

Additions to the lichen flora of the Ligurian Apennines (NW Italy)

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Aggiunte alla flora lichenica dell' Appennino Ligure — Il presente lavoro ha permesso di individuare 24 entità licheniche per l'Appennino ligure di cui 11 nuove per la Liguria e 4 per l'Emilia.

Key words: biodiversità, Emilia, Lichenes, Liguria.

According to VALCUVIA & VITTADINI (1982), only a few lichenological collections were made in the Ligurian Apennines in the Liguria and Emilia regions (N Italy) (DE NOTARIS, 1846; BAGLIETTO, 1857; ZANFROGNINI, 1902; DEGELIUS, 1935). Only 73 *taxa* were reported from this area in Liguria, which is less than 10% of the whole Ligurian lichen flora. Furthermore, the last records for the Emilian versant of the Apennines date back to the beginning of the 20th century (BRACCIFORTI, 1897; ZANFROGNINI, 1902; DEGELIUS, 1935 see NIMIS, 2000).

More recently, some lichenological studies were carried out in the Ligurian Apennines, in the Vara (PUTORTI et al., 1997) and the Aveto valleys (BRUNIALTI et al., 1999; GIORDANI & BRUNIALTI, 2000a). During a biomonitoring study, a few lichens were reported for the Aveto, Vara, Scrivia and Trebbia valleys (GIORDANI & BRUNIALTI, 2000b). Some interesting species most of which are new to Liguria and Emilia, mainly collected in the Aveto valley, are reported in this paper.

METHODS

Lichen samples were collected in the following localities (fig.1):

1. Rezzoaglio, Villanocce: Aveto valley (Prov. Genova, Liguria), *Fraxinus excelsior*, 850-900 m, 13/5/00, leg. R. Benesperi, G. Brunialti, P. Giordani, S. Ravera.
2. Monte Nero: Nure valley (Prov. Parma, Emilia), *Abies alba*, 1650 m, 27/2/2000, leg. G. Brunialti, P. Giordani, P. Modenesi, R. Bernardello.
3. Monte Pu: Petronio valley (Prov. Genova, Liguria), ophiolitic rocks, 800 m, 13/2/2000, leg. P. Giordani.

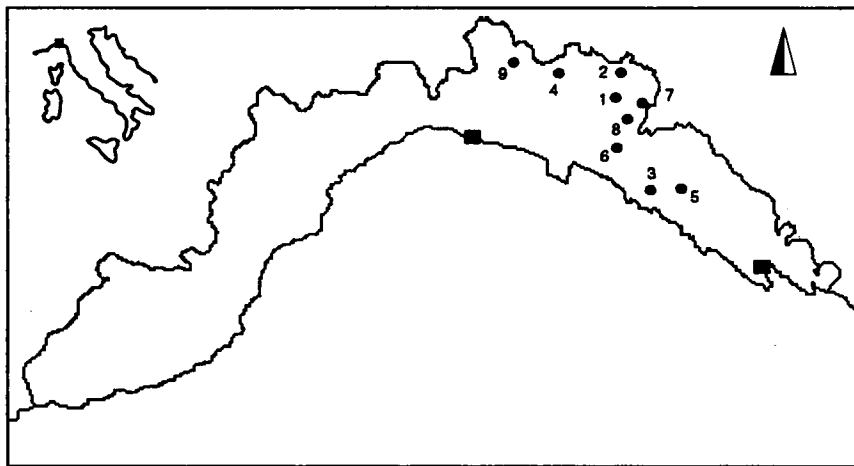


Fig. 1 — Area of study with sampling sites.

