

or palpiger, though the anterior margin of the mentum is clearly defined.

There are no true tubercles upon the thoracic or abdominal segments, the setæ thickly studding both dorsal folds of each segment laterad nearly to the spiracle, caudad of which is an area covered with setæ. On the ventral aspect are five areas of setæ, the central one being composed of two areas coalesced upon the mesal line.

Many European writers have described the larvæ of *Donacia* as having but eight segments, but as Schmidt-Schwedt has pointed out, the ninth and rudimentary tenth are easily recognizable and are very clearly seen in the last embryonic stage, as shown in the figures of Kolliker. Indeed, the latter figures show two long, filiform, lateral appendages attached to each of the ninth and tenth segments. In *Lema*, *Crioceris*, and one or two other genera, the anus is found opening in the ninth abdominal tergite, but in *Donacia* it opens at the caudal margin of the seventh tergite, and true tergites of the eighth and ninth segments are wanting, this space being but slightly chitinized and containing no true sclerites.

But the most striking feature of the *Donacia* larvæ is the pair of brown, chitinous, sickle-like appendages borne upon the eighth abdominal segment. These are about .5 to .66 mm. in length and reach nearly to the tip of the abdomen. For many years the function of these organs was somewhat of a puzzle to those European entomologists who had studied these larvæ, though in 1842 Kolliker gave a clue to their function in his paper on the embryology of *D. crassipes*, Fab., stating that on the third caudal segment are two cylindrical tubes connecting with the main tracheal trunks ("—atque ex tertio dorso tubuli duo cylindrici cum trachearum truncis communicantes enati sunt" — Kolliker, *Observationes de Prima Insectorum Genesi*, etc., Turici, 1842). Perris, in his excellent article on the larva and life-history of *D. sagittaria*, Fab. (*Ann. Soc. Ent. Fr.* 2d ser. t. VI., 1848, p. 33, Pl. II., No. 2, fig. 1-2), stated that their function is wholly unknown. Heeger thought they enabled the larvæ to cling to the roots of the plants, and aided them in creeping.

The manner in which these larvæ are enabled to breathe under water and to form a cocoon filled with air has also been somewhat of a problem. At the base of each appendage is what to all appearances is a very large spiracle. Perris thought that these are closed by a thin membrane, but that the air of the tracheal system is purified through