



The red-listed species *Thamnurgus rossicus* in East Europe is a synonym of the rare Central European species, *T. petzi* (Curculionidae: Scolytinae)

BJARTE H. JORDAL^{1,4}, HEIKO GEBHARDT² & MICHAEL Y. MANDELSHTAM³

¹University Museum of Bergen, PB 7800, 5020 Bergen, Norway

²Maienfildstr. 23/1, 72074 Tübingen, Germany

³Zoological Institute, Russian Academy of Sciences, St. Petersburg, 199034 Russia

⁴Corresponding author. E-mail: bjarte.jordal@um.uib.no

Abstract

The taxonomic status of *Thamnurgus rossicus* was evaluated with respect to the morphologically similar *T. petzi* using genetic markers. Nucleotide data from the mitochondrial COI gene revealed 2.4% variation between the European Alps and Russian steppe populations. The two nuclear DNA markers CAD and EF1 α were identical across populations. In view of their similar morphology, genetic composition, and the partial overlap in host plant preferences (Ranunculaceae: *Aconitum* and *Delphinium*), *T. rossicus* is placed in synonymy with *T. petzi*.

Key words: Curculionidae, Scolytinae, *Thamnurgus*, Ranunculaceae, COI, CAD, EF1 α

Introduction

Thamnurgus rossicus Alekseev is a rare species that feeds and breeds in larkspurs (*Delphinium*) and more rarely in monkshood (*Aconitum*) in open landscapes. It has only been found in the Russian provinces of Kursk and Lipetsk and is considered sufficiently rare to be red listed for the Lipetsk province (Mandelshtam *et al.*, 2012). The status of this species has been questioned however, as the equally rare and morphologically similar species *T. petzi* Reitter is found scattered through Austria, southern Germany and Hungary, and possibly southern Romania and Moldova (Fig. 1). The latter species develops in monkshood (*Aconitum*) and has not yet been collected from larkspurs. A third related species—*T. delphinii* (Rosenhauer)—has a broader host preference, but is mainly associated with larkspurs in the genera *Consolida* and *Delphinium*. These three species form the subgenus *Macrothamnurgus* (as described by Mandelshtam *et al.* 2012)—defined by having a large male aedeagus and broad tegmen, and by their association with Ranunculaceae host plants.

Morphological differences between *T. rossicus* and *T. petzi* are few and subject to individual assessment (see Figs 2–5). Suggested diagnostic features for *T. rossicus* include a more defined longitudinal impunctate area on the pronotum, a smaller length to width ratio, rounded posterior angles of the pronotum, and some very fine details of the male genitalia (figures 5a-b in Mandelshtam *et al.*, 2012). For most bark beetles with more extensive populations, such characters tend to be variable even within series and hence not reliable for species diagnosis. It is therefore possible that minor morphological variation and different host plant preferences reflect local adaptations, e.g. to optimal host plants, and therefore do not indicate real evolutionary divergence of two species. To examine this possibility we have analysed nucleotide sequences from three genes for each of the two species and re-examined their morphology.

Material and methods

Specimens of *T. petzi* were found in the stems of monkshood (*Aconitum napellus*) northeast of Windischgarsten in

Diagnosis. Body 2.65–2.80 times longer than wide, mature colour black. Elytra with long, soft, semi-erect and strongly curved interstrial setae; striae setae shorter, recumbent. Declivity distinctly punctate, in females weakly bisulcate, surface transversely wrinkled. Reproduces in herbs of larkspur (*Delphinium*) or monkshood (*Aconitum*).

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