

**Contributions to the knowledge of the Quediina
(Coleoptera: Staphylinidae: Staphylinini) of China
Part 50. Genus *Anthosaurus* gen. nov.**

Aleš SMETANA

Agriculture and Agri-Food Canada, Biodiversity, Central Experimental Farm,
K. W. Neatby Bldg., Ottawa, Ontario K1A 0C6, Canada
e-mail: ales.smetana@agr.gc.ca

Taxonomy, new genus, description, geographical distribution, Coleoptera, Staphylinidae, Quediina, *Anthosaurus*, China, Palaearctic Region

Abstract. *Anthosaurus* gen. nov. is established for the two species up to now assigned to the subgenus *Raphirus* Stephens, 1829 of the genus *Quedius* Stephens, 1829: *Quedius gardneri* Cameron, 1932 and *Q. caelestis* Smetana, 1996. *Quedius caelestis* is designated as the type species of the genus. The main characters distinguishing the genus from the genus *Quedius* are presented, some specific characters distinguishing the two included species are redefined and the variability involved is discussed. A paragraph distinguishing the two species is attached, the new genus will be included in the key to the genera of the Quediina of the mainland China that is nearing the completion.

INTRODUCTION

This is the fiftieth of a series of papers dealing with the Quediina of the mainland China. It is dealing with the two species at present assigned to the subgenus *Raphirus* Stephens, 1829 of the genus *Quedius* Stephens, 1829: *Quedius gardneri* Cameron, 1932 and *Q. caelestis* Smetana, 1996. A new genus *Anthosaurus* is established for them and taxonomical, bionomical and distributional aspects of the new genus level taxon and the two included species are presented. The probable necessity to establish a new genus level taxon for Cameron's species *Quedius gardneri* was already mentioned by Smetana, 1988: 233.

MATERIAL AND METHODS

The symbols used in the text, when referring to the depositions of specimens are as follows:

- ASC collection of A. Smetana, deposited at The National Museum of Nature and Science, Toshiba, Japan;
- MSC collection of Michael Schülke, Berlin, Germany;
- PHC collection of Peter Hlaváč, Praha, Czech Republic.

TAXONOMIC PART

Anthosaurus gen. nov.

(Figs. 1-10)

Type species. *Quedius caelestis* Smetana, 1996, by original designation here.

Description. In most characters similar to *Quedius*, but different mainly by differently developed mandibles, by the development of the four first visible abdominal tergites, and by the configuration of the aedoeagus.

Mandibles each with medial portion explanate and each at the base of the explanate portion with well developed mandibular prosthema similar to that of most *Quedius* species; in addition to the mandibular prosthema each mandible bears on ventral surface of the explanate portion an extensive, longitudinal mandibular brush appearing as a field of specialized setae covering almost entire explanate portion (Fig. 1); in dorsal view the right mandible bears a minute tooth at about apical third of the explanate portion that originates on ventral edge of the explanate portion; the left mandible bears two minute, broad dents on basal half of the explanate portion, both being an extension of the dorsal edge of the explanate portion.

First four visible abdominal tergites each with elevated middle keel bordered at each side by an impression, both the keel and impression becoming gradually less distinct toward fourth tergite.

