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GRASSHOPPERS (ORTHOPTERA: CAELIFERA) AND CRICKETS (ORTHOPTERA: ENSIFERA) FROM SLOPES OF MACOŠSKÁ STRÁŇ AND VILÉMOVICKÁ STRÁŇ (MORAVSKÝ KRAS PROTECTED LANDSCAPE AREA, CZECH REPUBLIC)

J. Niedobová, F. Chládek, V. Hula

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Abstract

NIEDOBOVÁ J., CHLÁDEK F., HULA V.: *Grasshoppers (Orthoptera: Caelifera) and crickets (Orthoptera: Ensifera) from slopes of Macošská stráň and Vilémovická stráň (Moravský kras Protected landscape area, Czech Republic).* Acta univ. agric. et silvic. Mendel. Brun., 2011, LIX, No. 5, pp. 179–186

In 2008 we found 21 species of grasshoppers and crickets on Macošská stráň slope and 18 species on Vilémovická stráň slope. Both slopes are located in the northern part of the Moravský kras Protected landscape area and have xerothermic character. Both slopes are influenced by pasture management. For the most comprehensive picture of Orthoptera we used a standard method (sweeping of vegetation) and nonstandard methods (pitfall traps and Möricke yellow cups). Termophilous species of Orthoptera on Macošská stráň (47%) were dominating. On Vilémovická stráň mezophilous species (46%) were dominating. The most common species were *Stenobothrus lineatus* (Panzer, 1796) on Macošská stráň slope and *Chorthippus parallelus* (Zetterstedt, 1821), *Stenobothrus lineatus*, *Chorthippus bigutulus* (Linné, 1758) and *Chorthippus dorsatus* (Zetterstedt, 1821) on Vilémovická stráň slope. Rare species of this assemblage were *Stenobothrus nigromaculatus* (Herrich-Schaffer, 1840) which was on Macošská stráň slope only and *Tetrix bipunctata* (Linnaeus, 1758) which has much bigger abundances also on Macošská stráň slope.

Orthoptera, faunistics, dry grasslands on limestone, Moravský kras PLA, Czech Republic

Moravský kras belongs among the most explored areas. Faunistic studies are crucial for all activities in the protected areas and the Protection Plan of Moravský kras PLA (for the period 2007–2016) (AOPK ČR and MŽP ČR 2007) indicates that this type of studies must be conducted here. Nevertheless, faunistics of Orthoptera species are still missing in Moravský kras PLA.

Orthoptera fauna of Moravia was studied relatively well. From whole region exist several very important studies from different regions (e.g. Čejchan, 1983, 1986; Holuša, 1997a, 1997b, 2000, 2007; Holuša *et al.*, 2008; Chládek, 1976, 2001, 2002, 2003, etc.), but there exist local studies from the southernmost region only (e.g. Chládek 1977, 1982, 1987, 1993).

MATERIAL AND METHODS

Localities

Investigated localities are located in the northern part of Moravský kras PLA on the west end of Suchý žleb valley. Collections were performed on a total of four transects of Macošská stráň and Vilémovická stráň slopes.

Both localities are limestone hillsides with a well-developed limestone karren fields with habitats

of secondary dry grasslands. The whole area was previously used as communal grazing (Kotouč, 2006). In 2006 regular grazing was restored.

Individual transects (T1–T4) are given by GPS coordinates (the quotes were taken over) and the entire site is located in the faunistic square 6666 (Pruner and Míka 1996). Subsequently, conducted management and geographic exposure of the slope is reported.

- Macošská stráň T1 (SAC Moravský kras), GPS 49°22'14"N, 16°44'13"E – south exposed slope on limestone, in 2008 unmanaged.
- Macošská stráň T2 (SAC Moravský kras), GPS 49°22'13"N, 16°44'21"E – south exposed slope on limestone, in 2008 pastured (27. 8.–19. 9.).
- Vilémovická stráň T3 (SAC Moravský kras), GPS 49°22'7"N, 16°44'32"E – north-west exposed slope on limestone, in 2008 pastured (25. 4.–15. 5. and 25. 9.–11. 10.).
- Vilémovická stráň T4 (SAC Moravský kras), GPS 49°22'9"N, 16°44'38"E – west exposed slope on limestone, in 2008 pastured (4. 6.–2. 9.).

Methodology

Investigation was conducted in 2008. We used three collecting methods. We used sweeping; it is the main and standardized collecting method for Orhoptera (Holuša, 2006). Then we used pitfall traps and yellow Möricke cups which are not used for collecting Orthoptera usually.

