



Larval morphology and diagnosis of the Giant Microcaddisfly species, *Ugandatrichia* spp. (Hydroptilidae: Trichoptera) in Thailand

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Abstract

Fifth instar larval morphology and ultrastructure of *Ugandatrichia kerdmaung* Malicky and Chantaramongkol 1991, *U. maliwan* Malicky and Chantaramongkol 1991, *U. hongha* Olah 1989 and *U. hairanga* Olah 1989 were investigated. The *Ugandatrichia* spp. are case bearing and net spinning caddisflies. The presence, number and characteristics of the sclerites on abdominal sterna III, IV, and V can be used to identify the *Ugandatrichia* species found in Thailand. The larva of *U. hongha* has no sclerites on the abdominal sterna; that of *U. hairanga* has a sclerite on each of abdominal sterna III, IV, and V; that of *U. kerdmuang* has a sclerite on each of abdominal sterna IV and V, and that of *U. maliwan* has six sclerites on abdominal sterna IV and V. SEM micrographs of *Ugandatrichia* spp. showed that the spherical palpiger has a labial palp, an anterior silk gland opening, and dense bristles anteriorly and inside of its mouth. There are three main types of integument surface: an irregular dome shape which is found on the head, pronotum, mesonotum, and metanotum; a regular dome shape which is found on the membrane between the nota; and an amoeboid, dot shape which is found on the abdominal segments.

Key word: Microcaddisflies, Hydroptilidae, *Ugandatrichia*, Larva, Thailand

Introduction

Hydroptilids are tiny caddisflies, the vast majority of which are no longer than 6 mm long. They are often referred to as microcaddisflies (Dudgeon, 1999). The larvae are free living for the first four instars, and build a case for the final instar. The three thoracic nota of the insects are covered with sclerotized plates, abdominal gills are lacking, and long setae occur on the head and thoracic nota. There is usually a sclerotized plate on the dorsum of abdominal segment IX and small claws at the lateral posterior end (Wiggins 1996, Malicky 1999, Dudgeon 1999, Laudee 2002).

The study of Trichoptera biodiversity in Thailand has revealed more than 800 species, many of which have not been described (Malicky & Chantaramongkol 1999, Thapanya *et al.* 2004, Malicky & Prommi 2006). Hydroptilidae is represented in Thailand by two genera, *Orthotrichia* and *Ugandatrichia*. Five species of *Ugandatrichia*, *U. hairanga* Olah 1989, *U. hongha* Olah 1989, *U. maliwan* Malicky and Chantaramongkol 1991, *U. sanana* Olah, 1987 and *U. kerdmuang* were reported in Thailand (Malicky and Chantaramongkol, 1999), but many more are expected.

The study of Trichoptera in Thailand has been mainly on the biodiversity of the adults. In comparison with adult Trichoptera in Thailand, only a very few larva can be identified to the species level. However, Malicky (1999) described the morphology and biology of the larva of *U. maliwan* and compared its case and final instar morphology with those of *U. maliwan* and *U. kerdmuang*. His investigation showed that these caddisflies were different according to the number and shape of sclerites on abdominal sterna IV and V.