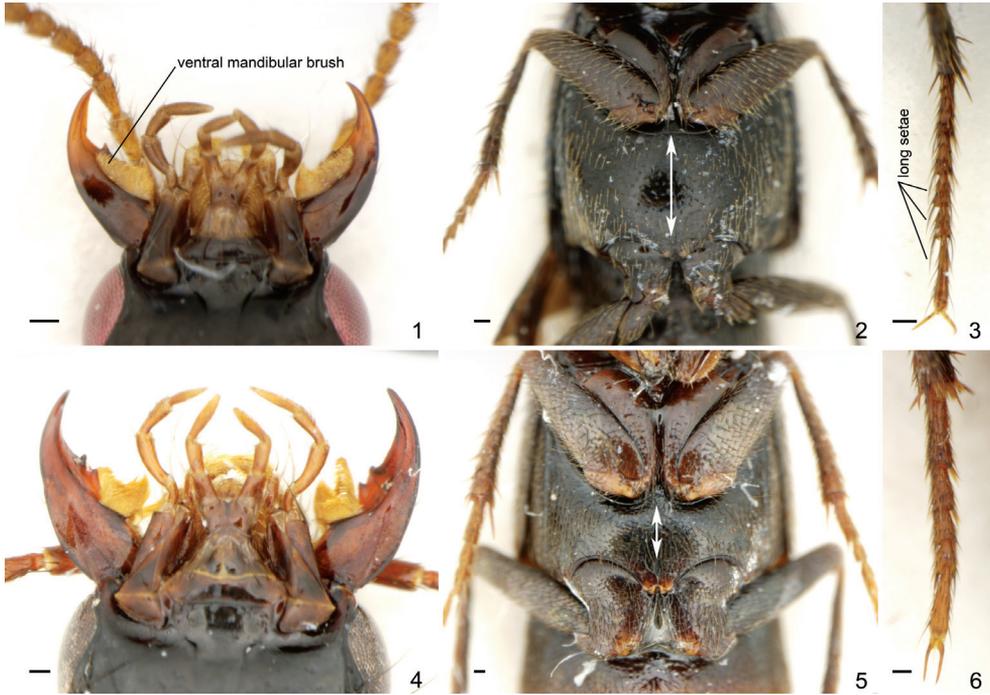
Aedoeagus with both median lobe and tegmen with parameres highly modified. Median lobe anteriorly featuring a transverse lamella separated by a deep gap from the narrow apical portion of characteristic shape (Fig. 7). Tegmen highly developed and enveloping to great extent median lobe, the paramere part split horizontally with ventral portion anteriorly split into two parallel arms of somewhat variable length and with the dorsal portion in the form of a plate with minutely emarginated apex in *A. caelestis* (Fig. 8), or bearing triangular lobe at each anterolateral corner (Fig. 233 in Smetana, 1988: 428).

Tergite 10 of female genital segment of characteristic, modified shape and setation (Figs. 10, 11).

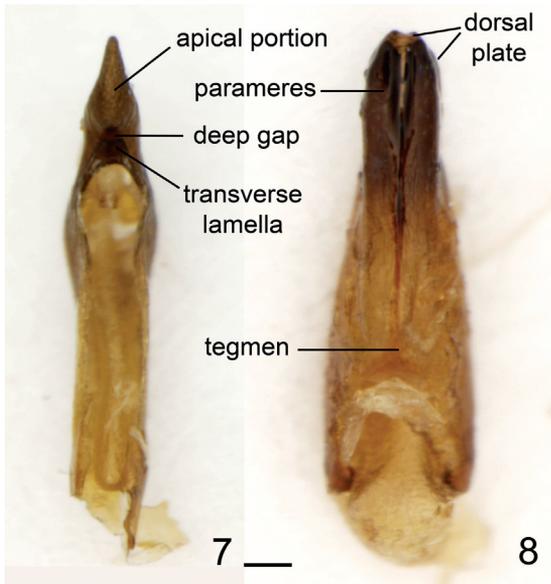
Further supporting characters are: 1) the long and thin middle and hind tarsi with segments two through four markedly longer than wide and bearing on each side a ventroapical, conspicuous, long dark seta markedly longer than the segment (most distinct on segment four) (Figs. 3, 6); 2) the conspicuously large metasternum with bulbous middle portion, separating middle coxal cavities from hind coxal cavities along longitudinal axis by considerable distance (Figs. 2, 5).

In addition to the morphological characters the two species of the genus differ from almost all members of the genus *Quedius* in their natural history by being floricol (see below for details).

