The specimen has been compared with preserved specimens of *Berthelinia limax*¹ from Japan, *B. typica* (Gatliff and Gabriel) from Australia², and *Midorigai australis* Burn² from Australia. In the Hawaiian specimen, the shells are shorter from anterior to posterior in relation to height of the valve than are the shells of *B. limax*, and they differ from both *B. typica* and *M. australis* in the blunt, rounded anterior and posterior ends. The nucleus of the Hawaiian specimen differs from those of *B. limax* and *B. typica* in that it is closely applied to the dorsum rather than being elevated and erect; and it differs from that of *M. australis* in that it is smaller in relation to the size of the valve and does not extend over the right valve.

Designation of a specific name will await the collection of additional material.

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Secretions of the Labral and Trunk Limb Glands in the Cladoceran *Eurycercus lamellatus*

THERE has been much dispute concerning the function of the labral glands of the Branchiopoda. Although Cannon¹⁻⁶ has long maintained that they produce a secretion which entangles particulate food prior to its being dealt with by the paired mouthparts, this has not been universally accepted. Among those who dispute this, Nicholson and Yonge⁷ expressed the hope that new and independent evidence would be produced by others. Such evidence, which vindicates Cannon's belief, has been obtained from the chydorid cladoceran *Eurycercus lamellatus* (O. F. Müller), in which the labral gland secretions and their origin have been unequivocally demonstrated. Previous evidence was confined to the observation of secretions in the gland cell ducts¹ or, even in the much studied anostracan *Chirocephalus diaphanus* Prévost, to the demonstration of material adjacent to the labrum which was believed to have been produced by the labral glands^{8,9}. In *Eurycercus*, secreted matter exuding from the ducts in the labrum has been clearly revealed (Fig. 1 S). This material is mixed with the food by special lobes on the first trunk limb (L) and by the maxillules.

The importance of entangling substances in the feeding mechanism is emphasized by the discovery of posteriorly originating secretions such as have not previously been reported in the Cladocera. In the Anostraca, secretions produced by superficial, segmentally arranged glands adjacent to the food groove and on the limbs have been described, and divergent views have been expressed regarding their possible function^{4,5,8-10}. In *Eurycercus*, secretions are produced by large gland cells located near the base of the fourth trunk limbs. They are stored in voluminous reservoirs within these limbs (Fig. 2 R). An exit duct from each reservoir opens on the inner face of each limb. Discharged material (PS) is shown near the orifice of the exit ducts in Figs. 2 and 3. This is passed towards the food groove and forwards (Fig. 3 A), carrying with it particles filtered by the trunk

Fig. 1. Longitudinal section through labrum showing exudation of labral gland secretion (S) and proximity of inner lobe (L) on first trunk limb

Fig. 2. Horizontal section showing reservoir (R) in fourth limb and secretion (PS) being poured from it and its neighbour in the opposite limb

Fig. 3. Longitudinal section showing secretion (PS) being poured from fourth trunk limb and passing forward (A)

All photographs (taken with assistance from Miss P. J. Townley) are from thick slices of Zenker-fixed specimens embedded in low viscosity nitrocellulose and stained with Mallory's stain. Figs. 1 and 3 are shown ventral surface uppermost. The top of Fig. 2 is anterior

limbs during the feeding process, an investigation of which is now nearing completion.

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