the British Association, p. 190.

When dredging in the channel called the Minch, midway between Skye and the mainland, in 40 fathoms water, Mr. MacAndrew procured a single specimen of a *Pleurotoma* which differs only in size (being larger) from a new species which I discovered on the coasts of Asia Minor, and which has been figured by Mr. Reeve. It is at once distinguished from all other British *Pleurotomæ* in the sculpture, the ribbing being spiral. It is a slender turritid shell of eight or nine terete, spirally ribbed whorls; the ribs are broad, rounded and smooth, the central ones having intermediate smaller ones; a broad crenated furrow runs round the summit of each whorl, bounding the suture. The ribs are about twelve on the last whorl, four or five on the others. The notch is sutural, broad and deep. The canal is long and slightly curved. The aperture is as long as the upper whorl. The apex of the spire is acute. The colour is yellowish white.

Dimensions :—Length $0\frac{1}{2}$ inch.

Breadth $0\frac{2}{12}$.

Length of last whorl $1\frac{7}{24}$.

Aperture $0\frac{5}{24}$.

4. A large *Natica*, which, if not distinct from *Natica monilifera*, has at least claims to be ranked as a marked variety of that species. It inhabits deeper water than the usual form, having been met with in various depths from 12 to 50 fathoms (off the coast of Wales). It wants the usual spots and markings of *monilifera*, has the upper margin of the whorls, especially in the older specimens, depressed or grooved, and above all is covered by an epidermis.

In other characters however it so closely resembles *N. monilifera*, that an observation of the characters of the animal (which is of great *specific* importance in this genus) will be required before we may pronounce with certainty on the specific value of the form.

Besides the above, Mr. MacAndrew has met with in the seas of the Hebrides the *Cyprina triangularis* of Montagu, the *Chemnitzia fulvocincta* (*Turritella*, sp.) of Thompson, and the *Pleurotoma Boothii* of Smith. The *Pecten Landsburgi* has also been met with by him in considerable numbers. It is the shell which Mr. Jeffreys named (but without a description) "*Pecten aculeatus*" in Sowerby's 'Malacological Magazine.' The *Pecten tigrinus* and the *P. striatus* of Muller appear to be identical with the two varieties of this species, and one of those names should be adopted for it on the ground of priority, as should Muller's *P. triradiatus* for our *obsoletus*. It is to be regretted that Mr. Jeffreys, who has been a most successful and enterprising collector of British Marine Testacea, does not make known from time to time his discoveries: *describing* such as are new, for mere names without descriptions cannot be admitted in any department of natural history, and only tend to confuse and mislead.

ECHINODERMATA.

Mr. MacAndrew has taken in the Hebrides that remarkable creature, the *Holothuria squamata* of the 'Zoologia Danica,' an animal which will probably form the type of a new genus. I have not yet had time to examine structurally the specimens which he has put into my hands, and content myself for the present with the bare announcement of this important addition to the list of British animals. In a note from Mr. Alder, that gentleman informs me that it has also been taken on the Scottish coast during this summer by Mr. Jeffreys.

ZOOPHYTA.

Pavonaria quadrangularis.

At the British Association I announced as new, under the name of *Virgularia quadrangularis*, a most remarkable Asteroid zoophyte dredged by Mr. MacAndrew on the west coast of Scotland.

I had formed my opinion from the skeleton, but from a more careful examination of a fine specimen which had been taken alive, and which Mr. MacAndrew entrusted to my care to convey to the British Museum, I have convinced myself that it is no other than the "*Pennatula quadrangularis*" of Pallas, first discovered and described by Bohadsch, and hitherto unknown in the Atlantic. It forms the type of Cuvier's genus *Pavonaria*.

The specimen in question is a slender, flexible rod, no less than 2 feet 6 inches in length, and consists of an acutely quadrangular calcareous skeleton invested with animal matter, consisting of a general integument and three series of sessile but exerted polypes arranged unilaterally, the position of the ranges corresponding to three of the angles of the stem. The animal matter in the dried state is of a yellow colour and the skeleton white. It was taken both dead and alive in 20 fathoms water off the island of Kerrera near Oban, the bottom being mud, in which it doubtless stands erect after the manner of *Virgularia*. Before a fuller description can be drawn up, specimens must be examined in the living state or preserved in fluid. In the meantime I offer the following remarks on the history of the species.

