

anyhow they must be kept clear and distinct in the mind in order to make progress in scientific zootomy.

While protesting against the abandonment of the very useful, nay, necessary term "homology," I accept with pleasure Mr. Lankester's new terms, and thank him very cordially for this latest contribution to philosophical anatomy.

IX.—*On some Genera and Species of Gasteropodous Mollusca collected by Mr. M'Andrew in the Gulf of Suez.* By
ARTHUR ADAMS, F.L.S.

MR. M'ANDREW having submitted to my inspection numerous small and obscure forms of marine gasteropodous Mollusca, for the purpose of identification, I have made a careful examination and comparison of them, to assist him in his researches into the geographical distribution of Mollusca, and have included the results in this paper.

Fam. Rissoidæ.

Genus CERATIA, H. & A. Ad.

C. pyrgula, A. Ad.

C. testa turbinato-turrita, imperforata, alba, tenui, nitida, semiopaca, spira apice obtusa; anfract. 5, convexis, suturis profundis; apertura ovata, antice vix effusa et subdilatata; labio arcuato, acuto.

Hab. Gulf of Suez.

A turreted, turbinate, semiopaque white shell, with the apex of the spire very obtuse, and with the aperture somewhat effuse and dilated anteriorly.

Genus MICROSTELMA, A. Ad.

M. concinna, A. Ad.

M. testa ovato-turrita, imperforata, alba; anfract. 7, planis, postice angulatis, supremis longitudinaliter plicatis, plicis rectis, validis, æqualibus, interstitiis transversim striatis; anfractu ultimo magno, plicis evanidis; apertura oblongo-ovata, antice producta, effusa; labio arcuato, simplici; labro postice ad suturam angulato.

Hab. Gulf of Suez.

The only other shell I have seen resembling this somewhat worn specimen found by Mr. M'Andrew is *Microstelma dædala*, A. Ad., from the Gotto Islands, in Japan (Ann. & Mag. Nat. Hist. 1863, xi. p. 348). The nucleolar whorls are unfortunately

broken off. It has the aspect of a Pyramidellid; but, from the absence of plaits on the columella, I should prefer to place it with the Rissoids.

Genus CORENA, A. Ad.

Testa elato-turbinata, rimata, spira apice obtusa; apertura circulari, peritremate continuo; labio callo tenui expanso obtecto, et postice tuberculo acuto instructo; labro margine duplicato, extus valde reflexo.

Resembles in form some species of the little Bulimoid group called *Ena* by Leach; but it has a double peritreme, and the inner lip is furnished posteriorly with a dentiform tubercle. The genus seems nearer *Onoba* than any other form with which I am acquainted.

C. tuberculifera, A. Ad.

C. testa elato-turrita, rimata, albida, tenui, subpellucida, apice spira obtusa; anfr. 5, convexiusculis, longitudinaliter oblique striatis.

Hab. Gulf of Suez.

Genus RISSOA, Fréminv.

R. gracilis, A. Ad.

R. testa aciculato-turrita, alba, solida, in medio convexiuscula; anfr. 8, convexis, longitudinaliter costatis, costis confertis; apertura ovata; labro arcuato, dilatato.

Hab. Gulf of Suez.

The only species of *Rissoa* proper which at all resembles this very elegant little shell is *R. auriscalpium*, Linn., which, however, is much larger, and has not the regular, longitudinal, rather crowded ribs of this shell. Only a single specimen was obtained.

Genus ONOBA, H. & A. Ad.

O. mirifica, A. Ad. Ann. & Mag. Nat. Hist. 1863.

Hab. Gulf of Suez (M'Andr.), Japan (A. Ad.).

Genus FENELLA, A. Ad.

1. *F. pupoides*, A. Ad. Ann. & Mag. Nat. Hist. 1860.

Hab. Gulf of Suez (M'Andr.), Japan (A. Ad.).

2. *F. scabra*, A. Ad. (*Dunkeria*), Ann. & Mag. Nat. Hist. 1860.

Hab. Gulf of Suez (M'Andr.), Japan (A. Ad.).

