

THE MIRID RECTAL ORGAN: PURGING THE LITERATURE

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ABSTRACT

The rectal or perianal organ of mirid (plant bug) nymphs was explored in a recent paper and assumed to have been overlooked by hemipterists. To rebut this notion, references ascribing the presence of an eversible rectal organ in nymphs of Old and New World mirids are cited, and their function of assisting nymphs to maintain contact with their hosts under adverse conditions is discussed. It is concluded that the rectal organ, although inadequately studied and mentioned only sporadically in the literature, occurs in mirid nymphs of all stages and probably in all subfamilies. A similar organ occurs in adult mirids; a similar-appearing, eversible structure is present in nymphs of the Anthocoridae.

A rectal or perianal organ recently was discovered in nymphs of *Dagbertus olivaceus* (Reuter) and a homologous structure was noted in nymphs of the Palearctic mirid *Pantilius tunicatus* (F.) (Leston 1979). The organ was illustrated and its function was proposed as helping nymphs of arboreal species maintain contact with their host plants under windy conditions, assuredly a reasonable suggestion. I offer the following comments not to asperse but to rectify the assumption that the rectal organ of immature Miridae has "passed unnoticed" in hemipterological literature. Kullenberg (1944) concluded from his careful biological studies that mirids generally were "not seasoned against wind" but several workers had previously reported on a sticky, eversible organ that helps keep mirid nymphs from losing contact with their host plants under adverse conditions.

Crosby (1911) was one of the first to observe an extrusible organ in North American mirids. He noted that nymphs of 2 species occurring on apple trees, *Heterocordylus malinus* Reuter and *Lygidea mendax* Reuter, rarely fall from their host when disturbed but "have a curious way of getting a new hold. The posterior end of the alimentary canal can be extruded, and is covered with a viscid secretion. As soon as they strike an object in falling, this sticky organ adheres to it until the insect can regain its foothold." H. H. Knight, probably drawing on Crosby's observations (C. R. Crosby was one of Knight's teachers at Cornell University), further discussed the survival function of the mirid rectal organ in the introductions to 2 of his major works (Knight 1941: 2; 1968: 14).

In the European literature Petherbridge and Husain (1918) noted that nymphs of *Plesiocoris rugicollis* (Fieber) were difficult to dislodge from apple branches because "even when falling . . . they hardly ever reach the ground but obtain a hold on one of the lower twigs . . . by extending the posterior part of their alimentary canal which secretes a sticky fluid." Fulmek (1930) includes a good illustration of the "Haftorgan" of *Lygocoris spinolae*