

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."

I have seen one specimen in Professor Hutton's cabinet, Canterbury Museum, and I am quite sure that it is no New Zealand shell, but very likely from Mauritius. I have collected myself on mountains near Masterton, but never found such a shell.

3. *Trochomorpha hermia*, Hutton (1883). This shell, a specimen of which is also in Professor Hutton's collection, is another contribution to our fauna by Mr. T. W. Kirk, from the Manawatu district. It was described by Professor F. W. Hutton in Trans. N.Z. Inst., vol. xvi., p. 183. The specimen I saw corresponds quite well with *Helix (Pachystyla) inversicolor*, Fér., from Mauritius. It, also, has to be omitted from the list of New Zealand Mollusca.

4. *Neritina neozelanica*, Recluz (1843). The habitat is given: "New Zealand, on stones in mountain-streams." Professor F. W. Hutton remarks ("Manual of New Zealand Mollusca, 1880," p. 90), "The locality given is probably erroneous, but I have reproduced the description, as it has been overlooked in former lists." *Neritina neozelanica*, Recl., is found on the Fiji Islands (Gould), and is, according to Musson, the most common fresh-water shell on the Samoa Islands (Upolu, Tutuila). It has not been found by any of the recent collectors in New Zealand, and we may well exclude it from the list of our fauna.

In Trans. N.Z. Inst., vol. xiv., p. 268, Mr. T. W. Kirk mentions *Neritina fluviatilis*, L., as having been found by him in the Waikanae River. I saw the specimens in Professor Hutton's cabinet, and they perfectly correspond with typical specimens from Germany. I think Mr. T. W. Kirk must have been mistaken in labelling *N. fluviatilis* as from the Waikanae River.

5. *Helix (Rhadaga) reinga*, Gray, closely allied to *H. dringi*, Pf., from North Australia, is very doubtful for New Zealand. Had it been collected by Dr. Dieffenbach at the North Cape it very likely would have been described by Gray with the other species in Dieffenbach's "New Zealand." Mr. Justice Gillies remarks (Trans. N.Z. Inst., vol. xiv., p. 169), "Doubtful if ever found in New Zealand;" and Professor F. W. Hutton holds (Trans. N.Z. Inst., vol. xvi., p. 186) that it is "very probably a New Zealand species, although no specimen exists in any of our collections." Perhaps it is a unique specimen, like *H. dringi*, Pf. A thorough exploration of the far north of New Zealand would give us more certainty in the question.

6. *Helix (Trachia) delessertiana*, Le Guillou (1842), is, according to Dr. J. C. Cox, synonymous with *Helix taranaki*, Gray, and is found on the islands of Torres Strait (Cox, Monograph of Austr. Land Shells, p. 61, No. 153). It is not men-

tioned by Gray in Dieffenbach's "New Zealand," is not in any of our museums with New Zealand as locality, and has not been found here by any collector since it was described by Gray. We therefore may place it amongst our very doubtful species, though its occurrence in New Zealand is not impossible, and would correspond with the habitat of *Therasia ophelia*, Pf., which is said to have been found also near Cape York, Queensland.

ART. XXII.—*Miscellaneous Communications on New Zealand Land and Fresh-water Mollusca.*

By H. SUTER.

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

1. *Potamopyrgus*. In my last paper on our molluscs (Trans. N.Z. Inst., vol. xxiii., p. 94) I recorded the fact of *P. corolla*, Gould, being viviparous. I unfortunately forgot to mention that Professor F. W. Hutton had already brought this peculiarity to our knowledge in 1881 for the species *P. cumingiana*; Fischer, and *P. antipodum*, Gray (Trans. N.Z. Inst., vol. xiv., p. 144), and had also given figures of the embryonic shells. The priority of the discovery therefore belongs to our distinguished conchologist Professor F. W. Hutton. There remains only *P. pupoides*, Hutt., to be examined on its mode of propagation.

2. *Laoma marina*, Hutt., and *L. nerissa*, Hutt. Some years ago, when collecting in the Forty-mile Bush, North Island, I had the opportunity of examining a good number of the above-named shells, and I then made the observation that the lamellæ of the aperture of these shells show a great variability. I found specimens showing the three lamellæ only of *Laoma marina*, others—mostly smaller ones—with the seven lamellæ of *L. nerissa*; but I obtained also a good number of shells which were, with regard to the number of lamellæ, intermediate forms, showing more lamellæ than *L. marina* and less than *L. nerissa*. I thus became convinced that the two species are in reality but one; but it was not until some months ago that I found time for fuller investigation. Through the kindness of Mr. Charles T. Musson, of Sydney, who had been collecting in the Province of Auckland, I obtained a number of shells, and amongst them twenty-nine specimens of *L. marina* and *nerissa*, collected at Mount Wellington, Auckland. These I submitted to a close examination, the result of which I wish to give here.