

The Lichens of the Sorrento peninsula (Campania - Southern Italy)

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I licheni della penisola sorrentina (Campania, Italia meridionale) – Nel lavoro sono riportati i risultati di uno studio sulla flora lichenica della penisola sorrentina. Sono state censite 363 entità delle quali 11 sono risultate nuove per l'area studiata, 11 per la regione Campania e 4 per l'Italia meridionale. Da segnalare il ritrovamento di *Lecanora bandolensis* B. de Lesd. non segnalata in precedenza per l'Italia continentale. È stata inoltre confermata la presenza, nell'area percorsa, di 8 entità incluse nella lista rossa dei licheni italiani (Nimis & Martellos, 2008). Per quel che attiene alle forme di crescita è stata accertata un'elevata incidenza dei licheni crostosi (65%) seguiti dai foliosi (21%), dai fruticulosi (7%), squamulosi (6%) e leprosi (1%). Riguardo al tipo substrato nettamente dominanti sono risultati gli epifiti (47%) e i sassicoli (41%). Meno rappresentati i terricoli (11%) e trascurabile la percentuale di lignicoli (1%). Tutti questi valori non si discostano da quelli riportati per altre aree montuose della Campania. L'analisi dei gruppi fitoclimatici ha messo in evidenza la prevalenza, nella penisola sorrentina, dei licheni a diffusione incentrata nelle regioni temperate. Sotto questo profilo, i confronti con altri massicci della Campania, mettono in evidenza come il maggior grado di affinità si riscontrino tra la flora lichenica della penisola sorrentina e quella dei Monti del Matese. Le analisi statistiche hanno evidenziato come la distribuzione dei licheni nell'area studiata sia significativamente influenzata dall'altitudine e dal degrado ambientale dovuto alle attività umane.

The lichens of the Sorrento peninsula (Campania, Southern Italy) – A survey of the lichen flora of the Sorrento peninsula was carried out through field research and investigations in herbaria and in the literature. The flora was found to comprise 363 taxa, including 118 new taxa for the Sorrento peninsula, 4 for southern Italy and 11 for the Campania region. Furthermore, *Lecanora bandolensis* B. de Lesd. had never been reported in previous studies on the lichen flora of mainland Italy. Emphasis must be laid on the occurrence in this area of eight taxa mentioned in the Red List of lichens for Italy (Nimis & Martellos, 2008). As regards growth forms, analysis shows a high rate of crustose lichens (65%), followed by foliose (21%), fruticose (7%), squamulose (6%) and leprous (1%). As for the type of substrate, the most widespread were epiphytic (47%), and saxicolous (41%) lichens. Terricolous lichens accounted for 11% and lignicolous only 1%. These values are similar to those reported for other areas of Campania. With regard to phytoclimatic groups, in the Sorrento peninsula, lichens with a temperate distribution are the most widespread. Comparison with other areas in Campania shows that the lichen flora of the Sorrento peninsula is closest to that of the Matese mountains. The statistical analysis showed that the lichen distribution pattern in the study area is strongly related to altitude and to environmental degradation due to human disturbance.

Key words: Lichens, Southern Italy, Campania, Lichens, Sorrento peninsula, Southern Italy.

Foreword

Due to the variety of its environments and the resulting extreme diversity of its plant population, in the past the Sorrento peninsula attracted the attention of many botanists concerned almost exclusively with its vascular flora. In this regard, the peninsula is well known thanks to a series of floristic surveys which, from the beginning of the 19th century (Tenore, 1811-1838) up to the last decade of the 20th century (Caputo et al., 1989-90), allowed botanists to publish numerous accounts on the plant population of this area.

In the same period less attention was devoted to its lichen flora. Indeed, the only available data on this subject are reported in the work "The Lichens of Southern Italy" by Jatta (1889-90) and in the "Flora Italica Criptogama" by the same author (Jatta, 1909-1911) where, however, only 5 species are cited for the "Monti Stabiani" as the Sorrento peninsula was also known. Only at the end of the 1970s was a work on lichens published, albeit limited to Mt. Faito (Ricciardi et al., 1976-77). More recently, a study on lichen diversity (Nimis and Tretiach, 2004) was also proposed, carried out along a transect from the Tyrrhenian coast of Lazio and Campania to the foothills of the Apennines in the neighbouring region of Molise.

This work aims to be a further contribution to the knowledge of the lichen flora of the Sorrento peninsula, adding to the available bibliographic data the materials gathered in many surveys and herborizations carried out in the area.

The study area

The Sorrento peninsula reaches more than 1,000 m above sea level over much of its area, attaining its maximum height (1443 m) at Mt. S. Angelo a Tre Pizzi. This ridge separates the Bay of Naples from that of Salerno and is partly formed by the chain of the Lattari mountains. The peninsula extends SW for about 25 km into the Tyrrhenian Sea (Fig. 1), forming the south-eastern boundary of the Bay of Naples.