Two transects on every each slope (Macošská and Vilémovická stráň slope) were marked out. Sweeping was done in 14-day intervals (from 6 May to 2 September) in the direction up the slope, on each transect line we always made 200 sweeps. We used entomological sweeping net (diameter 35cm).

In each of the four transects five pitfall traps were placed in line. We used plastic cups (capacity 500 ml). Traps were buried in lines always in the direction up the slope with about five-meter-long distances between them. As a fixative fluid we used 4% formaldehyde solution. All material from pitfall traps was marked and placed to a plastic bottle with 4% formaldehyde solution.

Dates, locations and control of traps in 2008 were as follows: 22 April, 22 May, 18 June, 22 July, 18 August, 21 September, 21 October, and 28 November.

Five yellow Möricke traps (cups) were placed in lines in five-meter distances. Each Möricke trap was made from an eating box (15 × 15 cm). We sprayed a big yellow patch (acrylate colour number 585005) to the middle of each box. The role of killing and fixation fluid was fulfilled by saline solution with adding a few drops of detergent. Yellow Möricke traps were installed at the locations for the first time on 22 April, 2008, collections were performed in 14-day intervals and in hot summer months in 7-day intervals.

All material was determined by František Chládek. Abundance was evaluated according to Kočárek *et al.* (2005). He used following terms to classify the frequency of each species: very common, common, locally common, rare and very rare.

Thermopreference was evaluated according to Kočárek *et al.* (2005). Their evaluation terms for each individual species were translated in the following categories of thermopreference: mesophylous, thermophylous, psychrophylous and species with unknown thermopreference.

Comments and nomenclature are based on Kočárek *et al.* (2005).

RESULTS AND DISCUSSION

A total number of 21 species were found in all 742 determined specimens on Macošská stráň slope (transect T1 and T2). On Vilémovická stráň slope (transect T3 and T4) there were found 18 species in all 781 determined specimens. This means that for the faunistic square 6666 we are reporting the total of 25 species (tab. I), what is 26,3 % of all species recorded from the territory of Moravia – Czech Republic (Kočárek *et al.*, 2009)

Altogether 10% of rare species on Macošská stráň and 6% of rare species on Vilémovická stráň were found (tab. II). The only relatively rare species were represented by *Stenobothrus nigromaculatus* and *Tetrix bipunctata*. This two species were found on the xeric and pastured sites in Bílé Karpaty (Holuša *et al.*, 2008) too and bot of this species are often very common on some particular localities. Then we found that termophilous Orthoptera species were dominating on Macošská stráň (47%), mezophilous Ortoptera species were dominating on Vilémovická stráň (46%) (tab II). Based on Tropek *et al.* (2009), rare xerothermic Orthoptera fauna is connected to stony habitats more than to habitats with deep soil horizon. Macošská stráň which has one unpastured part hosted more termophilous and rare species of Orthoptera than Vilémovická stráň (more intensively pastured). It is known, that pasture management has an important influence on Orthoptera species (Malenovský *et al.*, 2006). Kemp *et al.* (1990) and Báldi and Kisbenedek (1997) recommend Orthoptera species for quality indication of pastured biotopes. We suggest that pasture of Vilémovická stráň was too heavy and that this part of the valley is from the point of view of Orthoptera not so valuable as Macošská stráň slope.

Important is presence of mountainous and hygrophilous species *Ch. montanus* and *Ch. albomarginatus*. Bot where present only on Vilémovická stráň slope which is situated to north and this slope is more wet than Macošská stráň slope.

I: *Species of Orthoptera and their abundances on the slopes of Macošská (T1 and T2) and Vilémovická (T3 and T4) stráň in PLA Moravský kras in 2008*

