

A collection of oribatid mites (Acari, Oribatida) from the Sella Pass (Dolomites, South Tyrol, Italy)

Abstract

Results from collections of oribatid mites in the alpine grassland of the Sella Pass (2220 m a.s.l.) are presented. Four samples were taken in different vegetation units (moss, grass and herbs, *Silene* cushion, *Juniperus* litter). A total of 34 species belonging to 19 families were found. *Oribatella longispina*, *Trichoribates scilierensis* are endemic in the Alps. Some faunistically remarkable species are presented, and their general distribution and habitat requirements are pointed out.

Keywords: Acari, Oribatida, South Tyrol, Sella Pass, Dolomites, species list, faunistics

Introduction

The oribatid mite fauna of South Tyrol is relatively well known, mainly by numerous collectings in the course of biodiversity projects (SCHATZ 2016). At present almost 400 species are recorded from the country (Schatz in preparation), but most of them from lower elevations. Collectings at higher altitudes are comparatively inadequate (SCHMÖLZER 1962, 1994, MIHELČIĆ 1971, CHRISTANDL-PESKOLLER & JANETSCHKE 1976, SCHATZ 2006, 2008, FISCHER & SCHATZ 2007).

In the course of an excursion into the Dolomites some soil and litter samples were taken in the alpine meadow on the Sella Pass. The Sella Pass (2220 m a.s.l.) is an important transition between the Val Gardena / Gröden (South Tyrol) and the Fassa Valley (Trentino). The pass is situated between the mountains of the Sella group in the East and the Langkofel group in the West near the upper limit of the timber line to the alpine grassland.

Material and Methods

Four samples were taken on the southern ridge above the mountain pass road (SS 242) in the alpine meadow (46°30'N, 11°46'E, 20.vi.2017, leg. H. Schatz, fig. 1):

- 1 (BZ 152): moss cushion, moderately moist, about 0,5 liter (2240 m a.s.l.).
- 2 (BZ 153): grass sod with *Ranunculus* sp., roots and soil, moderately moist, about 0,5 liter (2240 m a.s.l., beside sample 1).
- 3 (BZ 154): cushion of *Silene acaulis*, surface area dry, underside with roots and humus moderately moist, about 0,5 liter (2256 m a.s.l.).
- 4 (BZ155): litter and humus under *Juniperus communis*, dry to moist, about 1 liter (2255 m a.s.l., beside sample 3).

The extraction of the material was carried out using a Macfadyen extractor in the Institute of Ecology, University of Innsbruck. The determination of the oribatid mites followed mainly the key of WEIGMANN (2006), as well as special literature for some species.

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Fig. 1: Sampling site on the Sella Pass, alpine meadow and *Juniperus communis*, in the background the Langkofel group (Foto: Irene Schatz, 20.06.2017).



Results

A total of 34 oribatid species belonging to 19 families were found (table 1), among them 4 spp. of Ceratozetidae and Phthiracaridae each, and 3 spp. of Oppiidae and Suctobelbidae each. All species are already reported from South Tyrol, 27 spp. (75%) are known from the adjacent Trentino, and 17 spp. (47%) from the province of Belluno in the East (cf. MARCUZZI 2003). All species from the Sella Pass are also known from Austria (cf. KRISPER et al. 2017), and 28 spp. (78%) from Switzerland (Schatz, unpubl. data) beside other parts of the Alps. The majority of the species have a wide general distribution – palaearctic (6 spp.), holarctic (16 spp.), and larger („semi/cosmopolitan“, 4 spp.), few species show a distribution restricted to Central Europe (1 sp., *Eupelops strenzkei*), Central-South Europe incl. Caucasus (5 spp.), or are endemic in the Eastern Alps (2 spp., *Oribatella longispina*, *Trichoribates scilierensis*). *Oribatella longispina* was found in all 4 sample sites, *Ceratoppia bipilis* and *Trichoribates scilierensis* in 3 samples. Habitat relationships are known for many oribatid mite species. Most species show preference for more than one habitat type. Euryoecious species (covering a broad range of habitat requirements) are dominant in almost all samples, while alpine species dominate the oribatid community in the *Silene acaulis* cushion plant.

Some remarkable species records

Eulohmannia ribagai (BERLESE, 1910) (Fam. Eulohmanniidae): General distribution: holarctic, oriental (type locality Giudicarie Alps, Prov. Trento, near Tiarno, CASTAGNOLI & PEGAZZANO 1985). Frequent in alpine habitats and in deeper soil layers, hence relatively rarely found. On the Sella Pass in the *Silene acaulis* cushion.

Eupelops strenzkei (KNÜLLE, 1954) (Fam. Phenopelopidae): General distribution: Central Europe. In South Tyrol in marshy forests, wet meadows, bogs. Hygrophilous, frequently found in wetlands. On the Sella Pass in the grass-herb sod and *Silene acaulis* cushion, one specimen each.

