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The Orthoptera fauna of the Stelvio National Park, Italy

Riassunto: *Gli Ortotteri del Parco Nazionale dello Stelvio, Italia.*

Nel triennio 2013-2015 sono stati indagati gli Ortotteri del Parco Nazionale dello Stelvio nell'ambito del "Progetto di Monitoraggio della Biodiversità Alpina". Si presenta una prima check-list dell'Area Protetta, unitamente ad indicazioni preliminari ecologiche e biogeografiche sui *taxa* rilevati. Sono state censite 40 specie (16 Ensifera, 24 Caelifera), corrispondenti all'11% dell'ortotterofauna italiana. È stata riscontrata una netta diversificazione su base geografica nella composizione specifica dei diversi settori dell'Area Protetta. Il genere *Barbitistes* è rappresentato da *B. serricauda* nel settore altoatesino e da *B. alpinus* nei settori trentino e lombardo. *Kisella irena* è diffusa nelle sole valli di Peio e Rabbi, in continuità con l'areale della specie in Trentino. Inaspettatamente *Euthystira brachyptera* è stata rilevata nel solo settore lombardo, sebbene apparentemente vi sia ampia disponibilità di habitat per questa specie anche nella restante parte dell'area di studio. *Omocestus haemorrhoidalis* e *Chorthippus vagans* sono stati rilevati nella sola Val Venosta (BZ). La presenza di due specie, note per il Parco su basi bibliografiche, non è stata confermata nell'ambito del presente studio: *Celes variabilis* e *Ruspolia nitidula*. Presso Martello (BZ) è stata rinvenuta la prima stazione di presenza interna al Parco di *Tettigonia caudata*, rara in Italia. Due *taxa* di notevole interesse conservazionistico, *Epacromius tergestinus ponticus* e *Crysochraon dispar*, segnalati nel secolo scorso in siti appena al di fuori dei confini del Parco, sono oggi probabilmente estinti a causa delle gravi manomissioni subite dal loro habitat.

Abstract: Within the Project "Animal Biodiversity Monitoring in the Alpine Environment" the Orthoptera fauna has been studied in a three-year period (2013-2015). The first check-list of the protected area, with ecological and biogeographical notes, is presented. We found 40 species (16 Ensifera, 24 Caelifera), corresponding to 11% of the Italian Orthoptera fauna. A geographic differentiation in species distribution among the three areas (Alto Adige - BZ, Trentino - TN and Lombardy - BS and SO) has been detected. The genus *Barbitistes* is represented by *B. serricauda* in Alto Adige and *B. alpinus* in Trentino and Lombardy. *Kisella irena* is restricted to Peio and Rabbi Valleys only, in connection with this species distribution in Trentino. Within the Park, *Euthystira brachyptera* is distributed only in Lombardy, despite its habitat is apparently extensively available also in Trentino and Alto Adige. We found *Omocestus haemorrhoidalis* and *Chorthippus vagans* only in Val Venosta (BZ). Only two species, previously reported for the study area, has not been detected during our surveys: *Celes variabilis* and *Ruspolia nitidula*. The first site of presence of *Tettigonia caudata*, rare in Italy, within the Park boundaries has been discovered near Martello (BZ). Two endangered *taxa* of high conservation value, *Epacromius tergestinus ponticus* and *Crysochraon dispar*, reported in the last Century just outside the Park boundaries, are probably extinct today due to habitat loss.

Key words: Orthoptera, Italy, Stelvio National Park, Alps, biodiversity, checklist, conservation.

Introduction

Knowledge on the Orthoptera fauna of Trentino - South Tyrol region has been deeply summarized by Galvagni (1950, 2001), Agabiti & Fontana (2005), Hellrigl (2006) and Buzzetti (2010). On the other side, Lombardy Alps lack specific surveys on this group of Insects. Data on the Orthoptera of both Regions are also provided by Fontana *et al.* (2006). However, on a bibliographical basis we can assume that the Stelvio National Park area still remains only marginally surveyed, and therefore this study is the first in-depth survey of Orthoptera of the park.

Materials and methods

The Stelvio National Park (hereafter "SNP"), which extends over 130,700 ha, is a protected area located among Lombardy, Trentino and South Tyrol. The whole study area is alpine, with an altitude varying be-

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tween 650 and 3900 m. The Park, formerly managed as a consortium, has recently been splitted into three smaller protected areas according to the different local administrations, but it retained its "national" status.

Between 2013 and 2015 the Park promoted an extensive monitoring activity on many animal *taxa* within the "Animal Biodiversity Monitoring in the Alpine Environment" project. The project has been coordinated by the Gran Paradiso National Park and implemented in the four Alpine National Parks, together with the Val Grande and the Dolomiti Bellunesi National Parks. As the current loss of biodiversity requires long-term monitoring studies of the distribution of living organisms, particularly in regions, such as mountains, which are highly sensitive to climatic and environmental changes, the same monitoring effort will be repeated every five years to highlight the response of alpine biodiversity to climate and land-use changes. The aim of the project is to assess the distribution of different taxa along altitudinal gradients and the relative influence of geographical, environmental and climatic factors. Within this project, the Orthoptera fauna has been studied in a three-year period. Standardized samplings have been carried out in 23 fixed plots in South Tyrol (surveyed in 2014-2015), 10 plots in Trentino (surveyed in 2014-2015) and 25 plots in Lombardy (surveyed in 2013-2014) (Fig. 1 and Tab. 1). Plots are located along 12 altitudinal transects, between 945 and 2639 m a.s.l. Each plot consists of a 200 m line transect walk, repeated 3 times between mid July and September. Visits have been conducted with medium-high temperatures, light wind and no rain. In this paper, we used presence-only data collected along the transects, joined with non-standardized samplings and bibliographic data.

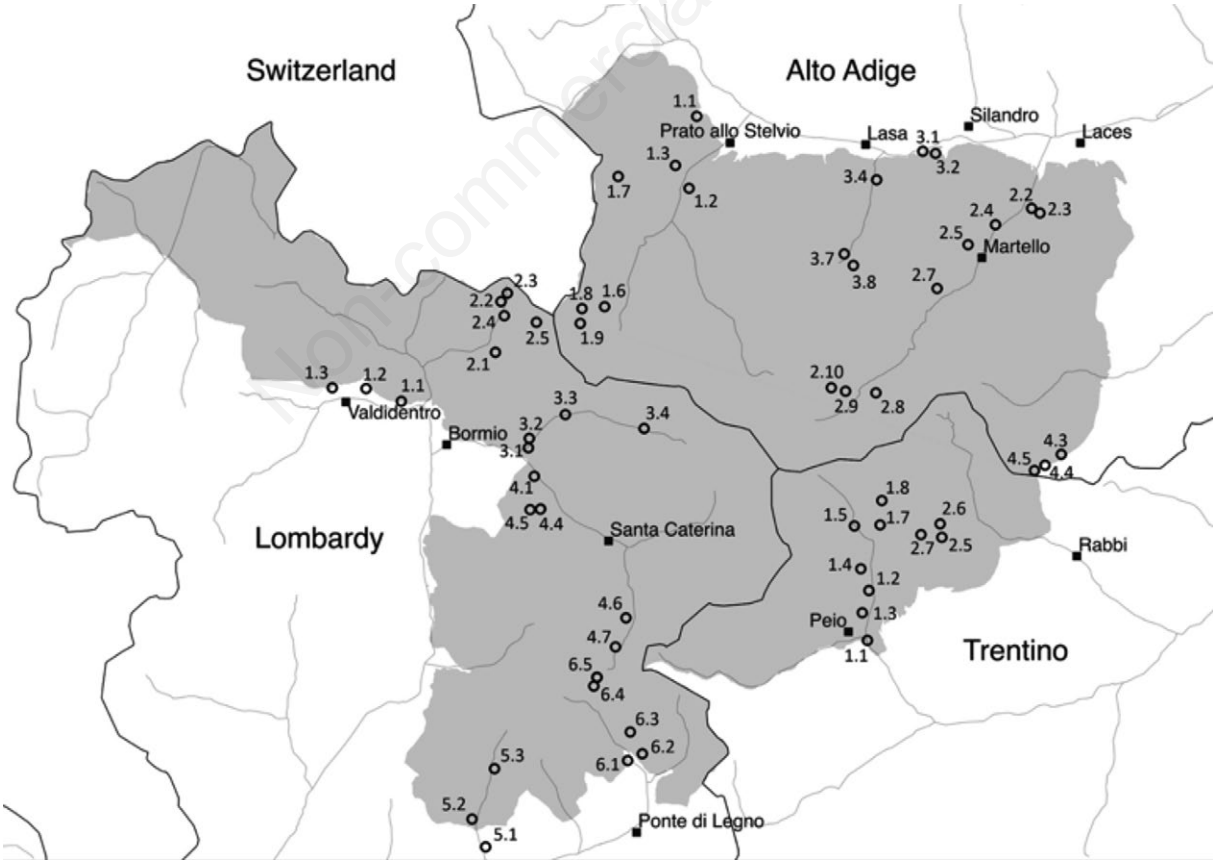

Fig. 1. Sampling plots (open circles) and main localities (filled squares) in the Stelvio National Park (grey area).

Tab. 1. Sampling plots.

Region	Plot ID	Area	Locality	Altitude (m)	Habitat
Alto Adige	*1.1*	Prato allo Stelvio	Montechiaro	1040	Dry meadow
	1.2	Stelvio	Lasairn Hof	1271	Hay meadow, spruce forest
	1.3	Stelvio	Faschldrie	1465	Meadow, shrubland
	1.6	Valle di Trafoi	Rocca Bianca	1978	Larch forest, meadow
	1.7	Stelvio	Obere Stilfser Alm	2185	Alpenrose heath
	1.8	Valle di Trafoi	Alpe di Gloren	2375	Meadow
	1.9	Valle di Trafoi	Cime del Segnale	2600	Meadow
	2.2	Martello	Kratzeben	1040	Hay meadow, mixed woodland
	2.3	Martello	Pronta	1267	Pasture, deciduous forest
	2.4	Martello	Maiern	1350	Meadow, deciduous forest
	2.5	Martello	Premstlhof	1627	Hay meadow, mixed woodland
	2.7	Martello	Stallwies	1969	Hay meadow, coniferous forest
	2.8	Martello	Paradies	2200	Meadow
	2.9	Martello	Val Madriccio	2400	Meadow
	2.10	Martello	Val Madriccio	2600	Meadow
	3.1	Silandro	Brugg	776	Grey alder riparian woodland
	3.2	Silandro	Mut	945	Pasture with birches and junipers
	3.4	Lasa	Tarnell	1315	Hay meadow
	3.7	Lasa	Mattaunboden	1999	Alpenrose heath, larch forest
	3.8	Lasa	Grubenkopf	2200	Meadow
	4.3	Ultimo	Kirchbergtal	2200	Meadow
	4.4	Ultimo	Baerhapp	2400	Meadow (*Carex curvula*)
	4.5	Ultimo	Haselgruber See	2600	Meadow, wetland
Trentino	*1.1*	Peio	Pegaia	1176	Hay meadow
	1.2	Peio	Masi Feraion	1430	Spruce forest, hay meadow
	1.3	Peio	Croce dei Bagni	1575	Hay meadow, alder forest
	1.4	Peio	Masi Vallenaia	1746	Spruce forest, hay meadow
	1.5	Peio	Malga Mare	1998	Wet meadow
	1.7	Peio	Lago delle Lame	2436	Meadow
	1.8	Peio	Lago del Careser	2528	Meadow, stony grounds
	2.5	Rabbi	Malga Maleda	2180	Alpenrose heath
	2.6	Rabbi	Val Flora	2378	Meadow
	2.7	Rabbi	Val Maura	2639	Stony ground
Lombardy	*1.1*	Valdidentro	Bosco Arsiccio	1510	Pine forest
	1.2	Valdidentro	Sasso Prada	1623	Mugo pine forest, hay meadow
	1.3	Valdidentro	Plator	1822	Hay meadow
	2.1	Valle del Braulio	Valle dei Vitelli	2190	Shrub-pasture
	2.2	Valle del Braulio	Umbrail	2412	*Sesleria*-grassland
	2.3	Valle del Braulio	Pozzine	2631	*Sesleria mista*-grassland
	2.4	Valle del Braulio	Le Rese	2408	Alpenrose and *Vaccinium* heaths
	2.5	Valle del Braulio	Foppe di Mogenaccia	2630	Calcareous stony grounds
	3.1	Val Zebrù	Niblogo	1540	Dry meadow
	3.2	Val Zebrù	Fantelle	1734	Hay meadow
	3.3	Val Zebrù	Zebrù del Giardin	1877	Spruce forest, hay meadow
	3.4	Val Zebrù	Pastori	2243	Mugo pines forest, pastures
	4.1	Valfurva	Calvarana	1409	Spruce forest, hay meadow
	4.4	Valfurva	Sobretta di Sopra	2036	Swiss pine forest, pastures
	4.5	Valfurva	Sobrettina	2175	Pasture, shrubland
	4.6	Val di Gavia	Alpe Gavia	2464	Wet meadow (*Carex curvula*)
	4.7	Val di Gavia	Berni	2690	Meadow (*Carex curvula, Nardus*)
	5.1	Val Grande	Tu	1493	Larch forest
	5.2	Val Grande	Pradac	1628	Spruce forest, pasture
	5.3	Val Grande	Malga Valgrande	1792	Alpenrose heath and alder forest
	6.1	Valle delle Messi	S. Apollonia	1588	Peat bog
	6.2	Valle delle Messi	Graole	2038	Meadow, shrubland
	6.3	Valle delle Messi	Sasso Maurizio	2193	Meadow
	6.4	Valle delle Messi	Lago Nero	2401	Peat bog
	6.5	Valle delle Messi	Passo Gavia	2615	Siliceous stony ground

List of species

Forty species (16 Ensifera, 24 Caelifera) have been sampled within Park boundaries. During the three-year period 2013-2015, we found 31 species in the Alto Adige region, 20 in Trentino and 26 in Lombardy.

