

Description and DNA barcoding assessment of the new species *Deutonura gibbosa* (Collembola: Neanuridae: Neanurinae), a common springtail of Alps and Jura

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Abstract

Deutonura gibbosa, a new species of the *phlegraea* group, is described. It is characterized by a large elongate uneven tubercle Di on Abd. V, with chaetae Di1 and Di2 shift backward. It has otherwise the same chaetotaxic pattern as the subspecies *sylvatica* of *D. deficiens*. *Deutonura gibbosa* **sp. nov.** is the most widespread *Deutonura* in the Alps and southern Jura. Its barcode sequence is provided and compared to those of four other *Deutonura* of the *phlegraea* group; it unambiguously differs from them, including from *D. deficiens sylvatica*, its closest relative according to current taxonomy. This is the most convincing example so far that barcode may help to discriminate taxa among closely related species in Collembola.

Key words: taxonomy, chaetotaxy, new taxon, DNA barcode, molecular discrimination, species complex

Introduction

With 53 species, *Deutonura* is the most speciose genus of the large subfamily Neanurinae. Distributed in the whole palaearctic region, it is particularly diversified in Southwestern Europe, where it has been studied in more details than anywhere else. A few species (like *Deutonura phlegraea*) are relatively widespread, but most have restricted range and many are narrow endemics. The present paper describes a new species of the *Deutonura phlegraea* group (*sensu* Deharveng 1979), *Deutonura gibbosa* **sp. nov.**, which is one of the most common species of the genus, widely distributed in Alps and southern Jura. The new species has a dorsal chaetotaxy identical to that of *Deutonura deficiens sylvatica* Deharveng, 1982, but arrangement of chaetae and development of hind body dorso-internal tubercles are different. Barcode sequences of this new species are used and compared with 4 other species of the same species-group, providing an additional genetic support to the validity of the new species.

Material and methods

Morphological terminology. The terminology used in the text and Tab. 1 are derived from that of Deharveng (1983), Deharveng and Weiner (1984), Smolis and Deharveng (2006) and Smolis (2008).

Abbreviations. Body parts : Abd.—abdomen, Ant.—antenna, Cx—coxa, Fe—femur, Scx2—subcoxa 2, Ti—tibiotarsus, Th.—thorax, Tr—trochanter, VT—ventral tube.

Groups of chaetae: Ag—antegenital, An—anal, Fu—furcal, Ve—ventroexternal, Vi—ventrointernal, VL—ventrolateral.