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Flora of the Mavigliano Wood (Cosenza, Calabria). 1. – The Lichens

Abstract

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A list of 157 species of lichens and lichenicolous fungi is reported from the Mavigliano Wood (Calabria, S Italy). Eight species are new to Calabria. The flora contains some interesting indicators of air purity and long ecological continuity of the woods. A small station hosting foliicolous lichens has also been found. The biodiversity is remarkably high for a site next to an incinerator with a great environmental impact.

Introduction

The region of Calabria, the southernmost tip of peninsular Italy, due to its rough morphology, variety of substrata and of climates, hosts a rich and varied lichen flora. The recent floristic studies of Puntillo (1996, 1998) have increased the number of lichens known from Calabria to 867 infrageneric taxa. The study of single biotopes, such as valleys, mountains or forests, however, still permits to expand the knowledge of the lichen diversity of this region.

The present paper reports the result of a detailed floristic analysis of the forest of Mavigliano.

Study area

The Mavigliano Wood covers ca. 60 ha of hills in the Montalto Uffugo district (Province of Cosenza) between 180 and 296 m. The geological substrata are mostly argillaceous, sandy and arenaceous. The climate is Mediterranean, with a humid and rainy winter and a warm and dry summer, with a drought period of three months. The average annual temperature is 16,3 °C and the average annual rainfall is 1044 mm. Frost is occasional.

The Mavigliano Wood consists of a termophilous woodland composed of decidous broad-leaved trees (*Quercus frainetto*, *Q. cerris* e *Q. pubescens*). In the small valleys grow Ash (*Fraxinus oxycarpa*), Poplar (*Populus nigra*) and Willow (*Salix* sp.). The underwood hosts several shrubs and small trees, such as *Carpinus orientalis, Ligustrum vulgare*, *Crataegus oxyacantha, Cornus sanguinea* and *Erica arborea*.

Materials and methods

The study is based on the specimens collected in the Bosco di Mavigliano and deposited in the herbarium of the Natural History Museum of Calabria and Botanical Garden of the University of Calabria (CLU). The material was identified in the laboratory of the same Institute using routine techniques.

Nomenclature follows, as far as possible, ITALIC (Martellos & Nimis 2000). Identifications were based following Clauzade & Roux (1985) and several monographs.

Floristic list

Abrothallus suecicus (Kirscht.) Nordin – Parasitic on the thallus and apothecia of *Ramalina* (Det. P. Diederich).

Acarospora schleicheri (Ach.) A. Massal. – On the thallus of *Disploschistes diacapsis*, on clayey and dry soil. New to Calabria.

Acarospora smaragdula (Wahlenb.) A. Massal. – On siliceous pebbles near the ground.

Acrocordia gemmata (Ach.) A. Massal. – On bark at the base of old oaks.

Amandinea punctata (Hoffmn.) Coppins & Scheid. – On the bark of oak.

Anaptychia ciliaris (L.) Körb. – Common in Calabria, especially in the montane belt. Collected on the bark of a big oak.

Arthonia elegans (Ach.) Almq. – A southern suboceanic species. Collected on the smooth bark of *Crataegus* in a small humid and shaded, woody valley.

Arthonia muscigena Th. Fr. – A lichenicolous, pantropical fungus with outposts in some temperate regions of Europe. Found on the thallus of *Bacidina vasakii*, the latter collected on the cladodes of *Ruscus aculeatus*.

Arthonia pruinata (Pers.) A. L. Sm. – A species of old trees, strongly declining due to air pollution and to the disappearance of mature, isolated decidous trees with acid bark. Collected in the crevices of the bark of a of big oak, at the base of the trunk.

Arthonia punctiformis Ach. – On twigs of various trees.

Arthonia radiata (Pers.) Ach. – On the smooth bark of several trees, such as *Carpinus orientalis* and *Crataegus oxyacantha*.

Arthonia spadicea Leight. – This species is declining in Europe because of increasing of air pollution and the management of forests. Collected on smooth bark of *Carpinus orientalis*.

Arthrosporum populorum A. Massal. – On cultivated *Populus* x *canadensis*.

Bacidia arceutina (Ach.) Arnold – A mainly submediterranean species. Collected on smooth bark of *Carpinus orientalis*.

Bacidia beckhausii Körb. – On the bark of a very old oak along the edge of the forest, and along forest roads.

