

Data to the earthworm fauna of the Balkan Peninsula, Istria, the Papuk Mountain and the Kamnik-Savinja Alps (Megadrili: Lumbricidae)

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ABSTRACT: Recent earthworm collectings on the Balkan Peninsula, the Papuk Mountain and the Kamnik-Savinja Alps resulted in records of 37 species and subspecies. *Helodrilus balcanicus balcanicus* (Černosvitov, 1931), *H. balcanicus plavensis* (Karaman, 1972), *Dendrobaena montenegrina* Mršić, 1988 and *D. jahorensis* Mršić, 1991 proved to be new for the fauna of Kosovo.

Introduction

The Balkan Peninsula is one of the most important biodiversity centres of Europe (GRIFFITHS et al. 2004). Defining its exact boundaries is difficult due to the different views, here we follow the definition of SZEDERJESI (2017a). Research on the earthworm fauna of the Balkans covers more than a century. The results were comprehensively summarised in the monograph of MRŠIĆ (1991). The exploratory works are still ongoing; however, the intensity differs in the different Balkan countries. Most of the new data are from Serbia (MILUTINOVIĆ et al. 2010, 2015, STOJANOVIĆ et al. 2017, 2018a) and Bulgaria (VALCHOVSKI 2016, 2017, VALCHOVSKI & MISIRLIOĞLU 2017, VALCHOVSKI & SZEDERJESI 2016, VALCHOVSKI et al. 2018).

Scientists of the Hungarian Natural History Museum (Budapest) accomplished several collecting trips to the Balkan Peninsula in the last two decades. These resulted in a whole lot of new faunistical data, and several new species from the different Balkan countries were described recently (SZEDERJESI 2013a, 2013b, 2014, 2015, 2017b, SZEDERJESI & CSUZDI 2012a, 2012b, 2015, SZEDERJESI et al. 2014, 2017).

The aim of this paper is to present the results of the recent earthworm collectings and the unpublished data from the Balkan Peninsula, with additional records from Istria, the Papuk Mountain and the Kamnik-Savinja Alps.

Material and methods

Earthworms were collected by the diluted formaldehyde method (RAW 1959), by digging and searching under stones and beneath bark of fallen logs. The specimens were killed, fixed and preserved in 96% or 75% ethanol, and deposited in the earthworm collection of the Hungarian Natural History Museum (HNHM). The collecting sites are shown on Fig. 1, the site numbers are indicated with italics in the text.

Abbreviations of the collectors' names: DA = Dorottya Angyal, VB = Violeta Berlajolli, LD = László Dányi, TD = Tamás Deli, ZE = Zoltán Erőss, ZF = Zoltán Fehér, JG = Jozef Grego, AH = András Hunyadi, PJ = Péter Juhász, JK = Jenő Kontschán, TK = Tibor Kovács, GM = Gabor Mesaroš, DM = Dávid Murányi, GP = Gellért Puskás, TSz = Tímea Szederjesi, MSz = Mihály Szekeres.

