Understanding the biology of *Wilhelmina nepenthicola* Schmitz et Villeneuve (Diptera: Calliphoridae) inhabiting *Nepenthes* in Sarawak (Part 1)

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ABSTRACT

During a field survey at Matang Wildlife Centre, Sarawak in 2019, two third-instar larvae of *Wilhelmina nepenthicola* (Diptera: Calliphoridae) were collected from the pitcher plant *Nepenthes ampullaria*. These plants provide a unique microhabitat where various dipteran species complete their life cycles. The collected larvae were subsequently reared under controlled laboratory conditions to document their developmental progression and biological behaviours. Observations revealed that the larvae exhibited both predatory and scavenging feeding behaviours, suggesting a degree of ecological plasticity in their feeding strategy. They actively preyed upon other invertebrates within the pitcher fluid while also utilising decaying organic matter as a food source. Under natural conditions of 29 ± 1 °C and 70 ± 10% relative humidity, the pupariation period lasted for 11 days, after which adult emergence was observed. This study provides a detailed examination of the morphology and biology of *W. nepenthicola* larvae, contributing to a better understanding of their ecological role within *Nepenthes* pitcher habitats. The findings also highlight the potential adaptation of this species to specialised environments, offering insights into the survival strategies of necrophagous and predatory dipterans in nutrient-limited ecosystems.

Keywords : *Wilhelmina nepenthicola*, Calliphoridae, pitcher plant, *Nepenthes ampullaria*, Sarawak, Borneo