Art. 22.—*Some New Zealand Amphipoda: No. 3.**

By Chas. Chilton, M.A., D.Sc., F.N.Z.Inst., &c.

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Amphilochus squamosus (G. M. Thomson).

Amphilochus squamosus Stebbing, 1906, p. 161; 1910, p. 577; Chilton, 1912, p. 479. *A. marionis* Stebbing, 1906, p. 151 and p. 723. *Gitanopsis antarctica* Chevreux, 1913, p. 104.

This species is fairly common on the New Zealand coasts; it is small, not exceeding 4 mm. in length. It was described and figured by Thomson in 1880, but, owing to insufficient information as to the mouth-parts, was given as a doubtful species in "*Das Tierreich*" *Amphipoda* in 1906, not "accidentally omitted," as I stated by mistake in 1912. In that year I was able to compare specimens from New Zealand with others from the South Orkneys collected by the "Scotia," and came to the conclusion that they were specifically identical. I also identified them with *A. marionis* Stebbing obtained by the "Challenger" from Marion Island, and drew attention to the presence of a small accessory flagellum on the upper antennae which had not been mentioned by previous authors. I omitted, however, to point out that the molar of the mandible is well developed, not "feeble" as described by Stebbing in the generic diagnosis given in 1906 (p. 149). Stebbing (1888, p. 744) says, "the molar tubercle (not shown in the figures, *m*, *m*) is conical, scarcely if at all dentate." In the specimens I have examined it is fully as strong as shown in Chevreux's figure of *Gitanopsis antarctica*, and has the circular end thickly provided with short stout setules forming a triturating surface in the usual manner.

Gitanopsis antarctica, described from Petermann Island by Chevreux in 1913, agrees in the presence of the accessory flagellum and in the well-developed molar as well as in the other characters. Through the kindness of Monsieur Edouard Chevreux I have been able to examine a specimen of his species, and cannot find any character of importance in which it differs from the New Zealand or South Orkneys ones.

Stebbing (1910, p. 577) records the species under the name *Amphilochus marionis* from "Off Manning River," New South Wales, and states that the species is notable for having the telson much shorter than in other species of the genus except *A. brunneus* Della Valle. The species thus appears to be circumpolar in Subantarctic and Antarctic seas.

Whether the species should be left in *Amphilochus* or transferred to *Gitanopsis* is doubtful; I am inclined to think that the differences in the mandibles and other points are not of generic value, and this seems to be confirmed by the fact that in Australian specimens that seem undoubtedly to belong to *Amphilochus neapolitanus* Della Valle the molar is well developed, and not feeble as it is in European specimens of that species. I am dealing more fully with these species in a paper sent to the *Records of the Australian Museum*.

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* For No. 1 of this series see *Trans. N.Z. Inst.*, vol. 52, p. 1, and for No. 2 *Trans. N.Z. Inst.*, vol. 53, p. 220.

Metopella ovata (Stebbing).

Metopella ovata Stebbing, 1906, p. 183; Chilton, 1912, p. 481.

I have two small specimens from Brighton, Otago, which I refer to this species. One is a female, about 3 mm. in length, and agrees closely with Stebbing's description and figures; it has the palm of the second gnathopod transverse, and that of the first nearly so; in these respects it agrees with the South Orkneys specimens that I referred to *M. ovata* in 1912, with one of which I have been able to compare it. The other Brighton specimen, taken at approximately the same time, shows no brood-plates or other distinctive marks of sex, and is possibly a male; in it the palms of both gnathopods are much more oblique; it agrees so closely in all other respects that I think it must be considered as belonging to the same species.

In both specimens, which have been stained with eosine and mounted in Canada balsam as micro-slides, certain structures which appear to be of a glandular nature have been deeply stained in the side-plates and other parts of the body but not in the appendages; these show as groups of small round bodies with straight ducts leading towards the margin of the side-plate. They appear to be similar to the structures figured by Stebbing (1891, pl. 1, *prp.* 4) in the basal joint of the fourth peraeopod of *Urothoe elegans*, though I cannot find that these are referred to in his text.

Metopella ovata is now known from the South Orkneys, the Strait of Magellan, and from New Zealand.

Paracalliope fluviatilis (G. M. Thomson).

