Art. XXXIII.—*A New Species of* Orchestia.

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Of the numerous species of *Orchestia* that are found on the coasts of New Zealand one of the commonest is *Orchestia chiliensis* Milne-Edwards, usually found under stones, seaweed, &c., on rocky shores, but not on sandy beaches. In general characters it resembles *O. mediterranea* A. Costa, of Europe, and it agrees well with the short description given by Stebbing in "Das Tierreich Amphipoda," p. 537. The species can usually be recognized in the fully developed male by the stout peduncle of the lower antenna and by the somewhat widened meral and carpal joints of the fourth and fifth peraeopoda; the females and immature males are, however, much more difficult to distinguish from those of allied species.

In August, 1915, I received from Mr. T. B. Smith, of the Stephen Island Lighthouse, to whom I am indebted for many interesting *Crustacea*, a large number of specimens of an *Orchestia* which I at first thought to be *O. chiliensis* M.-E., one undoubted male of which was, indeed, present. Among them, however, a few of the largest males had the meral and carpal joints of the last two peraeopoda widened into large flat plates, thus differing markedly from the form usually met with in *O. chiliensis*. It is, of course, possible that this is only an extreme development of the tendency shown to a less extent in the ordinary specimens of *O. chiliensis*, for it is well known that in several *Amphipoda* the structures specially modified in the male may in certain individuals be developed to an extent that makes them look quite different from the ordinary form. I have described an example of this in the case of *Cerapus flindersi* Stebbing,* and other examples could be quoted. In the present case, however, until the relationship between the Stephen Island form and *O. chiliensis* is better known it will be safer to consider the former to be a distinct species, and I am therefore describing it under the name *Orchestia miranda* sp. nov.

Orchestia miranda sp. nov. Figs. 1 to 6.

Specific Diagnosis.—In general resembling *O. chiliensis* M.-E., the male differing from the female in the stouter lower antenna, in the gnathopoda, and especially in the enlarged joints of the last two pairs of peraeopoda. In the fourth peraeopod the merus is of normal width proximally but widens distally to fully twice this width, thus forming a triangular plate; the carpus is greatly dilated into a large oblong plate with rounded corners, rather wider than the greatest width of the merus; the propod is not dilated, but of normal width. The fifth peraeopod is modified in a similar

* Rec. Australian Museum, vol. 2, p. 1, 1892.

way, but the carpus is much more dilated, especially toward the posterior margin, its greatest width being half as great again as that of the merus.

Length of body of largest specimens, about 20 mm.

Hab.—Stephen Island, Cook Strait, New Zealand, on rocky shores.

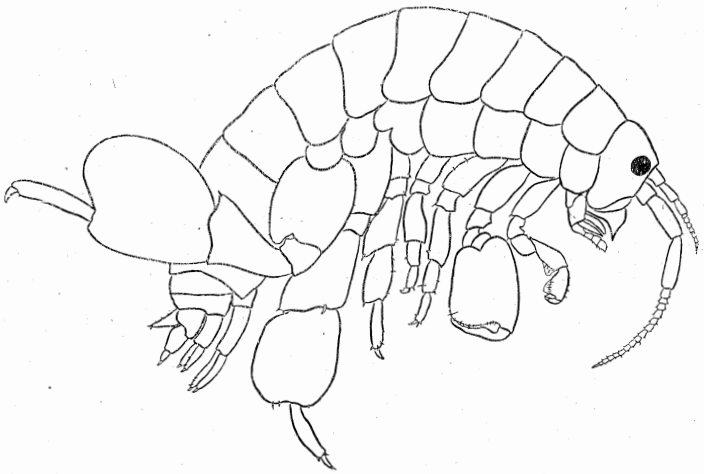

FIG. 1.—*Orchestia miranda*, male; side view.