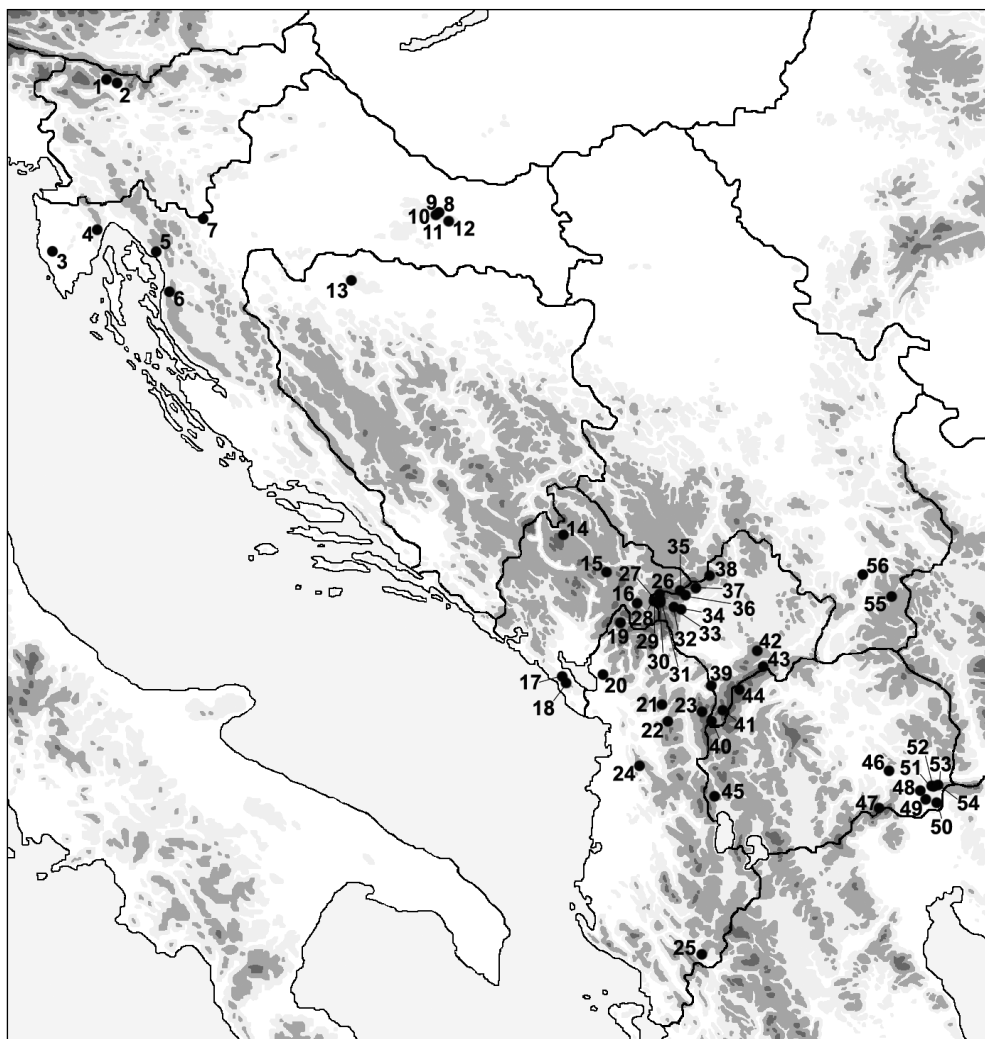


Fig. 1. Collecting localities on the Balkan Peninsula, Istria, the Papuk Mountain and the Kamnik-Savinja Alps.

Faunistical data

LUMBRICIDAE Rafinesque-Schmaltz, 1815

Allolobophora chlorotica (Savigny, 1826) – **Kosovo**: HNHM-17149: 1, No. 37 Istog/Istok District, N of Vrellë/Vrelo, N42°46'29.6" E20°23'58.1", 568 m, 27.05.2014, VB. – **Montenegro**: HNHM-16762: 6, No. 18 Rumija Mts, 1 km above Stari Bar, 180 m, 14.10.2008, LD-ZF-JK-DM. – **Serbia**: HNHM-16885: 1, No. 56 Jablanica district, Leskovacko Polje, Oraovica, Južna Morava River and its shore vegetation NW of the village, 250 m, N42°53.893' E22°02.858', 19.02.2014, DA-LD-TK-DM.

Allolobophora ruzsai Szedzerjesi, 2014 – **Montenegro**: HNHM-17330: 4, No. 15 Sinjajevina Mts, Zoljski Ljevak stream above Polja, 890 m, N42.9634° E19.5267°, 26.05.2018, GP-TSz.

Allolobophora sturanyi sturanyi Rosa, 1895 – **Croatia**: HNHM-17321: 4, *No. 5* Primorje-Gorski Kotar County, Ledenice, ash-maple forest, 250 m, N45.1318° E14.8411°, 21.05.2018, GP-TSz.

