This article was downloaded by: [Universite Laval]
On: 25 December 2014, At: 10:30
Publisher: Taylor & Francis
Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK

Annals and Magazine of Natural History: Series 2
Publication details, including instructions for authors and subscription information:
http://www.tandfonline.com/loi/tnah08

XXI.—Revision of the families of Nudibranch Mollusks, with the description of a new genus of Phyllidiadæ

J.E. Gray Ph.D. F.R.S. V.P.Z.S.
Published online: 21 Dec 2009.

To cite this article: J.E. Gray Ph.D. F.R.S. V.P.Z.S. (1853) XXI.—Revision of the families of Nudibranch Mollusks, with the description of a new genus of Phyllidiadæ, Annals and Magazine of Natural History: Series 2, 11:63, 218-221, DOI: 10.1080/03745485609496246

To link to this article: http://dx.doi.org/10.1080/03745485609496246

PLEASE SCROLL DOWN FOR ARTICLE

Taylor & Francis makes every effort to ensure the accuracy of all the information (the "Content") contained in the publications on our platform. However, Taylor & Francis, our agents, and our licensors make no representations or warranties whatsoever as to the accuracy, completeness, or suitability for any purpose of the Content. Any opinions and views expressed in this publication are the opinions and views of the authors, and are not the views of or endorsed by Taylor & Francis. The accuracy of the Content should not be relied upon and should be independently verified with primary sources of information. Taylor and Francis shall not be liable for any losses, actions, claims,

proceedings, demands, costs, expenses, damages, and other liabilities whatsoever or howsoever caused arising directly or indirectly in connection with, in relation to or arising out of the use of the Content.

This article may be used for research, teaching, and private study purposes. Any substantial or systematic reproduction, redistribution, reselling, loan, sub-licensing, systematic supply, or distribution in any form to anyone is expressly forbidden. Terms & Conditions of access and use can be found at http://www.tandfonline.com/page/terms-and-conditions

Downloaded by [Universite Laval] at 10:30 25 December 2014

The germination of the spores also gives some insight into the origin of the spiral bands.

When the spore breaks out, the contents form a coat uniformly spread over the wall, with only a slight indication of spiral arrangement (*a*, *b*, fig. 1. Pl. VIII.). As the young cell grows, this becomes broken up, and the originally irregular and imperfect slits thus produced, subsequently cut in a continuous course through the originally uniform coat, which is now slit up into regularly arranged bands (Pl. VIII. figs. 2, 3). The cause why the coating of the wall tears up into spiral and not rectilinear bands, remains unknown here, just as in the origin of all other spiral forms in the vegetable cell. Germinating plants of *Spirogyræ* with only one spiral band, might, perhaps, give an opportunity of discovering more accurate particulars of this process. That the cytoblast—Meyen's 'central-organ'—notwithstanding the mucilaginous filaments running out from it to the borders of the spiral bands—plays no part here, seems to me so much the more probable, that I doubt its actual existence in the spore and in the young unicellular plant. I never found the cytoblasts in the spores, *even when the contents were gently pressed out, which would make it clearly visible,* and just as little could I detect it in the much more transparent young, unicellular plant (figs. 2, 3). It is first found in the *two-celled* plants, and many-celled specimens have one in *each* cell, even the *radical cell*; it is not oval, but round (fig. 1 *c*, *m*, *m*, *m*). Alex. Braun has shown the part it plays in the formation of new cells in the *Spirogyra**. It appears, therefore, *that it originates* in the unicellular plant *immediately before the formation of the septum,* and then quickly causes the formation of two new cytoblasts, either through solution or subdivision, and thus we should bring its presence in *all* cells of old plants into agreement with its absence from the spores and unicellular plants.

[To be continued.]

XXI.—*Revision of the Families of Nudibranch Mollusks, with the description of a new Genus of* Phyllidiadæ. By J. E. Gray, Ph.D., F.R.S., V.P.Z.S. &c.

The very important results which were obtained by the examination of the tongues and teeth of the *Ctenobranchous* Mollusca, which were partly published in the last Number, have induced me to continue my researches on these organs in the *Nudibranchiate* Mollusca. They have resulted in two important facts:

* *Loc. cit.* p. 257 *et seq.*

Downloaded by [Universite Laval] at 10:30 25 December 2014

first, the necessity of dividing the family *Doridæ* into three families, neatly characterized by the disposition and form of the teeth, as well as by the position of the respiratory organs,—characters showing very great differences in their habits and œconomy; secondly, proving that the genera *Phyllirrhoë* and *Limapontia*, though they have no external gills, or indeed any appearance of gills of any kind, are properly placed in this order, as the structure of the buccal mass, tongue, and teeth exactly agrees with that of the families next to which they were placed in my previous arrangement.

I may observe, that I find the disposition and form of the teeth to afford a very good guide in cases which have been considered doubtful from some modification of the respiratory organs. The genera *Ancylus*, *Siphonaria*, and *Amphibola* have been placed in different parts of the system, even in the most recent work of Philippi—often with marine families. From the structure of their respiratory organs, I had long satisfied myself that they are all true *Pulmonobranchia*, and the examination of the tongue and teeth strengthens this opinion, for it is almost impossible to distinguish their teeth from those of the *Auriculadæ* and other land Mollusca.

In the following table, the teeth of the genera placed under each family have been actually examined, or their teeth have been described or figured by some other author.

