

may be able to produce a variety of sounds and therefore apprise the nurses of more than one need or craving.

The adult Pseudomyrmicæ are so peculiar in structure that Emery, Ashmead (1905) and others have been led to separate them sharply from all other Myrmicinæ. The shape of the head in the worker and female and especially of the clypeus and frontal carinæ is unique, the eyes are very large and there is a strong tendency to development of ocelli in the workers, the conformation of the petiole, postpetiole and tibial spurs is peculiar, and as I have recently shown (1919b), the number of antennal joints (12) is the same in the male as in the worker and female in all four genera.

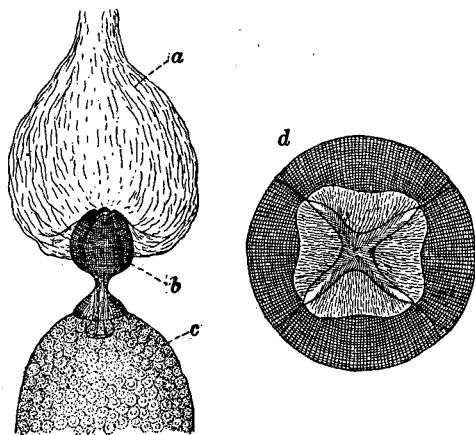


Fig. 1. *a*, Ingluvies, or "crop," *b*, calyx of proventriculus, or "gizzard," and *c*, ventriculus, or "stomach," of *Pachysima aethiops* Fabr.; *d*, proventriculus seen from the front under a higher magnification.

Little study has been devoted to the structure of the proventriculus, or "gizzard" in the Myrmicinæ, but Meinert, Forel and Emery have described and figured it as simple and tubular in most genera and of a very primitive type compared with the conditions in the Dolichoderinæ and Camponotinæ. I find, however, that the proventriculus of all four genera of the Pseudomyrmicæ is much more specialized, being anteriorly developed as an apple- or quince-shaped ball, covered with longitudinal and circular muscles and with four distinct, connate sepals, bluntly rounded and finely hairy at their tips, and posteriorly as a very short, tubular, con-