Longitudinal muscle fibers are absent. Four *bulb canals,* continuous with those of the tract and calyx, extend the length of the bulb and end blindly at the posterior extremity. In the anterior half of the bulb they do not communicate with the bulb cavity, but are closed off by the approximating chitin walls internally adjacent to them. Posteriorly, the walls diverge so that the canals communicate widely with the lumen when the transverse muscles are relaxed (pl. 7, fig. A), but are closed off from the lumen when the muscles contract. As in the calyx and tract, the outer surfaces of the walls form the points of attachment of the transverse muscles.

The bulb merges into the cylinder by a posterior constriction and a termination of the bulb canals. The circular muscles are again reduced to a thickness of one to two fibers, and there is still no evidence of longitudinal muscle fibers (pl. 7, fig. B). Internally the cylinder consists of a simple chitinous tube surrounded by a single-cell layer of epithelium. At its posterior end, as it enters the midgut, the cylinder is seen in our preparations to fold upon itself in such a way as to become a compound tube (pl. 7, fig. C). This is made possible by an extreme thinning of the intima in that area. At the end of the cylinder the intima is folded inside out and back upon the cylinder for a short distance; it is then turned inward again and envelops the cylinder as a third fold before it terminates at the midgut junction. The median intima shown in our figure is therefore actually the true intima folded upon itself. The significance of this rather complicated situation is that the tip of the cylinder is highly flexible, allowing the cylinder to be intruded far into the midgut as the *cylinder valve* ("knob" of previous literature) or to be pulled out of the cavity altogether as a straight, simple tube. Thus the relative lengths of the cylinder and cylinder valve, or those parts outside and inside the midgut cavity respectively, can vary considerably, and the cylinder valve can disappear entirely under some conditions. This phenomenon was first observed by Forel in *Conomyrma pyramica* (1929); we have seen it in several formicine genera, including *Camponotus, Lasius,* and *Prenolepis.*

The midgut is of sufficient histological interest to deserve