Bacidia circumspecta (Vain.) Malme – A rare species. Collected on eutrophic bark (*Populus* sp.).

Bacidia crozalsiana (H. Olivier) Zahlbr. – This species, previously known only from France, was recently reported from Italy by Puntillo (1996). It is not common on smooth bark of *Populus nigra*.

Bacidia igniarii (Nyl.) Oksner – An indicator species of long ecological continuity of forests (Tibell 1991). Very rare on the bark of *Quercus pubescens*.

Bacidia incompta (Hook.) Anzi – This species is decreasing due to the demise of elm (*Ulmus*), which is its most common phorophyte. Collected on the bark of very old oaks (*Quercus pubescens*).

Bacidia rubella (Hoffm.) A. Massal. – Common on the fissured bark at the base of isolated trees, often on oaks (*Quercus pubescens*).

Bacidina vasakii **(**Vézda**)** Vézda – A foliicolous pantropical species with outpost in warm-humid sites of the Mediterranean area. Found on cladodes of *Ruscus aculeatus*.

Biatorella ochrophora (Nyl.) Arnold – A rare species, sensitive to air pollution and to the disappearance of mature trees. Collected from the fissured bark of old trees.

Caloplaca arenaria (Pers.) Müll. Arg. – On small pebbles.

Caloplaca cerina (Hedwig) Th. Fr. – Common on well-lit trees.

Caloplaca citrina (Hoffm.) Th. Fr. – On cement walls.

Caloplaca ferruginea (Huds.) Th. Fr. – Not common on the rough bark of several isolated trees.

Caloplaca flavovirescens (Wulfen) Dalla Torre & Sarnth. – Collected on basic rocks, on well-lit horizontal surfaces wetted by rain.

Caloplaca haematites (St.-Amans) Zwackh – Very common on the bark of isolated trees.

Caloplaca obscurella (Körb.) Th. Fr. – Sorediate and non-sorediate forms were collected together on lignum and bark of various trees, often in association with other nitrophitic lichens.

Caloplaca virescens (Sm.) Coppins – This *taxon* of the *C. cerina* complex has been much overlooked because it is usually sterile, but it is easily identifiable by its thick, granular and sorediate-isidiate thallus. It is non common on old big isolated trees at the base of the trunk associated with other nitrophytic species. New to Calabria.

Candelaria concolor (Dicks.) Stein. – Not common on isolated trees along forest roads.

Candelariella reflexa (Nyl.) Lettau – Common on isolated and cultivated trees with eutrophic or eutrophicated bark (often on *Olea europaea*).

Candelariella vitellina (Hoffm.) Müll. Arg. – On siliceous pebbles near the ground.

Candelariella xanthostigma (Ach.) Lettau – Common on acid bark of isolated, cultivated trees.

Catillaria chalybeia (Borrer) A. Massal. – A widespread epilithic species, found on acid bark.

Chaenotheca hispidula (Ach.) Zahlbr. – Collected in the crevices of fissured bark at the base of the trunk of *Quercus pubescens*, in a shaded and moist stand.

Chrysothrix candelaris (L.) J.R. Laundon – On twigs of *Erica arborea* in a small, N-exposed valley.

Chromatoclamys muscorum (Fr.) H. Mayrhofer & Poelt – On *Hypnum cupressiforme,* and on bark, at the base of a trunk of *Quercus pubescens*.

Cladonia cervicornis (Ach.) Flot. subsp. ***cervicornis*** **–** Very common on soil in open situations.

Cladonia fimbriata (L.) Fr. – On soil.

Cladonia foliacea (Huds.) Willd. – On barren soil.

Cladonia furcata (Huds.) Schrad. – On acid soil in open situations.

