

## A checklist of the leeches (Annelida: Hirudinea) of Montenegro

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Received 1 December 2014 | Accepted 25 December 2014 | Published online 8 January 2015.

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### Abstract

Based on published records and original data from recent research, a list is presented of the leeches (Hirudinea) of Montenegro. It includes 29 species and subspecies in 13 genera and 5 families. Numerous new records are reported; *Glossiphonia paludosa* (Carena, 1824), *Helobdella stagnalis* (Linnaeus, 1758), *Alboglossiphonia hyalina* (O. F. Müller, 1774), *Alboglossiphonia striata* (Apáthy, 1888), *Piscicola pawlowskii* (Sket, 1968), *Piscicola respirans* Troschel, 1850, *Hirudo verbana* Carena, 1820, *Erpobdella nigricollis* (Brandes, 1900) and *Erpobdella vilnensis* (Liskiewicz, 1925), are reported for the first time for Montenegro. The characteristics of the leeches fauna in the treated area are briefly outlined.

**Key words:** Hirudinea, leeches, first record, faunistics, checklist, Montenegro, Balkan.

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### Introduction

The research of leeches biodiversity in Montenegro has a relatively long tradition (Blanchard, 1905). Nevertheless, the fauna of Montenegro is still incompletely known (e.g., Sket 1968, Šapkarev 1975). During the last decade more authors published informations on leeches (Grosser and Pešić 2005, Grosser *et al.* 2007, Utevsky *et al.* 2013). However, despite a growing number of data published during the the last decades, leeches records from Montenegro, as well the other Balkan countries, remain dispersed.

This paper has two main objectives, namely (i) compiling data on the Montenegrin leeches and their current geographic distribution in Montenegro, and (ii) presenting georeferenced distribution records of leech species collected from 2004 up to now (available at <http://ecol-mne.com/wp-content/uploads/2014/12/Appendix.kmz>), in order to contribute to the better knowledge of the region's biodiversity, and to understand the major gaps in our knowledge on the leeches of Montenegro.

### Material and Methods

Using published records and original data, a checklist was compiled of the leech fauna of Montenegro. The species referred to in postgraduate theses and scientific meetings are no formal publications and are consequently not included in this paper.

For new records leeches were collected by hand or with pincers from the underside of hard substratum (stones, wood, roods) and on submerged plants in the water, on the banks, as well as on shore. The collected leeches were firstly transfered into 10 % ethanol, after which they were washed to remove the

mucus and preserved in 70 - 75 % ethanol. The material is deposited in the author's collections. The nomenclature and taxonomy followed Nesemann and Neubert (1999).

## Systematics

### Family Glossiphoniidae Vaillant

#### Genus *Theromyzon* Philippi, 1867

##### *Theromyzon tessulatum* (Müller, 1774)

**Remarks:** Reported by Sket (1968) from glacial Lake Plav in north-eastern Montenegro.

**Distribution:** Holarctic.

#### Genus *Glossiphonia* Johnson, 1816

##### *Glossiphonia complanata complanata* (Linnaeus, 1758)

**New records:** Podgorica, Komani, Sitnica river, 42°28'46.85"N, 19° 8'4.20"E, 08.iv.2005 Pešić & Grosser, 2 specimens; ; River Zeta near Spuž town, 42°30'42.01"N, 19°11'51.33E," 05.viii.2006 Pešić & Grosser, one specimen; Danilovgrad, spring Svinjiška vrela, 42°38'18.24"N, 19° 0'26.33"E, 15.vii.2011, Gligorović, one specimen; Podgorica, Skadar Lake near Vitoja, 42°19'29.76"N, 19°21'45.56"E, 30.viii.2014, Pešić & Gligorović, 2 specimens.

**Remarks:** *Glossiphonia complanata* is widely distributed in Montenegro (Blanchard 1905; Augener 1936-37, Sket 1968).

**Distribution:** Holarctic.

##### *Glossiphonia concolor* (Apathy, 1888)

**New records:** Plav, spring of Lim River, 42°36'21.48"N, 19°55'40.37"E, 14.x.2005, Pešić, 5 specimens; Danilovgrad, village Martinići, stream Rimanić, 42°31'31.46"N, 19°11'34.21"E, 19.04.2006 Pešić & Grosser, one specimen; *ibid.*, 21.v.2008 Pešić, one specimen; Danilovgrad, Sušica river, Orašja Jama, 42°31'53.43"N, 19°5'36.77"E, 10.viii.2010 Pešić, 8 specimens.