Aporrectodea caliginosa (Savigny, 1826) – **Kosovo**: HNHM-17135: 1, *No. 32* Pejë/Peć District, Rugovë/Rugova, N42°39'54" E20°13'49", 733 m, 05.04.2014, VB. – **North Macedonia**: HNHM-16869: 1, *No. 54* Southeastern region, Belasica Mts, Bašibos, Karani Stream in mixed deciduous forest NE of the village, 400 m, N41°19.076' E22°42.434', 20.02.2014, DA-LD-TK-DM; HNHM-16876: 3, *No. 49* Southeastern region, Bogdanci, Luda Mara Stream in grazed pasture NE of the city, 170 m, N41°14.115' E22°38.212', 21.02.2014, DA-LD-TK-DM; HNHM-16879: 1, *No. 48* Southeastern region, Valandovsko Polje, Dedeli, temporary macchia brook W of the village, 150 m, N41°17.036' E22°35.905', 21.02.2014, DA-LD-TK-DM; HNHM-16881: 1, *No. 52* Southeastern region, Valandovsko Polje, Bašibos, Ali Hodza Spring SW of the village, 230 m, N41°18.051' E22°40.912', 20.02.2014, DA-LD-TK-DM. – **Slovenia**: HNHM-16149: 1, *No. 2* above Begunje, pasture/meadow, 14.04.2006, LD-JK; HNHM-16138: 1, *No. 1* Brezje pri Trziču, 684 m, mixed beech-pine forest, 11.04.2006, LD-JK.

Aporrectodea handlirschi (Rosa, 1897) – **North Macedonia**: HNHM-16883: 1, *No. 51* Southeastern region, Valandovsko Polje, Čalakli, sidestream of Anska River and its plane tree gallery E of the village, 170 m, N41°18.071' E22°39.217', 20.02.2014, DA-LD-TK-DM.

Aporrectodea jassyensis (Michaelsen, 1891) – **North Macedonia**: HNHM-16877: 1, *No. 49* Southeastern region, Bogdanci, Luda Mara Stream in grazed pasture NE of the city, 170 m, N41°14.115' E22°38.212', 21.02.2014, DA-LD-TK-DM.

Aporrectodea rosea (Savigny, 1826) – **Croatia**: HNHM-17325: 1, *No. 7* Karlovac County, mixed forest between Zdihovo and Bosanci, 190 m, N45.4326° E15.2416°, 19.05.2018, GP-TSz. – **Kosovo**: HNHM-17141: 1, *No. 31* Pejë/Peć District, Drelë/Drelaj, N42°42'32.7" E20°07'09.4", 1131 m, 04.05.2014, VB. – **North Macedonia**: HNHM-16870: 1, *No. 54* Southeastern region, Belasica Mts, Bašibos, Karani Stream in mixed deciduous forest NE of the village, 400 m, N41°19.076' E22°42.434', 20.02.2014, DA-LD-TK-DM; HNHM-16882: 1, *No. 52* Southeastern region, Valandovsko Polje, Bašibos, Ali Hodza Spring SW of the village, 230 m, N41°18.051' E22°40.912', 20.02.2014, DA-LD-TK-DM.

Aporrectodea sineporis (Omodeo, 1952) – **Croatia**: HNHM-16361: 1, *No. 9* Papuk, Jankovac pass, beech forest, 24.10.2004, DM.

Aporrectodea smaragdina (Rosa, 1892) – **Croatia**: HNHM-17328: 1, *No. 4* Istria, Učka Mt, Poklon, beech forest, 940 m, N45.3099° E14.2123°, 20.05.2018, GP-TSz. – **Kosovo**: HNHM-17437: 1, *No. 38* Pejë/Peć District, N or Ruica Summit, Uvor sink-hole, 20 km on a forest road N of Dushkajë/Duškajë, 1575 m, N42.8796 E20.5512, 22.10.2018, TD-ZE-ZF. – **Montenegro**: HNHM-17332: 1, *No. 16* Andrijevica Municipality, Zoriće, forest stream, 880 m, N42.6815° E19.8658°, 26.05.2018, GP-TSz.

