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Wm. Thompson Esq. ^a

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SPECIES UNICA.

APHANIZOMENON INCURVUM, Nobis, vid. tab. fig. 1—12.

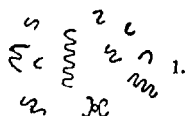
Lamella plana, alba-viridi, incurva, filis coadnatis, articulis 2—8 duplo longioribus, discretis, cæruleo-viridibus.

Habitat in fossis et stagnis aquæ dulcis in Flandria, mense Maio ad Julium.

“ Il est évident que ce genre lie les *conjugées* vrais aux *zygnémées*, par un accouplement bien prononcé chez ces derniers, mais devenant une simple soudure chez les *aphanizomènes*. Il met en rapport les *conjugées* avec les *laminaires* des eaux marines, par la forme de la lamelle qui résulte de la soudure des filets. Il établit une analogie entre les *oscillariées* et les *confervées*, en démontrant qu’un mouvement de reptation, de natation ou d’oscillation, peut appartenir aussi bien à l’organisation des conferves qu’à celle des oscillatoires, dans lesquels on croit reconnaître les caractères de l’animalité. Les vésicules renflées ramènent l’*aphanizomène* à la *Conferva vesicata* d’Agardh, et les articles, comme l’organisation des filets elle-même, lui conservent avec les *confervées* vrais des rapports si clairs, qu’il serait hors de propos de placer ailleurs que parmi elles ce genre nouveau.”



1. Appearance of *Anabaina spiralis* under a low power of microscope.



2. Its appearance considerably magnified—when consisting of this number of spiral folds $\frac{1}{3}$ of an inch in length.



3. Different appearance of granules as noted in description on Sept. 27.

XI.—*Contributions towards a knowledge of the Mollusca Nudibranchia and Mollusca Tunicata of Ireland, with Descriptions of some apparently new Species of Invertebrata.*
By WM. THOMPSON, Esq., V. P. N. Hist. Society of Belfast.

[With a Plate.]

MOLLUSCA NUDIBRANCHIA, Cuv.

DORIS TUBERCULATA, Cuv. Johnst. Ann. Nat. Hist. vol. i. p. 50. pl. 2. fig. 1. *D. argo*, Penn.

In the late Mr. Templeton’s Journal, “*Doris argo*, Penn., Brit. Zool. p. 22,” is mentioned as twice found by him in

1812, on the shore towards the entrance of Belfast Bay; and Dr. J. L. Drummond informs me, that about the same time he procured a *Doris* here equalling a hen's egg in size, and which he considered to be of this species. At Youghal (county Cork,) it has been taken by Mr. R. Ball, and to this gentleman and myself has occurred at the island of Ireland's Eye, off the Dublin coast. Mr. Geo. J. Allman, of Bandon, has favoured me with specimens procured by him at Court-masherry harbour, county of Cork, where he states that the species is common. The Irish specimens I have seen were generally straw-coloured. In one of them the anterior portion of the foot was margined with a line or band of a fine blue colour.

Doris affinis, mihi.

Body elongated, equally rounded at both ends, depressed, above closely studded with stout prolonged tubercles, orifices of tentacula without sheaths; branchial processes short, numerous, pinnate.

Length $1\frac{1}{4}$ inch, breadth equal to half the length; of a very pale straw colour; tentacula without sheaths, short, lamellate, in all respects resembling those of *D. tuberculata*; cloak covered with long stout tubercles varying in size, the largest along the sides, and $\frac{3}{4}$ of a line in height, generally of equal breadth throughout, but occasionally expanding towards the end, which terminates in a mass or fasciculus of spicula, conspicuous under a low power of the lens, and giving to them the appearance of a spinous armature; margin of the cloak moderately broad, its under surface granulated; space between it and the foot, and also this latter smooth; branchiæ short, pectinate, about 18 in number, disposed in a broadly horse-shoe form as in *D. bilamellata*, and the space within them likewise covered with tubercles.


This *Doris* approaches *D. bilamellata* more nearly than any other British species, and would perhaps be regarded by some authors as only a variety of it; for this reason I have named it *affinis*, to mark that as a species it may be viewed with some suspicion. Compared with *D. bilamellata*, the *D. affinis* has more solidity, is somewhat more depressed, its outline of body less elegant, margin of the cloak narrower, tentacula and branchiæ apparently* less developed, and instead of the

* The specimens were not attended to when living, consequently we must remain in uncertainty about some characters.

pretty rounded termination which the tubercles of *D. bilamellata* generally present, are fasciculi of spicula, and these not so tastefully disposed over the surface of the cloak as in that species: in all respects it is a less attractive animal.

In the month of December 1837, I obtained three specimens of this *Doris* from among oysters dredged at Greencastle, county of Londonderry.

Doris bilamellata, Linn. Johnst. Ann. Nat. Hist. vol. i. p. 53. pl. 2. fig. 8. *D. verrucosa*, Penn.