**Remarks:** Reported by Sket (1968) from glacial Lake Plav in north-eastern Montenegro.

**Distribution:** Northern, central and eastern Europe.

##### *Glossiphonia nebulosa* Kalbe, 1964

**New records:** Pljevlja, spring Prkos, 43°21'12.17"N, 19°20'41.30"E, 01.v.2008 Pešić, 11 specimens; Podgorica, Mareza spring, 42°28'47.92"N, 19°10'56.09"E, 08.iv.2005 Pešić & Grosser, 9 specimens; *ibid.*, 08.x.2005 Pešić, 2 specimens; Podgorica, Mareza, canals, 42°28'26.86"N, 19°10'47.37"E, 04.ii.2006 Pešić, one specimen; *ibid.*, 08.iv.2005 Pešić & Grosser, 8 specimens; Skadar Lake, sublacustrine spring Karuč, 42°21'29.80"N, 19° 6'20.84"E, 09.viii.2006 Pešić et Grosser, 6 specimens; Cetinje, River Crnojevića, stillwater channel near River Crnojevića, 42°21'17.78"N, 19°1'11.14"E, 09.viii.2006, Pešić & Grosser, 16 specimens; little stream and pool near Crno Jezero (Black Lake), 43° 9'6.87"N, 19° 6'6.89"E, 11.viii.2006, Pešić & Grosser, 5 specimens.

**Remarks:** This species was found in the glacial Lake Plav in north-eastern Montenegro (Sket 1968) and recently reported from the Skadar Lake (Utevsky *et al.* 2013). The latter record represents the southernmost spot of the species range in Europe known so far. However, the specimens from Skadar Lake clearly differs from typical *nebulosa* specimens by the reduced papillae (Fig. 1B). Additional material and application of molecular techniques could be helpful for understanding the taxonomic position of the populations with reduced papillae from Montenegro assigned to *G. nebulosa*.

**Distribution:** *Glossiphonia nebulosa* occurs in Central Europe, along the complete length of the Danube and in south-western Turkey. However, its distribution is not well known because this leech can be easily confused with the related snail leeches *Glossiphonia complanata* (Linnaeus, 1758) and *G. concolor* (Apathy, 1888).

***Glossiphonia paludosa* (Carena, 1824)**

**New records:** Skadar Lake, sublacustrine spring Karuč, 42°21'29.80"N, 19°6'20.84"E, 09.viii.2006 Pešić & Grosser, one specimen.

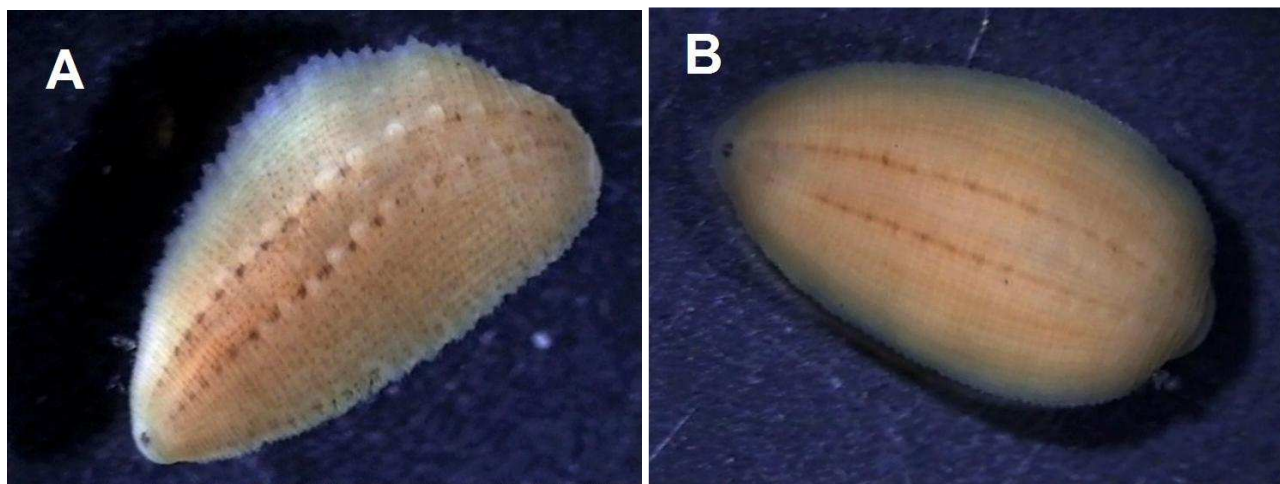
**Remarks:** New for Montenegro.