Species	T1	T2	T3	T4
Euthystira brachyptera (Ocskay, 1826)	24	4	6	8
Gomphocerippus rufus (Linnaeus, 1758)	8	49	28	48
Chorthippus albomarginatus (De Geer, 1773)	0	0	0	1
Chorthippus apricarius (Linnaeus, 1758)	14	10	76	8
Chorthippus biguttulus (Linnaeus, 1758)	26	69	68	9
Chorthippus brunneus (Thunberg, 1815)	0	0	1	2
Chorthippus dorsatus (Zetterstedt, 1821)	11	21	65	43
Chorthippus mollis (Charpentier, 1825)	3	7	17	4
Chorthippus montanus (Charpentier, 1825)	0	0	4	0
Chorthippus parallelus (Zetterstedt, 1821)	29	26	212	41
Chrysochraon dispar (Germar, 1835)	1	0	3	0
Leptophyes albovittata (Kollar, 1833)	11	3	6	1
Metrioptera bicolor (Philippi, 1830)	6	3	5	4
Metrioptera roeselii (Hagenbach, 1822)	1	1	0	0
Phaneroptera falcata (Poda, 1761)	2	0	0	0
Pholidoptera griseoaptera (De Geer, 1773)	0	2	0	0
Platycleis albopunctata grisea (Fabricius, 1781)	22	5	0	0
Omocestus haemorrhoidalis (Charpentier, 1825)	55	38	3	0
Omocestus viridulus (Linnaeus, 1758)	0	0	4	2
Stenobothrus lineatus (Panzer, 1796)	70	89	61	43
Stenobothrus nigromaculatus (Herrich-Schaffer, 1840)	49	16	0	0
Tetrix bipunctata (Linnaeus, 1758)	31	30	5	2
Tetrix tenuicornis (Sahlberg, 1891)	1	0	1	1
Tettigonia cantans (Fuessly, 1775)	1	3	0	0
Tettigonia viridissima Linnaeus, 1758	0	1	0	0

II: *Frequency (relative rarity) and termopreferences of Orthoptera assemblage*

Locality	Relative rarity			
	Rare	Locally common	Common	Very common
Macošská stráň	21	55	14	10
Vilémovická stráň	14	58	22	6
	Termopreferences			
	Termophious	**Mezophilous**	**Psychrophilous**	**Uknown**
Macošská stráň	47	32	2	19
Vilémovická stráň	48	46	3	11

Annotated list of species

Comments on particular species are taken from Kočárek *et al.* (2005). For collecting method are used following abbreviations:

ex – specimen
T1, T2, T3, T4 – transect number
pt – pitfall traps
mc – Möricke cups
s – sweeping
CR – Czech Republic.

Dates are written in European format – day, month and year (3. 7. 2008 means 3 July 2008).

Euthystira brachyptera (Ocskay, 1826)

In CR common to very common species. Humid as well as dry habitats. Data: 4ex: T1pt, 18. 6.–22. 7. 2008; 1ex: T2pt, 22. 7.–18. 8. 2008; 1ex: T1mc, 3. 7.–10. 7. 2008; 2ex: T1mc, 11. 8.–18. 8. 2008; 4ex: T1s, 23. 6. 2008; 4ex: T1s, 10. 7. 2008; 4ex: T1s, 22. 7. 2008; 5ex: T1s, 5. 8. 2008; 1ex: T2s, 10. 7. 2008; 2ex: T2s, 18. 8. 2008; 1ex: T4pt, 18. 8.–21. 9. 2008; 2ex: T3mc, 22. 7.–29. 7. 2008; 1ex: T4mc, 2. 9.–8. 9. 2008; 1ex: T3s, 10. 7. 2008; 2ex: T3s, 5. 8. 2008; 1ex: T3s, 2. 9. 2008; 3ex: T4s, 10. 7. 2008; 3ex: T4s, 5. 8. 2008.

***Gomphocerippus rufus* (Linnaeus, 1758)**

In CR locally common species. Moderately xerophilous. Occurrence – meadows and sparse woods. Data: 1ex: T1pt, 18. 8.–21. 9. 2008; 2ex: T1pt, 21. 9.–21. 10. 2008; 4ex: T1pt, 21. 10.–28. 11. 2008; 1ex: T2pt, 18. 6.–22. 7. 2008; 2ex: T2pt, 22. 7.–18. 8. 2008; 12ex: T2pt, 21. 9.–21. 10. 2008; 20ex: T2pt, 21. 10.–28. 11. 2008; 1ex: T1mc, 2. 9.–8. 9. 2008; 5ex: T2mc, 22. 7.–29. 7. 2008; 4ex: T2s, 18. 8. 2008; 5ex: T2s, 2. 9. 2008; 8ex: T3pt, 18. 8.–21. 9. 2008; 1ex: T3pt, 21. 9.–21. 10. 2008; 1ex: T4pt, 22. 7.–18. 8. 2008; 20ex: T4pt, 18. 8.–21. 9. 2008; 10ex: T4pt, 21. 9.–21. 10. 2008; 3ex: T3mc, 11. 8.–18. 8. 2008; 3ex: T3mc, 2. 9.–8. 9. 2008; 7ex: T4mc, 2. 9.–8. 9. 2008; 1ex: T3s, 22. 7. 2008; 2ex: T3s, 5. 8. 2008; 3ex: T3s, 18. 8. 2008; 6ex: T3s, 2. 9. 2008; 10ex: T4s, 18. 8. 2008.