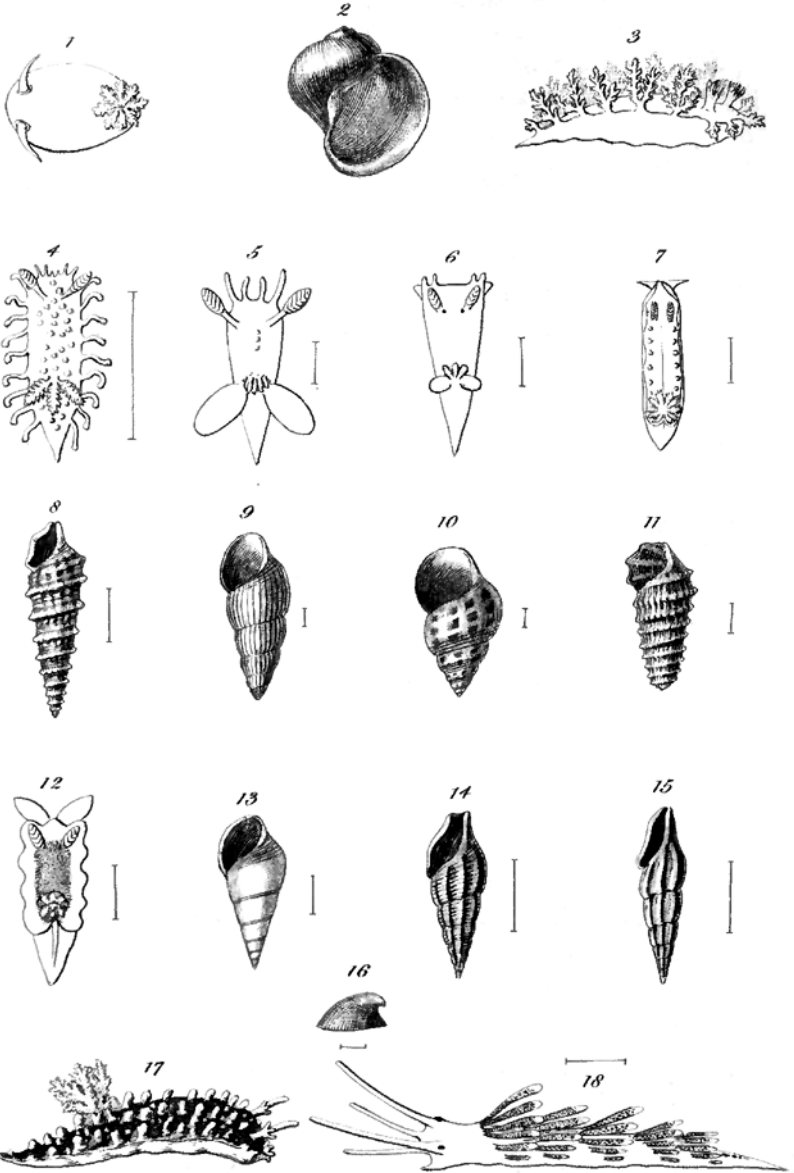
I have obtained this between tide-marks, at the island of Lambay, off the Dublin coast, and by dredging in about ten fathom water, in Belfast Bay. A specimen which was particularly examined, was found to agree with Dr. Fleming's description of *D. verrucosa* in the number of branchial processes, which are 24, and in their arrangement being somewhat "semicircular," in a broadly horse-shoe form, thus . In Dr. Johnston's specimens, the branchial processes seemed "not much to exceed twelve," and were disposed in an "uninterrupted circle." Annals, vol. i. p. 55. Although the precise number of these organs is of no specific value, the difference alluded to is so great as to be worthy of attention. In a specimen from Newhaven, near Edinburgh, favoured me by Mr. E. Forbes, these processes are twenty in number.

Doris muricata, Mull. Zool. Dan. vol. iii. p. 7. tab. 85. f. 2—4.

I have not unfrequently taken this minute species when (accompanied by Mr. Hyndman,) dredging in the loughs of Strangford and Belfast; it was generally adhering to the leaves of tangle (*Laminaria digitata*). Muller describes it as 5 lines long by 3 broad: my specimens were all even under this size. The *D. muricata* has hitherto been unnoticed in the British seas.

Doris pilosa, Mull. Zool. Dan. vol. iii. tab. 85. figs. 7 and 8. Johnst. in Ann. Nat. Hist. vol. i. p. 54. pl. 2. figs. 9 and 10.

The first Irish specimen of this *Doris* that I have seen was found in Dublin Bay, by G. J. Allman, Esq., to whom I am



British Mollusca.

R. Forbes del.

J.D.C. Sowerby, sculp.

indebted for it; subsequently two individuals were taken by Dr. J. L. Drummond, when dredging in the month of June in Belfast Bay. Mr. E. Forbes now agrees with Dr. Johnston in considering *D. Flemingii* of his "Malacologia Monensis," (*D. nigricans*, Flem.) a variety of *D. pilosa*. The Dublin Bay specimen is the var.: the others are of the ordinary form.

Doris sublaevis, mihi. Pl. II. fig. 1.

D. convex, broadly ovate, smooth, basal sheaths to the tentacula, foot broad, branchial filaments 8, long and finely plumose.

Length of specimen (from spirits) 7 lines, height equal to about half the length, breadth $4\frac{1}{2}$ lines, margin of cloak narrow, foot of nearly equal breadth throughout, tentacula long and acuminate. Colour white.

In being smooth, this species agrees with the *D. laevis*, Linn. Mull. Z. D. vol. ii. p. 9. tab. 47. figs. 3—5, but differs much in its convexity* and in the breadth of the foot, which is represented very narrow in that species.

Dredged in Belfast Bay by Mr. Hyndman, September 1835.