Cladonia pyxidata (L.) Hoffm. – On old stumps.
Cladonia rangiformis Hoffm. – Common on soil.
Collema crispum (Huds.) F.H. Wigg. – Rare, on acid soil.
Collema furfuraceum (Arnold) Du Rietz – Common on various trees.
Collema ligerinum (Hy) Harm. – On bark.
Collema limosum (Ach.) Ach. – An ephemeral terricolous lichen with a wide distribution in several continents. It is a pioneer on recently disturbed clay soil and it was collected in an open situation in garrigue vegetation. It has been often observed with apothecia and very reduced thalli. New to Calabria.
Collema subnigrescens Degel. – Very common together with many other gelatinous lichens. It occurs at the base of the rough trunk of different trees, mostly in rain-tracks.
Collema tenax (Sw.) Ach. – Found on clay and sandy disturbed soil in open situations.
Dactylospora parasitica (Flörke ex Spreng.) Zopf – Lichenicolous on *Pertusaria albescens* growing on bark of oaks. (Det. P. Diederich).
Degelia atlantica (Degel.) P. M. Jørg & P. James – A typical oceanic species. Not common on the acid bark of oaks (*Quercus cerris, Q. frainetto* and *Q. pubescens*).
Dendriscocaulon umhausense (Auersw.) Degel. – This lichen is known from Norway to the Mediterranean mountains, always in humid areas. Probably it is the morphotype of *Lobaria amplissima* with cyanobacteria. In the studied area was collected without the presence of *Lobaria* on fissured bark of old oaks.
Dimerella pineti (Ach.) Vézda – Rare, collected only once, in a niche at the base of fissured bark of oak (*Quercus pubescens*) in a humid and shaded situation.
Diploschistes actinostomus (Pers.) Zahlbr. – On well-lit siliceous stones wetted by rain along the river Mavigliano.
Diploschistes diacapsis (Ach.) Lumbsch – On clay soil in open situations. New to Calabria.
Diplotomma alboatrum (Hoffm.) Flot. – On eutrophicated bark, at the base of the trunks of very ancient trees (*Quercus pubescens*) along forest roads.
Endocarpon pusillum Hedw. – Very rare on soil, in the crevices in a niche of a well-lit conglomerate rock.
Eopyrenula leucoplaca (Wallr.) R.C. Harris – Very rare on fissured bark of old trees of oaks. New to Calabria.
Evernia prunastri (L.) Ach. – Common on shrubs, on branches or twigs in semi-open situations.
Fellhanera bouteillei (Desm.) Vézda – A foliicolous subcosmopolitan lichen. In Europe it grows also on twigs of trees. It was found on the cladodes of *Ruscus aculeatus* in a little valley protected by direct sun light and with constant humidity.
Flavoparmelia caperata (L.) Hale – This is the commonest *Parmelia* of the Mavigliano Wood and grows on bark, at the base of the trees.
Fuscopannaria olivacea (M. Jørg.) M. Jørg. – This recently-described species has a Mediterranean distribution. In the Mavigliano Wood grows into the crevices of fissured acid bark at the base of trees.
Graphis scripta (L.) Ach. – On smooth bark of young trees (e.g. *Carpinus orientalis*) under the canopy of an oak wood in a little valley with an ephemeral rivulet.

Gyalecta truncigena (Ach.) Hepp – Collected once on bark at the base of an old oak and on exposed roots in a niche near the ground.

Gyalideopsis athalloides (Nyl.) Vézda – This species, known from few localities in southern and central Europe and California was reported as new to Italy by Puntillo (1996) and recollected only in the studied area in open situations on clay-sandy, very acid soil. It is an ephemeral species present only during a few rainy months.

Gyalideopsis anastomosans P. James & Vézda – This recently-described species (James & Vìzda, in James 1972) characterized by transparent thlasidia was reported by Puntillo as new to Italy (1996) from the Bosco di Santa Maria (Serra San Bruno) is now recorded from the Mavigliano Wood, where it occurs on the edge of the wood along a forest road on twigs of *Erica arborea.*

Hyperphyscia adglutinata (Flörke) H. Mayrhofer & Poelt – Very common on nutrient-rich or -enriched substrata. Often associated with other nitrophytic lichens as *Candelaria concolor*, *Phaeophyscia* sp., *Physcia* sp.

Koerberia biformis A. Massal. – Restricted to sites with long ecological continuity of the woods. Common on fissured bark of various trees.

Lecanora chlarotera Nyl. – Very common on smooth bark or pioneer on twigs of various phorophytes.

Lecanora expallens Ach. – Collected with apothecia, common on acid rough bark, at the base of trunks, in rather shaded situations in open wood, often associated with *Micarea prasina*. New to Calabria.

Lecanora muralis (Schreber) Rabenh. – On small siliceous pebbles scattered on the soil.

Lecanora varia (Hoffm.) Ach. – On hard lignum of oak.

Lecidea fuscoatra (L.) Ach. – Not common on siliceous stones.

Lecidella carpathica Körb. – On siliceous stones along the edge of an arable field.

Lecidella elaeochroma (Ach.) M. Choisy – One of the commonest lichens of Italy. Also in the studied area is very common on smooth bark, often being pioneer on young twigs.

