

## REMARKS ON SOME TRECHINE GROUND BEETLE TAXA FROM THE BALKAN PENINSULA (COLEOPTERA: CARABIDAE: TRECHINI)

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Abstract – The purpose of this note is to offer some corrections and supplements to the paper of Lohaj et al. (2013), to prove the validity of recently described trechine genera in Serbia, and to comment on other erroneous facts presented in the analyzed paper. In particular, we will show that the taxonomical remarks on the genus *Duvalius* Delarouzeé, 1859, are wrong. The following genera are clearly delimited and represent valid taxa: *Serboduvalius* Ćurčić, Pavićević & Ćurčić, 2001, comb. n., *Rascioduvalius* Ćurčić, Brajković, Mitić & Ćurčić, 2003, comb. n., *Curcicia* Ćurčić & Brajković, 2003, comb. n., and *Javorella* Ćurčić, Brajković & Ćurčić, 2003, comb. n. The following new combinations are established for the following *Duvalius* species: *Serboduvalius* *gejadunayi* (Lohaj, Čeplík & Lakota, 2013), comb. n., *S. starivlahi* (Guéorguiev, Ćurčić & Ćurčić, 2000), comb. n., *S. dragacevensis* Ćurčić, Pavićević & Ćurčić, 2001, comb. n., *S. droveniki* (Magrini, 1998), comb. n., *Rascioduvalius* *cvijici* (Jeannel, 1923), comb. n., *R. stopicensis* (Jeannel, 1923), comb. n., *R. zlatiborensis* Ćurčić, Brajković & Ćurčić, 2005, comb. n., *Curcicia* *bolei* (Pretner, 1963), comb. n., *Javorella* *javorensis* Ćurčić, Brajković & Ćurčić, 2003, comb. n., *J. suvoborensis* (Pavićević & Popović, 2001), comb. n., and *J. suvodolensis* Ćurčić, Brajković & Ćurčić, 2003, comb. n.

Key words: Coleoptera; Carabidae; taxonomy; revision; *Duvalius*; *Serboduvalius*; *Rascioduvalius*; *Curcicia*; *Javorella*; cave-dwelling fauna; Serbia; Montenegro

### INTRODUCTION

Recently Lohaj et al. (2013) described a new trechine ground beetle from a cave in eastern Montenegro – *Duvalius* (*Neoduvalius*) *gejadunayi* Lohaj, Čeplík & Lakota, 2013. However, a thorough analysis of all important taxonomic traits of this taxon and a comparison with other members belonging to the genus *Duvalius* Delarouzeé, 1859, and its phenetically close genera has uncovered that it actually belongs to the genus *Serboduvalius* Ćurčić, Pavićević & Ćurčić, 2001, whose representatives were previously known from some caves in southwestern Serbia (Guéorguiev et al., 2000; Ćurčić et al., 2001). After additional detailed analysis, we found that the abovementioned species is actually closest to *Duvalius* (*Biharotrechus*)

*droveniki* Magrini, 1998, an endogean species from eastern Montenegro (Magrini, 1998). It is our opinion that *Duvalius* (*Biharotrechus*) *droveniki* belongs to the genus *Serboduvalius* as well. Additionally, Lohaj et al. (2013) erroneously included the following species in the subgenus *Neoduvalius* Müller, 1913, genus *Duvalius*, without any scientific explanation and taxonomic review: *Serboduvalius* *starivlahi* (Guéorguiev, Ćurčić & Ćurčić, 2000), *S. dragacevensis* Ćurčić, Pavićević & Ćurčić, 2001, *Rascioduvalius* *cvijici* (Jeannel, 1923), *R. stopicensis* (Jeannel, 1923) and *R. zlatiborensis* Ćurčić, Brajković & Ćurčić, 2005. We refute such superfluous analysis by Lohaj et al. (2013) and maintain the opinion that the species belong to the genera *Serboduvalius* and *Rascioduvalius*

Ćurčić, Brajković, Mitić & Ćurčić, 2005, as was previously stated by Ćurčić et al. (2001, 2003c, 2005), Guéorguiev (2007), Zagmajster (2007) and Janák & Moravec (2008). Moreover, Lohaj et al. (2013) synonymized a few trechine genera from Serbia without any scientific argumentation (*Serboduvalius*, *Rascioduvalius*, *Javorella* Ćurčić, Brajković & Ćurčić, 2003, and *Curcicia* Ćurčić & Brajković, 2003). We are proposing the re-erection to the genus level according to the studies of Ćurčić et al. (2001, 2003a, 2003b, 2003c, 2005), Ćurčić & Brajković (2003), and other authors (Guéorguiev, 2007; Zagmajster, 2007; Janák & Moravec, 2008). Apart from the aforementioned facts, the paper of Lohaj et al. (2013) contains numerous mistakes and erroneous facts of both technical and scientific nature. Therefore, a need for a thorough revision of the paper arose and we present it in the current study.

#### MATERIALS AND METHODS

The specimens of the type species of the genera *Serboduvalius*, *Rascioduvalius*, *Curcicia*, *Javorella*, and *Duvalius* were analyzed in laboratories of the Institute of Zoology, University of Belgrade – Faculty of Biology, Belgrade, Serbia. These were dissected and thoroughly studied. Dry specimens were adhered onto paper labels. Male genital structures were fixed in a medium composed of Canada balsam and xylol. All taxonomically important morphological characters were studied for comparison. Additional literature data were taken into account for the comparison of some taxa and the conclusions presented herein (Jeannel, 1928; Pretner, 1963; Magrini, 1998; Ćurčić et al., 2001, 2003b, 2003c; Pavićević & Popović, 2001; Ćurčić and Brajković, 2003; Lohaj et al., 2013).