The checklist follows the nomenclature and systematic order provided by Massa *et al.* (2012).

Fam. **Tettigoniidae** Krauss, 1902

1. ***Barbitistes alpinus*** Fruhstorfer, 1921
Chorotype: South-European.
TN - Peio: *1.2* Masi Feraion, 23.VII.2015 (1♂, LC).
BS -Val Grande: *5.2* Pradac, 29.VIII.2013, (1♂, RS).
SO - Valfurfa: Uzza, 1300 m, 25.VIII.1969 (Nadig, 1987).
Comments. Localized and uncommon species in the SNP, reaching an elevation of 1628 m a.s.l. In Alto Adige it is replaced by *B. serricauda*.

2. ***Barbitistes serricauda*** (Fabricius, 1794)
Chorotype: European.
BZ - Laces: *2.2* Kratzeben, 28.VII.2015 (1♂, 1♀, MB); Martello: *2.4* Maiern, 2.IX.2014 (1♂, DB; 1♂, MB), 28.VII.2015 (1♂, DB).
Comments. Localized and uncommon species in the SNP, reaching an elevation of 1350 m a.s.l. Within the SNP occurs in Alto Adige only.

3. ***Ruspolia nitidula*** (Scopoli, 1786)
Chorotype: Western-Palearctic.
SO - Bormio: Breno, 1957, Coll. La Greca (Fontana *et al.*, 2006).
Comments. Quoted for Bormio in the past; the species was not recorded in our standardized surveys nor in some wetlands investigated near Bormio during our study. However, the occurrence of the species cannot be excluded.

4. ***Tettigonia cantans*** (Fuessly, 1775)
Chorotype: Asiatic-European.
BZ - Martello: Martello, 1460 m, 6.VIII.2014 (1♂, DB; 1♀, MB), 24.VIII.2015 (1♀, DB); Silandro: *3.2* Mut, 30.VII.2015; Lasa: *3.4* Tarnell, 22.VII.2014, 5.VIII.2014, 15.VII.2015, 30.VII.2015; Lasa, biotopo, 887 m, 5.VIII.2014 (1♂, DB; 1♂, MB); Stelvio: *1.2* Lasairn Hof, 5.VIII.2014, 1.IX.2014, 14.VII.2015, 11.VIII.2015; Gomagoi, 1320-1350 m, 4.VIII.2014, 26.VIII.2015 (1♂, DB; 1♂, MB); Stelvio, 1967, Coll. Museo Bergamo (Fontana *et al.*, 2006).
TN - Rabbi: Somrabbi, 1360 m, 3.IX.2014; Val del Corvo, 1100 m, 1992, Coll. Fontana (Fontana *et al.*, 2006). Peio: *1.2* Masi Feraion, 7.VIII.2014, 18.VIII.2014, 23.VII.2015 (1♀, LC); *1.3* Croce dei Bagni, 24.VII.2014, 8.VIII.2014, 23.VII.2015 (1♂, 1♀, LC), 13.VIII.2015 (1♂, LC), 1.IX.2015 (1♀, LC); *1.4* Masi Vallenaia, 7.VIII.2014, 23.VII.2015 (1♀, LC), 1.IX.2015 (1♂, 1♀, LC); Peio, 1998, Coll. Fontana (Fontana *et al.*, 2006).
SO - Bormio: *4.1* Calvarana, 31.VIII.2013 (1♂, LC); Bormio, 1000 m, 1971, Coll. La Greca (Fontana *et al.*, 2006).
Comments. The species seems very rare in the Lombard sector of the Park, where a single specimen was found during our surveys. Conversely, it is a very common species in Trentino - Alto Adige, up to an altitude of 1746 m a.s.l.

5. ***Tettigonia caudata caudata*** (Charpentier, 1854)
Chorotype: South-European.
BZ - Martello: Martello, 1460 m, 6.VIII.2014 (1♂, 1♀, DB), 28.VII.2015 (1♀, MB).
Comments. Rare in Italy, this species was not previously reported from the SNP, although it has been collected by Nadig (1987) and by Galvagni (2001) in the Venosta Valley, outside Park boundaries.

6. ***Tettigonia viridissima*** (Linnaeus, 1758)
Chorotype: Asiatic-European.
BZ - Prato allo Stelvio: *1.1* Montechiaro, 1.IX.2014, 14.VII.2015, 30.VII.2015, 11.VIII.2015; Laces: Obermontani, 790 m, 6.VIII.2014 (1♀, DB).
SO - Bormio: *3.1* Niblogo, 11.IX.2014 (1♀, LC); *3.2* Fantelle, 21.VIII.2014 (1♂, LC); Valdidentro: *1.2* Sasso Prada, 14.VIII.2013 (1♂, LC), 31.VIII.2013, 2.IX.2013 (1♀, RS).
Comments. Localized species within the Park boundaries, where it reaches an elevation of 1734 m a.s.l. At least in Lombardy it is not uncommon at lower altitudes.

7. ***Decticus verrucivorus verrucivorus*** (Linnaeus, 1758)
Chorotype: Asiatic-European.
BZ - Ultimo: *4.3* Kirchbergtal, 7.VIII.2014, 17.VIII.2014; Martello: Martello, 1460 m, 6.VIII.2014; Stelvio: *1.3* Faschldrie, 11.VIII.2015;

Trafoi, 1927, Coll. Museo Trieste (Fontana *et al.*, 2006).
TN - Rabbi: Rabbi, 1924, Coll. Museo Trento (Fontana *et al.*, 2006); Peio: *1.1* Pegaia, 23.VII.2015 (1♂, LC); *1.2* Masi Feraion, 11.VII.2014; 7.VIII.2014, 23.VII.2015 (2♀♀, LC), 12.VIII.2015 (1♂, 1♀, LC), 1.IX.2015 (1♂, LC); *1.3* Croce dei Bagni, 24.VII.2014, 8.VIII.2014, 23.VII.2015 (1♀, LC), 13.VIII.2015 (1♀, LC); *1.4* Masi Vallenaia, 25.VII.2014,7.VIII.2014, 23.VII.2015, 13.VIII.2015 (1♂, 2♀♀, LC), 1.IX.2015 (1♂, LC); *1.7* Lago della Lama, 8.VIII.2014, 12.VIII.2015 (1♂, 1♀, LC).
BS - Val Grande: *5.2* Pradac, 16.VIII.2013 (1♀, LC), 29.VIII.2013 (1♀, RS), 24.VIII.2014, 17.IX.2014 (1♂, 1♀, LC); Valle delle Messi: *6.2* Graole, 31.VIII.2013 (1♂, LC), 2.IX.2013, 23.VIII.2014, 12.IX.2014.
SO - Valfurva: *3.1* Niblogo, 15.VIII.2013, 1.IX.2013, 21.VIII.2014 (1♂, LC), 15.IX.2014; *3.2* Fantelle, 1.IX.2013, 21.VIII.2014 (1♀, LC), 11.IX.2014 (1♀, LC), 15.IX.2014; *3.3* Zebrù del Giardin, 30.VIII.2013, 21.VIII.2014 (1♂, LC), 7.IX.2014; *4.1* Calvarana, 31.VIII.2013 (1♀, LC), 2.IX.2013 (1♂, 1♀, LC), 6.IX.2014, 11.IX.2014 (1♂, LC), 18.IX.2014 (3♀♀, LC); Valdidentro: *1.3* Plator, 14.VIII.2013 (1♂, 1♀, LC).
Comments. A rather localized species within the Park boundaries, where it occurs in 24% of the plots. It reaches an elevation of 2038 m a.s.l. in Lombardy.

8. ***Platycleis grisea grisea*** (Fabricius, 1781)
Chorotype: European.
BZ - Martello: *2.3* Pronta, 22.VII.2014, 5.VIII.2014 (1♀, DB), 2.IX.2014, 13.VIII.2015, 25.VIII.2015; *2.4* Maiern, 2.IX.2014; Silandro: *3.2* Mut, 22.VII.2014, 1.IX.2014 (1♀, MB); Lasa: *3.4* Tarnell, 30.VII.2015; Prato allo Stelvio: *1.1* Montechiaro, 23.VII.2014, 4.VIII.2014, 1.IX.2014, 14.VII.2015, 30.VII.2015; Stelvio: *1.3* Faschldrie, 4.VIII.2014, 1.IX.2014, 29.VII.2015.
TN - Peio: *1.3* Croce dei Bagni, 24.VII.2014.
SO - Valfurva: *3.1* Niblogo, 15.VIII.2013 (1♂, 3♀♀, LC), 1.IX.2013, 21.VIII.2014 (2♂♂, LC), 11.IX.2014 (2♂♂, 1♀, LC), 15.IX.2014; *3.2* Fantelle, 15.VIII.2013 (5♀♀, LC), 1.IX.2013 (1♂, 1♀, 1j, RS), 21.VIII.2014 (2♂♂, 2♀♀, LC), 11.IX.2014 (1♂, 1♀, LC), 15.IX.2014; *3.3* Zebrù del Giardin, 15.VIII.2013 (6♂♂, 6♀♀, LC), 30.VIII.2013 (1♀, RS), 19.IX.2014 (1♂, LC); *4.1* Calvarana, 2.IX.2013 (1♀, LC); Valdidentro: *1.1* Bosco Arsiccio, 14.VIII.2013 (2♂♂, LC), 9.IX.2014 (1♂, LC); *1.2* Sasso Prada, 25.VIII.2014, 9.IX.2014 (1♂, 1♀, LC), 15.IX.2014; *1.3* Plator, 14.VIII.2013 (4♀♀, LC), 31.VIII.2013, 25.VIII.2014, 9.IX.2014 (1♀, LC).
Comments. A rather localized species within the Park boundaries, where it occurs in 22% of the plots. It reaches an elevation of 1877 m a.s.l. in Lombardy.

9. ***Roeseliana roeselii*** (Hagenbach, 1822)
Chorotype: Sibiric-European.
BZ - Laces: *2.2* Kratzeben, 5.VIII.2014 (1♀, DB), 2.IX.2014 (1♂, DB), 28.VII.2015 (2♂♂, MB); *2.3* Pronta, 2.IX.2014; *2.5* Premstlhof, 2.IX.2014 (1♂, DB), 12.VIII.2015; Obermontani, 792 m, 6.VIII.2014; Martello: *2.7* Stallwies, 25.VIII.2015; Martello, 1460 m, 6.VIII.2014 (5♂♂, 3♀♀, DB; 1♀, MB), 2.IX.2014 (2♂♂, DB; 1♂, MB); Lasa: *3.4* Tarnell, 5.VIII.2014 (1♂, DB), 12.VIII.2015; Stelvio: *1.2* Lasairn Hof, 1.IX.2014 (1♀, MB), 14.VII.2015, 11.VIII.2015; *1.3* Faschldrie, 29.VII.2015, 11.VIII.2015; Muldwald, 1778 m, 4.VIII.2014 (1♂, DB); Trafoi, 1650 m, 1998, Coll. Fontana (Fontana *et al.*, 2006; Galvagni, 2001).
SO - Valfurva: *3.1* Niblogo, 1.IX.2013, 21.VIII.2014 (1♂, 2♀♀, LC), 11.IX.2014 (1♀, LC); *3.2* Fantelle, 15.VIII.2013 (1♀, LC), 1.IX.2013; *3.3* Zebrù del Giardin, 15.VIII.2013 (1♂, LC), 30.VIII.2013 (4♂♂, 1♀, RS), 7.IX.2014; *4.1* Calvarana, 31.VIII.2013 (2♂♂, 3♀♀, LC), 2.IX.2013 (5♂♂, 2♀♀, LC), 6.IX.2014, 11.IX.2014 (1♂, 4♀♀, LC), 18.IX.2014 (1♂, 4♀♀, LC); *4.4* Sobretta di Sopra, 18.VIII.2013 (2♂♂, 2♀♀, LC), 30.VIII.2013 (4♂♂, 1♀, LC), 5.IX.2014, 11.IX.2014; Bormio: Bormio, 1300 m, 1997, Coll. Fontana (Fontana *et al.*, 2006); Valdidentro: *1.2* Sasso Prada, 31.VIII.2013, 25.VIII.2014,9.IX.2014 (1♀, LC); *1.3* Plator, 31.VIII.2013, 25.VIII.2014, 9.IX.2014 (1♂, 1♀, LC), 15.IX.2014; Valdidentro, 1350-1400 m, 10.X.1980 (Nadig, 1987).
Comments. A rather localized species within the Park boundaries, where it was found in about a fifth of the plots. It reaches an elevation of 2036 m a.s.l. in Lombardy.

