

## Lichenological studies in Northern Italy: new records for Trentino - Alto Adige

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### Abstract:

A total of 19 infrageneric taxa of lichens are reported as new to Trentino-Alto Adige, the lichenologically best-known Italian region. Five taxa are new to Italy, one is new to the Alps. The regional lichen flora consists now of 1327 species (56,4% of the flora of Italy), with an increase of 2%.

**Key words:** Alps, lichens, flora, Trentino, Alto Adige, Italy

### 1. Introduction

Trentino-Alto Adige, with 1301 infrageneric taxa (NIMIS 2003, NIMIS & MARTELLOS 2003) is the lichenologically best-known Italian region. Its great lichenological interest is related to the variety of substrates and climates, and to the rugged morphology (NIMIS 1993). The most important work on the lichens of Trentino-Alto Adige was carried out by F. Arnold (1828-1901) in the last years of the 19<sup>th</sup> century. He surveyed South Tyrol, and published the results in the famous series *Lichenologische Ausflüge in Tyrol* (1868-1897). Another important contribution was done by E. Kernstock with the publication of his *Lichenologische Beiträge* (1890-1896). The lichen records from this region until 1901 were summarized by DALLA TORRE & SARNTHEIN (1902). In the first half of the 20<sup>th</sup> century, P. Bolzon and M. Cengia Sambo published several papers on lichen floristic in this area (NIMIS 1993). Several interesting records were published by German-speaking authors (NIMIS 1993), like the important contribution by BUSCHARDT (1979) on the lichens of the inner alpine valleys (Province of Bolzano).

Recent papers on the floristic of lichens in the South-Eastern and Central Alps (NASCIMBENE & CANIGLIA 2000, NASCIMBENE, 2002, 2003, 2004, NASCIMBENE et al. 2004) added about thirty records to the check-list of the region. A further updating is now proposed.

## 2. Data and methods

Several floristic surveys were carried out in four protected areas of Trentino-Alto Adige:

1. the Trento Province sector of the Stelvio National Park, in the central Alps
2. the Integral Natural Reserve of Mt. Bondone, in the pre-Alps near Trento
3. the Fanes-Sennes-Braies Natural Park in the South Tyrol Dolomites
4. the Sexten Dolomites Natural Park in the South Tyrol Dolomites

The main habitats of the montane, subalpine and alpine belt were investigated. In each habitat, the lichen flora was carefully sampled on suitable substrates inside 20x20 m plots. Complete checklists are now in preparation.

The Nomenclature follows NIMIS & MARTELOS (2003).

## 3. Results and Discussion

A total of 19 taxa are new to Trentino-Alto Adige, 5 are new to Italy, and 1 to the Alps (Tab. 1).

Taxa new to Italy or to the Alps are:

*Acarospora intricata* H. Magn. is a crustose lichen growing on iron-containing silicate rocks, on vertical or overhanging surfaces (TIMDAL 1984). The specimen was collected in de la Mare Valley near malga Prabon at 1820 m (Stelvio National Park). Recently it was found also in Lombardy.

*Aspicilia epiglypta* (Norrlin ex Nyl.) Hue is a crustose lichen growing on mineral-rich siliceous rocks. It was found on an isolated boulder in de la Mare Valley near malga Prabon at 1820 m (Stelvio National Park).

*Gyalideopsis anastomosans* P. James & Vezda is a mild-temperate lichen growing in humid, undisturbed forests. It was found in an old and unmanaged *Larix-Pinus cembra* formation in de la Mare Valley near malga Prabon at 1820 m (Stelvio National Park) and it is new for the Alps.

*Polyblastia philea* Zsch. is a crustose pioneer lichen growing on lime-rich soil. It was found in the Integral Natural Reserve of Mt. Bondone at 2070 m in a alpine grassland.

*Rhizocarpon ferax* H. Magn. and *Rhizocarpon inarense* (Vain.) Vain. are crustose lichens growing on silicate rocks. They were found in de la Mare Valley near malga Prabon at 1820 m (Stelvio National Park) on metamorphic mineral-rich siliceous outcrops together with *Rhizocarpon ridescens* (Nyl.) Zahlbr.

