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New distributional data on the Orthoptera of Montenegro with new records for the country

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ABSTRACT In this paper I present records of 105 species of grasshoppers and (bush) crickets observed in July-August 2022 at 69 localities throughout the country of Montenegro. With this a contribution to the biogeographical knowledge of the Orthoptera in Montenegro is aimed. Derived from the large dataset, species-richness is discussed based on the amount of species found at each locality and remarks are made on biodiversity hotspots. Commonness is treated and measured by the amount of localities each species is found. The most common species I order of presence are *Pseudochorthippus parallellus*, *Euthystira brachyptera, Oedipoda caerulescens*, *Pachytrachis gracilis* and *Stenobothrus lineatus*. *Micropodisma salamandra* is recorded for the first time in Montenegro and an undescribed species of *Miramella* was detected.

KEY WORDS Montenegro; Orthoptera; new species; biogeography.

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INTRODUCTION

Montenegro is situated in the Balkans and is a well-defined entity nowadays known as the Republic of Montenegro. It has been a part of Yugoslavia, but its borders have been stable for a long time. Geographically the country lies within the Dinaric Mountains. The region of the Dinaric Mountains is known as one of the European hotspots for biodiversity among Ortoptera (Kenyeres, 2009).

No up-to-date species list exists for Montenegro, nor is the distribution of species known sufficiently. At this moment distribution knowledge is mainly based on Cejhan (1984), Nikčević (2009), Ingrisch & Pavićević (2010, 2012) and Ivković et al. (2020). Circa 170 species were known at the time of this study.

With this study I want to contribute to the biogeographical knowledge of the Orthoptera in Montenegro. A large dataset is compiled, which can serve as a source of information for future projects.

MATERIAL AND METHODS

The study was carried out during the 24-day family summer holiday-stay in 2022 within the state boundaries of the Republic of Montenegro. Records were based on sight and sound observations, assisted by voucher specimens if needed. Voucher specimens are deposited in the author's private collection, where they were pinned and individually labeled and catalogued. For the purpose of identification many animals were caught by hand or sweep net. In many cases the

observations are largely supported by photographic evidence, which in some cases facilitated identification afterwards. Sound calls were occasionally recorded too. Care was taken to sample as many habitats as possible and effort was also put into field trips after sunset.

Inventories were undertaken at numerous localities covering the country to a great extent (Fig. 1). The localities are given in Table 1 in order of the route traveled and with their respective municipalities, altitude, geographical coordinates and dates.. Localities within close proximity of one another (<1 degree latitude or longitude) are aggregated, resulting in 69 localities in total.

A large part of the country is covered. Of the 24 municipalities recognized at the time of study 19 are covered. Of the municipalities not visited in this study, four are among the smallest in the country and located on the outer edge, the fifth is the centrally located Danilovgrad.

As the nature of this study was largely opportunistic, the time and effort spend per locality is far from equal, nor is the distribution of sample points random. The number of records however is large and can be used to give a global impression of distribution, commonness or (the opposite) rareness and the presence of biodiversity hotspots.

Species were identified in-situ with the help of the Dutch translation of Der Kosmos Heuschreckenführer (Bellmann et al., 2020) and for more details identification was based on keys provided by Harz (1969, 1975), a key to the Orthoptera of the Montenegrin Durmitor region (Ingrisch, 2012) and extralimital guides for Italy (Massa et al., 2012) and Greece (Willemse et al., 2018). Sampled specimens were identified by using a broad range of literature.

Several *Chorthippus* specimens within the *biguttulus*-complex without sound information were difficult to identify morphologically and were subsequently omitted from the dataset.

The taxonomic nomenclature follows the online database Orthoptera Species File (OSF) Version 5.0 (Cigliano et al., 2022). Where a different view is adopted this is given in the text. I abstain here from the use of subspecific taxa. The species in the complete list (Table 2) are arranged taxonomically