Calliope fluviatilis G. M. Thomson, 1879, p. 240, pl. x, *c*, fig. 4 *a–c*.
Pherusa australis Haswell, 1880, p. 103, pl. 7, fig. 1. *Paracalliope fluviatilis* Chilton, 1909, p. 55; 1920, p. 513; 1921, p. 529.

This species is the one commonly found in fresh-water streams throughout the whole of New Zealand. I have numerous specimens from fresh water at Cape Maria van Diemen, sent me by Mr. T. B. Smith, and have collected the species myself in various streams in Southland and at many intermediate stations. As has already been pointed out, the species is, however, capable of living in brackish and even in quite salt water, occurring in Dunedin Harbour, and also in Auckland Harbour, whence I have two specimens collected near the Puhoe Beacon.

In the Amphipoda of Chilka Lake, on the east coast of Bengal, which I have recently been examining, this species was represented by numerous specimens from different parts of the lake, and there were also specimens from Adyar River, from the outskirts of the city of Madras. Specimens sent from Nasugbu, south coast of Luzon, Philippine Islands, by Professor C. F. Baker, also proved to belong to this species, though the character of the water in which they were living in the Philippine Islands was not recorded. I have little doubt that Mr. Stebbing is right in suggesting that *Pherusa australis* Haswell from the east coast of Australia also belongs to this species, though I have been unable as yet to obtain specimens for comparison, and the type of Haswell's species is not available. I have described and figured the species in some detail in my report on the Chilka Lake Amphipoda. It is readily recognized by the peculiar inverted character of the second gnathopods and by the greatly elongated fifth peraeopods.

The existence of this species in fresh and brackish water in India, Philippine Islands, Australia, and New Zealand is of importance from the point of view of geographical distribution.

Nototropis minikoi (Walker).

Paratylus minikoi Walker, 1905, p. 925, fig. 141, 1–5.

Locality : Puysegur Point. One specimen, collected by T. B. Smith.

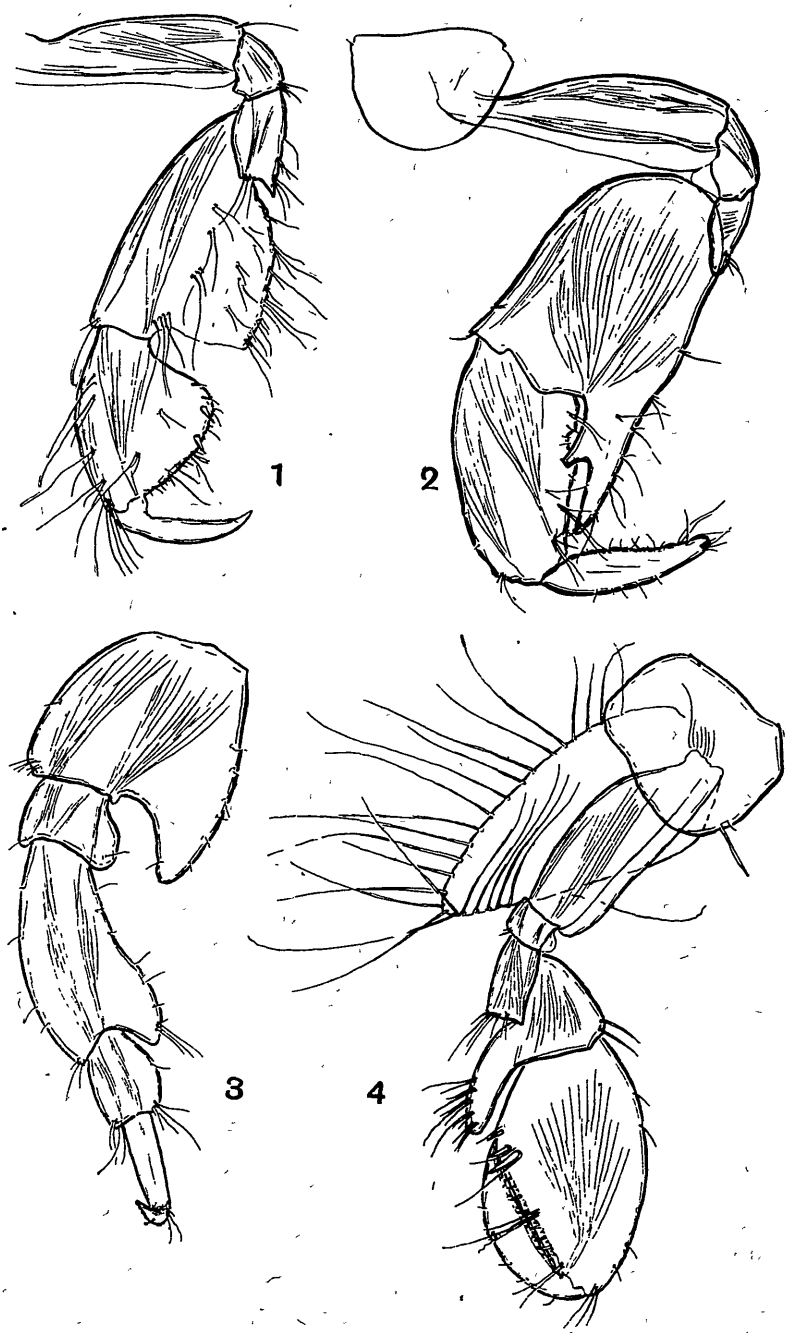
This species was originally described by Walker in his report on the Amphipoda of the Maldive and Laccadive Archipelagos. A small number of specimens collected at Carnac Island, west Australia, by Dr. Mjoberg, whose collection I have recently been examining, prove to belong to Walker's species, and the comparison of them with the single specimen from Puysegur Point which I had had for some time proved that the New Zealand specimen was also the same. This is the first record of the genus for New Zealand. The species *N. minikoi* can be distinguished from *N. homochir* (Haswell), which occurs in Australian and South African seas, by the absence of dorsal teeth on the peraeon and anterior segments of the pleon, and by the presence of a carina on the fourth and a smaller one on the coalesced fifth and sixth segments. The branchiae, described by Walker as "obliquely pinnate," are also characteristic, though the branchiae on the different segments vary somewhat in structure.

