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Polydrusus carpathicus (Brancsik, 1874), a new junior subjective synonym of *Polydrusus amoenus* (Germar, 1824) (Coleoptera: Curculionidae: Entiminae: Polydrusini)

Polydrusus carpathicus (Brancsik, 1874), nové synonymum ke druhu *Polydrusus amoenus* (Germar, 1824) (Coleoptera: Curculionidae: Entiminae: Polydrusini)

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Abstract. A new synonymy, *Polydrusus amoenus* (Germar, 1824) = *Polydrusus carpathicus* (Brancsik, 1874), syn. nov., is proposed. The type locality of *P. carpathicus* and the variability of morphological characters are discussed.

INTRODUCTION

The subgenus *Chlorodrosus* K. Daniel & J. Daniel, 1898 of the genus *Polydrusus* Germar, 1817 includes seven species distributed in the mountains of southern Europe, and one species, *P. amoenus* (Germar, 1824), which is widespread from France across most of the Alpine and Carpathian countries and beyond, to the Far East (Alonso-Zarazaga et al. 2017). Another taxon, *Polydrusus carpathicus* (Brancsik, 1874), was described from a single specimen from the Western Carpathians (Malý Kriváň Mt. in Malá Fatra Mts, Slovakia). Its taxonomic validity has not been clarified for a long time, since the unique type specimen has not been accessible to many authors in the past.

The recent finding of extensive series of *Polydrusus amoenus* sensu lato in the subalpine zone of the Malá Fatra provided an incentive to resolve the taxonomic status of *P. carpathicus*.

MATERIAL AND METHODS

Photographs of *P. amoenus* were taken with a Nikon Coolpix 4500 digital camera attached to a Leica MZ 9.5 trinocular stereomicroscope; images of the same specimen at different focal planes were combined with Helicon Focus 5.2 Pro and edited with Adobe Photoshop 9.0.2 software.

Nomenclature follows Alonso-Zarazaga et al. (2017). The following abbreviations are used: a.s.l. – above sea level; env. – environs of; lgt. – collected by; det. – determined by; spec. – specimen; Mt. – mount; Mts – mountains.

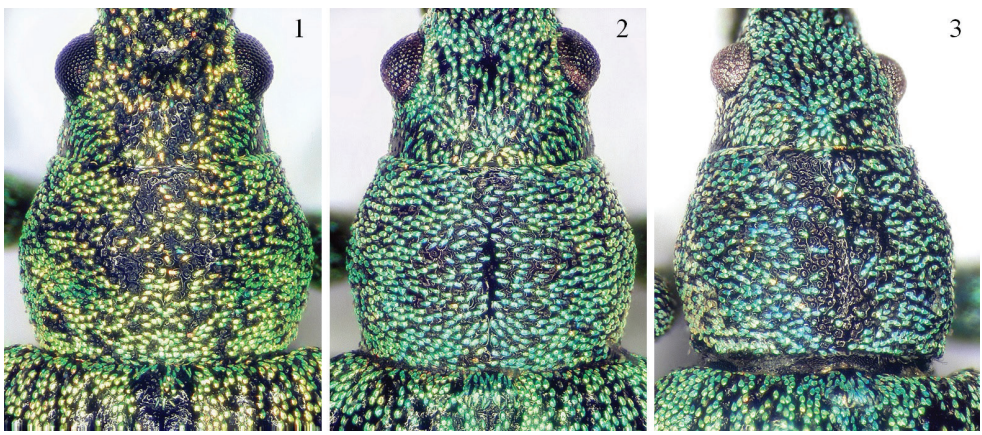
Acronyms of depositories: HNMB – Hungarian National Museum, Budapest, Hungary; MLUH – Martin Luther Universität Halle-Wittenberg; NHMB – Naturhistorisches Museum, Basel, Switzerland; SBC – Stanislav Benedikt collection, Plzeň, Czech Republic.