***Chorthippus albomarginatus* (De Geer, 1773)**

Common species in CR. Moderately hygrophilous. Occurrence – wet meadows, salt marshes, also drier habitats. Data: 1ex: T4s, 22. 7. 2008.

***Chorthippus apricarius* (Linnaeus, 1758)**

Common species on whole territory of CR. Xeromesophilous. Occurrence – grassland habitats including ruderal ones. Data: 1ex: T2pt, 18. 6.–22. 7. 2008; 2ex, T1mc, 3. 7.–10. 7. 2008; 12ex, T1mc, 11. 8.–18. 8. 2008; 3ex, T2mc, 11. 8.–18. 8. 2008; 5ex, T2s, 22. 7. 2008; 1ex, T2s, 2. 9. 2008; 17ex, T3pt, 18. 6.–22. 7. 2008; 4ex, T3pt, 22. 7.–18. 8. 2008; 1ex, T3pt, 18. 8.–21. 9. 2008; 2ex, T4pt, 22. 7.–18. 8. 2008; 1ex, T4pt, 18. 8.–21. 9. 2008; 12ex, T3mc, 22. 7.–29. 7. 2008; 12ex, T3mc, 11. 8.–18. 8. 2008; 4ex, T3mc, 2. 9.–8. 9. 2008; 11ex, T3s, 11. 7. 2008; 5ex, T3s, 22. 7. 2008; 3ex, T3s, 5. 8. 2008; 1ex, T3s, 18. 8. 2008; 6ex, T3s, 2. 9. 2008; 3ex, T4s, 10. 7. 2008; 2ex, T4s, 22. 7. 2008.

***Chorthippus biguttulus* (Linnaeus, 1758)**

Very common species in CR. Occurrence – from lowlands to mountains. Data: 2ex, T1pt, 22. 7.–18. 8. 2008; 1ex, T2pt, 18. 6.–22. 7. 2008; 21ex, T2pt, 22. 7.–18. 8. 2008; 1ex, T2pt, 21. 9.–21. 10. 2008; 1ex, T2pt, 21. 10.–28. 11. 2008; 4ex, T1mc, 10. 6.–18. 6. 2008; 3ex, T1mc, 22. 7.–29. 7. 2008; 9ex, T1mc, 11. 8.–18. 8. 2008; 3ex, T2mc, 10. 6.–18. 6. 2008; 3ex, T2mc, 22. 7.–29. 7. 2008; 7ex, T2mc, 11. 8.–18. 8. 2008; 1ex, T1s, 10. 7. 2008; 6ex, T1s, 22. 7. 2008; 1ex, T1s, 5. 8. 2008; 2ex, T2s, 10. 7. 2008; 3ex, T2s, 22. 7. 2008; 13ex, T2s, 5. 8. 2008; 12ex, T2s, 18. 8. 2008; 2ex, T2s, 2. 9. 2008; 10ex, T3pt, 22. 7.–18. 8. 2008; 16ex, T3pt, 18. 8.–21. 9. 2008; 2ex, T4pt, 18. 8.–21. 9. 2008; 1ex, T4pt, 21. 9.–21. 10. 2008; 9ex, T3mc, 22. 7.–29. 7. 2008; 6ex, T3mc, 11. 8.–18. 8. 2008; 4ex, T3mc, 2. 9.–8. 9. 2008; 1ex, T4mc, 2. 9.–8. 9. 2008; 8ex, T3s, 22. 7. 2008; 3ex, T3s, 5. 8. 2008; 12ex, T3s, 18. 8. 2008; 1ex, T4s, 22. 7. 2008; 4ex, T4s, 18. 8. 2008.

***Chorthippus brunneus* (Thunberg, 1815)**

Locally common species on whole territory of CR. Moderately xerophilous. Occurrence – steppes, meadows, forest clearings. Data: 1ex, T3pt, 18. 6.–22. 7. 2008; 2ex, T4pt, 22. 7.–18. 8. 2008.

