

NOTES ON A COLLECTION OF SHELLS  
FROM LIFU AND UVEA, LOYALTY ISLANDS,  
FORMED BY  
THE REV. JAMES AND MRS. HADFIELD,  
WITH LIST OF SPECIES.

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(Read before the Conchological Society, June 9th, 1894.)

THE Loyalty Islands, of which the three principal are Lifu, Maré, and Uvea, form part of the New Caledonian Archipelago, and are situate east of the main isle, with its capital Noumea, being placed long. 168° E. lat. 22° S. They are not, therefore, very far within the tropic of Capricorn.

Belonging to France, it is not surprising that several eminent naturalists of that nation have made an especial study of the fauna of this group. Accordingly we find, mainly in the pages of the 'Journal de Conchyliologie,' numerous papers on both the Terrestrial and Marine Mollusca, mostly from the pens of MM. Crosse, P. Fischer, Souverbie, Gassies, and three resident conchologists of note—Lambert, Marie, and Montrouzier. Mr. John Brazier\* has likewise described a few new forms from this region, and we must not omit the name of Mr. Edgar L. Layard, C.M.G., for many years British Consul in New Caledonia, who here, as elsewhere, made large collections.

The period of most active research in this quarter, so far as the mollusca are concerned, would appear to have been the decade 1865-75, but several novelties have been described since that later date.

We cannot find, however, that any catalogue of the whole Marine Molluscan Fauna of the Loyalty Island group has been

\* Proc. Linn. Soc. N.S.W., iv. (1879), 1880, pp. 388-392.

published, and, as a step towards this desired end, we venture to offer the following list of over 600 species, about twenty or twenty-one of which are considered new, this list being based upon a very beautiful and interesting collection, rich in individuals as well as number of species, formed by the Rev. James and Mrs. Hadfield, of Lifu, and coming mostly from that island, with some also from the neighbouring island of Uvea. They were collected during 1891-3.

Many of them, it is true, are beach shells, and a little worn, but their colours are so untarnished, and condition so perfect as to preclude their being considered as otherwise than in good condition. The small number of Pelecypoda is remarkable; the bulk of the shells collected are marine Gastropoda, and we may signalize *Conus*, *Mitra*, *Cypræa*, and *Columbella* especially as being very numerous, both in individuals and species. We have also included these amongst the terrestrial and fluviatile mollusca, also collected by Mr. and Mrs. Hadfield.

It is nothing new to be able to pronounce these islands as being as rich, almost, in marine Mollusca as the famous Philippine Islands, or Mauritius, for MM. Crosse and Fischer give forty-five species of *Mitra* and fifty species of *Conus*, for instance, as being found within the New Caledonian region. Many of these are of very wide distribution, and it is curious to observe how large a number of the forms found in Mauritius are here also, some 3,000 miles or more to the eastward, although it forms part of the same vast sub-division, the Indo-Pacific Province. The late M. Paul Fischer, however, considers the Australo-Polynesian region, in which he places these islands, distinct from the Indo-Pacific Province of Woodward. These sub-divisions, however, must necessarily be somewhat arbitrary, and their lines of demarcation optional. The fact remains, that in the Marine Mollusca, at all events, there is a close connection between the Mauritian and the New Caledonian Fauna.

We had, at first, in mind the possibility of a general

catalogue brought up to date of all the species hitherto reported from this group; but, upon reflection, we think it best merely to include those species received from time to time from Mr. Hadfield. Our especial thanks are due to Mr. William Moss, Mr. R. Cairns, and Dr. G. W. Chaster. To Mr. Moss, for photographing for us some of the new species in a very clear and accurate manner, and for allowing us to inspect, on several occasions, the large stores he received from Mr. Hadfield. To Mr. Cairns for having aided Mr. Moss in the separation and arrangement of so large a mass of material and for having permitted the selection by us of what might be of interest for this catalogue; and to Dr. G. W. Chaster also for some beautiful photographs of the new species, reproduced herewith by the collotype process. This aid has been to us invaluable. To Mr. Edgar A. Smith, F.Z.S., of the Natural History Museum, South Kensington, and to Mr. Ernest Ruthven Sykes, F.Z.S., we must also offer our best acknowledgments, for their ready help in discriminating some of the more critical species, and advice on the subject of the new forms; and to Mr. John Ray Hardy, of the Manchester Museum, Owens College, we are also indebted for much valuable assistance in the arrangement of the collection generally.

#### LIST OF SPECIES.

##### CLASS CEPHALOPODA.

##### ORDER DIBRANCHIATA.

##### FAMILY SPIRULIDÆ.

*Spirula peronii* Lam.—Several specimens of this pelagic species, mostly in a fragmentary condition.

##### ORDER TETRABRANCHIATA.

##### FAMILY NAUTILIDÆ.

*Nautilus macromphalus* Reeve.—A long suite of individuals ranging in size from very young ones, 22 mill. in diameter, to adult. Two very fine specimens came in spirit and contained the animal in good condition. In

the umbilical cavities of each of these specimens are colonies of a small Cirrhipede, allied to *Lepas fascicularis* L.

*N. pompilius* Linné.—One adult specimen.

##### CLASS GASTROPODA.

##### ORDER PULMONATA.

##### FAMILY TESTACELLIDÆ.

*Paryphanta Seisseti* Montr.—Several fine specimens.

