

## ART. XX.—List of the Introduced Land and Fresh-water Mollusca of New Zealand.

By H. SUTER.

[Read before the Philosophical Institute of Canterbury, 4th November, 1891.]

THE first list of introduced species was published by Professor F. W. Hutton (Trans. N.Z. Inst., vol. xvi., p. 211, and vol. xvii., p. 57); and recently Mr. Charles T. Musson, of Sydney, has published a paper "On the Naturalised Forms of Land and Fresh-water Mollusca in Australasia" (Proc. Linn. Soc. of N.S.W., vol. v., ser. ii., p. 883), in which some additional introduced species from New Zealand are mentioned. As I have been fortunate enough to get acquainted with a few more forms, I think it may be of some interest to give now a list as complete as my present knowledge allows.

1. *Testacella*, described by Professor F. W. Hutton as *T. vagans*, is found in gardens in the vicinity of Auckland. Mr. T. F. Cheeseman (Trans. N.Z. Inst., vol. xix., p. 170) remarks that it is very likely only a naturalised species, probably *T. maugei*, Fér., which is found in Portugal and on Teneriffe, but has also been introduced into Great Britain. I think Mr. Cheeseman's supposition to be fairly correct, as the genus *Testacella* is restricted in its habitat to south-western Europe and Algeria only, and it cannot belong to our native fauna.

2. *Helicarion milligani*, Pf. Mr. T. W. Kirk found one specimen of this snail at South Karori, near Wellington, which, no doubt, has been imported from Tasmania.

3. *Limax (Agriolimax) agrestis*, L. (= *L. molestus*, Hutt.). Found almost everywhere where improvements on the native soil have taken place.

4. *Limax (Heynemannia) maximus*, L. Dunedin (F. W. Hutton).

5. *Limax (Simrothia) variegatus*, Drap. (*L. flavus*, L.). Dunedin and Greymouth (F. W. Hutton).

6. *Amalia gagates*, Drap. Common in southern Europe, scarce in England. Has, like the foregoing, been imported in many parts of the world. Ohaupo and Auckland (Charles T. Musson).

7. *Hyalina (Euhyalina) cellaria*, Müll. (*H. sydneyensis*, Cox). It is not synonymous with *H. corneo-fulva*, Pf., which is a well-characterized New Zealand species, in form of the shell nearer to *Hyalina nitens*, Mich., than to *H. cellaria*. Bay of Islands; Auckland; Napier (F. W. Hutton).

8. *Hyalina (Euhyalina) alliaria*, Miller. The shell and dentition correspond with the description; dentition, 11—3—1—3—11, one marginal tooth more than mentioned by Schepman. In Mr. R. W. Fereday's hothouse, probably introduced from England.

9. *Hyalina (Vitrea) crystallina*, Müll. Specimens from Auckland are in Professor F. W. Hutton's cabinet, Canterbury Museum.

10. *Zonitoides nitida*, Müll. Recorded by Mr. Charles T. Musson: "Lake St. John, Auckland; a dozen specimens, under logs." I feel very doubtful about the identification of these shells, which I have not seen, as they might as well be *Hyalina novarae*, Pf. The examination of the dentition would at once settle the question.

11. *Arion empiricorum*, Fér. (*A. ater*, L.). Auckland, crawling over the roads after rain (Charles T. Musson).

12. *Arion subfuscus*, Drap. (*A. incommodus*, Hutt.). Dunedin (F. W. Hutton).

13. *Arion hortensis*, Fér. Auckland, plentiful (Charles T. Musson).

14. *Helix (Xerophila) caperata*, Mont.\* Found in Nelson (J. Meeson).

15. *Helix (Tachea) hortensis*, Müll. Auckland (F. W. Hutton). Mr. Charles T. Musson erroneously gives the name of *H. nemoralis*, L. (*l.c.*, p. 895).

16. *Helix (Pomatia) aspersa*, Müll. Auckland, Nelson, Greymouth (F. W. Hutton); Wellington, Christchurch (H. S.). Common at most of the sea-coast towns. Examples from Apua, in the Bay of Islands, are exceptionally thin, whilst shells from Auckland are of the variety *conordea* (Musson, *l.c.*).

17. *Helix (Corasia) tricolor*, Pf. Indigenous to San Christoval, Solomon Islands. The specimens I saw are in the cabinet of Mr. Kinsey, of Christchurch, and were found at the Bay of Islands. "Lives on the leaves of trees, or any plant in garden that is firm enough to hold them," says the collector's note. Formerly the Bay of Islands was trading with the Solomon Islands, and this may explain the introduction of this fine shell.

18. *Cochlostyla (Orthostyla) daphnis*, Brod. One specimen, which was found at Picton, is in Mr. Kinsey's cabinet. The species is a native of the Philippine Islands (Zebu, Siguijor).

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\* I am indebted to Mr. Charles Hedley, Austral. Mus., Sydney, for the identification of this shell.

19. *Limnæa (Limnæus) stagnalis*, L. River Avon, Christchurch. Introduced intentionally as food for trout (F. W. Hutton). Auckland, at the Onehunga Springs (Charles T. Musson).

ART. XXI.—*List of Land and Fresh-water Mollusca doubtful for New Zealand or not inhabiting it.*

By H. SUTER.

[Read before the Philosophical Institute of Canterbury, 4th November, 1891.]

1. *Elæa rapida*, Pf. (1853). Professor F. W. Hutton, in his "Manual of the New Zealand Mollusca, 1880," and in his "Revision of our Land Mollusca," has already pointed out that the New Zealand locality for this mollusc is very doubtful. Mr. Charles Hedley, in his "Notes on Queensland Shells" (Proc. Roy. Soc. of Queensl., vol. vi., p. 100), says, "*Elæa rapida* is not Australian; its only habitat is the New Hebrides, where Mr. Brazier himself has collected it. When first described it was stated to come from New Zealand." There can be no doubt now that *E. rapida* has to be omitted from the list of New Zealand land-shells.

2. *Nanina guttula*, Pf. (1853), is another land-shell very likely erroneously attributed to New Zealand by Pfeiffer. It was described by him, with the foregoing, in "Zeitschrift für Malakozoologie, 1853," and it seems that for both incorrect localities were given to Pfeiffer. Zelebor mentions it as found on the Nicobar Islands; but Lieut.-Colonel Godwin-Austen, F.R.S., who is thoroughly acquainted with the molluscan fauna of those islands, assures me that he does not know anything of the occurrence of *N. guttula* on the Nicobars. As the localities given by Pfeiffer are not always to be relied on, we might do well to place *N. guttula* amongst our doubtful species as long as it is not found by modern collectors in our colony.

Professor F. W. Hutton says (Trans. N.Z. Inst., vol. xvi., page 186), "I am not satisfied with my identification of *H. guttula*, Pf., as the shell in the Wellington Museum exceeds the dimensions given by Pfeiffer, and it can hardly be called thin; but in other respects it corresponds well with the description, and with Reeve's figure." The height of Reeve's figure is too great by about  $1\frac{1}{4}$  mm. if reduced to the measures given by Pfeiffer. The shells in the Wellington Museum were collected by Mr. T. W. Kirk on "mountains near Masterton."