THE

ZOOLOGY

OF THE

VOYAGE OF H.M.S. SAMARANG;

UNDER THE COMMAND OF

CAPTAIN SIR EDWARD BELCHER, C.B., F.R.A.S., F.G.S.

DURING THE YEARS 1843–1846.

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EDITED BY

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MOLLUSCA,

BY

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1848.

Fig. 7. Hinder end of the body of *Spirula Peronii* (fig. 1, 4, 5, 6) :—*twice the natural size.*

Fig. 8. Hinder end of the body of *Spirula australis* (fig. 2) :—*twice the natural size.*

Fig. 9. Hinder end of the body of *Spirula reticulata* (fig. 3) :—*four times the natural size.*

*** The engraver has added to the original drawing the impressions round the aperture of the siphon, discovered by Charles Stokes, Esq.

Fig. 10. Section of the hinder end of the mantle of *Spirula reticulata*, showing one of the terminal sacs of the visceral cavity.

Fig. 11. The specimen of *Spirula Peronii*, fig. 4, with the mantle laid open :—*twice the natural size.*

Fig. 12. Shows the relative position of the anus, *k*, the valvular apertures of the sacs of the venous (renal?) follicles, *l*, and of the generative outlet, *m*. The fig. *k'* shows the termination of the duct of the ink-bag, *z*, within the verge of the vent, *k'*, *magnified.*

Fig. 13. Branchial and systemic hearts and venous follicles.

Fig. 14. The livers *in situ*, with part of its capsule dissected off.

Fig. 15. Cranium, acoustic sacs, digestive organs, branchiæ, &c., of *Spirula Peronii*.

Fig. 15.* From M. De Blainville's Mémoire Sur l'Animal de la *Spirula*, "Annales Françaises et Etrangères d'Anatomie et de Physiologie," tom. i. 1837.

*** In the preceding figures the same letters are used to denote the same parts, and are explained in the text.

II. GASTEROPODA.

1. CONVOLUTA.

Out of from eighty to a hundred species of Cones collected during the voyage of the Samarang, only four proved to be new, the greater number of those of recent discovery having been anticipated by Mr. Cuming during his researches among the Philippine Islands, and described in the 'Conchologia Iconica.' The genus *Ovulum*, not having been examined since the publication of Mr. Sowerby's 'Species Conchyliorum,' afforded a greater amount of novelty. Mr. Sowerby, junr., being engaged in preparing a monograph of this genus for the forthcoming number of his 'Thesaurus,' it was thought desirable to place the specimens collected in his hands for comparison, and we are indebted to him for the descriptions and figures of eleven new species. A few species of *Erato* were collected, and in the genus *Cypræa*, some interesting observations were made at Singapore upon some living specimens of *C. annulus* in its early winged state, procured from the parent animal, and examined in activity under the microscope.

1. CONUS.

1. Conus papillaris. Pl. V. Fig. 7 *a, b.* Con. testâ fusiformi-oblongâ, spirâ elevato-turritâ, apice papillari, anfractibus supernè acutè concavo-angulatis, peculiariter tenuicoronatis, nodulis subobliquis, infra lævibus; albidâ, aurantio-ferrugineo longitudinaliter strigato-nebulatâ.

Hab. —— ?

This remarkable species of *Conus*, undoubtedly new, was found amongst the shells collected by Sir Edward Belcher during his voyage round the world in H.M.S. Sulphur, and

overlooked by Mr. Hinds in describing the Mollusca of that expedition. It had unfortunately no memorandum of its locality.

The upper portion of the whorls is sharply angled, and distinguished by a row of fine obliquely disposed nodules, the interstices between which are stained with the same rusty brown colour with which the rest of the shell is bedaubed. The apex is papillary.

2. Conus Borneensis. Pl. V. Fig. 8 *a, b, c, d.* Con. testâ fusiformi, medio attenuatâ, spirâ acutè elevatâ, anfractibus supernè concavis et angulatis, infra transversim lineari-sulcatis, sulcis ætate plus minusve obsoletis, longitudinaliter lineis incrementi arcuatim striatis; albâ, rufo-fusco sparsim maculatâ.

Hab. North-east coast of Borneo (in ten fathoms, sandy and stony bottom).