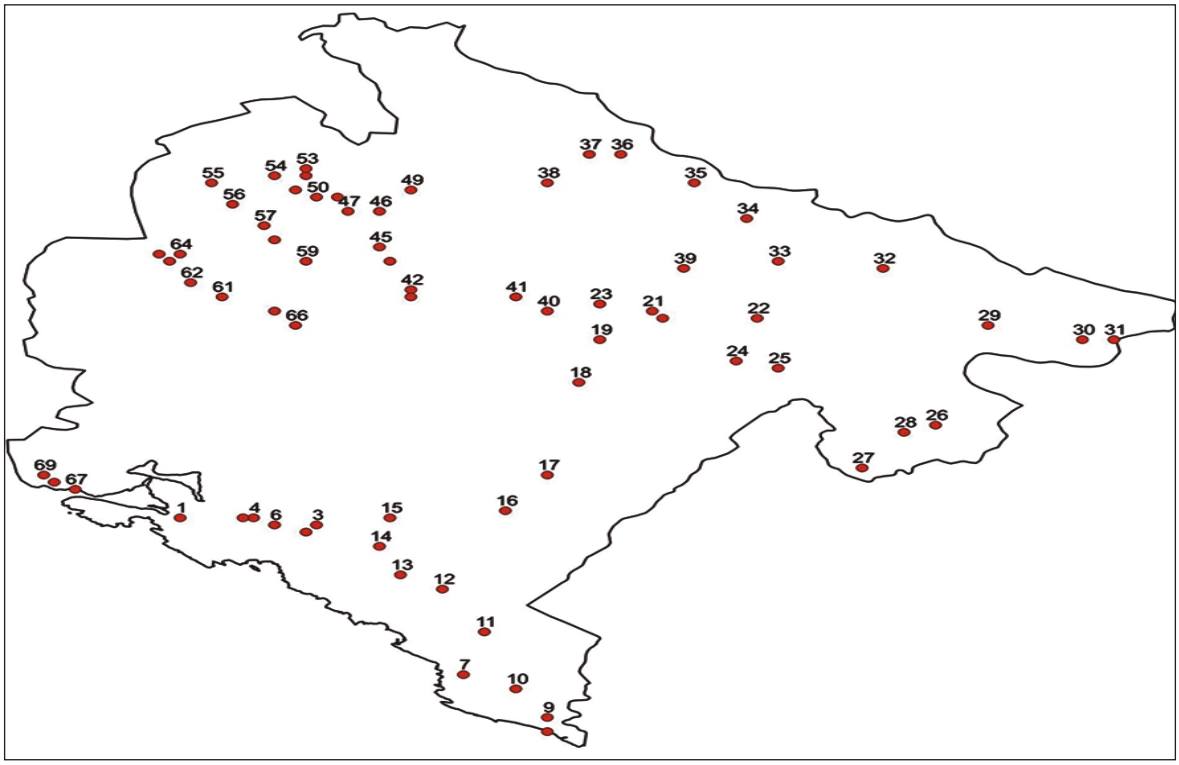

Figure 1. Montenegro and the studied localities. umbers refer to Table 1.

