

***Velleius* Leach, 1819 stat. nov., a subgenus of *Quedius* Stephens, 1829  
(Coleoptera: Staphylinidae: Staphylinini: Quediina)**

Aleš SMETANA

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

**Taxonomy, removal from synonymy, Coleoptera, Staphylinidae, Staphylinini, Quediina, *Velleius*, *Quedius*, *Microsaurus***

**Abstract.** *Velleius* Leach, 1819 stat. nov. is removed from synonymy with *Microsaurus* Dejean, 1833 and established as a subgenus of *Quedius* Stephens, 1829. The characters this action is based on are presented and a key to distinguish the adults of *Velleius* and *Microsaurus* is presented.

## INTRODUCTION

*Velleius* Leach, 1819 was quite recently proclaimed to be a member of the genus *Quedius* Stephens, 1829 and declared to be a synonym of the subgenus *Microsaurus* Dejean, 1833 (Solodovnikov 2012a). This act creates nomenclatorial problems, since both *Quedius* and *Microsaurus* are younger names. The problem was addressed by Solodovnikov (2012a) who announced that “in the interest of stability of the zoological nomenclature, an application to the International Committee for the Zoological Nomenclature has been prepared to suppress the Priority Rule and give precedence to the younger generic name *Quedius* Stephens, 1829 over the older generic name *Velleius* Leach, 1819”. But if the synonymization of *Velleius* with *Microsaurus* were accepted (but see further down ) as it was proposed (see above), then the application should also include *Microsaurus*, because *Microsaurus*, just like *Quedius*, is an old name in general use ever since it was erected, and replacing it with *Velleius* would cause serious confusion.

