



<http://dx.doi.org/10.11646/zootaxa.4006.2.6>

<http://zoobank.org/urn:lsid:zoobank.org:pub:105F594A-ECCC-468A-A832-548D3EFE846F>

Larval descriptions of *Annitella esparraguera* (Schmid 1952) and *Annitella iglesiasi* González & Malicky 1988 (Trichoptera: Limnephilidae), two endemic species from Southern Europe

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Abstract

Descriptions of the previously unknown larvae of *Annitella esparraguera* and *A. iglesiasi*, two European endemic species from the southern Iberian Peninsula are presented. The most important diagnostic features are illustrated and some taxonomic, zoogeographical and ecological notes are given. In addition, a previous key is modified to include these two new Iberian Limnephilidae larvae.

Key words: taxonomy, key, distribution, Iberian Peninsula

Introduction

Annitella Klapálek 1907 is a Palaearctic genus comprising 14 species (Oláh & Kovács 2012; Malicky 2013). Only one species, *A. obscurata* McLachlan 1876 is widely distributed, from Scandinavia to the Spanish Pyrenees (González *et al.* 1992; González & Martínez-Menéndez 2011). The other species are endemic to a single mountain or inhabit several nearby mountain ranges. Six species are endemics from mountain ranges of the Iberian Peninsula [*A. amelia* Sipahiler 1998, *A. cabeza* Sipahiler 1998, *A. esparraguera* (Schmid 1952), *A. iglesiasi* González & Malicky 1988, *A. lalomba* Sipahiler 1998, and *A. sanabriensis* (González & Otero 1985)]. One is endemic from the Pyrenees [*A. pyrenaea* (Navás 1930)], two from the Carpathians [*A. chomiacensis* (Dziędzielewicz 1908, in Dziędzielewicz & Klapálek 1908), and *A. lateroproducta* (Botosaneanu 1952)], and the other three species are endemic to the Balkans [*A. apfelbecki* (Klapálek 1899), *A. ostrovicensis* Oláh & Kovács 2012, and *A. triloba* Marinković-Gospodnetić 1957]. The last one, *A. thuringica* (Ulmer 1909), is distributed in the Alps and the Carpathians. Although the available information about the biology of this genus is still very limited, it is known that those species dwell in high mountain streams and brooks in low-flow-speed microhabitats and are univoltine with an autumnal flight period (Graf *et al.* 2008).

On the Iberian Peninsula, five of those endemics are distributed in the northern half and two in the southern. *Annitella cabeza* and *A. lalomba* have been recorded only from their type localities, northwestern Spain and the Cantabrian Mountains (Spain), respectively (Sipahiler 1998). *Annitella amelia* has been found in the Serra da Estrêla (northern Portugal) and Cabeza de Manzaneda (northwestern Spain; Sáinz-Bariáin & Zamora-Muñoz 2012). *Annitella pyrenaea* occurs all along the Pyrenean Mountains, while *A. sanabriensis* is widely distributed in different mountains in the northern half of Spain (Sipahiler 1998), such as the Sierra de Ancares or the Sierra de la Demanda (González & Otero 1985; Sipahiler 1998; González *et al.* 1992). *Annitella esparraguera* and *A. iglesiasi* occur only in southeastern Spain, being endemics of the Betic ranges. *Annitella esparraguera* dwells in the Sierra Nevada, the Sierra de Baza and the Sierra de Cazorla and Segura, and *A. iglesiasi* occurs exclusively in the Sierra Nevada mountain range (Zamora-Muñoz *et al.* 2012; Sáinz-Bariáin *et al.* 2013; Martínez-Menéndez 2014). In accordance with Sipahiler (1998), the *Annitella* species of the Iberian Peninsula present two morphological groups, based on their male genitalia structure: *A. esparraguera* is linked with *A. amelia*, *A. cabeza*, *A. lalomba*, *A. pyrenaea* and *A. sanabriensis*; and *A. iglesiasi* is linked to the widely distributed species in Europe, *A. obscurata*.