

Notes on a Collection of Terrestrial Mollusca from Christmas Island

By F. F. LAIDLAW, M.A.

Both Mr. J. R. le B. Tomlin and Dr. B. Rensch have given me kind and valuable assistance in drawing up the following list which is chiefly based on material collected by Mr. M. W. F. TWEEDIE in 1932 and I have the pleasant duty of offering them here my grateful thanks for their help.

The molluscan fauna of Christmas Island has been dealt with chiefly by the late E. Smith.

References to his papers on the fauna are as follows:—

Smith E., 1887. Proc. Zool. Soc. London, pp. 517-519.

1888. *ibid.* pp. 536-538.

1900. *ibid.* pp. 117-118.

1900. Christmas Island Monograph, pp. 54-59.

1905. Ann. Mag. Nat. Hist. 16, p. 551.

1909. Proc. Malac. Soc. VIII, pp. 369-372.

1910. *ibid.* IX, pp. 315-318.

Other references are few, all that I have been able to find are given below.

Laidlaw, F. F., 1930. Proc. Malac. Soc. XIX, p. 176.
(note on *Sitala? normani* Smith).

Rensch, B., 1931. (Zool. Jahrb. 61, p. 378).

(suggests that the form described by Smith under the name *Leptopoma mouhoti* Pfr. is probably an undescribed race of *Japonia (?) wallacei* Pfr.).

Jutting, T. van B., 1932 Journ. of Conch. XIX, p. 206, Pl. VII, fig. 12. (records *Succinea listeri* Smith from Java).

ELLOEIIDÆ

Pythia nux Reeve.

Numerous specimens of all ages, some preserved in spirit, from debris and detritus.

The species is evidently abundant. It is not recorded by Smith, who however lists *scarabaeus* L. a similar but larger species. Mr. Tomlin to whom I owe the identification of these specimens has very kindly searched for the material studied by Smith in order to determine whether *scarabaeus* actually occurs, or whether Smith's examples should have been correctly referred to *nux*. Unfortunately he has not been able to trace the specimens in question so that it must remain doubtful if both species occur in the fauna. Height of average specimen of *nux* from Christmas Island 14 mm., diam. max. 9 mm.

Smith also records the following members of the family—

Melampus fasciatus Desh. (Smith 1888)¹.

luteus Q. & G. (Smith 1887).

castaneus Mildf. (Smith 1900).

(I have been informed by Mr. Tomlin since the above was written that he has succeeded in finding specimens from Christmas Island identified by Smith as *scarabaeus* L. and that they are undoubtedly more correctly to be referred to *nux*).

SUCCINEIDÆ

Succinea solitaria Smith.

Succinea solitaria, Smith, 1887, p. 518, fig. id. 1900, p. 536.

A number of specimens "from jungle".

Two other species have been recorded from the Island; but neither of them is included in Mr. Tweedie's collection.

These are *solidula* Pfr. and *listeri* Smith. The latter has recently been found in Java, whence it is recorded by Miss van Benthem Jutting (1932).

VERTIGINIDÆ

Nesopupa proscripta (Smith). Fig. 1.

Jaminia proscripta, Smith 1905.

¹ These three species were collected in 1932, and have been identified by Mr. J. R. Le B. Tomlin. M.W.F.T.

35 specimens from debris at base of trees.

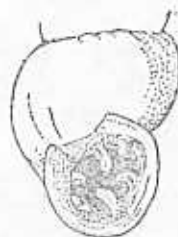


Fig. 1.—*Nesopupa proscripta* (Smith)

Pilsbry compares this species with *malayana* Issel. He remarks—

"This has the angular lamella short, it is remote from, not running into the upper termination of the upper lip, thereby differing from *malayana*."

SUBULINIDÆ

Subulina octona Brug.

A number of specimens in spirit, without precise localization, along with examples of *Pythia nux*.

Not recorded by Smith, a vagrant.

Opeas gracile Hutton.

Specimens "from near saw-mills." I have also seen specimens collected in 1904 from "near Hospital". Recorded by Smith under the name *Opeas subula* Pfr. I believe the latter name is now reserved for a closely allied New World species or race.

Like the last species this seems to follow in the wake of human activities all over the tropical world.

ENDODONTIDÆ

Charopa? sp.

Seven examples of this interesting shell, some of them much worn.

The largest specimen has a maximum diameter of 2.7 mm. and altitude 1.3 mm.

Shell widely umbilicate, depressed conoidal of about 4½ whorls, regularly increasing. Periphery subangulate, suture well impressed; aperture sublunate.

Both dorsal and ventral surfaces finely and regularly ribbed.

Dr. RENSCH has been good enough to examine a specimen for me and suggests that it belongs to this genus, and is probably an undescribed species.

