



A revision of the *Thyropygus allevatus* group. Part 3: the *T. induratus* subgroup (Diplopoda: Spirostreptida: Harpagophoridae)

PIYATIDA PIMVICHAI¹, HENRIK ENGHOFF^{2,3} & SOMSAK PANHA^{1,3}

¹Animal Systematics Research Unit, Department of Biology, Faculty of Science, Chulalongkorn University, Bangkok 10330, Thailand.
E-mail: somsakp@sc.chula.ac.th and piyatida_pimvichai@yahoo.com

²Natural History Museum of Denmark, University of Copenhagen, Universitetsparken 15, DK-2100 Copenhagen Ø, Denmark.
E-mail: henghoff@snm.ku.dk

³Corresponding author. E-mail: somsakp@sc.chula.ac.th

Abstract

The *Thyropygus induratus* subgroup of the *T. allevatus* group is revised. Three new species are described from Thailand: *T. dormiens* **n. sp.**, *T. laterolobatus* **n. sp.** and *T. macrosiamensis* **n. sp.** The following species are redescribed and re-elevated from subspecies status under *T. allevatus* (Karsch, 1881): *Thyropygus induratus* Attems, 1936 (= *T. punctatus* Attems, 1938, **new synonym**), *Thyropygus quietus* Attems, 1938, *Thyropygus resimus* Attems, 1938, and *Thyropygus uncinatus* (Demange, 1961). *Thyropygus siamensis* Verhoeff, 1938 (= *Thyropisthus ligulus* Demange, 1961, **new synonym**), is re-described. A case of species with identical gonopods but very different body size (*T. induratus* and *T. quietus*) is discussed.

Key words: millipede, taxonomy, new species, Thailand, size difference

Introduction

Following our revisions of the *opinatus* and *bifurcus* subgroups of the *Thyropygus allevatus* group (Pimvichai *et al.* 2009a, b), we here revise a hitherto unrecognized subgroup which we name the *induratus* subgroup after its first described member. Like the previously revised subgroups, the *induratus* subgroup occurs in continental SE Asia: Thailand, Laos and Vietnam. In contrast to the *opinatus* and *bifurcus* subgroups which with a single exception consist of recently or newly described species, the *induratus* subgroup to a large degree consists of species described in the first half of the 20th century and often subsequently misunderstood. The latest author to consider this group as such was Hoffman (1975) who treated most of the described species of the group as subspecies of *T. allevatus* (Karsch, 1881). The latter species is certainly quite similar to the species we consider as constituting the *induratus* subgroup, but it does differ sufficiently from them to warrant its own subgroup. We thus treat *Thyropygus allevatus sensu* Hoffman (1975) as five separate species belonging to two subgroups of the *T. allevatus* group. We have argued previously (Pimvichai *et al.* 2009a) for our preference for a splitting rather than lumping approach to species-level taxonomy in the *T. allevatus* group.

Material and methods

Newly collected specimens were hand-collected and partly preserved in 70% ethanol, partly placed in a freezer at -20 °C for subsequent molecular studies. Specimens were examined from the following collections:

CUMZ Museum of Zoology, Chulalongkorn University, Bangkok, Thailand
MNHN Muséum national d'Histoire Naturelle, Paris, France
NMW Naturhistorisches Museum, Vienna, Austria