It was first described by Bohadsch in his interesting work '*De quibusdam animalibus marinis*' (1761), who states that he procured it from the fishermen at Naples, who call it "*Penna del pesce pavone*." He describes his specimen as 2 feet 10 inches in length, although broken short. He gives a rude figure taken from a living specimen. He describes the skeleton as friable, "*ex pasta veluti farinacea compactum videtur*."... "*Os hocce quadratum, candidum, membrana lutescens, falso sapore donata immediate investit, quam cutis coriacea dimidiam circiter lineam crassa undique circumdat. Inter utramque membranam in vivo animali quemdam humorem continerit, atque formam totius Pennæ cylindricam esse opinor, et quidem ex eo, quod Pennæ rubræ, &c. mortuæ et exsiccatae truncus quoque aliter configuratus sit, quam in Penna viva observetur*" (p. 112). He states that the polypes have eight white, not very prominent tentacula, and are arranged on three sides of the trunk. In 1766 Pallas gave a diagnosis of this zoophyte under the appropriate name of *Pennatula quadrangularis* in his '*Elenchus Zoophytorum*,' adding the remark, "*vidi fere bipedale*." Subsequent authors seem to have described it at second hand. Ellis gave a copy of Bohadsch's figure in the 53rd volume of the '*Philosophical Transactions*,' as "*Dr. Bohadsch's sea pen, called the pen of the peacock fish*" (t. 20. fig. 7, 8). In the work of Solander and Ellis it is recorded as *Pennatula antennina*, as also in Gmelin. Lamarck made it a species of his genus *Funiculina*, an assemblage of three dissimilar zoophytes, styling it *Funiculina tetragona*. Cuvier constituted the genus *Pavonaria*

for its reception. De Blainville adopted the genus, modifying the character as follows:—

“Animals polypiform, sessile, not retractile, provided with eight pinnated tentacula, arranged quincuncially on one side only of the posterior half of a free, regular, quadrangular and much elongated rachis.” (Actinologie, p. 516.)

This genus appears well-founded, and the species will accordingly stand as *Pavonaria quadrangularis* (sp.), Pallas.

In Loch Fine Mr. MacAndrew dredged a fine specimen of the remarkable and rare zoophyte known to British naturalists as “*Zoanthus Couchii*.” It has not hitherto, as far as I am aware, been noticed on the Scottish coasts.

All the above-mentioned animals were exhibited to the Natural History Section at York. It is very desirable, since most of the naturalists engaged in the investigation of the indigenous fauna and flora are members of the British Association, that from year to year new and rare forms of British animals and plants should be brought forward at the annual meetings of that body, and so be rendered familiar to many who might not otherwise have an opportunity of examining them. The chief interest of the Section will always depend on the meeting of the practical investigators of the zoology and botany of the British Islands, and of the statistics of natural history, with those naturalists whose attention is directed to the philosophy of the science and to the investigation of structural and physiological questions. This has been the character of the Section during the last two meetings, and promises happily to be permanent and to be the means of elevating the reputation of this department of British science among our continental brethren, who a few years ago were not much inclined to admit the probability of our going ahead in the higher branches of biological science. The more suggestive the character of the meetings of Section D. is rendered, and the less there is of frivolous disputes as to who first named this species or who named that, without reference to structure, habits, law and locality, the better.

EXPLANATION OF PLATE XI. UPPER FIGURES.

1. *Emarginula crassa*.
2. *Eulima MacAndrei*.
3. *Pleurotoma teres*.

LIII.—*Descriptions of some new Species of Butterflies in the Collection of the British Museum.* By EDWARD DOUBLEDAY, Esq., F.L.S.

Genus PAPILIO.

P. Photinus. Alis omnibus nigris, cæruleo-micantibus, posticis dentatis, serie duplici macularum chermesinarum, ciliis omnibus albo-maculatis. Expans. alar. $3\frac{1}{2}$ unc.

Above.—Anterior wings black, the apex fuscous, the disc and



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