The main distinction between this species and the *C. arcuatus*, to which it is so closely allied, consists in its attenuated growth, a character satisfactorily observed by a careful comparison of several specimens with the type of that species in Mr. Cuming's collection.

3. Conus floridulus. Pl. V. Fig. 9 *a, b.* Con. testâ oblongo-turbinatâ, solidiusculâ, basi tumidiusculâ, liris perpaucis subdistantibus, spirâ striatâ, obsoletè obliquè coronatâ, apice acutâ; violascente-albâ, basi vividè roseo-violaceâ, medio fasciatim immaculatâ, supra infraque aurantio-fusco tinctâ et punctatâ, apice pallidè rufescente.

Hab. —— ? (from the Sulphur Voyage).

A shell of rather solid growth, very deeply stained with violet at the base, and delicately suffused with that colour throughout; a pale band being formed round the middle by the interruption of the orange-brown dots, which are painted above and below it. The spire is very indistinctly undulately noduled, and faintly spotted with orange-brown, with which colour it is also tinged at the apex.

4. Conus pica. Pl. V. Fig. 10 *a, b, c, d.* Con. testâ sub-cylindraceo-ovatâ, tenuiculâ, tumidâ, inflatâ, spirâ depresso-convexâ, creberrimè impresso-sulcatâ, apice parvo, acutè elato; basi lineari-sulcatâ, sulcis subdistantibus; albâ, fusco-nigricante plus minusve grandimaculatâ et minutè punctatâ.

Hab. Island of Balambangan, north end of Borneo (on a shallow coral reef).

Very closely allied to the *C. spectrum*, but distinct in form and style of painting.

5. Conus pigmentatus. Pl. V. Fig. 11 *a, b.* Con. testâ oblongo-turbinatâ, transversim obsoletè crebrisulcatâ, spirâ striatâ et obliquè coronatâ; albâ, violascente tinctâ, olivaceo maculatâ, flocculis albis hic illic aspersâ, basi et aperturæ fauce vividè cæruleo-violaceis, spirâ albâ, apice intensè roseo.

Hab. —— ? (from the Sulphur Voyage).

An extremely interesting species in which the apex is remarkable for its intense crimson-rose colouring in all stages of growth. The ground colour is a pale verdigris blue, the shell is then crossed by olive lines which form two broad bands, and these are sprinkled with little opake-white flakes ranging mostly in a longitudinal direction, and the crimson apex rising in the centre of a pure white spire is very conspicuous. The interior is a rich violet.

The Cones have the siphon in general very much elongated, and curved upwards and backwards over the shell; the head is usually somewhat produced, and furnished with a retractile proboscis, the eyes vary in position, being in some instances situated on the outer side near the extreme end of the tentacles, whilst in others they are placed in the middle, and even at their outer bases. Their bodies are not unfrequently handsomely marked and marbled, but, as a general rule, are less brilliant in colour than the shell.

The Cones become more numerous and varied in their colours as we approach the equatorial seas. They seem to prefer fissures and holes of the rocks, especially among coral reefs, living in the warm shallow pools within the barrier, where, although slow-moving, they lead a predatory life, boring into the substance of the shells of other mollusks, for the purpose of sucking the juice from their bodies. They crawl but slowly, and usually with their tentacles in a straight line before them. They are very timid, and shrink within their shells quickly on the approach of danger. Some species affect deep water, and one was dredged by us in the Sunda Straits, in thirty fathoms; and another, the *Conus thalassiarchus*, at Sooloo, in about forty fathoms. In the Asiatic region, the species of this beautiful genus seem greatly to predominate, there being more than one hundred and twenty peculiar to this portion of the globe, while there are but two or three known in Europe, about twenty in Africa, thirty in Australia, and about fifty in America. The animal of *Conus aulicus* has the proboscis beautifully varied with red and white, and there is a square and very minute operculum on the dorsal surface of the hinder part of the foot. Its bite produces a venomed wound, accompanied by acute pain, and making a small deep triangular mark, which is succeeded by a watery vesicle. At the little island of Mayo, one of the Moluccas, near Ternate, Sir Edward Belcher was bitten by one of these Cones, which suddenly exserted its proboscis as he took it out of the water with his hand, and he compared the pain he experienced to that produced by the burning of phosphorus under the skin. The instrument which inflicted the wound, in this instance, was probably the tongue, which in these mollusks is long, and armed with two ranges of sharp-pointed teeth.