N.	Municipality	Locality	Latitude (N)	Longitude (E)	Elevation (m)	Date	Number of species
1	Kotor	Lješevići	42°23'	18°44'	18	18 VII 2022	5
2	Cetinje	Ugnji	42°21'	18°56'	730	18 VII 2022	7
3	Cetinje	Lipa	42°22'	18°57'	530	18 VII 2022	16
4	Cetinje	Gornič	42°23'	18°51'	1237	20 VII 2022	13
5	Cetinje	Cetinje	42°23'	18°50'	1500	20 VII 2022	7
6	Cetinje	Bjeloši	42°22'	18°53'	1010	20 VII 2022	9
7	Bar	Kunje	42°01'	19°11'	267	20 VII 2022	1
8	Ulcinj	Doni Štoj	41°53'	19°19'	1	21 VII 2022	20
9	Ulcinj	Saline	41°55'	19°19'	-3	21 VII 2022	2
10	Bar	Velja Gorana	41°59'	19°16'	88	21 VII 2022	12
11	Ulcinj	Gornja Briska	42°07'	19°13'	470	21 VII 2022	10
12	Bar	Donja Seoaca	42°13'	19°09'	273	21 VII 2022	1
13	Bar	Virpazar	42°15'	19°05'	4	22 VII 2022	9
14	Podgorica	Donja Sela	42°19'	19°03'	125	22VII 2022	4
15	Podgorica	Meterizi	42°23'	19°04'	316	21 VII 2022	2
16	Podgorica	Podgorica	42°24'	19°15'	41	22 VII 2022	4
17	Podgorica	Podgorica	42°29'	19°19'	66	23 VII 2022	1
18	Kolašin	Sela	42°42'	19°22'	215	23 VII 2022	3
19	Kolašin	Bare	42°48'	19°24'	750	23 VII 2022	3
20	Kolašin	Drijenak	42°51'	19°30'	945	23 VII 2022	12
21	Kolašin	Lipovska Bistrica	42°52'	19°29'	1109	24 VII 2022	7
22	Berane	Sedlačka gora	42°51'	19°39'	1865	25 VII 2022	13
23	Kolašin	Gornje Lipova	42°53'	19°24'	1282	26 VII 2022	17
24	Kolašin	Bare Kraljske	42°45'	19°37'	1101	26 VII 2022	3
25	Andrijevica	Trešnjevik	42°44'	19°41'	1466	26 VII 2022	6
26	Plav	Plav	42°36'	19°56'	912	26 VII 2022	3
27	Gusinje	Ropojan valley	42°30'	19°49'	1150	27 VII 2022	13
28	Gusinje	Martinoviće	42°35'	19°53'	922	28 VII 2022	7
29	Rožaje	Kalače	42°50'	20°01'	1323	28 VII 2022	19
30	Rožaje	Dacići	42°48'	20°10'	1207	28 VII 2022	2
31	Rožaje	Balotići	42°48'	20°13'	1660	28 VII 2022	4
32	Bijelo Polje	Bubanje	42°58'	19°51'	621	29 VII 2022	6
33	Bijelo Polje	Bajista	42°59'	19°41'	646	29 VII 2022	7
34	Bijelo Polje	Potrk	43°05'	19°38'	739	29 VII 2022	4
35	Bijelo Polje	Kovren	43°10'	19°33'	1082	29 VII 2022	8
36	Pljevlja	Potkrajci	43°14'	19°26'	928	29 VII 2022	15
37	Pljevlja	Mijakovići	43°14'	19°23'	1124	29 VII 2022	14
38	Pljevlja	Bitine	43°10'	19°19'	1185	30 VII 2022	16
39	Mojkovac	Polja	42°58'	19°32'	826	30 VII 2022	16
40	Kolašin	Redice	42°52'	19°19'	731	31 VII 2022	4
41	Kolašin	Ljevišta	42°54'	19°16'	1544	31 VII 2022	12
42	Šavnik	Miloševići	42°55'	19°06'	1125	31 VII 2022	5
43	Šavnik	Krnovo	42°54'	19°06'	1520	01VIII 2022	16
44	Šavnik	Pošćenje	42°59'	19°04'	1010	02VIII 2022	3
45	Šavnik	Komarnica	43°01'	19°03'	1004	02VIII 2022	25
46	Žabljak	Sedlo	43°06'	19°03'	1917	03VIII 2022	5
47	Šavnik	P14 road	43°06'	19°00'	1797	03VIII 2022	4
48	Plužine	Pištet	43°08'	18°59'	1816	03VIII 2022	11
49	Žabljak	Pitomine	43°09'	19°06'	1468	04VIII 2022	7
50	Plužine	Boričje	43°08'	18°57'	1773	05VIII 2022	8
51	Plužine	Boričje	43°09'	18°55'	1450	05VIII 2022	14
52	Plužine	Trsa	43°11'	18°56'	1450	05VIII 2022	9
53	Plužine	Trsa	43°12'	18°56'	1427	05VIII 2022	15
54	Plužine	Vojinovići	43°11'	18°53'	1232	06VIII 2022	2
55	Plužine	Stolac	43°10'	18°47'	690	06VIII 2022	16
56	Plužine	Seljani	43°07'	18°49'	877	07VIII 2022	7
57	Plužine	Dubljevići	43°04'	18°52'	996	07VIII 2022	8
58	Plužine	Bukovac	43°02'	18°53'	1141	07VIII 2022	3
59	Plužine	Donja Brezna	42°59'	18°56'	993	07VIII 2022	14
60	Plužine	Duga	42°52'	18°53'	816	08VIII 2022	3
61	Nikšic	Gornje Srijede	42°54'	18°48'	928	08VIII 2022	4
62	Nikšic	Gornje Srijede	42°56'	18°45'	1089	08VIII 2022	4
63	Nikšic	Goslić	42°59'	18°43'	880	08VIII 2022	4
64	Nikšic	Javljem	43°00'	18°44'	899	08VIII 2022	5
65	Nikšic	Krstac	43°00'	18°42'	1011	08VIII 2022	2
66	Nikšic	Rastovac	42°50'	18°55'	624	08VIII 2022	3
67	Herzeg Novi	Sasovići	42°27'	18°34'	15	09VIII 2022	5
68	Herzeg Novi	Podi	42°28'	18°32'	351	10 VIII 2022	6
69	Herzeg Novi	Crveno Brno	42°29'	18°31'	501	10 VIII 2022	4

Table 1. Localities with coordinates, elevation, date and number of species recorded.

and given in the order in which they are usually treated in guide books.

Elevation is derived from Google Earth or a handheld GPS and not corrected for accuracy uncertainty. Geographical names are spelled in accordance with local usage.

RESULTS

The number of observed taxa at species level is 105. The suborder Ensifera is represented by 61 species, Caelifera by 44. After aggregating nearby localities in total 548 unique locality-species records were registered. Records of the observed species are given in Table 2.