A Carl Zeiss Stemi 2000 binocular stereomicroscope and Carl Zeiss Axioskop 40 microscope were used for examining the morphological characteristics of the trechine ground beetles. Additionally, the original illustrations of all the type species from literature sources were compared (Jeannel, 1928; Pretner, 1963; Magrini, 1998; Ćurčić et al., 2001, 2003b, 2003c; Lohaj et al., 2013).

#### RESULTS AND DISCUSSION

##### FAMILY CARABIDAE LATREILLE, 1802

##### SUBFAMILY TRECHINAE BONELLI, 1810

##### TRIBE TRECHINI BONELLI, 1810

##### GENUS *SERBODUVALIUS* ĆURČIĆ, PAVIĆEVIĆ & ĆURČIĆ, 2001, COMB. N.

*Etymology* – After Serbia, its *terra typica*.

*Type species* – *Serboduvalius dragacevensis* Ćurčić, Pavićević & Ćurčić, 2001, comb. n.

*Other species* – *S. starivlahi* (Guéorguiev, Ćurčić & Ćurčić, 2000), comb. n., *S. gejadunayi* (Lohaj, Čeplik & Lakota, 2013), comb. n., and *S. droveniki* (Magrini, 1998), comb. n.

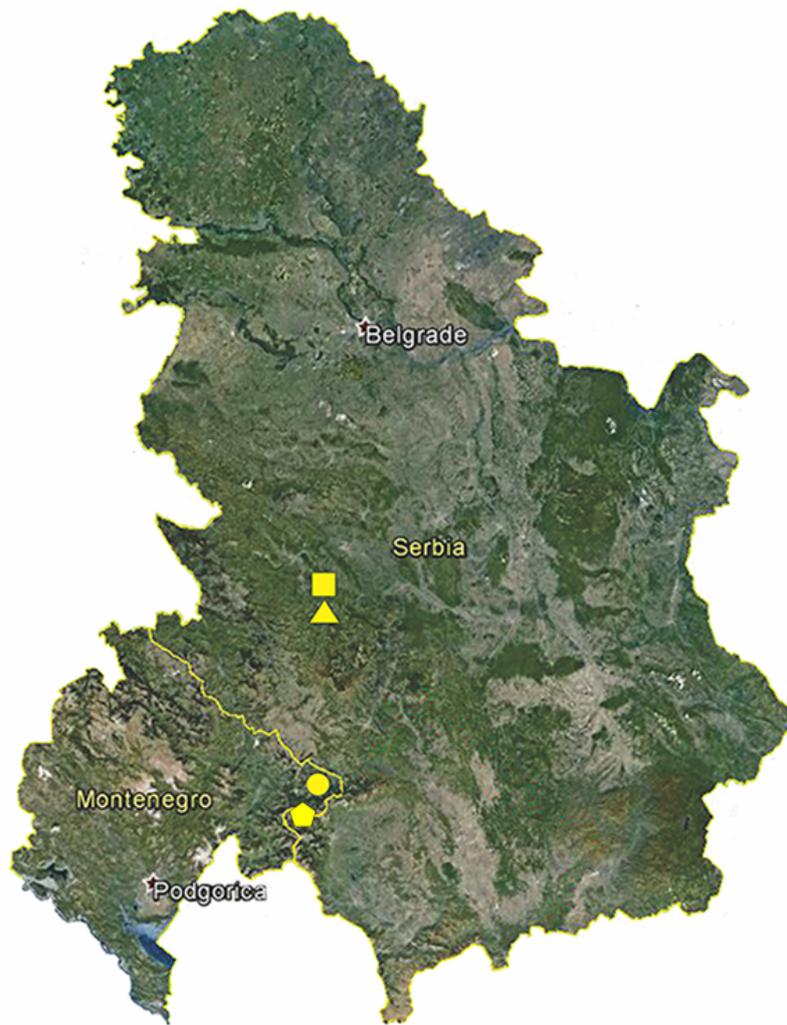
*Synonyms* – Subgenus *Duvaliotes* Jeannel, 1928 (part.): Magrini, 1998: 129; subgenus *Neoduvalius* Müller, 1913 (part.): Guéorguiev et al., 2000: 227; Lohaj et al., 2013: 100; subgenus *Biharotrechus* Bokor, 1922 (part.): Moravec et al., 2003: 299.

*Old combinations* – *Duvalius (Duvaliotes)*: Magrini, 1998: 129; *Duvalius (Neoduvalius)*: Guéorguiev et al., 2000: 227; Lohaj et al., 2013: 100; *Duvalius (Biharotrechus)*: Moravec et al., 2003: 299.

*Type locality* – Mala Pećina Cave, village of Rti, near Kotraž, Dragačevo Mts., southwestern Serbia.

*Type series* – Mala Pećina Cave, village of Rti, near Kotraž, Dragačevo Mts., southwestern Serbia, 30 April 2001, leg. S. Ćurčić, B. Mitić & S. Makarov (holotype male, allotype female, and a paratype male); *idem*, 20 August 2001 (five paratype males and a paratype female).