Bimastos eiseni (Levinsen, 1884) – **Montenegro**: HNHM-17331: 2, *No. 15* Sinjajevina Mts, Zoljski Ljevak stream above Polja, 890 m, N42.9634° E19.5267°, 26.05.2018, GP-TSz. – **North Macedonia**: HNHM-16871: 1, HNHM-16880: 1, *No. 54* Southeastern region, Belasica Mts, Bašibos, Karani Stream in mixed deciduous forest NE of the village, 400 m, N41°19.076' E22°42.434', 20.02.2014, DA-LD-TK-DM; HNHM-16875: 1, *No. 53* Southeastern region, Belasica Mts, Bašibos, Anska River and its plane tree gallery at Kočuli settlement, 310 m, N41°18.658' E22°41.717', 20.02.2014, DA-LD-TK-DM.

Bimastos rubidus (Savigny, 1826) – **Croatia**: 16360: 1, *No. 9* Papuk, Jankovac pass, beech forest, 24.10.2004, DM. – **Kosovo**: HNHM-17144: 1, *No. 27* Pejë/Peć District, Rugovë/Rugova, N42°42'28.5" E20°02'32.4", 1243 m, 27.04.2014, VB; HNHM-17429: 1, *No. 35* Pejë/Peć District, E of the mountain pass on the Pejë/Peć to Rožaje road, N of Mt. Zhleb/Žleb, near state border, mixed forest, 1500 m N42.7838 E20.2554, 18.09.2018, ZF-GM; HNHM-17436: 1, *No. 43* Ferizaj/Uroševac District, ca. 3 km S of Gotovushë/Gotovuša, Reservat Strikt i Natyres Gryka, rocky beech-pine forest between Mt. Crni Vrh and Mt. Kokošinje, 1244 m, N42.2308 E21.0799, 18.10.2018, TD-ZE-ZF. – **North Macedonia**: HNHM-16872: 1, *No. 54* Southeastern region, Belasica Mts, Bašibos, Karani Stream in mixed deciduous forest NE of the village, 400 m, N41°19.076' E22°42.434', 20.02.2014, DA-LD-TK-DM; HNHM-16888: 1, *No. 50* Southeastern region, Dojransko Basin, Stari Dojran, shore of Dojran Lake at the village, 150 m, N41°11.015' E22°43.373', 20.02.2014, DA-LD-TK-DM.

Dendrobaena alpina alpina (Rosa, 1884) – **Albania**: HNHM-17337: 1, *No. 19* Bjeshkët e Nemuna (Prokletije) Mts, Gropat e Selcës, stream, 1220 m, 26.05.2018, N42.5404° E19.6970°, GP-TSz.

Dendrobaena attemsi (Michaelsen, 1902) – **Albania**: HNHM-16445: 1, *No. 23* Kukës district, Turaj, open brook and alpine grassland along the Novoselë–Kolesjan road, E of the village, 1800 m, N41°56.594' E20°29.879', 24.06.2007, LD-ZE-ZF-AH-DM.

Dendrobaena luraensis Szederjesi & Csuzdi, 2012 – **Albania**: HNHM-15888: 1, *No. 24* Tiranë district, a spring 10 km E of Qafëmollë, 1200 m, 22.10.2002, ZE-ZF-JK-DM.

