

A NEW AMPHIPOD CRUSTACEAN, ORCHESTOIDEA BIOLLEI, FROM COSTA RICA.

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Before proceeding to describe a new species of Talitridæ I wish to refer to a former paper on *Amphipoda from Costa Rica*, in which I figured and described as new *Hyalella fauoni*,^a pointing out its near relationship to other forms earlier described under various names. Recently, in her very interesting paper cited below, Miss Weckel has made *H. fauoni* a synonym of the species which in her opinion ought to be called *H. knickerbockeri* (Bate). The independence of *H. fauoni* is not a matter of great moment; but the question remains an open one whether it may not be more inconvenient than necessary to fuse under one name the forms of *Hyalella* which have been distinguished as *dentata* and *incrimis*. Supposing that a single name is required, there are three to choose from with claims prior to Bate's *knickerbockeri*. These are the obscure *Amphithoe dentata* Say, 1818, *Amphithoe aztecus* Saussure, 1858, and *Amphithoe andina* Philippi, 1860. The reader inclined to accept a bias in a certain direction may consult the notes on these names in the bibliography to the "Challenger Amphipoda," 1888, as well as the references supplied by Das Tierreich in 1906.

In the Amphipoda of Das Tierreich there is an inconsistency between pages 523 and 524, the former affirming that the palp of the first maxilla is one-jointed in the family Talitridæ, the latter that it is two-jointed in the genus *Talitrus*. The alternative character of "minutely two-jointed" should have been added to the description of the palp in the diagnosis of the family.

Family TALITRIDÆ.

- 1813-14. *Orchestida* LEACH, Edinburgh Encyclopædia, VII, p. 432.
1906. *Talitrida* STEBBING, Das Tierreich, Lief. 21, p. 523.
1907. *Orchestida* ADA WECKEL, Proc. U. S. Nat. Mus., XXXIII, p. 54.

^a Proc. U. S. Nat. Mus., XXVI, 1903, p. 928, pl. LXI.

Genus ORCHESTOIDEA Nicolet.

1849. *Orchestoidea* NICOLET, in Gay, Hist. Chile, III, p. 229.1906. *Orchestoidea* STEBBING, Das Tierreich, Lief. 21, p. 527.

This genus agrees with both sexes of *Talitrus* and with the female of *Talorchestia* in having the first gnathopod simple, differing from the male of *Talorchestia* and both sexes of *Orchestia* in which the first gnathopod is subchelate. All the four genera have the second gnathopod in the female feebly chelate, but in the male this is the case only with *Talitrus*, the second gnathopod of the male in the other three genera being powerfully developed. These distinctions do not enable us to separate a species of *Talorchestia* or *Orchestoidea* from one of *Talitrus*, when only female, nor yet an *Orchestia* from a *Talorchestia*, when only male specimens are available. But as these animals are generally plentiful, where they occur at all, any difficulty arising from the absence of one or other sex will not as a rule be of long standing under the energy of modern research.

ORCHESTOIDEA BIOLLEYI, new species.

Plate XII.

Integument smooth and shining, but under a high power showing the three-spiked markings often seen in this family. Fifth side-plate of pereon as deep as fourth. Postero-lateral corners of third pleon segment quadrate with minute projecting point.

Eyes large, dark, roughly rounded, in the largest specimens separated only by a short space at the top of the head.

First antennæ very short, third joint of peduncle rather the longest, equal to the little five-jointed flagellum. Second antennæ in the male longer than the body, last joint of peduncle considerably longer than the preceding joint, flagellum 39-jointed, more than thrice as long as the peduncle; in the female much shorter than the body, flagellum 23-jointed, not greatly longer than the peduncle.

The mouth-organs are in close agreement with those of *Talitrus* and *Talorchestia*. The minute palp of the first maxillæ appears to be 2-jointed, with the second joint considerably shorter than the first.

The first gnathopods, in accord with the generic character, are simple in both sexes, but in the male the rather large fifth joint has at the distal end of the hind margin a transparent bulb or bubble-like expansion, which is wanting in the female.

