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Correcting caddisfly synonymy created by apophantic declaration (Trichoptera)

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Abstract. Malicky (2018) synonymized *Tinodes karpathos* Oláh, 2015 described from the Karpathos Island, Greece with *Tinodes petaludes* Malicky, 1974 described from the Rhodes Island. On the basis of re-examination of the *T. karpathos* holotype and compared it with the newly collected *T. petaludes* specimens the synonymy of the two species is rejected and *Tinodes karpathos* is reinstated here as a valid species, stat. restit.!

Keywords. Trichoptera, Tinodes, synonymy, Karpathos, Rhodes.

INTRODUCTION

Malicky (2018) has synonymized *Tinodes karpathos* Oláh, 2015 described from the Karpathos Island, Greece with *Tinodes petaludes* Malicky, 1974 described from the Rhodes Island. In his monograph on Greece Caddisflies (Malicky 2005) recorded *T. petaludes* also from Karpathos Island, probably as a misidentification. Based upon the pronounced and distinct divergences we have found and presented here between *T. petaludes* from Rhodes and *T. karpathos* from Karpathos Island it is possible that his records of *Tinodes petaludes* from Chios, Samos and Kos islands (Malicky 2005) are also misidentifications and may represent unknown incipient sibling species.

Tinodes karpathos Oláh, 2015 stat. restit.

(Figures 1–3)

In our original species description we have compared and found *T. karpathos* more close to *T. reisseri* Malicky described from Crete Island. Here, we present a detailed comparison of our *T. karpathos* to *T. petaludes*, the species that Malicky (2018) considered identical with *T. karpathos*.

Having received specimens of *T. petaludes* from two regions of the Rhodes Island we have compared the holotype of *T. karpathos* with these three specimens. The fine genital structure was rather stable at the three available specimens of *T. petaludes*. There are several trait divergences between the synonymized *T. karpathos* and *T. petaludes* detectable even by gross morphology detailed below.

(1) The paraproct-phallic organ complex are entirely different at the two species; the pair of the free digitiform processes of paraproct is armed with a strong terminal spine of megaseta at *T. petaludes*; *T. karpathos* lacks this terminal structure; at *T. petaludes* the phallic organ is armed with eight megasetae subapicad in ventrolateral position on both sides but the number of megasetae is only two at *T. karpathos*; the phallic head is firmly constricted forming a stable shape by the elaborated alveoli lines of megasetae on both side at *T. petaludes* and more loose, more membranous, therefore dilated at *T. karpathos* without such a bracing structure. Documented by molecular genetic studies on *Drosophila* species we have to realize how elaborated genetic background produces a simple shape modification. Several thousand or tens of thousands of sequence loci with complex interactions of epigenetics,

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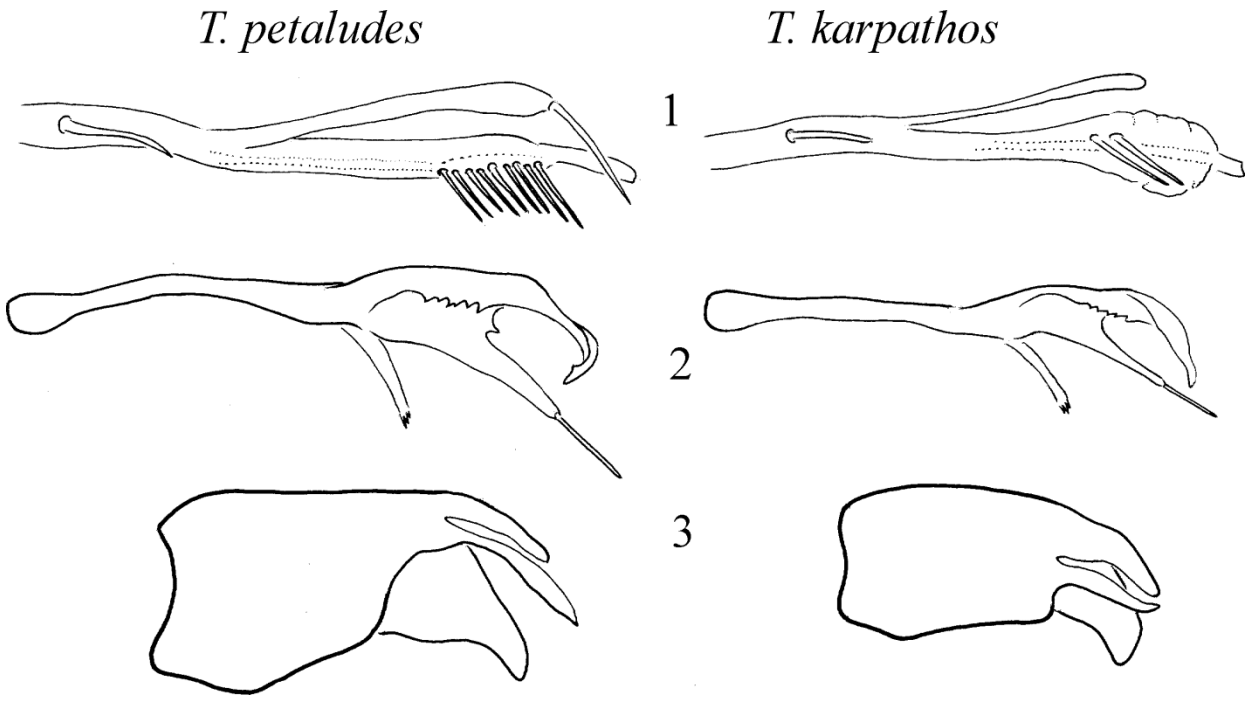

Figure 1–3. Genital organs of *Tinodes petaludes* and *T. karpathos*. 1= Paraproct and phallic organ complex, 2 = basal plate of gonopod, 3= gonopod.

epistasis and pleiotropy determine just a simple curvature on a lobe structure (McNeil *et al.* 2011). We can imagine how complex sequences and their interactions generate and maintain such sophisticated divergences clearly visible between the paraproct and phallic organ complexes of the synonymized two species, *T. petaludes* and *T. karpathos*.

(2) There are divergences in the fine structure of the basal plate of gonopods as well. The dorsal pair of processes is curving deep ventrad at *T. petaludes* and curving more posterad at *T. karpathos*; the basement of the ventral processes with strong apical megaseta is differently shaped; the position and pattern of the serrated lateral ridge on the dorsal processes is also diverged.

(3) There are significant shape divergences on the gonopods; the body of coxopodite is different; the dorsoapical bilobed structure of the coxo podite entirely diverged; the shape of harpago is different (Figs. 1–3).

Based on re-examination of the holotype of *T. karpathos* and compared it with newly collected *T. petaludes* specimens, *Tinodes karpathos* is reinstated here as a valid species, **stat. restit.**!

Material examined. *Tinodes karpathos* Oláh, 2015: Holotype: **Greece,** South Aegean, Karpathos regional unit, Esochori, spring and its outlet at Vryssiani church, 125m, N35°37.954', E27°06.600', 12.11.2012, leg. J. Kontschán, D. Murányi (1 male, HNHM). *Tinodes petaludes* Malicky, 1975: **Greece,** South Aegean, Rhodes regional unit, Eleousa, artificial spring lake at the village, 290m, N36°16.370', E28°01.439', 14.11. 2012 leg. J. Kontschán, D. Murányi (1 male, HNHM). South Aegean, Rhodes regional unit, Vati, roadside spring E of the village, 75m, N36° 03.225', E27°54.486', 08.11.2012 leg. J. Kontschán, D. Murányi (2 males, HNHM).

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