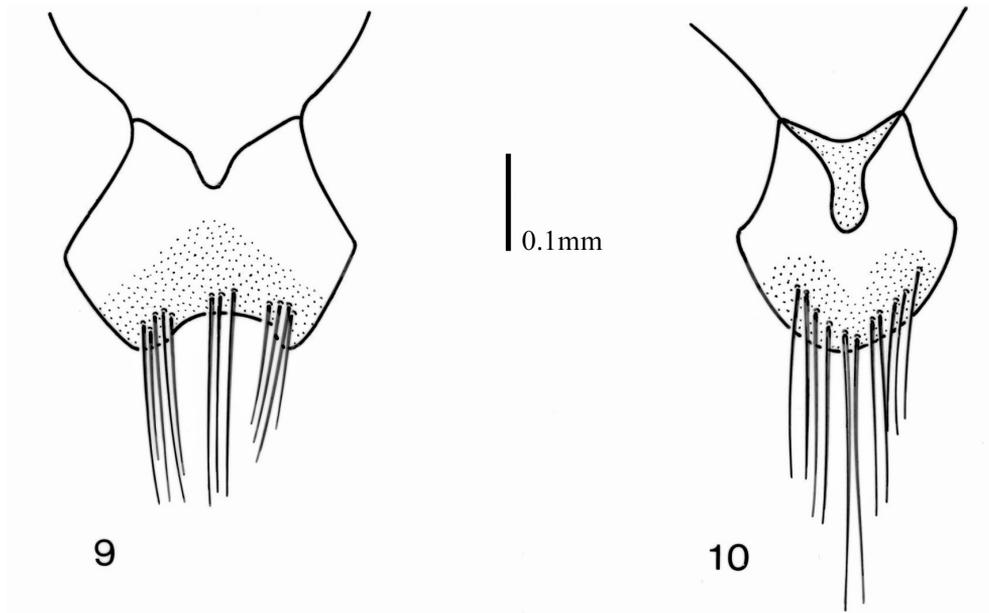
Etymology. The generic epithet is a combination of the Greek noun ανθος (bosom, flower) and of a part of the existing name *Microsaurus*. It refers to the floricolity of the two species included.



Figs. 1-6. 1-3: *Anthosaurus caelestis*: 1- mouthparts showing ventral mandibular brush; 2- metasternum; 3- left hind tarsus. 4-6: *Quedius (Raphirus) herbicola* Smetana.: 4- mouthparts showing absence of ventral mandibular brush; 5- metasternum; 6- left hind tarsus. (Scale 0.1 mm).



Figs. 7-8. *Anthosaurus caelestis*: 7- median lobe of aedeagus, paramere removed; 8- aedeagus, ventral view. (Scale 0.1 mm).



Figs. 9, 10. - Tergite 10 of female genital segment. 9: *Anthosaurus caelestis*; 10- *Anthosaurus gardneri*.

Discussion. The possibility that a separate genus level taxon may be necessary to accommodate *Quedius gardneri*, at that time treated as the sole member of the *gardneri* species group within the subgenus *Raphirus* of *Quedius*, was mentioned by myself a long time ago (Smetana, 1988: 233). The idea was repeated at the occasion of the discovery of the second species of the *gardneri*-species group: *Q. caelestis* Smetana, 1996, but no action was taken pending a revision of quediine genera (Smetana, 1996: 58). The work on the review of the subtribe Quediina of mainland China brought the necessity to tackle the problem and the present paper is the result of the relevant study. The erection of yet another new genus within the Chinese fauna will likely be necessary and will be dealt with in a subsequent paper. The floricoly has actually been proved only for *A. caelestis*, but the fact that *A. gardneri* shows all the important generic characters, including the presence of the ventral mandibular brush, leaves no doubt that floricoly is also applicable for *A. gardneri*. Specimens of *A. caelestis* have been typically found by myself in the Hailuogou valley of Gongga Shan in large, white flowers of the common *Sambucus*-like shrub (see Smetana, 2002: 121 for details) and it is also typical that many specimens of *A. caelestis* were taken by coleopterists who primarily collect beetles that regularly visit plant flowers, such as members of Buprestidae, Cerambycidae, etc. The floricoly distinguishes the two species of *Anthosaurus* from almost all members of the genus *Quedius*, except for *Q. masatoi* Smetana, 2007 and possibly *Q. klapperichi* Smetana, 2007 (see Smetana, 2012: 315, 316).

The modifications of the mandibles, particularly the presence of the ventral mandibular brush may suggest that the adults of *Anthosaurus* feed on pollen. This, of course, would have to be confirmed by the study of the gut contents of adults.

In view of new material available for study, some comments or/corrections to my previously published data on *A. gardneri* and *A. caelestis* should be made. When describing the aedoeagus of *A. caelestis* (Smetana 1996: 57) I misinterpreted the dorsal portion of the paramere in the form of a plate with minutely emarginated apex (see above and Fig. 8) as being a part of the median lobe. The rest of the description of the aedoeagus is all right, except perhaps that the length of the two arms of the paramere varies to some extent.