The second gnathopods of the male have the fifth joint very small and feebly separated from the strong ovoid sixth joint, the hind margin of which is characterized by having near the distal end a small transparent bulb, the distal end itself being rounded and tipped with a spine. Within this apex the strong finger closes into a

pocket, being fitted over a broad spinose curve of the palm, between which and the hinge it inserts a squarish projection of its inner margin into a corresponding depression of the palm. The second gnathopod of the female is of the usual membranaceous character, the second joint expanded in the proximal half, the fifth joint wider and a little longer than the sixth, which is rather strongly and not narrowly produced beyond the diminutive longitudinal finger, which lies in a setulose gap of the sixth joint's front margin. In the male specimen from which the detail figures have been drawn one of the gnathopods of the second pair is decidedly smaller than the other and is without the transparent process on the hind margin. In another specimen,

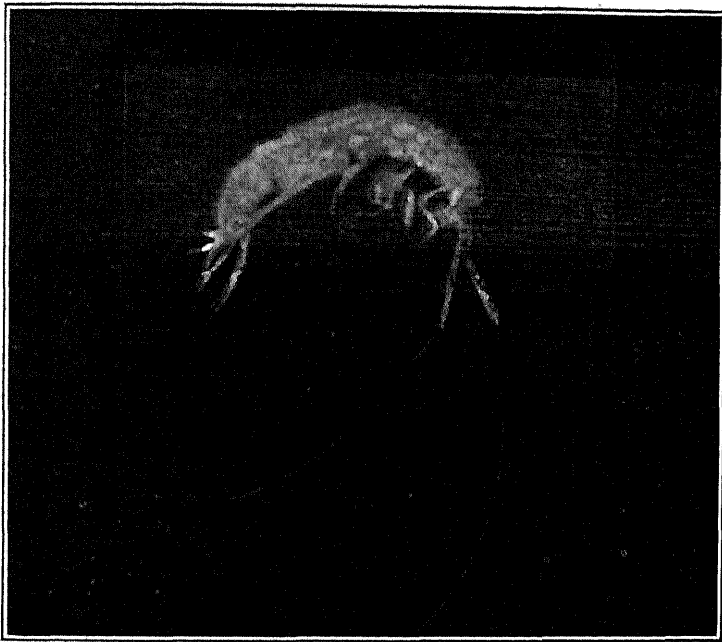


FIG. 1.—*ORCHESTOIDEA BIOLLEYI*, MALE.

probably abnormal, the apex of the sixth joint of the second gnathopod is laterally outdrawn, obscuring its ordinary character. Only one member of the pair is present, and the specimen is otherwise defective.

The first three peraeopods are short, the second shorter than the first, with its finger more strongly notched. The third peraeopod has its second joint almost circular, much less in diameter than the length of the side-plate. The fourth and fifth peraeopods are very much longer, the fifth having its second joint much wider than that of the fourth pair, and its total length somewhat greater. The fingers in these two pairs are long and slender, in all the pairs there is an obliquely pointed spine in advance of the unguis. All the branchial

vesicles are narrowly twisted. The marsupial plates of the female examined do not seem to be fully developed.

The slender pleopods have along the peduncles two rows of short spines and two coupling-hooks. The rami are about nine-jointed, and are scarcely as long as the peduncles.

The first uropods have the peduncle longer than the subequal rami, one of which has conspicuous spines only at the apex. The second pair have one ramus much longer than the other, with the peduncle

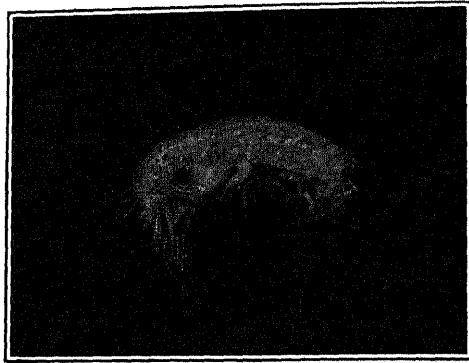


FIG. 2.—ORCHESTOIDEA BIOLLEYI, FEMALE.

of intermediate length. The third pair have the ramus about equal in length to the peduncle. The telson is about as broad as long, distally tapering, with a dividing line running up some part of the length from the apex.

Length of male about 10 mm., of female about 7.5 mm.

Habitat.—Several specimens were collected in February, 1907, at Punta Arenas, Costa Rica (Pacific coast), in sand, under trunks of trees, by the late Professor P. Biolley, out of respect to whom the specific name has been given to this species.

Type.—Cat. No. 38843, U.S.N.M.

EXPLANATION OF PLATE XII.

n. s. ♂, *n. s.* ♀. Lines indicating natural size of male and female specimens, from which the details have been figured.

a. s., *a. i.* Upper and lower antennae of male.