**Distribution:** Italy, Switzerland, France, Austria, Slovakia, Czech Republic, Hungary, Romania, tributaries of the Black Sea and adjacent regions.

***Glossiphonia cf. pulchella* Sket, 1968**

**New records:** Skadar Lake, sublacustrine spring Karuč, 42°21'29.80"N, 19°6'20.84"E, 09.viii.2006 Pešić & Grosser, 3 specimens

**Remarks:** The specimens examined from Skadar Lake shows a general conformity with *Glossiphonia pulchella* Sket, 1968, a species known only from the littoral zone of Lake Ohrid. Our assignment to *G. pulchella* is based mainly on non-identity with alternative species, additional material and comparison with the specimens from Ohrid Lake are necessary to clarify the taxonomy of these specimens.



**Figures 1.** A – *Glossiphonia cf. pulchella* Sket, 1968, Skadar Lake; sublacustrine spring Karuč. B – *Glossiphonia cf. nebulosa*, specimen from sublacustrine spring Karuč (Skadra Lake) with reduced papillae.

**Genus *Batracobdelloides* Oosthuizen in Sawyer, 1986**

***Batracobdelloides moogi* Nesemann & Csanyi, 1995**

**Remarks:** This species was reported by Grosser and Pešić (2005) from a pond in central part of Montenegro (Danilovgrad, between Lazine and Kosić village, 42°32'33.68"N, 19°7'23.05"E).

**Distribution:** Hungary, Austria, Slovakia, Montenegro.

**Genus *Helobdella* R. Blanchard, 1896**

***Helobdella stagnalis* (Linnaeus, 1758)**

**New records:** Cetinje, River Crnojevića, stillwater channel near River Crnojevića, 42°21'17.78"N, 19°1'11.14"E, 9.viii.2006, Pešić & Grosser, 2 specimens; Durmitor Mt., little stream and pool near Crno Jezero (Black Lake), 43° 9'6.87"N, 19° 6'6.89"E, 11.viii.2006 Pešić & Grosser, 4 specimens; Šavnik, Pošćenjsko Lake, 42°58'54.10"N, 19° 4'4.49"N, 14.ix.2012, Pešić, 9 specimens.

**Remarks:** New for Montenegro.

**Distribution:** Holarctic.

**Genus *Alboglossiphonia* Lukin, 1976**

***Alboglossiphonia heteroclita* (Linnaeus, 1758)**

**New records:** Skadar Lake near Vranjina, 42°16'52.05"N, 19°8'19.19"E, 25.v.2005 Pešić, 2 specimens; Skadar Lake, sublacustrine spring Karuč, 42°21'29.80"N, 19° 6'20.84"E, 09.viii.2006, Pešić & Grosser, one specimen.

**Remarks:** This species was subdivided in the past in three varieties, recently regarded as separate species within the genus *Alboglossiphonia*: *A. heteroclita* (Linnaeus, 1761) (syn. *G. h. var. papillosa* (Braun, 1805)), *A. hyalina* (O. F. Müller, 1774) and *A. striata* (Apáthy, 1888).

*Alboglossiphonia heteroclita* was reported from Skadar Lake and a spring in Pljevlja (Blanchard 1905, Sket 1968, respectively) but without information which variety they found. Therefore, we can not assign their findings of *G. heteroclita* to any of the aforementioned *Alboglossiphonia*-species.

**Distribution:** Holarctic.

***Alboglossiphonis hyalina* (O. F. Müller, 1774)**

**New records:** Skadar Lake area, Virpazar, River Oraoštica, pool, 42°14'51.39"N, 19°4'47.53"E, 06.iv.2005 Pešić & Grosser, 3 specimens.