The number of localities a species is found at is a good starting point for evaluating commonness. For this reason the species list in Table 2 has been rearranged and is presented in a horizontal bar diagram in Fig. 2.

The most commonly found species was *Pseudochorthippus parallelus* with a representation of 37 out of the 69 localities. It has a broad

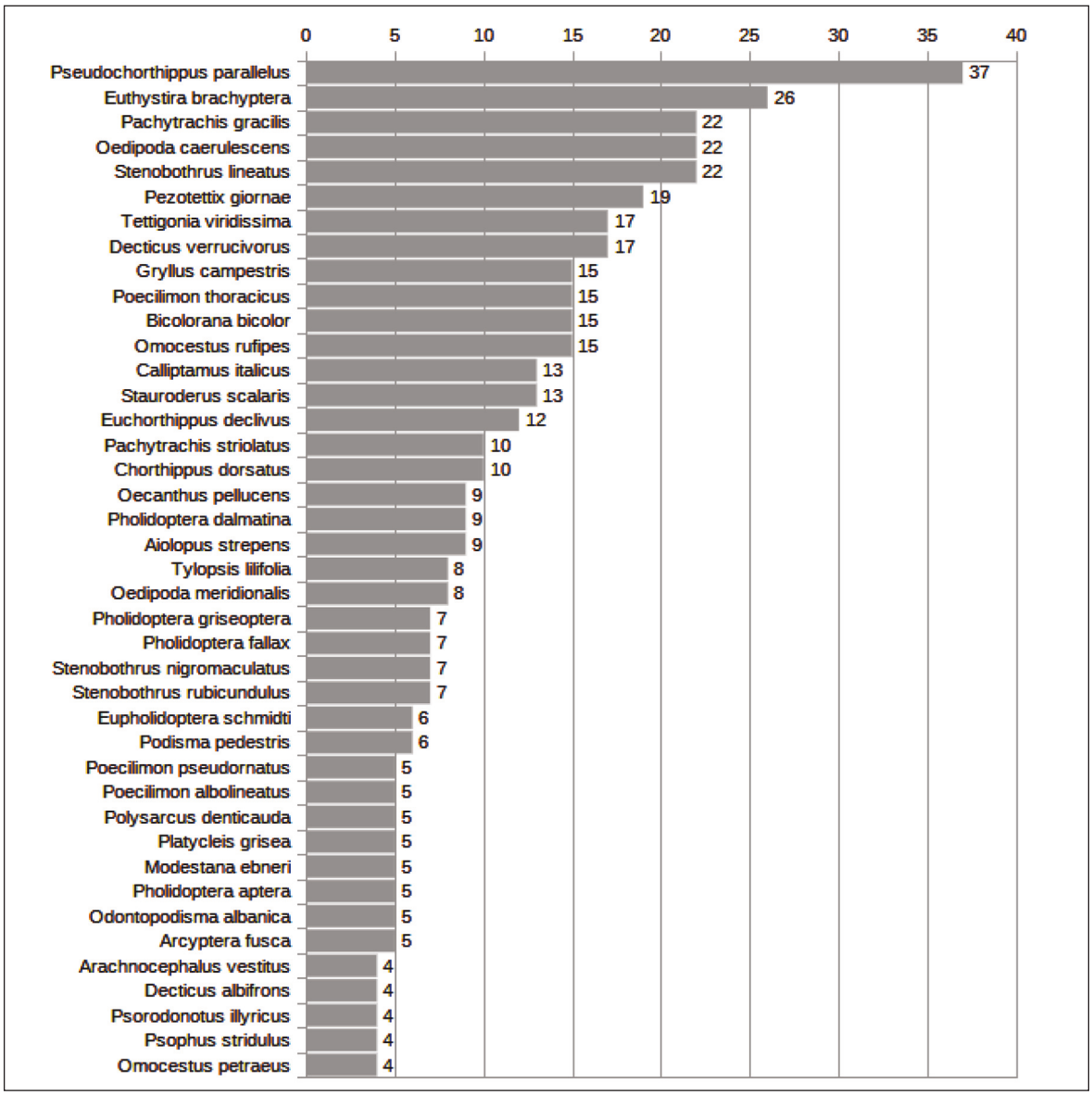

Table 2. Species, recorded localities and number of localities.