The species is now known from the Laccadive Archipelago, west Australia, and south-west New Zealand.

Ericthonius brasiliensis (Dana).

Ericthonius brasiliensis Stebbing, 1906, p. 671 (with synonyms).

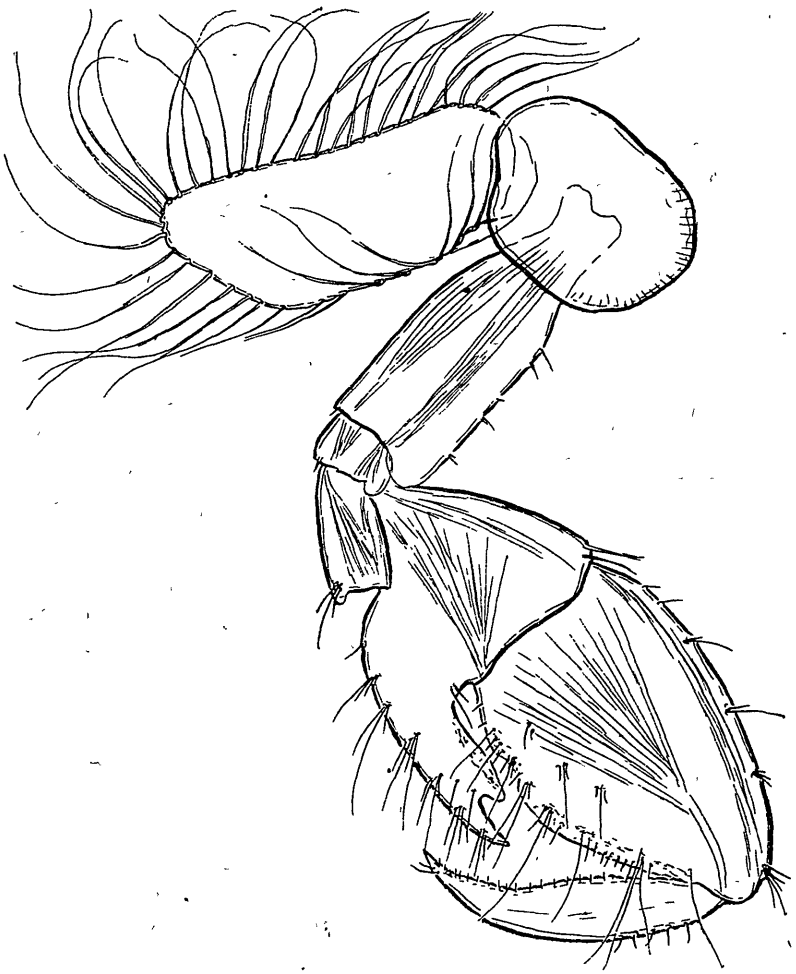
This species has not hitherto been recorded from New Zealand, but I have a few specimens collected near D'Urville Rock, Hauraki Gulf, in December, 1914, that I think undoubtedly belong to it. They agree closely with the description given by Stebbing quoted above, and with the figures of *E. abditus* given by Sars (1894, pl. 215), this species being considered by Stebbing to be a synonym of *E. brasiliensis*. I have also been able to compare the New Zealand specimens with an English one which I presume to be a specimen of *E. brasiliensis* (Dana), and find that they agree in all essential points. In one respect, however, the New Zealand specimens appear to differ from *E. brasiliensis* as defined by Stebbing and to agree with *E. pugnax* Dana from the "Sooloo Sea"—viz., the third peraeopod has the second joint with a narrow acute downward prolongation of the hind-margin. The same character is possessed by *E. macrodactylus* Dana, also from the "Sooloo Sea," and I expect that it is one attained only in the older males, the younger ones having the joint of more normal shape as described by Stebbing. Stebbing says that *E. pugnax* is closely related to *E. brasiliensis*, and that *E. macrodactylus* is distinguished "from *E. difformis* especially by the long tooth of the fifth joint in the second gnathopod being separated from the base of the sixth joint by a very deep concavity, and by the second joint of the third peraeopod having a narrow acute prolongation of the hind-margin." Of *E. difformis* M.-Edw. (a species found in the North Atlantic) he says, "possibly not distinct from *E. brasiliensis*." From the fact that the species occurring in New Zealand seems to combine characters of *E. brasiliensis* and *E. pugnax*, I strongly suspect that all the forms mentioned above really belong to the one species, the differences in the gnathopods and in the third peraeopods being merely due to different stages of growth. The figures given, which were drawn by Miss Herriott independently and before it was recognized that the species was the same as *E. brasiliensis*, will, I think,