All over the area the topography is rugged. There is considerable superficial but occasionally also deep soil erosion. The hydrography is thus characterized by short, straight creeks running along its steep slopes, governed by the seasonal Mediterranean rainfall regime. There is also a major underground hydrographic network.

The ridge of the Lattari Mountains-Sorrento Peninsula consists of a morphological-structural unit like a horst stretching from ENE to WSW. The skele-

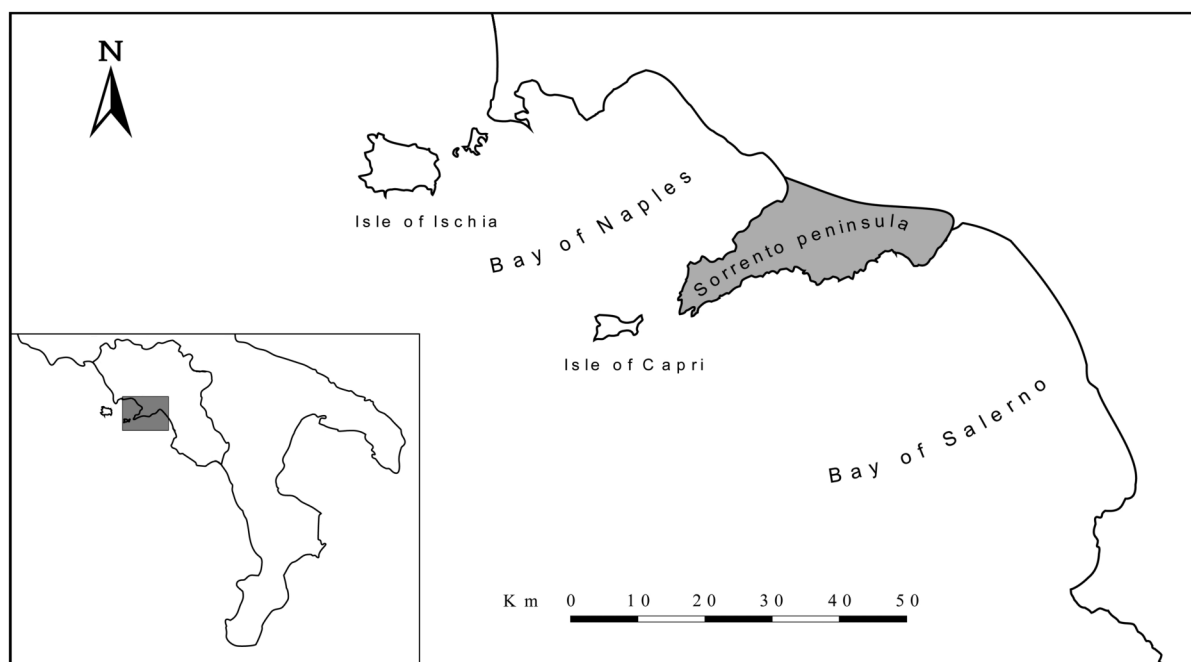


Fig. 1 - The study area.

ton of this mountain range is formed by Mesozoic carbonate rocks which can be ascribed to the Campanian-Lucanian platform palaeogeographic unit, and only secondly to a terrigenous Miocene mantle overlying the most peninsular section of the ridge (Cinque, 1986). Between 1100-1200 m several rugged areas occur, as well as less steep slopes, such as the valley at the foot of Mt. Cerasuolo (1214 m). From 1300 to 1444 m, on Mt. S. Angelo a Tre Pizzi, the landscape features a series of inaccessible limestone peaks culminating with the three rocky spurs of Mt. San Michele (1444 m), Mt. di Mezzo (1425 m) and Mt. Catiello (1326 m). The southern slopes, steeply descending to the coastal towns of Positano and Praiano, are made up of uninterrupted series of peaks, rocky walls and cliffs that fall abruptly to sea level in only 2 km.

Among the highest peaks in this zone Mt. Faito is worthy noting. This relief consisting of strongly inclined dolomite layers dates from the Trias up to the Cretaceous and the Tertiary. The lowermost basement, which never emerges, is built up by Triassic dolomites overlain on the southern slopes by Jurassic and Upper Cretaceous grey dolomitic limestones. The matrix of the other sides belongs to a more recent period of the Cretaceous. Its elements are dolomites, dolomitic limestones and grey limestones. At the highest altitudes, extensive areas are overlain by recent pyroclastic fallouts and loose tuffs from nearby Vesuvius.

