

ART. XXXI.—Notes on, and recent Additions to, the New Zealand Crustacean Fauna.

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[Read before the Otago Institute, 8th November, 1887.]

PLATES XIII. AND XIV.

THE notes in this paper serve partly to extend the range of many species hitherto recorded from only one or two localities in the colony; partly to call attention to descriptions of species new to our lists, but which have been described in foreign publications since the issue of the "critical list"* drawn up by Mr. C. Chilton and myself; and also to describe some new species. During the last four or five years a number of new forms of *Amphipoda* have been obtained; but, as the Rev. T. R. R. Stebbing, in his monograph of the "Challenger" *Amphipoda*, is revising all our hitherto-described species, I have thought it advisable to refrain from publishing any further additions to that group until his report has appeared.

In the following notes the numbers prefixed to most of the species are those of the "critical list" referred to.

Sub-order. MACROURA.

Hippolyte stewarti, n. sp. Plate XIII., fig. 1.

In the "Histoire Naturelle des Crustacés" (vol. ii., p. 377) M. Milne-Edwards describes a species of *Hippolyte* under the name of *H. spinifrons*, adding as its locality, "*habite les côtes de la Nouvelle-Zélande.*" Mr. Miers, in his "Catalogue of New Zealand Crustacea" (p. 80), quotes M.-Edwards's description, adding, "I have seen no specimens of this species." I have not met with any specimens either. But among the few shrimps obtained by the dredge in Paterson Inlet, Stewart Island, I obtained a very distinct species of this genus, with a characteristic rostrum, of which the following is a description:—

Rostrum springing about the middle of the carapace, and reaching considerably beyond the peduncle of the inner antenna, with 6 acute teeth on its upper and 2 on its lower margin, which latter is greatly produced downwards in front of the orbit of the eye. The margin of the carapace under the orbit is furnished with 2 teeth, the lower and outer of which is most developed. The lower slender flagella of the internal antennæ are about as long as the carapace; the upper are much shorter. The scale of the external antenna reaches considerably beyond the extremity of the rostrum; (the flagella are missing in my

* "Trans. N.Z. Inst.," vol. xviii., p. 141.

specimen). The external maxillipedes, as in *H. spinifrons*, are very long, and reach considerably beyond the extremity of the scales of the outer antennæ. The legs of the 1st pair are moderately stout, and also reach beyond the extremity of the antennal scales; those of the 2nd pair reach to the end of the outer maxillipedes; the next three pairs are shorter. The abdomen narrows very suddenly at the last joint, and is bent completely round. The central caudal lamella has two spines on each side of the median line.

Length, about 1in.

Sub-order. AMPHIPODA.

5. *Corophium contractum*, Stimpson. Plate XIII., fig. 2.

When collecting on the shores of Auckland Harbour, between tide-marks, I picked up a small tube about 6mm. ($\frac{1}{4}$ in.) long, closed at one end and furnished with a hinged lid at the other end, which at the time I took to be the case of a marine caddis-worm. The tube was made of a very tough material, and was covered over with fragments of corallines; so that, had I not seen it moving, I should have passed it by without notice. On opening it the tube was found to contain a small specimen of *Corophium contractum*; but whether the crustacean constructed the tube, or, which is more likely, had merely found it empty and had taken refuge in it, could not be decided. Along with the amphipod was a small copepod (*Arpacticus*).

22. *Allorchestes neo-zealanica*, Dana. Plate XIII., fig. 3.

Found under stones between tide-marks in Auckland Harbour. The figure of this species in the British Museum Catalogue (pl. vi., fig. 3) is very poor and inadequate. The relative lengths of the antennæ in this and other species of the *Orchestidæ* appear to constitute characters of trifling importance from a specific point of view. In a single specimen dissected by me the peduncle of the anterior antenna is not nearly as long as its flagellum, and the latter organ is furnished with simple setæ, which are more than half as long as the joints which bear them. The posterior antennæ are very short, not exceeding the anterior in length. A very distinctive feature in the species is the form of the gnathopoda of the 2nd pair. The lower surface of the carpus (the margin of which is setose all round) is produced into a scoop-like projection, while that of the 1st pair is only slightly produced below. The meros of the 2nd pair is also produced below, but not into a scoop.