4. Rovegno: Trebbia valley (Prov. Genova, Liguria), *Castanea sativa*, 800 m, 15/6/2000, leg. P. Giordani, G. Brunialti.
5. Carrodano: Vara valley (Prov. La Spezia, Liguria), soil, 800 m, 15/3/2000, leg. P. Giordani.
6. Molinello: Graveglia valley (Prov. Genova, Liguria), soil and ophiolitic rocks, 500 m, 2/3/2000, leg. G. Brunialti, P. Giordani, P. Modenesi.
7. M. Penna: Aveto valley (Prov. Genova, Liguria), soil, 1400 m, 17/8/1997, leg. G. Brunialti, P. Giordani.
8. M. La Rocchetta: Penna valley (Prov. Genova, Liguria), soil, 1200 m, 15/7/1997, leg. G. Brunialti, P. Giordani.
9. Crocefieschi: Scrivia valley (Prov. Genova, Liguria), *Tilia sp.*, 700 m, 28/12/1999, leg. G. Brunialti, P. Giordani

The samples are preserved in GE and in RO. For identification, the keys of CLAUZADE & ROUX (1985), PUNTILLO (1989), PURVIS et al. (1992) and WIRTH (1995) were used. Author's abbreviations follow BRUMMITT & POWELL (1992). Nomenclature follows NIMIS (2000).

Taxa not previously reported for Liguria are marked with* and *taxa* new for Emilia are marked with**.

New and interesting records

- * ***Arthonia excipienda*** (Nyl.) Leight. — (1)

This species grows on the smooth bark of deciduous trees and shrubs in riparian mountain woodlands (NIMIS, 2000). The only recent records for Italy are from Tuscany (COPPINS, 1989) and Umbria (RAVERA, 1999).

- * ***Arthopyrenia salicis*** A. Massal. — (1)

This species grows on the smooth bark of deciduous trees and shrubs. There are very few Italian records from the Alps (HINTERREGGER, 1994) and the Central Apennines (RAVERA, 1998). It is very similar to *Arthopyrenia punctiformis* and its occurrence was probably underestimated.

Buellia griseovirens (Sm.) Almb. — (2)

This species was previously reported for Emilia from the N Apennines by NIMIS et al. (1996). It is fairly frequent on the smooth bark of deciduous trees and shrubs in rather humid situations (NIMIS, 2000). It has been reported recently from the Aveto Valley and the Portofino reserve (BRUNIALTI et al., 1999).

Calicium abietinum Pers. — (2)

This is the second record for Emilia, after ZANFROGNINI (1902). According to NIMIS (2000), it grows on the old wood of conifers, but also on bark, especially of *Abies*, in humid areas.

Calicium salicinum Pers. — (2)

This species was previously reported from Emilia by NIMIS et al. (1996). It is most frequent on dry parts of the boles of deciduous, acid-barked trees, but is also found on lignum (NIMIS, 2000).

* **Caloplaca lucifuga** G. Thor — (1)

This species grows on ancient, more or less isolated deciduous oaks, in crevices of rough bark, and on faces seldom wetted by rain (NIMIS, 2000). The specimen found on an old chestnut tree represents the first report for Liguria.

* **Cetraria chlorophylla** (Willd.) Vain — (4)

This species, found on more or less isolated conifers and more rarely on old acid-barked deciduous trees, was collected on *Castanea sativa*.

Cetrelia olivetorum (Nyl.) W. L. Culb. & C. F. Culb. — (1)

This species was only recently recorded from Liguria (PUTORTÌ et al., 1997, GIORDANI & BRUNIALTI, 2000a). The new specimen was from an old chestnut wood, associated with *Lobaria pulmonaria*.

** **Chaenotheca chrysocephala** (Ach.) Th. Fr. — (2)

This specimen, the first record for Emilia, was collected on *Abies alba*. This species grows on the acid bark of both broad-leaved and conifer trees, more rarely on hard lignum, with optimum on *Larix* (NIMIS, 2000).

** **Chaenotheca ferruginea** (Sm.) Migula — (2)

This is the first record for Emilia. The species grows on acid bark, both of very old oaks and conifers, on faces protected from rain.

** **Cyphelium inquinans** (Sm.) Trevis. — (2)

The specimen, collected on an old *Abies* represents the first record for Emilia. The only recent records for Italy were from Calabria (PUNTILLO, 1996). It lives on old conifer stumps, more rarely on lignum of broad-leaved deciduous trees, with optimum in upland areas (NIMIS, 2000).

* **Cyphelium sessile** (Pers.) Trevis. — (1)

This is a parasite of *Pertusaria* spp., very rare and declining in Italy, the only recent records being from Calabria (PUNTILLO, 1994, 1996). Our specimen was a parasite of *Pertusaria pertusa* on an old chestnut tree in an undisturbed situation.

