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# Variations in the male genitalia of *Hydropsyche acuta* MARTYNOV, 1909 and synonymy with *Hydropsyche derek* OLÁH & KISS, 2015 (Trichoptera, Hydropsychidae)

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**Abstract.** The distribution in Turkey and the Caucasus of *Hydropsyche acuta* MARTYNOV, 1909 is given based on the material and literature records. The variations in the male genitalia are figured. *Hydropsyche derek* OLÁH & KISS, 2015 is synonymized with *Hydropsyche acuta* MARTYNOV, 1909.

**Key words.** Trichoptera, distribution, synonym, *Hydropsyche*, Caucasus, Turkey.

## Introduction

The genus *Hydropsyche* in Turkey is represented by 69 species belonging to different species groups. Some of these species have large ranges and are found nearly everywhere, e.g. *H. kebab* MALICKY, 1974, found in every geographical region of Turkey, like *H. mahrkusha* SCHMID, 1959, described from Iran but occurring from the east towards western Turkey, and *H. lepnavae* BOTOSANEANU, 1967, described from the Caucasus and distributed towards western and southern Turkey.

In 1909, MARTYNOV described *Hydropsyche acuta* based on four males collected from eastern Turkey, at Lake Çıldır in Kars Province (MARTYNOV, 1909), which was at that time occupied by Russia. MARTYNOV wrote and figured "form  $\alpha$ " for *Hydropsyche instabilis* subsp. *acuta* n. subsp., characterized by a thin apical projection of the harpago, and for two males collected from the same place described as "form  $\beta$ ", of which the general appearance looks like form  $\alpha$  but the harpago gradually narrows towards the apical end. Later Schmid found *Hydropsyche acuta* from Walazir in Tebris Province in northern Iran. He described in the same article a new species of the *instabilis* species group, *Hydropsyche djabai* SCHMID, 1959 (SCHMID, 1959), of which the harpago also gradually narrowed towards the apex, becoming very narrow near the tip; he wrote that the specimens are abundant and a close relative of this new species is *H. acuta* MARTYNOV. The figures and the description of this species show that it is similar to the figure of form  $\beta$  given by MARTYNOV (1909). I have in my collection both species collected from the area surrounding Lake Çıldır in Kars and the neighboring province Ardahan and redescribed and figured them (SIPAHILER, 2004), adding the province names under the figures, which according to OLÁH & KISS (2015) had not been given, which is not the case. In addition, the above mentioned article is not given in their reference list.

*Hydropsyche acuta* MARTYNOV has a larger area in Turkey from east towards the west like the above-mentioned species of the genus *Hydropsyche*; this species is also found in the Russian Caucasus (IVANOV, 2011) and Ukraine (SZCZESNY & GODUNKO, 2008). *Hydropsyche djabai* (form  $\beta$  according to MARTYNOV) was found in eastern and northeastern Turkey, and *Hydropsyche acuta* and *H. djabai* were found sympatrically in several places in Kars, Ardahan, and Van provinces.

**Distribution of *Hydropsyche acuta* in Turkey.** Ankara, Ayaş, 18 km East, 40°01'N, 32°21'E, 1000 m, 16.7.1980, 1 male; Kızılcahamam, Işık Dağı, Sofular Deresi, 1550 m, 40°38'N, 32°47'E, 16.6.1996, 1 male; 10 km Southeast of Eymir, 29.7.1993, 39°47'N, 32°53'E, 1200 m, 5 males, 3 females; Van, 35 km Northeast of Van, Muradiye direction, 1760 m, 38°41'N, 43°22'E, 22.7.1995, 1 male, 1 female; Giresun, Şebinkarahisar, 8 km North, 40°20'N, 38°26'E, 6.7.2007, 1 male, 3 females; Kütahya, Çavdarhisar, 1000 m, 39°11'N, 29°36'E, 6.7.1980, 1 male; Gümüşhane, 40 km S, 1700-1800 m, 40°10'N, 39°27'E, 20.6.1976, 3 males (Sipahiler & Malicky, 1987); Şebinkarahisar, Tamdere, 1250 m, 40°33'N, 38°21'E, 6.7.2007, 2 males, 3 females, larvae and pupae; Kars, Çıldır, Karaçay, 2000 m, 40°56'N, 43°17'E, 24.7.1981, 12 males 1 female; Göle, Merdenit, 2300 m, 40°50'N, 42°32'E, 8.1965, 1 male, 2 females; Ardahan, Değirmenköy, 1970 m, 43°05'N, 42°48'E, 23.7.1981, 14 males, 3 females; Erzincan, 48 km West, 1965 m, 39°42'N, 38°38'E, 8.7.2007, 1 male pupa, larva.