Doris Barvicensis, Johnst. Ann. Nat. Hist. vol. i. p. 55. pl. 2. fig. 11—13.

I have been favoured by G. J. Allman, Esq., with specimens of this *Doris*, of which he procured about a dozen in Courtmasherry harbour, in the months of August and September, 1838. They were all found among the roots of *Laminaria digitata* cast ashore, and being alive, a minute description of them, as observed in this state, was drawn up by Mr. Allman. In all details except the following, these individuals agreed with those described by Dr. Johnston in the Annals.—Slightly elevated white tubercles†, chiefly disposed in straight lines, appeared on the sides of the body; 9 branchial leaflets; in the several specimens examined these do not encircle the vent, but are wanting for the space of $\frac{1}{4}$ of a circle posteriorly, two hinder leaflets shortest. On calling Mr. Allman's attention to Dr. Johnston's description, he re-

* "*Doris ovalis alba corpore supra planiuscula lævi*," is Muller's diagnosis of *D. laevis*.

† Mr. E. Forbes, to whom the species is well known, considers what are here called tubercles to have been only coloured spots having such an appearance.

marked that the appearance described as an orifice behind the vent, "is merely formed by the partial apposition of the edges of a slit existing in the posterior margin of the mantle, and which approximation is dependent on the will of the animal." In addition to these specimens, beautifully coloured figures, both of the natural size and magnified, drawn by Miss Allman from the living mollusk, illustrate the above points.

Doris elongata, mihi. Pl. II. fig. 7.

*Goniodoris** do. do.

D. elongated, narrow, a row of papillæ on each side the back, branchial filaments about 10, plumose.

Length of specimen (from spirits) 3 lines, breadth 1 line, height $\frac{3}{4}$ line, breadth of body equal throughout.

This species resembles in form the *D. gracilis* and *D. pal-lens* of Rapp. Nova Acta, vol. xiii. part 2. p. 522. tab. 27. figs. 9 and 10.

I obtained this mollusk in June 1838, between tide-marks, at the island of Lambay, off the Dublin coast.

Tritonia Hombergii, Cuv. Johnst. Ann. Nat. Hist. vol. i. p. 114. pl. 3. figs. 1 and 2.

A specimen about 4 inches in length, with the examination of which I have been favoured by Mr. R. Ball, was dredged with oysters some years ago at Howth, county Dublin.

Tritonia lactea, mihi. Pl. II. fig. 3.

T. of a milk-white colour, with 6 large branchial appendages on each side, bifid and ramosely pinnate; mantle terminating anteriorly in 4 arborescent processes.

Length of specimen (from spirits) 8 lines, sheaths of the tentacula deeply fimbriated. Colour milk-white, but with the aid of a lens a few very minute scarlet dots are seen scattered over parts of the body and the branchial appendages.

The approximation of this species to the *T. arborescens*, Cuv. renders necessary some notice of the characters in which they correspond and differ from each other. The dia-

* A new and well-marked genus constituted by Mr. Forbes. See present No. of Annals, p. 104.

gnosis of *T. arborescens* in Fleming's Brit. Anim. p. 284,—“branchiæ 6 on each side, in the form of plumose tubercles,” applies equally to the *T. lactea*, as does the detailed description in the following particulars—“foot narrow, sides compressed; cloak smooth, its margin above the mouth with 4 plumose appendages; branchiæ decreasing in size towards the tail,”—this in *T. lactea* is very small. On comparing it with a specimen of *T. arborescens* from St. Andrews, in Mr. E. Forbes's collection, the most striking difference is in the shorter body of *T. lactea*, and consequently the nearer approximation of the branchial filaments, which are considerably larger than in its congener, whilst the sheaths of the tentacula are somewhat less developed than in that species: the colour too is very different, *T. arborescens* being of a rose-red, varied with darker spots and markings.

The specimen occurred to me when dredging at the entrance of Strangford lough, in the month of October, in company with Mr. Hyndman.

Eolidia papillosa, Johnst. Mag. Nat. Hist. 8. 376. fig. 35. Annals N. H. 1. 118.

Of this fine species, three individuals were found by Dr. Lloyd (of Malahide) and myself, under stones at Lambay island, on the 1st of June; at the same time their spawn, just as described and figured by Dr. Johnston in Mag. N. H. as above-cited, was obtained. One of these animals examined critically had 25 lateral rows of branchial processes, and about 12 of these to each row.

Eolidia Cuvierii, Johnst. Ann. Nat. Hist. 1. 120. pl. 3. fig. 9—11.

Among the *Nudibranchia* which I owe to the kindness of Mr. Allman, was a small individual of this species, taken by him at Courtmasherry harbour, in the autumn of 1838.

Eolidia rufibranchialis, Johnst. Mag. Nat. Hist. 5. 428. fig. 85. Annals N. H. 1. 121.

