

INTERESTING LICHEN SPECIES FROM THE MARATEA COAST (BASILICATA REGION, SOUTH ITALY)

Interessante Flechten von der Marateaküste
(Basilikata-Region, Süditalien)

by

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Summary: A contribution to the knowledge of the lichen epiphytic and epilithic flora of the Thyrrhenian coast of the region Basilicata is provided. The aim was mainly to recognize the Mediterranean element considered as very scarce when compared with the vascular mediterranean flora. The chorological analysis shows that truly Mediterranean species are more frequent among the epilithic than the epiphytic ones as pointed out previously by NIMIS (1993, 1996).

Zusammenfassung: Die epiphytische und epilithische Flechtenflora der Thyrrhenischen Küste in der Region Basilicata wird unter besonderer Berücksichtigung der mediterranen Elemente vorgestellt. Eine Analyse der Chorologie zeigt, daß echte mediterrane Arten unter den epilithischen Flechten häufiger auftreten als unter den epiphytischen, worauf schon NIMIS (1993, 1996) hingewiesen hat.

Introduction

Basilicata is a small southern Italian region, little studied in the second half of the previous century; the subsequent few contributions added very little to the lichenological knowledge of this region (NIMIS 1993). The steel coast, close to the better known Calabria, seems to be right for the purpose of recognizing lichen Mediterranean species whose incidence in the Italian lichen

flora is quite low when compared with the vascular one (NIMIS & TRETACH 1995; NIMIS 1996).

In a field survey in May 1996, nearly one hundred epiphytic and epilithic species were collected, and some of them are fairly interesting from both a phytogeographical and a taxonomic point of view.

Survey area

The Tyrrhenian coast of the Regione Basilicata includes a small portion (28 km) of the gulf of Policastro, from Sapri to the Noce river which marks the border with Calabria.

The climate is sub-mediterranean. Average rainfall is 1246 mm (1971-1990), temperature 14,5° C. Higher rainfall is likely to be due to the high mountains raising from the coast ("orographic rains").

The mountains run along the coastline and are broken by perpendicular short and humid valleys.

Significant parts of the area are inaccessible. Therefore, even though the tourist areas nearby attract large crowds, it is still possible to find several sites where the vegetation shows interesting conservative aspects. These sites shows various bioclimatic conditions: sunny arid rocks alternate with shady humid hollows and the typical Mediterranean xerothermic vegetation (*Oleo-Ceratonion*) alternates with mixed sclerophylle - deciduous plant community (*Quercetalia pubescentis*). Anthropogenic (*Robinia*) and cultivated plants are present all over.

Data and methods

A range diagnosis for each species was done, following WIRTH (1980) when possible, or obtaining informations from the Lichens of Italy (NIMIS 1993) and other relevant literature.

Results

A total of 97 species has been recorded as reported in Table 1. In spite off the very preliminar character of the field survey, both the epiphytic and the epilithic lichen flora (Fig. 1) appear to be particularly rich, although the reduced number of fruticose and foliose species.

Topelia nimisiana, recently described by TRETACH & VEZDA (1992), was found on the bark of deciduous *Quercus*, as for its first collection in the nature reserve of Castelporziano, Latium (central Italy).

The chorological analysis shows a high percentage of widely distributed species (Fig. 2); particularly notable are lichens with suboceanic affinity, such

as *Normandina pulchella* that is very frequent mainly on deciduous *Quercus*, on *Q. ilex*, *Olea europaea* and *Ceratonia siliqua*. Also notable are *Degelia atlantica* and *Enterographa crassa*, found very frequently and showing a good correlation with air humidity. *Leptogium brebissonii* is another subatlantic species, already found in Calabria, that appears to be distributed along the Tyrrhenian coast (NIMIS & POELT 1987).

"Mediterranean" epiphytic species appear to be bounded to suboceanic conditions (NIMIS & SCHIAVON 1986; PUNTILLO & CODOGNO 1987; BARTOLI et al., 1991). As previously noted elsewhere, we did not find a lot of truly "Mediterranean" epiphytic species, e.g. with a "Mediterranean" range, as for higher plants: of 60 collected species, only *Dimerella tavaresiana*, *Koerberia bififormis* and *Opegrapha celtidicola* can be considered truly "Mediterranean", besides *Topelia nimisiana*, until now known only for the Tyrrhenian coasts.

As already pointed out, truly Mediterranean species are more frequent among the epilithic than the epiphytic ones, i.e. *Placolecis opaca*, *Lithothelium triseptatum*, *Petractis luetkemuellerei*, *Solenopsora olivacea* (Fig. 3).

The contemporary presence, in this coastal areas near a mountain range, of lichens having oceanic and boreal distributions is an interesting evidence that legitimate the debate on the true limits of the oro-boreal belt in Italy. As correctly suggested by NIMIS, this limit should be set at the southern tip of Italy.

