

THE PARASITIC ISOPOD LEIDYA DISTORTA (LEIDY)
FOUND ON A NEW HOST.

By HARRIET RICHARDSON,

Collaborator, Division of Marine Invertebrates, U. S. National Museum.

Prof. A. E. Verrill has recently sent me specimens from the Bermuda Islands of *Pachygrapsus transversus* (Gibbes), infested with an Isopod parasite. The parasite is located in the branchial cavity of the host. On examination the Isopod was found to be *Leidyia distorta* (Leidy), heretofore recorded as parasitic on *Uca pugilator* (Bosc). This genus and species is therefore not confined to one genus and species of host.

The species found by Fritz Mueller in the branchial cavity of a Grapsoid *Pachygrapsus transversus* (Gibbes), from the coast of Brazil, is probably this species and genus, and not *Grapsicepon fritzi*, the nominal species of Giard and Bonnier.^a

Because *Grapsicepon edwardsi* was found on a Grapsoid, *Planes minutus*, according to the theory advanced by these authors the parasite of another Grapsoid of the same family, *Pachygrapsus transversus*, would naturally be a *Grapsicepon*. The facts prove, however, that this is not always the case, in this instance as in other parasitic Isopod genera before cited.

Leidyia is found parasitic on both *Uca* and *Pachygrapsus*, two widely separated genera of hosts belonging to different families.

As no descriptions or figures of this form have been given since those published by Leidy, the following descriptions and figures may be of interest, in that the young female is also described and figured for the first time:

^aTrav. du Labor. de Wimereux, V, 1887, p. 70, and VIII, 1900, p. 226.

LEIDYA DISTORTA (Leidy).

Cepon distortus LEIDY, Jour. Acad. Nat. Sci. Phila., (2), III, 1855, p. 150, pl. XI, figs. 26-32.—HARGER, Report U. S. Fish Commission, Pt. 6, 1880, p. 311.—KOSSMANN, Zool. Ergeb. einer Reise in die Küst. des Rothen Meeres, III, Malacostraca, 1880, p. 122; Mittheil. aus der Zool. Station zu Neapel, III, 1881, first half, p. 182.—RICHARDSON, Am. Nat., XXXIV, 1900, p. 309.

Leidya distorta CORNALIA and PANCERI, Mem. R. Acad. Sci. Torino, (2), XIX, 1858-1861, p. 114.—GIARD and BONNIER, Trav. du Labor. de Wime-reux, V, 1887, p. 68, fig. 12.—RICHARDSON, Proc. U. S. Nat. Mus., XXIII, 1901, p. 579; Bull. U. S. Nat. Mus., No. 54, 1905, pp. 511-512.

Localities.—Atlantic City, New Jersey, on *Uca pugilator* (Bosc); Bermudas on *Pachygrapsus transversus* (Gibbes).

It is interesting to note that although *Leidya distorta* was first found at Atlantic City, New Jersey, its host, *Uca pugilator*, extends as far south as the coast of Florida, and the new host, *Pachygrapsus transversus*, extends as far north as the Florida coast, so that the continental ranges of the two hosts overlap.

Description of female.—Body rather irregular in outline, oblong-oval. Color yellow. (See figs. 1-2.)

Head large, bilobed, and with the front produced in a wide border or margin. Eyes wanting.

FIG. 1c.—LEIDYA DISTORTA. ADULT FEMALE (DORSAL VIEW).

First two segments of thorax short. The three following segments are the largest, and are subequal in length, about twice as long as the first; sixth a little shorter than fifth; seventh about half as long as sixth. The second, third, fourth, and fifth segments have in the middle of the dorsal part of the segment a squarish plate, which in the fifth segment has the outer edges considerably elevated, so as to form a longitudinal carina on either side, which extends posteriorly over the sixth segment. Coxal plates or epimera are present on the anterior portion of the lateral margin of all the segments, but are almost completely hidden by the large ovarian boss which projects upward in a large, prominent lobe. There are five pairs of incubatory plates, which



FIG. 2.—LEIDYA DISTORTA. ADULT FEMALE (DORSAL VIEW).

^a Figs. 1, 2, and 5 are from photographs taken in the U. S. National Museum. In the specimens photographed the pleural lamellæ and the pleopoda were bent, so that they do not appear as long as in Leidy's figures.

overlap each other on the ventral side, completely inclosing the marsupial cavity. The seven pairs of legs are small and feeble, the propodus and dactylus forming a prehensile hand.^a (See fig. 3.)

The six segments of the abdomen are more or less coalesced in the middle of the dorsal surface. The lateral parts of each of the first five segments are produced into an elongate double-branched pinnate appendage on either side, so that altogether there are five pairs or ten pinnate appendages to the first five segments. The upper branches probably represent the pleural lamellæ and the lower branches the pleopods, so that, in this interpretation, there are five pairs of single-branched pleopoda and five pairs of single-branched pleural lamellæ. The sixth or terminal segment is furnished with a single pair of elongated pinnate appendages, the uropoda.

Description of young female.—The young female differs from the adult in its narrower and elongated form, in not having the thorax so



FIG. 3.—LEIDYA DISTORTA. LEG OF ADULT FEMALE. $\times 52$.



a



b

FIG. 4.—LEIDYA DISTORTA. YOUNG FEMALE. a, DORSAL VIEW; b, VENTRAL VIEW.

greatly distended, in the more equal length of the segments of the thorax, which do not have the median dorsal plate as in the adult, in having the segments of the abdomen more distinctly separated and the lateral appendages more elongated.

^a Leidy mistook the prehensile hand for the "recurved, abortive hooklet." In some positions the hand has the appearance of a blunt hook and the dactylus is difficult to see. Leidy's figure is inaccurate and misleading. The article immediately preceding the "hooklet," in Leidy's figure, is probably the carpus and the merus combined. The line of separation between the two articles is somewhat difficult to see. Another interpretation might be given to Leidy's figure, the "hooklet" being the dactylus, the article preceding it, the propodus, and the one preceding that, the combined carpus, merus, and ischium.

The incubatory plates are much smaller than in the adult, and the marsupial pouch greatly reduced in size. The pouch is never filled with eggs at this stage. (See fig. 4.)

Description of male.—Body narrow, elongate. Color yellow. (See fig. 5.)



FIG. 5.—LEIDYA DISTORTA. MALE.^a × 23.

Head but little wider than long; frontal margin straight, with antero-lateral angles rounded. Posterior portion somewhat wider than anterior. Eyes wanting. First pair of antennae composed of three joints, second pair composed of seven, the last two being minute and tipped with hairs.

The seven thoracic segments are separated from each other by lateral incisions, so that the lateral margins are not continuous. There are seven pairs of prehensile legs.

The six abdominal segments are perfectly distinct, are separated from each other by lateral incisions, and decrease gradually in width, from the first to the sixth, which carries a pair of elongated, tapering appendages, the uropoda. The pleopoda are rudimentary.

^a Some allowance must be made for Leidy's figures, which are somewhat diagrammatic.