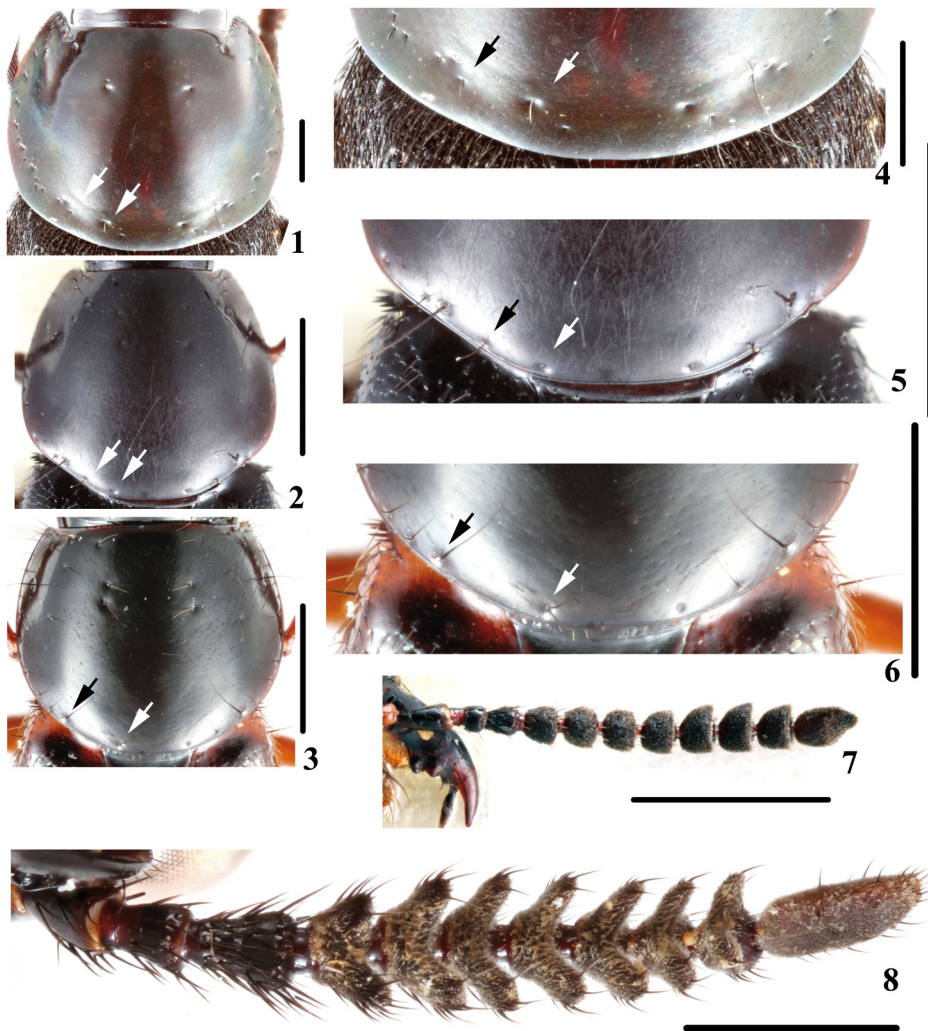
## RESULTS

There is no reason to dispute the placement of *Velleius* within *Quedius*, a concept that was suggested a long time ago by some classical authors (see in Solodovnikov, 2012a) and accepted by Gridelli (1932), but to place it within *Microsaurus* is not without serious objections. The synonymy was based on the molecular-based phylogenetic analysis (Chatzimanolis et al., 2010) which “placed species of *Velleius* nested within *Quedius* (*Microsaurus*)” (Solodovnikov, 2012a) and subsequent statement that *Velleius* “ist nach phylogenetischen Untersuchungen synonym[sic] zu *Microsaurus* Dejean, 1833 (Untergattung von *Quedius*)” (Solodovnikov, 2012b). The tree in Chatzimanolis et al. (2010) is a 50% majority rule consensus tree and includes only a few Quediina taxa, in particular only one

representative of the subgenus *Microsaurus*: *Quedius cruentus* Olivier, 1795, meaning that while it suggests close relationship of *Velleius* and *Microsaurus*, it in no way supports the placement of *Velleius* within *Microsaurus*.

I also have difficulties to accept two further statements by Solodovnikov (2012a) that are supposed to corroborate the synonymy of *Velleius* with *Microsaurus*. The first one concerns *Quedius inquietus* (Champion, 1925): “Also Smetana (1988) pointed out a case when it was difficult to assign a species, *Quedius inquietus* (Champion, 1925) (originally described as *Velleius*), to either *Velleius* or *Microsaurus*, a subgenus of *Quedius*”. I clearly stated (Smetana, 1988) that “There seems to be little doubt that the species belongs to the subgenus *Microsaurus* of *Quedius*”, and I kept *Quedius inquietus* in *Microsaurus* in many subsequent publications. The original assignment to *Velleius* by Champion was just a result of not enough taxonomic knowledge of the group by the author, which was understandable at that time. The second statement concerns the larval stages: “The larva of *Velleius* is *Quedius*-like”, followed by citation of several papers, including one by Pototskaya, 1967. There seems to be no doubt that the larva of *Velleius* is *Quedius*-like; however, Pototskaya (1967) gives at least two characters that separate larvae of *Velleius* and *Quedius*: 1) presence of split setae on body parts (present on all body parts in *Velleius* and absent on head and thorax in *Quedius* (including *Microsaurus*, see page 83) and (2) the absence (in *Velleius*) or presence (in *Quedius*, including *Microsaurus*) of the tibial comb. The same characters are also used by Topp, (1978) to separate the larvae of the two taxa, and Kasule (1970) also uses the presence or absence of the tibial comb to separate *Velleius* and *Quedius* larvae. So to sum up so far: 1) *Quedius inquietus* has nothing to do with *Velleius*, and 2) there are two character states in larval stage of *Velleius*, that separate it from *Quedius* (*Microsaurus*) and, since to the best of my knowledge nobody proved that the two characters are invalid, they have to be accepted.