30. *Talorchestia tumida*, mihi. Plate XIII., figs. 4–8.

My original description of this species is reproduced by Mr. Stebbing in the "Proceedings of the Geological Society" (Lon-

don) of 19th January, 1886 (p. 4). Mr. Stebbing has very fully described and figured the male in the Transactions of the same society, vol. xii., p. 202, pl. xxxix.

The following is a brief description of the female:—

Mouth-organs as in male. Upper antennæ with the flagellum only 5-jointed; lower with the flagellum 12-jointed.

Gnathopod of the 1st pair (fig. 4) almost similar to the same limb in the male, but with fewer spines on the front margin of the first joint, and with the finger somewhat longer than the hand.

Gnathopod of the 2nd pair (figs. 5 and 6): First free joint nearly as long as all the rest together, with very numerous spines on the front margin, and almost smooth behind. Wrist and hand subequal in length, former rounded and slightly spinous below; hand laterally flattened, beset with short spines on both sides, with a produced rounded palm; finger almost obsolete, represented by a minute lobe at the extremity of the upper side of the hand. The three anterior pairs of peræopoda very similar to those of the male; those of the 4th pair having the 4th joint straight, with the front and back margins nearly parallel, and without the prominence so characteristic of some forms of the male.

34. *Megamæra fasciculata*, mihi.

Gathered in abundance at Waiwera and Auckland Harbour, mostly on the under sides of wet stones between tide-marks.

35. *Mæra sub-carinata*, Haswell.

Dredged in the Bay of Islands at 8 fathoms. Also received from Waipapapa Point, where it was gathered by Mr. J. F. Erecson.

39. *Melita tenuicornis*, Dana.

Found in abundance, along with No. 34, at Waiwera and Auckland; also dredged in the Bay of Islands, where Dana originally obtained it. It is a common littoral species.

41. *Harmonia crassipes*, Haswell.

A specimen, apparently referable to this species, was among my Bay of Islands dredgings, but the original description and drawing are so imperfect as to make identification difficult. It seems to me also that Mr. Haswell has not shown sufficiently good grounds for separating this species under a distinct generic appellation from Spence Bate's genus *Eurystheus*, to which I think it ought to be reunited.

43. *Aora typica*, Kröyer.

Very abundant in dredgings in the Bay of Islands. This is a very variable species. In one male specimen the right

gnathopod of the 1st pair was very greatly developed, that of the left limb being small and different in shape.

49. *Calliopius fluviatilis*, mihi.

This common fresh-water species has been found by Mr. Chilton at Anderson's Bay, in Dunedin Harbour, in brackish or nearly salt water, along with sea-anemones and other marine forms.

50. *Calliopius subterraneus*, Chilton.

I have received from Mr. W. W. Smith a specimen of this interesting form taken from a well at Ashburton.

52. *Pherusa cœrulea*, mihi.

The preliminary description of this species occurs along with that of *Talorchestia tumida* in "Proc. Zool. Soc. London," of 19th January, 1886, p. 5. Mr. Stebbing's full description and figures are to be found in "Trans. Zool. Soc. London," vol. xii., p. 206, pl. xxxix.

54. *Dexamine pacifica*, mihi.

Very abundant in dredgings from the Bay of Islands.

55. *Phoxus batei*, Haswell.

One specimen dredged in the Bay of Islands.

56. *Panoplæa spinosa*, mihi.

57. *Panoplæa debilis*, mihi.

Both dredged in the Bay of Islands.

Family. HYPERIIDEA.

Hyperia (Tauria) macrocephala, Dana.

Two specimens collected at Sumner beach, near Christchurch, by Professor Hutton, and handed to me by Mr. Charles Chilton, are apparently referable to this species; but Dana's description and the figure given in the British Museum Catalogue (the only one accessible to me) are so imperfect that absolute identification is impossible.