This brief diagnosis may be supplemented by the following more detailed description of a fully developed *male*:—

Body rather compressed. First side plate smaller than the second, by which it is overlapped, fifth as deep as the fourth. Third pleon segment

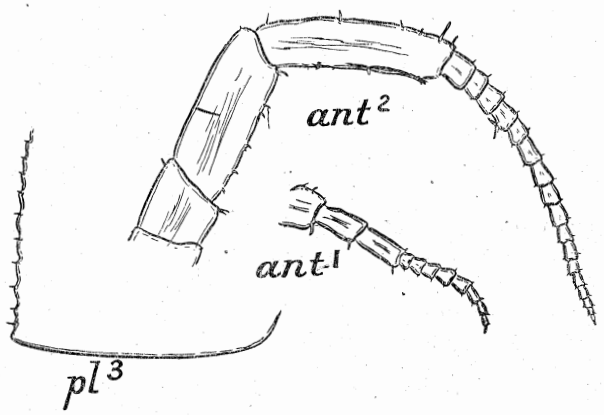

FIG. 2.—*Orchestia miranda*, male. *ant*^{1}, first antenna; *ant*^{2}, second antenna; *pl*^{3}, inferior and posterior margins of third pleon segment.

(fig. 2, *pl*^{3}) with postero-inferior angle quadrate, its posterior margin with small low serrations each with a minute seta. Eyes black, round or slightly oval, the distance between them about equal to their greatest width.

First antenna (fig. 2, *ant*^{1}) reaching to the end of penultimate joint of the lower; second and third joints subequal and a little longer than the

first; flagellum as long as peduncle, and containing about 8 joints. Second antenna (fig. 2, *ant*^{2}) fully one-third the length of the body; penultimate joint of peduncle rather shorter than the ultimate, both rather broad; flagellum stout, subequal in length to the peduncle, of about 20 joints.

Mouth parts apparently not presenting any distinctive features.

First gnathopod (fig. 3, *gn*^{1}) with side plate subtriangular, somewhat produced downwards anteriorly, its lower margin with a few stout setae, its inner surface with an irregular row of more slender setae extending from the insertion of the basal joint to the infero-anterior angle; merus with a small rounded pellucid process, carpus much longer than the propod, the pellucid area on each marked off from the rest of the joint by a row of stout setae, palm transverse, finger not extending beyond the true palm.

Second gnathopod (fig. 3, *gn*^{2}) with side plate produced at about the middle of the posterior margin into a subacute point, basal joint not much expanded, merus and carpus very short, propod very large, widening distally, anterior and posterior margins without setae, palm only slightly

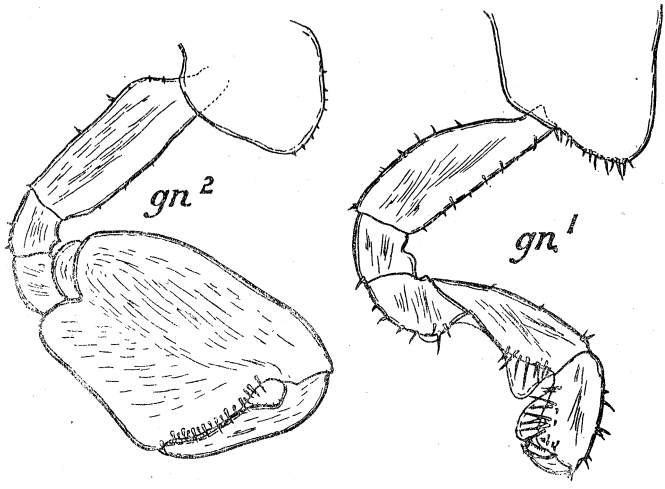

FIG. 3.—*Orchestia miranda*, male. *gn*^{1}, first gnathopod; *gn*^{2}, second gnathopod.

oblique, straight or a little convex, provided with a double row of short stout setae, finger strong with an enlargement at about its proximal third, end curved and fitting into a short groove at the end of the palm.

First and second peraeopoda alike and presenting no special features, the side plates subrectangular with rounded corners, posterior margin in each produced into a subacute process, setae on the various joints few and short, two or three stout ones on anterior border of propod at base of finger. Third peraeopod (fig. 4, *prp*^{3}) subequal in length to the two preceding, side plate with anterior lobe as deep as the fourth, basis broadly expanded, its posterior margin convex and serrate, merus and carpus somewhat widened, about twice as wide as the propod. Fourth peraeopod (fig. 4, *prp*^{4}) with basis similar to that of the third, ischium normal, merus widening greatly toward distal end, which is rather oblique and nearly as wide as the joint is long, carpus forming a large rectangular plate with rounded corners, nearly as broad as long, propod and finger normal, not expanded.