The first specimen of this *Eolidia* that I am aware of being taken on the Irish coast, occurred to myself at Newcastle, county Down, in August, 1836, but besides its careful pre-
Ann. Nat. Hist. Vol. 5. No. 29. April 1840. H

servation in spirits, no attention was bestowed upon it. In June last, a considerable number of individuals of this species were taken in the dredge near Bangor, (county Down,) by Dr. J. L. Drummond, who being unacquainted with them, at once drew up a very minute and excellent description from the living animals, illustrating it at the same time with several sketches. Under the head of "general observations," it is remarked in Dr. Drummond's journal: "Animal either very active and coursing repeatedly round the basin, or hanging by its disk applied to the surface of the water. Touch very acute, the tentacula and cirri shrinking at the slightest application of a foreign body. On killing a specimen by keeping it some time in fresh-water, the cirri every one dropped off on the slightest touch*." Some of these specimens (from spirits) are of large size, several being $9\frac{1}{2}$ and 10 lines in length. In the disposition and length of the branchial filaments there is great diversity: in one individual these filaments are as long as its entire body, or 7 lines in length; in another of equal size, they are half the length of its body; in some they are conspicuously in fasciculi; in others they appear to be in a continuous row: none however exhibit filaments of a clavate form like those of the *Doris pedata* of Montagu (see Johnston in Annals above-cited); they are generally pointed†.

To the kindness of Edmund Getty, Esq., I owe the results of a day's dredging in Belfast Bay, in October last, among which was a mollusk of this species.

Euplocamus plumosus, mihi. Pl. II. fig. 4.

E. with body elongated, tapering to the tail, 3 plumose branchial filaments.

* Mr. R. Patterson, who accompanied Dr. Drummond on the occasion, favours me with the following note: "To avoid this, I took a number of living specimens, and by the successive addition of some table salt, converted the sea-water into pretty strong brine. While doing so the motions of the animal became gradually more feeble, and then ceased. The branchiæ did not appear detached, and the specimens were placed in a bottle along with the brine in which they had been killed. The result was however the same; they separated as much as if the shock from fresh-water had still been sustained, and the liquid became so foetid and discoloured (perhaps from the presence of too much animal matter,) that the entire contents of the bottle were thrown away."

† Nevertheless I cannot but think that *D. pedata* is identical with the species under consideration.

Length 10 lines, mouth "sub-inferior terminal;" frontal appendages 6, the two central very small, 3 beautifully plumose branchial filaments, situated at about two-thirds the length of the body from the head; mantle separated from the disk by a deep channel; edge of cloak thin and waved; no eyes apparent; lateral appendages 9 on each side, terminated by disks*. Colour—body white, tail orange, clavate, tips of the processes surrounding the body orange, as are those of the frontal appendages and tentacula; branchial filaments orange; on the back are a number of papillæ of this colour, as is likewise a line of spots along each side between the cloak and foot.

The gliding motion of this beautiful species along the bottom of the vessel in which it was placed for examination was regular and graceful. It was dredged in Strangford lough, adhering to a *Laminaria*, by Mr. Hyndman and myself, in January, 1835. The description and figure were taken from the living animal.

Of the genus *Euplocamus* I know but five species, three of which, described by Philippi†, have been found in the Mediterranean alone; these differ so much from the northern species as to render comparison unnecessary. The *E. plumosus* in general appearance much resembles the *E. clavigera* of Muller, but differs from it in having only 3 instead of 4 branchial filaments, and in these being *plumose*—in this character too, it differs from the *E. pulcher*‡ of Dr. Johnston, although the number of these filaments is the same in both; besides, its body and lateral appendages are more elongated; altogether it is a much more graceful animal than the last mentioned.

* Mr. Forbes suggests that these may possibly be suctorial.

† *E. croceus*, Phil. Enum. Moll. Sicilia, p. 103. tab. 7. fig. 1. *E. frondosus* and *E. cirriger*. Ann. Nat. Hist. vol. iv. pp. 88 and 89. pl. iii. fig. 1 and 2.—translated from Wiegmann's Archiv.

‡ Dr. Johnston first described this species under the name of *Tergipes pulcher*, and subsequently constituted a new genus, *Triopa*, for its reception. Ann. Nat. Hist. i. 124. He was unaware at the time that the same judicious view had previously been taken by Philippi, who founded his genus *Euplocamus* on an allied species. This latter name, in right of priority, must be retained. Mr. Forbes has taken the *E. pulcher* at the Isle of Man and at Shetland; and joining him, as I do, in the opinion that it is distinct from *E. clavigera*, I have ventured to restore the original specific name. The genus *Triopa* will still rank under its banner the anomalous *T. nothus* of Dr. Johnston.

"*Polycera quadrilineata*," var. *nonlineata*. Pl. II. fig. 6*.

Doris quadrilineata, Mull. Zool. Dan. vol. 1. p. 18. tab. 17. fig. 4—6.

Frontal processes of the mantle 4, angles of the foot produced; pair of branchial lobes rather small.

Length of specimen (from spirits) 3 lines; body broadly truncate anteriorly, tapering to the tail; tentacula lamellated; 3 branchial filaments; eyes two, at the inner side of the posterior base of the tentacula. *Colour*—whitish, with the frontal processes of an orange-yellow; a few scattered dots of this colour on the mantle.

Although the four black lines described by Muller as extending in an interrupted manner along the body of *P. quadrilineata*, are entirely wanting in my specimens, I cannot, possessing as they do every other character in common with it, regard them as of a different species. They are at the same time quite distinct from the supposed varieties of *P. quadrilineata* figured in table 138 of the 'Zoologia Danica.'