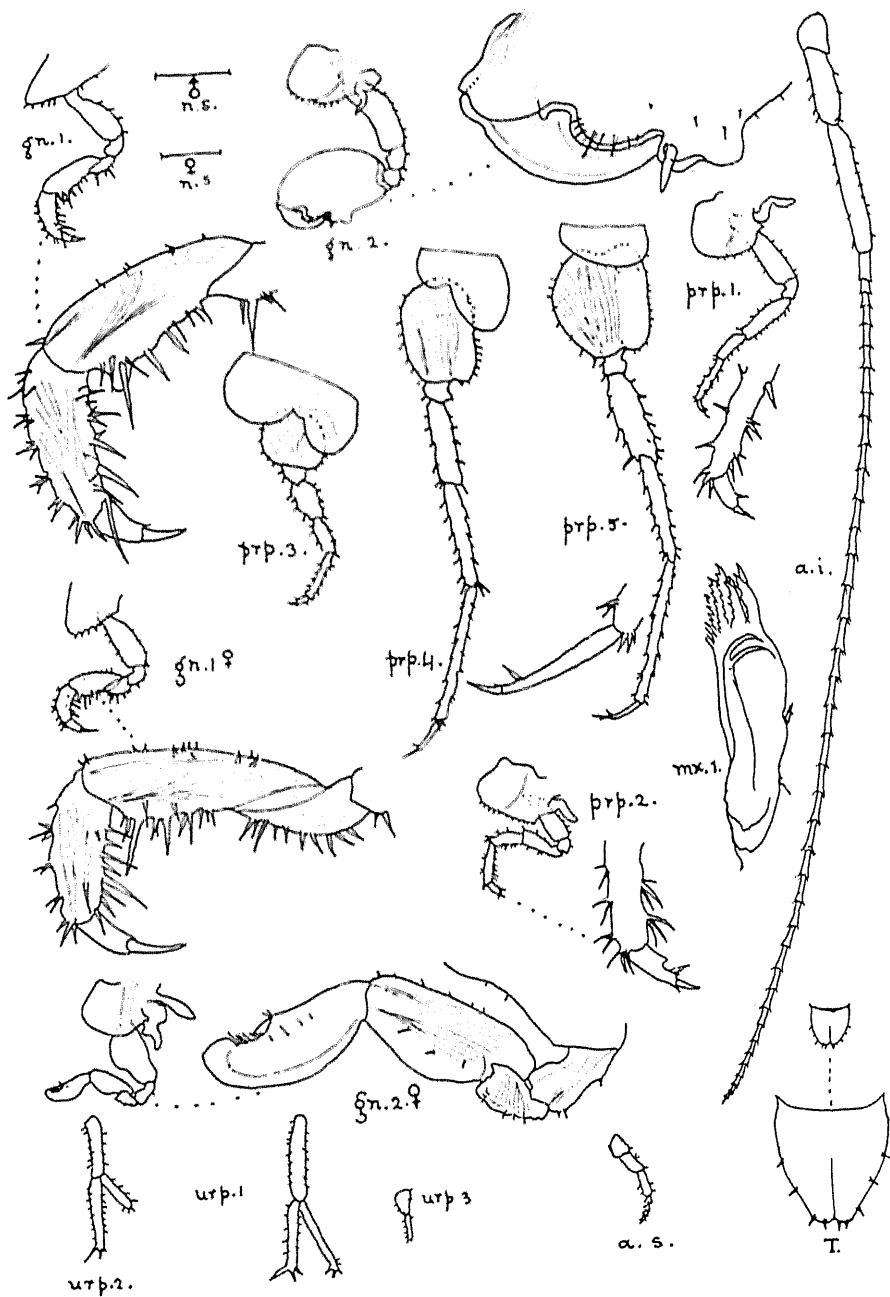
mx. 1. First maxilla of male, the inner plate seen by transparence through the outer. The scale of magnification higher than in the other figures.

gn. 1, *gn.* 2, *gn.* 1, ♀, *gn.* 2, ♀. First and second gnathopods of the male and female, with portions of the same more highly magnified.

prp. 1, 2, 3, 4, 5. The five pereopods, with parts of the first, second, and fifth more highly magnified.

urp. 1, 2, 3, *T.* The three uropods and the telson, with the latter more highly magnified.

Two uniform scales have been used for the lower and higher enlargement of all the parts except the first maxilla.



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FOR EXPLANATION OF PLATE SEE PAGE 244.