10. ***Pholidoptera aptera aptera*** (Fabricius, 1793)
Chorotype: European.
BZ - Ultimo: *4.3* Kirchbergtal, 7.VIII.2014, 27.VII.2015, 10.VIII.2015; Laces: *2.2* Kratzeben, 26.VI.2014 (1♂, MB), 22.VII.2014, 5.VIII.2014 (1♀,

MB), 2.IX.2014, 28.VII.2015; *2.3* Pronta, 22.VII.2014; Martello: *2.5* Premstlhof, 28.VII.2015; Lasa: *3.4* Tarnell, 22.VII.2014; *3.7* Mattaunboden, 22.VII.2014, 4.VIII.2014, 30.VII.2015, 12.VIII.2015, 26.VIII.2015 (1♀, DB; 1♂, MB); Stelvio: *1.2* Lasairn Hof, 14.VII.2015; *1.3* Faschldrie, 29.VII.2015; *1.6* Rocca Bianca, 23.VII.2014, 14.VII.2015, 29.VII.2015 (1♂, DB), 11.VIII.2015; Trafoi, 1927, Coll. Museo Trieste (Fontana *et al.*, 2006); Valle Trafoi, 1950-2000 m, 25.VIII.1969 (Nadig, 1987); Trafoi, 1650-1900 m, 2.IX.1998 (Galvagni, 2001); Passo dello Stelvio, 1925, Coll. Museo Verona (Fontana *et al.*, 2006).
TN - Rabbi: *2.5* Malga Maleda, 25.VII.2014; Rabbi Fonti, near the Stelvio N. P. guest house, 1220 m, 3.VII.2015 (1♂, LC); Bagni di Rabbi, 1159 m, 1924, Coll. Museo Trento (Fontana *et al.*, 2006); Val del Corvo - Malga Palude, 1800 m, 1992, Coll. Fontana (Fontana *et al.*, 2006).
Comments. It reaches 2000 m in Trentino - Alto Adige, where this species is rather common. Not recorded in the Lombard sector of the Park.

11. ***Pholidoptera griseoaptera*** (De Geer, 1773)
Chorotype: European.
BZ - Laces: *2.2* Kratzeben, 5.VIII.2014 (1♂,1♀, DB), 2.IX.2014, 28.VII.2015; *2.3* Pronta, 22.VII.2014, 5.VIII.2014, 2.IX.2014, 25.VIII.2015; Martello: *2.4* Maiern, 2.IX.2014; *2.5* Premstlhof, 6.VIII.2014, 2.IX.2014, 28.VII.2015; Silandro: *3.2* Mut, 5.VIII.2014, 1.IX.2014; Lasa: *3.4* Tarnell, 5.VIII.2014 (2♂♂, 1♀, MB), 1.IX.2014, 15.VII.2015, 30.VII.2015, 12.VIII.2015; Lasa, biotope, 887 m, 5.VIII.2014; Stelvio: *1.2* Lasairn Hof, 1.IX.2014, 14.VII.2015, 11.VIII.2015; *1.3* Faschldrie, 1.IX.2014, 11.VIII.2015, 29.VII.2015 (1♂, MB), 26.VIII.2015.
TN - Rabbi: *2.5* Malga Maleda, 8.VIII.2014, 21.VII.2015 (1♂, 1♀, LC); Somrabbi, 1360 m,3.IX.2014; Peio: *1.1* Pegaia, 12.VIII.2015 (1♂, LC); *1.2* Masi Feraion, 7.VIII.2014, 18.VIII.2014, 23.VII.2015 (2♂♂, 1♀, LC), 12.VIII.2015 (1♂, 1♀, LC); *1.3* Croce dei Bagni, 1.IX.2015 (1♂, 2♀♀, LC); *1.4* Masi Vallenaia, 25.VII.2014, 7.VIII.2014, 23.VII.2015 (2♂♂, 2♀♀, LC), 1.IX.2015 (1♀, LC); Peio, 1400 m, Coll. Ist. Entom. Piacenza (Fontana *et al.*, 2006).
BS - Val Grande: *5.1* Tu, 17.IX.2014 (1♀, LC); *5.2* Pradac, 16.VIII.2013 (2♂♂, 2♀♀, LC), 29.VIII.2013 (1♂, 2♀♀, RS), 24.VIII.2014, 13.IX.2014.
SO: Bormio, 1000 m, 1971, Coll. La Greca (Fontana *et al.*, 2006).
Comments. Very localized in the Lombard part of the SNP, but common in Trentino and in Alto Adige. It reaches 1746 m a.s.l. in Trentino.

12. ***Antaxius difformis*** (Brunner, 1861)
Chorotype: South-European.
BZ - Ultimo: Kirchbergalm, 2100 m, 10.VIII.2015 (2♂♂, 2♀♀, DB; 3♂♂, 2♀♀, MB); Stelvio: *1.6* Rocca Bianca, 11.VIII.2015 (1♂, DB).
BS - Val Grande: *5.3*, Malga Valgrande, 29.VIII.2013 (1♂, RS); Valle delle Messi: *6.2* Graole, 31.VIII.2013 (1♀, LC).
SO - Valfurva: *4.5* Sobrettina, 10.VIII.2013 (1♂, RS), 30.VIII.2013 (3♂♂, LC), 1.IX.2013, 11.IX.2014 (2♂♂, 1♀, LC); Val Zebrù: *3.3* Zebrù del Giardin, 30.VIII.2013 (1♂, 1♀, RS).
Comments. An endemic species of the southern slopes of the Alps. It is a localized species in the SNP, where it was found in less than 10% of sites surveyed. It has been observed between 1792 and 2175 m a.s.l.

13. ***Chopardius pedestris pedestris*** (Fabricius, 1787)
Chorotype: South-European.
SO - Bormio: Bormio, IX.1932, C. Mancini legit, MSNG; Bormio Valley, 1300 m (Nadig, 1987); Valdidentro: *1.1* Bosco Arsiccio, 31.VIII.2013 (1♂, 1j, RS), 9.IX.2014 (2♂♂, LC).
Comments. A very local and uncommon species in the SNP, where it was found only in Lombardy, in a single low altitude (1510 m a.s.l.) plot near Bormio, a locality where it was already reported in literature.

Fam. **Gryllidae** Laicharting, 1781

14. ***Gryllus campestris*** Linnaeus, 1758
Chorotype: Palearctic.
BZ - Martello: *2.4* Maiern, 22.VII.2014.
TN - Rabbi: Cavallar, 1470 m,3.VI.2014 (1♂, DB); Val di Peio: Celledizzo, 1150 m, 2.VI.2014.
Comments. This wide ranging species in Italy seems very localized in the SNP, where it was found in three localities only. Surprisingly, the species has not been reported in the Lombard sector of the Park. It reaches 1470 m a.sl. in Trentino.

15. ***Nemobius sylvestris sylvestris*** (Bosc, 1792)
Chorotype: European-Mediterranean.
BZ - Stelvio: Faschldrie, 1525 m, 4.VIII.2014.

Comments. This cricket is widespread in Italy but seems very localized in the SNP, where it was found in a single locality. This rarity is probably due to the scarcity of its habitat, represented by broadleaf woods.

16. ***Oecanthus pellucens pellucens*** (Scopoli, 1763)
Chorotype: Palearctic.
BZ - Silandro: *3.2* Mut, 13.VIII.2015 (1♀, MB); Lasa: Lasa, 865 m, 12.VIII.2015; Prato allo Stelvio: *1.1* Montechiaro, 28.VII.2015, 30.VII.2015 (1♂, 1♀, DB; 1♂, MB); Prato allo Stelvio, 915 m, 6.VIII.2014, 28.VII.2015.
Comments. The limited diffusion of this species within the SNP is not surprising, since *O.pellucens* is a thermophilous and xerophylous cricket, and suitable micro-habitats are scarce in the Park. It reaches 1040 m a.s.l.

Fam. **Tetrigidae** Serville, 1838

17a. ***Tetrix bipunctata bipunctata*** (Linnaeus, 1758)
Chorotype: Asiatic-European.
BZ - Laces: *2.3* Pronta, 2.IX.2014 (1♀, DB). Silandro: *3.2* Mut, 25.VI.2014 (2♀♀, DB), 13.VIII.2015 (1♀, MB). Stelvio: *1.7* Obere Stlfser Alm, 10.VII.2014 (1♀, DB).
BS - Val Grande: *5.2* Pradac, 16.VIII.2013 (1♀, LC).
SO - Valfurva: *3.4* Pastori, 15.VIII.2013 (1♂, LC), 30.VIII.2013 (1♂, RS), 21.VIII.2014 (1♂, LC), 7.IX.2014; *4.1* Calvarana, 18.IX.2014 (1♀, LC); *4.5* Sobrettina, 11.IX.2014 (2♂♂, LC); Valdidentro: *1.1* Bosco Arsiccio, 31.VIII.2013 (1♀, RS); *1.3* Plator, 9.IX.2014 (1♀, LC).
Comments. *T. bipunctata* is the only member of its family recorded in the study area. The nominal subspecies is rather widespred (about 20% of the plots). It reaches 2243 m a.s.l. in Lombardy.

17b. ***Tetrix bipunctata kraussi*** (Saulcy, 1888)
Chorotype: European.
BZ - Stelvio: Trafoi, 1927, Coll. Museo Trieste (Fontana *et al.*, 2006).
TN - Peio: *1.1* Pegaia, 2.VI.2014 (1♀, DB); *1.7* Lago della Lama, 8.VIII.2014 (1♀, DB); Rabbi: Somrabbi, Torrente Rabbies, 1360 m, 3.IX.2014 (1♀, MB); Somrabbi, 1360 m, 3.IX.2014 (1♂, DB); Val del Corvo - Malga Palude, 1800 m, 1992, Coll. Fontana (Fontana *et al.*, 2006); Malga Terzolasa, 2055 m, 3.VI.2014 (2♂♂, 1♀, DB).
Comments. The subspecies *T. b. kraussi* is less widespread in the Park, and it was not recorded in the Lombard part. As expected in case of subspecies, the two taxa *T. b. bipunctata* and *T. b. kraussi* do not overlap their distribution.

17c. ***Tetrix bipunctata*** (Linnaeus, 1758)
BZ - Martello: *2.4* Maiern, 2.IX.2014; *2.5* Premstlhof, 22.VII.2014, 2.IX.2014; Silandro: *3.2* Mut, 7.VII.2014 (2♀♀, DB); Lasa: *3.4* Tarnell, 30.VII.2015; Prato allo Stelvio: Torrente Solda, 945 m, 21.VII.2014; Stelvio: *1.6* Rocca Bianca, 29.VII.2015; Trafoi, 1927, Coll. Museo Trieste (Fontana *et al.*, 2006).
TN - Peio: *1.2* Masi Feraion, 11.VII.2014.
Comments. Are herein referred to *Tetrix bipunctata* the observations related to instars or to observations on the field of not collected adult, due to the escape of individuals.

Fam. **Acrididae** MacLeay, 1821

18. ***Sphingonotus caerulans caerulans*** (Linnaeus, 1767)
Chorotype: South-European.
BZ - Prato allo Stelvio: Torrente Solda, 945 m, 21.VII.2014, 6.VIII.2014 (1♂, 1♀, DB), 1.IX.2014, 2.IX.2014.
Comments. This species, typical of sandy and gravelling soils (also artificial, such as gravel pits), was recorded in a single locality within the boundaries of the Park.

19. ***Podisma pedestris pedestris*** (Linnaeus, 1758)
Chorotype: Sibiric-European.
BZ - Ultimo: *4.3* Kirchbergtal, 7.VIII.2014, 27.VII.2015, 10.VIII.2015; *4.4* Kirchbergtal, 7.VIII.2014, 13.VII.2015, 27.VII.2015; Martello: *2.8* Paradies, 13.VIII.2015; *2.9* Val Madriccio, 6.VIII.2014 (1♀, DB), 28.VII.2015; *2.10* Val Madriccio, 28.VII.2015 (2♂♂, DB; 2♂♂, 1♀ , MB); Passo Madriccio, 2500 m, 1969, Coll. Padova (Fontana *et al.*, 2006); Martello, 2450-2600 m, 30.VIII.1968 (Galvagni, 2001); Lasa: *3.7* Mattaunboden, 9.VII.2014 (1♀, DB), 22.VII.2014, 4.VIII.2014, 30.VII.2015 (1♂, MB), 12.VIII.2015, 26.VIII.2015 (2♂♂, DB; 2♂♂,

MB); *3.8* Grubenkopf, 22.VII.2014, 4.VIII.2014, 15.VII.2015, 30.VII.2015, 26.VIII.2015 (3♂♂, 1♀, DB); Stelvio: *1.6* Rocca Bianca, 14.VII.2015, 29.VII.2015; *1.7* Obere Stilfser Alm, 4.VIII.2014, 14.VII.2015, 29.VII.2015; *1.8* Alpe di Gloren, 4.VIII.2014, 1.IX.2014, 29.VII.2015; *1.9* Cime del Segnale, 29.VII.2015; Trafoi, 2250 m, 1998, Coll. Fontana (Fontana *et al.*, 2006); Trafoi, 2250 m, 2.IX.1998 (Galvagni, 2001); near Passo dello Stelvio, 2450 m, 11.VIII.2015 (1♂, DB; 1♂, MB); Solda, 1906-2200 m, 26.VIII.1964 (Galvagni, 2001).
TN - Rabbi: *2.5* Malga Maleda, 25.VII.2014, 8.VIII.2014, 21.VII.2015 (1♂, 3♀♀, LC), 11.VIII.2015 (1♀ LC); Peio: *1.4* Masi Vallenaia, 23.VII.2015 (1♂, LC); *1.7* Lago della Lama, 25.VII.2014, 8.VIII.2014, 18.VIII.2014, 22.VII.2015 (1♀, LC), 12.VIII.2015 (1♂, LC); near Lago di Careser, 2525 m, 22.VII.2015; 12.VIII.2015 (2♂♂, 3♀♀, LC).
BS - Val Grande: *5.3* Malga Valgrande, 16.VIII.2013 (1♂, 2♀♀, LC), 29.VIII.2013 (1♂, 1♀, RS); Valle delle Messi: *6.2* Graole, 31.VIII.2013 (1♂, 1♀, LC), 2.IX.2013 (3♂♂, 3♀♀, LC), 23.VIII.2014; *6.3* Sasso Maurizio, 25.VIII.2013 (1♂, 1♀, RS), 31.VIII.2013 (1♂, 1♀, LC), 23.VIII.2014, 12.IX.2014 (2♂♂, 3♀♀, LC), 14.IX.2014.
SO - Valfurva: *3.3* Zebrù del Giardin, 19.IX.2014 (2♀♀, LC); *3.4* Pastori, 15.VIII.2013 (2♂♂, 1♀, LC), 30.VIII.2013 (1♂, 1♀, RS), 21.VIII.2014 (2♂♂, 1♀, LC), 7.IX.2014, 19.IX.2014 (2♀♀, LC); *4.4* Sobretta di Sopra, 5.IX.2014, 11.IX.2014 (2♂♂, 1♀, LC); *4.5* Sobrettina, 30.VIII.2013 (2♂♂, 4♀♀, LC), 1.IX.2013, 5.IX.2014, 11.IX.2014 (2♂♂, 2♀♀, LC); Plaghera Alta, 2280 m, 1971, Coll. La Greca (Fontana *et al.*, 2006); Bormio: *2.1* Valle dei Vitelli, 29.VIII.2013 (5♂♂, 4♀♀, LC), VIII.2013 (1♂, 1♀, RS), 6.IX.2014, 10.IX.2014 (4♂♂, 2♀♀, LC); Valdidentro: *1.1* Bosco Arsiccio, 14.VIII.2013 (1♀, LC), 31.VIII.2013 (1♂, 1♀, RS), 9.IX.2014 (1♂; 2♀♀, LC).
Comments. This orophylous species is widespread in the SNP, where it lives between 1510 and 2600 m a.s.l.