Lecidella scabra (Taylor) Hertel & Leuckert – Found once on a heap of acid stones near the ground. New to Calabria

Lepraria lobificans Nyl. – On various substrata (bark, soil and bryophytes) in niches well protected from rain and direct sunlight.

Leprocaulon microscopicum (Vill.) Gams – Common on soil or at the base of the trees in niches well protected from rain and sunlight.

Leptogium brebissonii Mont. – Not common on N-exposed rough, mossy and acid bark of oaks.

Leptogium corniculatum (Hoffmn.) Minks – Found on pleurocarpic terricolous mosses (*Pseudoscleropodium purum* and *Scorpiurum circinatum*) and directly on acid soil in humid situations.

Leptogium furfuraceum (Harm.) Sierk – A mainly western, suboceanic species, in Italy known only from Calabria. Common on bark of various trees.

Leptogium lichenoides (L.) Zahlbr. – On terricolous bryophytes.

Leptogium plicatile (Ach.) Leight. – On the top of conglomeratic rocks along the edge of the wood. New to Calabria.

Leptogium teretiusculum (Wallr.) Arnold – On the rough bark of oaks.

Leptorhaphis atomaria (Ach.) Szatala – In crevices of fissured rough bark.
Lobaria amplissima (Scop.) Forssell – Collected once on a pleurocarpic moss (*Leucodon sciuroides*) on the bark of a very ancient branch of oak (*Quercus pubescens*).
Melanelia exasperata (De Not.) Essl. – Pioneer on little branches or twigs together with other nitrophytic species.
Melanelia glabra (Schaer.) Essl. – Very common with several other *Parmelia* on bark of oaks (*Quercus frainetto* and *Q. pubescens*)
Melanelia subaurifera (Nyl.) Essl. – Pioneer on smooth acid bark in open situations.
Micarea melaenida (Nyl.) Coppins – Reported as new to Italy by Puntillo (1996). Collected on compact clay soil in open situations.
Micarea prasina Fr. – Very abundant at the base of trees in crevices of the bark and sometimes on epigeous bryophtyes.
Moelleropsis nebulosa (Hoffm.) Gyeln. – Both on bare sandy soil and on terricolous bryophytes in rather shaded, humid situations along forest roads.
Naetrocymbe punctiformis (Pers) R.C. Harris – On twigs of various phorophytes.
Neofuscelia pulla (Ach.) Essl. s. lat. – On siliceous stones along the river Mavigliano and on pebbles wetted by rain scattered on soil.
Nephroma laevigatum Ach. – On epiphytic bryophytes at the base of trunks of various phorophtytes.
Mycobilimbia hypnorum (Libert) Kalb & Hafellner – On epilithic and epigeous mosses.
Opegrapha atra Pers. – On smooth bark in the wood.
Opegrapha niveoatra (Borrer) J.R. Laundon – Collected once on acid bark of a very old oak (*Quercus pubescens*) in a niche at the base of a tree.
Parmelia sulcata Taylor – Common on bark of branches and trunks of oaks.
Parmelina quercina (Willd.) Hale – Common on moderately nutrient-enriched bark of isolated trees.
Parmelina tiliacea (Hoffm.) Hale – This is the commonest *Parmelia* in the Mavigliano Wood on acid nutrient-enriched bark.
Parmotrema chinense (Osbeck) Hale & Ahti – On acid bark, often on epiphytic bryophytes, mostly north exposed.
Peltigera praetextata (Sommerf.) Zopf – On epigeous pleurocarpic mosses, on acid soil and on bark at the base of trunks.
Pertusaria albescens (Huds.) M. Choisy & Werner – Not common on acid bark of oaks.
Pertusaria amara (Ach.) Nyl. – Common on bark of oaks.
Pertusaria hymenea (Ach.) Schaer. – On rough acid bark of isolated oaks.
Pertusaria leioplaca DC. – On smooth bark of twigs growing in the underwood.
Phaeophyscia hirsuta (Mereschk.) Essl. – Common on the bark of cultivated poplars.
Phlyctis agelaea (Ach.) Flot. – On the smooth bark of *Carpinus orientalis* in humid and shaded situations (little valley with rivulet).
Physcia adscendens (Fr.) H. Olivier – Very common on various substrates at the edge of the wood near cultivated fields.
Physcia aipolia (Humb.) Fürnrh. – Very common on bark and twigs of many phorophytes along the edge of the wood near cultivated fields.
Physcia biziana (A. Massal.) Zahlbr. var. ***biziana*** – On trunks or twigs of many phorophytes, associated with other nitrophytic elements.