***Chorthippus dorsatus* (Zetterstedt, 1821)**

Common species in CR. Moderately xerophilous. Occurrence – meadows, steppes, clearings. Data: 3ex, T1pt, 21. 10.–28. 11. 2008; 1ex, T2pt, 21. 9.–21. 10. 2008; 2ex, T2zp, 21. 10.–28. 11. 2008; 8ex, T1mc, 11. 8.–18. 8. 2008; 2ex, T2mc, 3. 7.–10. 7. 2008; 4ex, T2mc, 22. 7.–29. 7. 2008; 2ex, T2mc, 11. 8.–18. 8. 2008; 2ex, T2s, 5. 8. 2008; 2ex, T2s, 18. 8. 2008; 6ex, T2s, 2. 9. 2008; 1ex, T3pt, 22. 7.–18. 8. 2008; 1ex, T3pt, 21. 9.–21. 10. 2008; 12ex, T4pt, 18. 8.–21. 9. 2008; 6ex, T4pt, 21. 9.–21. 10. 2008; 8ex, T3mc, 22. 7.–29. 7. 2008; 8ex, T3mc, 11. 8.–18. 8. 2008; 3ex, T3mc, 2. 9.–8. 9. 2008; 6ex, T4mc, 2. 9.–8. 9. 2008; 21ex, T3s, 22. 7. 2008; 15ex, T3s, 18. 8. 2008; 8ex, T3s, 2. 9. 2008; 2ex, T4s, 22. 7. 2008; 3ex, T4s, 5. 8. 2008; 14ex, T4s, 18. 8. 2008.

***Chorthippus mollis* (Charpentier, 1825)**

Common species at lower altitudes of CR. Moderately xerophilous. Occurrence–meadows, steppes. Data: 1ex, T2pt, 21. 10.–28. 11. 2008; 3ex, T2mc, 22. 7. –29. 7. 2008; 3ex, T1s, 5. 8. 2008; 3ex, T2s, 5. 8. 2008; 2ex, T3pt, 22. 7.–18. 8. 2008; 1ex, T4pt, 22. 7.–18. 8. 2008; 2ex, T4pt, 18. 8.–21. 9. 2008; 3ex, T3s, 22. 7. 2008; 4ex, T3s, 5. 8. 2008; 1ex, T4s, 22. 7. 2008.

***Chorthippus montanus* (Charpentier, 1825)**

Common species on whole territory of CR. Hygrophilous. Occurrence – chiefly wet meadows and wetlands. Data: 1ex, T3pt, 18. 8.–21. 9. 2008; 3ex, T3mc, 2. 9.–8. 9. 2008.

***Chorthippus parallelus* (Zetterstedt, 1821)**

Very common species in CR. Moderately hygrophilous. Occurrence – dry and wet habitats. Data: 4ex, T2pt, 18. 6.–22. 7. 2008; 3ex, T1mc, 3. 7.–10. 7. 2008; 25ex, T1mc, 11. 8.–18. 8. 2008; 1ex, T2mc, 3. 7.–10. 7. 2008; 3ex, T2mc, 22. 7.–29. 7. 2008; 5ex, T2mc, 11. 8.–18. 8. 2008; 1ex, T1s, 23. 6. 2008; 1ex, T2s, 10. 7. 2008; 5ex, T2s, 22. 7. 2008; 6ex, T2s, 5. 8. 2008; 1ex, T2s, 18. 8. 2008; 32ex, T3pt, 18. 6.–22. 7. 2008; 10ex, T3pt, 22. 7.–18. 8. 2008; 12ex, T3pt, 18. 8.–21. 9. 2008; 4ex, T4pt, 22. 7.–18. 8. 2008; 10ex, T4pt, 18. 8.–21. 9. 2008; 3ex, T4pt, 21. 9.–21. 10. 2008; 25ex, T3mc, 22. 7.–29. 7. 2008; 11ex, T3mc, 11. 8.–18. 8. 2008; 17ex, T3mc, 2. 9.–8. 9. 2008; 2ex, T4mc, 2. 9.–8. 9. 2008; 28ex, T3s, 10. 7. 2008; 27ex, T3s, 22. 7. 2008; 35ex, T3s, 5. 8. 2008; 11ex, T3s, 18. 8. 2008; 4ex, T3s, 2. 9. 2008;12ex, T4s, 22. 7. 2008; 4ex, T4s, 5. 8. 2008; 6ex, T4s, 2. 9. 2008.

***Chrysochraon dispar* (Germar, 1835)**

Locally common species across entire territory in CR. Moderately hygrophilous. Occurrence – wet or waterlogged meadows but also dry habitats. Data: 1ex, T1pt, 22. 5.–18. 6. 2008; 1ex, T3pt, 18. 6.–22. 7. 2008; 2ex, T3s, 10. 7. 2008.