20. ***Bohemanella frigida frigida*** (Boheman, 1846)
Chorotype: Olarctic.
BS - Valle delle Messi: *6.5* Passo Gavia, 17.VIII.2013 (5♂♂, 2♀♀, LC), 1.IX.2013 (3♂♂, 8♀♀, LC), 11.IX.2014 (1♂, 2♀♀, RS).
SO - Valfurva: *4.6* Alpe Gavia, 30.VIII.2013 (2♂♂, 1♀, LC), 1.IX.2013 (5♂♂, 5♀♀, LC), 28.VIII.2014 (3♀♀, LC), 14.IX.2014; *4.7* Berni, 17.VIII.2013 (11♂♂, 12♀♀, LC), 30.VIII.2013 (10♂♂, 4♀♀, LC), 28.VIII.2014 (2♂♂, 5♀♀, LC), 17.IX.2014; Plaghera Alta, 2280 m, 1971, Coll. La Greca (Fontana *et al.*, 2006); Bormio: *2.1* Valle dei Vitelli, 22.VIII.2014 (4, LC), 10.IX2014; *2.3* Pozzine, 24.VIII.2013 (1♂, 2♀♀, RS), *2.4* Le Rese, 13.VIII.2013 (1♂, 2♀♀, LC), 29.VIII.2013 (1♂, 1♀, LC), 2.IX.2013, 6.IX.2014, 8.IX.2014, 10.IX.2014 (2♀♀, LC); *2.5* Foppe di Mogenaccia, 24.VIII.2013 (1♂, 1♀, RS), 29.VIII.2014 (2♂♂, 2♀♀, LC), 10.IX.2014 (2♂♂, 2♀♀, LC); Passo dello Stelvio, 2400 m, 1971, Coll. La Greca (Fontana *et al.*, 2006); Valdidentro: *2.3* Pozzine, 24.VIII.2013, 10.IX.2014 (2♀♀, LC).
Comments. A high altitude species, only found in Lombardy; its presence is expected also in Alto Adige, since it was found very close to the Stelvio Pass. The altitudinal range found in this study is between 2408 and 2690 m a.s.l.

21. ***Kisella irena*** (Fruhstorfer, 1921)
Chorotype: South-European.
TN - Rabbi: near Malga Maleda, 11.VIII.2015 (1♂, LC); Val Maleda, 1794 m, 8.VIII.2014 (1♂, MB); Somrabbi, 1360 m, 3.IX.2014 (5♂♂, DB); Bagni di Rabbi, 1300 m, 1992, Coll. Fontana (Fontana *et al.*, 2006); Val del Corvo - Malga Palude, 1800 m, 1992, Coll. Fontana (Fontana *et al.*, 2006); Peio: *1.2* Masi Feraion, 11.VII.2014, 7.VIII.2014 (1♂, 1♀, MB); *1.4* Masi Vallenaia, 7.VIII.2014 (4♂♂, DB), 24.VII.2014 (6♂♂, DB), 7.VIII.2014; Peio, 1650 m (Nadig, 1989).
Comments. In the SNP this species seems exclusive of the Trento sector, between 1430 and 2180 m a.s.l.

22. ***Psophus stridulus*** Linnaeus, 1758
Chorotype: Palearctic.
BZ - Stelvio: *1.6* Rocca Bianca, 1.IX.2014 (1♀, DB), 11.VIII.2015 (2♂♂, DB; 2♂♂, MB); *1.7* Obere Stilfser Alm, 29.VII.2015, 11.VIII.2015; *1.8* Alpe di Gloren, 4.VIII.2014, 29.VII.2015, 11.VIII.2015 (1♀, MB); near Passo dello Stelvio, 2450 m, 11.VIII.2015; Trafoi, 2250 m, 1998, Coll. Fontana (Fontana *et al.*, 2006); Trafoi, 2250 m, 2.IX.1998 (Galvagni, 2001).
SO - Valfurva: *3.2* Fantelle,15.VIII.2013 (2♂♂, LC), 1.IX.2013 (4♂♂, RS), 21.VIII.2014 (2♂♂, LC), 15.IX.2014.
Comments. Although the altitudinal range in the area is broad (1734-2450 m a.s.l.), it is a very localized species, only found in 6% of all plots.

23. ***Celes variabilis variabilis*** (Pallas, 1771)
Chorotype: Sibiric-European.
SO - Bormio: Bormio (De Carlini, 1889).
Comments. Quoted from Bormio in the past, the presence of this species was not confirmed by our study.

24. ***Oedipoda caerulescens caerulescens*** (Linnaeus, 1758)
Chorotype: Palearctic.
BZ - Laces: *2.3* Pronta, 2.IX.2014, 13.VIII.2015, 25.VIII.2015; Martello: *2.4* Maiern, 2.IX.2014, 12.VIII.2015; Silandro: *3.2* Mut, 22.VII.2014, 5.VIII.2014 (1♂, DB), 1.IX.2014, 30.VII.2015, 13.VIII.2015; Prato allo Stelvio: *1.1* Montechiaro, 23.VII.2014, 4.VIII.2014, 1.IX.2014, 14.VII.2015, 30.VII.2015, 11.VIII.2015; Torrente Solda, 945 m, 6.VIII.2014, 1.IX.2014; Stelvio: *1.3* Faschldrie, 1.IX.2014, 11.VIII.2015 (1♂,1♀, DB).
TN - Peio: near Pegaia, 12.VIII.2015 (1♂, 1♀, MB).
BS - Valle delle Messi: *6.2* Graole, 31.VIII.2013 (1♂, LC), 2.IX.2013 (2♂♂, LC).
SO - Valfurva: *3.1* Niblogo, 15.VIII.2013 (1♀, LC), *3.2* Fantelle, 15.VIII.2013 (2♂♂, LC), 1.IX.2013 (1♂, RS); Valdidentro: *1.1* Bosco Arsiccio, 14.VIII.2013 (1♂, 1♀, LC).
Comments. A widespread species in Italy, often recorded in artificial habitats such as dirt yards. Its spread in the park is limited by the high average altitude. The altitudinal record in the Park is 1734 m a.s.l.

25. ***Oedipoda germanica*** (Latreille, 1804)
Chorotype: Turanic-European.
SO - Valdidentro: *1.1* Bosco Arsiccio, 9.IX.2014 (2♂♂, 4♀♀, LC).
Comments. This species, widespread in Italy, is extremely localized in the SNP, where is known from only one locality.

26. ***Stethophyma grossum*** (Linnaeus 1758)
Chorotype: Sibiric-European.
SO - Valdidentro: *2.1* Sasso Prada, 2.IX.2013 (1 ♂ RS).
Comments. A very rare grasshopper in the SNP, where a single specimen was found in a small peat bog in Lombardy. A large population was found in a much more extensive peat bog near Oga Fort, located outside the Park at a distance as the crow flies of some 3.5 kilometers from Sasso Prada.

27. ***Euthystira brachyptera*** (Ocskay, 1826)
Chorotype: Centralasiatic-European.
BS - Val Grande: *5.2* Pradac, 29.VIII.2013 (1♂, 1♀, RS), 24.VIII.2014, 13.IX.2014; Valle delle Messi: *6.2* Graole, 31.VIII.2013 (1♀, LC), 2.IX.2013 (1♀, LC), 23.VIII.2014, 12.IX.2014 (4♀♀, LC), 13.IX.2014.
SO - Valfurva: *3.1* Niblogo, 15.VIII.2013 (3♀♀, LC), 1.IX.2013, 21.VIII.2014 (1♂, 3♀♀, LC), 11.IX.2014 (5♀♀, LC), 15.IX.2014; *3.2* Fantelle, 15.VIII.2013 (2♀♀, LC), 1.IX.2013 (1♀, RS), 21.VIII.2014 (4♀♀, LC), 11.IX.2014 (1♂, 4♀♀, LC), 15.IX.2014; *3.3* Zebrù del Giardin, 15.VIII.2013 (1♀, LC), 30.VIII.2013 (1♂, RS), 21.VIII.2014 (5♀♀, LC), 7.IX.2014, 19.IX.2014 (1♂, 4♀♀, LC); *4.1* Calvarana, 31.VIII.2013 (4♀♀, LC), 2.IX.2013 (4♀♀, LC), 6.IX.2014, 11.IX.2014 (5♀♀, LC), 18.IX.2014 (2♂♂, 8♀♀, LC); Bormio: Bormio, 1000 m, 1971, Coll. La Greca (Fontana *et al.*, 2006); Valdidentro: *1.2* Sasso Prada, 14.VIII.2013 (2♀♀, LC), 31.VIII.2013, 25.VIII.2014, 9.IX.2014 (3♂♂, 6♀♀, LC); *1.3* Plator, 31.VIII.2013, 25.VIII.2014, 9.IX.2014 (1♂, 2♀♀, LC), 15.IX.2014.
Comments. A rather widespread species in the Lombard part of the Park, found in about one third of the plots, but surprisingly not found in the Trento and Alto Adige sectors. In the SNP it reaches the altitude of 2038 m a.s.l.

28. ***Omocestus (Dirshius) haemorrhoidalis haemorrhoidalis*** (Charpentier, 1825)
Chorotype: Centralasiatic-European.
BZ - Laces: *2.3* Pronta, 22.VII.2014, 5.VIII.2014 (2♂♂, DB), 2.IX.2014; Martello: *2.4* Maiern, 2.IX.2014 (1♂, DB); *2.5* Premstlhof, 6.VIII.2014, 2.IX.2014 (1♂, 2♀♀, DB), 28.VII.2015 (1♂, MB); Silandro: *3.2* Mut, 7.VII.2014 (2♂♂,1♀, DB; 1♀, MB); 22.VII.2014, 5.VIII.2014, 1.IX.2014 (5♂♂, 2♀♀, DB; 2♂♂, MB), 13.VIII.2015 (1♂, 1♀, MB); Lasa: *3.4* Tarnell, 30.VII.2015; Prato allo Stelvio: *1.1* Montechiaro, 30.VII.2015; Torrente Solda, 895 m, 26.VIII.2015; Stelvio: *1.3* Faschldrie, 1.IX.2014 (2♂♂, DB), 29.VII.2015, 11.VIII.2015 (1♂, DB; 1♀, MB), 26.VIII.2015.
Comments. A rather widespread species in the Alto Adige part of the Park, but not found in the other sectors of SNP. The altitudinal record is 1627 m a.s.l.

29. ***Omocestus (Omocestus) viridulus*** (Linnaeus, 1758)
Chorotype: Sibiric-European.

BZ - Ultimo: *4.3* Kirchbergtal, 24.VII.2014, 7.VIII.2014, 17.VIII.2014, 27.VII.2015, 10.VIII.2015; *4.4* Kirchbergtal, 7.VIII.2014, 17.VIII.2014, 27.VII.2015; Laces: *2.2* Kratzeben, 9.VII.2014 (1♀, DB) 22.VII.2014, 5.VIII.2014 (♂, 1♀, MB); *2.5* Premstlhof, 6.VIII.2014, 28.VII.2015, 12.VIII.2015; Obermontani, 792 m, 6.VIII.2014; Martello: *2.7* Stallwies, 22.VII.2014, 6.VIII.2014, 2.IX.2014, 16.VII.2015, 28.VII.2015; *2.8* Paradies, 6.VIII.2014, 2.IX.2014, 28.VII.2015, 13.VIII.2015; *2.9* Val Madriccio, 13.VIII.2015; Val Madriccio, 2450-2600 m, 30.VIII.1968 (Galvagni, 2001); Martello, 1460 m, 6.VIII.2014; Lasa: *3.4* Tarnell, 26.VI.2014 (2♂♂, 3♀♀, DB; (2♂♂, 1♀, MB), 22.VII.2014, 5.VIII.2014, 15.VII.2015, 30.VII.2015, 12.VIII.2015; *3.7* Mattaunboden, 26.VI.2014, 9.VII.2014 (1♀, DB), 22.VII.2014, 12.VIII.2015; *3.8* Grubenkopf, 4.VIII.2014, 15.VII.2015, 30.VII.2015, 12.VIII.2015; Stelvio: *1.2* Lasairn Hof, 1.IX.2014, 14.VII.2015, 11.VIII.2015; *1.7* Obere Stilfser Alm, 14.VII.2015; *1.9* Cime del Segnale, 29.VII.2015; Trafoi, 1927, Coll. Museo Trieste (Fontana *et al.*, 2006); Solda, 1906 m, 26.VII.1964 (Galvagni, 2001).

