

## TWO NEW SPECIES OF ENTOMOSTRACA.

By V. T. CHAMBERS.

## TACHIDIUS (?) FONTICOLA, n. sp.

Plate A.—See figs. 1 to 11 inclusive.—1, *T. fonticola*; 2, its inferior palpus, male and female; 3, female antenna; 4, female legs of 2d, 3d, and 4th pair; 5, female leg of 1st pair; 6, female appendage to 6th segment; 7, do. of male; 8, male antenna; 9, male leg of 1st pair; 10, male leg of 2d pair; 3d is like it, except that the terminal setæ are longer, as long as those of the 4th pair; 11, male legs of 4th pair.

The animal is pale yellow, with the eye spot very large and bright crimson. The antennæ of the female are short, thick, and simple; those of the male are six jointed, and as shown in figure 8; the setæ of the legs of the female are much shorter than those of the male. Length of body, .385 mm., that of terminal setæ is .3 mm. The armature as to spines, etc., is sufficiently given in the figures.

So far as is known, this species does not inhabit a portion of the earth's surface more than two yards square. At the famous locality known as Big Bone Springs, large "Gums" (hollow trunks of trees) are sunk in the ground, and the water of the springs rises up in these Gums, and running over the top spreads out over the ground, or runs off in small streams. At one of these springs, which is near the edge of a bank of Big Bone Creek, the water spreads over the ground toward the bank over which it trickles. There is not enough of it to form a stream, spread out thus, and quickly absorbed in the ground as it is, but it affords a fine place for the growth of a species of *Oscillatoria* (probably *O. imperator*, Wood), which forms a tolerably thick mat, upon the surface, and in which *T. fonticola* lives in countless multitudes. All the species of *Tachidius* heretofore known live in salt seas, or in brackish water connected with them. How this little creature found its way to its present habitat is a mystery. I have no analysis of this water by me, but the water of all of these springs is strongly impregnated with common salt, iron, sulphur, and other mineral ingredients in less quantity. I found only the *Tachidius* and *Oscillatoria* growing at that place, but in the water of another spring, containing a smaller percentage of mineral matters, I found the species of *Cypris*, a dipterous larva, and several *infusoria* (*Paremecium*, Monads, etc.) But I found no animal or vegetable organisms in any of the "Gums" in which the water is very cold. It was only when it spreads around the spring, or stands in little puddles, that I found the creatures above mentioned, but this standing water outside of the "Gums" was warmed by the sun, and by reason of evaporation was more strongly saline than that in the "Gums." The legs of the *Tachidius* seemed formed for swimming, but there was scarcely water

enough even for so small a creature to swim. The legs of the female seem, however, scarcely so well adapted for swimming as those of the male. I refer the species provisionally to *Tachidius*, as it seems to belong there more properly than in *Canthocamptus*.

DIAPTOMUS (?) KENTUCKYENSIS, n. sp.

Plate A and B.—Figure 12, *Diaptomus* (?) *kentuckyensis*. The outer line represents the male; the dotted inner line the outline of the female; fig. 13, abdomen of female; fig. 14, right antenna, male; fig. 15, left antenna, male; fig. 16, antenna of female; fig. 17, posterior foot, male; fig. 18, last foot of male; fig. 19, maxilliped of first pair, female; fig. 20, antenule male and female; fig. 21, mandible; fig. 22, 2d swimming foot, female; fig. 23, first swimming foot of female.

The species is white and transparent. The abdomen of the male has five, that of the female only four segments. *Cephalothorax* with five distinct segments, but when crushed under pressure the head appears to divide into four segments. The organs as represented in the figures,—length from apex of head to end of terminal setæ, 1.5 mm. Antennæ as long as the body.

For several years in succession, I have taken it from the same spot, in a small lake or pond, in Linden Grove cemetery, in Covington, Kentucky, in May; but have not met with it elsewhere. The differences in the male and female abdomen, suggest a doubt whether it properly belongs in *Diaptomus*, which strictly has five joints in the abdomen in both sexes. The thorax here has only four distinct segments beside the head, though under pressure the head and thorax may be separated into nine segments. In *D. castor*, according to Baird, the antennæ have twenty-six joints. In this species the right antenna has only twenty-four in the male, and the left has twenty-six; otherwise it is very similar to the same organ of *D. castor*, except as to the number, position and character of its ciliæ, as to which it differs decidedly, since according to Baird, *D. castor* has each joint furnished with one or more setæ, and the terminal one with five (see fig. 14 as to this species). *D. castor*, according to Baird, has the short branch of the antenule, consisting of six joints. In this species, the articulation of this joint is very indistinct, and there are, I think, ten joints, some of them being very small and indistinct; there are nine plumose setæ, each of which appears to me to spring from a distinct joint. Baird's first joint seems to me to be resolvable into three; the second branch is longer than the first. This species is evidently quite distinct from *D. castor*, and it may be doubtful whether they should be placed in the same genus. It is also evidently quite distinct from *D. pallidus*, Herrick; and from *D. longicornis*, Herrick; and from all the other species with which I am acquainted, especially as to the different numbers of joints in the abdomen in the sexes.