**Remarks:** New for Montenegro.

**Distribution:** Central and East Europe.

***Alboglossiphonia striata* (Apáthy, 1888)**

**New records:** Skadar Lake, sublacustrine spring Karuč, 42°21'29.80"N, 19°6'20.84"E, 24.v.2005 Pešić, 2 specimens; *ibid.*, 09.viii.2006 Pešić & Grosser, 2 specimens.

**Remarks:** The taxonomical status of *Alboglossiphonia striata* is not clear. The leech was regarded as a variety of *Alboglossiphonia heteroclita* for a long time. New for Montenegro.

**Distribution:** Central and eastern Europe.

**Genus *Hemiclepis* Vejdovsky, 1884**

***Hemiclepis marginata* (Müller, 1774)**

**New records:** Podgorica, Komani, spring Crno Oko, 42°29'3.76"N, 19°9'14.95"E, 08.iv.2005, Pešić & Grosser, one specimen.

**Remarks:** Reported by Sket (1968) from glacial Lake Plav in north-eastern Montenegro.

**Distribution:** Palaearctic.

**Genus *Placobdella* R. Blanchard, 1893**

***Placobdella costata* (Fr. Müller, 1846)**

**New records:** Podgorica, Mareza, Canals, 42°28'26.86"N, 19°10'47.37"E, 04.02.2006 Pešić, one specimen; Spuž, small spring near the Zeta river bank, 42°30'39.27"N, 19°11'58.17"E, 10.viii.2010, Pešić, one specimen; Skadar Lake, Malo Blato, village Bobija, 42°20'45.33"N, 19°9'15.95"E, 22.v.2008 Pešić, one specimen; Danilovgrad, River Sušica, Orašja Jama, 42°31'53.43"N, 19°5'36.77"E, 10.viii.2010 Pešić, one specimen; Danilovgrad, pond between Lazine and Kosić village, 42°32'33.68"N, 19°7'23.05"E, 04.iv.2005, 04.iv.2005, Pešić & Grosser, 4 specimens; *ibid.*, 12.viii.2006 Pešić & Grosser, 5 specimens; *ibid.*, 12.viii.2010 Pešić & Grosser, one specimen; *ibid.*, 12.viii.2010 Pešić, one specimen.

**Remarks:** This species was reported by Šapkarev (1984) from the Skadar Lake (near Virpazar).

**Distribution:** Mediterranean species, known eastwards to the Ukraine, in the southeast from Greece, Turkey, the Levant to the southern Arabian Peninsula (Nesemann and Neubert 1999).

**Family Piscicolidae Johnston, 1865**

**Genus *Piscicola* De Blainville, 1818**

***Piscicola pawlowskii* (Sket, 1968)**

**New records:** Danilovgrad, River Zeta near village Martinici, 42°32'10.59"N, 19°9'38.66"E, vi.2007, Pešić one specimen.

**Remarks:** New for Montenegro.

**Distribution:** Eastern Europe, Balkans.

***Piscicola respirans* Troschel, 1850**

**New records:** River Tara near Mojkovac, 42°57'25.47"N, 19°34'34.77"E, 20.iv.2012, Pešić, 2 specimens.

**Remarks:** New for Montenegro.

**Distribution:** Central Europe, from France to the Carpathian Basin, the complete Danube region, northern Anatolia to the Caspian Sea (Nesemann and Neubert 1999).