TN - Rabbi: *2.5* Malga Maleda, 8.VIII.2014, 11.VIII.2015 (1♂, 1♀, LC); *2.6* Val Flora, 11.VIII.2015 (1♂, 2♀♀, LC); Somrabbi, 1360 m, 3.IX.2014; Bagni di Rabbi, 1300 m, 1991, Coll. Fontana (Fontana *et al.*, 2006); Val del Corvo, 1600 m, 1991, Coll. Fontana (Fontana *et al.*, 2006); Peio: *1.1* Pegaia, 23.VII.2015 (1♂, LC); *1.2* Masi Feraion, 11.VII.2014, 7.VIII.2014, 23.VII.2015 (1♂, LC); *1.3* Croce dei Bagni, 24.VII.2014, 8.VIII.2014; *1.4* Masi Vallenaia, 25.VII.2014, 7.VIII.2014, 23.VII.2015 (4♂♂, 5♀♀, LC), 13.VIII.2015 (4♂♂, 5♀♀, LC), 1.IX.2015 (2♀♀, LC); *1.5* Malga Mare, 8.VIII.2014, 18.VIII.2014, 23.VII.2015 (8♂♂, 7♀♀, LC); 12.VIII.2015 (5♂♂, 10♀♀, LC); 1.IX.2015 (1♀, LC), *1.7* Lago della Lama, 22.VII.2015 (1♂, LC); Peio Terme, 1998, Coll. Fontana (Fontana *et al.*, 2006).

BS - Val Grande: *5.2* Pradac, 16.VIII.2013 (1♀, LC), 29.VIII.2013, 13.IX.2014; *5.3* Malga Valgrande, 16.VIII.2013 (5♂♂, 7♀♀, LC), 29.VIII.2013 (2♂♂, 3♀♀, RS), 24.VIII.2014, 13.IX.2014, 17.IX.2014 (2♂♂, 1♀, LC); Valle delle Messi: *6.1* S. Apollonia, 31.VIII.2013 (7♂♂, 8♀♀, LC), 2.IX.2013 (5♂♂, 3♀♀, LC), 23.VIII.2014 (1♂, LC), 12.IX.2014 (4♂♂, LC); *6.2* Graole, 2.IX.2013 (4♂♂, 3♀♀, LC), 12.IX.2014 (5♂♂, 3♀♀, RS); *6.3* Sasso Maurizio, 25.VIII.2013 (1♂, RS), 31.VIII.2013 (2♀♀, LC), 23.VIII.2014; *6.4* Lago Nero, 17.VIII.2013 (3♂♂, LC), 1.IX.2013 (7♂♂, 9♀♀, LC), 28.VIII.2014 (5♂♂, 3♀♀, LC), 12.IX.2014 (4♂♂, 5♀♀, LC), 14.IX.2014.

SO - Valfurva: *3.1* Niblogo, 15.VIII.2013 (1♀, LC), *3.2* Fantelle, 21.VIII.2014 (1♀, LC); *3.3* Zebrù del Giardin, 15.VIII.2013 (1♀, LC), 30.VIII.2013 (3♀♀, RS),7.IX.2014; *3.4* Pastori, 15.VIII.2013 (2♂♂, 3♀♀, LC), 30.VIII.2013 (2♂♂, 2♀♀, RS), 21.VIII.2014 (5♂♂, 4♀♀, LC), 7.IX.2014; *4.1* Calvarana, 31.VIII.2013 (4♂♂, 4♀♀, LC), 2.IX.2013 (8♀♀, LC), 6.IX.2014, 18.IX.2014 (1♀, LC); *4.4* Sobretta di Sopra, 18.VIII.2013 (7♂♂, 8♀♀, LC), 30.VIII.2013 (8♂♂, 3♀♀, LC), 5.IX.2014, 11.IX.2014 (1♂, 3♀♀, LC), 19.IX.2014 (1♀, LC); *4.5* Sobrettina, 30.VIII.2013 (1♂, 1♀, LC), 1.IX.2013, 11.IX.2014 (1♀, LC); Plaghera Alta, 2280 m, 1971, Coll. La Greca (Fontana *et al.*, 2006); Bormio: *2.1* Valle dei Vitelli, 29.VIII.2013 (3♂♂, 2♀♀, LC), VIII.2013 (1♂, 1♀, RS), 22.VIII.2014 (2♀♀, LC), 10.IX.2014 (8♂♂ ;4♀♀, LC); *2.2* Umbrail, 8.IX.2014 (1♂, 2♀♀, LC), 10.IX.2014 (3♂♂, LC); *2.3* Pozzine, 24.VIII.2013 (2♂♂, 2♀♀, RS), *2.4* Le Rese, 13.VIII.2013 (2♂♂, 3♀♀, LC), 10.IX.2014 (1♀, RS); *2.5* Foppe di Mogenaccia, 29.VIII.2014 (2♀♀, LC), 10.IX.2014 (1♂, 3♀♀, LC); Passo dello Stelvio, 2400 m, 1971, Coll. La Greca (Fontana *et al.*, 2006); Bormio, 1000 m, 1971, Coll. La Greca (Fontana *et al.*, 2006); Valdidentro: *1.3* Plator, 9.IX.2014 (2♀♀, LC); *2.2* Umbrail, 29.VIII.2013 (3♂♂, 1♀, LC), 8.IX.2014 (1♂, 2♀♀, RS), 10.IX.2014 (3♂♂, RS); *2.3* Pozzine, 24.VIII.2013, 10.IX.2014 (1♀, LC); *2.4* Le Rese, 10.IX.2014 (1♀, LC).

Comments. One of the most widespread species in the SNP, where it was found in about 70% of the plots, up to an altitude of 2631 m a.s.l.

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

Chorotype: Asiatic-European.

BZ - Laces: *2.3* Pronta, 9.VII.2014 (1♂, MB), 22.VII.2014 (1♀, MB), 5.VIII.2014, 2.IX.2014, 28.VII.2015, 13.VIII.2015, 25.VIII.2015 (1♀, MB); Martello: *2.4* Maiern, 26.VI.2014 (1♂, DB), 22.VII.2014, 5.VIII.2014, 2.IX.2014, 12.VIII.2015, 25.VIII.2015; Lasa: *3.7* Mattaunboden, 4.VIII.2014; Prato allo Stelvio: *1.1* Montechiaro, 4.VIII.2014; Stelvio: *1.3* Faschldrie, 23.VII.2014, 4.VIII.2014, 1.IX.2014 (1♂,1♀, DB; 1♂, MB), 29.VII.2015, 11.VIII.2015 (1♂,1♀, DB), 26.VIII.2015.

TN - Rabbi: Val del Corvo, 1600 m, 1992, Coll. Fontana (Fontana *et al.*, 2006); Peio: *1.3* Croce dei Bagni, 24.VII.2014, 8.VIII.2014, 23.VII.2015 (2♀♀, LC), 13.VIII.2015 (2♀♀, LC), 1.IX.2015 (2♀♀, LC). BS - Val Grande: *5.2* Pradac, 16.VIII.2013 (1♂, 1♀, LC), 29.VIII.2013 (1♂, 2♀♀, RS), 24.VIII.2014, 13.IX.2014, 17.IX.2014 (3♂♂, 1♀, LC); Valle delle Messi: *6.2* Graole, 31.VIII.2013 (7♂♂, 2♀♀, LC), 23.VIII.2014, 12.IX.2014 (3♂♂, 1♀, LC), 13.IX.2014.
SO - Valfurva: *3.1* Niblogo, 21.VIII.2014 (1♂, LC); *3.2* Fantelle, 1.IX.2013 (2♂♂, 1♀, RS), 11.IX.2014 (4♀♀, LC), 15.IX.2014; *3.3* Zebrù del Giardin, 30.VIII.2013 (1♂, 1♀, RS), 21.VIII.2014 (2♂♂, 1♀, LC), 7.IX.2014, 19.IX.2014 (1♂, LC); Bormio: Bormio (De Carlini, 1889); Valdidentro: *1.2* Sasso Prada, 31.VIII.2013, 25.VIII.2014, 9.IX.2014 (1♀, LC); *1.3* Plator, 31.VIII.2013, 9.IX.2014 (1♀, LC); *2.2* Umbrail, 29.VIII.2013 (1♂, 1♀, LC), 6.IX.2014, 10.IX.2014 (1♂, 2♀♀, LC); ***2.3*** Pozzine, 24.VIII.2013, 10.IX.2014 (1♂, LC).
Comments. A rather widespread species in the SNP, where it was found in 25% of the plots, up to an altitude of 2631 m a.s.l.

31. ***Stenobothrus rubicundulus*** (Kruseman et Jeekel, 1967)
Chorotype: South-European.
BZ - Stelvio: *1.8* Alpe di Gloren, 4.VIII.2014 (1♂, DB), 11.VIII.2015 (1♀, MB).
Comments. A very localized species in the Park, found in a single plot at an altitude of 2375 m a.s.l.

32. ***Aeropus sibiricus sibiricus*** (Linnaeus, 1767)
Chorotype: Asiatic-European.
BZ - Ultimo: *4.3* Kirchbergtal, 24.VII.2014, 7.VIII.2014, 17.VIII.2014, 27.VII.2015, 10.VIII.2015; *4.4* Kirchbergtal, 17.VIII.2014; Martello: *2.10* Val Madriccio, 23.VII.2014, 28.VII.2015(1♂, 1♀, MB); *2.8* Paradies, 6.VIII.2014, 2.IX.2014, 16.VII.2015, 28.VII.2015, 13.VIII.2015; *2.9* Val Madriccio, 23.VII.2014, 6.VIII.2014, 8.VII.2015, 13.VIII.2015; Rifugio Corsi, 2500 m, 1969, Coll. Padova (Fontana *et al.*, 2006); Passo Madriccio, 2500 m, 1969, Coll. Padova (Fontana *et al.*, 2006); Val Madriccio, 2450 m, 30.VIII.1968 (Galvagni, 2001); Lasa: *3.7* Mattaunboden, 22.VII.2014, 4.VIII.2014, 12.VIII.2015; *3.8* Grubenkopf, 15.VII.2015, 12.VIII.2015; Stelvio: *1.6* Rocca Bianca, 23.VII.2014, 4.VIII.2014, 11.VIII.2015; *1.7* Obere Stilfser Alm, 23.VII.2014, 4.VIII.2014, 14.VII.2015, 29.VII.2015, 11.VIII.2015; *1.8* Alpe di Gloren, 23.VII.2014 (1♂, DB), 4.VIII.2014, 1.IX.2014, 14.VII.2015, 29.VII.2015, 11.VIII.2015; *1.9* Cime del Segnale, 23.VII.2014, 29.VII.2015; Trafoi, 2250 m, 2.IX.1998 (Galvagni, 2001); Solda, 1906 m, 26.VII.1964 (Galvagni, 2001); Passo dello Stelvio, 2400 m, 1997, Coll. Fontana (Fontana *et al.*, 2006).
TN - Rabbi: *2.5* Malga Maleda, 25.VII.2014, 8.VIII.2014, 21.VII.2015 (4♂♂, 5♀♀, LC); *2.6* Val Flora, 25.VII.2014, 8.VIII.2014, 21.VII.2015 (7♂♂, 3♀♀, LC), 11.VIII.2015 (1♂, 4♀♀, LC); *2.7* Val Maura, 8.VIII.2014, 11.VIII.2015 (5♂♂, 3♀♀LC); surroundings of Val Maura, 21.VII.2015; Val del Corvo, 1600 m, 1992, Coll. Fontana (Fontana *et al.*, 2006); Peio: *1.4* Masi Vallenaia, 23.VII.2015 (1 ♂, LC), 1.IX.2015 (1♀, LC); *1.5* Malga Mare, 18.VIII.2014 (1♀, MB); *1.7* Lago della Lama, 25.VII.2014, 8.VIII.2014, 18.VIII.2014, 22.VII.2015 (5♂♂, LC); 12.VIII.2015 (4♂♂, 1♀, LC); 3.IX.2015; *1.8* Lago del Careser, 8.VIII.2014.
BS - Valle delle Messi: *6.2* Graole,23.VIII.2014; *6.3* Sasso Maurizio, 31.VIII.2013 (2♂♂, 2♀♀, LC), 25.VIII.2013 (1♂, 1♀, RS), 12.IX.2014 (3♀♀, LC), 14.IX.2014.
SO - Valfurva: *3.4* Pastori, 15.VIII.2013 (5♂♂, 1♀, LC), 30.VIII.2013 (1♂, RS), 21.VIII.2014 (2♂♂, 3♀♀, LC), 7.IX.2014, 19.IX.2014 (1♂, LC); *4.4* Sobretta di Sopra, 11.IX.2014 (1♂, LC), 19.IX.2014 (1♂, 1♀, LC); *4.5* Sobrettina, 30.VIII.2013 (2♂♂, LC), 1.IX.2013, 5.IX.2014, 11.IX.2014 (1♂, 1♀, LC), 19.IX.2014 (3♂♂, 1♀, LC); *4.6* Alpe Gavia, 17.IX.2014; Plaghera Alta, 2280 m, 1971, Coll. La Greca (Fontana *et al.*, 2006); Valle del Braulio: *2.4* Le Rese, 13.VIII.2013 (2♂♂, 1♀, LC), 29.VIII.2013 (1♂, LC), 8.IX.2014, 10.IX.2014 (2♂♂, 4♀♀, RS); *2.5* Foppe Mogenaccia, 28.VIII.2013; Passo dello Stelvio, 2400 m, 1971, Coll. La Greca (Fontana *et al.*, 2006); Valdidentro: *2.2* Umbrail, 29.VIII.2013 (4♂♂, 4♀♀, LC), 6.IX.2014, 8.IX.2014 (2♂♂, 2♀♀, LC), 10.IX.2014 (4♂♂, 2♀♀, LC); *2.3* Pozzine, 24.VIII.2013 (1♂, 2♀♀, RS), 29.VIII.2014 (4♂♂, 2♀♀, LC), 6.IX.2014, 10.IX.2014 (1♂, 1♀, LC); *2.4* Le Rese, 10.IX.2014 (2♂♂, 4♀♀, LC); *2.5* Foppe di Mogenaccia, 24.VIII.2013 (1♂, 1♀, RS).
Comments. A high altitude species in Italy, rather widespread in the Park. It was found in about 50% of the plots. The altitudinal range is between 1978 and 2631 m a.s.l.