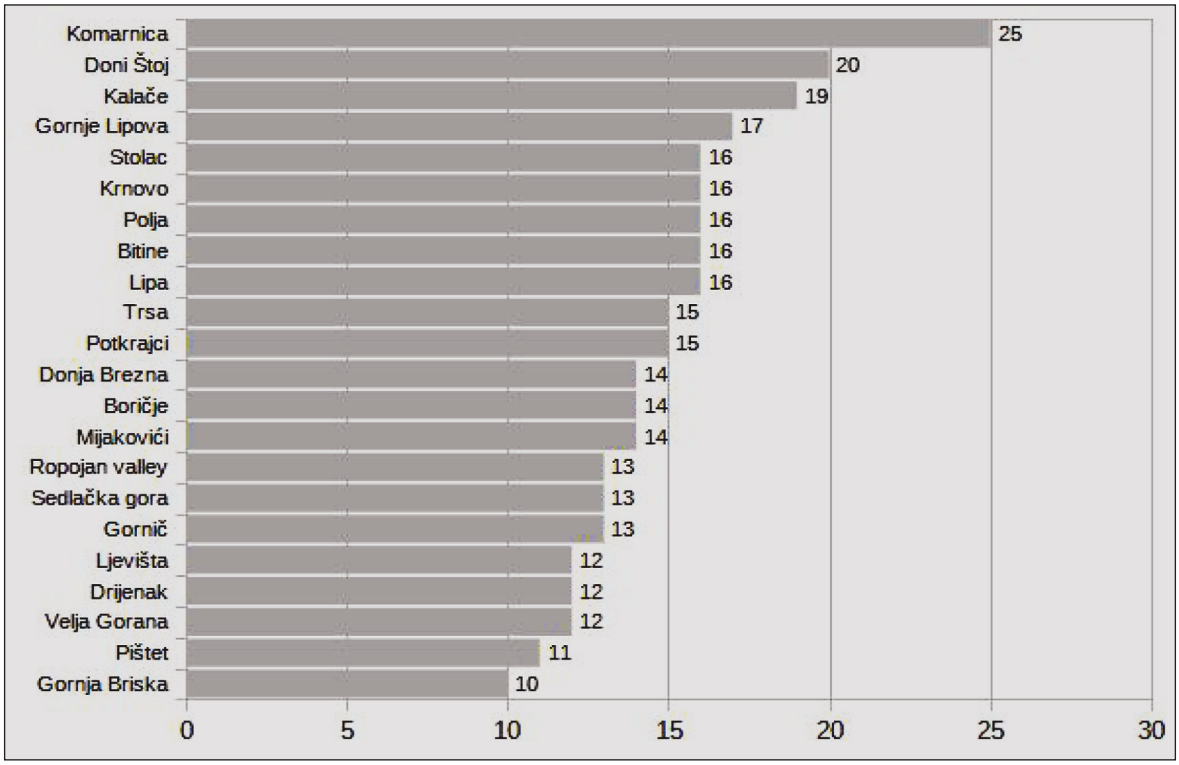

Figure 3. Number of species per locality. Only localities with ≥10 species are included.

Figure 4. Male macropterous *Podisma pedestris*.