While C. Spence Bate considers that the distinction on which Dana separated the genus *Tauria* from *Hyperia* depended merely on specific characters, Carl Bovallius, in his "Systematical List of *Amphipoda Hyperiidea*" ("Bihang till K. Svenska Vet.-Akad. Handlingar," band ii., no. 16), refers this species (p. 19) back to Dana's genus *Tauria* as *T. macrocephala*, but without any explanation of his reason for doing so.

This species has not been previously recorded from the colony, but may be expected to occur on our coasts from time

to time along with other pelagic South Pacific and antarctic species.

Hyperia dubia, n. sp.

A new hyperid, not referable to any described species, was picked up by my wife on the Ocean Beach, Dunedin. It was a female, carrying a large number of ova. Pending the publication of the "Challenger" report on the *Amphiphoda*, I have provisionally named this species *H. dubia*.

Sub-order. ISOPODA.

90. *Ceratothoa lineata*, Miers.

A single specimen of this species (which was previously unknown to me) was forwarded by Dr. Gaze, of Westport, who took it from the mouth of a guard- (gar- ?) fish at Nelson.

94. *Nerocila macleayii*, Leach.

Two specimens of this species (also previously unknown to me) were forwarded by the same correspondent, who informs me that they are common on kahawai (*Arripis salar*) and other large fishes on the west coast of this island.

Genus **Cassidina.**

In the absence of a copy of Dana's "U.S. Explor. Expedition," the following generic characters are taken from Milne-Edwards's "Histoire Naturelle des Crustacés," vol. iii., p. 223:—

Head large and very short, almost semi-lunar, deeply sunk into the thorax, produced anteriorly into a median process which is directed obliquely downwards between the bases of the antennæ. Eyes oval in form, occupying the lateral angles of the head. Antennæ and mouth-apparatus as in *Sphæroma*. Thoracic segments very large and prolonged on each side in the form of a thin plate, which is produced obliquely downwards and ends in an almost straight margin. The first segment of the thorax is produced forwards on each side of the head almost to the bases of the antennæ. Abdomen as wide as the thorax in front, but narrowing rapidly; it is divisible into two portions, the anterior of which is formed of several segments anchylosed in the median line, but separate at the sides, and the posterior scutiform portion. The ambulatory feet are slender and bi-unguiculate. The first five pairs of abdominal appendages are similar to those of *Sphæroma*, but have the margin of the external terminal lamella much more setose. The last pair of abdominal feet also resemble those of *Sphæroma*, only their terminal movable lamella is almost rudimentary, while the prolongation of the basal articulation

which represents the internal lamella is very large, and completely rounds off the abdominal shield.

Cassidina neo-zealanica, n. sp. (Pl. XIV., figs. 1-4.)

Body very flat, broadly elliptical in form, its breadth being almost exactly two-thirds of its length. Head as long as two anterior thoracic segments; the orbits of the eyes are produced a little back into the succeeding segment; frontal process pyriform, covering the bases of the antennæ. First and 2nd segments of thorax shortest in the median line, 3rd and 4th longest, remainder becoming shorter posteriorly. Abdomen about half as long as thorax; last segment triangular, obtuse, and (along with lamella of last caudal feet) thickly ciliated.

External (inferior) antennæ as long as cephalon and first three segments of thorax; peduncle 4-jointed, bearing several setæ, mostly all shorter than the diameter of the joints; 2nd joint rather the longest, 1st and 3rd subequal, shortest; flagellum 13-jointed, slightly longer than peduncle and tapering off to the extremity. Internal (superior) antennæ reaching to penultimate joint of peduncle of the external pair; peduncle 3-jointed, destitute of setæ, all the joints somewhat flattened, basal joint very broad; flagellum two-thirds as long as peduncle, 9- (10- ?) jointed, each joint bearing a jointed (olfactory ?) seta.

Internal lamellæ of caudal feet rather narrow, arcuate; external lamellæ oblong, obtuse, hardly more than one-fourth the length of internal lamellæ.

Colour brownish-grey, covered with black spots and star-like markings.

Length, 8mm.; breadth, 5mm.

Habitat. Creeping on kelp dredged from 10 fathoms in the Bay of Islands.

114. *Cleantis tubicola*, mihi. (Pl. XIV., figs. 5-8.)