***Leptophyes albovittata* (Kollar, 1833)**

Locally common species on whole territory in CR. Moderately thermophilous. Occurrence – taller herbs and shrubs. Data: 5ex, T1s, 10. 7. 2008; 4ex, T1s, 22. 7. 2008; 2ex, T1s, 5. 8. 2008; 2ex, T2s, 10. 7. 2008; 1ex, T2s, 5. 8. 2008; 1ex, T3s, 22. 7. 2008; 3ex, T3s, 5. 8. 2008; 2ex, T3s, 18. 8. 2008; 1ex, T4s, 10. 6. 2008.

***Metrioptera bicolor* (Philippi, 1830)**

Common species in lowlands and hills in CR. Moderately xerophilous to xerophilous. Occurrence – meadows, balks etc. Data: 2ex, T1pt, 22. 7.–18. 8. 2008; 1ex, T1mc, 10. 6.–18. 6. 2008; 1ex, T1mc, 22. 7.–29. 7. 2008; 1ex, T1s, 22. 7. 2008; 1ex, T1s, 5. 8. 2008; 1ex, T2s, 22. 7. 2008; 1ex, T2s, 5. 8. 2008; 1ex, T2s, 18. 8. 2008; 2ex, T3pt, 18. 6.–22. 7. 2008; 1ex, T3pt, 22. 7.–18. 8. 2008; 2ex, T4pt, 22. 7.–18. 8. 2008; 1ex, T4pt, 18. 8.–21. 9. 2008; 1ex, T3s, 22. 7. 2008; 1ex, T3s, 5. 8. 2008; 1ex, T4s, 10. 7. 2008.

***Metrioptera roeselii* (Hagenbach, 1822)**

Very common species from lowlands to mountains in CR. Occurrence – in a wide range of habitats – meadows, balks, fields etc. Data: 1ex, T1s, 5. 8. 2008; 1ex, T2s, 5. 8. 2008.

***Phaneroptera falcata* (Poda, 1761)**

Common species in lowlands in southern Moravia. Thermophilous species. Occurrence – edges of deciduous woods, balks, gardens. On shrubs and taller herbs. Kočárek et all. (2008) wrote, that this species was known to be widespread only in southern and central Moravia till 2000. *Phaneroptera falcata* quick expand into northern Moravia and Silesia during the last years. Data: 1ex, T1s, 18. 8. 2008; 1ex, T1s, 2. 9. 2008.

***Pholidoptera griseoaptera* (De Geer, 1773)**

Very common species from lowlands to mountains in CR. Occurrence – forest edges. On taller herbs and shrubs. Data: 1ex, T2pt, 22. 7.–18. 8. 2008; 1ex, T2mc, 22. 7.–29. 7. 2008.

***Platycleis albopunctata grisea* (Fabricius, 1781)**

Common species in warmer parts of Moravia. Data: 1ex, T1pt, 18. 6.–22. 7. 2008; 11ex, T1pt, 22. 7.–18. 8. 2008; 8ex, T1pt, 18. 8.–21. 9. 2008; 1ex, T1pt, 21. 9.–21. 10. 2008; 1ex, T2pt, 22. 7.–18. 8. 2008; 1ex, T1mc, 10. 6.–18. 6. 2008; 1ex, T2mc, 22. 7.–29. 7. 2008; 2ex, T2s, 22. 7. 2008; 1ex, T2s, 18. 8. 2008.

***Omocestus haemorrhoidalis* (Charpentier, 1825)**

Common species on whole territory of CR. Occurrence – meadows, steppes, fallows etc.

Data: 4ex, T1pt, 18. 6.–22. 7. 2008; 13ex, T1pt, 22. 7.–18. 8. 2008; 21ex, T1pt, 18. 8.–21. 9. 2008; 1ex, T1pt, 21. 10.–28. 11. 2008; 1ex, T2pt, 18. 6.–22. 7. 2008; 5 T2pt, 22. 7.–18. 8. 2008; 2ex, T2pt, 18. 8.–21. 9. 2008; 3ex, T2pt, 21. 9.–21. 10. 2008; 2ex, T1mc, 11. 8.–18. 8. 2008; 5ex, T1mc, 2. 9.–8. 9. 2008; 4ex, T2mc, 22. 7.–29. 7. 2008; 2ex, T2mc, 11. 8.–18. 8. 2008; 3ex, T2mc, 2. 9.–8. 9. 2008; 2ex, T1s, 22. 7. 2008; 1ex, T1s, 5. 8. 2008; 6ex, T1s, 18. 8. 2008; 2ex,T2s, 10. 7. 2008; 5ex, T2s, 22. 7. 2008; 3ex, T2s, 5. 8. 2008; 7ex, T2s, 18. 8. 2008; 1ex, T2s, 2. 9. 2008; 3ex, T3pt, 22. 7.–18. 8. 2008.

