



Molecular phylogeny of the weevil genus *Kyklioacalles* Stüben, with descriptions of a new subgenus *Glaberacalles* and two new species (Curculionidae: Cryptorhynchinae)

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Abstract

A molecular phylogeny of the western Palearctic weevil genus *Kyklioacalles* Stüben, 1999 is presented, combining two mitochondrial genes (CO1 and 16S) in a Bayesian analysis. Based on molecular data, the validity of the subspecies *Kyklioacalles punctaticollis punctaticollis* (Lucas, 1849) and *Kyklioacalles punctaticollis meteoricus* (Meyer, 1909) is discussed and the morphological differentiation of the endophalli and known distributions of both subspecies are verified. *Glaberacalles* **subg. n.** (formerly *Kyklioacalles punctaticollis*-group) and two new species are described, *Kyklioacalles atlasicus* **sp.n.** from Morocco and *Kyklioacalles plantapilosus* **sp.n.** from Spain. *Kyklioacalles berberi* (Stüben, 2005), **comb. n.** and *Kyklioacalles olcese* (Tournier, 1873) **comb. n.** are transferred from *Acalles* Schoenherr. The molecular results further advocate a transfer of *Onyxacalles pyrenaicus* (Boheman, 1844) to *Kyklioacalles*; however this is not supported by morphological evidence. *Kyklioacalles almadensis* Stüben, 2004 **syn. n.** (Spain) is synonymized with *Kyklioacalles bupleuri* Stüben, 2004 (Tunisia). A catalogue of all 40 (sub-)species of *Kyklioacalles* is given and a key of the species of the subgenus *Glaberacalles* is presented.

Key words: Bayesian analysis, 16S, COI, endophallus, molecular phylogenetics, western Palearctic

Introduction

Together with a number of other genera, the genus *Kyklioacalles* Stüben, 1999 (Curculionidae: Cryptorhynchinae) was separated by Stüben (1999a) from the former and excessively broadly defined genus *Acalles* Schoenherr, 1826 as a group with initially 13 species. Since then many new species have been described, mainly from Spain and Morocco. Thus, including the new species to be described in the present work, the genus comprises 40 valid species and subspecies. The discovery of so many new species seems surprising because these Cryptorhynchinae are large (length 2.0–7.0 mm) in comparison to the *Acalles* s.str. species of Central Europe, their body shape is conspicuously cylindrical, and the integument is often markedly colourful and patterned (cf. Figs. 20–24). However, there is an easy explanation for these recent discoveries: in contrast to the few species of *Kyklioacalles* from Central and Eastern Europe like *K. roboris* (Curtis, 1834) or *K. navieresi* (Boheman, 1837), which are markedly detritivorous (sometimes also xylophagous), and in any case represent unspecific, polyphagous sylvan species, the species of the Iberian Peninsula and North Africa live concealed and are mono- or oligophagous on different species of Fabaceae and Euphorbiaceae (Stüben 2003a: 157). In some cases, they have been reared on their host plants (Stüben 2003b, 2004). These species are thermophilic and highly specialized and only feed on plants or parts of plants which die back. The imagines show nocturnal habits (Fig. 1) and usually hide next to the root base in the daytime. In this case it is impossible to catch specimens by beating or shifting. With a good knowledge of their behaviour, one can detect imagines and catch them by hand. Such an undertaking is only promising during the midday sun although feigning death, which is a typical behaviour of Cryptorhynchinae, can make finding specimens difficult.