Fifth peraeopod (fig. 4, *prp*^{5}) longer than the fourth, and similarly expanded but with carpus fully as wide as long, its posterior margin being greatly produced and very convex.

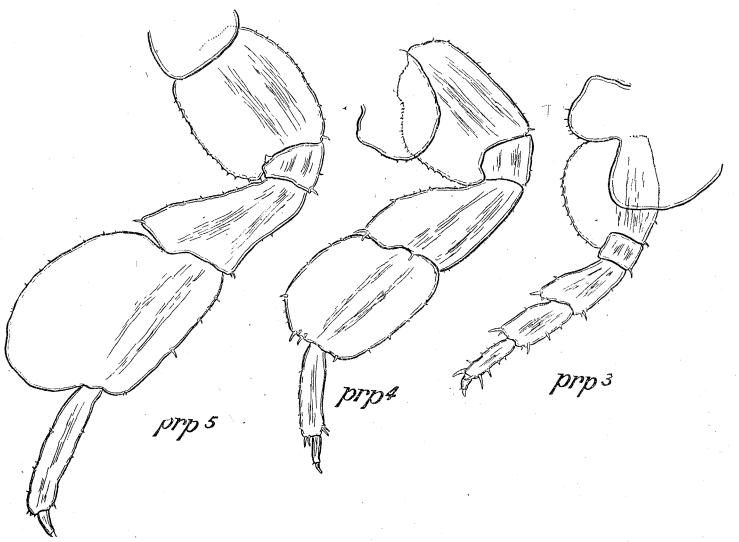

FIG. 4.—*Orchestia miranda*, male. *prp*^{3}, third peraeopod; *prp*^{4}, fourth peraeopod; *prp*^{5}, fifth peraeopod.

First and second uropoda (fig. 5, *urp*^{1} and *urp*^{2}) normal, the peduncle and both rami in each bearing short stout spines. Third uropod (fig. 5, *urp*^{3}) with peduncle laterally compressed, its depth near the base nearly equal to the length, a few stout setae at distal end of upper margin, ramus

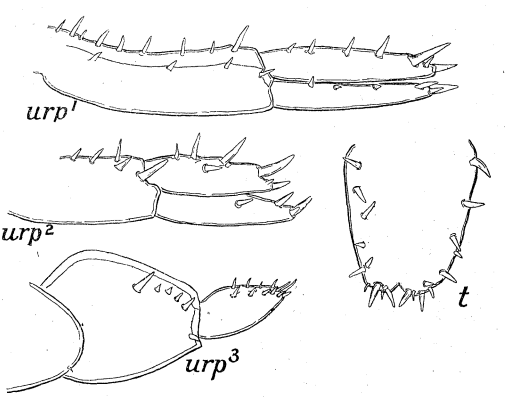

FIG. 5.—*Orchestia miranda*, male. *urp*^{1}, first uropod; *urp*^{2}, second uropod; *urp*^{3}, third uropod; *t*, telson.

much shorter than peduncle, with a double row of small stout setae along upper margin. Telson (fig. 5, *t*) longer than broad, narrowing slightly distally, posterior margin with small triangular notch, lateral and posterior margins supplied with short stout setae.

in which the male tends to differ from the female in the dilatation of the meral and carpal joints of the fifth peraeopod, but in it, as to a less extent in *O. chiliensis* also, the same tendency is seen in the fourth peraeopod as well. *O. miranda* differs from *O. chiliensis* in the much greater expansion of the joints of the last two peraeopoda, and also in the second gnathopod, which has the palm less oblique and without the large obtuse tooth near the finger-hinge characteristic of *O. chiliensis*. It must be remembered, however, that all the examples of *O. miranda* at present known come from a single restricted locality; if it is found to be more widespread an examination of specimens from other localities will probably show that the distinctions drawn above between it and *O. chiliensis* will not invariably hold.