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Two new species of the genus *Rhyacophila* Pictet (Trichoptera: Rhyacophilidae) from the Indian Himalayas

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Rhyacophilidae Stephens, 1836, is a relatively large family revised by Schmid (1970). The family is predominantly north temperate, found in North America, Europe and Asia (Holzenthal *et al.* 2007). The genus *Rhyacophila* contains 801 species globally; among these, 375 species have been recorded from the Oriental Region and 148 species occur in India (Morse, 2012). For the identification of species the works by Armitage & Arefina (2003), Kimmins (1952, 1953, 1964), Kiss (2003, 2011a, 2011b), Malicky (1995a, 1995b, 1997), Malicky & Chantaramongkol (1993), Malicky & Prommi (2006), Malicky & Sun (2002), Martynov (1927a, 1927b, 1930, 1935), Morton (1900), Schmid (1959, 1970) and Sun & Yang (1998) were used.

Specimens belonging to this genus were collected primarily during the first 1–3 hours after dusk with light traps having either mercury-vapour bulbs (with alternating current) or 22-W circline fluorescent BL tubes (Bioquip, with 12-volt, rechargeable batteries). The traps were placed near the edges of some high altitude streams. The caddisfly material so collected was killed and preserved in 95% ethanol containing glycerine. The male genitalia were removed and were treated with the lactic acid procedure of Blahník *et al.* (2007).

The illustrations were prepared with the aid of a zoom stereoscopic binocular microscope (Kyowa Getner DVZ-555 with maximum magnification of 90X) fitted with an ocular grid in one eyepiece. The illustrations were scanned at 600 dpi black and white, and mounted onto plates in Adobe Photoshop 8.0®. The genitalic terminology corresponds with that of Schmid (1970).

Types of the new taxa are deposited in the Museum of the Department of Zoology and Environmental Sciences, Punjabi University, Patiala, India (PUPM).

Rhyacophila sajadi sp. nov.

(Figs. 1–4)

Diagnosis. Assigned to the *R. naviculata* Group (*R. naviculata* Branch of Schmid 1970), this new species resembles *R. kyadongpa* Schmid 1970 in the general shape of the male genitalia, but can be easily distinguish from it by the following characters in lateral view:

In *R. sajadi*, the lateral processes of the apicodorsal lobe of segment IX are broader than the median processes (spine-like apically) and with a triangular membranous projection, whereas in *R. kyadongpa* the median processes (not spine-like apically) are broader than the lateral processes and lateral processes are without any triangular projection. The anal sclerite is C-shaped in *R. sajadi* but is elongated and not C-shaped in *R. kyadongpa*. The phallicata is curved downwards apically in *R. sajadi* and it is straight in *R. kyadongpa*. The dorsal appendage of the phallic apparatus is rounded apically in *R. sajadi* but it is pointed apically in *R. kyadongpa*. The dorsal surface of the terminal segment of each inferior appendage is sloped in *R. sajadi*, but is elevated and convex in *R. kyadongpa*.

Male: In alcohol, antennae brown, forewings yellowish-brown with light yellow patches. Length of each antenna 10.4 mm and length of each forewing 14.0 mm. Genitalia (Figs. 1–4): In dorsal view, apices of lateral processes of apicodorsal lobe of segment IX truncate; in lateral view, median process of apicodorsal lobe of segment IX pointed and lateral processes 2 times broader than median process apically and with medially directed triangular membranous projection in middle of its proximal half. Anal sclerite C-shaped. Dorsal appendage of phallic apparatus digitiform; phallicata sickle shaped; parameres absent. Dorsal surface of terminal segment of each inferior appendage sloped and with minute spinules.

Etymology. The species is named for Sajad Hussain Parey of Punjabi University, Patiala, India for providing encouragement.