33. ***Gomphocerippus rufus*** (Linnaeus, 1758)
Chorotype: Asiatic-European.
BZ - Lasa: *3.7* Mattaunboden, 30.VII.2015 (2♂♂, 1♀, DB), 12.VIII.2015, 26.VIII.2015 (2♂♂, 1♀, DB; 2♂♂, 1♀, MB).
TN - Rabbi: Somrabbi, 1360 m, 3.IX.2014 (2♂♂,1♀, DB; 1♂, 1♀, MB).
BS - Val Grande: *5.2* Pradac, 16.VIII.2013 (5♂♂, 2♀♀, LC), 29.VIII.2013 (1♂, 1♀, RS), 24.VIII.2014, 13.IX.2014, 17.IX.2014 (4♂♂, 3♀♀, LC).
SO - Valfurva: *4.1* Calvarana, 6.IX.2014, 18.IX.2014 (1♀, LC); Valdidentro: *1.1* Bosco Arsiccio, 14.VIII.2013 (1♂, LC), 15.IX.2014.
Comments**.** A grasshopper which usually is found on shrubs at the edge of the forest, but locally may also colonize subalpine shrublands. In the SNP is found only in a very few localities and reaches an altitude of 1999 m a.s.l.

34. ***Stauroderus scalaris scalaris*** (Fischer de Waldheim, 1846)
Chorotype: Asiatic-European.
BZ - Laces: *2.2* Kratzeben, 9.VII.2014 (1♀, DB), 22.VII.2014, 5.VIII.2014 (1♂, 1♀, DB; 1♂, 1♀, MB), 2.IX.2014, 28.VII.2015; *2.3* Pronta, 22.VII.2014, 5.VIII.2014 (1♂,1♀, DB), 2.IX.2014, 28.VII.2015, 13.VIII.2015; Obermontani, 792 m,6.VIII.2014; Martello: *2.4* Maiern, 26.VI.2014 (1♂, DB), 22.VII.2014, 5.VIII.2014, 2.IX.2014; *2.5* Premstlhof, 26.VI.2014 (1♂, DB), 22.VII.2014, 6.VIII.2014, 2.IX.2014, 28.VII.2015, 12.VIII.2015; *2.7* Stallwies, 28.VII.2015; Martello, 1460 m, 6.VIII.2014; Lasa: *3.4* Tarnell, 22.VII.2014, 15.VII.2015, 12.VIII.2015; Stelvio: *1.2* Lasairn Hof, 23.VII.2014, 5.VIII.2014, 1.IX.2014, 11.VIII.2015; *1.3* Faschldrie, 23.VII.2014, 1.IX.2014, 29.VII.2015, 11.VIII.2015.
TN - Rabbi: Somrabbi, 1360 m, 3.IX.2014; Bagni di Rabbi, 1300 m, 1992, Coll. Fontana (Fontana *et al.*, 2006); Val del Corvo, 1600 m, 1992, Coll. Fontana (Fontana *et al.*, 2006); Peio: *1.1* Pegaia, 23.VII.2015 (4♂♂, LC), 12.VIII.2015 (3♂♂, LC); *1.2* Masi Feraion, 11.VII.2014, 7.VIII.2014, 18.VIII.2014, 23.VII.2015 (3♂♂, 2♀♀, LC), 12.VIII.2015 (1♂, 1♀, LC), 1.IX.2015 (1♂, LC); *1.3* Croce dei Bagni, 24.VII.2014, 8.VIII.2014, 23.VII.2015 (4♂♂, 2♀♀, LC), 13.VIII.2015 (1♂, 6♀♀, LC), 1.IX.2015 (1♂, 1♀, LC); *1.4* Masi Vallenaia, 25.VII.2014, 7.VIII.2014, 23.VII.2015 (3♂♂, LC), 13.VIII.2015 (1♂, 3♀♀, LC); Peio, 1400 m, 1969, Coll. Ist. Entom. Piacenza (Fontana *et al.*, 2006).
BS - Valle delle Messi: *6.2* Graole, 23.VIII.2014, 12.IX.2014 (2♂♂, LC), 13.IX.2014; Val Grande: *5.2* Pradac, 29.VIII.2013 (1♂ RS), 24.VIII.2014, 13.IX.2014.
SO - Valfurva: *3.1* Niblogo, 15.VIII.2013 (1♂, 7♀♀, LC), 21.VIII.2014 (5♂♂, LC), 11.IX.2014 (5♂♂, 4♀♀, LC); *3.2* Fantelle, 15.VIII.2013 (3♂♂, 2♀♀, LC), 1.IX.2013 (1♂, RS), 21.VIII.2014 (4♂♂, 4♀♀, LC), 11.IX.2014 (1♂, 5♀♀, LC), 15.IX.2014; *3.3* Zebrù del Giardin, 15.VIII.2013 (1♂, 2♀♀, LC), 30.VIII.2013 (1♀, RS), 21.VIII.2014 (2♂♂, 4♀♀, LC), 7.IX.2014, 19.IX.2014 (1♀, LC); *3.4* Pastori, 15.VIII.2013 (6♀♀, LC), 7.IX.2014; *3.1* Niblogo, 1.IX.2013, 21.VIII.2014, 11.IX.2014, 15.IX.2014; *4.1* Calvarana, 31.VIII.2013, 2.IX.2013 (3♂♂, 1♀, LC), 11.IX.2014 (2♀♀, LC); *4.4* Sobretta di Sopra, 18.VIII.2013 (4♂♂, 5♀♀, LC), 30.VIII.2013 (8♂♂, 3♀♀, LC), 5.IX.2014, 11.IX.2014 (1♂, LC); *4.5* Sobrettina, 30.VIII.2013 (1♀, LC); Valdidentro: *1.2* Sasso Prada, 14.VIII.2013 (2♂♂, 3♀♀, LC), 31.VIII.2013, 25.VIII.2014, 9.IX.2014 (1♂, 1♀, LC); *1.3* Plator, 14.VIII.2013 (2♀♀, LC), 31.VIII.2013, 25.VIII.2014, 9.IX.2014 (3♂♂, 2♀♀, LC).
Comments. A rather widespread species in the Park, where it was found in 43% of the plots. It reaches an altitude of 2243 m a.s.l.

35. ***Chorthippus (Chorthippus) dorsatus dorsatus*** (Zetterstedt, 1821)
Chorotype: Sibiric-European.
BZ - Laces: *2.2* Kratzeben, 5.VIII.2014 (1♂, DB), 2.IX.2014, 28.VII.2015; *2.3* Pronta, 2.IX.2014; Martello: *2.5* Premstlhof, 6.VIII.2014, 2.IX.2014 (1♀, DB), 28.VII.2015, 12.VIII.2015, 25.VIII.2015; Martello, 1460 m, 6.VIII.2014, 28.VII.2015 (1♀, MB); Silandro: *3.2* Mut, 1.IX.2014; Lasa: *3.4* Tarnell, 12.VIII.2015; Stelvio: *1.2* Lasairn Hof, 1.IX.2014, 11.VIII.2015; *1.3* Faschldrie, 28.VII.2015 (1♂, DB; 1♀, MB).
TN - Peio: *1.2* Masi Feraion, 7.VIII.2014, 18.VIII.2014, 23.VII.2015 (2♂♂, 1♀, LC), 12.VIII.2015 (2♂♂, 9♀♀, LC), 1.IX.2015 (5♂♂, 4♀♀, LC); *1.3* Croce dei Bagni, 23.VII.2015 (1♂, 2♀♀, LC), 13.VIII.2015 (1♂, LC); *1.4* Masi Vallenaia, 13.VIII.2015 (2♂♂, 1♀, LC), 1.IX.2015 (2♂♂, 2♀♀, LC).
BS - Val Grande: *5.2* Pradac, 16.VIII.2013 (1♂, 2♀♀,

LC), 29.VIII.2013 (1♂, 1♀, RS), 13.IX.2014, 17.IX.2014 (7♂♂, 4♀♀, LC).
SO - Valfurva: *3.2* Fantelle, 15.IX.2014; *3.3* Zebrù del Giardin, 30.VIII.2103 (1♂, 1♀, RS), 7.IX.2014; *4.1* Calvarana, 31.VIII.2013 (1♂, LC), 2.IX.2013 (1♀, LC), 11.IX.2014 (1♀, LC), 18.IX.2014 (2♂♂, LC); Bormio: Bormio, 1300 m, 1997, Coll. Fontana (Fontana *et al.*, 2006); Valdidentro: *1.2* Sasso Prada, 31.VIII.2013, 25.VIII.2014; *1.3* Plator, 14.VIII.2013 (1♀, LC), 31.VIII.2013, 25.VIII.2014, 9.IX.2014 (12♂♂, 3♀♀, LC), 15.IX.2014.
Comments. This species is not widespread, because of the high average altitude of the Park. It reaches 1877 m a.s.l. in Val Grande (BS).