Three individuals of this species occurred to us on the same occasion as the *Tritonia lactea*, when dredging at the entrance of Strangford lough; they were adhering to *Laminaria digitata*. When placed in a phial of sea-water, they were generally to be seen suspended by their threads from the surface, the body at the same time moving freely about with much grace. This species has hitherto been unnoticed in the British seas.

Polycera typica, mihi. Plate II. fig. 5.

P. with 4 frontal appendages, tapering towards the point; tentacula lamellate; branchial lobes very large.

Length 5 lines, body narrow, tail tapering; branchial filaments elongated, in a tuft anterior to the lobes; disk thin and flexible at the edges. *Colour*—whitish, tentacula and branchial lobes tipped with yellow; back and sides thinly studded with tubercles (spots?) of a yellow colour, three of which are in the middle of the back, and six or seven close to the tuft of branchial filaments; the intestines (seen through the skin) of a dark colour.

Of this well-marked species, two individuals were dredged in Strangford lough, by Mr. Hyndman and myself, in

* The figure is necessarily stiff, having been drawn from a dead specimen. Muller's was done from the living animal.

January, 1835, at the same time with *Euplocamus plumosus*. They seemed partial to coming to the surface of the water in which they were for some time kept, and to moving along with the foot upwards.

From the *P. quadrilineata* and *P. cornuta* (vol. 4. p. 29. tab. 145. fig. 1—3.) of the 'Zoologia Danica', the *P. flava* of Montagu (Linn. Trans. vol. vii. p. 84. pl. 7.) and the *P. lineatus* of Risso, (Hist. Nat. l'Eur. Merid. iv. pl. 1. fig. 5.) all the species of *Polycera* that I have seen described and figured, the *P. typica* differs remarkably in the development of the branchial lobes. The *P. capensis*, Freycinet, is known to me by name only.

All the *Mollusca Nudibranchia* treated of in this communication are for the first time recorded as Irish species.

MOLLUSCA TUNICATA.

The *Mollusca Tunicata* have in Ireland as in other countries engaged very little attention; yet if mere outward beauty be any attraction to the naturalist, where will he behold it more surpassing than in the compound species of this portion of the animal kingdom? Of every hue—arrayed in purple and gold—will he find them even in this "cold and cloudy clime."

The species of the British seas are now, I rejoice to state, about to be investigated by naturalists highly qualified for the task. This I learned when about to attempt entering on the study of our native species; and communicating my specimens to the parties alluded to, that in connexion with their own they might be properly elucidated, I at once ceased from my incipient investigation. For this reason, the following species, belonging to the first division, "*Ascidies Simples*," are placed, without regard to systematic arrangement, merely under the name used by the author in whose work I found them described. Small as is the number, the species are one-half more numerous than those published in 1828 in Fleming's British Animals.

**Ascidia venosa*, Mull. Zool. Dan. vol. i. p. 25. tab. 25.

* This mark before the species denotes those which I have not seen recorded as British—the others are new only to the Irish Fauna.

Obtained by dredging in the loughs of Strangford and Belfast; first distinguished as an Irish species by Dr. J. L. Drummond. It is remarked by Muller to be common about Christiansand.

Ascidia prunum, Mull. Z. D. vol. i. p. 42. tab. 34. fig. 1—3.

Procured in the same localities as last.

**Ascidia aspersa*, Mull. Z. D. vol. ii. p. 32. tab. 65. fig. 2.

As last.

**Ascidia scabra*, Mull. Z. D. vol. ii. p. 33. tab. 65. fig. 3.

As last. Possibly not distinct from it.

Ascidia rustica, Linn. Mull. Z. D. vol. i. p. 14. tab. 15.

Commonly investing the larger marine plants—found on shells, stones, &c. This species is much less common on our shores in the adult than in the young state, when assuming a flattish oval form, and coloured like red cornelian, it is seen beautifully studding our larger Fuci.

Lamarck strangely considered that the *A. scabra*, Mull. might be identical with this—they certainly have no relation to each other. Nor can I believe with him that the *A. patula* and *A. aspersa*, Mull. have any connexion with *A. rustica*. Anim. sans Vert. t. 3. p. 123.

**Ascidia parallelogramma*, Mull. Z. D. vol. ii. p. 11. tab. 49.

I have taken this beautiful species (which is admirably represented in the work just cited,) on different occasions when dredging in Strangford lough; it was attached to Algæ.

Ascidia echinata, Linn. Mull. Z. D. vol. iv. p. 10. tab. 130. fig. 1.

Of this well-marked and pretty species, I obtained an individual parasitic on one of the larger *Ascidie* dredged in Strangford lough.

**Ascidia orbicularis*, Mull. Z. D. vol. ii. p. 53. tab. 79. f. 1, 2. Obtained on *Zostera marina* in Strangford lough.

**Ascidia mammillaris*, Delle Chiaie, vol. iii. p. 187, 197. tav. 45. fig. 14.

Found attached to *Laminaria digitata*, &c. in Belfast and Strangford loughs. The spinous tubercles in my specimens

are not so regularly disposed over the body as represented in Chiaie's work; they are most developed about the orifices.

**Cynthia claudicans*, Sav. Mem. p. 150. pl. 2. fig. 1.

Not uncommon on oysters and other shell-fish taken in the north-east of Ireland. Savigny describes it as common on the oysters brought to Paris.

Phallusia intestinalis, Sav. Mem. p. 169. pl. 11. fig. 1.

Obtained in Strangford lough.