Dendrobaena byblica (Rosa, 1893) – **Albania**: HNHM-17297: 1, *No. 21* Mirditë district, Mali i Munellës, E slope, near spring, 1370 m, N41.9714 E20.1166, 30.06.2016, ZE-ZF-MSz-JG. – **Kosovo**: HNHM-17139: 1, *No. 32* Pejë/Peć District, Rugovë/Rugova, N42°39'54" E20°13'49", 733 m, 05.04.2014, VB; HNHM-17150 1 ex., *No. 30* Pejë/Peć District, Rugovë/Rugova, N42°41'54.2" E20°06'21.0", 1047 m, 16.02.2014, VB. – **Montenegro**: HNHM-17334: 6, *No. 16* Andrijevica Municipality, Zoriće, forest stream, 880 m, N42.6815° E19.8658°, 26.05.2018, GP-TSz. – **North Macedonia**: 17297: 2, *No. 45* SW region, Jablanica Mts, Labuništa, 1905 m, 26.06.2014, PJ-TK-DM, HNHM-16942: 1, *No. 47* Vardar region, Kožuf Mts, lake and open brook in alpine grassland towards Ski Kožuf, 1670 m, N41°12.560' E22°13.170', 04.10.2013, TK-DM; HNHM-16943: 2, *No. 44* Polog region, Šar Planina, Vešala (Veshallë), open, rocky stream at the village, 1290 m, N42°03.865' E20°50.866', 01.10.2013, TK-DM.

Dendrobaena cognettii (Michaelsen, 1903) – **Croatia**: HNHM-17324: 1, *No. 3* Istria, mixed forest below Bubani, 25 m, N45.1284° E13.7413°, 20.05.2018, GP-TSz.

Dendrobaena depressa (Rosa, 1893) – **Croatia**: HNHM-17326: 1, *No. 7* Karlovac County, mixed forest between Zdihovo and Bosanci, 190 m, N45.4326° E15.2416°, 19.05.2018, GP-TSz.

Dendrobaena ganglbaueri (Rosa, 1894) – **Croatia**: HNHM-16447: 1, *No. 10* Papuk, springcave of the Jankovac stream, 24.10.2004, DM.

Dendrobaena jahorensis Mršić, 1991 – **Kosovo**: HNHM-17430: 1, *No. 42* Ferizaj/Uroševac District, SE of Jezerc/Jezerca, limestone gorge of Nerodime/Nerodimka River, 5 km upstream from Mala Reka confluence, 780 m, N42.3475 E21.0188, 04.10.2018, ZE-ZF-GM.

Dendrobaena montenegrina Mršić, 1988 – **Kosovo**: HNHM-17428: 1, *No. 35* Pejë/Peć District, E of the mountain pass on the Pejë/Peć to Rožaje road, N of Mt. Zhleb/Žleb, near state border, mixed forest, 1500 m, N42.7838 E20.2554, 18.09.2018, ZF-GM.

Dendrobaena papukiana Mršić, 1988 – **Croatia**: HNHM-16362: 2, *No. 9* Papuk, Jankovac pass, beech forest, 24.10.2004, DM.

Dendrobaena veneta (Rosa, 1886) – **Albania**: HNHM-16459: 1, *No. 20* Shkodër district, Rrash, Vrak spring and its outlet stream, 50 m, 16.04.2006, ZE-ZF-AH-DM; HNHM-17448: 1, Delvinë district, Gjerë Mts, Muzinë, Syri i Kaltër, karst springs W of the village, N39°55.286' E20°11.330', 155 m, 13.10.2004, ZF-JK-DM.

Eisenia fetida (Savigny, 1826) – **Kosovo**: HNHM-17148: 1, *No. 37* Istog/Istok District, N of Vrellë/Vrelo, N42°46'29.6" E20°23'58.1", 568 m, 27.05.2014, VB. – **North Macedonia**: HNHM-16868: 3, *No. 46* Vardar region, Demir Kapija, Vardar River and its willow gallery E of the city, 150m, N41°24.316' E22°16.042', 22.02.2014, DA-LD-TK-DM.

Eisenia lucens (Waga, 1857) – **Serbia**: HNHM-15518: 1, 15519: 1, *No. 55* Surdulica, N42°40.396' E22°16.965', 890 m, 08.04.2006, DM.