Species	Localities	N.
Ensifera		
Gryllus campestris Linnaeus, 1758	13, 20, 23, **27**, 29, **37**, **39**, 42, **43**, 45, 49, 53, 60, 66, **67**	15
Eumodicogryllus bordigalensis (Latreille, 1804)	**247**	1
Gryllomorpha dalmatina (Ocskay, 1832)	**55**	1
Oecanthus pellucens (Scopoli, 1763)	**3**, 8, 13, **18**, **19**, **40**, **55**, 66, 67	9
Oecanthus dulcisonans Gorochov, 1993	**8**, 13	2
Arachnocephalus vestitus Costa, 1855	**1**, **8**, 10, 68	4
Trigonidium cicindeloides Rambur, 1838	**8**	1
Natula averni (Costa, 1855)	8	1
Pteronemobius heydenii (Fischer, 1853)	39, 66	2
Ovaliptila willemsei (Karaman, 1975)	**55**	1
Troglophilus cavicola (Kollar, 1833)	**42**	1
Ephippiger ephippiger (Fiebig, 1784)	**37**	1
Epohippiger discoidalis (Fieber, 1853)	**2**, 4, 6	3
Conocephalus fuscus (Fabricius, 1793)	**8**	1
Ruspolia nitidula (Scopoli, 1786)	**8**, **13**	2
Meconema thalassinum (De Geer, 1773)	**26**, **42**, **59**	3
Phaneroptera falcata (Poda, 1761)	**19, 40**	2
Tylopsis lilifolia (Fabricius, 1793)	1, 2, **8**, 10, 13, 14, 15, 68	8
Acrometopa macropoda (Burmeister, 1838)	**2**	1
Barbitistes cf. *serricauda* (Fabricius, 1798)	**31**	1
Barbitistes ocskayi (Charpentier, 1850)	**3**, **11**	2
Barbitistes yersini Brunner, 1878	**7**, **27**	2
Leptophyes laticauda (Frivaldszky, 1868)	**6**, **10**, **59**	3
Leptophyes discoidalis (Frivaldszky, 1868)	**39**	1
Isophya modestior Brunner, 1882	**5**, **23**, **37**	3
Isophya clara Ingrisch et Pavićević, 2010	**39**	1
Isophya speciosa (Frivaldszky, 1868)	**22**, **51**	2
Poecilimon affinis (Frivaldszky, 1868)	**5**	1
Poecilimon pseudornatus Ingrisch et Pavićević, 2010	**23**, **27**, **29**, **41**, **51**	5
Poecilimon albolineatus Ingrisch & Pavićević, 2010	**45**, **51**, **53**, **59**, **64**	5
Poecilimon cf. *albolineatus*	**4**, **5**	2
Poecilimon ampliatus Brunner, 1878	**49**, **51**	2
Poecilimon jonicus (Fieber, 1853)	**10**	1
Poecilimon thoracicus (Fieber, 1853)	**20**, 21, **23**, 24, 25, 27, **29**, 30, 34, 35, **37**, **41**, 49, 51, **56**	15
Polysarcus denticauda (Charpentier, 1825)	**23**, **37**, **38**, 43, **48**	5
Saga natoliae Serville, 1838	12	1
Tettigonia viridissima (Linnaeus, 1758)	**3**, 10, **11**, 20, 23, 26, 27, 28, 29,37, 39, 41, 43, 45, 49, 53, 55	17
Decticus verrucivorus (Linnaeus, 1758)	**4**, **20**, 22, 23, 29, 35, 36, 37, 41, 43, 45, 46, 47, 48, 50, 51, 52	17
Decticus albifrons (Fabricius, 1775)	1, 8, 9, 10	4
Platycleis grisea (Fabricius, 1781)	**35**, **40**, **43**, **45**, **55**	5
Montana stricta (Zeller, 1849)	**45**, **53**, **55**	3

Stethophyma grossum (Linnaeus, 1758)	**28**	1
Modestana modesta (Fieber, 1853)	**4**, **57**, **62**	3
Modestana ebneri (Ramme, 1926)	**22**, **48**, 50, **51**	5
Sepiana sepium (Yersin, 1854)	**3**, **8**, **18**	3
Vichetia oblongicollis Brunner, 1882	**11**	1
Roeseliana roeselii (Hagenbach, 1822)	**13**, **28**, **36**	3
Bicolorana bicolor (Philippi 1830)	**20**, **25**, **29**, **36**, 38, 41, 45, 47, 48, 49, 50, **51**, **53**, 59	15
Metrioptera hoermani (Werner, 1906)	**48**	1
Metrioptera prenjica (Burr, 1899)	**22**	1
Psorodonotus illyricus Ebner, 1923	**23**, **41**, **43**, 48	4
Psorodonotus macedonicus Ramme, 1931	**22**	1
Eupholidoptera schmidti (Fieber, 1861)	1, **3**, **8**, 11, 13, **67**	6
Pholidoptera griseoptera (De Geer, 1773)	**21**, 23, **27**, **36**, **39**, **42**, 55	7
Pholidoptera aptera (Fabricius, 1793)	**21**, 23, **25**, **37**, **38**	5
Pholidoptera fallax (Fischer, 1853)	**3**, **4**, 5, **25**, **29**, **38**, **67**	7
Pholidoptera femorata (Fieber, 1853)	**3**, **4**, **11**	3
Pholidoptera dalmatina (Krauss, 1879)	**3**, 11, **37**, **38**, **42**, **43**, 45, 55, **59**	9
Pholidoptera frivaldszkyi (Herman, 1871)	**29**, **37**	2
Pachytrachis striolatus (Fieber, 1853)	3, **4**, **5**, **45**, **51**, **54**, **55**, **59**, 65, **69**	10
Pachytrachis gracilis (Brunner, 1861)	**2, 3, 4, 5, 6**, **11**, **18**, **20**, **21**, **23**, **25**, **27**, **29**, 33, 34, 37, 39, 41, **43**,**45, 63**, **65**	22
Rhacocleis germanica (Herrich-Schäffer, 1840)	**3**	1
Caelifera		
Tetrix subulata (Linnaeus, 1758)	**33, 45**	2
Tetrix bipunctata (Linnaeus, 1758)	**45**	1
Podisma pedestris (Linnaeus, 1758)	**27**, **30**, 31, 37, **38**, 45	6
Miramella albanica Mistshenko, 1952	**22**	2
Miramella sp.	**10**, **11**	2
Odontopodisma albanica Ramme, 1951	**6**, **39**	2
Odontopodisma decipiens Ramme, 1951	**35**, **59**	2
Micropodisma salamandra (Fischer, 1854)	**29**	1
Pezotettix giornae (Rossi, 1794)	**2**, **3**, 6, 10, 15, 16, 19, 24, **29**, 32, 33, 36, 38, **55**, **56**, 61, **62**, 68, 69	19
Calliptamus italicus (Linnaeus, 1758)	**2**, **3**, **8**, 10, **14**, **16**, **36**, **38**, **45**, 55, 57, 62, 68	13
Paracaloptenus caloptenoides (Brunner, 1861)	**29**	1
Paracaloptenus cristatus Willemse, 1973	**55**, **57**, **58**	3
Anacridium aegyptium (Linnaeus, 1764)	8, 10, **68**	3
Psophus stridulus (Linnaeus, 1758)	**23**, 35, **39**, **53**	4
Oedipoda caerulescens (Linnaeus, 1758)	**6**, 10, 14, 16, 20, 32, 33, 34, 35, 36, 38, 39, 40, 43, 45, 51, 53, 54, 55, 59, 60, 69	22
Oedipoda meridionalis (Linnaeus, 1758)	2, **3**, **4**, 14, **23**, **36**, 38, **39**	8
Acrotylus patruelis (Herrich-Schaffer, 1838)	**8**	1
Acrotylus longipes (Charpentier, 1845)	**8**	1
Aiolopus thalassinus (Fabricius, 1781)	**8**	1
Aiolopus strepens (Latreille, 1804)	1, **8**, 9, 10, 17, 32, **33**, 68, 69	9