Clavelina lepadiformis, Sav. p. 110, 174.

Ascidia lepadiformis, Mull. Z. D. vol. ii. p. 119. tab. 79. f. 5.
As last.

**Distoma rubrum*, Sav. Mem. p. 177. pl. 3. fig. 1. and pl. 13.

On *Laminaria digitata*, dredged in Belfast Bay, by Edm. Getty, Esq., and kindly sent me. This species was communicated by Leach to Savigny, who notices it simply as inhabiting the European seas. My specimens were not of so lively a colour as represented in Savigny's work.

Distoma variolosum, Gaërt. Sav. Mem. p. 38 and 178.?

A *Distoma* apparently from description (I have not seen any figure) of this species has occurred to me investing *Fucus serratus* in Belfast Bay; the colour was always whitish-yellow. Gaërtner announced the *D. variolosum* to be found enveloping *Fucus palmatus*, on the coast of England.

Botryllus Leachii, Sav. Mem. p. 199. pl. 4. f. 6. and pl. 20. f. 4. Delle Chiaie, vol. iii. p. 94. tav. 36. f. 14—16.

North-east of Ireland, occasionally investing the roots of *Laminaria digitata*, &c.; when dried it has somewhat the appearance of a sponge. This species was sent by Leach to Savigny, who marks it with doubt as from the English coast. On the shores of Naples it has been found by Delle Chiaie as above cited.

Botryllus Schlosseri. Phil. Trans. vol. 49. p. 449. pl. 14.

I have occasionally obtained this on Algæ, in the loughs of Strangford and Belfast, and have found it attached to stones at the island of Lambay, Dublin coast.

**Botryllus polycyclus*, Sav. Mem. p. 47. pl. 4. fig. 5. *Botryllus Renieri*. Delle Chiaie, vol. iii. p. 93.

This very beautiful species, which is admirably described by Savigny, I have found much more common in the north of Ireland than the *B. Schlosseri*; it occurs chiefly on the leaves of *Laminaria digitata*. The Adriatic Sea and the Manche are the localities whence Savigny procured it. What Delle Chiaie figures as a variety of this species, tab. 36, fig. 9, has occurred to me as commonly as the ordinary state.

Sydneyum turbinatum, Sav. Mem. p. 239.

I once procured this in Strangford lough; and by Dr. J. L. Drummond it has since been found in Belfast Bay.

In the Magazine of Nat. Hist., vol. vii. p. 129, *et seq.*, two *Ascidia* are figured and described as new by "C. M.,"—a signature adopted by my friend Robert Templeton, Esq., Roy. Art., in this and another communication in the same vol. p. 10. To the first, *Asc. gemina*, no habitat is given, but the entrance to Strangford lough may be mentioned as one, as I have found the species there, adhering to the submerged rocks. The *Asc. anceps* is perhaps not distinct from *Asc. prunum*.

INVERTEBRATA MISCELLANEA.

MOLLUSCA.

Ianthina nitens, Menke.? Philippi Enum. Moll. Siciliæ, p. 164. tab. 9. fig. 16.? *I. pallida*, Harvey MS. Pl. II. fig. 2.

This *Ianthina*, of which a number of specimens were found some years ago by my friend W. H. Harvey, Esq. (the well-known botanist) at Miltown Malbay on the coast of Clare, is very distinct from the two known British species, *I. fragilis* and *I. exigua*, and was named *I. pallida* by Mr. Harvey; whether it be really a nondescript species is difficult to be determined. The nearest approach I find to it is the *I. nitens*, Menke, as described and figured by Philippi in his excellent 'Enumeratio Molluscorum Siciliæ,' but from this it differs in the columella being curved so as to present a somewhat rounded appearance, instead of being straight; the *Ianthinæ*, however, are subject to considerable variety. With the exception of this character, it agrees well in *form* with the *I. prolongata*, Blain., figured in Payraudeau's 'Moll. de Corse;' but the colour of this, (dark blue,) is very different

from mine. Philippi at the same time quotes the *I. prolougata* in Payraudeau as identical with his, which in colour, "pallide violacea," is similar to the Irish specimens, hence named *pallida*. This author again refers to what Blainville figures as one of the forms of *I. fragilis* (Malac. tab. 37 bis. fig. 1.) for a representation of his *I. nitens*. Philippi's diagnosis of this species is, "Testa ovata, obtusa, anfractibus omnibus valde rotundatis, sutura profunda divisis, apertura semiovata, labro profunde exciso angulo columellæ cum labro acuto." Habitat, Sicily. Size of Irish specimens, 11 lines long, $8\frac{1}{2}$ broad.

The genus *Ianthina* is in much confusion, which the present notes tend in no way to clear up: they are only intended to introduce a third species of this attractive genus to the British Fauna.

Rissoa Harveyi, mihi. *Cingula sculpta*, Harvey's MS. Pl. II. fig. 11.

This species—two lines in length—is most nearly allied to the *R. excavata*, Philippi, (Enum. Moll. Sicil., p. 154. tab. 10. fig. 6), the following description of which, with the mere substitution of the numbers between the brackets, is equally applicable to *R. Harveyi*.

"*Rissoa excavata*, mihi, tab. x. fig. 6.

