- A New-Zealand Species of the Amphipodan Genus Cyproidia. By CHARLES CHILTON, M.A., D.Sc., M.B., C.M., F.L.S., Research Fellow, University of Edinburgh.

[Plate V.]

A FEW specimens of the species described in this paper have been in my possession for a considerable time, and were obtained some years ago by surface-netting in Otago Harbour, New Zealand. I have hitherto refrained from publishing the species, owing to uncertainty as to its generic position; but as that difficulty appears likely to increase as time goes on, I have decided to describe the species now under the genus *Cyproidia*, Haswell.

This genus was instituted by Haswell in 1880 for two Australian species *, and the description was afterwards given with some slight additions and corrections in his Catalogue of the Australian Crustacea in 1882 †. In 1885 a British species was described by Stebbing ‡, who pointed out the close resemblance between the genus *Cyproidia* and another genus *Stegoplax*, founded by Sars in 1882. Another British species

^{*} Proc. Linn. Soc. N. S. W. vol. iv. pp. 320-321.

^{† &#}x27;Catalogue of the Stalk- and Sessile-eyed Crustacea of Australia,' p. 229.

[‡] Ann. & Mag. Nat. Hist. ser. 5, vol. xv. 1885, p. 59, pl. ii.

was described by Thomas Scott in 1893, but was referred to the genus with some doubt, as it possessed several characters that seemed rather to indicate that it should be placed under Stegoplax *. Some confusion already seems to have crept into the discussion, for while Haswell's description in his Catalogue says that the superior antennæ are without a secondary flagellum, and this description is quoted in full by Stebbing, yet the latter describes his species Cyproidia damnoniensis as having a minute one-jointed secondary flagellum on the superior antennæ, without indicating in any way, so far as I can find, that in this respect his species differs from the generic description given by Haswell. It was apparently this that led Scott to say that Cyproidia and Stegoplax differ in "the apparent presence (Cyproidia) or absence (Stegoplax) of a minute secondary appendage to the superior antennæ "+, though a few lines further on he recognizes that in possessing no secondary appendage to the superior antennæ his species, ? Cyproidia brevirostris, "agrees better with Haswell's amended description than with that of the Rev. Mr. Stebbing, as well as exhibits a close affinity with Stegoplax." Whatever the author of Cyproidia may have intended, it appears that his genus is fated to be considered as having the possession of a minute secondary appendage to the upper antennæ for one of its characters, for Sars, in his recent work, in comparing the genus with his Stegoplax, speaks of Cyproidia, "as recently redescribed by Mr. Stebbing," as possessing a secondary appendage, though he also points out other differences, as, indeed, previous authors had also done ‡.

Della Valle places both Cyproidia and Stegoplax as synonyms of Peltocoxa, Catta §, as had been previously suggested by Stebbing ||; but with the discovery of new species it is hardly likely that these genera will be allowed to drop, and, on the other hand, Stebbing has quite recently established a new genus Paracyproidea, differing from Cyproidia in several small points, for the species Cyproidia lineata, Haswell ¶. At the same time he also established the new genus Tetradeion for the species Cyproidia? crassa that I provisionally referred to Cyproidia in 1882 **, but though both genera belong to the Amphilochidæ, Tetradeion is very different from the true Cyproidia.

* Ann. & Mag. Nat. Hist. ser. 6, vol. xii. 1893, p. 244, pl. xiii,

† L. c. p. 245.

f. Crustacea of Norway,' i. p. 232.
§ 'Fauna und Flora des Golfes Neapel,' Monograph 20, p. 647.

I (Report on the 'Challenger' Amphipoda,' p. 441.
 ¶ Ann. & Mag. Nat. Hist. ser. 7, vol. iv. p. 207.
 ** 'Transactions New Zeala. d Institute,' xv. p. 80, pl. iii. fig. 1.

Cyproidia otakensis, sp. n. (Pl. V.)

Specific description.—Cephalon with a very small blunt rostral projection; first two segments of pereion short, third and fourth much longer, fourth longer than the third; last three segments of percion and first three segments of pleon subequal in length; fourth segment of pleon fully as long as the third, but much narrower, it bears throughout its length a distinct dorsal crest, which widens posteriorly and projects beyond the end of the following segment, ending acutely; fifth segment very short, only about one fifth the length of the fourth, sixth segment longer than the fifth; telson reaching to the extremity of the peduncle of the terminal uropods. Gnathopoda subequal; carpus of the second longer than that of the first, and in both produced distally along the underside of the propodos; propodos of the second rather the stouter, palm not well defined in either. Basa of first and second pereiopoda narrow, not expanded; those of third, fourth, and fifth all expanded in a thin flat plate with rounded posterior margin. Rami of terminal uropoda unequal, upper margins fringed with fine setæ and a few stouter spinules at intervals.

Colour light brown.

Size. Length of body about 3 millim.

Hab. Otago Harbour, New Zealand. A few specimens obtained by surface-netting.

In addition to the above brief diagnosis, I give here the following additional details:---

The general shape of the body will be best seen from the figure; the side-plates of the first and second pereiopoda are enormously developed, and the antennæ, appendages, and pleon can nearly all be concealed and protected by them. The side-plate of the first pereiopod extends forwards past the first two short segments of the pereion and fits closely along to the lower margin of the cephalon; its junction with the side-plate of the second pereiopod is sinuous, the two are accurately and closely fitted, but are not actually cemented together, and can be readily separated by dissection. The side-plate of the second pereiopod is slightly deeper and considerably broader than that of the first; its margin is regularly convex below and behind, but is excavated at the upper posterior corner for the reception of the fairly well developed side-plate of the third pereiopod.

