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Fasciculi Malayenses

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## CONTENTS

### PART II

<table>
<thead>
<tr>
<th>Title</th>
<th>Author</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report on the Non-Operculate Pulmonates</td>
<td>W. E. Collinge, M.Sc.</td>
<td>201</td>
</tr>
<tr>
<td>The Funnel surrounding the Mouth in the Tadpole of Megalophrys Montana</td>
<td>Nelson Annandale, B.A.</td>
<td>275</td>
</tr>
<tr>
<td>Heliocopris Mouhotus and Dominus</td>
<td>D. Sharp, M.A., F.R.S.</td>
<td>285</td>
</tr>
<tr>
<td>Report on the Marine Fishes</td>
<td>J. Johnstone, B.Sc.</td>
<td>293</td>
</tr>
<tr>
<td>List of Freshwater Fishes</td>
<td>G. A. Boulenger, F.R.S.</td>
<td>303</td>
</tr>
<tr>
<td>Note on a Tooth of Elephas Namadicus</td>
<td>Charles W. Andrews, D.Sc.</td>
<td>307</td>
</tr>
</tbody>
</table>

### APPENDIX

<table>
<thead>
<tr>
<th>Title</th>
<th>Author</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnoses of Aculeate Hymenoptera</td>
<td>Lieut.-Colonel C. T. Bingham</td>
<td>i</td>
</tr>
<tr>
<td>List of Water Beetles</td>
<td>D. Sharp, M.A., F.R.S.</td>
<td>vii</td>
</tr>
</tbody>
</table>
NON-OPERCULATE PULMONATA

BY

WALTER E. COLLINGE, M.Sc.

THE UNIVERSITY, BIRMINGHAM
INTRODUCTORY NOTE

No particular attention was paid to the collection of Mollusca either by Mr. Annandale or myself, and, as has been noted previously, the drought that prevailed during a great portion of our stay in the Siamese Malay States was very unfavourable to most forms of invertebrate life. The majority of our collecting stations, moreover, were situated on granite, where the molluscan fauna is naturally poor, but the limestone hills and caves in the vicinity of Biserat would probably afford a rich harvest if carefully searched during the rainy season. The districts covered by the 'Skeat' Expedition and ourselves in the Eastern States were, to all intents and purposes, identical, and the fact that out of thirty-eight species in the two lists only one is common to both, shows that on the Eastern side of the Peninsula, at any rate, almost everything remains to be done in this branch of zoology; though on the west coast our knowledge is much more complete owing to the researches of Stoliczka, Godwin-Austen, De Morgan, and Moellendorf.

HERBERT C. ROBINSON
REPORT ON THE NON-OPERCULATE LAND MOLLUSCA

By WALTER E. COLLINGE, M.Sc.

THE UNIVERSITY, BIRMINGHAM

The collection of Non-Operculate Land Molluscs made by Messrs. Annandale and Robinson during 1901 and 1902 in the Malay Peninsula, and which has been placed in my hands for identification and description, is not a large one, and many of the species I have dealt with in my account of the Non-Operculate Land and Freshwater Molluscs collected by the members of the 'Skeat' Expedition in 1899 and 1900. There are, however, a few species which were not obtained on this expedition, and these are of particular interest.

Firstly, I would mention the occurrence of a new species of Damayantia, Issel, which genus has not hitherto been recorded from elsewhere than Borneo; its distribution is thus extended considerably westward. A new species of Parmarion, P. Fisch., is described from Bukit Besar, while an example of Helicarion lowi, De Morgan, enables me to give some account of the anatomy, from which it will be seen that it can no longer be retained in that genus, but finds a more natural position in the genus Nilgiria, Godw.-Aust. Finally, a new species of Atopos, Simr., offers an opportunity of further adding to our knowledge of the anatomy of this most interesting genus, though there yet remain many gaps.

In all, the collection comprises representatives of twenty-three species, which are contained in seventeen genera; of these, five species are new.

My best thanks are here tendered to the Council of the Birmingham Natural History and Philosophical Society for a grant towards the cost of the figures illustrating this work.

