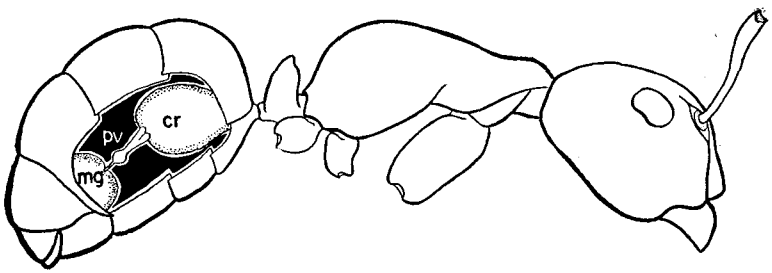
possesses a translucent integument. The crop, when filled with stained fluid, can be observed through the gastric tergites, so that those individuals that have their crops distended most suitably for dissection can easily be picked from the artificial nests. China ink was found to be the most suitable of several stains considered for use in studying the course of food in the living gut. This was ground up in honey to make an intensely black liquid, which could be traced even when passing through the fine canal system of the proventriculus. Dissections were accomplished simply by clipping the ant's legs, removing the sternites with a fine pair of scissors, picking out the fat body, and washing the cavity of the gaster with insect Ringer's solution. For histological studies the gut was serially sectioned at seven microns and stained with Ehrlich's haemotoxylin and eosin.



Text-figure 1. Soldier of *Camponotus americanus* Mayr, with a window cut in the gaster to show size and placement of the proventriculus. Cr, crop; pv, proventriculus; mg, midgut.

The proventriculus, or gizzard, lies in the anterior half of the gastric cavity when not displaced posteriorly by the distended crop (text–fig. 1.). It is the last segment of the foregut and connects the usually voluminous crop with the midgut. In the "euformicine" ants (section

EXPLANATION OF PLATE 5

Exploded semidiagrammatic drawing of the chitinous framework of the proventriculus. Epithelium and muscularis not shown. A, calyx; B, occlusory tract; C, bulb; D, cylinder. Sep. cnl., sepal canal; filt., filtering slit of sepal; sep., sepal; in., intersepalary intima; cyl. vlv., cylinder valve. (180X)