*Rhytida inæqualis* Pfr.—Several.

*Diplomphalus lifuanus* Montr.—Plentiful and very fine.

##### FAMILY HELICIDÆ.

*Helix pomatia* Linné.—A large number of this species were received, mostly differing but slightly from European examples, but several are almost black in colour. Of course the species has been introduced, and Mr. E. L. Layard gives a graphic description of his first finding it in the Island of Lifu in 1879, and subsequent tracing of the authors of its introduction, who were the officers of a French man-of-war (vide Wallis Kew, 'The Dispersal of Shells,' London, 1893).

*H. (Geotrochus) sinistrorsa* Deshayes=*Buliminus sinistrorsus* Pät.—A curious little shell, placed by Clessin in the sub-section *Pseudopartula* Pfr. Our specimens, of which there are a great number, have been identified as the above by Mr. E. L. Layard and others, but agree as nearly with *Buliminus theobaldianus* Gassies, as figured in Gassies' Faune Conch. Nouvelle-Calédonie, pt. 2 pl. iii., fig. 9.

*H. (Patula) costulifera* Pfr.—Several.

*H. (Patula) confinis* Gassies.—Several.

*Bulimus (Placostylus) Alexander* Crosse.—Several examples of this fine species.

*B. (Placostylus) Edwardsianus* Gassies.—Several.

*B. (Placostylus) fibratus* Martyn.—Several.

*B. (Placostylus) insignis* Petit.—Very abundant, most of the specimens minus epidermis.

abounding in synonymy and false species, and badly needing a competent monographer.

## ORDER PROSOBRANCHIATA.

## FAMILY TEREBRIDÆ.

- Terebra (Subula) casta** Hinds.—Near *T. hastata* Menke.  
A pretty species. Several specimens.
- T. (Subula) crenulata** Linné.—Several fine specimens in various stages of growth.
- T. (Subula) dimidiata** Linné.—Several.
- T. (Subula) duplicata** Lamarck.—Three specimens.
- T. (Subula) maculata** Linné.—Very numerous in all stages of growth, several specimens being large and well marked.
- T. (Subula) muscaria** Linné.—Abundant and very fine.
- T. (Abretia) affinis** Gray.—A beautiful, but common form. Numerous examples.
- T. (Abretia) cerithina** Lamarck.—One full-grown specimen in good condition.
- T. (Hastula) circumcincta** Deshayes.—A conspicuous shell; spirally transverse-striated. Several specimens.
- T. (Hastula) lanceata** Lamarck.—A number of worn or fragmentary examples of this elegant species.
- T. (Euterebra) Bernardi** Deshayes.—An Australian form. One or two specimens.
- T. (Euterebra) circinata** Deshayes.—A few examples. Originally described from China.
- T. (Euterebra) Mariesii** Smith.—One specimen only, but exactly agreeing with the Japanese type; it has been referred to the describer of the species.
- T. (Euterebra) straminea** Gray.—Two specimens.
- T. (Euterebra) tricolor** Sowerby.—Several imperfect but characteristic specimens.
- T. (Myurella) argus** Hinds.—One fine example only.
- T. (Myurella) cingulifera** Lamarck.—A few worn shells.
- T. (Myurella) myuros** Lamarck.—Uncommon.

**T. (Myurella) nectarea** sp. nov. (Pl. II., fig. 2).

*T. testa elongato-subulata, ad basim latiore, albida, parum nitida, supra suturas regulariter brunneo-maculata, anfractibus tridecim, transversim multi-sulcatis, longitudinaliter costatis, costis gemmulatis infra, juxta suturas, duabusque macularum ordinibus plus minusve decoratis, ultimo anfractu bicingulato apud medium atque ad basim, apertura ovata, labro exteriori simplici.*

*Long., 35 mill. Lat., 10 mill.*

*Hab., Lifu.*

One specimen of this distinct and handsome shell was brought home by Mr. Hadfield in 1891-2. The longitudinal ribs beaded just below, and the double row of brown spots above the sutures, resemble no other species with which we are acquainted, excepting perhaps *T. tigrina* Gmelin, a smooth shell with the same disposition of marking; it bears also some superficial likeness to *T. corrugata* Lam., *T. histrio* Desh., and others of the same section. But in form *T. interlineata* Desh., from the Sandwich Isles, gives the closest approach to our species. This, we believe, is still unique in the Cumingian collection at South Kensington. In this shell, however, the whorls are divided by a broad transverse groove, and there is no sign of this in *T. nectarea*. Care must be taken not to confound imperfect specimens of *Vertagus Martinianus* Pfr. with this shell.

- T. (Myurella) nodularis** Deshayes.—Not uncommon. Perhaps only a form of *T. textilis* Hinds.
- T. (Myurella) oculata** Lamarck.—Several good specimens of this fine species.
- T. (Myurella) subulata** Linné.—Common.
- T. (Myurella) textilis** Hinds.—Common.

## FAMILY CONIDÆ.

- Conus imperialis** Linné.—Several; one very fine.
- C. marmoreus** Linné.—Numerous; mostly young specimens.
- C. pulicarius** Bruguière.—Abundant; several very fine specimens with epidermis intact.



Plate II.



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