When describing *Q. caelestis* and comparing it to *Q. gardneri*, (Smetana, 1996: 58) I gave the impunctate scutellum in *Q. gardneri* (as opposed to punctuate scutellum in *Q. caelestis*) and the difference in the pubescence of the elytra and of the abdomen as the separating external characters of the two species. However, additional material of both species proved these characters useless. There are specimens with punctate or impunctate scutellum in both species, and the difference in pubescence does not really exist. The two species differ in the shape of both the aedoeagus and tergite 10 of the female genital segment (see Figs. above) and externally in the coloration of the elytra and the appendages.

In *A. caelestis* the elytra are dark metallic blue, both palpi are piceous, first three antennal segments are piceous and the remaining antennal segments are brownish to pale brown, and the legs are piceous with distinctly paler tarsi (particularly those of middle and hind legs). In *Q. gardneri* the elytra are dark metallic green, both palpi and entire antennae are piceous-black to black, and the legs are black with slightly paler tarsi. It should be emphasized that the difference in coloration of the elytra is constant and obvious.

Specimens of *A. gardneri* from mainland China studied (first records from the country and Yunnan):

CHINA: Yunnan: mts. 60 km E Tengchong, 2300 m, 14.-19.V.2006, S. Murzin & I. Shokhin, 1 ♀ (MSC); Pass 50 km W from Judian, 10-13.VI.2005, Ivo Jeniš lgt., 4 ♀♀ (ASC, PHC); Pass SW from Baoshan, Gaoligong Shan, 4-8.VI.2005, I. Jeniš lgt., 1 ♀ (ASC).

Anthosaurus gardneri has been till known only from the Himalayan region (West Bengal and Bhutan, see Smetana, 1988: 297). Note that all above localities are located in areas west of Mekong or even Salween rivers, where there is a distinct presence of the Himalayan elements (see Smetana, 2006: 72).

ACKNOWLEDGMENTS. I thank Vasily Grebennikov, Canadian Food Inspection Agency, Ottawa, for taking the photographs of the body parts and Go Sato, Agriculture and Agri-Food Canada, Ottawa, for carefully finishing the line drawings

REFERENCES

- CAMERON M. 1932: *The fauna of British India, including Ceylon and Burma. Coleoptera. Staphylinidae. Vol. III.* London: Taylor and Francis. xiii + 443 pp., 4 pl.
- SMETANA A. 1988: Revision of the tribes Quediini and Atanygnathini. Part II. The Himalayan region (Coleoptera: Staphylinidae). *Quaestiones Entomologicae* 24: 163-464.

- SMETANA A. 1996: Contributions to the knowledge of the Quediina (Coleoptera, Staphylinidae, Staphylinini) of China. Part 4. Genus *Quedius* Stephens, 1829. Subgenus *Raphirus* Stephens, 1829. Section 1. *Elytra* 24:49-59.
- SMETANA A. 2002: Contributions to the knowledge of the Quediina (Coleoptera, Staphylinidae, Staphylinini) of China. Part 21. Genus *Quedius* Stephens, 1829. Subgenus *Raphirus* Stephens, 1829. Section 4. *Elytra* 30: 119-135.
- SMETANA A. 2006: Contributions to the knowledge of the Quediina (Coleoptera, Staphylinidae, Staphylinini) of China. Part 27. Genus *Quedius* Stephens, 1829. Subgenus *Microsaurus* Dejean, 1833. Section 15. *Elytra* 34: 63-94.
- SMETANA A. 2012: Two species of the genus *Quedius* Stephens, 1829, subgenus *Microsaurus* Dejean, 1833, new to fauna of Vietnam (Coleoptera, Staphylinidae, Staphylinini, Quediina). *Studies and Reports, Taxonomical Series* 8: 315-320.
- STEPHENS J. F. 1829: *The Nomenclature of British Insects; being a compendious list of such species as are contained in the Systematic Catalogue of British Insects, and forming a guide to their classification*. London: Baldwin & Cradock. 64 columns.

Received: 2.12.2014

Accepted: 5.1.2015