Physcia leptalea (Ach.) DC. – On trunks or twigs of isolated trees.
Physcia tenella (Scop.) DC. – Common on trunks, and twigs of isolated trees and shrubs.
Physconia distorta (With.) J.R. Laundon – Common on acid bark of isolated trees.
Physconia grisea (Lam.) Poelt – Common on bark of isolated trees.
Physconia servitii (Nádv.) Poelt – Rare on the bark of oaks.
Physconia venusta (Ach.) Poelt – On rough bark of old trees.
Placidium squamulosum (Ach.) Breuss – Not common on clay soil in an open situation.
Placidiopsis tenella (Nyl.) Zahlbr. – A pyrenocarpous epigeous species known from a few localities in Southern Europe (Breuss pers com.) and reported from Italy by Puntillo (1993). It was collected on clay soil in an open situation.
Placynthium nigrum (Huds.) Gray – Common on small calcareous pebbles at the soil surface, in periodically wetted, open situations.
Pleurosticta acetabulum (Neck.) Elix & Lumbsch – Not common on bark of oaks.
Polyblastia rouxiana Vézda & Vivant – An ephemeral species which appears in the few rainy months only. It has been collected on clay soil in open situations.
Polysporina simplex (Davies) Vézda – Very common on pebbles near the ground level, in open situations.
Porina aenea (Wallr.) Zahlbr. – On smooth bark at the base of the trunks in rather closed, shaded situations, such as little valley with rivulets under the canopy of the wood.
Porina hoehneliana (Jaap) R. Sant. – A foliicolous species known from a few European localities only. It has been collected as epiphyllous and sometimes as ipophyllous on *Ruscus aculeatus* cladodes (see Calabrian distribution map in Puntillo 2000), often in association with the next species.
Porina oxneri R. Sant. – An obligately foliicolous lichen known from a few European localities and from Caucasus (distribution map in Puntillo & Vézda 1994). Collected on *Ruscus aculeatus* cladodes in a very shaded and humid micro-niche; associated with the former species.
Porpidia crustulata (Ach.) Hertel & Knoph – Very common on small pebbles scattered on the ground in open situations.
Punctelia subrudecta (Nyl.) Krog – Very common on acid bark of ancient isolated trees along forest roads.
Pyrenula chlorospila Arnold – Rare on the smooth bark of *Carpinus orientalis* in shaded, humid situations (valley with rivulet under the canopy of the wood).
Ramalina farinacea (L.) Ach. – Common on acid bark of oaks (*Quercus frainetto, Q. pubescens*) in the upper parts of trunks, on branches and dry twigs.
Ramalina fastigiata (Pers.) Ach. – On branches and twigs of oaks and often on shrubs in the semi-open underwood.
Ramalina fraxinea (L.) Ach. – On twigs and branches of more o less isolated trees at the edge of the wood and along forest roads.
Rhizocarpon lecanorinum Anders – On siliceous stones along the river Mavigliano.
Rhizocarpon lavatum (Fr.) Hazsl. – Rare on small pebbles near the ground level in rather humid, shaded situations. New to Calabria.
Rinodina gennarii Bagl. – Rare on small pebbles near the ground level in nutrient-enriched situations. New to Calabria (Det. H. Mayrhofer).
Rinodina sophodes (Ach.) A. Massal. – On young twigs of various phorophytes.

Schismatomma decolorans (Sm.) Clauzade & Vézda – Not very common in the crevices of big trees well protected from rain and direct sunlight.

Sphinctrina turbinata (Pers. ex Fr.) De Not. – On the thallus of *Pertusaria pertusa* growing on the bark of old big oak.

Staurolemma omphalarioides (Anzi) M. Jørg. & Henssen – Found only once on acid bark of *Quercus pubescens* at the base of the trunk.

Staurothele geoica Zschacke – In fissures of siliceous rocks. New to Calabria.

Stereocaulon vesuvianum Pers. – On siliceous stones along the river Mavigliano always in niches sheltered from direct sunlight.

Strigula affinis (A. Massal.) R. C. Harris – On smooth bark of *Quercus pubescens* (Conf. M. Tretiach).