Fuscozetes intermedius CAROLI & MAFFIA, 1934 (Fam. Ceratozetidae): General distribution: western palaearctic. Several records in the Eastern Alps; also in southwestern Europe (Sierra Nevada, Spain, PÉREZ-ÍÑIGO 1993) and Kazakhstan (RAKHIMBAEVA 1995). Mainly in montane to high alpine habitats. The type locality (at Passo di Rolle, Prov. Trento, 2200 m a.s.l.) is in 23 km linear distance south of the Sella Pass in the Southern Dolomites. A possible synonymy with *Fuscozetes tatricus* SENICZAK, 1993 is supposed. All described morphological features in both descriptions (CAROLI & MAFFIA 1934, SENICZAK 1993) are identical. Given this fact, the known distribution of this species is enlarged and covers also records in Germany (Hesse, Rhön mountains, WEIGMANN et al. 2015), Northern Bohemia (Bohemian Switzerland, MIKO 2016), Poland (Tatra, SENICZAK 1993). On the Sella Pass in *Silene acaulis* cushion.

Oribatella longispina BERLESE, 1914 (Fam. Oribatellidae): General distribution: endemic in the Eastern Alps (type locality Lago Palù, Prov. Sondrio, CASTAGNOLI & PEGAZZANO 1985). Mainly in mountain forests and alpine grassland. On the Sella Pass in all samples, abundant in *Juniperus* litter, single records in other samples.

Oribatula interrupta (WILLMANN, 1939) (Fam. Oribatulidae): General distribution: palaearctic. Frequent in montane to alpine habitats. On the Sella Pass in *Silene acaulis* cushion.

Pantelozetes alpestris (WILLMANN, 1929) (Fam. Thyrisomidae): General distribution: holarctic. Mainly in montane to alpine habitats, frequently found in moss. On the Sella Pass two specimens in the moss cushion.

Trichoribates scilierensis BAYARTOGTOKH & SCHATZ, 2008 (Fam. Ceratozetidae): General distribution: endemic in the Alps (type locality Dolomites, Sciliar massif, Prov. Bolzano, BAYARTOGTOKH & SCHATZ 2008). Most records are from the Eastern Alps, South Tyrol and Trentino (Italy), North and East Tyrol (Austria). An unpublished record is also known from the Furca Pass (Uri, Switzerland, leg. HS). Only found in alpine to high alpine habitats (exceptions are records in a steep scree slope with pionier vegetation in East Tyrol, 1520 m a.s.l., BAYARTOGTOKH & SCHATZ 2008, and near a cold air cave near Gais in the Tauferer Tal, 870 m a.s.l., SCHATZ & FISCHER 2010). On the Sella Pass in moss and *Silene acaulis* cushions and in the grass-herb sod.

These small sampling results do not claim to be comprehensive for the knowledge of the oribatid fauna of the Sella Pass, but are meant as a small insight into this mountainous region as a piece of jigsaw for the faunistics of South Tyrol.

Table 1: Oribatid mites (Acari, Oribatida) collected on the Sella Pass (Dolomites, South Tyrol, Italy).

Abbreviations: Number of sites see text. General distribution c-eur Central Europe, c-s-eur Central-South Europe, cos semi/cosmopolitan, hol holarctic, pal palaearctic, w-pal western palaearctic. Habitat requirements eu euryoecious, hy hygrophilous, mu muscicolous, pr praticolous, si silvicolous, xe xerophilous. Single records are depicted separately.

