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New species and subspecies of *Rhyacophila* (Trichoptera: Rhyacophilidae) from Asia

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Abstract

New species and subspecies of the genus *Rhyacophila* (Trichoptera, Rhyacophilidae), i.e. *Rhyacophila mikusi* n. sp. in the *R. yosii* Group from Taiwan (Republic of China), *Rhyacophila wichardi* n. sp. in the *R. curvata* Group, *Rhyacophila chayulpa ghunsa* new subspecies in the *R. chayulpa* Group, and *Rhyacophila chembo bigu* new subspecies in the *R. khimbarpa* Group from Nepal are described and illustrated with drawings of the genitalia.

Key words: Caddisflies, taxonomy, diagnosis, distribution, Taiwan, Nepal

Introduction

The Oriental Biogeographic Region in southern Asia is rich in caddisfly species, where there is a total of 4865 species in 28 families and the density of known Trichoptera species is about 370 species per million square kilometers (Morse 2011). The genus *Rhyacophila* is one of the most speciose genera of Trichoptera, with 771 species globally and 366 in the Oriental Region (Morse 2014).

Kiss (2013) gave a list of 16 *Rhyacophila* species from Taiwan, of which 12 belong to 6 *Rhyacophila* Groups but the systematic status of 4 of them is obscure. The new Taiwanese species, described here in the *R. yosii* Group, increases the total number of *Rhyacophila* species from Taiwan to 17. Schmid (1970) listed 6 species of the *R. yosii* Group, Malicky (1995) described 1, Mey (1995, 1996, 1998) 4, and Hsu and Chen (2003) 1, so that the new species increases the world's number of species in the *R. yosii* Group to 13.

A new *Rhyacophila* species and two subspecies are described here from Nepal. Thus, the previous total of *R.* species for this country increases to 39, belonging to 15 *Rhyacophila* Groups (Kiss, 2013). These new species and subspecies belong to the following groups reported previously from the Oriental Biogeographic Region:

Rhyacophila curvata Group: Schmid (1970) described 14 species, Malicky (1987, 1995, 2004, 2007, 2009) 5, Oláh (1987) 1, Sun & Yang (1995) 1, Ivanov & Melnitsky (2009, 2013) 3, Huisman & Armitage (2011) 3, and Kiss (2011) 1 for a previous world total of 28 species; so that the new species increases the world's number of species in this Group to 29.

Rhyacophila chayulpa Group: Schmid (1970) described 3 species and 2 subspecies of *R. chayulpa* Schmid 1970 in this Group, Melnitsky (2005) another subspecies of *R. chayulpa*, so that the new subspecies of *R. chayulpa* increases the world's numbers in the *R. chayulpa* Group to 3 species and 4 subspecies.

Rhyacophila khimbarpa Group: 14 species and 1 subspecies of *R. chembo* Schmid 1970 of this Group were listed or described by Schmid (1970), 1 species by Schmid & Denning (1971), 3 species by Oláh (1987), 2 species by Malicky & Chantaramongkol (1993, 2004), 1 species by Mey (1996), 1 species by Sun & Yang (1998), 2 species by Malicky & Sun (2002), 1 species by Malicky & Nawvong (2004), and 1 species and another subspecies of *R. chembo* by Melnitsky (2005), so that the previous world total of reported species of this group is 26 species and 2 subspecies. The new subspecies of *R. chembo* therefore increases the number of subspecies in this Group to 3.

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