Eisenia spelaea (Rosa, 1901) – **Croatia**: HNHM-15507: 1, *No. 11* Papuk Mts, from stream, 24.10.2004, DM.

Eiseniella tetraedra (Savigny, 1826) – **Kosovo**: HNHM-17137: 1, HNHM-17145: 1, *No. 27* Pejë/Peć District, Rugovë/Rugova, N42°42'28.5" E20°02'32.4", 1243 m, 27.04.2014, VB; HNHM-17143: 1, *No. 30* Pejë/Peć District, Rugovë/Rugova, N42°41'54.2" E20°06'21.0", 1047 m, 16.02.2014, VB; HNHM-17431: 3, *No. 26* Pejë/Peć District, W of Hajla Summit, springs on subalpine grassland (1 km from Koshutanë/Košutane to Bogë/Boga + 4 km on a road to the North), 1880 m, N42.7649 E20.1, 01.10.2018, ZE-ZF-GM. – **Montenegro**: HNHM-14991: 1, *No. 14* Durmitor Mts, Žabljak, 14.08.2004, DM. – **North Macedonia**: HNHM-16874: 1, *No. 53* Southeastern region, Belasica Mts, Bašibos, Anska River and its plane tree gallery at Kočuli settlement, 310 m, N41°18.658' E22°41.717', 20.02.2014, DA-LD-TK-DM.

Helodrilus balcanicus balcanicus (Černosvitov, 1931) – **Kosovo**: HNHM-17142: 1, *No. 27* Pejë/Peć District, Rugovë/Rugova, N42°42'28.5" E20°02'32.4", 1243 m, 27.04.2014, VB; HNHM-17147: 3, *No. 36* Pejë/Peć District, Radac/Radovac, N42°44'16" E20°18'21", 588 m, 2014, VB.

Helodrilus balcanicus plavensis (Karaman, 1972) – **Kosovo**: HNHM-17134: 1, *No. 32* Pejë/Peć District, Rugovë/Rugova, N42°39'54" E20°13'49", 733 m, 05.04.2014, VB; HNHM-17426: 4, *No. 33* Pejë/Peć District, Rugovo Gorge, 3.5 km W of the Patriarchate Monastery, 650 m, in spring, N42.6651 E20.2309, 18.09.2018, ZF-GM. – **Montenegro**: HNHM-17333: 4, *No. 16* Andrijevica Municipality, Zoriće, forest stream, 880 m, N42.6815° E19.8658°, 26.05.2018, GP-TSz.

Lumbricus rubellus Hoffmeister, 1843 – **Albania**: HNHM-16958: 2, *No. 22* Mirditë district, Mali i Shentit, sinkhole on the SW part of the plateau, in a cave, 1364 m, 23.06.2014, DA-JG. – **Croatia**: HNHM-17323: 1, *No. 3* Istria, mixed forest below Bubani, 25 m, N45.1284° E13.7413°, 20.05.2018, GP-TSz; HNHM-16423: 1, *No. 8* Papuk, Drenovac, stream bank, pine forest, 20.04.2004, JK; HNHM-16359: 1, *No. 9* Papuk, Jankovac pass, beech forest, 24.10.2004, DM. – **Kosovo**: HNHM-17136: 1, HNHM-17140: 2, *No. 31* Pejë/Peć District, Drelë/Drelaj, N42°42'32.7" E20°07'09.4", 1131 m, 04.05.2014, VB; HNHM-17138: 2, *No. 32* Pejë/Peć District, Rugovë/Rugova, N42°39'54" E20°13'49", 733 m, 05.04.2014, VB; HNHM-17425: 3, *No. 41* Prizren District, S of Brod, along the path from Hotel Arxhena to the ski station,

