



## A new species in the *Rhyacophila lieftincki* Group (Trichoptera: Rhyacophilidae) from southwestern Virginia

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Members of the *Rhyacophila lieftincki* Group (Trichoptera: Rhyacophilidae) share distinctive characters in both the adult (Schmid 1970) and larval forms (Smith 1984). In males, segment IX is short ventrally, with the apico-dorsal portion forming a large, usually triangular lobe over segment X. Segment X is somewhat reduced in height, slightly oblique to the base, and bearing small, claw- or toothlike points at its posterior end. Anal sclerites are vestigial or lacking in about half the species, and usually without roots. The phallosome and endosoma are reduced, and the dorsal appendage of the phallic apparatus is absent. In the larva, the anal proleg has an apicolateral spur that arises independently of the lateral sclerites. The anal claw has a comb-like row of minute teeth ventrally and tergite IX has anterolateral angles extended ventrally to near the sternum.

The nominate species of this group was described by Ulmer (1951) from Java. Subsequently, 12 additional species or subspecies have been described or included from the Oriental, Palaearctic, and Nearctic Regions (Table 1). Mey (1999) discussed the origin and formation of distributional patterns of several groups of *Rhyacophila* in the islands of Southeast Asia. For the *Rh. lieftincki* Group, he re-evaluated the morphological characters and proposed a reconstruction of the group's phylogeny based on cladistic principles. This was based on a series of synapomorphic and plesiomorphic morphological character states. Mey indicated that the species with the most plesiomorphic character states were from the temperate zones (*Rh. impar* Martynov-East Palaearctic and *Rh. arnaudi* Denning-West Nearctic).

**TABLE 1.** Members of the *Rhyacophila lieftincki* Group (type country, political subunit).

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<i>Rhyacophila arnaudi</i> Denning, 1948 (USA, Washington)
<i>Rh. claviforma</i> Sun & Yang, 1998 (China, Si-chuan)
<i>Rh. crispa</i> Sun & Yang, 1998 (China, Yun-nan)
<i>Rh. donoana</i> Malicky, 1978 (Indonesia, Sumatra)
<i>Rh. dumogana</i> Neboiss & Botosaneanu, 1988 (Indonesia, Sulawesi)
<i>Rh. fanjingshanensis</i> Malicky & Changhai 2002 (China, Guizhou)
<i>Rh. impar</i> Martynov, 1914 (Russian Federation, Altaiskii Krai)
<i>Rh. kando kando</i> Schmid, 1970 (India, Assam)
<i>Rh. kando rengma</i> Schmid, 1970 (India, Manipur)
<i>Rh. krauskasseggae</i> Malicky, 1978 (Indonesia, Sumatra)
<i>Rh. lieftincki</i> Ulmer, 1951 (Indonesia, West Java)
<i>Rh. madalensis</i> Hsu & Chen, 1996 (Taiwan, Miao-li)
<i>Rh. mimiclaviforma</i> Sun & Yang, 1998 (China, Yun-nan)
<i>Rh. simmonsii</i> Armitage, 2008 NEW SPECIES (U.S.A., Virginia)

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The purpose of this paper is to describe a new species of the *Rhyacophila lieftincki* Group from the East Nearctic Region. The holotype and some paratype material is stored in ethanol and has been deposited at the National Museum of Natural History (Smithsonian Institution) in Washington, DC. Other paratype material was deposited at the Royal Ontario Museum in Toronto, ON, or is in the possession of the author.