Locusta migratoria (Linnaeus, 1758)	**8**	1
Acrida ungarica (Herbst, 1786)	8, 16	2
Acrida ungarica (Herbst, 1786)	8, 16	2
Arcyptera fusca (Pallas, 1773)	**41**, **43**, 51, 52, 53	5
Dociostaurus genei (Ocskay, 1833)	**8**	1
Euthystira brachyptera (Ocskay, 1826)	**20**, **21**, 22, 23, **28**, **29**, 31, 35, **36**, 37, **38**, 39, 41, **43**, **45**, 46, 47, 49, 50, 52, 53, **56**, 58, 59, 61, **62**	26
Gomphocerippus rufus (Linnaeus, 1758)	**29**	1
Gomphocerus sibiricus (Linnaeus, 1767)	**22**, **48**	2
Stenobothrus lineatus (Panzer, 1796)	4, 5, **20**, **21**, **22**, **27**, **29**, **36**, **38**, 39, 41, **43**, 44, **45**, **46**, 47, 48, 50, 51, 52, 53, **59**	22
Stenobothrus nigromaculatus (Herrich-Schäffer, 1840)	**4**, **22**, **27**, **45**, **46**, **48**, **57**	7
Stenobothrus fischeri (Eversmann, 1848)	4, **55**, **59**	3
Stenobothrus stigmaticus (Rambur, 1838)	**48**	1
Stenobothrus rubicundulus Kruseman et Jeekel, 1967	**23**, **45**, **50**, **52**, **53**, **57**, 59	7
Omocestus rufipes (Zetterstedt, 1821)	**20**, 28, **29**, 32, **33**, **36**, 38, 39, 43, 45, **55**, 56, 61, 63, 64	15
Omocestus petraeus (Brisout de Barneville, 1856)	**36**, **45**, **57**, **64**	4
Stauroderus scalaris (Fischer von Waldheim, 1846)	**20**, 23, **27**, **38**, 41, 44, **45**, **50**, 51, **52**, 53, 58, 59	13
Chorthippus apricarius (Linnaeus, 1758)	**22**, **52**	2
Chorthippus biguttulus (Linnaeus, 1758)	**35**	1
Chorthippus mollis (Charpentier, 1825)	**552**, **571**, **572**	3
Chorthippus maritimus Mistshenko, 1951	**22**	1
Chorthippus dorsatus (Zetterstedt, 1821)	**6**, **11**, **13**, **27**, **28**, **36**, **38**, **45**, **52**, **53**	10
Chorthippus oschei Helversen, 1986	**13**, **55**	2
Pseudochorthippus parallelus (Zetterstedt, 1821)	**3**, 4, **6**, **11**, **20**, 21, **22**, 23, 24, **25**, 26, 27, **28**, **29**, 31, 32, 33, 37, 39, 41, 43, 44, 45, 46, 48, 49, 50, 51, 52, 53, 56, 57, 59, 63, 64	37
Euchorthippus declivus (Brisout de Barneville, 1848)	**3**, **6**, **29**, **36**, 38, 39, **53**, **56**, 57, 60, 63, 64	12

Table 2. Observed species with recorded localities. Bold: voucher specimen present.

ecological niche and can practically be found everywhere. A surprising second place takes *Euthystira brachyptera*. Other common species were *Pachytrachis gracilis*, *Oedipoda caerulescens*, *Stenobothrus lineatus* and *Pezotettix giornae*.