In many species of *Conus* I have noticed a very peculiar dilatation of the anterior extremity of the siphon, reminding one of that singular inflated portion of the mantle in *Terebellum*, which performs the office of a siphon; and the shell of this genus more nearly approaches those species of Cones in which the eyes become nearly terminal, and in which the operculum, horny and triangular in outline, is partially free. The Cones are not unfrequently marked somewhat in accordance with the colours of their shells. *A.A.*

2. OVULUM, *Brug.*

1. Ovulum volva. Pl. VI. Fig. 9. Ovul. pallio elongato, utrinque valdè producto, mamillarum serie regulari prope margine munito, mamillis subequidistantibus; pede et corpore opaco-albis, corporis extremitate posticâ intensè nigrâ, pallio pellucido-carneo, mamillis nigricantibus.

The principal specific peculiarity of the mollusk which produces the well-known shell of the Eastern Seas, termed the "Weaver's Shuttle," consists in the mantle being furnished near the edge with a row of blackish nipple-like tubercles extending to the end of the prolonged extremities. The specimen from which the drawing is taken was dredged in about five fathoms, from a rocky coral bottom off the Island of Basilan, between the Islands of Mindanao and Sooloo, in the Mindoro Sea. It was in a living state but had not arrived at maturity, the lip not being thickened or reflected, and of that tenuity, that the mamillæ of the mantle, which, partially withdrawn probably, lined the interior, were visible


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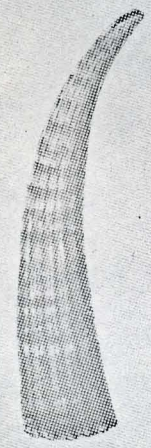
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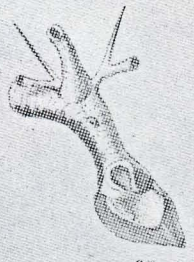
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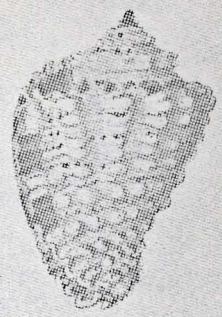
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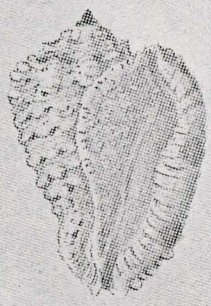
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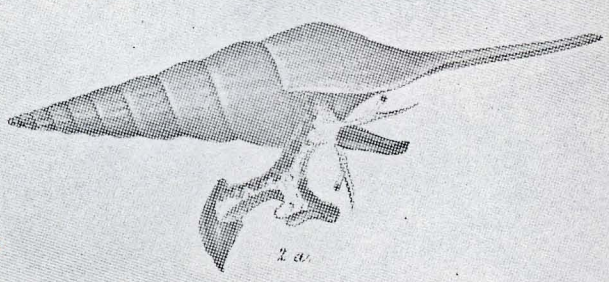
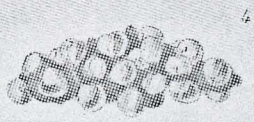

2a.


8a.


8b.


4b.


4c.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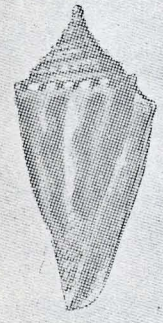
7a.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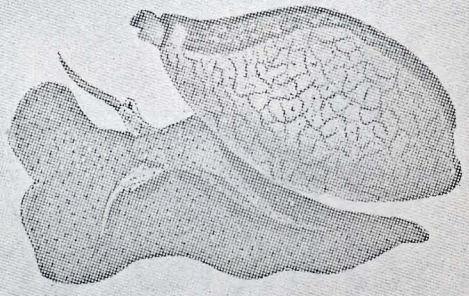

5.


9a.

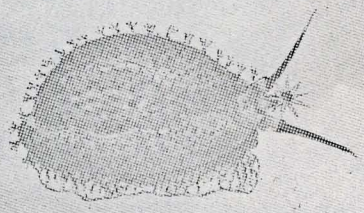

9b.


10a.


10b.


11a.


11b.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