

*Heterochæta spinifrons*, Claus (Pl. XIII. figs. 1-13).

*Heterochæta spinifrons*, Claus, Die frei lebenden Copepoden, p. 182, pl. xxxii. figs. 8, 9, 14, 16.

Length, one-sixth of an inch (4.2 mm.). Cephalothorax slender, tapering to each extremity (fig. 1), rostrum short, stout and bluntly pointed, not furcate. Anterior antennæ (figs. 1, 2) about as long as the body, slender; the base (in spirit specimens) thrown boldly forward from the front of the head, and then taking a sudden bend backwards; sparingly provided with very short marginal setæ, except near the base, where they are longer and more thickly set; apical joint rather short, its terminal setæ<sup>1</sup> not much longer than those of the other joints; in the *male* (fig. 3) the hinge joint forms a scarcely perceptible indentation, and there are no marginal spines or serratures. The inner branch of the posterior antenna (fig. 4) has four (? three) small median joints, and is nearly equal in size to the outer branch. The mandible (fig. 5) has four curved apical teeth, the two central teeth bi- or tri-furcate, the outermost tooth is, as it were, soldered to the side of the basal plate, its base forming a rectangular projection, and between it and the other teeth there is a wide gap. The maxilla (fig. 6) is long and slender, digitiform, has five or six stout apical setæ, a quadrate basal plate, which is marginally setose, and only one short tri-setose branch. The marginal setæ of the anterior foot-jaws (fig. 7) are very strong, and the last two are closely pectinated with short fine setæ on their inner margins; at the apex of the limb is a tuft of about six slender setæ, about half as long as the larger claws. The posterior foot-jaws (fig. 8) are like those of *Calanus*, but the basal joint bears one short spine, and an excessively long and strong flexuous seta. All the branches of the swimming feet, both external and internal, are three-jointed, the marginal spines are short, sharp and slender; the outer branch of the third pair (fig. 9) is, however, much dilated, and has a series of very short claw-like terminal spines. The fifth pair in the *male* (fig. 10) are only slightly different on the two sides; the inner branches are two-jointed, ending in a brush of six stout plumose setæ; the outer branches end in long, slender claws, that of the right side having two large digitiform processes on the inner margins of the first and third joints; in the *female* the fifth pair are alike on both sides (fig. 11), and differ little from the first and second pairs, except that the median joint of each outer branch bears on its inner margin a strong divaricate and slightly curved spine, which is as long as the third joint, and in the natural position of the limb crosses its fellow of the opposite side. The first abdominal somite in the impregnated *female* (fig. 12) is very large and tumid, the *receptaculum seminis* (?) forming a large rounded prominence on its anterior aspect; in the *male* the abdominal joints are nearly equal in size. The caudal stylets are about

<sup>1</sup> These setæ are scarcely long enough in the plate, and in fig. 1 the number of antennal joints is given incorrectly. The figure (10) illustrating the fifth pair of feet of the male, though representing rightly the specimen from which it was drawn, differs considerably from the same organs in other examples; probably, however, the discrepancies are characteristic of the various ages of the specimens.