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# PROCEEDINGS

OF THE

GENERAL MEETINGS FOR SCIENTIFIC BUSINESS

OF THE

# ZOOLOGICAL SOCIETY

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5. Note on some Crustacea from the Freshwater Lakes of New Zealand. By CHARLES CHILTON, M.A., D.Sc., F.L.S., Professor of Biology, Canterbury College, New Zealand.

[Received May 18, 1906.]

Dr. G. S. Brady has been good enough to submit to me the few Amphipoda and other higher Crustacea collected by Messrs. Lucas and Hodgkin during their recent investigation of the principal lakes of New Zealand\*. The first specimens reached me in November 1905 and were at once reported upon; a few additional specimens were received in March 1906, and an examination of these has necessitated some alteration of the general remarks at first made. It will be seen from the following list that the collections of the higher Crustacea were rather meagre and that all the specimens secured belong to species already known.

For many years I have looked forward to making collections from the freshwater lakes of New Zealand in the hope of finding there Crustacea allied to the blind forms inhabiting the underground waters of the Canterbury Plains, just as forms closely allied to European subterranean species are found in the deep waters of the Swiss Lakes. The Crustacea first sent me by Dr. Brady were, however, disappointing from this point of view, but among those lately received there are two specimens of the blind species *Paraleptamphopus subterraneus* (Chilton), one specimen from Lake Wakatipu (depth not stated) in the South Island, and the other from Lake Taupo in the North Island, taken at a depth of 700 feet. This species is widely distributed in the underground waters of the Canterbury Plains, and has also been found in surface streams at Castle Hill in Canterbury and in the Longwood Range in Southland, and its occurrence in the two lakes named still further widens its area of distribution. It is closely allied to *Paraleptamphopus cæruleus* (G. M. Thomson), first described from a small stream at the top of the Old Man Range in Otago, at a height of about 3000 feet, but since found to be, like its underground representative, more widely distributed.

The next most interesting species is the little Isopod that I have identified as *Paranthura nigro-punctata* (Lucas). Though a surface form it is of particular interest, since it is the only known freshwater species of the Anthuridæ, and thus helps to throw some light on the origin of the subterranean species *Cruregens fontanus*, which belongs to the same family. Taken in connection with the recent discovery of a Caprellid in the Lake of Geneva, the occurrence of this Anthurid in freshwater leads us to hope that other unexpected finds may be looked for on a further examination of the lakes.

Two other species, *Tenagomysis novæ-zealandiæ* and *Para-*

\* "A Bathymetrical Survey of the Lakes of New Zealand," by Keith Lucas. Geographical Journal, May & June 1904.



*corophium excavatum*, were previously known only from salt or brackish water on the sea-coast. The little crab *Hymenosoma lacustris* was previously known to occur in New Zealand only in a small freshwater lake near the coast, but it has also been recorded from streams in Victoria and in Norfolk Island.

In the following list I have given only the most important references under each species.

#### BRACHYURA.

##### HYMENOSOMA LACUSTRIS (Chilton).

*Elamena* (?) *lacustris* Chilton, Trans. N. Z. Inst. xiv. p. 172.

*Hymenosoma lacustris* Chilton, l. c. xv. p. 69, pl. i. fig. 2.

*Hymenosoma lacustris* Fulton & Grant, Proc. R. S. Vict. xv. (new series) p. 60, pl. viii.

One male and one female specimen from Lake Waikare, the male taken on the stony shore, the female in 5 feet of water.

These resemble the typical specimens from Lake Pupuke Auckland, except that the posterior tooth of the carapace is quite absent and the anterior one forms a slight projection of the outline of the carapace rather than a definite tooth.

This species has been found in freshwater streams in Norfolk Island and in Lake Colac in Victoria. A full account of the slight differences observed between the specimens from different localities will be found in the paper by Messrs. Fulton and Grant mentioned above.

#### MACRURA.

##### XIPHOCARIS CURVIROSTRIS (Heller).

*Caridina curvirostris* Heller, Voy. Novara, Crust. p. 105.

*Xiphocaris fluviatilis* G. M. Thomson, Trans. Linn. Soc. viii. p. 447, pl. xxix. figs. 2 to 13.

Numerous specimens from Lake Waikare, from nettings among reeds\*.

This species is common in freshwater streams throughout the main islands of the Colony; I have specimens also from the Chatham Islands.

#### SCHIZOPODA.

##### TENAGOMYSIS NOVÆ-ZEALANDIÆ G. M. Thomson.

*Tenagomysis novæ-zealandiæ* G. M. Thomson, Journ. Linn. Soc. xxvii. p. 484, pl. xxxiii. figs. 6 to 8 & pl. xxxiv. figs. 9 to 17.

Six specimens from Lake Waikare, in a netting from among reeds.