SPECIES SITE	1 (BZ152)	2 (BZ153)	3 (BZ154)	4 (BZ155)	GENERAL DISTRIBUTION	HABITAT REQUIREMENT
<i>habitat</i>	moss	herbs	cushion plant	<i>Juniperus</i> litter		
<i>number of species</i>	16	8	12	14		
Fam. Achipteridae						
<i>Achipteria sellnicki</i> HAMMEN, 1952				x	pal	pr xe
<i>Parachipteria punctata</i> (NICOLET, 1855)	1				hol	eu (pr si mu)
Fam. Brachychthoniidae						
<i>Liochthonius lapponicus</i> (TRÄGÄRDH, 1910)	x				hol	eu (hy pr si)
<i>Liochthonius strenzkei</i> FORSSLUND, 1963	x	1			hol	pr si
Fam. Ceratozetidae						
<i>Diapterobates humeralis</i> (HERMANN, 1804)				1	hol	pr si
<i>Fuscozetes intermedius</i> CAROLI & MAFFIA, 1934			x		c-s-eur	alpine
<i>Trichoribates incisellus</i> (KRAMER, 1897)	1	2			hol	eu (pr)
<i>Trichoribates scilierensis</i> BAYARTOGTOKH & SCHATZ, 2008	x	x	x		alpine endemic	alpine
Fam. Chamobatidae						
<i>Chamobates birulai</i> (KULCZYNSKI, 1902)	1				pal	si
<i>Chamobates borealis</i> (TRÄGÄRDH, 1902) [= <i>pusillus</i> auct.]	1	1			pal	eu (si)
Fam. Crotoniidae						
<i>Camisia biverrucata</i> (C.L. KOCH, 1839)	x				hol	mu si xe pr
Fam. Ctenobelbidae						
<i>Ctenobelba pectinigera</i> (BERLESE, 1908)	2				c-s-eur, pal	si xe
Fam. Eremaeidae						
<i>Eueremaeus valkanovi</i> (KUNST, 1957)	x		x		c-s-eur, pal	mu xe
Fam. Eulohmanniidae						
<i>Eulohmannia ribagai</i> (BERLESE, 1910)			x		hol	si alpine
Fam. Liacaridae						
<i>Adoristes ovatus</i> (C.L. KOCH, 1839)				x	hol	eu (si)
<i>Liacarus coracinus</i> (C.L. KOCH, 1840)				x	hol	eu (pr si)
Fam. Oppiidae						
<i>Dissorhina ornata</i> (OUDEMANS, 1900)	1			x	hol	eu (si)
<i>Microppia minus</i> (PAOLI, 1908)			1		hol - cos	eu (xe)
<i>Oppiella falcata</i> (PAOLI, 1908)				x	pal	si
Fam. Oribatellidae						
<i>Oribatella longispina</i> BERLESE, 1915	1	2	1	x	alpine endemic	pr mu si alpine
Fam. Oribatulidae						
<i>Oribatula interrupta</i> (WILLMANN, 1939)			x		pal	mu alpine
Fam. Peloppiidae						
<i>Ceratoppia bipilis</i> (HERMANN, 1804)	1	1		x	hol	eu
Fam. Phenopelopidae						
<i>Eupelops plicatus</i> (C.L. KOCH, 1835)		1			hol	eu (si)
<i>Eupelops strenzkei</i> (KNÜLLE, 1954)		1	1		c-eur	hy
Fam. Phthiracaridae						
<i>Phthiracarus crinitus</i> (C.L. KOCH, 1841)			2		c-s-eur	si xe

SPECIES SITE	1 (BZ152)	2 (BZ153)	3 (BZ154)	4 (BZ155)	GENERAL DISTRIBUTION	HABITAT REQUIREMENT
<i>Phthiracarus globosus</i> (C.L. KOCH, 1841)				x	hol	eu (si)
<i>Phthiracarus laevigatus</i> (C.L. KOCH, 1841)			x	x	pal-cos	si mu xe
<i>Phthiracarus longulus</i> (C.L. KOCH, 1841)				x	hol	si
Fam. Quadropiidae						
<i>Quadropia quadricarinata</i> (MICHAEL, 1885)	x		1		hol - cos	eu (si xe)
Fam. Suctobelbidae						
<i>Suctobelba altvateri</i> MORITZ, 1970				2	c-s-eur, w-pal	hy mu si
<i>Suctobelba trigona</i> (MICHAEL, 1888)				2	pal	eu (mu si)
<i>Suctobelbella sarekensis</i> (FORSSLUND, 1941)				3	hol	eu (si)
Fam. Tectocepheidae						
<i>Tectocepheus sarekensis</i> (TRÄGARDH, 1910)	1		2		hol - cos	eu
Fam. Thyrisomidae						
<i>Pantelozetes alpestris</i> (WILLMANN, 1929)	2				hol	mu alpine

Zusammenfassung

Eine Aufsammlung von Hornmilben (Acari: Oribatida) vom Sellajoch (Dolomiten, Südtirol, Italien)

Die Ergebnisse einer Aufsammlung von Hornmilben in der alpinen Grasheide am Sellajoch (2220 m ü.M.) werden vorgestellt. Es wurden vier Boden- und Streuproben in verschiedenen Vegetationseinheiten entnommen (Moos, Gras und Kräuter, *Silene acaulis* Polster, Streu und Erde unter *Juniperus communis*). Insgesamt wurden 34 Arten aus 19 Familien angetroffen. *Oribatella longispina* und *Trichoribates scilierensis* sind in den Alpen endemisch. Einige faunistisch bemerkenswerte Arten und ihre allgemeine Verbreitung und Habitatpräferenzen werden vorgestellt.

Riassunto

Una raccolta di oribatidi (Acari: Oribatida) del Passo Sella (Dolomiti, Alto Adige, Italia)

Vengono presentati risultati di una raccolta di oribatidi nella prateria alpina del Passo Sella (2220 m s.l.m.). Quattro campioni di suolo e lettiera sono stati raccolti in differenti unità di vegetazione (muschio, erba, cuscino di *Silene acaulis*, lettiera e humus sotto *Juniperus communis*). In totale sono state censite 34 specie di 18 famiglie, tutte le specie sono conosciute per l'Alto Adige. *Oribatella longispina* e *Trichoribates scilierensis* sono endemiche delle Alpi. Vengono presentate alcune specie notevoli. La loro distribuzione generale e requisiti di habitat vengono discussi in dettaglio.

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