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### XLIX.—On a small collection of marine shells from Henderson Island

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# THE ANNALS

AND

## MAGAZINE OF NATURAL HISTORY.

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XLIX.—*On a small Collection of Marine Shells from Henderson Island.* By E. A. SMITH, I.S.O.

[Plate IX.]

HENDERSON ISLAND, also known as Elizabeth Island, is situated in the South Pacific Ocean, being an outlier of the Paumotu group, and not very remote from Pitcairn Island. Captain F. W. Beechey, R.N., who investigated the island in 1825, has given some account of it in his "Narrative of a Voyage to the Pacific and Beering's Strait in H.M.S. 'Blossom,'" 1831, vol. i. pp. 61-65. In the British Museum are various specimens obtained on that voyage at the Paumotus, and presented by Captain Beechey, and, although no particular island is specified, it is quite possible that some of them were collected at Henderson Island. It was apparently visited by Hugh Cuming during the early part of last century, since a few species obtained by him when collecting in the archipelago have been assigned to this island. Other collectors have since visited the Paumotus, but I have not observed that any of them have recorded species from Henderson Island. M. Couturier\* has given an extensive list of the shells of this region, and it includes a large proportion of those quoted in the following catalogue, excepting the bivalves, which he has not dealt with.

The present collection was made by Mr. J. R. Jamieson, assisted by Mr. D. R. Tait, and these gentlemen have

\* Journ. de Conch. 1907, pp. 123-178.

kindly presented a selection of the specimens to the British Museum.

A glance at the list at once tells us that the majority of the species are common well-known forms, having a wide range in the Pacific, some as far north as the Sandwich Islands, and many of them also occurring in the Indian Ocean, and in a few instances even in the Red Sea.

The collection apparently indicates that a rich Molluscan fauna exists at this island. At present only the more conspicuous species have been collected, and doubtless many smaller and less noticeable forms could be found by closer and more extended research, more especially if dredging were resorted to.