RESULTS

Polydrusus (*Chlorodrusus*) *amoenus* (Germar, 1824)
(Figs 1–8)

Metallites amoenus Germar, 1824: 457
Polydrusus hopffgarteni Stierlin, 1884: 65.
Polydrusus sibiricus Hochhuth, 1851: 31.
Metallites carpathicus Brancsik, 1874: 229, **syn. nov.** (Fig. 8)

Type locality. *P. amoenus*: "Halae Saxonum" [= Halle, Germany]; *P. carpathicus*: "Karpathen", see Remarks.
Type material. *P. amoenus*: Syntypes, number unstated (not examined) (MLUH); *P. carpathicus*: Holotype, ♂: "C, Trencsen, Dr. Brancsik" (NHMB).
Additional material. Czech Republic: Šumava Mts, Jezerní hora Mt., 1300 m a.s.l., 15.vii.1990, 2 spec.; Šumava Mts, Kvilda env., 1000 m a.s.l., vii.1994, 3 spec.; Šumava Mts, Prášily env., 1100 m a.s.l., viii.1995, 2 spec.; Krkonoše Mts, Luční hora Mt., 1350 m a.s.l., 13.vii.2019, 2 spec. **Slovakia**: Malá Fatra Mts, Chleb Mt., 1600 m a.s.l., 27.vi.2019, 8 spec.; Slovenský raj Mts, Čingov, 900 m a.s.l., 3.vii.1975, 2 spec.; Západné Tatry Mts, Sivý vrch Mt., 1700 m a.s.l., 8.viii.1999, 3 spec.; Muránska planina Mts, Malá Stožka Mt., 1000 m a.s.l., 22.vi.2002, 2 spec. All spec. S. Benedikt det. (SBC).
Remarks. Germar (1824) described *Metallites amoenus* from an unstated number of specimens originating from "Halae Saxonum". I have not seen any type specimens, but the species is well-known and the name is generally used for a species common at higher elevations of central Europe (Roubal 1937–1941, Benedikt et al. 2010, Curculio Team 2011, Alonso-Zarazaga et al. 2017 etc.). Brancsik (1874) described *M. carpathicus* from a single male specimen collected (translated from German) "in the moss in the subalpine zone with *Pinus mugo* in



Figs 1–3. *Polydrusus amoenus* (Germar, 1824), varying formation of the keel of the pronotum: 1, 2 – Slovakia, Malá Fatra Mts, Chleb Mt.; 3 – Czech Republic, Šumava Mts, Kvilda. Photograph: Z. Kejval.
Obr. 1–3. *Polydrusus amoenus* (Germar, 1824), různé formování kýlu na štítu: 1, 2 – Slovensko, Malá Fatra, Chleb; 3 – Česká republika, Šumava, Kvilda. Fotografie: Z. Kejval.



Figs 4–7. *Polydrusus amoenus* (Germar, 1824), aedeagus in ventral and lateral view: 4, 5 – Slovakia, Malá Fatra Mts, Chleb Mt.; 6, 7 – Czech Republic, Šumava Mts, Kvilda. Photograph: Z. Kejval.
Obr. 4–7. *Polydrusus amoenus* (Germar, 1824), aedeagus ventrálně a laterálně: 4, 5 – Slovensko, Malá Fatra, Chleb; 6, 7 – Česká republika, Šumava, Kvilda. Fotografie: Z. Kejval.