3. *F. reticulata*, A. Ad. (*Dunkeria*), Ann. & Mag. Nat. Hist. 1860.

Hab. Gulf of Suez (M'Andr.), Japan (A. Ad.).

4. *F. rufocincta*, A. Ad. (*Dunkeria*), Ann. & Mag. Nat. Hist. 1860.

Hab. Gulf of Suez (M'Andr.), Japan (A. Ad.).

Genus HYALA, H. & A. Ad.

1. *H. nitida*, A. Ad.

H. testa elato-turbinata, imperforata, albida, tenui, lævi, nitida, semipellucida; spira apice obtusa; anfract. 6, convexis, ad suturas subangulatis, suturis profundis, anfractu ultimo rotundato; apertura ovata; labio vix reflexo; labro arcuato, simplici, margine acuto.

Hab. Gulf of Suez.

Very similar in form to the succeeding species; but the axis is not perforated, the inner lip is hardly reflexed, and the whorls are angulated at the sutures.

2. *H. concinna*, A. Ad.

H. testa elato-turbinata, perforata, alba, tenui, lævi, subdiaphana; spira apice obtusa; anfract. $5\frac{1}{2}$, convexis, suturis impressis, anfractu ultimo rotundato; apertura ovata, antice subeffusa; labio vix reflexo; labro margine acuto.

Hab. Gulf of Suez.

A pretty shell, more nearly resembling the type of *Hyala* than any other form with which I am acquainted, but the true position of which must remain doubtful until the animal shall have been discovered and examined.

3. *H. pumila*, A. Ad.

H. testa elongato-turbinata, imperforata, alba, lævi, pellucida; spira apice obtusa; anfract. 4, planiusculis, suturis marginatis; anfractu ultimo magno, elongato; apertura ovata, peritremate continuo; labio subincrassato; labro margine arcuato, subdilatato.

Hab. Gulf of Suez (M'Andr.), Japan (A. Ad.).

This pretty little shell, which appears to be identical with specimens I found in Japan, resembles in form some species of *Onoba*, but is smooth and nearly pellucid, and has the obtuse spire seen in *Hyala*. The inner lip being continuous with the outer, also, reminds one rather of *Onoba* than of *Hyala*.

Fam. Litiopidæ.

Genus DIALA, A. Ad.

1. *D. varia*, A. Ad. Ann. & Mag. Nat. Hist. 1861.
Hab. Gulf of Suez (M'Andr.), Japan (A. Ad.).
2. *D. suturalis*, A. Ad. (*Monoptygma*), Sow. Thes. Conch. (*Monopt.*) pl. 172. f. 31, 33.
Hab. Gulf of Suez (M'Andr.), Philippines (Cuming).

3. *D. succincta*, A. Ad.

D. testa turrito-pyramidalis; spira conica, elata; lævi, solida, polita, lutescente, fascia angusta rufa ad suturas ornata; anfr. 8, planis, transversim obsolete sulcatis; anfractu ultimo antice fascia rufa succincto; apertura ovata, antice producta et acuminata; labio rectiusculo, fusco tineto; labro arcuato, simplici.

Hab. Gulf of Suez.

A pretty species, quite distinct from any hitherto described, being elevated and conical, with the aperture very much produced and narrowed in front.

Genus ALABA, H. & A. Ad.

1. *A. imbricata*, A. Ad. Ann. & Mag. Nat. Hist. 1862.
Hab. Gulf of Suez (M'Andr.), Japan (A. Ad.).
2. *A. lucida*, A. Ad. Ann. & Mag. Nat. Hist. 1862.
Hab. Gulf of Suez (M'Andr.), Japan (A. Ad.).

Genus STYLIFERINA, A. Ad.

1. *S. goniochila*, A. Ad. Ann. & Mag. Nat. Hist. 1860.
Hab. Gulf of Suez (M'Andr.), Japan (A. Ad.).

2. *S. callosa*, A. Ad.

S. testa turbinata, alba, vitrea, vix pellucida, nitidissima, polita; anfract. norm. 4, convexis, sutura marginata; anfr. ultimo basi convexo, regione umbilicali callo oblecta; apertura ovato-lunari, labio obliquo, superne incrassato, antice subeffusa.