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Tab. 1 - Floristic list

Species	substrate	Areal diagnosis
<i>Anema nummularium</i> (DURIEU & MONT.) NYL.	limestone	med.subatl
<i>Aspicilia calcarea</i> (L.) MUDD	limestone	bor-med
<i>Caloplaca aurantia</i> (PERS.) STEINER	limestone	s'mieur-med
<i>Caloplaca citrina</i> (HOFFM.) TH.FR.	limestone	bor-med
<i>Caloplaca flavescens</i> (HUDSON) LAUNDON	limestone	mieur -med
<i>Caloplaca xantholyta</i> (NYL.) JATTA	limestone	mieur-med(mo)
<i>Clauzadea immersa</i> (WEBER) HAF.& BELLEMÈRE	limestone	mieur-med.subatl
<i>Diplotomma epipolium</i> (ACH.) ARNOLD	lateritium	bor-med
<i>Lecanactis grumulosa</i> (DUFOUR) FR.	limestone	mieur.subatl
<i>Lecanora dispersa</i> (PERS.) SOMMERF.	limestone	arkt-med
<i>Lepraria nivalis</i> LAUNDON	limestone	bor-med
<i>Leptogium diffractum</i> KÖRBER	limestone	mieur-med
<i>Lichina confinis</i> (MÜLL.) AGARDH	limestone	s'bor-mieur.atl-med
<i>Lichinella stipatula</i> NYL.	limestone	med(mo)subatl
<i>Lithothelium triseptatum</i> (NYL.) APTROOT	limestone	med.subatl
<i>Opegrapha calcarea</i> SM.	limestone	smed.subatl
<i>Opegrapha subelevata</i> (NYL.) NYL.	limestone	s'mieur.atl-med
<i>Parmelia pulla</i> ACH.	lateritium	s'bor-med
<i>Petractis luetkemulleri</i> (ZAHLEBR.) VEZDA	limestone	med.atl
<i>Placolecis opaca</i> (FR.) HAF.	limestone	(s'mieur)-med.subatl
<i>Placynthium nigrum</i> (HUDSON) GRAY	limestone	bor-med
<i>Porina byssophila</i> (KÖRBER) ZAHLEBR.	limestone	s'mieur.atl-med
<i>Sarcogyne regularis</i> KÖRBER	limestone	arkt-med
<i>Solenopsora olivacea</i> (FR.) KILIAS	limestone	med.subatl
<i>Squamarina lentigera</i> (WEBER) POELT	limestone	(bor.atl)-mieur-med
<i>Verrucaria nigrescens</i> PERS.	limestone	bor-med
<i>Catapyrenium pilosellum</i> BREUSS	soil	med.subatl
<i>Cladonia convoluta</i> (LAM.) ANDERS	soil	s'mieur.subko-med
<i>Cladonia pyxidata</i> (L.) HOFFM.	soil	arkt-med
<i>Cladonia rangiformis</i> HOFFM.	soil	s'bor-med
<i>Toninia sedifolia</i> (SCOP.) TIMDAL	soil	bor.atl-med
<i>Agonimia tristicula</i> (NYL.) ZAHLEBR.	mosses	mieur.atl-med
<i>Mycobilimbia sabuletorum</i> (SCHREBER) HAF.	mosses	bor-med(mo)
<i>Topelia rosea</i> (SERVIT) JÖRG.&VEZDA	mosses	med.subatl

