



Taxonomic status of *Euzonitis haroldi* (Heyden, 1870) (Coleoptera: Meloidae) inferred from morphological and molecular data

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Abstract

The species *Euzonitis haroldi* (Heyden 1870) (Coleoptera: Meloidae; Nemognathinae) is an almost unknown taxon, sometimes treated as a variety of *E. quadrimaculata* (Pallas, 1773), originally described from Central Spain and only known from a few localities in Spain and Morocco. We found specimens of *E. haroldi* and *E. quadrimaculata* feeding together on flowers of Apiaceae in Central Spain. These specimens provided an excellent opportunity to properly assess the status of *E. haroldi* by analyzing and comparing morphological and molecular data of the two taxa. For the morphological study we reviewed a total of 227 specimens. We concluded that *E. haroldi* is genetically and morphologically identical, except for coloration, to *E. quadrimaculata*, and therefore *E. haroldi* should be treated as a junior synonym of *E. quadrimaculata* (**syn. nov.**)

Key words: Taxonomy, mtDNA, Cytochrome oxidase I, Morphology, Spain, Morocco, New synonymy

Introduction

Euzonitis Semenov 1893, within the tribe Nemognathini Lacordaire 1859 (Coleoptera: Meloidae: Nemognathinae), is represented by eighteen species distributed from Madeira, the Maghreb and the Iberian Peninsula, to central Asia as far as Mongolia (Bologna & Pinto 2002). Most species of *Euzonitis* are localized in western Asia and southeastern Europe, with only three species occurring in the westernmost portions of the Palearctic Region (Escherich 1891, 1897; Semenov 1893; Bologna 1979, 1991, 1994a, 1994b; Bologna & Pinto 2002). The systematics and phylogenetic relationships of this genus, as well as that of many other genera of Nemognathinae, are poorly known (Bologna & Pinto 2001, 2002). The first instar larval morphology, recently described for *Euzonitis rubida* (Ménétriés, 1832) (Di Giulio & Bologna, 2007), confirms its closeness to *Zonitis* Fabricius, 1775 as previously suggested by Bologna (1991). The current taxonomy of the genus *Euzonitis* is mostly based on elytral and pronotal pilosity, integument sculpture and coloration; a set of characters that show a relatively high degree of intraspecific variation in blister beetles (Bologna 1991).

Three species of *Euzonitis* have been consistently reported from the Iberian Peninsula (García-París & Ruiz 2005): *E. sexmaculata* (Olivier 1789), *E. quadrimaculata* (Pallas 1773) and *E. haroldi* (Heyden 1870) (Graells 1853; Salvañá Comas 1870; Martínez Sáez 1873; Escherich 1890, 1891, 1897; Champion 1902; Górriz Muñoz 1902; Navás 1902; Rodríguez López-Neyra 1914; De la Fuente 1933; Pardo Alcaide 1952, 1956; Bologna 1991; Recalde *et al.* 2002; Pérez-Moreno *et al.* 2003). While the taxonomic status of the widely distributed *E. sexmaculata* and *E. quadrimaculata*, seems to be well established (Bologna 1991), there is controversy on the status of *E. haroldi*. This taxon, originally described as *Zonitis haroldi* Heyden 1870 from Central Spain (*loc. typ.*: “Casa de Campo” near Madrid, Heyden 1870: p. 150) and only known from a few localities