1580 m, streamside gallery forest, N41.9619 E20.71, 20.09.2018, ZF-GM; HNHM-17427: 1, *No. 28* Pejë/Peć District, Haxhaj/Hashaj, Haxhaj Spring, 1250 m, in/near spring, stream gallery, N42.7082 E20.0486, 19.09.2018, ZF-GM; HNHM-17433: 1, *No. 40* Prizren District, 10 km S of Restelicë/Rastelica, streamside grassland, 1830 m, N41.892 E20.6234, 21.10.2018, TD-ZE-ZF; HNHM-17435: 1, *No. 39* Prizren District, E side of Mt. Koritnik, 6.5 km from the Rapçë/Rapča to Kërsteç/Krstac road on a forest path, 1880 m, burnt beech-pine forest, subalpine grassland, N42.0827 E20.5831, 20.10.2018, TD-ZE-ZF; HNHM-17438: 6, *No. 38* Pejë/Peć District, N or Ruica Summit, Uvor sink-hole, 20 km on a forest road N of Dushkajë/Duškajja, 1575 m, N42.8796 E20.5512, 22.10.2018, TD-ZE-ZF. – **North Macedonia**: HNHM-16873: 1, *No. 51* Southeastern region, Valandovsko Polje, Čalakli, sidestream of Anska River and its plane tree gallery E of the village, 170 m, N41°18.071' E22°39.217', 20.02.2014, DA-LD-TK-DM; HNHM-16886: 1, *No. 49* Southeastern region, Bogdanci, Luda Mara Stream in grazed pasture NE of the city, 170 m, N41°14.115' E22°38.212', 21.02.2014, DA-LD-TK-DM; HNHM-16887: 1, *No. 53* Southeastern region, Belasica Mts, Bašibos, Anska River and its plane tree gallery at Koçuli settlement, 310 m, N41°18.658' E22°41.717', 20.02.2014, DA-LD-TK-DM.

Lumbricus terrestris Linnaeus, 1758 – **Croatia**: HNHM-16422: 1, *No. 12* Papuk, Kutjevo, 1 km N, stream bank, 20.04.2004, JK.

Octodrilus bretscheri (Zicsi, 1969) – **Croatia**: HNHM-17321: 1, *No. 5* Primorje-Gorski Kotar County, Ledenice, ash-maple forest, 250 m, N45.1318° E14.8411°, 21.05.2018, GP-TSz.

Octodrilus complanatus (Dugčs, 1828) – **Albania**: HNHM-17446: 1, Delvinë district, Gjerë Mts, Muzinë, Syri i Kaltër, karst springs W of the village, N39°55.286' E20°11.330', 155 m, 13.10.2004, ZF-JK-DM. – **Croatia**: HNHM-17320: 1, *No. 5* Primorje-Gorski Kotar County, Ledenice, ash-maple forest, 250 m, N45.1318° E14.8411°, 21.05.2018, GP-TSz.

Octodrilus croaticus (Rosa, 1895) – **Albania**: HNHM-16959: 1, *No. 25* Përmet district, Nemerçkë Mts, gorge ca. 2 km SW of Draçovë, 450 m, rocky forest, 29.06.2014, DA-ZE-ZF-JG; HNHM-16460: 1, *No. 20* Shkodër district, Rrash, Vrak spring and its outlet stream, 50 m, 16.04.2006, ZE-ZF-AH-DM.

Octodrilus lissaensis (Michaelsen, 1891) – **Croatia**: HNHM-17327 1, *No. 4* Istria, Učka Mt, Poklon, beech forest, 940 m, N45.3099° E14.2123°, 20.05.2018, GP-TSz; HNHM-16373: 1, *No. 6* Velebit Mts, Starigrad, Bilasica, 44°50.621N 14°58.018E, 1189 m, beech forest, 30.04.2007, LD.