**Family Haemopidae Richardson, 1969****Genus *Haemopsis* Savigny, 1822*****Haemopsis sanguisuga* (Linnaeus, 1758)**

New records: Biogradska Gora N.P. little Stream near Biogradsko Lake, 42°53'55.23"N, 19°36'3.43"E, 07.viii.2006 Pešić & Grosser one specimen; Biogradsko Gora N.P., Biogradsko Lake, 42°54'0.68 N, 19°35'44.85"E, 07.viii.2006 Pešić & Grosser 10 specimens; little stream and pool near Crno Jezero (Black Lake), 43° 9'6.87"N, 19°6'6.89"E, 11.viii.2006 Pešić & Grosser 8 specimens; Pljevlja, village Zenica, spring Malov Potok, 43°20'8.15, 19°20'25.59"E, 02.v.2008, Pešić 4 specimens; Podgorica, spring Mareza, 42°28'47.92"N, 19°10'56.09"E, 19.v.2008, Pešić one specimen; Podgorica, Komani, Sitnica river, 42°28'46.85"N, 19° 8'4.20"E, 08.04.2005 Pešić & Grosser 2 specimens; Danilovgrad, small stream near River Zeta, 06.viii.2005 Pešić one specimen; River Zeta near Spuž town, 42°30'42.01"N, 19°11'51.33E," 05.viii.2006 Pešić & Grosser, 3 specimens; Spuž, small spring near the Zeta river bank, 42°30'39.27"N, 19°11'58.17"E, 10.viii.2010, Pešić, one specimen; Danilovgrad, Ponikvica, spring-pool, 42°40' 29.694"N, 19° 15'59.479"E, 18.viii.2010, Pešić 2 specimens; Lukavica Mt., Bare Bojovića, spring Babino Sicalo, 42°48'14.929"N, 19°12'53.809"E, 05.viii.2010, Pešić 3 specimens; Cetinje, River Crnojevića, stillwater channel near River Crnojevića, 42°21'17.78"N, 19°1'11.14"E, 08.ix.2012, Pešić, one specimen; Danilovgrad, Viš village, spring at the bank of Sušica river, 42°37'24.23"N, 19° 2'33.33"E, 15.vi.2011 Gligorović, one specimen.

**Records from the study area:** This species is widely distributed in Montenegro (Blanchard 1905, Remy 1953, Sket 1968).

**Distribution:** Palaearctic.

**Family Hirudinidae Whitman, 1886****Genus *Hirudo* Linnaeus, 1758*****Hirudo medicinalis* (Linnaeus, 1758)**

**Remarks:** This species was reported from Krupac (Blanchard 1905) and Pošćenska and Plavsko Lake (Sket 1968). However, as this species was in the past confused with *Hirudo verbana*, all former records from the Balkan area are questionable.

**Distribution:** North, central and south-western Europe.

***Hirudo verbana* Carena, 1820**

**Material examined:** Danilovgrad, village Martinići, pond Moromiš, 42°31'59.62"N, 19°12'3.10"E, 2004-2005, Pešić 5 specimens; Danilovgrad, pond between Lazine and Kosić village, 42°32'33.68"N, 19°7'23.05"E, 04.iv.2005 Pešić & Grosser, 2 specimens, *ibid.*, 12.viii.2006 Pešić & Grosser, 3 specimens; Niksic, Župa, pool, 42°43'22.37"N, 19°7'38.06" "E, 15.xi.2005 Pešić, one specimen; Nikšić, pool near village Počekovići, 42°47'43.14"N, 18°30'37.24"E, 05.vi.2014 Pešić & Gligorović, one specimen; Petrovac, Buljarica, pond, 42°11'37.95"N, 18°58'8.84"E, 12.x.2014, Gligorović one specimen.

**Remarks:** See under *H. medicinalis*. New for Montenegro.

**Distribution:** Autochthonous from south-eastern Europe to the Near East. It was introduced to North America.

**Familij Erpobdellidae R. Blanchard, 1894**



**Genus *Erpobdella* De Blainville, 1818*****Erpobdella nigricollis* (Brandes, 1900)**

**New records:** Podgorica, Skadar Lake area, spring Kaludjerovo oko, 42°22'28.31"N, 19°8'58.64"E, 12.viii.2010, Pešić, 4 specimens; *ibid.*, 28.viii.2012, Pešić, one specimen.

**Remarks:** New for Montenegro.

**Distribution:** Central and southeast Europe. In the Balkan this species occurs in the Danube system in the northern and eastern part. The record from Skadar lake seems to represent the southernmost spot of the species range known so far.