Species	substrate	Areal diagnosis
<i>Acrocordia gemmata</i> (ACH.) MASSAL.	bark Q	s'bor-mieur(subatl)-med
<i>Anisomeridium nyssaegenum</i> (ELLIS & EVERH) HARRIS	bark R	bor-med
<i>Arthonia radiata</i> (PERS.) ACH.	bark L	s'bor.subatl-med
<i>Arthopyrenia cinereopruinosa</i> (SCHAERER) MASSAL.	bark F	mieur.subatl-med
<i>Arthopyrenia punctiformis</i> (PERS.) MASSAL.	bark F,L	bor-med
<i>Bacidia incompta</i> (HOOKER) ANZI	bark Q	mieur-smed
<i>Bacidina phacodes</i> (KÖRB.) VEZDA	bark Q	bor-mieur(subatl)-med
<i>Buellia disciformis</i> (FR.) MUDD	bark Qi	bor-med.mo
<i>Byssoloma leucoblepharum</i> (NYL.) VAINIO	bark L	(pantrop)-med.atl
<i>Caloplaca holocarpa</i> (ACH.) WADE	bark Qi	arkt-med
<i>Candelaria concolor</i> (DICKSON) STEIN.	bark C	s'bor-med
<i>Candelariella vitellina</i> (HOFFM.) MÜLL. ARG	bark Qi	arkt-med
<i>Candelariella xanthostigma</i> (ACH.) LETTAU	bark C	bor-med
<i>Collema furfuraceum</i> (ARNOLD) DU RIETZ	bark Qi,O,P	bor.atl-mieur.atl-med(mo)
<i>Degelia atlantica</i> (DEGEL) JÖRG. & JAMES	bark Qi,P,C	mieur-med.atl
<i>Dimerella tavaresiana</i> VEZDA	bark Q	med.atl
<i>Diploicia canescens</i> (DICKSON) MASSAL.	bark Qi	mieur.subatl-med
<i>Enterographa crassa</i> (DC) FÉE	bark Q	mieur.subatl
<i>Evernia prunastri</i> (L.) ACH.	bark O	bor-med
<i>Gyalecta truncigena</i> (ACH.) HEPP	bark Qi	mieur-med
<i>Hyperphyscia adglutinata</i> (FLÖRKE) MAYRH & POELT	bark Qi	mieur.subatl-med
<i>Koerberia biformis</i> MASSAL.	bark Qi,O,P	med.subatl
<i>Lecania cyrtella</i> (ACH.) TH. FR.	bark Q	s'bor-med
<i>Lecanora argentata</i> (ACH.) MALME	bark Qi	bor-mieur-med(mo)
<i>Lecanora chlarotera</i> NYL.	bark Qi	s'bor-med
<i>Lecidella elaeochroma</i> (ACH.) HASZL.	bark Qi	(arkt)-bor-med
<i>Lepraria incana</i> (L.) ACH.	bark O	(bor)-mieur-med
<i>Leptogium brebissonii</i> MONT.	bark O,P	mieur.subatl-med
<i>Leptogium teretiusculum</i> (WALLR.) ARNOLD	bark O,P,C	s'bor-smed
<i>Nephroma laevigatum</i> ACH.	bark Q	bor.atl-mieur.atl-med(subatl)
<i>Normandina pulchella</i> (BORRER) NYL.	bark Q,Qi,O	mieur-med.subatl
<i>Opegrapha rufescens</i> PERS.	bark Q	s'bor-mieur.subatl-med(mo)
<i>Opegrapha varia</i> PERS.	bark Qi	s'bor-smed
<i>Parmelia acetabulum</i> (NECKER) DUBY	bark O,P	mieur-med(mo)
<i>Parmelia caperata</i> (L.) ACH.	bark P,C	s'bor(subatl)-med
<i>Parmelia glabra</i> (SCHAERER) NYL.	bark P	mieur.pralp-med.mo

<i>Parmelia quercina</i> (WILLD.) VAINIO	bark Q	mieur.subatl(pralp)- med.mo
<i>Parmelia subrudecta</i> NYL.	bark Q,Qi,C	mieur-smed
<i>Parmelia tiliacea</i> (HOFFM.) ACH.	bark Q	mieur-med
<i>Parmotrema chinense</i> (OSBECK) HALE & AHTI	bark Q	mieur.subatl- med.mo
<i>Pertusaria amara</i> (ACH.) NYL.	bark Qi	bor-med
<i>Pertusaria hymenea</i> (ACH.) SCHAEERER	bark Qi	mieur(atl)- med(subatl)
<i>Pertusaria leucostoma</i> (BERNH.) MASSAL.	bark C	s'bor-med(mo)
<i>Pertusaria pertusa</i> AUCT.	bark Qi	mieur-med
<i>Phaeophyscia ciliata</i> (HOFFM.) MOBERG	bark Qi,P	bor-smed
<i>Physcia adscendens</i> (FR.) OLIV.	bark Qi,J	bor-med
<i>Physcia aipolia</i> (HUMB.) HAMPE	bark Qi	bor-med
<i>Physcia biziana</i> (MASSAL.) ZAHLBR.	bark C	smed.subatl-med
<i>Physcia semipinnata</i> (GMELIN) MÖBERG	bark Qi,P	s'mieur.atl-med(mo)
<i>Physconia distorta</i> (WILLD.) LAUNDON	bark Qi,O,P	s'bor.atl-smed
<i>Physconia grisea</i> (LAM.) POELT	bark C	mieur.atl-med
<i>Porina aenea</i> (WALLR.) ZAHLBR.	bark J	mieur(subatl)-med
<i>Porina leptalea</i> (DURIEU & MONT) SM.	bark L	mieur.subatl
<i>Pyrenula chlorospila</i> ARNOLD	bark Qi	s'mieur.atl-smed
<i>Rinodina</i> cfr. <i>conradii</i> KÖRBER	bark Qi	bor-mieur
<i>Schismatomma decolorans</i> (SM.) CLAUZ. & ROUX	bark O	mieur.subatl-med
<i>Strangospora ochrophora</i> (NYL.) ANDERSON	bark Q	mieur.atl
<i>Toninia plumbina</i> (ANZI) HAF & TIMDAL	parasitic	bor.atl-med
<i>Topelia nimisiana</i> TRETIACH & VEZDA-	bark Q	med.subatl
<i>Xanthoria parietina</i> (L.) TH. FR.	bark Qi,C,J	bor-med
<i>Opegrapha atra</i> PERS.	wood L	s'bor-med
<i>Opegrapha celtidicola</i> (JATTA) JATTA	wood L	med.atl
<i>Opegrapha vermicellifera</i> (KUNZE) LAUNDON	wood Q	mieur.subatl