*Diagnosis* – As presented in the paper of Ćurčić et al. (2001).



**Fig. 1.** Distribution of species of the genus *Serboduvalius*. Square - *S. dragacevensis*; triangle - *S. starivlahi*; circle - *S. gejadunayi*; pentagon - *S. droveniki*.

*Distribution* – The genus *Serboduvalius*, comb. n. is presently known only from a few caves and deep soil in southwestern Serbia and eastern Montenegro (Fig. 1).

*Remarks* – This genus differs from all other phenetically close genera by a set of correlative morphological features as listed in Ćurčić et al. (2001). This set of characteristics is specific to species belonging to the genus, and is not evident within other *Duvalius* and *Duvalius*-like taxa. Lohaj et al. (2013) singled out certain its morphological features and mentioned

that they are present among other *Duvalius* taxa, but the characters need to be studied in a complex way. They overlooked the fact that the set of correlative morphological features of the genus is unique and do not exist in any other trechine genera.

We maintain the opinion of Pavićević & Popović (2001), who claimed that it would be inappropriate and even pretentious to establish a new subgenus until the area of Serbia were better covered (when some related species might possibly be discovered). Janák & Moravec (2008) claimed that the recently described

trechine *Duvalius*-like genera from Serbia probably represent either groups of species or subgenera. The solution of the taxonomic problem lies in a better knowledge of the diversity of the genus *Duvalius* in the Balkans, and descriptions of additional new species in the area studied will enable us to define the final status of the trechine genera analyzed. The recent finding and description of the third *Serboduvallius* species, *Serboduvallius gejadunayi*, comb. n. (Lohaj et al., 2013), which shares the basic correlative morphological characteristics of *Serboduvallius*, comb. n. (presence of reduced eyes, deep and complete frontal furrows, smooth genae, and 3-4 pairs of elytral discal setae, the second pair of elytral discal setae closer to the first pair than to the third pair of these setae, the same position of the humeral umbilicate setae, and the presence of a similar gutter-formed copulatory piece which is bilobed at the base) confirmed the fact that the genus is valid. The additional trechine species is added into the genus *Serboduvallius*, comb. n. as well (*S. droveniki*, comb. n.), since it possesses all leading characteristics of the genus.

The genus *Serboduvallius*, comb. n. probably belongs to an old and separate phyletic lineage that originated during Tertiary (Čurčić et al., 2001). The taxon is both an endemic and relict of southwestern Serbia, eastern Montenegro and the Balkan Peninsula.

*SERBODUVALIUS GEJZADUNAYI* (LOHAJ,  
ČEPLÍK & LAKOTA, 2013), COMB. N.

*Old combination* – *Duvalius* (*Neoduvallius*) *gejadunayi*: Lohaj et al., 2013, 94.

*Type locality* – Pećina u Dubokom Potoku Cave, village of Donje Biševo, 1 180 m.a.s.l., near Rožaje, eastern Montenegro.

*Other localities* – None.

*Description and diagnosis* – As presented in the paper of Lohaj et al. (2013).

*Distribution* – This species is presently known from

a cave in the vicinity of the town of Rožaje, eastern Montenegro.

*Remarks* – After detailed analysis of morphological features of *Duvalius* (*Neoduvallius*) *gejadunayi* (presence of reduced eyes, deep and complete frontal furrows, longitudinal fissure on fore tibiae, smooth genae, 3-4 pairs of elytral discal setae, position of the second pair of elytral discal setae and the humeral umbilicate setae, and similar kind of copulatory piece), we concluded that this species actually belongs to the genus *Serboduvallius*, comb. n., together with two previously described species from southwestern Serbia and another species from eastern Montenegro. The paper of Lohaj et al. (2013) contains a description of the species, but the diagnosis is incomplete since the authors surprisingly did not compare the new species with the other phenetically close species *Serboduvallius droveniki*, comb. n. (living in deep soil in the vicinity of the type locality of *S. gejadunayi*, comb. n.) and *S. dragacevensis*, comb. n. (the type species of the genus *Serboduvallius*, comb. n.). The following remains unclear: what criteria was used by the authors to include the species within *Duvalius* (*Neoduvallius*) and what is the precise position of setae of the humeral umbilicate series? Furthermore, the presence of complete frontal furrows is not characteristic for *Neoduvallius* taxa, so the new species cannot be associated with it. Additionally, the presence of three pairs of elytral discal setae is very rare in *Neoduvallius* species, while it is observed in all *Serboduvallius* species. The presence of four pairs of elytral discal setae (in some specimens of *Serboduvallius starivlahi*, comb. n., *S. gejadunayi*, comb. n., and *S. droveniki*, comb. n.) is not common in *Neoduvallius* species. Additionally unclear was the presence/absence of eyes in *Serboduvallius gejadunayi*, comb. n. by Lohaj et al. (2013). At first it was recorded that the eyes are completely reduced (a dark spot is registered in a few specimens) (Lohaj et al., 2013: 96), and then the authors reported that the eyes in the species are totally absent (Lohaj et al., 2013: 99). However, small eye spots can be seen in the species in Figs. 1 and 3 presented in the cited paper (Lohaj et al., 2013: 95). The authors wrongly named the type locality as Duboki Potok Cave instead of Pećina u Dubokom

Potoku Cave in the Distribution chapter (Lohaj et al., 2013: 98), the village where the cave is situated (Dinje Biševo instead of Donje Biševo) in the chapter Topographic location and ecology (Lohaj et al., 2013: 98), and erroneously determined the pseudoscorpion species caught at the same locality (*Neobisium ninae* Ćurčić, Dimitrijević & Tomić was described from the type locality vs. *Neobisium umbratile* Beier, 1938) (Ćurčić et al., 2007, 2008; Lohaj et al., 2013: 98).