***Erpobdella octoculata* (Linnaeus, 1758)**

**New records:** Plav, Spring of river Lim, 42°36'21.48"N, 19°55'40.37"E, 14.x.2005 Pešić, 10 specimens; Montenegro, River Lim near Dobrakovo, 43° 8'26.39"N, 19°46'47.46"E, vii.2006, Pešić 3 specimens; Skadar Lake near Vranjina village, 42°16'52.05"N, 19° 8'19.19"E, 24.iii.2005, Pešić, 2 specimens; Skadar Lake, sublacustrine spring Karuč, 42°21'29.80"N, 19° 6'20.84"E, 09.viii.2006 Pešić & Grosser, 9 specimens; Durmitor Mt., little stream and pool near Crno Jezero (Black Lake), 43° 9'6.87"N, 19° 6'6.89"E, 11.viii.2006 Pešić et Grosser 8 specimens; Podgorica, Komani Crno oko spring, 08.iv.2005, Pešić & Grosser, 3 specimens; Podgorica, Tuzi, Skadar lake near Vitoja, 42°19'29.76"N, 19°21'45.56"E, 10.v.2012 Pešić, 5 specimens; *ibid.*, 30.viii.2014, Pešić & Gligorović, 10 specimens; Podgorica, Tološi, Mareza, canal, 42°28'26.86"N, 19°10'47.37"E, 8.iv.2005 Pešić & Grosser, 16 specimens; Šavnik, Pošćenjsko Lake, 42°58'54.10"N, 19° 4'4.49"N, 14.ix.2012, Pešić, 3 specimens.

**Remarks:** This species is widely distributed in Montenegro (Šapkarev 1984, Blanchard 1905, Augener, 1936-37, Sket, 1968).

**Distribution:** Central to south-eastern Europe.

***Erpobdella testacea* (Savigny, 1822)**

**New records:** Ulcinj, Šasko Lake, 41°58'37.97"N, 19°20'20.19"E, 10.viii.2006 Pešić & Grosser, one specimen.

**Remarks:** Recently this species was reported by Utevsky *et al.* (2013) from Skadar Lake, where it co-occurs with *Glossiphonia nebulosa* within 0.5 m off the stony shore of the lake.

**Distribution:** Palaearctic.

***Erpobdella vilnensis* (Liskiewicz, 1925)**

**New records:** Durmitor Mt., little stream and pool near Crno Jezero (Black Lake), 43° 9'6.87"N, 19° 6'6.89"E, 11.viii.2006 Pešić & Grosser 16 specimens; Lukavica Mt., Bare Bojovića, spring Babino Sicalo, 42°48'14.929"N, 19°12'53.809"E, 05.vii.2010 Pešić one specimen; Danilovgrad, Martinići stream.....; Lukavica Mt., small spring near Kapetanovo Lake, 42°48'46.51"N, 19°13'40.50"E, 13.viii.2010, Gligorović, one specimen; Šavnik, small spring near Komarnica River, 42°59'35.35"N, 19° 4'4.63" "E, 29.vii.2012, Gligorović, one specimen.

**Remarks:** New for Montenegro.

**Distribution:** Palaearctic species. Known from central to eastern Europe: Austria, Czech Republic, France (Vogues), Germany, Hungary, Romania, Latvia, Luxembourg, Macedonia, Poland, Russia, Slovakia, Slovenia (Nesemann and Neubert 1999).

**Genus *Dina* R. Blanchard, 1892*****Dina absoloni* Johansson, 1913**

**New records:** Podgorica, Kuči, Orahovo, Cave Pela Ujnina, 42°28'14.30"N, 19°27'11.41"E, 24.vii.2010 Pavićević 9 specimens.

**Remarks:** This species is widely distributed in Montenegro (Sket 1968)

**Distribution:** Known from the caves in the Dinaric carst.

***Dina lineata lineata* (Müller, 1774)**

**Remarks:** This species is widely reported from Montenegro (Šapkarev 1984, Blanchard 1905, Remy 1937, Sket 1968). *Dina lineata* was recorded from many countries in the south-western Mediterranean part of the

western Palaearctic (Spain, Italy, Balkan; see: Neumann and Neubert 1999). However, most records of *Dina lineata* in Montenegro and in neighbouring countries should be ascertained to the following two subspecies: *Dina l. montana* and especially to *Dina l. dinarica*. The taxonomical status of the both taxa are not clear, and most probably *Dina l. dinarica* represent a separate species. Based on molecular analysis *Dina lineata montana* should be treated as subspecies of *D. dinarica* (Stanković pers. communication)

