

THE FAIRY SHRIMPS OF ILLINOIS¹

H. J. VAN CLEAVE.

The fairy shrimps of Illinois have been but little studied. Prof. S. A. Forbes, in the early days, directed considerable attention to this group and brought together a very representative collection of specimens. In more recent years they have been neglected. Recently, I have had the opportunity of examining collections from various parts of the country and as a result have accumulated some records of the occurrence of two species formerly not recorded from Illinois. One of these includes the record of a genus not previously listed for the State.

In 1876, Prof. Forbes described *Eubbranchipus serratus* from specimens collected at Normal, Illinois, in April, 1876. The type material of this species remained in the collections of the Illinois State Laboratory of Natural History. I have had the privilege of examining these collections of *Eubbranchipus*. The original alcoholic material upon which the description of *E. serratus* is based had been dried up. Some years ago Prof. Frank Smith in reexamining these specimens succeeded in restoring them to the extent that many of the diagnostic characters were observable. In addition to this type material, the Natural History Survey collections contain series of *Eubbranchipus serratus* collected by Forbes from the type locality at Normal, Illinois, covering the period from 1876 to 1882. The restored type specimens and others in the collection identified by Forbes agree in all details with specimens occurring commonly in the vicinity of Urbana, Illinois.

A. S. Pearse, in 1912, described what he deemed to be a new species of *Eubbranchipus* under the name of *Eubbranchipus dadayi*. His description and his figures differ in no manner from specimens of *E. serratus* from the type locality identified by Forbes. I therefore maintain that *Eubbranchipus dadayi* Pearse, 1912 is a direct synonym of *Eubbranchipus serratus* Forbes, 1876.

¹Contributions from the Zoological Laboratory of the University of Illinois, No. 311.

In preparing the key to the Phyllopoda for Ward and Whipple's Fresh-Water Biology, Pearse (1918) made use of characters noted by Forbes in the original description of *E. serratus* to run this species to an entirely different section of the key from that including his species *E. dadayi*. The identity of the two species was thereby obscured.

Forbes (1876:13) characterized the abdominal segments as "narrow in front, with rounded anterior angles, while the posterior angles are produced backward, giving a decidedly serrate appearance to the abdominal margin." Later (Page 22) he laid less stress upon the angular projections of the abdomen and described the abdomen as "somewhat serrate." In fact such is the condition shown in his drawing of the abdomen (Fig. 21 Plate 5).

Pearse (1918: 669) construed this serrate appearance of the abdominal segments as due to lateral projections similar to those described for Hay's species *E. gelidus*. By so doing, Pearse grouped *E. serratus* with *E. gelidus* and failed to recognize the identity between *E. serratus* and *E. dadayi*.

Only after collecting *Eubbranchipus* locally over a period of years and after a careful examination of the Forbes collections did the writer become convinced of the invalidity of *E. dadayi* which must fall as a synonym to *E. serratus*.

Thru the courtesy of Prof. L. M. Turner of Blackburn College at Carlinville, Illinois, I recently received specimens of *Eubbranchipus* collected from temporary pools in February, 1927. These individuals very clearly belong to the species *Eubbranchipus vernalis*, one of the species characteristic of the eastern states, but previously not recorded from Illinois. Smaller individuals of this same species are in my collection from another locality in southern Illinois. These last mentioned specimens were collected by Mr. W. F. Shay near Mulberry Grove in the very early part of January, 1926.

Unidentified fairy shrimps from East St. Louis, Illinois, July 18, 1906, in the collection of the Illinois Natural History Survey have been identified as *Streptocephalus coloradensis* Dodds. This species, described by Dodds, from mountain lakes of 5,000 to 8,500 feet elevation in Colorado,

has not been reported from Illinois previously. In fact the present record is the first published account of the occurrence of this genus within the State.

In connection with the study of material incident to the preparation of this paper microscopic mounts were prepared to show the heads of four species of *Eubbranchipus* in similar orientation. These mounts were photographed to the same scale of magnification and are here reproduced as figures 1-4.

REFERENCES

- Dodds, G. S. 1915. A Key to the Entomostraca of Colorado. Univ. of Colorado Studies, Vol. XI. No. 4:265-298.
Forbes, S. A. 1876. List of Illinois Crustacea with Descriptions of New Species. Bull. Ill. Museum of Natural History, 1:3-25.
Pearse, A. S. 1912. Notes on Phyllopod Crustacea. Michigan Acad. Sci., 14:191-197.
— — 1918. The Fairy Shrimps (Phyllopoda). Ward and Whipple's Freshwater Biology. Wiley and Sons, New York: 661-675.

EXPLANATION OF FIGURES.

Figures 1 to 4. Microphotographs showing the heads of four species of *Eubbranchipus* at same magnification. In each instance the stained head was mounted in damar with its caudal or posterior surface uppermost. The large jaw-like appendages are the second antennae, modified for clasping during copulation. These modifications are lacking in the females.



Fig. 1. *Eubbranchipus vernalis*, collected at Carlinville, Illinois.

Fig. 2. *Eubbranchipus gelidus*, collected at Syracuse, New York.

Fig. 3. *Eubbranchipus serratus*, collected at Urbana, Illinois.

Fig. 4. *Eubbranchipus ornatus*, collected at Bloomington, Minnesota. (Ill. State Natural History Collection, No. 31272).