*SERBODUVALIUS STARIVLAHI* (GUÉORGUIEV, ĆURČIĆ & ĆURČIĆ, 2000), COMB. N.

*Old combinations* – *Duvalius* (*Neoduvalius*) *starivlahi*: Guéorguiev et al., 2000, 227.

*Duvalius* (*Neoduvalius*) *starivlahi*: Lohaj et al., 2013, 102.

*Type locality*. – Hadži-Prodanova Pećina Cave, village of Raščići, near Ivanjica, Southwestern Serbia.

*Other localities*. – None.

*Description and diagnosis*. – As presented in the papers of Guéorguiev et al. (2000) and Ćurčić et al. (2001).

*Distribution*. – This species is presently known from a cave in the vicinity of the town of Ivanjica, Southwestern Serbia.

*Remarks*. – Presence of reduced eyes, deep and complete frontal furrows, longitudinal fissure on fore tibiae, smooth genae, 3-4 pairs of elytral discal setae, a gutter-formed copulatory piece, and position of both the second pair of elytral discal setae (closer to the first than to the third pair of elytral discal setae) and the humeral umbilicate setae (as stated in description of the genus; Ćurčić et al., 2001: 53) confirm the fact that this form belongs to the genus *Serboduvalius*, comb. n., as was originally stated by Ćurčić et al. (2001). Totally wrong is the opinion by Lohaj et al. (2013), who stated that these two species are probably conspecific on the basis of morphological differences. A dozen observed differences among the

species are listed in the paper of Ćurčić et al. (2001), and additional drawings showing some of them are included there as well.

*SERBODUVALIUS DRAGACEVENSIS* ĆURČIĆ, PAVIĆEVIĆ & ĆURČIĆ, 2001, COMB. N.

*Old combination*. – *Duvalius* (*Neoduvalius*) *dragacevensis*: Lohaj et al., 2013, 101.

*Type locality* – Mala Pećina Cave, village of Rti, near Kotraž, Dragačevo Mts., southwestern Serbia.

*Other localities* – None.

*Description and diagnosis* – As presented in the paper of Ćurčić et al. (2001).

*Distribution* This species is presently known from a cave in the Dragačevo Mts., southwestern Serbia.

*Remarks* – Presence of reduced eyes, deep and complete frontal furrows, longitudinal fissure on fore tibiae, smooth genae, three pairs of elytral discal setae, a gutter-formed copulatory piece, and position of both the second pair of elytral discal setae (closer to the first than to the third pair of elytral discal setae) and the humeral umbilicate setae (as stated in description of the genus; Ćurčić et al., 2001: 53) confirm that this species belongs to the genus *Serboduvalius*, comb. n., as was originally stated by Ćurčić et al. (2001). Furthermore, the precise distance between type localities of *Serboduvalius starivlahi*, comb. n. and *S. dragacevensis*, comb. n. is 12.5 km (not around 10 km, as was stated by Lohaj et al., 2013: 101).

*SERBODUVALIUS DROVENIKI* (MAGRINI, 1998), COMB. N.

*Old combinations* – *Duvalius* (*Duvaliotes*) *droveniki*: Magrini, 1998, 129.

*Duvalius* (*Biharotrechus*) *droveniki*: Moravec et al., 2003, 299.

*Type locality*. – Mt. Hajla, Prokletije, near Rožaje,

Eastern Montenegro.

*Other localities.* – None.

*Description and diagnosis.* – As presented in the paper of Magrini (1998).

*Distribution.* – This species is endogean and is presently known from soil on Mt. Hajla, Prokletije, Eastern Montenegro.

*Remarks.* – Presence of reduced eyes, deep and complete frontal furrows, longitudinal fissure on fore tibiae, smooth genae, 3-4 pairs of elytral discal setae, a gutter-formed copulatory piece, and similar position of both the second pair of elytral discal setae (closer to the first than to the third pair of elytral discal setae) and the humeral umbilicate setae (as stated in description of the genus; Ćurčić *et al.*, 2001: 53) confirm that this species actually belongs to the genus *Serboduvallius*, comb. n. Closest to *S. gejadunayi*, comb. n. according to form of the aedeagus and the copulatory piece and other morphological features (Magrini, 1998; Lohaj *et al.*, 2013).

GENUS RASCIODUVALIUS ĆURČIĆ,  
BRAJKOVIĆ, MITIĆ & ĆURČIĆ, 2003, COMB. N.

*Etymology* – After Rascia, the old name for Serbia, its *terra typica*.

*Type species* – *Rascioduvallius cvijici* (Jeannel, 1923), comb. n.

*Other species* – *R. stopicensis* (Jeannel, 1923), comb. n. and *R. zlatiborensis* Ćurčić, Brajković & Ćurčić, 2005, comb. n.