Whilst I think this is very likely I do not feel able to give a full comparison with the known species of the genus, and therefore leave the specimens without a name for the present.

ARIOPHANTIDÆ

Sitala (?) *normani* Smith.

Ariophanta (Microcystis) normani, Smith 1888.
Lamprocystis normani, Smith 1900.
Sitala ? normani Laidlaw 1930.

A number of specimens, some of them very young, were collected by Tweedie. The species seems to be common. Mr. Tomlin writes to me that there are at least half-a-dozen sets of it in the British Museum series.

Its precise generic position is a little doubtful, but it is certainly closely allied to some of the forms at present included in *Sitala*.

Two other species probably closely allied to *normani* have been recorded from the island by Smith, and were included in the same genus (*Lamprocystis*).

These are—

mildredae Smith 1888.
mabelae Smith 1888.

Tomlin tells me (in litt.) "I do not see any real difference between "*normani* and *mildredae*. *Mabelae* is flatter and bluntly keeled."

Kaliella cruda Smith 1909.

"I examined *Kaliella cruda* also, it looks a very ordinary *Kaliella*." (Tomlin, in litt.).

Not represented in the collection before me.

STREPTAXIDÆ

Huttonella bicolor (Hutton).

Ennea bicolor Smith, (1909).

A 'vagrant' species found over a great part of the Asiatic tropics.

CYCLOPHORIDÆ

Japonia (?) *wallacei* subsp.

Japonia wallacei subsp. nov. ? Rensch, 1931.
Leptopoma mouhoti Pfr. var. Smith, 1900.
Kobelt, Monogr. Cyclophoridae, 1902.

One worn and damaged specimen. I believe that Rensch is correct in regarding the Christmas Island form as a subspecies, or race of a widely ranging species, forms of which occur from the Aru Islands and New Guinea, through the lesser Sunda Islands to Java, and with a representative in Cambodia (*mouhoti* Pfr.).

The dimensions of the specimen before me are—alt 7.8 mm., diam max. 7.6 mm.

In addition there are three very small, quite immature specimens apparently of the same species.

ASSIMINEIDÆ

Paludinella andrewsiana (Smith).

Several specimens, all dead shells, from fissures in limestone at the top of sea cliff.

Height of average specimen 3.2 mm, breadth 2.1 mm.

Dr. Rensch tells me (in litt.) that this species is clearly very closely allied to his species *P. halophila* from Java. In his account of fresh-water forms from the "Deutschen Limnologischen Sunda-Expedition" (Arch. f. Hydrobiologie, Suppl. Band XIII; 226-227. 1934) he compares *andrewsiana* with *Assimineea bedaliensis* Rensch, but after seeing one of the specimens from Christmas Island he regards it as a *Paludinella*.

HYDROCENIDÆ

Georissa javana Mlldff. Fig. 2.

Numerous examples, from amongst debris.



Fig. 2.—*Georissa javana* Mlldff.

This small species appears to be an addition to the fauna of the Island.

TRUNCATELLIDÆ

Truncatella valida Pfr.

This species ranges over the whole of the Indo-Australian Archipelago, and is perhaps the most abundant land-mollusc found in Christmas Island. Dead shells are very numerous amongst debris, and occur at all stages of development. The radula has been figured by Rensch (Zool. Jahrb., 1931, 61: 395, fig. 21).

In an analysis of the fauna the four species of the Ellobiidae and *Truncatella* may be put on one side, they have some special facilities for distribution, and can stand immersion in salt water. There are three species whose presence may be fairly attributed to human agency, viz. *Subulina octona*, *Opeas gracile*, and *Huttonella bicolor*.

The remainder fall into a different category.

Succinea.—It is not a little remarkable to find three distinct species inhabiting so small an area. Tomlin has called my attention to the cases, somewhat parallel, of St. Helena with three species of the genus, Bermuda with two, and the Hawaiian islands with a rich development of the genus. This then is a feature of the Christmas Island fauna comparable to that of at least some other remote islands.

The nine remaining species (and with them *Succinea listeri*) all suggest some definite relationship with the molluscan fauna of the Indo-Australian Archipelago, excepting perhaps the *Charopa*. Though it is scarcely possible to write with any degree of certainty as to this species, it is permissible to say that the genus is a very ancient one and is well represented in Polynesia, New Zealand, and New Guinea.

Nesopupa proscripta belongs to a genus characteristic of small islands of the Pacific and Indian Oceans. A species is recorded from the Cocos Islands, and even from St. Helena. The Bornean species *malayana* Issel. is closely allied to our species.

The rest of the species may be regarded as belonging to the Malaysian fauna, but with sufficient individuality to suggest a long period of isolation.

In general it may be stated that Christmas Island shows some of the peculiarities, hitherto unexplained, which characterize a number of small islands remote from large land masses.