

## LITERATURE FOR 1912 ON THE BEHAVIOR OF ANTS AND MYRMECOPHILES

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Miss Andries (1) made a detailed study of the taxonomy, biology and development of the German species of flies of the genus *Microdon*, which in their larval and pupal stages live in ant nests. The species studied (*M. rhenanus*, *mutabilis* and *eggeri*) live most commonly with species of *Formica*, though the forms of *eggeri* were found also with *Lasius*. Fertilized females of the fly readily oviposited on bark, inserting the ovipositor into cracks. About one hundred and fifty eggs are laid, five to eighteen in a lot. These hatch in about twelve days. The larvae are not unlike certain slugs, and in fact were described by some early writers as mollusks. They crawl slowly about in the nest, secreting from the mouth a fluid that keeps the under side of the body moist. The food habits are not understood. Andries thinks that they feed on the vegetable moisture in the nest, as no solid food was found in any of the specimens sectioned. The relationship of the fly in its different stages to the ants is not well understood. It was formerly supposed by Wasmann that the larvae were treated like big *Coccidae*. Those kept by Andries were entirely ignored by the ants, and it was noted that when nests in the field were disturbed the ants removed their brood to a place of safety, while the *Microdon* larvae remained behind unnoticed. Wasmann has observed the ants lick the golden hairs of freshly emerged adults, but Andries notes that the adults, both in the field and in observation nests, were treated inimically by the ants, which seized them by the legs and wings. She succeeded in bringing growing larvae through to the adult stage apart from ants, and does not believe that *Microdon* is closely dependent upon its host.

Brun (3), after numerous experiments on the colony forming habits of *Formica*, believes that the higher acervicolous species in the genus are descended not only morphologically, but also