the Carpathians". Later, Brancsik (1879) specified the type locality as "Kis-Krivan" [= Malý Kriváň Mt. in the Malá Fatra Mts]. In any case, this led to further confusion in the localization by some authors, since there is another peak in the Vysoké Tatry Mts with the name "Kriváň". Thus, Heyden et al. (1906) listed its occurrence as "Tatra" and later Fleischer (1927–1930) noted for the taxon "originally in Kriváň (Dr. Brancsik), in the Vysoké Tatry Mts and in the Liptovské hory Mts (Reitter)". Contrary to both Brancsik's (1874, 1879) publications, the locality label of the holotype states "C, Trencsén, Dr. Brancsik" (Fig. 8). But it is very probable that K. Brancsik used "Trencsén" here to refer to the whole region of the former Trenčín county. Within this county, the only subalpine zone with *Pinus mugo* is located in the Malá Fatra Mts. Consequently, the locality of "Kis-Krivan" must be identified with Malý Kriváň Mt. in the Malá Fatra Mts and not with Kriváň Mt. in the Vysoké Tatry Mts. This explanation is supported by the data on other beetles which Brancsik (1874) mentioned in his paper, since all these other findings are located in the Malá Fatra Mts (e.g. "auf Bergen um Sillein" [= Žilina], "Thale Vrátna" [= Vrátna dolina]).

Polydrusus carpathicus was subsequently recorded only by Roubal (1937–1941) from "Smokov. [= Slovakia, Smokovec in Vysoké Tatry Mts] (Sukd., non vidi)". Smreczyński (1960) mentioned that he had revised the series of four specimens identified by E. Reitter as *P. carpathicus* and deposited in his collection in HNMB, and all these specimens he assigned to the species *P.* (*Piezocnemus*) *paradoxus* Stierlin, 1859. Roubal (1928), who had the opportunity to see the type specimen of *P. carpathicus* in the collection of Dr. Knirsch in Köln (Germany) stated that this voucher specimen does not belong to the subgenus *Piezocnemus* Chevrolat, 1869. Reitter apparently did not know the type, and he determined all specimens of *P. paradoxus* from the Vysoké Tatry Mts and Western Carpathians in general as *P. carpathicus*. This also explains the inclusion of the species in the subgenus *Piezocnemus* (although it was

described in *Metallites* Germar, 1823, now treated as a subgenus of the genus *Polydrusus*) and the introduction of the Vysoké Tatry Mts in the above mentioned Catalogus Coleopterorum Europae, Caucasus et Armeniae Rossicae (Heyden et al. 1906), of which Reitter was a co-author. Only recent revision of the type specimen has clearly identified *P. carpathicus* as a member of the subgenus *Chlorodrosus* (Curculio Team 2011). Despite this, the current catalogue of Palaearctic weevils (Alonso-Zarazaga et al. 2017) erroneously placed this name again in the subgenus *Piezocnemus*.

In the key to *Polydrusus* species, a smooth keel on the pronotum is given as the only characteristics to distinguish of *P. carpathicus* from *P. amoenus*. A photograph of the aedeagus is also provided (Curculio Team 2011). It is interesting that the scales are nearly totally abraded on the whole body of the type specimen (Fig. 8) although it should be (translated from German) "densely covered with elongated green and copper glossy scales" (Brancsik 1874). It may be that the scales were scraped off during subsequent handling of the specimen.

The study of additional material of *P. amoenus* showed that the keel on the pronotum varies in all specimens compared. It is well or slightly developed in some of them, and totally absent in others (Figs 1–3) even in specimens from the same localities. The shape of the penis apex in males (Figs 4–7) varies slightly too and does not differ significantly from the type specimen of *P. carpathicus* (Fig. 8). When comparing the photographs with the material of *P. amoenus,* it was also not possible to find any other clear morphological differences.

This comparison results in the statement that *P. carpathicus* is a junior subjective synonym of *P. amoenus*.

