

Structures posterior to the vesicula seminalis which may correspond with the ejaculatory dilations of *Anisolabis littorea* have been recorded in other species of Dermaptera. The large single swelling behind the vesicula seminalis in *Forficula auricularia* is well known, but the authors quoted above (p. 204) tend to interpret it in many different ways, or to ignore it. However, it may be referable to the paired ejaculatory dilations of *A. littorea*. In *Euborellia moesta*, Berlese (1909) shows behind each of the paired vesiculae seminales a wide duct opening into an even wider swelling, also termed "vesicula seminalis"; the figure indicates that this is muscle ensheathed. These could correspond with the ejaculatory dilations of *A. littorea*.

### *The Ejaculatory Ducts*

The two ejaculatory ducts (Figs. 1, 2) are most asymmetrical in appearance, but of approximately equal overall length, and are comprised of several regions. At first, each widens from its initial constriction and passes through one of the muscle loops on the apex of the manubrium. The wall of the portion before the loop (Fig. 15) is very thick, consisting of a cuticular lining, an epithelium of very tall cells standing on a thick basement membrane and a very wide outer covering of irregularly arranged muscle fibres. The whole is ensheathed in a delicate epithelial membrane.

Between the muscle loops and the genitalia the ejaculatory ducts are of unequal length, that leading to the reflected mesal lobe being short, whereas the other is thrown into a long loop. Here also, the character of the duct wall is changed: the muscle sheath gradually becomes converted to a hollow tube of longitudinal fibres with the lining epithelium detached as a separate sinuous duct made up of a thin intima and cubical epithelium (Fig. 16). The space between the muscular tube and the free duct is probably filled with fluid. In this form the duct continues into the genitalia. Eventually the internal duct becomes continuous with the virga and the muscular tube narrows down and disappears (p. 211).

## THE GENITALIA

Until the appearance of the paper by Snodgrass (1957) the homologies of the dermapteran genitalia were regarded as being obscure. However, by considering the development of the organ in conjunction with that of other insects, he has thrown much light on the relationships of the parts. These comparisons also affirm that the paired condition in the Labiduroidea is more primitive than the single condition in the Forficuloidea. Snodgrass's interpretation of homologies and his terminology will be followed here.

Associated with the genitalia is the manubrium (Fig. 4). This is an elongate loop arising from the centre of the anterior margin of the ninth sternum. It is composed of a wire-like sclerotised frame closely enveloped in a cuticular membrane. In *Anisolabis littorea* the manubrium is narrow and is about as long as the sclerite. Burr (1916) holds that the manubrium has some value as a systematic character.

The median flattened genital organ of *Anisolabis littorea* is completely invested in a tough cuticular membrane (Fig. 1). It lies above the subgenital plate, which in male Dermaptera is the ninth sternum. The genital chamber is an invagination of the intersegmental membrane behind the ninth sternum. The proximal, single portion of the organ lies within the body wall but the distal, paired section is outside. The basal parts of the two penes lie in the genital chamber with the apical portions (mesal lobes and lateral lobes) in the groove between the tenth sternites; they are covered by the subgenital plate.