The following is a short description of this species, of which only a preliminary notice in the "New Zealand Journal of Science" (vol. ii., p. 577) has hitherto appeared.

Body narrow, much elongated, with the sides perfectly parallel. Cephalon with its lateral margin produced downwards into an angular lobe; its front margin nearly straight (transverse); its posterior margin produced backwards in the middle into an excavation of the first thoracic segment; eyes rather narrow, placed near the sides of the head. First thoracic segment subequal in length to the cephalon; 2nd rather shorter; succeeding segments subequal, hardly exceeding the 1st in length. Epimera of first four segments indis-

tinct; those of the 5th, 6th, and 7th segments distinct, and with their exterior margins produced backwards.

Abdomen about 4mm. long; the rest of the body being 11mm.; 2nd segment rather indistinct; last segment as long as the first five segments of body, and ending in a deep semi-circular notch. The operculum is crossed by a transverse line about one-third of the length from the extremity.

External antennæ thick and pediform, as long as the cephalon and three succeeding segments; peduncle 4-jointed, flagellum 2-jointed, joints diminishing in length towards the end. Internal antennæ reaching to the end of the second joint of the external pair; peduncle 3-jointed; flagellum with one long joint, ending in a very short joint and a tuft of setæ.

Length, 15mm.; the ratio of length to breadth being as 11 to 1.

Colour brown, with minute black punctations.

116. *Jæra neo-zealanica*, Chilton.

This species, Mr. Chilton informs me, is identical with Dana's *Jæra pubescens*, from Tierra del Fuego. The description and figure of that species, however, leave this identification somewhat doubtful. Meanwhile C. Bovallius* separates those species with tri-unguiculate dactyla into a new genus *Iais*, of which the following is the generic character:—

Genus *Iais*, Carl Bovallius.

“Body depressed, elongate. Head rounded, not rostrate. Eyes small, consisting of very few ocelli. First pair of antennæ few-jointed. Second pair longer than half the body, with multi-articulate flagellum. Mandibles provided with a 3-jointed palp. Lateral margins of the pereional segments scarcely produced, not covering the bases of the legs. Pereiopoda subequal, walking legs; dactyli pedunculated, 3-unguiculate. The uropoda consist of thick cylindrical peduncles, and two elongate laminate rami.”

Iais neo-zealanica, Chilton.

Numerous specimens of this species were taken by me between tide-marks in Auckland Harbour.

118. *Janira longicauda*, Chilton.

This species differs from *Janira* and allied genera sufficiently, in the opinion of Carl Bovallius, to be separated into a new genus *Iathrippa*,† of which the following is the character:—

* “Notes on the Family Asellidæ” (“Bihang till K. Svenska Vet.-Akad. Handlingar,” band ii., no. 15, p. 50).

† *Loc. cit.*, p. 31.

Genus *Iathrippa*, C. Bovallius.

“ Body depressed, elongate. Head large, provided with a rounded rostrum. Eyes large, faceted. First pair of antennæ short, shorter than the breadth of the head; flagellum multi-articulate. Lateral margins of the pereionial segments feebly produced, incised, scarcely covering the bases of the legs. First pair of pereiopoda subcheliform (?); the following subequal walking legs. Dactyli bi-unguiculate. Uropoda dilated; the rami long, laminiform, lanceolate.”

Only species, *Iathrippa longicauda*, Chilton.

136A. *Armadillo ambitiosus*, Budde-Lund.

This species was originally described in the “*Prospectus generum specierumque Crustaceorum Isopodum terrestrium*” (Copenhagen, 1879). The following somewhat abbreviated description is taken from the same author’s “*Crustacea Isopoda Terrestria*” (1885), p. 34:—

“Oval oblong, strongly convex, nearly smooth but minutely punctate.

“Antennæ (?). Eyes large, with about 20 ocelli. Epistome with its superior margin reaching a little beyond the front at the sides, but not in the middle. Clypeus with medium-sized lobes.

“First thoracic segment with a thin lateral margin, and with a small tooth on the inside of the posterior portion (?). Second segment with the lateral margin entire, thickened in front; posterior margin of the first (few) segments distinctly sinuate on both sides.