***Omocestus viridulus* (Linnaeus, 1758)**

Common species in CR, from lowlands to mountains. Moderately xerophilous. Occurrence – meadows. Data: 1ex, T4pt, 22. 7.–18. 8. 2008; 2ex, T3mc, 22. 7.–29. 7. 2008; 2ex, T3s, 22. 7. 2008; 1ex, T4s, 22. 7. 2008.

***Stenobothrus lineatus* (Panzer, 1796)**

Common species in CR. Moderately xerophilous. Occurrence – meadows, steppes etc. Behrens and Fartmann (2004) wrote, that this species prefer short dry turf vegetation with partly open soil. Data: 9ex, T1pt, 18. 6.–22. 7. 2008; 18ex, T1pt, 22. 7.–18. 8. 2008; 4ex, T1pt, 18. 8.–21. 9. 2008; 1ex, T1pt, 21. 10.–28. 11. 2008; 15ex, T2pt, 18. 6.–22. 7. 2008; 35ex, T2pt, 22. 7.–18. 8. 2008; 1ex, T2pt, 18. 8.–21. 9. 2008; 1ex, T2pt, 21. 9.–21. 10. 2008; 6ex, T1mc, 10. 6.–18. 6. 2008; 4ex, T1mc, 3. 7.–10. 7. 2008; 4ex, T1mc, 11. 8.–18. 8. 2008; 1ex, T1mc, 2. 9.–8. 9. 2008; 2ex, T2mc, 10. 6.–18. 6. 2008; 3ex, T2mc, 3. 7.–10. 7. 2008; 9ex, T2mc, 22. 7.–29. 7. 2008; 2ex, T2mc, 11. 8.–18. 8. 2008; 2ex, T2mc, 2. 9.–8. 9. 2008; 1ex, T1s, 23. 6. 2008; 4ex, T1s, 10. 7. 2008; 6ex, T1s, 22. 7. 2008; 6ex, T1s, 5. 8. 2008; 5ex, T1s, 18. 8. 2008; 1ex, T1s, 2. 9. 2008; 6ex, T2s, 10. 7. 2008; 8ex, T2s, 22. 7. 2008; 5ex, T2s, 18. 8. 2008; 15ex, T3pt, 18. 6.–22. 7. 2008; 11ex, T3pt, 22. 7.–18. 8. 2008; 3ex, T3pt, 18. 8.–21. 9. 2008; 1ex, T4pt, 18. 6.–22. 7. 2008; 9ex, T4pt, 22. 7.–18. 8. 2008; 8ex, T4mc, 18. 8.–21. 9. 2008; 1ex, T4pt, 21. 9.–21. 10. 2008; 4ex, T3mc, 22. 7.–29. 7. 2008; 1ex, T4mc, 2. 9.–8. 9. 2008; 1ex, T3s, 23. 6. 2008; 2ex, T3s, 10. 7. 2008; 8ex, T3s, 22. 7. 2008; 14ex, T3s, 5. 8. 2008; 3ex, T3s, 18. 8. 2008; 3ex, T4s, 10. 7. 2008; 9ex, T4s, 22. 7. 2008; 10ex, T4s, 5. 8. 2008; 1ex, T4s, 18. 8. 2008.

***Stenobothrus nigromaculatus* (Herrich-Schaffer, 1840)**

Rare species in CR. In lowlands. Xerophilous. Occurrence–steppes, forest-steppes. Data: 7ex, T1pt, 18. 6.–22. 7. 2008; 15ex, T1pt, 22. 7.–18. 8. 2008; 4ex, T1pt, 18. 8.–21. 9. 2008; 2ex, T2pt, 18. 6.–22. 7. 2008; 1ex, T2pt, 22. 7.–18. 8. 2008; 1ex, T1mc, 3. 7.–10. 7. 2008; 4ex, T1mc, 22. 7.–29. 7. 2008; 3ex, T2mc, 3. 7.–10. 7. 2008; 4ex, T2mc, 22. 7.–29. 7. 2008; 1ex, T2mc, 11. 8.–18. 8. 2008; 1ex, T1s, 23. 6. 2008; 3ex, T1s, 10. 7. 2008; 9ex, T1s, 22. 7. 2008; 5ex, T1s, 5. 8. 2008; 2ex, T2s, 10. 7. 2008; 3ex, T2s, 22. 7. 2008.