Octodrilus transpadanus (Rosa, 1884) – **Albania**: HNHM-17447: 1, Delvinë district, Gjerë Mts, Muzinë, Syri i Kaltër, karst springs W of the village, N39°55.286' E20°11.330', 155 m, 13.10.2004, ZF-JK-DM. – **Bosnia-Herzegovina**: HNHM-16068: 1, *No. 13* Banja Luka region, Kozara Mts, Kozarac, 450 m, 24.05.2012, TK-GP.

Octodrilus velebiticus Mršić, 1991 – **Croatia**: HNHM-16374: 1, *No. 6* Velebit Mts, Starigrad, Bilasica, 44°50.621N 14°58.018E, 1189 m, beech forest, 30.04.2007, LD.

Octolasion lacteum (Örley, 1881) – **Albania**: HNHM-17335: 1, *No. 19* Bjeshkët e Nemuna (Prokletije) Mts, Gropat e Selcës, stream, 1220 m, 26.05.2018, N42.5404° E19.6970°, GP-TSz. – **Croatia**: HNHM-16358: 1, *No. 9* Papuk, Jankovac pass, beech forest, 24.10.2004, DM – **Kosovo**: HNHM-17146: 1, *No. 34* Pejë/Peć District, Pejë/Peć, 569 m, 26.04.2014, VB; HNHM-17432: 1, *No. 29* Pejë/Peć District, 2.5 km from Kuqishtë/Kučişte to Bogë/Boga, 1180 m, streamside pine forest, N42.7073 E20.0609, 18.09.2018, ZF-GM; HNHM-17434: 1, *No. 39* Prizren District, E side of Mt. Koritnik, 6.5 km from the Rapçë/Rapča to Kërsteç/Krstac road on a forest path, 1880 m, burnt beech-pine forest, subalpine grassland, N42.0827 E20.5831, 20.10.2018, TD-ZE-ZF. – **Montenegro**: HNHM-17329: 1, *No. 17* Rumija Mts, Sutorman, Đoloza spring, mixed forest, 760 m, N42.1573° E19.1017°, 25.05.2018, GP-TSz. – **North Macedonia**: HNHM-16878: 1, *No. 49* Southeastern region, Bogdanci, Luda Mara Stream in grazed pasture NE of the city, 170 m, N41°14.115' E22°38.212', 21.02.2014, DA-LD-TK-DM; HNHM-16884: 1, *No. 51* Southeastern region, Valandovsko Polje, Čalakli, sidestream of Anska River and its plane tree gallery E of the village, 170 m, N41°18.071' E22°39.217', 20.02.2014, DA-LD-TK-DM.

Discussion

The recent expeditions resulted in 37 earthworm species and subspecies collected from different parts of the Balkan Peninsula and some surrounding areas.

Based on ŠAPKAREV (1975) and STOJANOVIĆ et al. (2018b), *Helodrilus balcanicus balcanicus* and *H. balcanicus plavensis* are new for the fauna of Kosovo. Both are broad range Balkan endemics (TRAKIĆ et al. 2016) originally described from North Macedonia (ČERNOSVITOV 1931) and Montenegro (KARAMAN 1972), respectively.

Dendrobaena montenegrina and *D. jahorensis* also represent new records for Kosovo. *D. montenegrina* was known so far only from its type locality (Crno Jezero, Durmitor, Montenegro). *D. jahorensis* was described from Jahorina, Bosnia-Herzegovina (MRŠIĆ 1991). The character states of our specimen fit well with the original description, except the number of the vesicles, which is three pairs instead of four.

The *Dendrobaena attemsi* specimen found in Albania also exhibits slight difference from the typical *attemsi* character states: its tubercles are shorter (31–32 vs. 30–32). With its brown-reddish pigmentation it most resembles *D. vranicensis* Mršić, 1991, which is now treated as a synonym of *D. attemsi* (CSUZDI 2012), but it differs in the number of vesicles (three pairs vs. two). Nevertheless, we have to take into account that *D. attemsi* is a widely distributed species with great morphological variability that often manifests in the extension of the tubercles (SZEDERJESI 2017a).

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