“Anal segment longer than broad, somewhat contracted in the middle, apex truncately rounded. Basal joint of the anal feet one and a half times (or more) as long as broad, narrowing greatly towards the apex; external branch small but conspicuous; internal branch shorter than the last segment.

“Colour nearly uniform brown.

“Length, 14mm.; breadth, 7mm.; height 3.5mm.

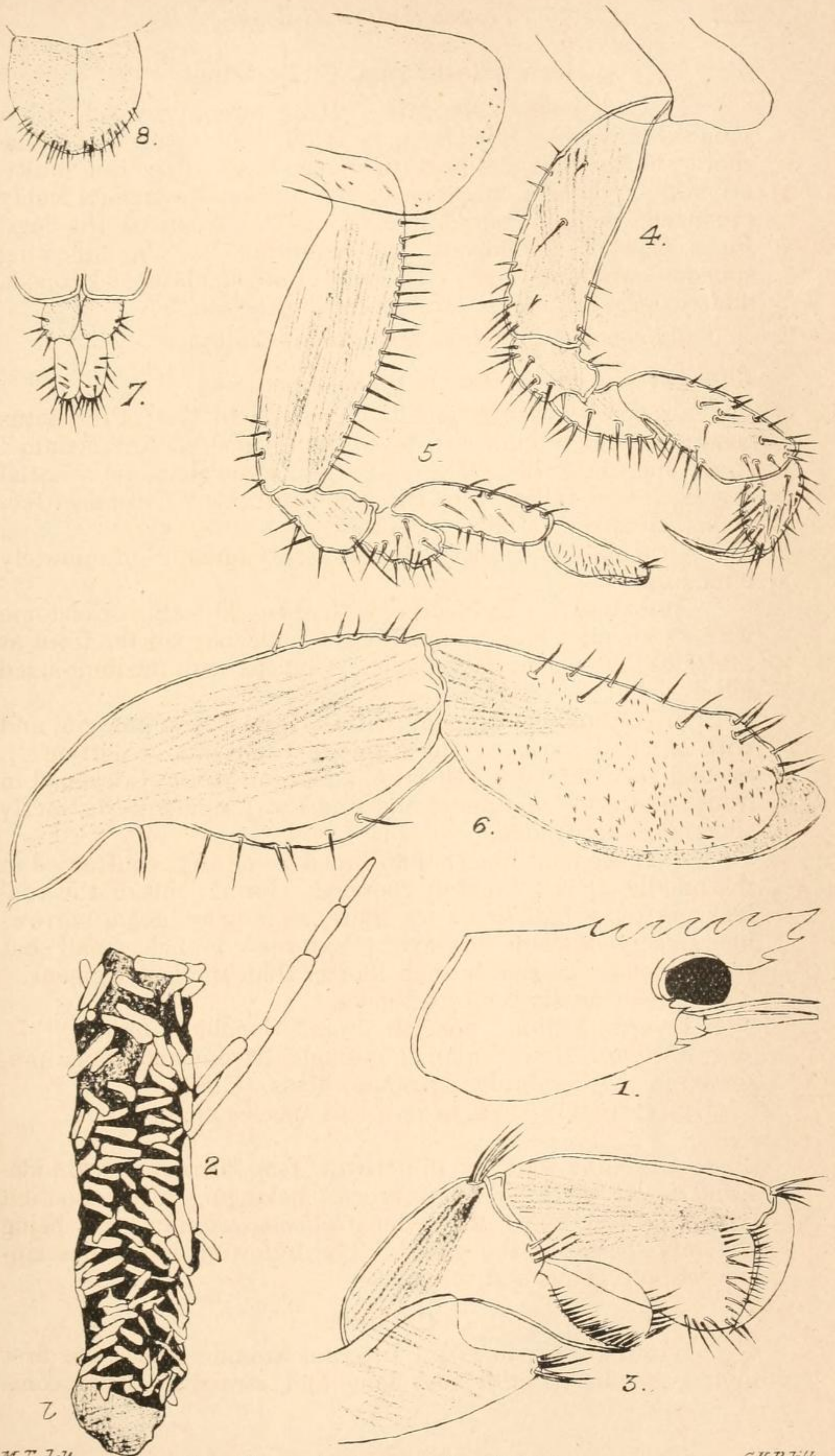
“*Habitat.* New Zealand; a single defective specimen preserved in the Cambridge Museum, Mass. (U.S.A.)”