#### LIST OF THE SPECIES.

- |   |   |
|---|---|
| <i>Acmæa conoidalis</i> , Pease.                  | <i>Bursa</i> (Colubrellina) <i>affinis</i> ( <i>Broderip</i> ).   |
| <i>Patella stellæformis</i> , Reeve.              | — ( <i>Craspedotriton</i> ) <i>convoluta</i> ( <i>Broderip</i> ). |
| <i>Haliotis pulcherrima</i> , Martyn.             | <i>Colubraria nitidula</i> ( <i>Sowerby</i> ).                    |
| <i>Broderipia iridescens</i> ( <i>Broderip</i> ). | <i>Cassis</i> (Casmaria) <i>vibex</i> ( <i>Linn.</i> ).           |
| <i>Stomatella speciosa</i> , A. Ad.               | <i>Morum ponderosum</i> ( <i>Hanley</i> ).                        |
| <i>Calliostoma roseopictum</i> , sp. n.           | <i>Vanicoro plicata</i> ( <i>Récluz</i> ).                        |
| <i>Turbo petholatus</i> , Linn.                   | <i>Strombus floridus</i> , Lamarck.                               |
| — <i>argyrostoma</i> , Linn.                      | <i>Latirus nodatus</i> ( <i>Martyn</i> ).                         |
| <i>Nerita plicata</i> , Linn.                     | <i>Mitra pontificalis</i> , Lamarck.                              |
| — <i>melanotrachus</i> , Smith.                   | — <i>fulva</i> , Swainson.  |
| <i>Helicina solidula</i> , Gray.                  | — <i>auriculoides</i> , Reeve.                                    |
| <i>Littorina obesa</i> , Sowerby.                 | — <i>maculosa</i> , Reeve.  |
| — <i>trochoides</i> , Gray.                       | <i>Caducifer cylindrica</i> ( <i>Pease</i> ).                     |
| <i>Amalthea australis</i> ( <i>Lamk.</i> ).       | <i>Nassa papillosa</i> ( <i>Linn.</i> ).                          |
| <i>Cypræa arenosa</i> , Gray.                     | — <i>gaudiosa</i> , Hinds.  |
| — <i>scurra</i> , Chemnitz.                       | <i>Maculotriton bracteatus</i> ( <i>Hinds</i> ),                  |
| — <i>isabella</i> , Linn.                         | var.  |
| — <i>subteres</i> , Weinkauff.                    | <i>Tritonidea difficilis</i> , sp. n.                             |
| — <i>caput-serpentis</i> , Linn.                  | — <i>rosacea</i> , sp. n.   |
| — <i>poraria</i> , Linn.                          | <i>Pisania decollata</i> , Sowerby.                               |
| — <i>helvola</i> , Linn.                          | <i>Engina fuscolineata</i> , sp. n.                               |
| — <i>cumingii</i> , Gray.                         | <i>Columbella turturina</i> , Lamarck.                            |
| — <i>irrorata</i> , Solander.                     | — <i>varians</i> , Sowerby.                                       |
| — <i>goodallii</i> , Gray.                        | — <i>obtusa</i> , Sowerby.  |
| — <i>minoridens</i> , Melvill.                    | <i>Thais intermedia</i> ( <i>Kiener</i> ).                        |
| — <i>childreni</i> , Gray.                        | <i>Iopas sertum</i> ( <i>Bruguière</i> ).                         |
| — <i>cicercula</i> , Linn.                        | <i>Vexilla vexillum</i> ( <i>Chemnitz</i> ).                      |
| — <i>margarita</i> , Solander.                    | — <i>tæniata</i> ( <i>Powis</i> ).                                |
| <i>Trivia oryza</i> ( <i>Lamarck</i> ).           | <i>Drupa horrida</i> ( <i>Lamarck</i> ).                          |
| <i>Mamilla simiæ</i> ( <i>Récluz</i> ).           | — <i>clathrata</i> ( <i>Lamarck</i> ).                            |
| <i>Natica dillwynii</i> , Payraudeau.             | — <i>ricinus</i> ( <i>Linn.</i> ).                                |
| <i>Ianthina communis</i> , Lamarck.               | — <i>morus</i> ( <i>Lamarck</i> ).                                |
| <i>Vertagus obeliscus</i> ( <i>Bruguière</i> ).   | — <i>tuberculata</i> ( <i>Blainville</i> ), var.                  |
| <i>Cerithium tuberculiferum</i> , Pease.          | — <i>dealbata</i> ( <i>Reeve</i> ).                               |
| — <i>nassoide</i> , Sowerby.                      | <i>Quoyula madreporarum</i> ( <i>Sowerby</i> ).                   |
| — <i>rarimaculatum</i> , Sowerby.                 | <i>Conus lividus</i> , Hwass.                                     |
| <i>Royella sinon</i> ( <i>Bayle</i> ).            |   |
| <i>Epitonium perplexum</i> , Pease.               |   |

Conus hebræus, <i>Linn.</i> , and var.	Arca maculata, <i>Sowerby</i> .
vermiculatus, <i>Lamk.</i>	— ( <i>Acar</i> ) <i>domingensis</i> , <i>Lamarck</i> .
miliaris, <i>Hwass.</i>	— ( <i>Barbatia</i> ) <i>parva</i> , <i>Sowerby</i> .
ceylonensis, <i>Hwass</i> , var.	Pecten pallium, <i>Linn.</i>
nanus, <i>Brod.</i>	— <i>coruscans</i> , <i>Hinds</i> .
tessellatus, <i>Born</i> .	Lima bullifera, <i>Deshayes</i> .
rattus, <i>Hwass</i> .	Spondylus sp.
pennaceus, <i>Born</i> , var. <i>episcopus</i> , <i>Lamk.</i>	Lucina ( <i>Codakia</i> ) <i>divergens</i> , <i>Philippi</i> .
solidus, <i>Sowerby</i> .	Libitina guineaica ( <i>Chemnitz</i> ).
glans, <i>Hwass</i> , var. <i>tenuistriatus</i> , <i>Sowerby</i> . A slender form of this variety.	Tellina scobinata, <i>Linn.</i>
tulipa, <i>Linn.</i>	Semele australis ( <i>Sowerby</i> ).
Bulla sp. <i>juv.</i>	Corculum productum ( <i>Deshayes</i> ).
Melampus luteus ( <i>Quoy &amp; Gaimard</i> ).	Tridacna crocea, <i>Lamarck</i> .
	— <i>squamosa</i> , <i>Lamarck</i> .
	Chama jukesii, <i>Reeve</i> .