This species has hitherto been known only from the sea-coast. Mr. Thomson records it from the Kaikorai lagoon (brackish water), estuary of Waikouaiti River, and rock-pools at Brighton—all

\* In the tube with this specimen was a single example of a terrestrial Isopod, *Porcellio scaber* Latr., an introduced species which must have got among the collections from the lakes by some accident.



near Dunedin, and from the Bay of Islands, dredged in 8 fathoms. I have taken it near the mouth of a little stream at Brighton, in water which was at the time almost fresh to the taste, though close to the sea and affected by extra high tides.

#### AMPHIPODA.

##### PARACALLIOPE FLUVIATILIS (G. M. Thomson).

*Calliope fluviatilis* G. M. Thomson, Trans. N. Z. Inst. xi. p. 240.

*Paracalliope fluviatilis* Stebbing, Ann. & Mag. N. H. ser. 7, iv. p. 210.

Numerous specimens from Lake Waikare.

This species is very common in all freshwater streams in New Zealand; I have also taken it in perfectly salt-water in Dunedin Harbour and elsewhere.

##### PARALEPTAMPHOPUS SUBTERRANEUS (Chilton).

*Calliope subterranea* Chilton, Trans. N. Z. Inst. xiv. p. 177.

*Calliopius subterraneus* Chilton, Trans. Linn. Soc. ser. 2, Zool. vi. p. 234.

*Paraleptamphopus subterraneus* Stebbing, Ann. & Mag. Nat. Hist. ser. 7, iv. p. 210.

One imperfect specimen from Lake Wakatipu (no depth mentioned), and one from Lake Tapu, taken at a depth of 700 feet.

These are both blind, and do not differ appreciably from specimens from the underground waters of the Canterbury Plains. This same blind species has also been taken in surface streams at Castle Hill, Canterbury, at an elevation of 2000 feet above the sea; and more recently Mr. R. M. Laing has brought me specimens from the Longwood Range in Southland. The extension of its distribution as shown by its occurrence in Lakes Tapu and Wakatipu is very interesting.

##### PARACOROPHIUM EXCAVATUM (G. M. Thomson).

*Corophium excavatum* G. M. Thomson, Trans. N. Z. Inst. xvi. p. 236.

*Paracorophium excavatum*, Stebbing, Ann. & Mag. N. H. ser. 7, iii. pp. 241 & 350.

Several specimens from Lake Rotoiti, 5 fathoms, and Lake Waikare (netting among reeds).

This species was described by Mr. Thomson from specimens obtained from "Brighton Creek (salt-water)." I subsequently took it in Brighton Creek along with *Tenagomysis novæ-zealandiæ* when the water was almost fresh to the taste, and specimens lived in a small bottle of this water for some months. I have specimens also from brackish water at Napier.

It thus appears probable that the last three species are all capable of living in fresh or in salt water; and the occurrence of *Paracorophium excavatum* in freshwater lakes far from the sea



is very interesting. I do not know of any other freshwater Corophiidæ.

#### ISOPODA.

##### PARANTHURA NIGRO-PUNCTATA (Lucas).

*Paranthura costana* Thomson, Trans. N. Z. Inst. xiv. p. 230; Index Faunæ N. Z. p. 262.

*Paranthura nigro-punctata* Stebbing & Norman, Trans. Zool. Soc. xii. p. 129, pl. xxvi. fig. 11.

A small specimen, about 6 mm. long, from Waikare Lake, taken at a depth of 5 feet, must, I think, be referred to the species found on the New Zealand coast, which was long ago identified with this European species by Mr. Thomson. The specimen is immature, the seventh segment of the pereion being small and lacking appendages. It possesses large distinct black eyes, the colour is pale yellow with markings of black on the back, and it is evidently a surface form. Another specimen from the same locality was dissected and drawn by Dr. Brady, who kindly sent me the drawings he had made.

So far as I am aware, this is the only freshwater species of the Anthuridæ known, with the exception of the subterranean form *Cruregens fontanus* from the underground waters of the Canterbury Plains, and it is of especial interest for this reason, though it is quite distinct from *Cruregens fontanus*.

The species to which I have referred it, *Paranthura nigro-punctata*, was first taken by Mr. Thomson among some seaweed washed up on the beach near the mouth of the Taieri River; I have several specimens taken at different localities on the East Coast of Canterbury, which agree closely with the description and figures given by Stebbing and Norman.

6. On the Marine Fauna of the Cape Verde Islands, from Collections made in 1904 by Mr. C. Crossland.—The Polyclad Turbellaria. By F. F. LAIDLAW, M.A. Cantab.

[Received June 8, 1906.]

(Plate LII.\* and Text-figures 111–113.)

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#### i. INTRODUCTION.

The collection of Polyclads made by Mr. Crossland is of interest not only on account of the hitherto undescribed species represented in it, but also because it is the first collection which makes it

\* For explanation of the Plate, see p. 719.