"*R. testa oblonga, obtusa, alba, anfractibus superne angulatis, medio concavis, longitudinaliter costatis, ultimo inferne cingulis tribus transversis elevatis instructo, apertura ovata simplici [costæ circiter 12 (24) in quovis anfractu* superne et inferne angulatæ.]*

"*Testa minuta, 1''' longa (2), oblonga, anfractibus 4—5 (6), apice obtuso; apertura ovalis superne vix angulata, labrum simplex.*" Mouth not so large as in *R. excavata*.

This shell was discovered at Miltown Malbay (county of Clare), by Mr. W. H. Harvey, some years ago, and characteristically named by him *C. sculpta*; the term *insculpta* being applied to a species of the allied genus *Odostomia*, has induced me, perhaps unnecessarily, to change the name. The species is dedicated to its discoverer, who had success-

* My species shows the necessity of making this part of the diagnosis: the words used are Philippi's, and taken from his general description.

fully studied our native Mollusca before his attention was directed to botany, in which department his labours have now long been known and appreciated.

Rissoa tristriata, mihi. Pl. II. fig. 10.

R. conic, volutions $5\frac{1}{2}$, rounded, smooth, with spiral rows of tawny spots, first whorl very large, aperture roundish oval, umbilicus none, 3 striæ winding round the summit of each whorl.

Length $1\frac{1}{2}$ line.

A connecting link between *R. semistriata* and *R. interrupta*.

Found at Youghal by Miss M. Ball.

Rissoa Balliæ, mihi. Pl. II. fig. 9.

R. elongated, white, apex obtuse, 5 slightly rounded whorls, deeply marked longitudinally with somewhat distant striæ, aperture ovate, margin of the mouth thin, lower portion of the first whorl spirally striated. Length $1\frac{1}{2}$ line.

Although of a more slender form, this species, in sculpture, &c., somewhat resembles *Odostomia spiralis*, but is a true *Rissoa*.

Found at Youghal by Miss M. Ball, after whom it is named, though a very trivial compliment to her acquirements in different departments of the Invertebrata of Ireland.

Turritella fulvocincta, mihi.

T. with about 11 whorls, transversely ribbed, spirally striated, whitish, with a single fulvous band winding round the volutions.

Length $3\frac{3}{4}$ lines.

Found at Portmarnock, near Dublin; and communicated to me by Miss M. Ball.

“*Cerithium reticulatum*, var. β .” Harvey’s MS. Pl. II. fig. 8.

Whorls 9 or 10, with three spiral ridges, the uppermost very prominent and forming a keel round the suture, ridges crossed by somewhat distant longitudinal furrows.

Length $3\frac{1}{2}$ lines, breadth $1\frac{1}{2}$; colour purplish brown.

This shell differs from *C. reticulatum* in the prominent keel bounding the whorls on the upper side, and in the spiral furrows being much deeper than the longitudinal, and these rather less marked than in that species.

As one individual only has been obtained, I named it, doubtfully as new, *C. carinatum*; but according to the better judgment of Mr. Harvey, it is only a variety of *C. reticulatum*; the shell was found by this gentleman at Miltown Malbay.

Natica.

A shell belonging to this genus, obtained at Youghal by Miss M. Ball, presents the following characters. It is in length 12, in breadth 9 lines, of a tawny colour, without bands or markings of any kind; in form it is similar to *N. Alderi*, but is a larger species; umbilicus divided by a spiral ridge.

To my friend Mr. E. Forbes, who has attentively studied the British *Naticæ*, I submitted this shell, but he had not seen any like it. Until more specimens are examined, (more, I understand, have been procured,) I am unwilling to designate it as a new species; but should it prove to be so, I would propose *N. fulva* as an appropriate name.

The *N. castanea*, Lam., is stated by M. Reclus, who has examined the original specimens, to be identical with *N. monilifera*. Lam. t. viii. p. 625, 2nd edit. M. Deshayes sets it down as the young of this species. Id. p. 639*.

ECHINODERMATA.

Ophiocoma Ballii, mihi.

Disk round or pentangular, covered with imbricated scales, two diverging broadly wedge-shaped scales at the base of each ray.

Largest specimen—disk $2\frac{1}{2}$ lines broad, rays in length nearly equal to four times its breadth; rays above with fan-shaped scales, beneath with rudely heart-shaped plates; spines four in each row, rough, as long or longer than the breadth of ray. Colour pink.

* In a MS. sent me by my friend Robert Templeton, Esq., Roy. Art., before his departure for Ceylon, are the following descriptions of what he considered to be two new species:

“*Nautilus pulchella*, mihi. Size $\frac{1}{15}$ inch, opake white, exteriorly crenated, becoming toothed towards the inner volutions; chambers about 20, marked externally by a depression, adjoining which the shell is minutely tuberculated, or crenato-tuberculated.

“Among some minute shells from Bangor, county Down, presented me by Mr. G. C. Hyndman.

Nautilus dentatus, mihi. Size $\frac{3}{8}$ inch, opake white, chambers of the last whorl about 12, broad, crenato-tuberculate exteriorly, the margin toothed, the teeth less acute towards the mouth. With last.”

Several specimens of different size dredged some years ago in Dalkey Sound, on the coast of Dublin, by R. Ball, Esq. The species is named after my friend, than whom no one in Ireland does more to advance the science of natural history.

Holothuria Drummondii, mihi.