#### ***Dina lineata dinarica* Sket, 1968**

**New records:** Biogradska Gora N.P. little Stream near Biogradsko Lake, 42°53'55.23"N, 19°36'3.43"E, 07.viii.2006 Pešić & Grosser 5 specimens; River Lim near Dobrakovo, 43° 8'26.39"N, 19°46'47.46"E, viii.2006, Pešić 4 specimens; Berane town, spring near Monastir Djurđevi Stupovi, 42°51'10.49"N, 19°51'41.12"E, 29.ix.2005 Pešić 3 specimens; Berane, spring in villaje Petnjik, 42°49'53.55"N, 19°54'32.66"E, 25.ix.2006 Pešić & Grosser 6 specimens; Podgorica region, Piperi, village Gornji Crnci, spring, 28.ii.2008 Pešić one specimen; Podgorica region, Piperi, village Mrke, a well, iii.2008 Pešić 3 specimens; Bar, villaje Dobro Vode, spring Točak Nikočevića, 02.v.05, Pešić 2 specimens; Bar, Željeznica River, 42°6'22.78N, 19°5'51.03"E, 9.iv.2005 Pešić & Grosser 10 specimens; Danilovgrad, Moromiš stream, 42°31'58.62"N, 19°12'1.32"E, 05.iv.2005 Pešić & Grosser 1 specimen; Danilovgrad, Šobajići spring, 42°63'10.19"N, 19°06'86.99"E, 27.03.2005 Pešić 3 specimens; Danilovgrad stream Rimanić, 42°31'31.46"N, 19°11'34.21"E, 05.iv.2005 Pešić & Grosser 14 specimens; *ibid.*, 30.iv.2005, Pešić 3 specimens; River Zeta near Spuž town, 42°30'42.01"N, 19°11'51.33E," 05.viii.2006, Pešić & Grosser, 4 specimens; Danilovgrad, Sušica river near spring Orašja Jama, 42°31'53.43"N, 19°5'36.77"E, 10.viii.2010 Pešić 2 specimens; Danilovgrad town, Tunjevo village, spring, 42°34'20.32"N, 19° 4'17.93"E, 27.iii.2005 Pešić, one specimen; 06.vi.2012 Pešić 3 specimens; Podgorica, Fundina village, spring, 42°4.764N 19.03.459E, 27.vi.2012 Pešić 4 specimens; Podgorica, spring Ribnička Vrela, 42°26'14.06"N, 19°17'51.94"E, 05.viii.2006 Pešić & Grosser 14 specimens; *ibid.*, 16.iv.2012 Pešić 3 specimens; Podgorica, Mareza spring, 42°28'47.92"N, 19°10'56.09"E, 08.IV.2005 Pešić & Grosser, 5 specimens; Podgorica, Komani, spring Crno Oko, 42°29'3.76"N, 19° 9'14.95"E, 08.iv.2005 Pešić & Grosser, 3 specimens; Virpazar, River Oraovštica, 42°14'51.70"N, 19° 4'47.87"E, 06.iv.2005 Pešić & Grosser, 19 specimens; Nikšić, Vidrovan spring Vukovo vrelo, Vidrovan village. 42°51'26.78"N, 18°56'31.55"E, 04.iv.2005, Pešić & Grosser, 8 specimens; *ibid.*, 20.viii.2010, Pešić, 3 specimens; Podgorica, Kučka Korita, 42°29'17.39"N, 19°31'57.02"E, 10.vii.2013, Gligorović, one specimen; Podgorica, Kuči, spring in village Mosor, 22.viii.2013, Gligorović, 3 specimens; Danilovgrad, spring in village Kupinovo, 42°38'36.55"N, 19°2'46.60"E, 4.viii.2012, Gligorović, 2 specimens; Danilovgrad, spring Svinjiška vrela, 42°38'18.24"N, 19° 0'26.33"E, 15.vii.2011, Gligorović, one specimen; Podgorica, Tuzi, spring Vitoja, 42°19'31.34"N, 19°21'46.00"E, 30.viii.2014, Pešić & Gligorović, one specimen; Podgorica, Piperi, spring in village Gornji Crnci, 42°32'25.3"N 19°13'40.7"E, 13.iv.2013, Pešić & Gligorović, 5 specimens.