The new taxa were collected in six different habitats (Tab. 2). The richest in new species are both siliceous and carbonatic rocks, and subalpine *Larix* formations. Also alpine rivers on siliceous substrates seem to be interesting for new floristic surveys; their exploration could lead to an increase in the knowledge on lichen diversity of the Italian Alps. On the contrary the terricolous lichens of Italy were studied in depth (NIMIS & MARTELOS 2004) and so only some sporadic species could be added to the regional and national check-list.

**Tab. 1:** List of the new species for Trentino-Alto Adige.

Localities: SNP Stelvio National Park - Trentino sector (Province Trento), BINR Mt. Bondone Integral Natural Reserve (Province Trento), FSBNP Fanes-Sennes-Braies Natural Park (Province Bolzano), SDNP Sexten Dolomites Natural Park (Province Bolzano), TAA Trentino Alto Adige.

		Localities						
		New to Italy	New to TAA	New to the Alps	SNP	BINR	FSBNP	SDNP
1	<i>Acarospora intricata</i> H. Magn.	+			+			
2	<i>Aspicila epiglypta</i> (Norrlin ex Nyl.) Hue	+			+			
3	<i>Aspicilia polychroma</i> Anzi v. <i>perradiata</i>		+			+		
4	<i>Aspicilia recedens</i> (Taylor) Arnold		+		+			
5	<i>Baeomyces carneus</i> Flörke		+		+			
6	<i>Biatora chrysantha</i> (Zahlbr.) Printzen		+		+			
7	<i>Cetraria obtusata</i> (Schaer.) Van den Boom & Sipman		+		+			
8	<i>Cyphelium pinicola</i> Tibell		+				+	
9	<i>Farnoldia jurana</i> ssp. <i>bicincta</i> (Hertel) Clauzade		+			+		
10	<i>Gyalideopsis anastomosans</i> P.James & Vezda		+	+	+			
11	<i>Hypocenomyce friesii</i> (Ach.) P.James & Gotth.Schneid.		+		+			
12	<i>Lepraria lobificans</i> Nyl.		+			+		
13	<i>Leproloma diffusum</i> J.R.Laundon		+					+
14	<i>Lobothallia melanaspis</i> (Ach.) Hafellner		+		+			
15	<i>Micarea elachista</i> (Körb.) Coppins & R.Sant.		+			+		
16	<i>Pertusaria pupillaris</i> (Nyl.) Th. Fr.		+		+			
17	<i>Polyblastia philea</i> Zsch.	+				+		
18	<i>Rhizocarpon ferax</i> H. Magn.	+			+			
19	<i>Rhizocarpon inarense</i> (Vain.) Vain.	+			+			
20	<i>Staurothele bacilligera</i> (Arnold) Arnold		+			+		
21	<i>Staurothele fissa</i> (Taylor) Zwackh		+		+			
22	<i>Staurothele fuscocuprea</i> (Nyl.) Zschacke		+		+			
23	<i>Thelidium pertusatii</i> (Garov.) Jatta		+		+			
24	<i>Toninia lutosa</i> (Ach.) Timdal		+			+		
25	<i>Umbilicaria cinereorufescens</i> (Schaer.) Frey		+		+			
26	<i>Verrucaria transiliens</i> Arnold		+			+		

**Tab. 2:** Presence of the new species in the six surveyed habitats.

Habitat	Natura 2000 code	N°of new species	% on the total
Siliceous rocks	81,10 and 82,20	7	27
Carbonatic rocks	81,20 and 82,10	6	23
<i>Larix</i> formations	94,20	6	23
Alpine rivers on siliceous substrates	32,20	3	11,6
Alpine grasslands on siliceous substrates	61,50	2	7,7
Alpine grasslands on carbonatic substrates	61,70	2	7,7

The lichen flora of Trentino-Alto Adige consists now of 1327 species with an increase of 2%.

The leading position of this region for lichen diversity in Italy is confirmed, since 56,4% of the total lichen flora of the Country is known to occur in this territory. Thus, Trentino-Alto Adige plays a priority role in the conservation of alpine lichen diversity.

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