In order to display local species-richness the total number of species found at each locality in Table 1 is used. Species-richness is plotted in descending order of richness in Figure 3. Komarnica stands out with 25 species, followed by Doni Štoj with 20, Kalače (19) and Gornje Lipova (17).

On 28 July 2022 multiple individuals of *Micropodisma salamandra* was recorded at the locality Kalače near Rožaje. They were observed on the edge of a marshy vegetation patch immediately downstream of a small water well in the mountain slope. The species has never been recorded before in Montenegro, thus it is an addition to the already large number of species known for the country.

In the lowland between Skadar Lake and the sea a grasshopper of the genus *Miramella* was found on 21 July 2022. The specimens collected from this

locality differ significantly from *Miramella albanica* and has been described as *Miramella demissa* Mulder, 2023 (Mulder, 2023)

DISCUSSION

A surprising amount of the total number of known species (>60%) has been found, given the short length of the study period.

Localities were specified as localities located within 1 degree distance from each other. This decision has a direct effect to the species-richness per locality as grouping can include more habitats and can increase the number of species.

Within the *Chorthippus biguttulus* group only animals from Sedlačka gora could be specified as *Ch. maritimus*. *Chorthippus brunneus* was not recorded anywhere. *Chorthippus biguttulus* could only be identified near the locality Kovren (Bijelo Polje municipality), but several animals from different localities could not be specified further than belonging to *Chorthippus biguttulus* or *Ch. mollis*, due to doubtful wing morphology and a number of stridulatory pegs in the overlapping part of the range. Omitting these species also directly influences species-richness.

A large number of 32 species was recorded from just one locality. This can be due to rareness or an alliance to specific rare habitats, but also could be the consequence of mimicry, specific activity patterns or just coincidence.

For species-richness at locality level as plotted in Fig. 3 earlier mentioned statistical contra-indications (unevenness, small numbers) are valid, but an impression can still be obtained. Up to 25 species could be registered at the richest locality (Komarnica).

The Durmitor area is quite species-rich. This geographical region is not strictly defined (beside by the National Park borders) and does not coincide with municipality borders. It includes parts of Zabljak, Plužine, Mojkovac, Pljevljia and Šavnik. Several of the richest localities in this study (Komarnica, Stolac and Trsa) belong to this region.

Gornje Lipova in the Rumija Mountain region also shows a relatively high number of species. Ivković et al. (2020) who explored this region more intensively already suggested it to have a high degree of biodiversity. For Doni Štoj an explanation is the presence of the sea with a sand beach, sand dunes as well as sweet water marsh vegetation at close proximity, which guarantees several species bound to these habitats. Country-wide these habitats are very restrictively present and in this region under high pressure of ongoing mass tourism construction projects.

A pair of *Vichetia* Harz, 1969 was recorded in the south of the country at Gornja Briska (Ulcinj municipality). Within this genus two species are described and still recognized by the Orthoptera Species Files (Cigliano et al., 2022): *V. oblongicollis* and *V. knipperi*. The validity of *V. knipperi* is debated though (Heller, 1962; Willemse, 1984; Chobanov, 2005; Iorgu, 2011). As in these specimens the so-called species-specific morphological characters also were doubtful, I decided to record it as *V. oblongicollis*.

Among *Poecilimon albolineatus* there are some yet undescribed taxa (Ingrisch & Pavićević, 2010, Ivković et al., 2020). This for instance is true for the populations near the coast. The populations from Cetinje municipality can be assigned to such a taxon and are given here as *Poecilimon* sp.

A surprising amount of macropterous specimens were encountered, especially among *Euthystira brachyptera*, but also *Pseudochorthippus parallelus* and *Bicolorana bicolor.* Even a macropterous specimen of *Podisma pedestris* was found. For this usually squamipterous species the wings were extremely long (Fig. 4). This apparently is a rare event (Bellmann et al., 2020). The specimen was the only representative of the species found in the area and maybe shifted by flight.

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