The Ovipositor Morphology in the Members of the Family Scathophagidae (Diptera) with Reference to Their Biology

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Abstract—Relation of the ovipositor structure and the egg-laying habit with the larval biology in the family Scathophagidae was investigated. The ovipositor was examined and illustrated for 29 species including *Phrosia albilabris* (F.), *Cordilura umbrosa* (Lw.), *Spathephilus breviventris* (Lw.), *Scathophaga stercoraria* (L.), *Chaetosa punctipes* (Mg.), *Pogonota barbata* (Ztt.), *Cochliarium cuneiventris* (Ztt.), and *Delina nigrita* (Fll.). Species with different bionomics and different larval feeding tissues, i.e., different substrates for oviposition, were distinguished. Comparative morphological analysis of the author's and literature data on 29 species belonging to 15 genera has shown the constancy of the ovipositor structure within the genera examined. Two principal types of the ovipositor structure were distinguished: (a) the elongate ovipositor with the distal position of the terminal part of the abdomen (the proctiger), this type is characteristic of phytophagous species (the delinine type); and (b) the shortened ovipositor with the proctiger shifted dorsally (the scathophagine type), this type is typical of predatory and saprophagous species. The delinine type of the ovipositor is adapted to inserting eggs into hard plant tissues. Changes in the feeding habits of the larvae were found to be associated with changes in the ovipositor structure. The dependence of the ovipositor structure on the egg-laying habit and on the larval biology enables hypothesizing biological features of those species for which the relevant data are not available yet. The morphogenesis of the ovipositor is speculated based on the data on its structure.

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