



## *Agabus (Acatodes) puetzi* sp. n., a new species of the *confinis*-group from the Qinghai-Tibet Plateau (Coleoptera, Dytiscidae, Agabini)

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### Abstract

*Agabus puetzi* sp. n. is described from the eastern part of the Qinghai-Tibet Plateau (Sichuan). It is a very distinctive species, males of which can be identified easily even in the field because the inner outline of the protibiae is distinctly curved, a feature which is unknown or considerably less prominent in any other *Agabus* Leach, 1817. The new species undoubtedly belongs to the subgenus *Acatodes* Thomson, 1859, although males lack the preapical spine of the median lobe, a character which is also seen in the Nearctic *Agabus audeni* Wallis, 1933, and the Holarctic *Agabus inexpectatus* Nilsson, 1990. Due to an unusual combination of external characters (e.g., double reticulation, shape of tibiae and of pro- and metasternal processes) it is not easy to assign the species to one of the known species groups of the subgenus. It seems likely, however, that it belongs to the *confinis*-group because several other characters are shared with most members of this group. A few features suggest a closer relationship to *Agabus thomsoni* (J. Sahlberg, 1871) and *Agabus zetterstedti* Thomson, 1856. The new species raises the number of members of the *confinis*-group to 36, seven of which occur in China. A list of all Afrotropical and Palearctic members of this group is given and their median lobes are figured in lateral view. The lectotype of *Agabus turcmenus* Guignot, 1957 is designated, and its habitus and aedeagus are illustrated for the first time. Some notes on the distribution and external morphology of *A. inexpectatus* are included.

**Key words:** Coleoptera, Dytiscidae, Agabini, *Agabus*, *Acatodes*, *confinis*-group, new species, lectotype, China, Tibet, Kyrgyzstan

### Introduction

In the summer of 1999, the Byrrhidae specialist Andreas Pütz (Eisenhüttenstadt, Germany) collected several Dytiscidae during a three-week collecting trip to the Qinghai-Tibet Plateau. Some years later he asked me to determine his material and I was quite surprised to find four specimens of *Agabus* Leach, 1817 with rather conspicuous external characters. It was difficult to assign the new taxon to one of the known species-groups, but I believe I have found a satisfactory solution, the new species belongs to the *confinis*-group of the subgenus *Acatodes* Thomson, 1859. This species-group has a Holarctic-Afrotropical distribution and includes, with the new species, 36 species which occur in the following zoogeographical regions: 2 Afrotropical, 8 Holarctic, 12 Nearctic and 14 Palearctic. Seven species of the group are now recorded from China (cf. Nilsson 2011): *Agabus angusi* Nilsson, 1994, *Agabus congener* (Thunberg, 1794), *Agabus joachimschmidti* Brancucci & Hendrich, 2008, *Agabus puetzi* sp. n., *Agabus suoduogangi* Štátný & Nilsson, 2003, *Agabus tibetanus* Zaitzev, 1908, and *Agabus turcmenus* Guignot, 1957.

I want to emphasise that the aim of this work is not a revision of the *confinis*-group, this has been done by Nilsson (1990) for the Palearctic species, and later by Larson (1991) for the Nearctic fauna. In addition it must be mentioned that my conclusions on the new species belonging to the *confinis*-group of *Acatodes* are based on its similarity with other members of the group, not a phylogenetic analysis.

### Material and methods

The holotype and a female paratype of the new species are stored in the personal collection of the collector A. Pütz (CPE; to be deposited in the SDEI [= Senckenberg Deutsches Entomologisches Institut], Müncheberg, Germany).