Strigula mediterranea Etayo – On bark, at the base of very old oaks.

Telenella modesta (Nyl.) Nyl. – Common on smooth bark of *Populus nigra* with several nitrophytic species.

Tomasiella arthonioides (A. Massal.) A. Massal. – This characteristic species with stromatic perithecia is widespread in southern and central Europe. Its obligate phorophyte is *Fraxinus ornus* where it has been found.

Toninia sedifolia (Scop.) Timdal – Not common on soil in open situations.

Toninia plumbina (Anzi) Hafellner & Timdal – A lichenicolous fungus, very rare on the thallus of *Degelia atlantica*.

Trapelia coarctata (Sm.) M. Choisy – On small stones scattered on the ground.

Thrombium epigaeum (Pers.) Wallr. – On clay soil.

Verrucaria sp. – This *Verrucaria* is a pioneer species. It was collected on pebbles near the ground level, in open situations.

Waynea stoechadiana (Abbassi & Cl. Roux) Cl. Roux & P. Clerc – In the fissures of the bark of an old, isolated oak.

Wouauxiella lichenicola (Linds.) Petr. & Syd. – A parasitic fungus in the apothecia of *Lecanora,* collected on twigs of oak. New to Calabria. (Det. P. Diederich).

Xanthoparmelia tinctina (Maheu & A. Gillet) Hale – On siliceous stones along the river Mavigliano, associated with *Neofuscelia pulla*.

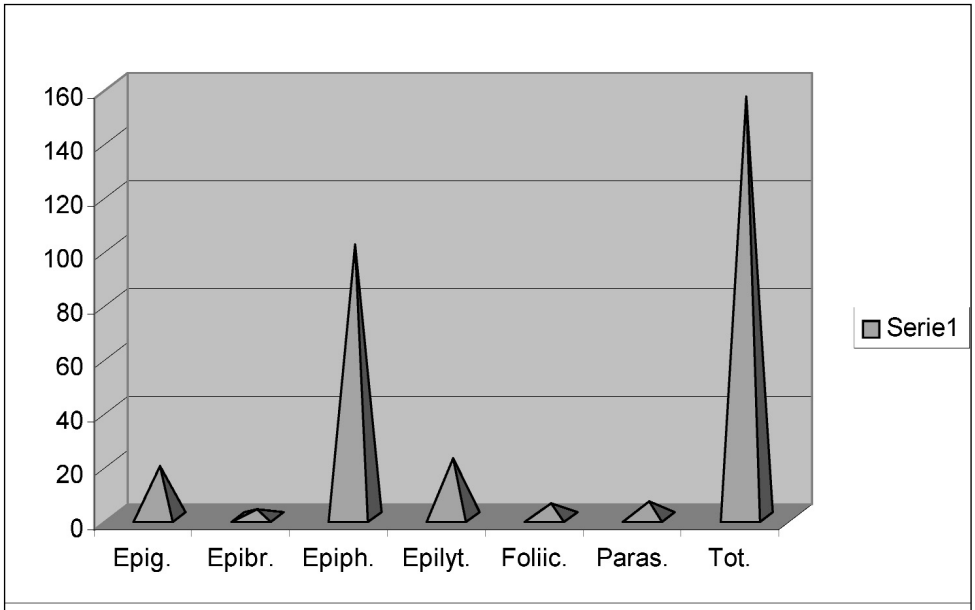
Xanthoria parietina (L.) Th. Fr. – On the bark of various trees near the edge of the wood.

Discussion and Conclusions

The lichen flora of the Mavigliano Wood consists of 157 taxa. Eight are new to Calabria (*Acarospora schleicheri*, *Caloplaca virescens*, *Collema limosum*, *Eopyrenula leioplaca*, *Lecidella scabra*, *Leptogium plicatile*, *Staurothele geoica*, e *Vouaxiella lichenicola*). Epiphytic lichens are the majority, with 102 taxa (Fig. 1), three of which are epibryophityc and five foliicolous.

Terricolous species are very few (19 taxa) and grow at the edge of the wood and of cultivated fields. Several of these species are ephemeral: they appear with the rainy season and disappear in summer (*Micarea melaenida*, *Collema limosum*, *Gyalideopsis athalloides*, *Placidiopsis tenella*, *Polyblastia rouxiana*, *Thrombium epigaeum*).