## NOTES ON A FEW OF THE SPECIES.

*Morum ponderosum* (Hanley).

*Oniscia ponderosa*, Hanley, Proc. Zool. Soc. 1858, p. 255, pl. xlii. figs. 9, 10.

*Oniscia exquisita*, Tryon (non Adams and Reeve), Man. Conch. vol. vii. p. 282, pl. x. fig. 22 (copy of Hanley's fig. 10).

It is interesting to know the locality of this rare species, the habitat being hitherto unrecorded. It is quite distinct from the *Oniscia exquisita* of Adams and Reeve\*, with which it has been incorrectly united by Tryon.

*Morum exquisitum* was dredged in 16–20 fathoms in the Sooloo Archipelago, which is very remote from Henderson Island.

*M. ponderosum* differs from *M. exquisitum* in its less elevated spire, the absence of granules on the columellar callus (which is not of a rosy-purple colour), in the thickened labrum being peppered with red dots on the outside, and the liræ within, which do not extend across the front of it. The columellar side of the aperture is transversely lirated within throughout the whole length, a feature which does not appear to be present in the Sooloo species. The apex of the spire in the latter is red, whereas in *ponderosum* it is white, and the concavity of the upper part of the whorls is finely spirally striated, which does not appear to be the case in *M. exquisitum*.

\* Voy. 'Samarang,' Zoology, Mollusca, p. 35, pl. v. figs. 3 a-b; Reeve, Conch. Icon. vol. v. fig. 3.

*Lima bullifera*, Deshayes.

*Lima bullifera*, Deshayes, in Maillard's Ile de la Réunion, vol. ii. p. 30, pl. xxxi. figs. 9, 10 (1863).

This species is remarkable on account of the scales on the costæ taking the form of little hollow globules and having the appearance of perfectly rounded solid tubercles. In the Henderson Island worn shells these are only preserved in one or two specimens. Deshayes was under the impression that the species never attained to a large size, and he gives the length as only 20 mm. The largest example from Henderson Island, however, is 48 mm. long. The number of costæ is said to be twenty, but in the specimens under examination there are about twenty-four to twenty-seven.

A remarkable feature in these shells, not noticed by Deshayes, is that the elongate muscular impression within the valves is of a yellowish colour. This, however, is more evident in some specimens than in others, and consequently in the smaller and possibly young shells described by Deshayes this colouring might not have been present or even overlooked.

At first sight this species, as remarked by its founder, might be taken for the well-known *L. squamosa*, Lamk., the *Ostrea lima* of Linnæus.

The occurrence of *L. bullifera* at such distant localities as Réunion Island and Henderson Island is not surprising, since the distribution of *L. squamosa* is equally remarkable, being practically world-wide (see Lischke, Japan. Meeres-Conch. Theil i. p. 162; Smith, 'Challenger' Lamelli-branchiata, p. 287).

*Broderipia iridescens* (Broderip).

*Scutella iridescens*, Broderip, Proc. Zool. Soc. 1834, p. 48.

*Broderipia iridescens*, Pilsbry, Man. Conch. vol. xii. p. 46, pl. i. figs. 5-8, pl. ii. figs. 41, 42.

*Hab.* Grimwood's Island, Pacific Ocean (*Broderip*); Marutea (= Lord Hood Island) and Vahitahi Island, Paumotu group (*Couturier*, J. de Conch. 1907, p. 172); Ile Réunion (*Deshayes*).