*Synonyms* – Subgenus *Duvalites* Jeannel, 1920 (part.): Jeannel, 1923: 10; subgenus *Neoduvallius* Müller, 1913 (part.): Winkler, 1926: 260; Jeannel, 1928: 553; Moravec *et al.*, 2003: 307; Lohaj *et al.*, 2013: 100; subgenus *Duvalius* Delarouzée, 1859 (part.): Pavićević & Popović, 2001: 4.

*Old combinations* – *Duvalius (Duvalites)*: Jeannel,

1923: 10; *Duvalius (Neoduvallius)*: Winkler, 1926: 260; Jeannel, 1928: 553; Moravec *et al.*, 2003: 307; Lohaj *et al.*, 2013: 100; *Duvalius (Duvalius)*: Pavićević & Popović, 2001: 4.

*Type locality* – Village of Bela Reka, 1 100 m.a.s.l., Mt. Murtenica, western Serbia.

*Type series* – From under stones in a forest, village of Bela Reka, 1 100 m.a.s.l., Mt. Murtenica, western Serbia, June 1923, leg. R. Jeannel (holotype male and allotype female).

*Diagnosis* – As presented in the paper of Ćurčić *et al.* (2003c).

*Distribution* – The genus *Rascioduvallius*, comb. n. is currently known only from few caves and deep soil in western Serbia.

*Remarks* – This genus differs from all other phenetically close genera by a set of correlative morphological features as listed in Ćurčić *et al.* (2003c). This set of characteristics is specific to species belonging to the genus, and is not evident within other *Duvalius* and *Duvalius*-like taxa. Lohaj *et al.* (2013) singled out certain its morphological features and mentioned that they are present among other *Duvalius* taxa, but the characters need to be studied in a complex way. They overlooked the fact that the set of correlative morphological features of the genus is unique and do not exist in any other trechine genera. Therefore, we refute its synonymization and the inclusion of the species within *Duvalius (Neoduvallius)*. This fact is confirmed by the opinion of Pavićević & Popović (2001), who mentioned that the criteria according to which *Rascioduvallius cvijici*, comb. n. and *R. stopicensis*, comb. n. are included into the subgenus *Neoduvallius* of *Duvalius* are not satisfactory. However, these authors proposed that the taxa should be transferred into the subgenus *Duvalius* s. str. Jeannel (1928) himself claimed that *Rascioduvallius cvijici*, comb. n. has a particular position in the trechine systematics. He was not sure whether it belongs to the subgenus *Duvalius* (= *Duvalites*) or *Neoduvallius* of *Duvalius*. The same author even admitted that the mentioned

species deserves an isolated generic status due to the presence of complete frontal furrows (Jeannel, 1928). Additionally, Pavićević & Popović (2001) said that it would be inappropriate and even pretentious to establish a new subgenus until the area of Serbia were better covered (when some related species might possibly be discovered). Janák & Moravec (2008) claimed that the recently described trechine *Duvalius*-like genera from Serbia probably represent either groups of species or subgenera. The solution of the taxonomic problem lies in a better knowledge of the diversity of the genus *Duvalius* in the Balkans. Descriptions of additional new species in the area studied will enable us to define the final status of the trechine genera analyzed. The recent finding and description of the third *Rascioduvalius* species, *R. zlatiborensis*, comb. n., which shares the basic correlative morphological characteristics of *Rascioduvalius*, comb. n. (presence of reduced eyes with depigmented ommatidia, deep and complete frontal furrows, longitudinal fissure on fore tibiae, curved pre-ocular furrow, hairy genae, two pairs of elytral discal setae, the same position of the humeral umbilicate setae, and the presence of a similar bifid gutter-formed copulatory piece) confirmed the fact that the genus is valid.

The genus *Rascioduvalius*, comb. n. probably belongs to an old and separate phyletic lineage which originated during the Tertiary (Ćurčić et al., 2003c). The taxon is both an endemic and relict of western Serbia and the Balkan Peninsula.

*RASCIODUVALIUS CVIJICI* (JEANNEL, 1923),  
COMB. N.

*Old combinations* – *Duvalius* (*Duvalites*) *cvijici cvijici*: Jeannel, 1923, 10.

*Duvalius* (*Neoduvalius*) *cvijici cvijici*: Winkler, 1926, 260.

*Duvalius* (*Neoduvalius*) *cvijici cvijici*: Jeannel, 1928, 553.

*Duvalius* (*Duvalius*) *cvijici cvijici*: Pavićević & Popović, 2001, 4.

*Duvalius* (*Neoduvalius*) *cvijici cvijici*: Moravec et al., 2003, 307.

*Duvalius* (*Neoduvalius*) *cvijici cvijici*: Lohaj et al., 2013, 101.

*Type locality* – Village of Bela Reka, 1 100 m.a.s.l., Mt. Murtenica, western Serbia.

*Other localities* – None.

*Description and diagnosis* – As presented in the publications of Jeannel (1923, 1928) and Ćurčić et al. (2003c).

*Distribution* – This species is endogean and can be found under stones in forests on Mt. Murtenica, western Serbia.