DAMAYANTIA, Issel

1. Damayantia minima, sp. nov.  
(Pl. XI, Figs. 1, 2)

Animal yellowish-brown, with a dark lateral band posteriorly, and an irregular black patch on the right side anteriorly. Mantle completely covers the shell; colour same as the body with three dark blotches in the middle. The dorsum is sharply keeled and lighter in colour. Rugae scarcely visible anteriorly, posterior-laterally large and somewhat rhomboidal; absent on the mantle. Caudal mucous pore large and overlapped by the extremity of the tail. Peripodial groove faint. Foot-fringe yellowish-brown, lineoles absent; foot-sole same colour, with median and lateral planes.

Length (in alcohol), 12·5 mm.

Gedong, Batang Padang, South Perak.

Hitherto the genus has only been recorded from Borneo. The present species differs from D. dilecta, Issel, the type of the genus, in its smaller size, colour, absence of lineoles on the foot-fringe, the smaller mantle lobes, and the position of the visceral mass in relation to the body posterior to it.

PARMARION, P. Fisch.

2. Parmarion malayana, sp. nov.  
(Pl. XI, Figs. 3, 4; Pl. XII, Figs. 11-13)

Animal fawn coloured, with faint dirty blue streak at each side of the dorsum posterior-laterally. Mantle fawn coloured with irregular deep brown markings; keeled on the left side. Head marked by two prominent dark blue bands, which extend on to the bases of the upper tentacles. Rugae faint, small, and oval shaped. Peripodial groove distinct. Foot-fringe same colour as the body, with faint lineoles. Foot-sole dirty yellow, with median and lateral planes.

Length (in alcohol), 30 mm.

Shell oval in form, amber coloured, semi-transparent and membraneous; whorls two-and-a-half; the first, which is very small, being calcareous. Maj. diam. 6·5; min. diam. 4 mm.

Bukit Besar, Nawngchik. 2,500 feet.

The Generative Organs (Pl. XII, Figs. 11-13).

The generative organs in general form agree with those of other Malayan species, there is one notable difference, however, viz., the penis does not
exhibit the beak-like distal end, common to so many species. The form of
the species reminds one of this same organ in some species of Girasia, Gray.
The vestibule is wide, and leading into it in the middle portion is the vagina,
'a long, wide, spacious tube, which distally receives the short duct of the
receptaculum seminis. The free oviduct is very short and scarcely differentiated
from the common duct, which is thrown into a single fold and richly convoluted.
The penis commences as a wide muscular tube, and at the point where the
retractor muscle is inserted becomes bulbous, and makes a sharp turn upon
itself, then gradually tapering passes into the vas deferens which joins the
common duct on the opposite side to and just above the opening of the
receptacular duct. Internally the lumen of the penis does not agree with the
external form, agreeing in this character with the genus Microparmarion, Simr.
At the proximal end the penis is a fine canal which makes a bend to the right
side and then to the left side, it is then continued as a fine tube to the region
where the penis is folded upon itself; here it expands into a sac-like chamber
which is connected by a tube-like portion with a further dilation, which latter
gradually lessens in size, continuing on the ventral side of the organ, and
ultimately passes into the vas deferens (Pl. XII, Fig. 12).

HELCARION, Fér.

3. Helicarion permolle, Stol.

Helicarion permolle, Stol. J. A. S. B. xlii, p. 18, pl. i, fig. 11; pl. ii, figs. 21-23
(1873).

Telóm, Perak-Pahang boundary. 4,000 feet.

ARIOPHANTA, Desmoulins

4. Ariophanta janus (Chem.)

Helix janus, Martini and Chemnitz, Conch. Cab. xi, p. 307, figs. 3016, 3017.

Bukit Besar, Nawngchik. 2,500 feet.

NILGIRIA, Godw-Aust.

5. Nilgia lowi (De Morgan)

(Plate XII, Figs. 14-16)

Helicarion lowi, De Morgan, Bull. Soc. Zool. Fr. x, p. 25, pl. i, figs. 3a-3d
(1885).