The epilithic flora includes only 20 taxa. Some species grow on pebbles scattered on the



Epig.	19
Epibr.	3
Epiph.	102
Epilit.	22
Foliic.	5
Paras.	6
Tot.	157

Fig. 1. Substrates.

ground, and behave as pioneer lichens, such as *Polysporina simplex, Porpidia crustulata* and *Trapelia coarctata*. Other species grow on the stones contained in iron nets on the edge of the Mavigliano river (*Neofuscelia pulla, Xanthoparmelia tinctina, Rhizocarpon lecanorinum*, *Stereocaulon vesuvianum* etc.).

Lichenicolous species are well represented (*Abrothallus suecicus*, *Acarospora schleicheri*, *Dactylospora parasitica*, *Sphinctrina turbinata*, *Toninia plumbina* and *Wouauxiella lichenicola*).

The corticicolous species growing on smooth bark (mainly of *Corylus avellana* and *Carpinus orientalis*) were found under the canopy of the wood and along the edge of little valleys with high humidity (*Arthonia elegans, A. radiata*, *Graphis scripta*, *Opegrapha atra* etc.).

The largest number of nitrophytic species was found on bark near the edge of the wood; near cultivated fields or pastures.

Crustose lichens dominate (93) on various substrates. Also foliose lichens are well represented (46 species).

HETEROMEROUS LICHENS						
Lepr.	Crust.	Placod.	Squam.	Folios.	Frutic.	Comp.
3	90	1	4	34	5	6

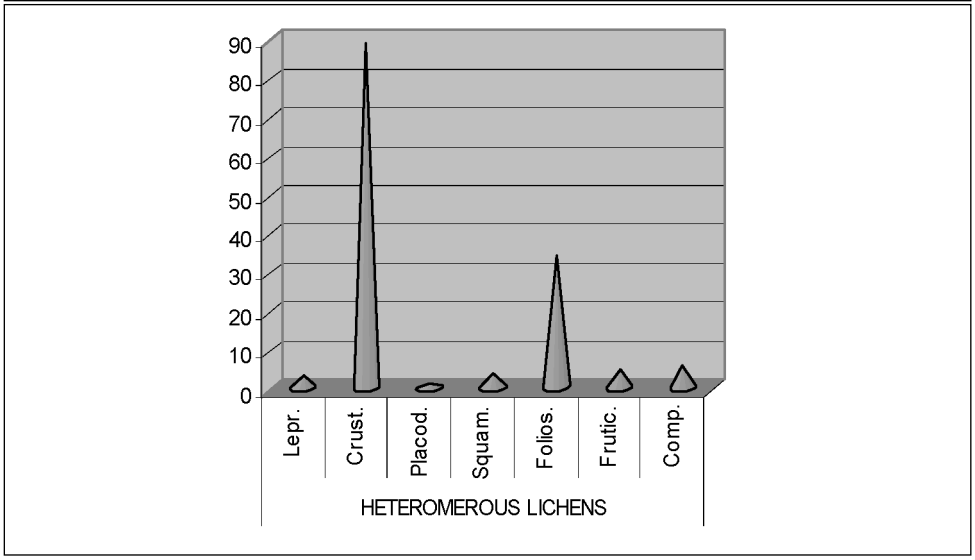
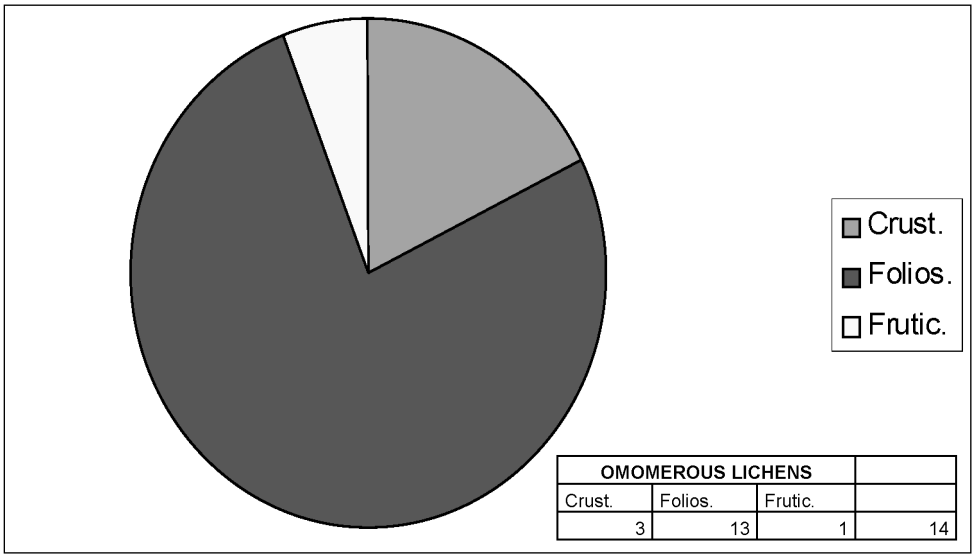


Fig. 2. Growth form.



