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OVOVIVIPARITY IN SOME TENEBRIONID BEETLES

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ABSTRACT

Ovoviviparity has been discovered in two species of South African opatine tenebrionid beetles, *Eurynotus capensis* (F.) and *Melanopterus marginicollis* Muls. Females carried fully developed larvae within the vagina. Three additional opatine species which may be ovoviviparous were also identified.

While ovoviviparity is a recurring phenomenon in certain groups of insects, it has been reported from only two families of Coleoptera. Nearly a dozen species of Chrysomelidae have been shown to be ovoviviparous. These are distributed among the genera *Chrysomela* (Rethfeldt 1924; Holmgren 1904), *Orina* (Holmgren 1904) and *Phytodecta* (Hennenberg 1927; Scheidter 1926). Viviparity and ovoviviparity are also found among certain myrmecophilous (Wasmann 1915, in Holmgren 1904) and termitophilous (Schödte 1855, in Holmgren 1904) Staphylinidae. No other families of Coleoptera have been reported to contain ovoviviparous species.

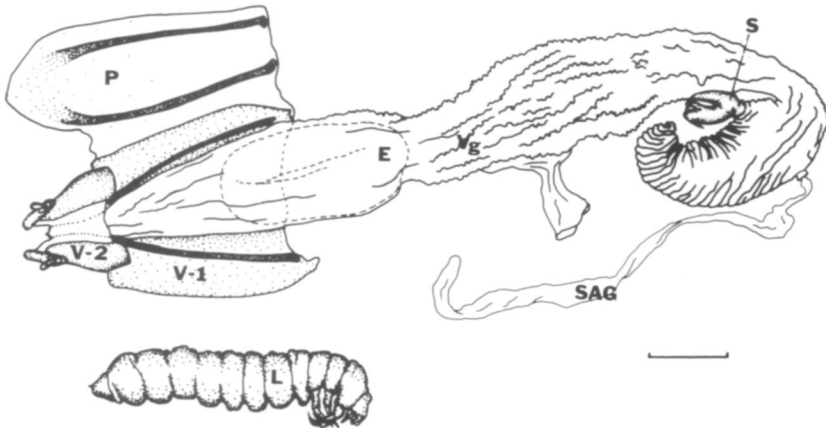


Figure 1. The KOH-cleared female genital tract of *Eurynotus capensis* (F), showing a developing egg (E) in place (dotted outline) in the vagina (Vg), and a larva (L) dissected from the vagina of another specimen. The proctiger (P) has been freed along its right side and folded out flat to expose the dorsal side of valvifer 1 (V-1). Spermatheca (S); spermathecal accessory gland (SAG); bar = 1 mm.

In the course of a study on the defensive glands of tenebrionid beetles, I noticed that females of the South African *Eurynotus capensis* (F.) contained within the vagina or bursa copulatrix large egg-like structures. The specimens had been cleared in KOH, so only the cuticular parts were represented. Dissection and staining with chlorazol black revealed that the females were carrying well-developed larvae (Fig. 1). It was not possible to discern whether these were still within the chorion. There seemed to be a single larva per female, but only a small number of females were available for inspection.

A survey of related South African tenebrionids of the subfamily Opatrinae showed that *Melanopterus marginicollis* Muls. females were also ovoviviparous (Fig. 2) and sometimes carried fully developed larvae in the vagina. The internal female tract of *M. porcus* (Muls.) is almost identical to that of *M. marginicollis*, and it is possible that, while developed

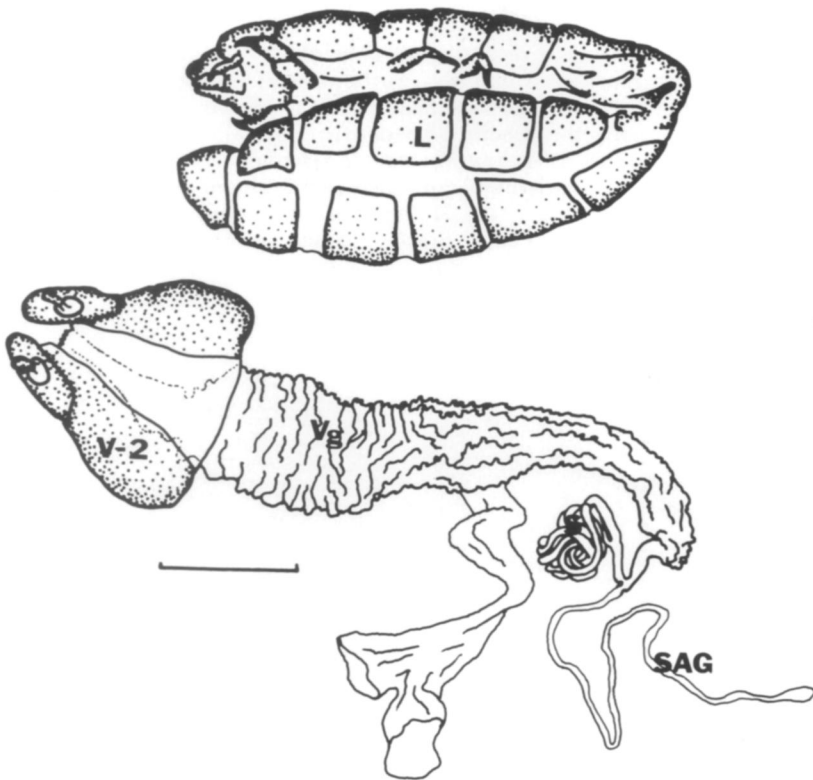


Figure 2. The KOH-cleared female genital tract of *Melanopterus marginicollis* Muls., and a larva (L) dissected from the vagina (Vg) of a somewhat larger female. The larva is bent double through the mid-body region and somewhat flattened. The first valvifer and the proctiger have been removed from this preparation, and the second valvifer (V-2) is dorsal side up. Bar = 1 mm.

larvae were not observed, this species is also ovoviviparous. Other possibly ovoviviparous species are *Schelodontes* sp. and *Anomalipus variolosus* (Sol.), both of which carried a single, large egg in the vagina. In neither, however, was development advanced enough to be able to detect larval structures after clearing.

All beetles were collected between March and June, 1970 in the vicinity of Grahamstown, South Africa. Little is known of the life habits of these beetles, and it is impossible to guess what factors predispose them to ovoviviparity.

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