Hab. Gulf of Suez.

A small, polished, semipellucid shell, of turbinate form, and with the umbilicus covered with a shining callus. The apical nucleolar whorls are broken off; but the genus seems to be *Styliferina*, which more resembles *Alaba* than *Stylifer* proper.

Fam. Pyramidellidæ.

Genus PYRAMIDELLA, Lam.

- P. mitralis*, A. Ad., Sow. Thes. Conch. (*Pyr.*) pl. 172. f. 9.
Hab. Gulf of Suez (M'Andr.), Philippines (Cuming).

Genus OBELISCUS, Humphr.

1. *O. terebellum*, Müll. (*Helix*), Verm. p. 123. no. 319; Sow. Thes. Conch. (*Obel.*) pl. 171. f. 5, 6.
Hab. Gulf of Suez (M'Andr.), West Indies (auct.).
2. *O. tessellatus*, A. Ad., Sow. Thes. Conch. (*Obel.*) pl. 171. f. 16.
Hab. Gulf of Suez (M'Andr.), Philippines (Cuming).
3. *O. pusillus*, A. Ad., Sow. Thes. Conch. (*Obel.*) pl. 171. f. 7.
Hab. Gulf of Suez (M'Andr.), Philippines (Cuming).
4. *O. vitreus*, A. Ad. Ann. & Mag. Nat. Hist. 1860, vi. 335.
Hab. Gulf of Suez (M'Andr.), Japan (A. Ad.).

Genus SYRNOLA, A. Ad.

1. *S. pulchella*, A. Ad. (*Obeliscus*), Sow. Thes. Conch. (Mon. *Obelisc.*) pl. 171. f. 20.
Hab. Gulf of Suez (M'Andr.), Japan (A. Ad.).
2. *S. aelis*, A. Ad. (*Obeliscus*), Sow. Thes. Conch. (Mon. *Obel.*) pl. 171. f. 30.
Hab. Gulf of Suez (M'Andr.), Philippines (Cuming).
3. *S. aciculata*, A. Ad. (*Obeliscus*), Sow. Thes. Conch. (Mon. *Obel.*) pl. 171. f. 21.
Ob. ornatus, Gld.
Hab. Gulf of Suez (M'Andr.), Philippines (Cuming), Japan (A. Ad.).
4. *S. pupina*, A. Ad. Ann. & Mag. Nat. Hist. 1860.
Hab. Gulf of Suez (M'Andr.), Japan (A. Ad.).
5. *S. subulina*, A. Ad. Proc. Zool. Soc. 1862.
Hab. Gulf of Suez (M'Andr.), Japan (A. Ad.).
6. *S. lucida*, A. Ad.

S. testa acuminato-conoidea, imperforata, semipellucida, vitrea, nitida; anfract. norm. 5, planis, ultimo amplo, ad basin rotun-

dato; apertura subquadrata, plica parietali conspicua, transversa.

Hab. Gulf of Suez.

Most nearly resembles *S. pyramidalis*, A. Ad., but is not umbilicated. It is also like *Ob. vitrea*, A. Ad., but is without any coloured red band on the whorls.

Genus ORINA, A. Ad.

Testa vitrea, conico-turrita, umbilicata; anfractibus planis, simplicibus. Apertura subquadrata, plica parietali unica transversa instructa.

O. pinguicula, A. Ad.

O. testa conoidali, profunde umbilicata, alba, tenui, lævi; anfr. norm. 5, planis, suturis canaliculatis; apertura subquadrata, antice subangulata; plica parietali transversa, valida; labro intus transversim sulcato.

Hab. Gulf of Suez.

Like a short umbilicated *Syrnola*. *S. pyramidalis*, A. Ad. (Ann. & Mag. Nat. Hist. 1860) also belongs to this newly indicated group.

Genus STYLOPTYGMA, A. Ad.

1. *S. lendix*, A. Ad. Proc. Zool. Soc. Lond. Nov. 1862.