OMOMEROUS LICHENS			
Crust.	Folios.	Frutic.	
3	13	1	14

Fig. 3. Growth form.

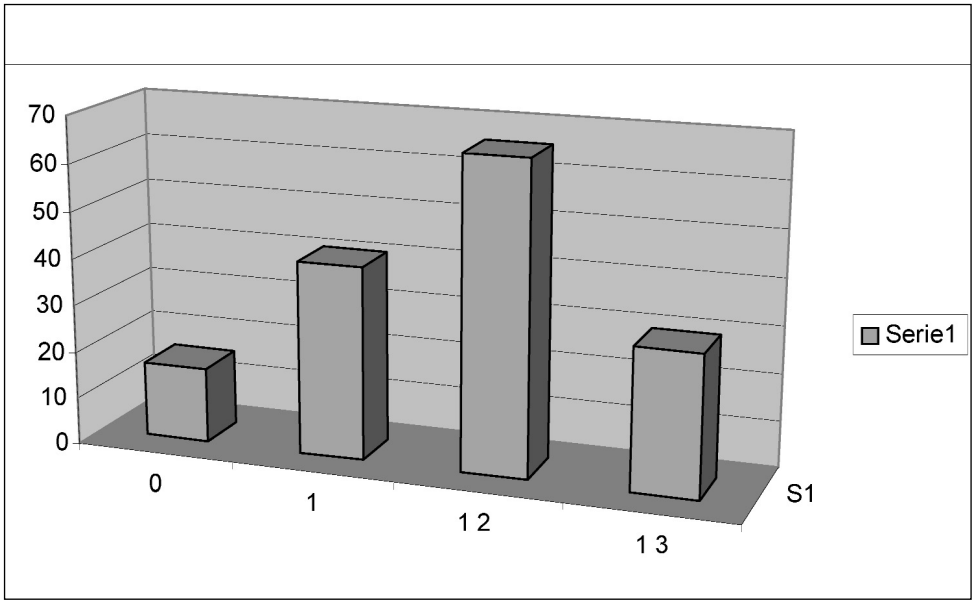


Fig. 4. Poleophoby index.

The lichen flora of the Mavigliano Wood has a great phyto-geographic interest because it includes both sub-oceanic (*Degelia atlantica*, *Dendriscoaculon umhausense*) and Mediterranean species (*Strigula mediterranea*, *Waynea stoechadiana*). It also contains very rare species, which are disappearing in large areas of Europe (*Arthonia pruinata*, *Bacidia igniarii*, *Chaenotheca hispidula, Dendriscocaulon umhausense*, *Lobaria amplissima, Sphinctrina turbinata, Biatorella ochrophora, Thelenella modesta* etc.) Many of the latter are indicators of air purity and of long ecological continuity of the woods. Also interesting is the presence of a small station of foliicolous lichen in a small valley (*Arthonia muscigena*, *Fellhanera bouteillei*, *Porina hoehneliana*, *Porina oxneri*, *Bacidina vasakii*) under the canopy of the wood.

The foliicolous lichen species are also an indicator of atmospheric purity and a long ecological continuity of the wood. They are restricted to the valley with rivulets and grow on cladodes of *Ruscus aculeatus,* on the lower branches where humidity, light and temperature are relatively more stable.

According to Nimis (pers. comm.), the indices of poleophoby extracted from ITALIC (http://dbiodbs.univ.trieste.it/) (see Fig. 4), can be used for characterizing a site. The species with index 1 (nr. 41) are indicator of naturalistic value and those with index 0 (nr. 16) are indicator of high naturalitistic value and of a long ecological continuity of the wood.

The Mavigliano Wood is the largest one surviving in the Crati Valley and it is set close to the towns of Cosenza and Rende and it is nearby an incinerator. Considering the high number of species with low poleophoby index, the integrity of the site appears as high.

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