H. of an olivaceous and white colour, with light brown suckers, which are very numerous on the angles, from 6 to 12 in each transverse irregular row; when contracted, tentacula long, pedicled, trifid, plumose, purple.

Length 10 inches.

After having been kept in spirits for a short time, it appears angular, corrugated, the corrugations smooth; a few suckers between them.

The specimen was dredged in Belfast Bay, in the month of June, by Dr. J. L. Drummond, who drew up the following description from the living animal:

“Bangor, June 27, 1839. *Holothuria* dredged yesterday of an olivaceous and white colour; at first, the shape of a lemon, and nearly as large as a middle-sized one; today, ten inches long, contracting itself slowly in various places, but has not yet shown its tentacula. It has five broad longitudinal bands of tubercle-like suckers running from end to end; these have four in each transverse row; suckers light brown; down the middle of each of the five series a whitish band extends; spaces between the belts of suckers of a blueish-white, with numerous irregular narrow transverse whiter lines of various breadth.”

Holothuria Hyndmani, mihi.

H. white, 5-angled, skin smooth, a double close row of large (non-retractile?) suckers on each angle; tentacula 10, sessile, white, plumose.

Length 2 inches.

Dredged in Belfast Bay, by my friend Mr. G. C. Hyndman, a well-informed and zealous naturalist, to whom it is dedicated*.

* “*Holothuria brunnea*, Forbes MS.

“*H.* brown, angulated, suckers 6 to 8 in each row, tentacula long, whitish, pinnated towards their extremities. Forbes.”

This minute *Holothuria*, generally under an inch in length, is the most common species taken by dredging in the loughs of Strangford and Belfast.

Sipunculus papillosus, mihi.

S. vermiform, brownish white, skin striated concentrically and covered with brown papillæ.

This is a fine and large species; throughout the greater part of its length posteriorly, the papillæ are more numerous and larger on the two sides than on the dorsal and ventral surfaces, and are particularly numerous at the posterior extremity, which is pointed and not perforated. It does not appear to be parasitic.

Specimens have been obtained at Miltown Malbay by Mr. Harvey, and at the south islands of Arran (an adjacent locality) by Mr. Ball. Mr. Harvey informs me that this species is not uncommon under stones in sand-covered rocks at Miltown Malbay.

The last four species will be more fully treated of, and figured, by Mr. Forbes, in his forthcoming work on the British Echinodermata.

ZOOPHYTA.

Flustra stellata, *Membranipora stellata*, mihi*.

M. stellate, or of a sub-stellate outline, cells without hairs or setæ.

Polypidom of a light sandy colour, encrusting the larger marine Algæ in somewhat of a stellate form; a few inches in diameter; aperture of the cells without hairs or bristles (like those of *M. pilosa* and *M. spongiosa*, Temp.†), but beset with spines or denticles, varying much in number, one at the base generally exceeding the others in magnitude. Along the centre of each ray extends a series consisting of a few rows of oblong or roundish-oblong cells, on either side of which are transverse rows of square and roundish cells considerably larger than those which constitute the central portion; "parietes of the cells prettily punctured‡." This description applies to the species in its most perfect state. When the

* Considering all the generic characters of *Flustra* and *Membranipora*, the present species would seem to appertain about as much to the "crustaceous" division of the former as to the latter genus.

† Brit. Zooph. p. 282. This is identical with *Flustra? carnosa*, Johnston.

‡ A character that I had overlooked, but which was noticed by Dr. Johnston.

stellate figures coalesce—which they rarely do—so as to cover the surface of the plant, the form and arrangement of the cells, as just mentioned, are generally preserved. When deviations from this arrangement do occur, the general form of the zoophyte is the most obvious character. This species first occurred to me in Belfast Bay, in September, 1833, when a quantity of tangle, *Laminaria digitata*, had been thrown ashore, on the broad leaves of which its stellate form at once arrested my attention. In Strangford lough I similarly found it afterwards; and more recently in Scotland, near Ballantrae (Ayrshire), on *Fucus serratus*, but not in perfection on this plant, whose leaves are too narrow to permit its perfect growth: on the shore at Leith too I have gathered it; and on a specimen of *Nitophyllum Gmelini*, from Sidmouth, favoured me by Dr. Greville, it appears. Its distribution would thus seem to be extensive.

I lately ascertained that it had been found by Dr. Drummond, many, perhaps thirty, years ago, at Larne. In the Supplement to Dr. Johnston's British Zoophytes the species will be figured.

To my accomplished friend Edward Forbes, Esq., I am indebted for the figures which illustrate this paper; without the aid too of his superior knowledge, a portion only of the species here introduced as new could, with any degree of certainty, have been announced as such.

REFERENCES TO PLATE II.

Fig. 1. *Doris sublævis*.

2. *Ianthina nitens*?

3. *Tritonia lactea*.

4. *Euplocamus plumosus*.

5. *Polycera typica*.

6. *Polycera quadrilineata*, var.

Fig. 7. *Goniodoris elongata*.

8. *Cerithium reticulatum*, var.

9. *Rissoa Balliæ*.

10. *Rissoa tristriata*.

11. *Rissoa Harveyi*.

XII.—On some New and Rare British Mollusca. By EDWARD FORBES, M.W.S., For. Sec. B.S., &c.

[With a Plate.]

I. *DORIS ARGO*. Dr. Johnston pointed out some time ago that the *Doris Argo* of Pennant and British authors generally