From a single alcoholic specimen collected at Bukit Besar (3,000 feet), I
am able to give the following particulars. The animal is a deep chrome yellow,
with dark-blue or greenish-blue blotches; the head and tentacles are also a
dark greenish-blue colour. The peripodial groove is well defined, and
terminates below the large caudal mucous pore. The foot-fringe is yellow,
marked with irregular blotches of blue; the foot-sole a dirty yellow and
marked by a shallow median groove, possibly due to the alcohol. The
extremity of the foot terminates bluntly. The specimen measured 31 mm.
in length, and the foot-sole 9 mm. in breadth. The shell was broken, but
at least a third less than that described and figured by De Morgan. It has
four whorls, and is thin and horn-coloured.

This species can no longer be retained in the genus Helicarion, Férr.,
which seems to be a repository to certain authors for all thin semi-transparent
shells of three or four whorls. It is closely related to certain species of
Ariophanta, in which the dart is represented by a small simple muscular
organ, and for such I would suggest that the name of Nilgiria, Godw.-Aust.,
should be retained.

The Rev. Professor H. M. Gwatkin has very kindly examined a
mounted specimen of the radula, which I sent him, and he states that he sees
no reason why the species should not be referred to Ariophanta, though, as
he points out, the genus is by no means in a satisfactory state.

The Generative Organs (Pl. XII, Figs. 14-16).

The vestibule is a wide sac-like pouch, into which the penis and dart-sac
open at the right and left sides opposite to one another, while posteriorly is
the opening of the vagina. The receptaculum seminis is a wide tubular sac,
and of considerable length. The free-oviduct, common duct, and albumen
gland call for no special mention. The penis is a long thick muscular organ,
with a definite epiphallus and kalk sac, the vas deferens joining it just below
this latter organ. The retractor muscle is inserted at the distal end of the
penis, at which point the latter organ exhibits a slight enlargement. Internally
there is a large long penis which distally exhibits a peculiar spongy-like cap or
covering (Pl. XII, fig. 16); this specimen was in only poor condition, and I
was therefore unable to make out the structure as clearly as I should have
liked. The dart gland and dart sac are of the usual form, and in the latter
there is present a small muscular papilla very similar to those present in other
species of Nilgiria.

**EUPLECTA,** Semper

6. **Euplecta bijuga** (Stol.)

Rotula bijuga, *Stol. J. A. S. B.* xlii, p. 14, pl. i, figs. 4-7; pl. ii, figs. 16-18
(1873).

Bukit Besar, Nawngchik. 3,000 feet.
7. Euplecta, sp.
Bukit Jalor, Jalor. 300 feet.

MACROCHLAMYS, Bens.

8. Macrochlamys resplendens (Philippi)
Macrochlamys (?) resplendens, Godw.-Aust. Moll. of India, p. 109, pl. xxvi,
figs. 1-3 (1883).

Bukit Besar, Nawngchik. 3,000 feet.

Three very fine specimens, the largest of which measures 23 mm. max. diam.

Macrochlamys hardwickei, Godw.-Aust. Moll. of India, p. 105 (1883).

Cape Patani, Jhering.

HEMIPLECTA, Albers.

10. Hemiplecta sakaya (De Morgan)
Oxytes sakaya, De Morgan, Bull. Soc. Zool. Fr. x, p. 32, pl. vi, figs. 1a-1c (1885).

Bukit Besar, Nawngchik. 2,500 feet.

Nanina (Hemiplecta) salangana, v. Martts. Conch. Mitt. 11, p. 134, pl. xxv,
figs. 8-12.

var. martensi, var. nov.

I am indebted to Professor E. von Martens for very kindly comparing a shell from Bukit Besar with specimens of this genus in the collection in the Berlin Museum. He regards it as near to H. salangana, v. Martts., from the island of Salanga or Junk Ceylon, on the north-west coast of the Malay Peninsula. It differs, however, from that species the type of which measures 44 mm. maj. diam., in its larger size being 52 mm., and a somewhat malformed specimen in which the sutures are very deep is 57 mm. It is also more darkly coloured and the umbilicus larger.