



## A taxonomic study on some Alpine *Hypogastrura* Bourlet, 1839 (Collembola, Hypogastruridae)

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### Abstract

The examination of the holotypes of *Hypogastrura parvula* Haybach, 1972 and *Orogastrura parva* (Gisin, 1949) revealed that they are conspecific, resulting in the synonymization of the former with the latter. The similar, but poorly known, species *H. exigua* Gisin, 1958 and *H. oreophila* Butschek, 1948 from the Alps have been redescribed.

**Key words:** *Hypogastrura exigua*, *Hypogastrura oreophila*, *Hypogastrura parvula*, *Orogastrura parva*, synonymy, redescription

### Introduction

Three main evolutionary lineages: ceratophysellan, hypogastruran and xenyllan, are distinguished within the collembolan family Hypogastruridae (Thibaud *et al.* 2004). Each lineage comprises species evolving by reduction of eyes and furca. In spite of the low phylogenetic value of these regressive features, the species were assembled into genera of uncertain monophyly. Morphologically similar species of the hypogastruran lineage characterized by pigmented small body (usually below 1 mm), the presence of reduced furca, tridentate retinaculum and also labrum with apical papillae, small anal spines and one tenent hair on tibiotarsi are included in two genera depending on the number of ocelli: *Hypogastrura* Bourlet, 1839 (8 + 8, except for *H. pyrenaica* (Cassagnau, 1959 which has 7 + 7 ocelli) and *Orogastrura* Deharveng & Gers, 1979 (5 + 5 – 7 + 7). There are nine such *Hypogastrura* species in the world fauna: *H. oreophila* Butschek, 1948, *H. exigua* Gisin, 1958, *H. parvula* Haybach, 1972, *H. pizzoci* Fanciulli & Dallai, 2008, *H. capitata* Cassagnau & Delamare, 1955, *H. verruculata* Rusek, 1967, *H. mongolica* (Nosek, 1976), *H. ramia* Lee & Choe, 1979 and *H. magistri* Babenko, 1994 in Babenko *et al.* (1994), and seven representatives of the second genus (Deharveng & Gers 1979; Thibaud *et al.* 2004). The first four *Hypogastrura* species and *Orogastrura parva* (Gisin, 1949) were described from the Alps (Butschek 1948; Gisin 1949, 1958; Haybach 1972; Fanciulli & Dallai 2008). Unfortunately, knowledge on their morphology (except for that of the recently described *H. pizzoci*) is insufficient. Their subtle morphological differentiation causes doubts concerning their taxonomic status. In material recently collected in the Italian Alps, individuals resembling the poorly known species *H. parvula*, *H. exigua* and *H. oreophila* were found. A review of available material revealed synonymy of *H. parvula* with *Orogastrura parva* (Gisin, 1949) and allowed me to redescribe the two other species.

### Material and methods

Terminology for the descriptions follows that given in Fjellberg (1984, 1999), Babenko *et al.* (1994) and Thibaud *et al.* (2004). Abbreviations used: ant. I–IV—antennal segments I–IV, th. I–III—thoracic terga I–III, abd. I–VI—abdominal terga I–VI.

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