*Remarks* – The presence of reduced eyes with depigmented ommatidia, deep and complete frontal furrows, longitudinal fissure on fore tibiae, curved pre-ocular furrow, hairy genae, two pairs of elytral discal setae, position of the humeral umbilicate setae (as stated in description of the genus; Ćurčić et al., 2003c: 484), and presence of a bifid gutter-formed copulatory piece, confirm the fact that this species belongs to the genus *Rascioduvalius*, comb. n., as previously stated by Ćurčić et al. (2003c). Jeannel (1928) and Lohaj et al. (2013) proposed its including in the subgenus *Neoduvalius*, genus *Duvalius*, but this is wrong because the species possesses complete frontal furrows (*vs.* incomplete ones are present in *Neoduvalius* species). Our opinion is supported by Pavićević & Popović (2001), who mentioned that the transfer is under doubt. Lohaj et al. (2013) erroneously stated that *Rascioduvalius cvijici*, comb. n., *R. stopicensis*, comb. n., and *R. zlatiborensis*, comb. n., are probably conspecific (inhabiting both caves and MSS on Mts. Zlatibor and Murtenica, western Serbia) on the basis of morphological differences, but without any argumentation. A dozen observed differences among the species are listed in the papers of Jeannel (1923, 1928) and Ćurčić et al. (2003c, 2005), along with drawings showing some of them. Additionally, the distance between the type localities of *Rascioduvalius cvijici*,

comb. n. (village of Bela Reka, Mt. Murtenica) and *R. zlatiborensis*, comb. n. (Markova Pećina Cave, village of Gornji Ljubiš, Mt. Zlatibor) is around 8 km (not around 2 km, as was stated by Lohaj et al., 2013).

*RASCIODUVALIUS STOPICENSIS* (JEANNEL, 1923), COMB. N.

*Old combinations* – *Duvalius* (*Duvalites*) *cvijici stopicensis*: Jeannel, 1923, 11.

*Duvalius* (*Neoduvalius*) *cvijici stopicensis*: Winkler, 1926, 260.

*Duvalius* (*Neoduvalius*) *cvijici stopicensis*: Jeannel, 1928, 554.

*Duvalius* (*Duvalius*) *cvijici stopicensis*: Pavićević & Popović, 2001, 4.

*Duvalius* (*Neoduvalius*) *cvijici stopicensis*: Moravec et al., 2003, 307.

*Duvalius* (*Neoduvalius*) *cvijici stopicensis*: Lohaj et al., 2013, 101.

*Type locality* – Stopića Pećina Cave, village of Rožanstvo, Mt. Zlatibor, near Užice, western Serbia.

*Other localities* – None.

*Description and diagnosis* – As presented in the publications of Jeannel (1923, 1928) and Čurčić et al. (2003c).

*Distribution* – This species is troglobitic and can be found under stones in the Stopića Pećina Cave on Mt. Zlatibor, western Serbia.

*Remarks* – The presence of reduced eyes with depigmented ommatidia, deep and complete frontal furrows, longitudinal fissure on fore tibiae, curved pre-ocular furrow, hairy genae, two pairs of elytral discal setae, position of the humeral umbilicate setae (as stated in description of the genus; Čurčić et al., 2003c: 484), and the presence of a bifid gutter-formed copu-

latory piece, confirm that this species belongs to the genus *Rascioduvalius*, comb. n., as previously stated by Čurčić et al. (2003c). Jeannel (1928) and Lohaj et al. (2013) proposed its inclusion as a subspecies of the species *cvijici* in the subgenus *Neoduvalius*, genus *Duvalius*, but this is wrong because it possesses complete frontal furrows (*vs.* incomplete ones, present in *Neoduvalius* species). Our opinion is supported by Pavićević & Popović (2001), who mentioned that the transfer is under doubt. The clear differences among *Rascioduvalius cvijici*, comb. n., *R. stopicensis*, comb. n., and *R. zlatiborensis*, comb. n. are mentioned in the papers of Jeannel (1923, 1928) and Čurčić et al. (2003c, 2005), along with accompanying drawings, and these are distinguished as three well-separated species.

*RASCIODUVALIUS ZLATIBORENSIS* ČURČIĆ, BRAJKOVIĆ & ČURČIĆ, 2005, COMB. N.

*Old combination* – *Duvalius* (*Neoduvalius*) *zlatiborensis*: Lohaj et al., 2013, 102.

*Type locality* – Markova (= Ršumska) Pećina Cave, village of Gornji Ljubiš, Mt. Zlatibor, western Serbia.

*Other localities* – None.

*Description and diagnosis* – As presented in the paper of Čurčić et al. (2005).

*Distribution* – This species is troglobitic and inhabits the Markova (= Ršumska) Pećina Cave on Mt. Zlatibor, western Serbia.

*Remarks* – The presence of reduced eyes with depigmented ommatidia, deep and complete frontal furrows, longitudinal fissure on fore tibiae, curved pre-ocular furrow, hairy genae, two pairs of elytral discal setae, and the position of the humeral umbilicate setae (as stated in description of the genus; Čurčić et al., 2003c: 484) confirm that this species belongs to the genus *Rascioduvalius*, comb. n., as originally stated by Čurčić et al. (2003c). Lohaj et al. (2013) proposed including the species in the subgenus *Neoduvalius*, genus *Duvalius*, in spite the fact

that it has complete frontal furrows (*vs.* incomplete ones are present in *Neoduvallius* species). Pavićević & Popović (2001) also do not support such an opinion.