I have been unable to discover any record of a Grimwood Island, but it is probably in the South Pacific as recorded by Pilsbry. He does not, however, refer it to any particular group of islands.

The dimensions of the single specimen from Henderson

Island far exceed those given by Broderip and other authors. It is 10 mm. long, 6 in diameter, and 2·5 in height.

*Natica dilhoynii*, Payraudeau.

*Hab.* Mediterranean, St. Helena, West Indies, Mauritius, and South Pacific (see Smith, Proc. Zool. Soc. 1890, p. 270).

In the Henderson Island specimens the reddish-brown articulations on the two white zones on the body-whorl are not so distinctly arrow-head-shaped, and the markings on the white base around the umbilicus consist of a series of small dots instead of the conspicuous curved brown lines which occur in Mediterranean and West-Indian specimens. I have not seen the operculum of Mauritian or South-Pacific examples.

DESCRIPTIONS OF NEW SPECIES.

*Engina fuscolineata*. (Pl. IX. fig. 1.)

Testa parva, ovato-fusiformis, alba, inter costas nodulosas fusco lineata; anfractus normales sex planiusculi, paulo infra suturam sulco constricti, oblique costulati, transversim striati, costulis nodulosis, in anfractu ultimo flexuosis, basim versus minus nodulosis; apertura angusta, intus flavescens; labrum incrassatum, album, denticulis circiter sex intus armatum, ad marginem fusco notatum; columella denticulis internis ad quinque et pluries vel denticulis internis duobus medianis instructa, callo tenui nitente definito induta; canalis anterior obliquus, leviter recurvus.

Longit. 9, diam. 4 mm.

This species is well characterized by the style of the markings, the fine dark brown lines between the nodulous costæ being very striking. The oblique costæ on the upper whorls have three or four tubercles on each, these being caused by transverse fine sulci or impressed lines cutting across the ribs. The body-whorl is somewhat contracted below the middle and has about ten nodules on the ribs. The anterior end is crossed by three or four conspicuous grooves, and the ridges between them are scarcely affected by the longitudinal costæ, and consequently appear almost non-nodulous. On the labrum the most posterior tubercle is somewhat distant from the next, so that a slight sinus is formed. The uppermost or hindmost denticle on the columella is a little within and near the hindmost one on the labrum. The four other denticles upon the outer edge correspond to the terminations of the oblique ridges upon the lower portion of the whorl. The two internal denticles are

almost like folds, such as occur in the genus *Mitra*, and the lower one is formed by the edge of the columella bordering the canal.

*Tritonidea difficilis.* (Pl. IX. fig. 2.)

Testa elongata, pallide lilacea, hic illic fusco maculata; anfractus 8?, convexiusculi, longitudinaliter costati et spiraliter lirati, liris supra costas leviter tuberculiformibus, inter liras spiraliter striati, lineis incrementi tenuibus inter costas sculpti; anfr. penultimus et ultimus costis circiter 16 instructi; in anfract. superioribus costæ sensim rariores; ultimus in medio convexiusculus, infra contractus, liris spiralibus ad 16, quam costis gracilioribus, ornatus; costæ infra medium sensim evanescentes; apertura brevis, longitudinis totius  $\frac{1}{3}$  paulo superans; labrum extra late incrassatum, quasi varicosum, intus liris circiter undecim intrantibus, ad marginem denticulatum; columella supra arcuata, denticulo prope labrum munita, prope medium incisuram unicam monstrans, callo definito tuberculis 5-6 instructo amicta; canalis anterior brevis, obliquus.

Longit. 19, lat. 8 mm.; apertura 6.5 longa, 2.5 lata.

I have only seen one specimen of this species, which does not appear to approach very closely any of the known forms. The purple apex being worn, the number of whorls is rather uncertain, but probably is about eight. The broad thickening of the labrum has a large brown blotch above the middle and a smaller one below, and the spire is blotched at intervals with the same colour. The notch on the columella is only slight, but is probably a constant feature.

This and the following species are placed in the genus *Tritonidea* for want of a better location, since this group and *Cantharus* require urgent revision.