Q = *Quercus pubescens* s.l.; R = *Robinia pseudoacacia*; L = *Laurus nobilis*;
 Qi = *Quercus ilex*; O = *Olea europaea*; P = *Prunus communis*; C = *Ceratonia siliqua*;
 J = *Juglans regia*

Fig. 1: Substrate spectrum. Epiphytic species include parasitic and growing on mosses lichens. Epilithic include growing on soil and lateritium ones.

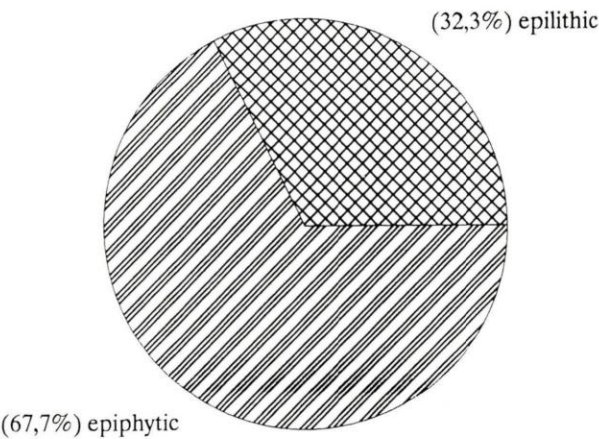


Fig. 2: Chorological spectrum.

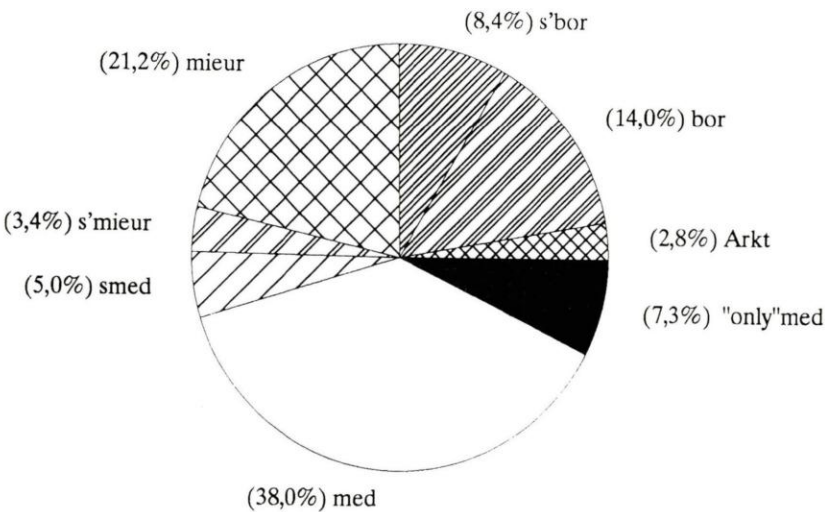
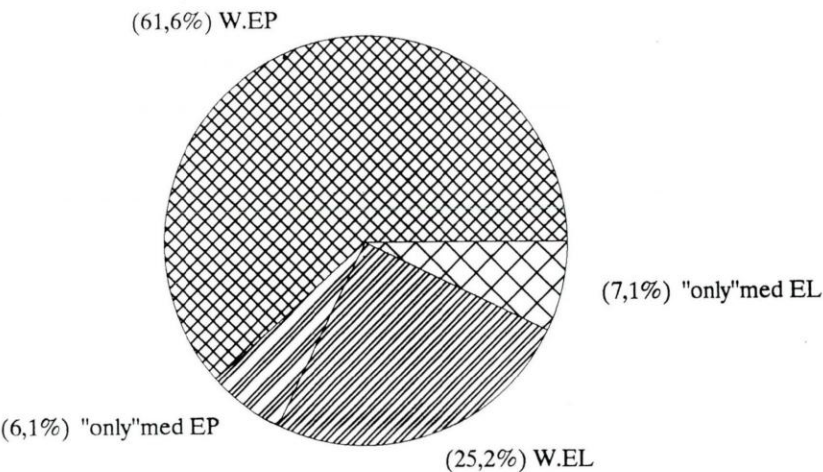


Fig. 3: Incidence of mediterranean species ("only" med) on epiphytic and epilithic lichen flora. W = widespread; EP = epiphytic species; EL = epilithic species.



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