GENUS *CURCICIA* ĆURČIĆ & BRAJKOVIĆ, 2003, COMB. N.

*Etymology* – After Prof. Dr. Božidar Ćurčić, a famous Serbian zoologist.

*Type species* – *Curcicia bolei* (Pretner, 1963), comb. n.

*Other species* – None.

*Synonyms* – Subgenus *Duvallius* Delarouzée, 1859 (part.): Pretner, 1963: 144; Pavićević & Popović, 2001: 3; Moravec et al., 2003: 301; genus *Duvallius* Delarouzée, 1859 (part.): Lohaj et al., 2013: 100.

*Old combinations* – *Duvallius* (*Duvallius*): Pretner, 1963: 144; Pavićević & Popović, 2001: 3; Moravec et al., 2003: 301; *Duvallius*: Lohaj et al., 2013: 100.

*Type locality* – Prekonoška Pećina Cave, village of Prekonoga, near Svrljig, Svrljiške Planine Mts., eastern Serbia.

*Type series* – Prekonoška Pećina Cave, village of Prekonoga, near Svrljig, Svrljiške Planine Mts., eastern Serbia, 26 May 1959, leg. E. Pretner (holotype male).

*Diagnosis* – As presented in the paper of Ćurčić & Brajković (2003).

*Distribution* – The genus *Curcicia*, comb. n. is currently known only from a cave in eastern Serbia.

*Remarks* – This genus differs from all other phenetically close genera (including *Duvallius*) by a set of correlative morphological features as listed in Ćurčić & Brajković (2003). This set of characteristics is specific to species belonging to the genus, and is not evident within other *Duvallius* and *Duvallius*-like taxa. Lohaj et al. (2013) singled out certain of its morpho-

logical features and mentioned that they are present among other *Duvallius* taxa, but the characters need to be studied in a complex way. They overlooked the fact that the set of correlative morphological features of the genus is unique and do not exist in any other trechine genera. Therefore, we refute its synonymization and inclusion in the species within *Duvallius*. Janák & Moravec (2008) are of the opinion that the recently described trechine *Duvallius*-like genera from Serbia probably represent either groups of species or subgenera. The solution of the taxonomic problem lies in a better knowledge of the diversity of the genus *Duvallius* in the Balkans. Descriptions of additional new species in the area studied will enable us to define the final status of all the trechine genera there.

The genus *Curcicia*, comb. n. probably belongs to an old and separate phyletic lineage which originated during the Tertiary (Ćurčić & Brajković, 2003). The taxon is both an endemic and relict of eastern Serbia and the Balkan Peninsula.

*CURCICIA BOLEI* (PRETNER, 1963), COMB. N.

*Old combinations* – *Duvallius* (*Duvallius*) *bolei*: Pretner, 1963, 144; Pavićević & Popović, 2001, 3; Moravec et al., 2003, 301; *Duvallius bolei*: Lohaj et al., 2013, 100.

*Type locality* – Prekonoška Pećina Cave, village of Prekonoga, near Svrljig, Svrljiške Planine Mts., eastern Serbia.

*Other localities* – None.

*Description and diagnosis* – As presented in the paper of Pretner (1963).

*Distribution* – This species is troglobitic and inhabits the Prekonoška Pećina Cave on the Svrljiške Planine Mts., eastern Serbia.

*Remarks* – The absence of eyes, presence of hypertrophied head, deep and complete frontal furrows, smooth genae, absence of longitudinal fissure on

fore tibiae, presence of two pairs of elytral discal setae, hind pronotal angles that are not pointed, position of the humeral umbilicate setae (as stated in the description of the genus; Ćurčić & Brajković, 2003: 28P), and presence of a bifid copulatory piece, confirm that this species belongs to the genus *Curcicia*, comb. n., as stated by Ćurčić & Brajković (2003). Lohaj et al. (2013) erroneously proposed including the species in the genus *Duvalius*. It is of interest to underline that even Pretner (1963) and Pavićević & Popović (2001) claimed that *Curcicia bolei*, comb. n. has an isolated position in the subgenus *Duvalius* and could not be associated with any of the existing congeners. This indicates that the authors were aware of the supraspecific position of the taxon (Ćurčić and Brajković, 2003).

*GENUS JAVORELLA* ĆURČIĆ, BRAJKOVIĆ & ĆURČIĆ, 2003, COMB. N.

*Etymology* – After Mt. Javor, its *terra typica*.

*Type species* – *Javorella javorensis* Ćurčić, Brajković & Ćurčić, 2003, comb. n.

*Other species* – *J. suvoborensis* (Pavićević & Popović, 2001), comb. n. and *J. suvodolensis* Ćurčić, Brajković & Ćurčić, 2003, comb. n.

*Synonyms* – Subgenus *Duvalius* Delarouzée, 1859 (part.): Pavićević & Popović, 2001: 1; genus *Duvalius* Delarouzée, 1859 (part.): Lohaj et al., 2013: 100.

*Old combinations* – *Duvalius (Duvalius)*: Pavićević & Popović, 2001: 1; *Duvalius*: Lohaj et al., 2013: 100.

*Type locality* – Pećina pod Kapilijama Cave, village of Trudovo, near Nova Varoš, Mt. Javor, southwestern Serbia.