Unfortunately, no figures of this species are given.

In the same work, p. 46 (“*Crust. Isop. Terrestr.*”), Budde-Lund describes another new species belonging to the section *Armadilloidea*, under the name *Cylloma oculatum*, this being the only species of the genus. The following is his description of both genus and species:—

Cylloma.

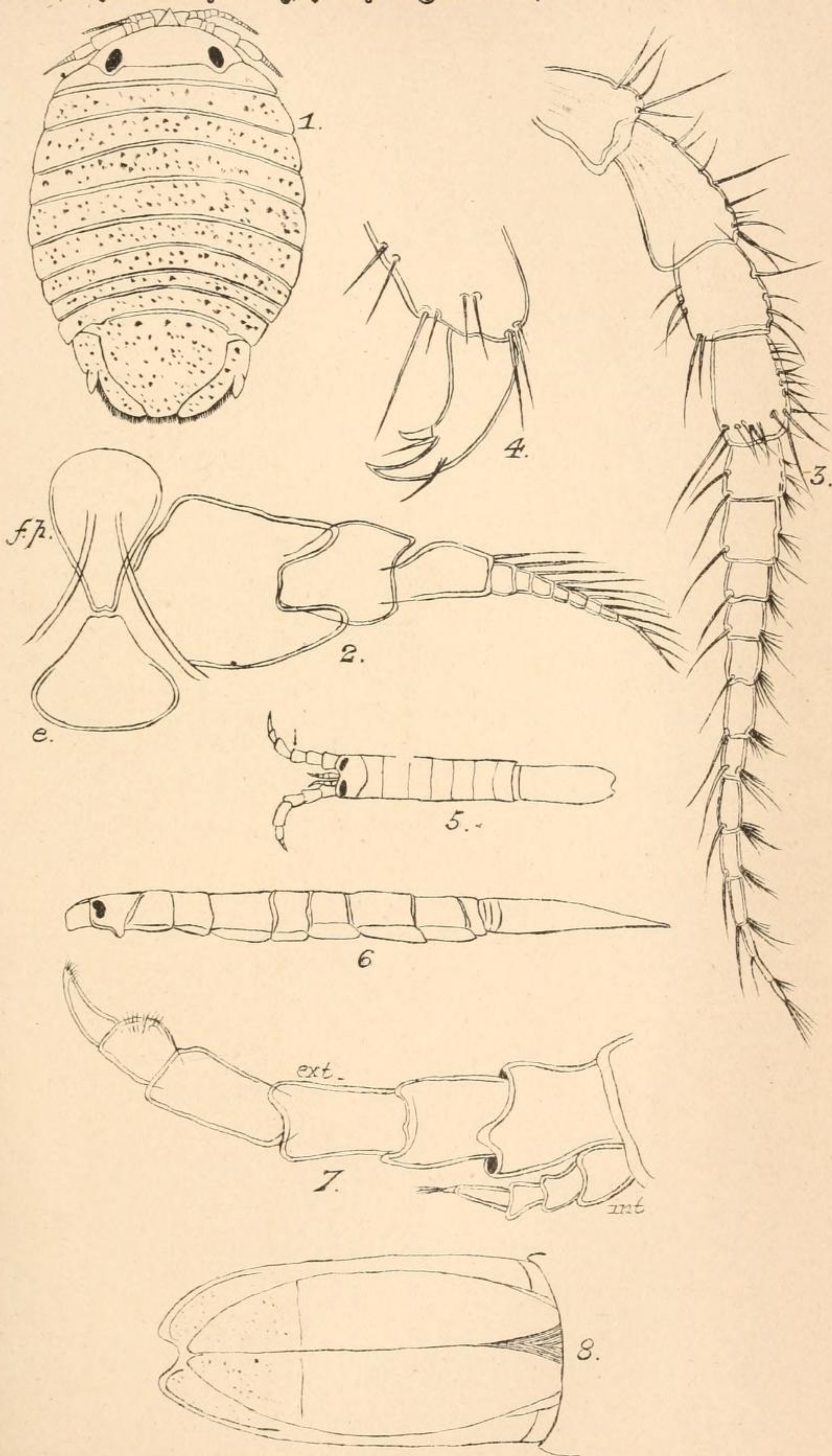
“External antennæ (?). Internal antennæ with the first joint very short, third very long and straight. Eyes com-