**Remarks:** This species is widely distributed in Montenegro (Sket 1968).

**Distribution:** Western Balkan.

#### ***Dina lineata montana* Sket, 1968**

**New records:** Komovi Mt., Štavna, 42°42'56"N, 19°41'10"E, 30.iv.2007 Pešić 2 specimens; Pljevlja, spring Prkos, 43°21'12.17"N, 19°20'41.30"E, 1.v.2008 Pešić 3 specimens; Andrijevica, village Slatina, spring 2, 42°45'10.2"N 19°47'14.2"E, 23.vii.2012, Gligorović, 2 specimens.

**Remarks:** This species is widely distributed in montane part of northern Montenegro (Sket 1968).

**Distribution:** Montenegro, Serbia (Grosser *et al.* in press).

#### ***Dina minuoculata* Grosser, Moritz & Pešić, 2007**

**New records:** Danilovgrad, pond in village Lazine, 42°32'33.68"N, 19°7'23.05"E, 04.iv.2005 Pešić *et* Grosser, 18 specimens, 12.viii.2006 Pešić & Grosser, 27 specimens, 12. viii.2010 Pešić & Grosser, one specimen; Skadar Lake, sublacustrine spring Karuč, 42°21'29.80"N, 19°6'20.84"E, 09.viii.2006 Pešić & Grosser, one specimen; stream Ljevok near Mojkovac, 42°59'18.47"N, 19°26'4.34"E, 30.04.2008 Pešić & Grosser, 8 specimens; Podgorica, Lijeva Rijeka village, stream, 42°38'42.91"N, 19°28'40.24"E, Pešić, 15 specimens.

**Remarks:** The species was described from the canyon of River Tara (stream Ljevok near Mojkovac - Grosser *et al.* 2007). Recently we found *D. minuoculata* in Eastern Serbia close to the border with Montenegro (Brodarevo, Grosser *et al.* in press).

**Distribution:** Known from northern part of Montenegro and eastern part of Serbia.

### Genus *Trocheta* Dutrochet, 1817

#### *Trocheta subviridis* Dutrochet, 1817

**Remarks:** This species was reported by Šapkarev (1984) from Kotor but without additional informations. This records should be verified by additional material.

**Distribution:** Known from northern Italy, France, Luxembourg, southern England and Ireland (Nesemann nad Neubert 1999).

#### *Trocheta dalmatina* Sket, 1968

**New records:** Skadar Lake area, spring in village Sotonići, 42°14'11.70"N, 19°2'37.86"E, 1.v.2012, Pešić 11 specimens; Skadar lake area, village Bukovica, spring Bukovičko vrelo, 42°13'56"N, 19°1'24"E, 7.vi.2012, Pešić 4 specimens.

**Remarks:** The species was known from the coastal spring and streams (Kotor, Herceg Novi – Sket 1968).

**Distribution:** Croatia (south of Dubrovnik), Montenegro, Serbia (Grosser *et al.* in press).

### Discussion

At the present state of knowledge, the number of species and subspecies of leeches recorded from Montenegro is 29 species and subspecies in 13 genera and 5 families. Montenegro provides suitable habitats for almost 30% of 96 species and subspecies of freshwater and terrestrial leeches recorded from Europe (Nesemann and Neubert 1999). When looking at the distribution of the species it is clear that the current knowledge of the diversity of the leeches is far from complete. In addition, it is reasonable to expect that this number will be changed due the following:

- 1) records of some species (e.g. *Hirudo medicinalis*, *Trocheta subviridis*) are doubtful, and additional material and field work are necessary to confirm its presence,
- 2) taxonomic status of some species are unclear (e.g., *Glossiphonia* cf. *pulchella*, *Dina lineata dinarica*, *Dina lineata montana*),
- 3) for some species known from the neighbouring countries (e.g. *Trocheta danastrica*, *T. haskonis*), there is good reason to assume that these species are expected to be found in the future in Montenegro,
- 4) further research on fish leeches (Piscicolidae) will undoubtedly increase the number of species known from Montenegro.

The present study is exhaustive and constitutes the most complete list of leeches in Montenegro, aimed to stimulate further studies on this important group of invertebrates in Montenegro.

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