*Tritonidea rosacea.* (Pl. IX. fig. 3.)

Testa parva, fusiformi-ovata, pallide rosacea; anfractus 6?, convexiusculi, costis septem crassis, albidis, rotundatis instructi, liris spiralibus alternatim majoribus (in anfractu penultimo 8-9, in ultimo circiter 18) cineti, inter liras tenuissime spiraliter striati; costæ in anfr. ultimo ad basim continuæ, paucae antice conspicue nodulosæ; apertura parva, ringens; labrum incrassatum, denticulis validis quatuor intus armatum; columella in medio intus incisa, callo definito induta, supra marginem externum tuberculis quatuor munita; canalis anterior brevis, obliquus.

Longit. circiter 13, diam. 6.5 mm.; apertura intus 5 longa, 2 lata.

Characterized by its rosy colour, strong costæ, and dentate aperture. There is a slight sinus above the posterior denticle

on the labrum, which is larger than the three others. The denticles on the inner lip correspond to the terminations of spirals around the lower part of the whorl. The notch on the inner edge of the columella is smooth and situated opposite the second denticle from the anterior end.

*Calliostoma roseopictum.* (Pl. IX. fig. 4.)

Testa parva, conica, anguste umbilicata, maculis roseis et albis picta, superne virescens et pallide cornea, ad basim lineis tribus concentricis roseis aliisque radiantibus ornata; anfractus sex, superiores tres convexiusculi, læves, dilute carnei, duo sequentes plani, subvirides, roseo plus minus picti, ultimus ad peripheriam rotunde angulatus, roseo alboque articulatus; ultimus et penultimus spiraliter regulariter striati, striis vel sulcis sex angustissimis, quam interstitiis longe angustioribus; basis infra angulum convexiuscula, versus umbilicum angustum album magis tenuiter concentricè striata; columella oblique arcuata; labrum intus incrassatum, album; apertura intus margaritacea, obsolete sulcata.

Alt. 4·3, diam. 3 mm.

The specimen here described, although very small, appears to be adult, since the outer lip is thickened within. The thread-like sulci upon the spire and the three upon the base are coloured, and contrast clearly with the ground-colour of the shell. The former are brownish and the latter more rosaceous.

The spotted lira at the periphery passes up the spire, forming a distinct margination beneath the suture.

This species is evidently closely allied to *C. marmoreum*, Pease, from the Paumotus, and may eventually prove to be a small, less elongate, and differently coloured variety of it.

EXPLANATION OF PLATE IX.

*Fig. 1. Engina fuscolineata, sp. n.*

*Fig. 2. Tritomidea difficilis, sp. n.*

*Fig. 3. — roseacea, sp. n.*

*Fig. 4. Calliostoma roseopictum, sp. n.*

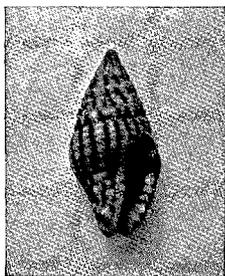
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L.—*Some Notes on the Parasitic Copepod Thersitina gasterostei, Pagenstecher.* By ROBERT GURNEY, M.A.

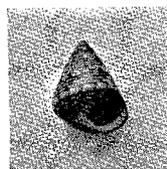
[Plates X.—XIII.]

THE family Ergasilidæ, to which *Thersitina* belongs, has recently been most ably monographed by Wilson\*, so far,

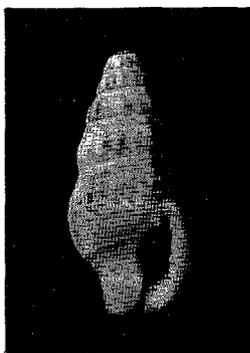
\* C. B. Wilson, Proc. U.S. Nat. Mus. xxxix. 1911, pp. 263-400.



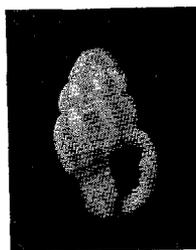
1



4



2



3

Mollusca from Henderson Island.