* **Dermatocarpon luridum** (With.) J. R. Laundon — (6)

A species found on periodically inundated siliceous rocks near creeks and brooks, or on steeply inclined, shaded faces with frequent water seepage (NIMIS, 2000). This is the first record for Liguria.

Heterodermia speciosa (Wulfen) Trevis. — (1)

The optimal distribution of this species is in the beech belt, on bark or epiphytic bryophytes (NIMIS, 2000). This is the only recent record for Liguria: *H. speciosa* was previously reported from the west coast of Liguria in the last century (BAGLIETTO, 1857; DELLA CAMPANA, 1892).

** **Hypogymnia farinacea** Zopf. — (2)

This is the first record for Emilia. According to NIMIS (2000), this species is most frequent in the Alps and rarer in the mountains of southern Italy.

* **Ochrolechia arborea** (Kreyer) Almb. — (1)

This is the first record for Liguria of this rather common species, which grows on more or less isolated deciduous trees with mineral-rich bark.

* **Ochrolechia balcanica** Verseghe — (1)

This is the first record for Liguria and for N-Italy as well. According to NIMIS (2000), this species is common along the Apennines, in humid forests, with optimum in the beech belt.

* **Parmelia exasperatula** Nyl. — (9)

This rather common species, occurring in *Xanthorion* communities, had not been previously reported for Liguria. It was found on *Tilia*.

Peltigera venosa (L.) Hoffm. — (3, 6)

According to NIMIS (2000), this species of acid substrata is quite common in the Alps, becoming very rare southwards.

These are the only recent records for Liguria, after the old record from the Maritime Alps by BAGLIETTO (1857).

* **Peltigera elisabethae** (Hudson) Baumg. — (7)

This is the first record for Liguria. This species was often mistaken for *Peltigera horizontalis* (NIMIS, 1993). The specimen was found on soil in a sheltered situation.

Peltigera neckeri Müll. Arg. — (8)

Our specimen was collected on soil. There is only one previous report for Liguria (VI-TIKAINEN, 1987).

Sphaerophorus globosus (Hudson) Vain. — (2)

This is the second Emilian record of this suboceanic species, previously reported from the Gorgo valley in the Tuscan-Emilian Apennine (ZANFROGNINI, 1902). According to NIMIS (2000), it can also occur on trees in natural forests. Our specimen was collected on *Abies alba*.

Stereocaulon condensatum Hoffm. — (3, 5)

According to NIMIS (2000), this pioneer species of open and sandy soil is probably restricted to the Alps. It was previously reported from Liguria in the hinterland of Genova and on the western coast by BAGLIETTO (1857) and DELLA CAMPANA (1892).

* *Toninia plumbina* (Anzi) Hafellner & Timdal — (1)

This parasite of *Degelia* species is very rare in Italy, being known only from the Tyrrhenian region (ANZI, 1862; BAGLIETTO, 1871, 1879; NIMIS & POELT, 1987; VAN DEN BOOM & APT-ROOT, 1990; TIMDAL, 1991; PUNTILLO, 1998; BARTOLI & PUNTILLO, 1998) and from Umbria (RAVERA, 1998). This is the northernmost record for Italy.

Discussion

From a lichenological point of view, the Ligurian Apennines were assigned to four phytoclimatic regions (NIMIS & MARTELOS, 2000): the humid sub-Mediterranean region in the valleys of the Tyrrhenic versant, the dry sub-Mediterranean region of the Emilian versant, the beech belt and the subalpine belt. This variety of climates is the main cause of a rich lichen flora.

In this paper, we report 11 species as new to the Liguria and 4 species as new to Emilia. Most of these species are very rare in the survey area, but, due to the lack of information, it is difficult to establish the true status and chances of survival of these species. Further studies are advisabled to develop more detailed floristic investigations in the Apennine valleys.

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Summary

This paper reports 24 lichens from the Ligurian Apennines, 11 of which are new to Liguria and 4 to Emilia regions in N-Italy.