1. *Gills surrounding the vent, on the middle of the hinder part of the back.*

Fam. 1. Onchidoridæ. Teeth two in each cross series; gills in separate cavities; mantle edging the foot and simple. *Acanthodoris, Onchidoris.*

Fam. 2. Doridid æ=Doridina and Polycerina, *Gray*. Teeth many in each cross series, subsimilar, inner often smaller; gill in a common cavity; mantle edge simple. *α. Doris; β. Goniodoris, Ceratosoma; γ. Ægires.*

Fam. 3. Triopidæ = Triopina, *Gray*. Teeth many (rarely only four) in each cross series, the inner lateral ones large, irregular-shaped; gills in a common cavity; mantle small, edged with tentacles. *Triopa, Idalia.*

2. *Gills superficial, generally in the form of fusiform processes, plaits, or branching vessels.*

a. *Tongue broad; teeth many in each cross series.*

Fam. 4. Tritoniadæ. Tentacula sheathed; gills fusiform or branched on each side of the back; vent lateral; jaws horny. *Tritonia, Dendronotus, Scyllæa, Eumenis.*

Downloaded by [Universite Laval] at 10:30 25 December 2014

Fam. 5. Proctonotidæ. Tentacula simple, linear, not sheathed; gills fusiform, on the sides of the back; vent dorsal; jaws horny, strong. *Proctonotus, Antiopa.*

Fam. 6. Diphyllidiadæ. Tentacula simple, united, expanded?; gills in folds on the under side of the edge of the mantle, which is bent up; jaws horny. *Diphyllidia.*

b. *Tongue narrow; teeth in a single central series.*

Fam. 7. Dotonidæ. Tentacula sheathed at the base, retractile; gills fusiform, on the sides of the back. *Doto.*

Fam. 8. Glaucidæ. Tentacula subulate, simple, rarely ringed, contractile; gills fusiform or branched, on the sides of the back; jaws often horny. *α. Glaucus*; *β. Eolidia, Montagua, Favorinus*; *γ. Embletonia*; *δ. Hermæa*; *ε. Alderia.*

Fam. 9. Placobranchidæ. Tentacula subulate or linear, folded; gills in the form of plaits or vessels radiating on the surface of the back. *Placobranchus, Elysia.*

Fam. 10. Limapontiadæ. Tentacula none or simple, contractile; body depressed; gills none external. *Limapontia.*

Fam. 11. Phyllirrhoidæ. Tentacula elongate-subulate; body compressed vertically; gills none external. *Phyllirrhoë.*

c. *Tongue and jaws none.*

Fam. 12. Phyllidiadæ. Tentacula dorsal, anterior, retractile; labial palpi close, conical, small; gills in form of radiating folds on the under side within the edges of the mantle; vent medial, posterior.

The examination of the specimens of this family has caused me to divide them into two genera, and to add a species which does not appear to have been before noticed.

Phyllidia. Vent dorsal, in the middle of the hinder part of the back.

1. *Phyllidia trilineata,* Cuvier, Ann. Mus. v. t. 18. f. 1–6.

2. *Phyllidia ocellata,* Cuvier, Ann. Mus. v. t. 18. f. 7.

3. *Phyllidia annulata.* Black, with three series of large, unequal-sized white rings, and with a row of minute white warts near the margin; aperture of tentacles with small white warts on each side. *Var.* 1. Central series of four rings. *Var.* 2. Central series of five rings, the last behind the vent.

Hab. Lord Hood's Islands. Brit. Mus. Two specimens.

The *Phyll. ocellata* of Cuvier has only five white rings, one in front and two on each side.

Downloaded by [Universite Laval] at 10:30 25 December 2014

Fryeria. Vent in the middle of the hinder part, in the groove between the mantle and the foot.

1. *Fryeria pustulosa.* Black, with three series of large, unequal, white tubercles on the middle of the back, and with large square white spots containing a tubercle, surrounded by smaller ones, on the edge of the mantle. *Phyllidia pustulosa,* Rüppell, Atlas, Moll. t. 11. f. 1, 1 *a*. *Inhab.* Cosseir. Brit. Mus.

Phyllidia pustulosa, Cuvier, Ann. Mus. v. 266. t. 18. f. 8, may be a bad figure of this species. Cuvier represents the dorsal anus in the other two species, but it is not marked in this, and the colouring somewhat resembles the Museum specimens.

There is a considerable difference in the internal anatomy of this genus, when compared with Cuvier's description of *Phyllidia trilineata.*

This genus is named after my excellent friend Mr. J. H. Fryer of Newcastle, who first sent to England the beautiful Chitons, *Fissurellæ, Purpuræ, Murices,* and other shells of the coast of Peru; and hence attracted the attention of naturalists and collectors to the rich harvest to be made in that country.

XXII.—*Additional Notice of the genus* Tancredia (*Lycett*), Hettangia (*Turquem*). By John Lycett, Esq..

At a meeting of the Cotteswold Naturalists' Club, held July 30, 1850, I had the honour to submit a memoir on the Testacea of the middle division of the Inferior Oolite, accompanied by a separate description of a group of small bivalve shells which occur both in that rock and in the Great Oolite. This group I proposed to erect into a genus, to be called *Tancredia,* a name intended to commemorate a gentleman no longer, unfortunately, a participator in our reunions. The fragility of the small shells which exemplified the genus, together with the coarseness of the investing stone, prevented my exposing the hinge of the left valve so clearly as could be wished; it was not therefore figured, and the description of the hinge in that valve was defective; but the hinge of the right valve, together with the external forms of three species, were faithfully rendered by Mr. Sowerby in the plate which accompanied the memoir. The 'Annals and Magazine of Natural History' for December 1850 contained the paper in question, and it was incorporated with the Transactions of the Cotteswold Naturalists' Club. The description of the hinge in the right valve was substantially correct, but owing to an imperfect knowledge of the form, arising from the valves being always found disunited, the term anterior was employed for posterior, and *vice versâ.*

It is necessary to revert to these facts with precision, as during

Downloaded by [Universite Laval] at 10:30 25 December 2014