G.M.T. del.

To illustrate Paper by G.M. Thomson.

C.H.P. lith.



G.M.T. del.

To illustrate Paper by G.M. Thomson.

C.H.P. lith.

pound, very large, prominent, situated in oval cavities; ocelli about 150, disposed in four or five rows. Clypeus nearly perpendicular, not lobed on the sides. Epistome forming a continuous frontal marginal line. Epimera of the front segments of the thorax with their posterior portions entire. Anal segment of the tail very short, broadly subtriangular. Exterior ramus of all the pairs of caudal feet furnished with tracheæ.

“*Cylloma oculatum*, Budde-Lund.

“Oblong oval, nearly smooth. Epistome with a triangular tubercle below the middle, with its superior margin reaching very much beyond the middle and somewhat reflexed. Vertex between the eyes obliquely 2-wrinkled.

“First thoracic segment with its anterior margin roundedly produced in the middle, curved; its posterior margin distinctly sinuate on both sides; lateral margins thickened (sub-alte-cinctis?), entire behind; posterior angles produced backwards. Third and fifth abdominal segments with large epimera, greatly produced backwards; epimera of the fifth segment suboval, somewhat convergent. Caudal feet greatly exceeding the anal segment; basal joint subtetragonal, its exterior portion toothed, shorter than the penultimate segment; external terminal ramus inserted on the inner portion of the basal joint, and slightly exceeding the epimera of the penultimate joint.

“Colour uniform, brown (?).

“Length, about 10mm.; breadth, 4mm.; height, 2.5mm.

“*Habitat*. New Zealand. Described from one very imperfect specimen preserved in Cambridge Museum, Mass. (U.S.A.).”

In the absence of figures, the descriptions of these two species, neither of which is known to New Zealand naturalists, and which are confessedly based on single imperfect specimens, are somewhat unsatisfactory.

DESCRIPTION OF PLATES XIII. AND XIV.

PLATE XIII.

Fig. 1.	<i>Hippolyte stewarti</i> ; rostrum	× 6
Fig. 2.	Tube covered with corallines, in which a specimen of <i>Coprophium contractum</i> was found	× 9
Fig. 3.	<i>Allorchestes neo-zealanica</i> ; gnathopod of the 2nd pair, showing the scoop-like prolongation of the carpus ..	× 18
Fig. 4.	<i>Talorchestia tumida</i> , ♀ ; gnathopod of 1st pair ..	× 26
Fig. 5.	“ “ 2nd pair ..	× 26
Fig. 6.	“ “ 2nd pair ; terminal joints of the same	× 56
Fig. 7.	<i>Talorchestia tumida</i> , ♀ ; ultimate pair of uropoda ..	× 26
Fig. 8.	“ “ telson	× 26

PLATE XIV.

Fig. 1.	<i>Cassidina neo-zealanica</i> , dorsal view	..	..	..	x	6
Fig. 2.	"	inner antennæ	..	..	x	20
Fig. 3.	"	outer antennæ (<i>f.p.</i> = frontal process; <i>e.</i> = epistome)	..	..	x	20
Fig. 4.	<i>Cassidina neo-zealanica</i> , end of 4th leg	..	..	..	x	40
Fig. 5.	<i>Cleantis tubicola</i> , dorsal view	..	..	..	x	3
Fig. 6.	"	lateral view, to show the epimeræ	..	..	x	6
Fig. 7.	"	inner and outer antennæ	..	..	x	26
Fig. 8.	"	abdomen, viewed from under side	..	..	x	13