36. ***Pseudochorthippus parallelus parallelus*** (Zetterstedt, 1821)
Chorotype: Sibiric-European.
BZ - Ultimo: *4.3* Kirchbergtal, 27.VII.2015 (3♂♂,5♀♀, DB; 5♂♂, 6♀♀, MB), 10.VIII.2015; *4.4* Kirchbergtal, 27.VII.2015; Laces: *2.2* Kratzeben, 9.VII.2014, 22.VII.2014, 5.VIII.2014 (1♂, 1♀, MB), 2.IX.2014, 15.VII.2015, 28.VII.2015 (2♂♂, 1♀, DB; 2♂♂, 1♀, MB); *2.3* Pronta, 22.VII.2014, 5.VIII.2014 (1♂, DB), 2.IX.2014, 13.VIII.2015, 25.VIII.2015; Martello: *2.4* Maiern, 2.IX.2014, 12.VIII.2015; *2.5* Premstlhof, 22.VII.2014, 5.VIII.2014 (1♀, DB), 2.IX.2014, 16.VII.2015, 28.VII.2015, 12.VIII.2015, 25.VIII.2015; Martello, 1460 m, 6.VIII.2014, 28.VII.2015 (2♂♂, 1♀, DB; 2♂♂, 2♀♀, MB); Lasa: *3.4* Tarnell, 30.VII.2015, 12.VIII.2015; Lasa, biotope, 887 m, 5.VIII.2014; Prato allo Stelvio: *1.1* Montechiaro, 14.VII.2015; Stelvio: *1.2* Lasairn Hof, 5.VIII.2014, 1.IX.2014, 14.VII.2015, 11.VIII.2015; *1.3* Faschldrie, 1.IX.2014, 29.VII.2015 (1♂, 1♀, MB), 11.VIII.2015, 26.VIII.2015; *1.6* Rocca Bianca, 1.IX.2014, 29.VII.2015 (1♂,2♀♀, DB; 3♂♂, 2♀♀, MB), 11.VIII.2015; *1.7* Obere Stilfser Alm, 29.VII.2015, 11.VIII.2015; *1.8* Alpe di Gloren, 1.IX.2014, 29.VII.2015, 11.VIII.2015; Gomagoi, 1318 m, 4.VIII.2014; Trafoi, 1650-1900 m, 2.IX.1998 (Galvagni, 2001).
TN - Rabbi: *2.5* Malga Maleda, 11.VIII.2015 (7♂♂, 4♀♀, LC); *2.6* Val Flora, 21.VII.2015 (1♂, LC), 11.VIII.2015 (2♂♂, 2♀♀, LC); Somrabbi, 1360 m, 3.IX.2014; Val del Corvo, 1600 m, 1991, Coll. Fontana (Fontana *et al.*, 2006); Peio:*1.1* Pegaia, 3.IX.2014 (1♂, DB), 12.VIII.2015 (4♂♂, 4♀♀, LC), 1.IX.2015 (2♀♀, LC); *1.2* Masi Feraion, 7.VIII.2014, 18.VIII.2014, 23.VII.2015 (2♂♂, 2♀♀, LC), 12.VIII.2015 (1♂, 2♀♀, LC), 1.IX.2015 (1♂, LC); *1.3* Croce dei Bagni, 23.VII.2015 (5♀♀, LC), 13.VIII.2015 (2♂♂, 3♀♀, LC), 1.IX.2015 (1♂, 2♀♀, LC); *1.4* Masi Vallenaia, 25.VII.2014, 7.VIII.2014, 23.VII.2015 (1♂, LC), 13.VIII.2015 (1♀, LC), 1.IX.2015 (1♀, LC); *1.5* Malga Mare, 18.VIII.2014, 1.IX.2015 (1♀, LC); *1.7* Lago della Lama, 8.VIII.2014, 22.VII.2015 (2♂♂, 1♀, LC), 12.VIII.2015 (5♂♂, 4♀♀, LC); Lago del Careser, 2274 m, 1946 (Galvagni, 1950).
BS - Val Grande: *5.2* Pradac, 16.VIII.2013 (1♂, 4♀♀, LC), 29.VIII.2013 (3♂♂, 2♀♀, RS), 13.IX.2014, 17.IX.2014 (3♂♂, 2♀♀. LC); *5.3* Malga Valgrande, 29.VIII.2013 (2♂♂, 1♀, RS), 24.VIII.2014, 13.IX.2014, 17.IX.2014 (1♂, 5♀♀, LC); Valle delle Messi: *6.1* S. Apollonia, 2.IX.2013 (1♀, LC); *6.2* Graole, 31.VIII.2013 (5♂♂, 11♀♀, LC), 2.IX.2013 (6♂♂, 3♀♀, LC), 23.VIII.2014, 12.IX.2014 (3♂♂, 3♀♀, LC), 13.IX.2014; *6.3* Sasso Maurizio, 31.VIII.2013 (7♂♂, 12♀♀, LC), 25.VIII.2013 (3♂♂, 1♀, RS), 23.VIII.2014, 12.IX.2014 (9♂♂, 9♀♀, LC), 14.IX.2014; *6.4* Lago Nero, 17.VIII.2013 (6♂♂, 4♀♀, LC), 1.IX.2013 (11♂♂,12♀♀, LC), 28.VIII.2014 (4♂♂, LC), 12.IX.2014 (8♂♂, 11♀♀, LC), 14.IX.2014.
SO - Valfurva: *3.1* Niblogo, 15.VIII.2013 (1♂, 2♀♀, LC), 1.IX.2013, 21.VIII.2014 (1♂, LC), 11.IX.2014 (1♂, 2♀♀, LC), 15.IX.2014; *3.2* Fantelle, 15.VIII.2013 (5♂♂, 2♀♀, LC), 1.IX.2013 (1♂, 2♀♀, RS), 21.VIII.2014 (3♂♂, 1♀, LC), 11.IX.2014 (5♂♂, 7♀♀, LC), 15.IX.2014; *3.3* Zebrù del Giardin, 30.VIII.2013 (1♂, 2♀♀, RS), 7.IX.2014; *4.1* Calvarana, 31.VIII.2013 (5♂♂, 2♀♀, LC), 2.IX.2013 (2♂♂, 2♀♀, LC), 6.IX.2014, 11.IX.2014 (3♂♂, 3♀♀, LC), 18.IX.2014 (3♂♂, 4♀♀, LC); *4.4* Sobretta di Sopra, 18.VIII.2013 (6♂♂, 5♀♀LC), 30.VIII.2013 (4♂♂, 3♀♀, LC), 5.IX.2014, 11.IX.2014 (6♂♂, 6♀♀, LC), 19.IX.2014 (1♂, 3♀♀, LC); *4.5* Sobrettina, 10.VIII.2013 (1♀, RS), 30.VIII.2013 (9♂♂, 4♀♀, LC), 1.IX.2013, 5.IX.2014, 11.IX.2014 (9♂♂, 5♀♀, LC), 19.IX.2014 (2♂♂, 1♀, LC); *4.6* Alpe Gavia, 30.VIII.2013 (8♂♂, 9♀♀, LC), 1.IX.2013 (14♂♂, 16♀♀, LC), 28.VIII.2014 (2♂♂, LC), 14.IX.2014; Plaghera Alta, 2280 m, 1971, Coll. La Greca (Fontana *et al.*, 2006); Bormio: *2.2* Umbrail, 13.VIII.2013 (6♂♂, 1♀, LC), 29.VIII.2013 (3♂♂, 20♀♀, LC), 6.IX.2014, 8.IX.2014 (12♂♂, 12♀♀, LC), 10.IX.2014 (11♂♂, 11♀♀, LC); *2.3* Pozzine, 24.VIII.2013,

6.IX.2014, 10.IX.2014 (2♂♂, 1♀, LC); Passo dello Stelvio, 2400 m, 1971, Coll. La Greca (Fontana *et al.*, 2006); Bormio, 1300 m, 1997, Coll. Fontana (Fontana *et al.*, 2006); Valdidentro: *1.2* Sasso Prada, 14.VIII.2013 (2♂♂, 1♀, LC), 31.VIII.2013, 25.VIII.2014,9.IX.2014 (5♂♂, 5♀♀, LC), 15.IX.2014; *1.3* Plator, 14.VIII.2013 (1♂, 5♀♀, LC), 31.VIII.2013, 25.VIII.2014, 9.IX.2014 (2♂♂, 2♀♀, LC), 15.IX.2014.

Comments. The commonest grasshopper in the Park. It was found in about 65% of the transects. It reaches an altitude of 2401 m a.s.l.

37. ***Chorthippus (Glyptobothrus) biguttulus biguttulus*** (Linnaeus, 1758)

Chorotype: European.

BZ - Laces: *2.3* Pronta, 9.VII.2014, 22.VII.2014, 5.VIII.2014 (2♂♂, DB), 2.IX.2014, 28.VII.2015, 13.VIII.2015, 25.VIII.2015; Martello: *2.4* Maiern, 2.IX.2014, 12.VIII.2015; *2.5* Premstlhof, 6.VIII.2014 (1♂, DB), 2.IX.2014 (1♂, DB), 15.VII.2015, 28.VII.2015 (1♂, DB; 1♂, MB), 12.VIII.2015, 25.VIII.2015; *2.7* Stallwies, 25.VIII.2015; Martello, 1460 m, 28.VII.2015 (1♂, MB); Stelvio: *1.2* Lasairn Hof, 11.VIII.2015; *1.3* Faschldrie, 11.VIII.2015, 26.VIII.2015; *1.6* Rocca Bianca, 29.VII.2015, 11.VIII.2015 (1♂, 1♀, DB; 1♂, 1♀, MB); *1.7* Obere Stilfser Alm, 11.VIII.2015; Trafoi, 1927, Coll. Museo Trieste (Fontana *et al.*, 2006).

TN - Rabbi: Val del Corvo, 1600 m, 1992, Coll. Fontana (Fontana *et al.*, 2006), Bagni di Rabbi, 1300 m, 1991, Coll. Fontana (Fontana *et al.*, 2006).

SO - Sondrio: Sondrio (De Carlini, 1889); *1.1* Bosco Arsiccio, 14.VIII.2013 (4♂♂, LC); Sasso Prada, 14.VIII.2013 (1♂, LC); *1.3* Plator, 14.VIII.2013 (5♂♂, 1♀, LC); Valfurva: *3.2* Fantelle, 15.VIII.2013 (1♂, LC), 11.IX.2014 (1♂, LC); *3.3* Zebrù del Giardin, 15.VIII.2013 (5♂♂, 3♀♀, LC); *4.1* Calvarana, 31.VIII.2013 (3♂♂, LC), 2.IX.2013 (4♂♂, LC); Valdidentro: *1.1* Bosco Arsiccio, 9.IX.2014 (3♂♂, LC); *1.2* Sasso Prada, 9.IX.2014 (2♂♂, LC); *1.3* Plator, 9.IX.2014 (1♂, LC).

Comments. A rather widespread species in the SNP, where it reaches 2185 m a.s.l.

38. ***Chorthippus (Glyptobothrus) brunneus brunneus*** (Thunberg, 1815)

Chorotype: Sibiric-European.

BZ - Laces: *2.2* Kratzeben,9.VII.2014 (1♂, DB), 22.VII.2014, 5.VIII.2014, 2.IX.2014, 28.VII.2015; *2.3* Pronta, 28.VII.2015, 13.VIII.2015, 25.VIII.2015; near Obermontani, 790 m, 6.VIII.2014; Martello: *2.5* Premstlhof, 22.VII.2014; Silandro: *3.2* Mut, 15.VII.2015; Brugg, 775 m, 7.VII.2014 (1♂, DB); Lasa: *3.4* Tarnell, 15.VII.2015, 12.VIII.2015 (1♂, DB; 1♂, MB); Prato allo Stelvio: *1.1* Montechiaro, 4.VIII.2014, 1.IX.2014, 14.VII.2015, 30.VII.2015, 11.VIII.2015; Torrente Solda, 945 m, 21.VII.2014; Stelvio: *1.2* Lasairn Hof, 1.IX.2014.

TN - Peio: *1.3* Croce dei Bagni, 13.VIII.2015 (1♂, 1♀, LC), 1.09.2015 (1♂, 1♀, LC); *1.4* Masi Vallenaia, 13.VIII.2015 (3♂♂, LC).

BS - Valle delle Messi: *6.2* Graole, 31.VIII.2013 (1♂, LC).

Comments. This species seems to be more common in Alto Adige, where it was found at low altitudes, up to 1627 m a.s.l.

39. ***Chorthippus (Glyptobothrus) mollis ignifer*** Ramme, 1923

Chorotype: South-European.

BZ - Martello: *2.4* Maiern,2.IX.2014, 28.VII.2015, 12.VIII.2015, 25.VIII.2015; Silandro: *3.2* Mut, 7.VII.2014 (2♂♂, DB), 22.VII.2014, 5.VIII.2014, 1.IX.2014 (1♂, DB), 30.VII.2015, 13.VIII.2015, 25.VIII.2015; Prato allo Stelvio: *1.1* Montechiaro, 8.VII.2014 (2♂♂, DB), 4.VIII.2014 (6♂♂, DB), 1.IX.2014, 14.VII.2015, 30.VII.2015, 11.VIII.2015; Torrente Solda, 945 m, 26.VIII.2015; Stelvio: *1.3* Faschldrie, 1.IX.2014, 29.VII.2015, 11.VIII.2015 (1♂, DB; 1♂, MB), 26.VIII.2015.

Comments. An Alpine species, limited to Alto Adige in the SNP, where it reaches 1465 m a.s.l.

40a. ***Chorthippus (Glyptobothrus) vagans vagans*** (Eversmann, 1848)

Chorotype: European.

BZ - Silandro: *3.2* Mut, 7.VII.2014 (1♂, 2♀♀, DB), 22.VII.2014, 5.VIII.2014, 1.IX.2014; Prato allo Stelvio: *1.1* Montechiaro, 4.VIII.2014; Torrente Solda, 945 m, 21.VII.2014, 1.IX.2014.

Comments. A very localized species in the Park, only found at lowest altitudes (up to 1040 m a.s.l.) in the Bolzano province.

40b. ***Chorthippus (Glyptobothrus)*** sp.

BS - Val Grande: *5.3* Malga Valgrande, 29.VIII.2013 (3♂♂, 3♀♀, RS).

SO - Valdidentro: *1.1* Bosco Arsiccio, 31.VIII.2013 (3♂♂, 3♀♀, RS); *1.2* Sasso Prada, 9.IX.2014 (2♀♀, LC); *1.3* Plator, 9.IX.2014 (3♀♀, LC); Valfurva: *3.1* Niblogo, 11.IX.2014 (1♀, LC); Val Zebrù: *3.2* Fantelle, 1.IX.2013 (3♂♂, 3♀♀, RS); *3.3* Zebrù del Giardin, 30.VIII.2013 (5♂♂, 1♀, RS), *3.4* Pastori, 30.VIII.2013, (1♂, RS), Pravasivo, VIII.2013 (1♂, RS), Lago delle Scale, 1828 m, 23.VIII.2013 (2♂♂, RS).

Note. Are herein referred to as *Chorthippus* (*Glyptobothrus*) sp. the specimens belonging to the *biguttulus / brunneus / mollis* species complex that was not possible to identify by songs.

Conclusions

In the Stelvio National Park 40 species are represented, corresponding to 11% of the Italian Orthoptera fauna (Massa *et al*., 2012). The scarcity of dry meadows, especially at low altitudes, explains the low levels of orthopteran diversity usually found in our surveys. Moreover, the Venosta Valley floors extensively covered by cultivations and both arid and wet natural grasslands dramatically reduced in last decades leading to local extinctions.

A geographic differentiation in several species distribution among the three area (BZ, TN and BS/SO) has been detected. We found *Barbitistes alpinus* only in the southern part, while *B. serricauda* is present in the northern part (Fig. 2). Both species inhabit bushes and trees of woodland margins. *B. alpinus* has been also reported a few km outside the Park, near Celentino at Malga Cel, 1500 m (Fontana *et al.*, 2006).