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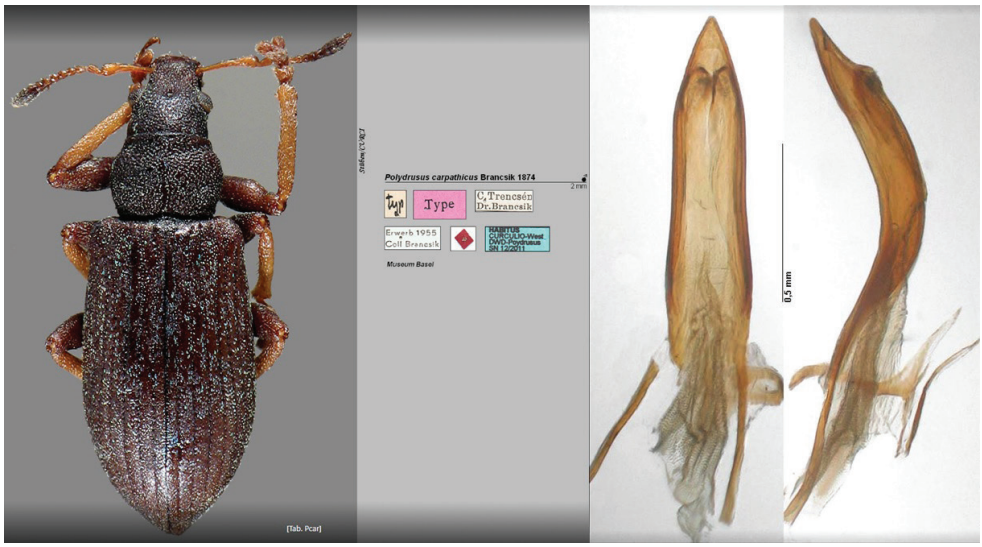


Fig. 8. *Polydrusus carpathicus* (Brancsik, 1874), holotype. Habitus (left) and aedeagus in ventral and lateral view (right). Photograph: P. Stüben (picture taken from Curculio Team 2011).
Obr. 8. *Polydrusus carpathicus* (Brancsik, 1874), holotypus. Habitus (vlevo) a aedeagus ventrálně a laterálně (vpravo). Fotografie: P. Stüben (obrázek byl převzat z práce Curculio Team 2011).

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SOUHRN

Polydrusus carpathicus Brancsik, 1874 (obr. 8) byl popsán Brancsikem (1874) z vrchu Malý Kriváň v Malé Fatře (Slovensko) podle jediného samce. Vzhledem k existenci tohoto jediného, špatně dostupného exempláře a neupřesnění polohy lokality při popisu došlo později jak k nesprávnému zařazení taxonu do podrodu *Piezocnemus* Chevrolat, 1869, tak ke zmatkům v interpretaci lokality a jejímu přiřazení do Vysokých Tater (Heyden et al. 1906, Fleischer 1927–1930, Alonso-Zarazaga et al. 2017). S tím souvisely i pozdější chybné determinace a nejasnosti ohledně validity taxonu (Roubal 1928, Smreczyński 1960). Teprve Curculio Team (2011) určil správně příslušnost typového exempláře, který se v současnosti

nachází v Naturhistorisches Museum Basel v Basileji, k podrodu *Chlorodrosus* K. Daniel & J. Daniel, 1898 a zároveň publikoval jeho fotografie, včetně fotografií aedeagu (obr. 8), a v klíči druhů *Polydrusus* i znak, který by měl taxon odlišit od příbuzných druhů podrodu *Chlorodrosus* – existenci jemného kýlu na štítu. Srovnáním uvedené fotodokumentace s materiálem druhu *P. amoenus* (Germar, 1824), aktuálně získaným ze subalpinské zóny Malé Fatry (Chleb, 1600 m) a dalšími exemplář *P. amoenus* z různých středoevropských pohoří (Česká republika: Šumava, Krkonoše; Slovenská republika: Slovenský raj, Západné Tatry, Muránska planina) se však ukázalo, že uvedený znak je pro odlišení samostatného druhu nedostatečný. Kýl na štítu je nestabilním znakem, protože jeho formování kolísá v sérii porovnávaných exemplářů z různých lokalit od úplné absence až po zřetelně vyvinutý útvar (obr. 1–3). Také v utváření aedeagu nelze najít významné rozdíly mezi typem a sérií z Chlebu i ostatním uvedeným materiálem (obr. 4–7). Na základě těchto zjištění je v práci stanoveno jméno *Polydrusus carpathicus* jako mladší synonymum ke druhu *P. amoenus*.