## *Hydropsyche acuta* MARTYNOV, 1909

Type place: Turkey, Kars, Lake Çıldır. *Hydropsyche acuta* MARTYNOV is a paler insect, characterized by the apical projection of the harpago and the large, apical part of the phallic apparatus with apically rounded lateroapical projections. Martynov had drawn figures of the harpago of which the apical projection makes nearly a right angle with the rest of the phallus. This species occupies a rather large area in Turkey, being found also in central Anatolia (Ankara Province), and northern (Giresun Province) and western Turkey (Kütahya Province). I have material collected on the same day from the type locality, namely from the outlet of Lake Çıldır (Figs. 1-5), and the surrounding area that shows that this feature is variable like the other parts of the genitalia, i.e. in some of the specimens the harpago roundly ends before apical projections (Fig. 3c) and the specimens that have a nearly quadrangular harpago, or even a sinuate forming dorsally rounded lobe, are found in the same stream. It is stated that one of the main features of *H. derek* is the lateroapical projections of the phallic apparatus, which are not triangular but make a right angle with the shaft. This feature is also variable as is seen in the figures from the type locality of *H. acuta* (Figs. 1-5a). As a result, the recently described species *Hydropsyche derek* is clearly a synonym of *Hydropsyche acuta*.

*Hydropsyche acuta* MARTYNOV, 1909 = *Hydropsyche derek* OLÁH & KISS, 2015 nov. syn.

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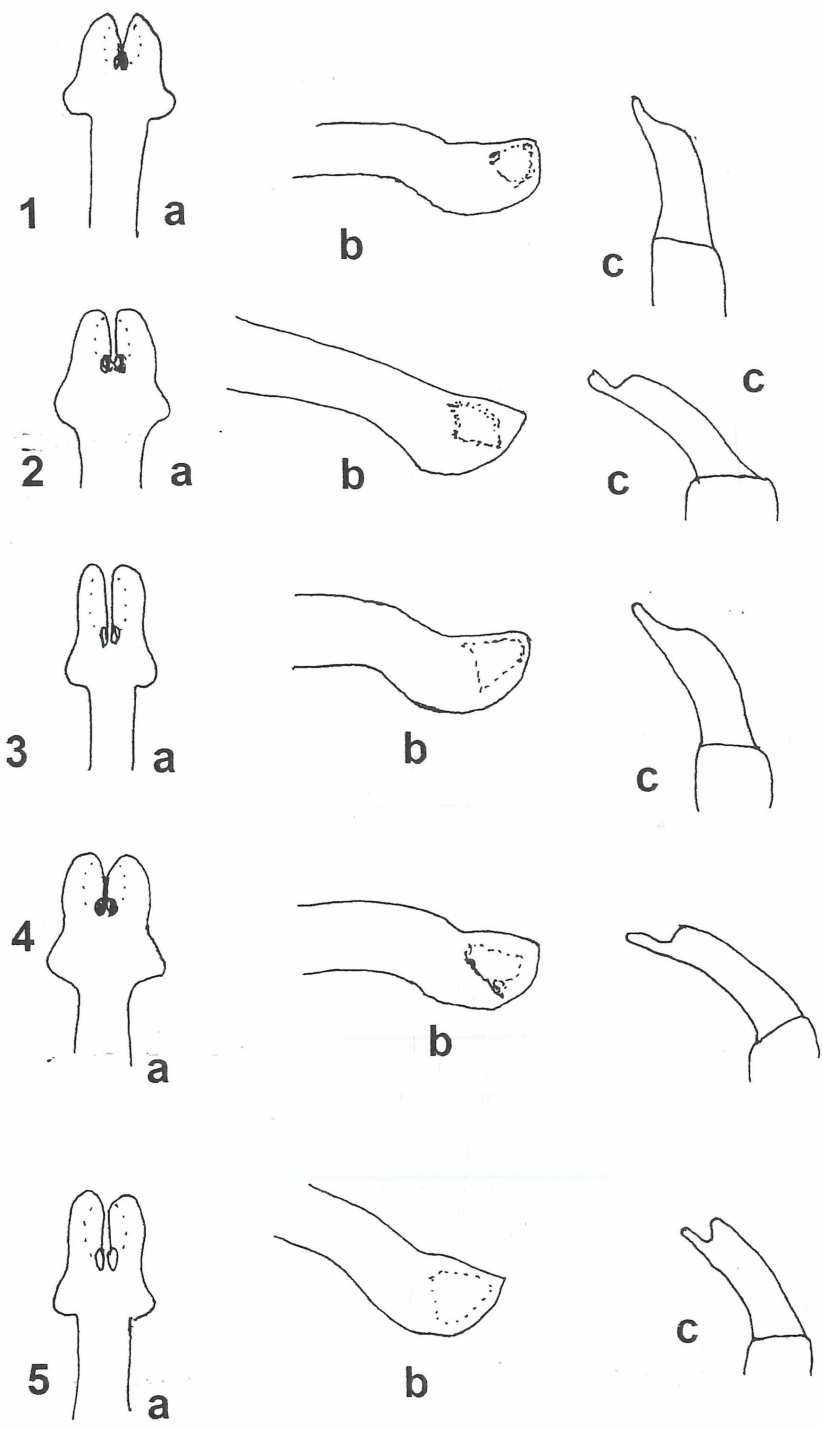
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**Figures 1-5:** Variations of the male genitalia of *Hydropsyche acuta* (Kars, Lake Çıldır): a, phallic apparatus, ventral; b, phallic apparatus, lateral; c, harpago, ventral.

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