The Genus *Tettigonia* is represented by three species in the Park. *T. cantans* is the most common in TN and BZ, where *T. viridissima* is distributed at lower altitudes (Fig. 3). Our findings of *T. caudata* at Martello are the first records within the Park bound-

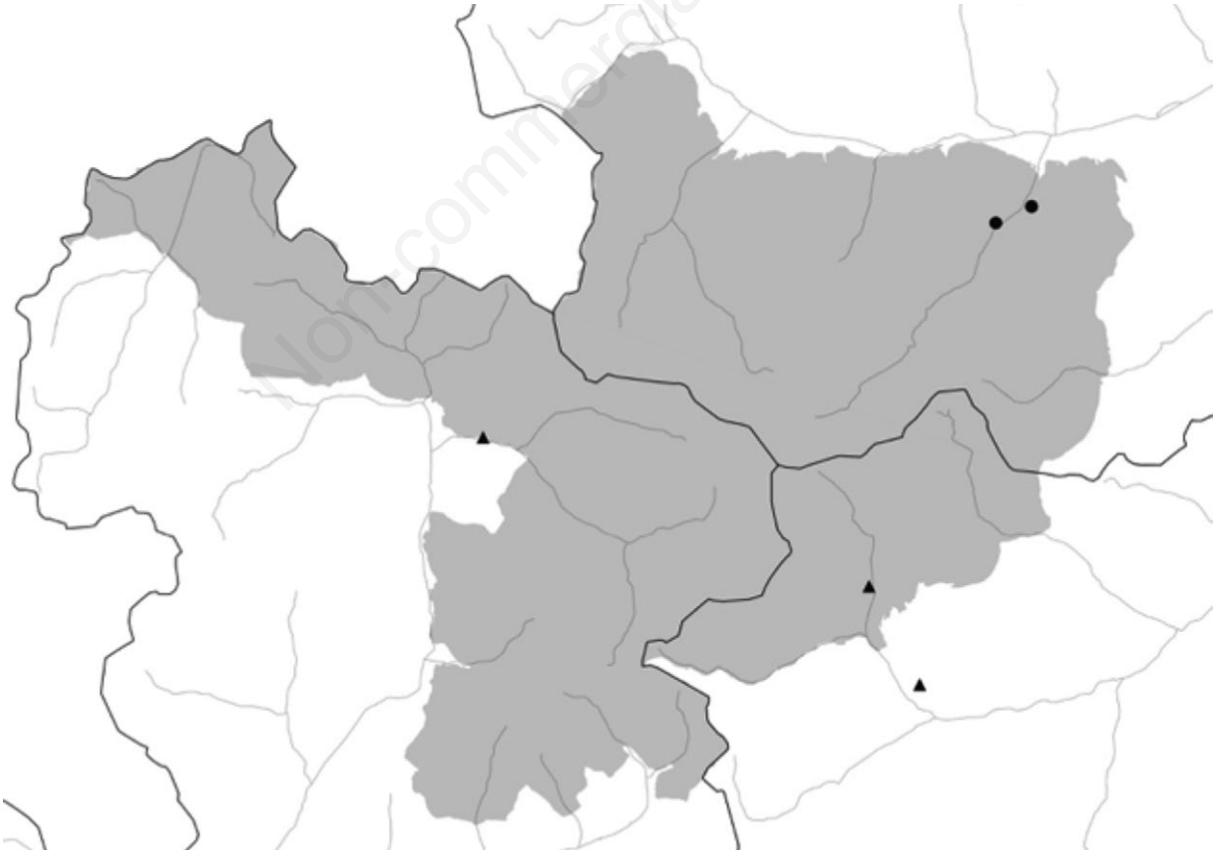

Fig. 2. Distribution of *Barbitistes serricauda* (dots) and *B. alpinus* (triangles) in the Stelvio National Park (grey area).

aries for this species, rare in Italy, only known from a few localities in Trentino – South Tyrol and from a single site in Vicenza province (Massa *et al.*, 2012).

The Italian distribution of *Celes variabilis* is currently restricted to Friuli (La Greca, 1994; Massa *et al*., 2012). The historical data in Valtellina (De Carlini, 1889) has not been confirmed by our surveys. Also *Ruspolia nitidula* is known from bibliographic data only (Fontana *et al*., 2006).

Kisella irena is distributed in Rabbi and Peio Valleys, in hydrophilous tall herb fringes of hay meadows. It has been also reported a few km outside the Park, near Celentino at Malga Cel, 1500 m (Fontana *et al.*, 2006). This species is absent both in BZ and in BS/SO counties (Fig. 4).

Within the Park, *Euthystira brachyptera* is distributed only in Lombardy, despite its habitat is apparently extensively present also in Trentino and South Tyrol. We found both *Omocestus haemorrhoidalis* and *O. petraeus* (Brisout de Barneville, 1855) in Venosta Valley, but only the first one within the Park boundaries. *O. petraeus* is present in dry rocky grasslands on southern exposure.

In many occasions transect walks proved to be an unsuitable method for bioacoustics identification of the species belonging to *Chorthippus (Glyptobothrus) biguttulus* group. *C. biguttulus* is the commonest species in the Bolzano province, especially in mid altitude dry stony grasslands. *C. mollis* has been found in similar habitat, but seems to be less common than *C. biguttulus*. *C. brunneus* is distributed at lower altitudes. *C. vagans* is typical under the canopy at the woodland margin of dry rocky meadows, but has been recorded only in Venosta Valley.

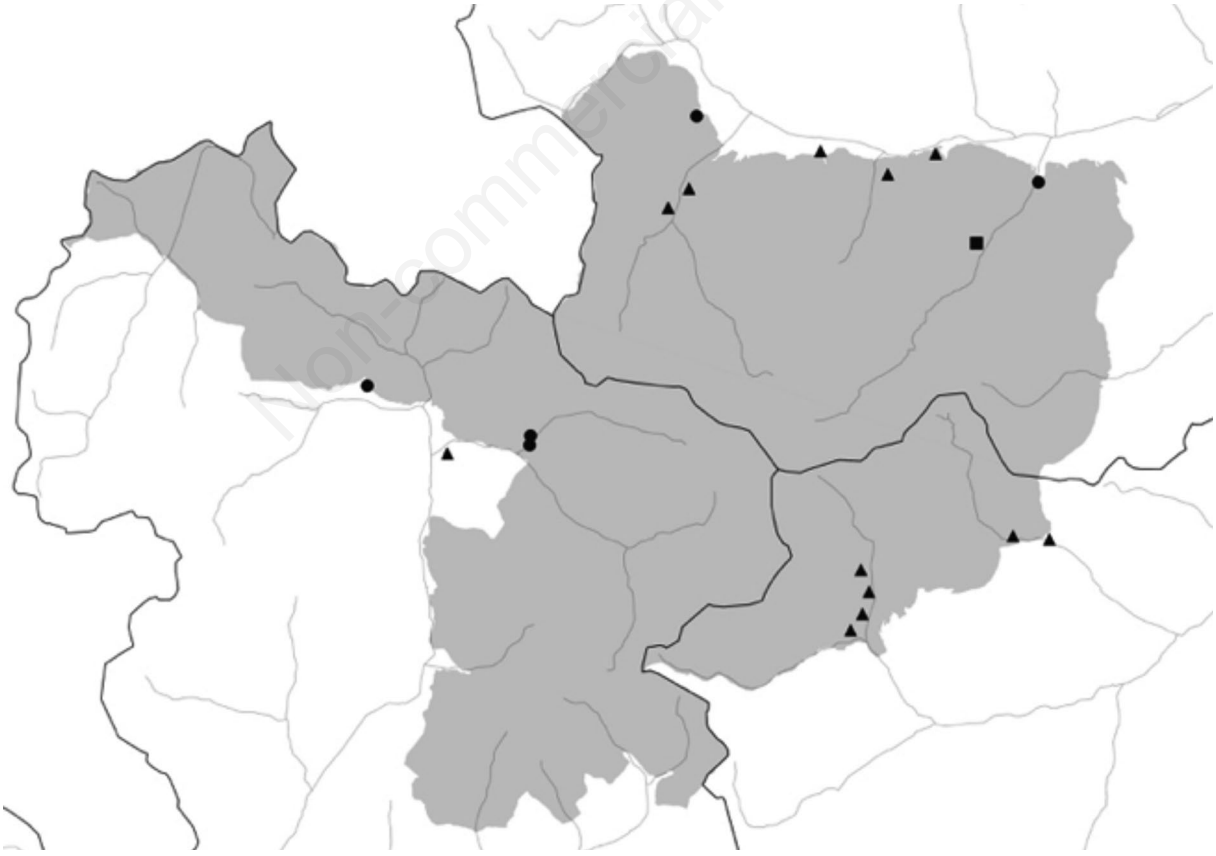

Fig. 3. Distribution of *Tettigonia cantans* (triangles), *T. caudata* (square) and *T. viridissima* (dots) in the Stelvio National Park (grey area).

Only about 1.5 Km in a straight line outside the Park boundaries, a population of *Epacromius tergestinus ponticus* Karny, 1907 has been discovered by Nadig (1991) on the alluvial fan of the Torrente Solda between Prato allo Stelvio and Spondigna (BZ), 885-900 m. The presence of *E. t. ponticus* in that locality has been detected also by Galvagni (2001) in 1967-1968, Bellmann (1993) in 1988 and T. Wilhalm (Hellrigl, 2006) in 1995. In 2014 and 2015 we failed to detect the species in this site, but we found *Platycleis grisea, Sphingonotus caerulans, Oedipoda caerulescens, Oedipoda germanica* (Latreille, 1804)*, Tetrix tuerki* (Krauss, 1876) (cfr.) and *Calliptamus italicus* (O.G. Costa, 1836). Given that the population in Prato allo Stelvio–Spondigna was the only site of *Epacromius tergestinus ponticus* in the Italian Alps, we have therefore to consider it probably extinct in Italy, as already suggested by Fontana *et al.* (2002) and Massa *et al*. (2012). In this site the habitat has suffered heavy modifications in the last century. Until 1981 the dry meadows were used for feeding goats, up to 150 goats in the mid-20th century. Later, the place became a military area and the tank activity restrained the vegetation growth. More recently the site has been designated as a recreational area, a cycle path passes through the whole habitat and vegetation has spread covering the original alluvial deposits. This human-induced transformation probably led *E. t. ponticus* to a local extinction due to habitat loss.

Galvagni & Fontana (1992) reported also *Chrysochraon dispar* (Germar, 1835) collected only 1 km outside the Park boundaries in 1967, near Oris, Prati di Sotto, 878 m (Lasa - BZ). The species has not been found in 1992 (Tami *et al.*, 2005) and also our specific surveys in this site in 2014 had a negative outcome. We failed to find also *Anisoptera fusca* (Fabri-

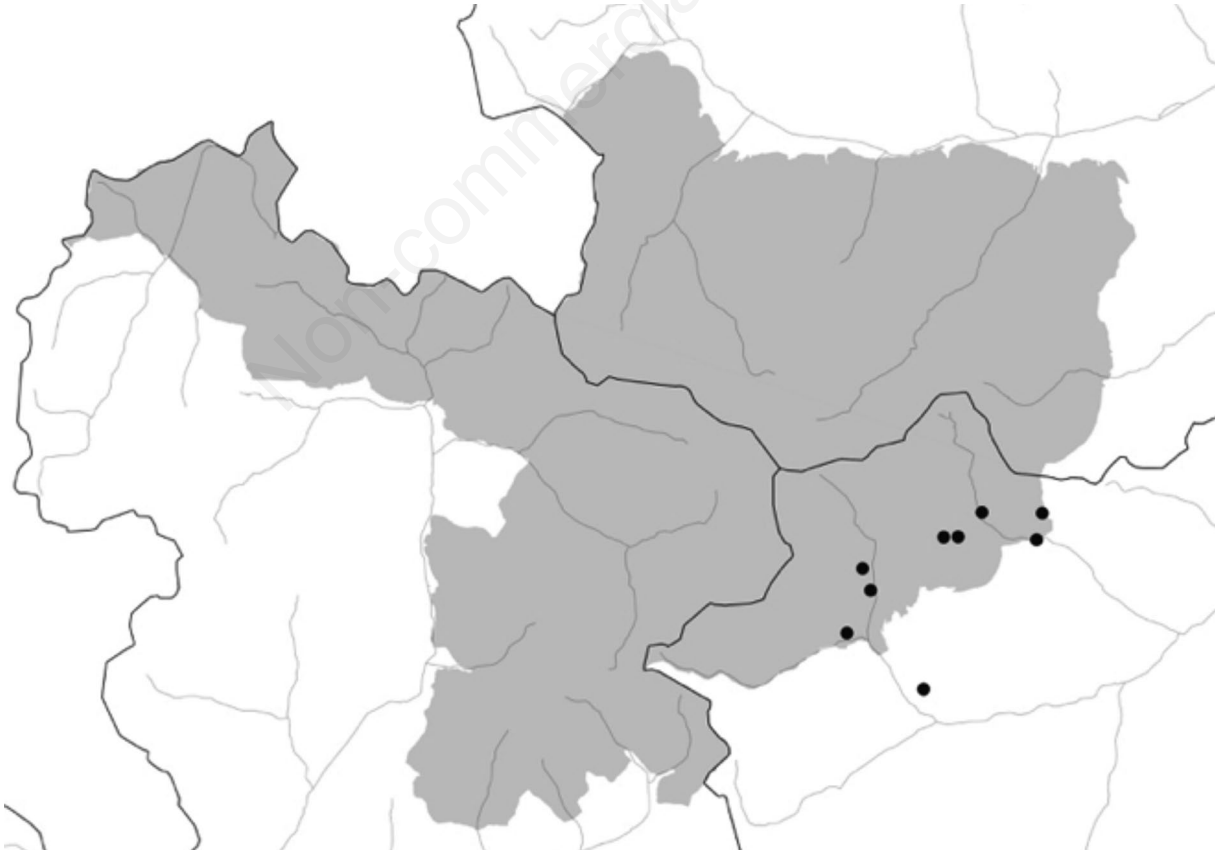

Fig. 4. Distribution of *Kisella irena* in the Stelvio National Park (grey area).

cius, 1793) and *Anisoptera dorsalis* (Latreille, 1804), previously collected in that locality by Galvagni (Galvagni & Fontana, 1992). The habitat, a wet grassland with *Phragmites* and *Carex*, surrounded by *Alnus glutinosa* and *Betula pendula* woodland, has been seriously altered by man activities. In the whole Venosta Valley wetlands has been dramatically reduced to favour agricultural development.

Three additional species, *Phaneroptera nana* Fieber, 1853, *Ephippiger persicarius* Fruhstorfer, 1921 and *Tetrix subulata* (Linnaeus, 1758), are known just outside the Park boundaries (Baccetti, 1963; Galvagni, 2001; Hellrigl, 2006). In the future, it is possible that these species might be found inside the Stelvio National Park.

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