Ericthonius brasiliensis.

FIG. 1.—Male, first gnathopod.
FIG. 2.—Male, second gnathopod.
FIG. 3.—Male, third peraeopod.
FIG. 4.—Female, second gnathopod.

bear out this statement. This conclusion seems to be confirmed by the fact that Walker (1904, p. 292) has recorded *E. abditus* (*i.e.*, *E. brasiliensis*) from Galle Harbour, where he says it is abundant, and from other localities on the coast of Ceylon; and that he also gives *E. macrodactylus* Dana, which is probably the same as *E. difformis* M.-Edw., from the Gulf of Manaar.



Ericthonius brasiliensis.

FIG. 5.—Female bearing eggs, second gnathopod (? abnormal).

While the males and females appear to agree closely with the figures given by Sars, it is to be noted that I have one specimen in which the second gnathopod has characters intermediate between that of the male and that of the female (see fig. 5). This specimen I would have considered without hesitation an immature male, but the appendage bears a well-developed brood-plate, and there are eggs in the brood-pouch.

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ART. 23.—*Additions to the Fish Fauna of New Zealand.*

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Plates 20–26.

SINCE the publication of my last paper* many striking examples of fish have been received at the Museum, and an account of the most interesting will be found annexed hereto. There is yet much to be done before we may consider the knowledge of our local fishes to be anything like complete. At the present time trawling operations are limited to comparatively shallow areas round our coast, consequently we know but little of the possibilities of deep-sea trawling and the productions therefrom.

I am glad to take this opportunity to acknowledge my gratitude to the following gentlemen who are actively interesting themselves in my work: To Mr. T. F. Cheeseman, F.L.S., F.Z.S., Curator of the Auckland Museum, for many courtesies in connection with my ichthyological studies; and to Mr. Allan R. McCulloch, Zoologist to the Australian Museum, Sydney, on whose long experience and expert advice I make many and frequent calls. For specimens of fish: Sandford's Limited; Mr. P. Munro; Mr. G. C. Munro; Captain Nilsson, of the s.s. "James Cosgrove"; Auckland City Council Fish-depot; Mr. J. H. Deighton, late general manager; Captain McKay and Engineer Crawford, of the s.s. "Cowan"; Mr. G. R. Hodgkinson, of the nets department; and Mr. Bostock, mate of the s.s. "Simplon."

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