Hab. Gulf of Suez (M'Andr.), Japan (A. Ad.).

2. *S. nivea*, A. Ad.

S. testa subulata, in medio tumidula, solida, eburnea, nivea, polita; anfract. norm. 6, planulatis, suturis marginatis; apertura elongato-ovata; plica parietali subinconspicua, perobliqua; labio simplici, acuto.

Hab. Gulf of Suez.

A solid, ivory-white, highly polished species, with an elongated aperture, and with the plait on the inner lip very oblique.

Genus MONOPTYGMA, Gray.

M. fulva, A. Ad. Proc. Zool. Soc. 1851; Sow. Thes. (Mon. Monopt.) pl. 172. f. 23.

Hab. Gulf of Suez (M'Andr.), Philippines (Cuming),

Genus MYONIA, A. Ad.

M. casta, A. Ad. (Monoptygma), Sow. Thes. Conch. (Mon. Monopt.) pl. 172. f. 22.

Hab. Gulf of Suez (M'Andr.), China Sea (A. Ad.).

Until the animals of *Monoptygma*, *Myonia*, and *Agatha* shall have been examined, it is difficult to say whether they should be placed in Pyramidellidæ or Actæonidæ.

Genus AGATHA, A. Ad.

A. vitrea, A. Ad.

A. testa subulata, alba, vitrea, semipellucida; anfract. 6, planulatis, sulcis transversis distantibus exaratis; apertura elongato-ovata, antice producta et effusa; labio in medio oblique subplicato.

Hab. Gulf of Suez.

This is a species of a group of shells of which *A. virgo*, A. Ad., is the type. They are beautiful white, polished, vitreous shells like elongated *Actæones* or, rather, *Myoniæ*, but without the sculpture peculiar to those forms.

Genus MORMULA, A. Ad.

M. Macandreae, A. Ad.

M. testa subulato-turrita, crassa, solida, rissoidea, alba; anfract. normalibus 11, planis, hic et illic valde varicosis, longitudinaliter costatis, transversim totis liratis, fasciis duabus rufis ornatis; apertura subquadrata; labio spiraliter tortuoso; labro extus valde varicoso, margine arcuato.

Hab. Gulf of Suez.

This shell agrees generically with the *Mormula egregia*, A. Ad., from the Philippines (Proc. Linn. Soc. Zool. vol. vii.), but specifically it differs in the whorls being ornamented with but two red-brown bands instead of three, and being provided here and there with strong conspicuous varices. *M. rissoina*, A. Ad. (Proc. Linn. Soc. Zool. vol. vii.), from Japan, *Lancea*, sp., Pse., from the Sandwich Islands, and probably *Proto Cornelliana*, Newcombe (Am. Journ. Conch. vol. v. pl. 17. f. 3), are examples of the same type. In two of Mr. M'Andrew's specimens the little embryonic sinistral shell is well shown—proving the genus to belong to Pyramidellidæ. It most nearly resembles *Turbonilla*; but the inner lip is not straight and simple as in that group. *Pyramidella aelis*, A. Ad. (Sow. Thes. Mon. Pyram. pl. 172. f. 16, 17), and *Pyramidella ambigua*, Gould (Otia Conch. p. 60), also belong to this genus.

Genus TURBONILLA, Risso.

1. *T. bifasciata*, A. Ad. Ann. & Mag. Nat. Hist. 1861.

Hab. Gulf of Suez (M'Andr.), China (A. Ad.).

2. *T. acicularis*, A. Ad. (*Chemnitzia*), Proc. Zool. Soc. 1853, p. 182.

Hab. Gulf of Suez (M'Andr.), Philippines (Cuming).

3. *T. metula*, A. Ad. (*Chrysallida*), Ann. & Mag. Nat. Hist. 1860.

Hab. Gulf of Suez (M'Andr.), Japan (A. Ad.).

4. *T. candida*, A. Ad. (*Chemnitzia*), Proc. Zool. Soc. 1853, p. 181.

Hab. Gulf of Suez (M'Andr.), Philippines (Cuming).