Adults of *Velleius* are indeed quite similar to those of *Microsaurus* in most characters, particularly in the chaetotaxy on the head and in the general shape of the aedeagus. Gridelli (1932) mentions two characters, in addition to the distinctive antenna, that separate *Velleius* from *Microsaurus*: the deeply incised ligula and the bifid paramere of the aedeagus. The two characters work only for some species of *Velleius* (i.e. *dilatatus*, *setosus*). Also the presence of large number of long, strong setae on male abdominal sternite 8, mentioned as a distinguishing character by Smetana (1995a) works only for some species of *Velleius*, so the only adult distinguishing character known until now is the distinctive antenna. It is characterized as “serrate” or “gesägt” (e.g., Watanabe, 1990; Smetana, 1995a; Solodovnikov, 2012b), or pectinate (e.g. Solodovnikov, 2012a). In fact, it is neither, it is a highly, uniquely modified antenna. Gridelli (1932) described it very pertinently as “Antenne doppiamente seghettate”, which would translate as “antennae double pectinate”, a term that is to be used to describe the *Velleius* antenna. The antennae of a few species of *Microsaurus* (e.g. *inquietus*, *holzschuhi*, *kiangsiensis*), that exhibit some modification of outer segments show at most a simple, asymmetrical extension of medial portion of the segment, described as “subserrate” for *inquietus* (Smetana, 1988), as “transverse, gradually becoming slightly asymmetrical, with medial portion more extended” for *kiangsiensis* (Smetana, 1995b), or “transverse, slightly subserrate” for *holzschuhi* (Smetana, 1999). These modifications are not homologous with



Figs. 1-8. Figs. 1, 4, 8: *Quedius (Velleius) pectinatus* (Sharp, 1874). 1- pronotum showing the position of laterobasal and mediobasal punctures (arrows); 4- same, in detail; 8- antenna in ventral view, showing the double serrate segments 4-10. Figs. 2, 5, 7: *Quedius (Microsaurus) inquinatus* (Champion, 1925): 2- pronotum showing the position of laterobasal and mediobasal punctures (arrows); 5- same, in detail; 7- antenna in ventral view showing the slightly serrate segments 8-10. Figs. 3, 6: *Quedius (Microsaurus) cruentus* (Olivier, 1795): 3- pronotum showing the position of laterobasal and mediobasal punctures (arrows); 6- same, in detail. Scale = 1 mm.

the complex, highly modified antenna of *Velleius*. There is one additional character state that separates the adults of *Velleius* from those of *Microsaurus* which concerns the chaetotaxy of the pronotum. There are three important punctures on pronotum: the anterolateral puncture (so far called the large lateral puncture in my papers), the laterobasal puncture (these two are mentioned and illustrated by Hayashi, 2009), and the mediobasal puncture that is named

for the first time here (the chaetotaxy of the pronotum will be discussed in detail in the review of the *Quediina* of mainland China, which is in preparation). In all *Microsaurus* species the laterobasal and mediobasal punctures are situated close to the pronotal margin, being separated from it by distance no more than slightly larger than the diameters of the punctures, whereas in the species of *Velleius* these two punctures are removed far from the pronotal margin, being separated from it by distance several to many times larger than the diameters of the punctures (see Figs 1-6). Based on the above discussion, the adults of *Velleius* may be distinguished from those of *Microsaurus* by using the following key:

- Antennal segments four to ten conspicuously modified, double pectinate (Fig. 8). Laterobasal and mediobasal punctures on pronotum situated away from pronotal margin, separated from it by distance several times larger than diameters of punctures (Figs 1,4 ..... subgenus *Velleius*  
 Antennal segments four to ten not modified, or at most outer segments (usually eighth to ten) slightly subserrate (Fig. 7). Laterobasal and mediobasal punctures on pronotum situated close to pronotal margin, either touching it or separated from it by distance at most slightly larger than diameters of puncture (Figs 2,5,6 ..... subgenus *Microsaurus*

**Note.** Most recently Ferreira (2013), while publishing the first record of “*Velleius dilatatus*” for Portugal, comments on the proposed synonymy of *Velleius* with *Quedius* and considers *Velleius* as separate genus.

## CONCLUSION

*Velleius* Leach, 1819 **stat. nov.** is removed from synonymy with *Microsaurus* Dejean, 1833 and established as a subgenus of *Quedius* Stephens, 1829, supported by both larval and adult characters.

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