***Tetrix bipunctata* (Linnaeus, 1758)**

Rare species in entire territory in CR. Xerophilous. Data: 6ex, T1pt, 22. 4.–22. 5. 2008; 10ex, T1pt, 22. 5.–18. 6. 2008; 10ex, T1pt, 22. 7.–18. 8. 2008; 4ex, T2pt, 22. 4.–22. 5. 2008; 15ex, T2pt, 22. 5.–18. 6. 2008; 2ex, T2pt, 22. 7.–18. 8. 2008; 3ex, T2pt, 18. 8.–21. 9. 2008; 1ex, T1mc, 22. 5.–4. 6. 2008; 1ex, T1mc, 10. 6.–18. 6.

2008; 1ex, T1mc, 3. 7.–10. 7. 2008; 1ex, T1mc, 22. 7.–29. 7. 2008; 1ex, T2mc, 22. 5.–4. 6. 2008; 1ex, T2mc, 10. 6.–18. 6. 2008; 1ex, T2mc, 3. 7.–10. 7. 2008; 1ex, T1s, 4. 6. 2008; 2ex, T2s, 6. 5. 2008; 1ex, T2s, 5. 8. 2008; 2ex, T3pt, 18. 6.–22. 7. 2008; 2ex, T3pt, 22. 7.–18. 8. 2008; 1ex, T4pt, 18. 6.–22. 7. 2008; 1ex, T3mc, 2. 9.–8. 9. 2008; 1ex, T4s, 23. 6. 2008.

***Tetrix tenuicornis* (Sahlberg, 1891)**

Common species in entire territory in CR, lowlands and hills. Occurrence – dry and also moderately humid habitats. Data: 1ex, T1pt, 22. 7.–18. 8. 2008; 1ex, T3pt, 18. 6.–22. 7. 2008; 1ex, T4pt, 18. 6.–22. 7. 2008.

***Tettigonia cantans* (Fuessly, 1775)**

Common species in CR, from hills to mountains. In lowlands only locally. Occurrence – shrubs and taller herbs in balks and forest clearings. Data: 1ex, T2mc, 22. 7.–29. 7. 2008; 1ex, T2mc, 11. 8.–18. 8. 2008; 1ex, T2mc, 2. 9.–8. 9. 2008; 1ex, T1s, 22. 7. 2008.

***Tettigonia viridissima* Linnaeus, 1758**

Common species in CR, from lowlands to hills. Occurrence – taller herbs, shrubs and trees. Data: 1ex, T2s, 2. 9. 2008.

SUMMARY

In 2008 we found 21 species of grasshoppers and crickets on slope of Macošská stráň and 18 species on slope of Vilémovická stráň. Both slopes are located in the northern part of the Moravský kras Protected landscape on the west end of Suchý žleb valley. Both localities are limestone hillsides with a well-developed limestone karren fields with habitats of secondary dry grasslands. The whole area was previously used as communal grazing (Kotouč, 2006). In 2006 regular grazing was restored here. Collections were performed on a total of four transects of Macošská stráň and Vilémovická stráň slopes. Both slopes are influenced by pastured management. For the most comprehensive picture of Orthoptera we used a standard method (sweeping of vegetation) and two nonstandard methods (pitfall traps and Möricke yellow cups).

The most common species are *Stenobothrus lineatus* (Panzer, 1796) on Macošská stráň and *Chorthippus parallelus* (Zetterstedt, 1821), *Stenobothrus lineatus*, *Chorthippus bigutulus* (Linné, 1758) and *Chorthippus dorsatus* (Zetterstedt, 1821) on Vilémovická stráň. The rare species of this assemblages were *Stenobothrus nigromaculatus* (Herrich-Schaffer, 1840) and *Tetrix bipunctata* (Linnaeus, 1758). This two species occurred in higher abundances on Macošská stráň. Termophilous species of Orthoptera dominated on Macošská stráň (47%). On Vilémovická stráň mezophilous species (46%) were dominating. On Vilémovická stráň slope two typically hygrophilous species has been found (*Chortipus montanus*, *Ch. albomarginatus*).

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Address

Ing. Jana Niedobová, Ph.D., Ing. Vladimír Hula, Ph.D., Ústav zoologie, rybářství, hydrobiologie a včelařství, Mendelova univerzita v Brně, Zemědělská 1, 613 00 Brno, Česká republika, RNDr. František Chládek, Bratří Čapků 12, 602 00 Brno, Česká republika, e-mail: Naaudia@seznam.cz