5. *T. fusca*, A. Ad. (*Chemnitzia*), Proc. Zool. Soc. 1853, p. 181.

Hab. Gulf of Suez (M'Andr.), Philippines (Cuming).

6. *T. decussata*, A. Ad. Ann. & Mag. Nat. Hist. 1861.

Hab. Gulf of Suez (M'Andr.), China Sea (A. Ad.).

7. *T. scitula*, A. Ad. Ann. & Mag. Nat. Hist. 1861.

Hab. Gulf of Suez (M'Andr.), China Sea (A. Ad.).

8. *T. modica*, A. Ad. Ann. & Mag. Nat. Hist. 1860.

Hab. Gulf of Suez (M'Andr.), Japan (A. Ad.).

Genus CINGULINA, A. Ad.

- C. circinata*, A. Ad. Ann. & Mag. Nat. Hist. 1860.

Hab. Gulf of Suez (M'Andr.), Japan (A. Ad.).

Fam. *Styliferidæ*.

Genus SCALENOSTOMA, Desh.

S. Deshayesii, A. Ad.

- S. testa* elongato-pyramidali, superne attenuata, spira styliiformi, albida, nitida, semiopaca; anfract. normalibus 7, primis convexiusculis, sequentibus planulatis, ad suturas acute carinatis; anfractu ultimo in medio carinato, basi convexo; apertura ovali, antice subeffusa; labro arcuato, in medio producto.

Hab. Gulf of Suez.

This shell seems to have all the characters of M. Deshayes's *Scalenostoma carinatum*, described in his 'Cat. des Mollusques de l'île de la Réunion,' pl. 7. f. 26, 28. *S. Deshayesii* has the form of a *Rissoina* with the texture and spire of a *Stylifer*. The inner lip is not so straight as in the Bourbon shell, and the spiral keel is less acute and defined. In his specimens

M. Deshayes was unable to ascertain if the nucleolar whorls were arranged in the form of a little sinistral embryonic shell, as they are in all true Pyramidellids; and, unfortunately, neither is Mr. M'Andrew's shell in a condition to prove the fact, the apex of the spire being broken off. I am of opinion, however, that *Scalenostoma* belongs to Styliferidæ, and probably should include *Chemnitzia Rangii* of Folin, *Méléagrini- coles*, pl. 6. f. 1.

X.—*Remarks on Prof. Owen's Monograph on Dimorphodon.*

By HARRY G. SEELEY, F.G.S., Assistant to Prof. Sedgwick in the Woodwardian Museum of the University of Cambridge.

IN this work several views are urged in osteology which seem to me inconsistent with facts; principles in philosophy are advanced which, if true principles, must place the science of physiology upon a different foundation from that which it has now; and a position is taken by Prof. Owen towards previous writers and with his readers which, if not new, demands explanation before the scientific truths of the memoir will be fairly stated.

I would guard myself here from the suspicion that I may be writing merely to correct mistakes or point out oversights. No writer can afford to do that. And errors of that kind are only defects, often unaccountable, in contributions to knowledge which are made in strivings to attain to truth. But all through this monograph there runs a bias which warps its osteology and philosophy, and leads to conclusions which seem to me to be erroneous, unscientific, and unjust. The passages which will be extracted from the monograph will make this clear, while the remarks appended will contribute the best elucidation of the truth that I can give.

First, of Osteology.—This is descriptive of specimens of *Dimorphodon* from the Lias, and interpretative of the osteology of the whole class of these animals by the evidence from the specimens described. Prof. Owen begins with the skull. Herein, so far as the general osteology went, he was preceded by Von Meyer and other comparative anatomists of Germany, whose labours have cleared the chief difficulties from the subject. Upon the skull Von Meyer is quoted and argued against, but, I think, both misunderstood and misrepresented; so that it has seemed to me desirable to reproduce as well as I was able in English the following account which Von Meyer



Adams, Arthur. 1870. "IX.—On some genera and species of gasteropodous Mollusca collected by Mr. M'Andrew in the Gulf of Suez." *The Annals and magazine of natural history; zoology, botany, and geology* 6, 121–129.

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