*Type series* – Pećina pod Kapilijama Cave, village of Trudovo, near Nova Varoš, Mt. Javor, southwestern Serbia, 20 August 2003, leg. S. Ćurčić (holotype male and four paratype females); *idem*, August 2002, leg. S. Ćurčić & B. Mitić (allotype female and a paratype female).

*Diagnosis* – As presented in the paper of Ćurčić et al. (2003b).

*Distribution* – The genus *Javorella*, comb. n. is currently known from two caves and deep soil in southwestern and western Serbia.

*Remarks* – This genus differs from all other phenetically close genera (including *Duvalius*) by a set of correlative morphological features as listed in Ćurčić et al. (2003b). This set of characteristics is specific to species belonging to the genus, and is not evident within other *Duvalius* and *Duvalius*-like taxa. Lohaj et al. (2013) singled out certain of its morphological features and mentioned that they are present among other *Duvalius* taxa, but the characters need to be studied in a complex way. They overlooked the fact that the set of correlative morphological features of the genus is unique and do not exist in any other trechine genera. Therefore, we refute its synonymization and inclusion in the species within *Duvalius*. Janák & Moravec (2008) are of the opinion that the recently described trechine *Duvalius*-like genera from Serbia probably represent either groups of species or subgenera.

The genus *Javorella*, comb. n. probably belongs to an old and separate phyletic lineage which originated during the Tertiary (Ćurčić et al., 2003b). The taxon is both an endemic and relict of southwestern and western Serbia and the Balkan Peninsula.

*JAVORELLA JAVORENSIS* ĆURČIĆ, BRAJKOVIĆ & ĆURČIĆ, 2003, COMB. N.

*Old combination* – *Duvalius javorensis*: Lohaj et al., 2013, 100.

*Type locality* – Pećina pod Kapilijama Cave, village of Trudovo, near Nova Varoš, Mt. Javor, southwestern Serbia.

*Other localities* – None.

*Description and diagnosis* – As presented in the paper of Ćurčić et al. (2003b).

*Distribution* – This species is troglobitic and inhabits the Pećina pod Kapilijama Cave on Mt. Javor, southwestern Serbia.

*Remarks* – The presence of reduced eyes with depigmented ommatidia, pigmented eye border, deep and complete frontal furrows, smooth genae, longitudinal fissure on fore tibiae, two pairs of elytral discal setae, position of the humeral umbilicate setae (as stated in description of the genus; Ćurčić et al., 2003b: 16), and the presence of a unifold gutter-formed copulatory piece, confirm the fact that this species belongs to the genus *Javorella*, comb. n., as originally stated by Ćurčić et al. (2003b). Lohaj et al. (2013) erroneously proposed the inclusion of all of the *Javorella* species in the genus *Duvalius*.

*JAVORELLA SUVOBORENSIS* (PAVIĆEVIĆ & POPOVIĆ, 2001), COMB. N.

*Old combinations* – *Duvalius* (*Duvalius*) *suvoborensis*: Pavićević & Popović, 2001, 1; *Duvalius suvoborensis*: Lohaj et al., 2013, 100.

*Type locality* – Cave in Brezaci, village of Brezaci, Rajac, near Valjevo, Mt. Suvobor, western Serbia.

*Other localities* – None.

*Description and diagnosis* – As presented in the paper of Pavićević & Popović (2001).

*Distribution* – This species is troglobitic and inhabits the Cave in Brezaci on Mt. Suvobor, western Serbia.

*Remarks* – The presence of reduced eyes with depigmented ommatidia, pigmented eye border, deep and complete frontal furrows, smooth genae, longitudinal fissure on fore tibiae, two pairs of elytral discal setae, position of the humeral umbilicate setae (as stated in the description of the genus; Ćurčić et al., 2003b: 16), and the presence of a unifold gutter-formed copulatory piece, confirm that this species belongs to the genus *Javorella*, comb. n., as stated by Ćurčić et al. (2003b). This species was previously erroneously included in the subgenus *Duvalius* (genus

*Duvalius*) by Pavićević & Popović (2001), as well as in the genus *Duvalius* (without assignment to the subgenus) by Lohaj et al. (2013). Even Pavićević and Popović (2001) think that the species has an isolated position in the subgenus *Duvalius* and cannot be associated with any of existing species groups.

*JAVORELLA SUVODOLENSIS* ĆURČIĆ, BRAJKOVIĆ & ĆURČIĆ, 2003, COMB. N.

*Old combination* – *Duvalius suvodolensis*: Lohaj et al., 2013, 100.

*Type locality* – From under stones, Suvodol valley, village of Debelja, near Nova Varoš, Mt. Javor, southwestern Serbia.

*Other localities* – None.

*Description and diagnosis* – As presented in the paper of Ćurčić et al. (2003a).

*Distribution* – This species is endogean and can be found under stones in valleys on Mt. Javor, southwestern Serbia.

*Remarks* – The presence of reduced eyes with depigmented ommatidia, pigmented eye border, deep and complete frontal furrows, smooth genae, longitudinal fissure on fore tibiae, two pairs of elytral discal setae, and the position of the humeral umbilicate setae (as stated in the description of the genus; Ćurčić et al., 2003b: 16) confirm that this species belongs to the genus *Javorella*, comb. n., as originally stated by Ćurčić et al. (2003a). Lohaj et al. (2013) erroneously proposed including all the *Javorella* species in the genus *Duvalius*.

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