The *cephalon* is rather longer than the first segment of the pereion, the rostrum small and indistinct. The *eye* is large

and conspicuous, of many facets, round in outline, and red in colour.

The upper antennæ are stout and rather short : first joint of the peduncle longer than the second, and second considerably longer than the third, though they are all of nearly the same breadth: the margins are nearly or quite free from setæ: the flagellum contains three or four joints; the first joint is much the largest, about as long as the third segment of the peduncle, it is broad and bears on its margin about sixteen long nontapering setæ, rather longer than the joint from which they spring; they are arranged somewhat irregularly in pairs, each pair springing from a small papilla; a similar arrangement is described by Scott in ? Cyproidia brevirostris, and from the figure given by Stebbing it is evident that it is also present in C. damnoniensis; it probably indicates that the first joint of the flagellum, though apparently single, is really formed by the coalescence of several separate joints, each with a pair of "olfactory seta," for that is what the long seta appear from their structure to be. The second joint of the flagellum is small and bears two long setæ, and is followed by a very slender but longer terminal joint with one or two setæ at its extremity; in the antenna on the other side of the specimen examined the flagellum was composed of four joints, there being two short joints before the slender terminal one. The secondary appendage is small and one-jointed and partially concealed by the broad first joint of the flagellum.

The lower antennæ are slightly longer than the upper and much more slender; the "gland-cone" arising from the second joint extends about halfway along the short third joint of the peduncle; fourth joint rather more than twice as long as the third, fifth rather shorter than the fourth, all with margins free from setæ; the flagellum is about half as long again as the fourth joint of the peduncle and is composed of four joints, each much shorter and narrower than the preceding, and bearing at the terminal extremity two or three fine setæ:

The mouth-parts I have not been able to examine in much detail, but they appear to closely resemble those of *C. dam*noniensis, Stebbing. The mandibles have a fairly welldeveloped molar; the apex of the inner plates in the maxillipeds is transversely truncate, with its outer angle rounded off.

The *first gnathopod* is rather slender; carpus shorter than propodos, bearing distally a projection which reaches about one third the length of the propodos and bears on its under surface about ten setæ; propodos only very slightly expanded, palm not well defined, but bearing six pairs of setæ at regular intervals; dactylos long, more than half as long as the propodos, a few fine setæ on both margins, the terminal claw long and ending very acutely.

The second gnathopod very similar to the first, but rather stouter; the meros bears four or five setæ on its truncate distal margin; the carpus is slightly longer than the propodos and its distal process reaches halfway along the propodos, and, in addition to the setæ on its lower margin and extremity, has an irregular row of smaller setæ along the margin that is in contact with the propodos; palm of propodos not well defined, convex, bearing six stout plumose setæ, with shorter setæ at their bases; dactylos as in first gnathopod, but slightly shorter.

The side-plates of the *first* and *second pereiopoda* have been already described; the basa are narrow and the remaining parts of these appendages call for no special notice.

In the *third pereiopod* the side-plate is of moderate size, its margin smooth and convex; the basos is produced posteriorly into a thin flat plate, very delicate and transparent, its margin slightly concave posteriorly, the postero-distal corner rounded; the meros is produced distally and posteriorly into a process which reaches as far as the end of the carpus and ends acutely.

The *fourth* and *fifth pereiopoda* are similar to the third, but the side-plates are smaller, while the expansions of the basa are broader and less delicate; the postero-distal angles are rounded as in the third pereiopoda, not acutely pointed as in ? Cyproidia brevirostris, Scott.

In the *pleon* the first three segments are subequal in length, their pleural projections not greatly developed, the inferoposterior angles rounded and not produced backward. The appearance of the terminal portion of the pleon, with its long dorsally crested fourth joint, followed by the very short fifth joint, is very characteristic. The first two pairs of uropods are slender, subequal, with slender subequal rami. The peduncle of the third uropods is stout, its upper distal angle acute; rami unequal, the outer shorter one being as long as the peduncle. The telson does not appear to be laterally compressed, but is somewhat boat-shaped, concave above, and reaches as far as the end of the peduncle of the third uropods. The first uropods appear to reach a little beyond the extremity of the second, and these a little beyond that of the third; but in this, as in so many other characters, there is evidently considerable variation.

While this species closely resembles the other species referred to the genus in most respects, it can be at once

recognized by the characteristic formation of the terminal portion of the pleon; it differs from *C. damnoniensis*, Stebbing, in having a flat expansion to the basos of the third pereiopod and in having the apex of the inner plates of the maxillipeds truncate; in the latter point and in some others it agrees with the new genus *Paracyproidea*, Stebbing, but it appears to differ from this genus in the form and size of the telson.

EXPLANATION OF PLATE V.

Fig. 1. Cyproidia otakensis. \times 24. Fig. 1 a. s. Superior antenna. Fig. 1 a. i. Inferior antenna. Fig. 1 gn. 1. First gnathopod. Fig. 1 gn. 2. Second gnathopod. Fig. 1 prp. 1-5. First to fifth pereiopods. Fig. 1 ur. 3 & T. Third uropod and telson, side view.

(All the details highly magnified.)