Climatic features

The Sorrento Peninsula has a mild Mediterranean-type climate with a dry period during summer mitigated, mainly on the southern slopes, both by sea breezes and the nearby wooded and mountainous interior. Along the coast, the lowest temperatures during the cold period (December - March) only occasionally fall below 0° C, while in the warm period (June - August) the highest temperatures range from 35° to 38° C, as shown by mean temperatures and precipitation recorded by the Hydrogeographic Service of the Public Works Ministry in the meteorological stations of Castellammare di Stabia (18 m a.s.l.) and Ravello (315 m a.s.l.). Rainfall is concentrated in winter months, with annual rainfall amounting to about 1300-1400 mm.

No data are available for the inland areas of the Lattari Mountains for either temperature or precipitation. The Walter-Lieth climate diagram thus concerns only the two above-mentioned stations (Fig. 2).

The rainfall pattern occurring on the stretch of coast leading from Maiori-Positano to Amalfi with Ravello at its centre shows relatively high rainfall compared to other coastal belts of Campania which have a higher number of rainy days rather than a larger quantity of rain. Deep narrow valleys on the south-facing slopes are not affected by cold winter winds and, thanks also to their morphology, they can

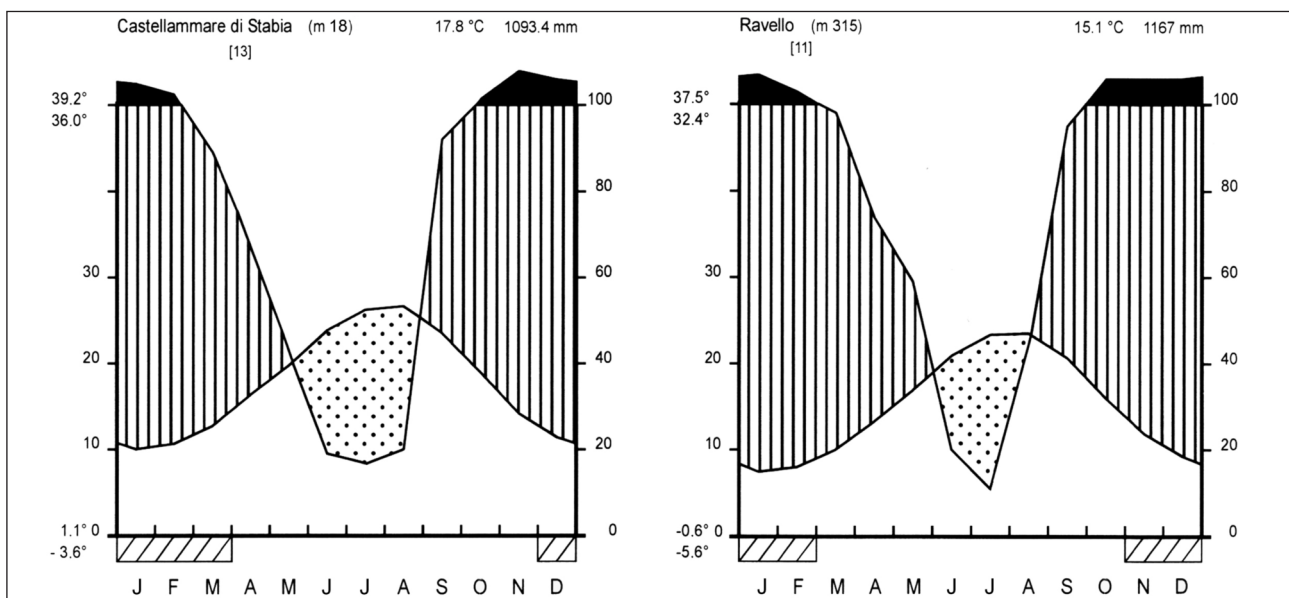


Fig. 2 - Walter-Lieth climate diagrams concerning the meteorological stations of Castellammare di Stabia and Ravello.

benefit from rather higher humidity in summer. The hot-humid micro-climate conditions deriving from these slight seasonal variations have allowed the survival of some thermophilous pantropical tertiary vascular species in these canyons.

Vascular flora and vegetation outlines

The Sorrento peninsula has been subject to intense human exploitation for millennia. Severe forest cutting and in some cases the total clearance of natural vegetation and the building of tourist facilities and human settlements has resulted in major environmental impacts. Nevertheless, thanks to the rugged morphology of the whole area, some relatively intact aspects of the natural vegetation can still be found. Small fragments of forests dominated by *Quercus ilex* L. still survive at the lowest altitudes on the northern slopes. Chestnut coppices and fruit groves of the same tree are found at higher elevations, where also mixed deciduous forest patches occur featuring *Ostrya carpinifolia* Scop., *Fraxinus ornus* L., *Acer obtusatum* Waldst. et Kit ex Willd., *Quercus ceris* L. and *Quercus pubescens* Willd.

Together with these species, *Alnus cordata* (Loisel.) Loisel. is often found, attesting the occurrence in these stands of a rather mesic environment. The saddle sculpting the slightly hilly southern slopes, in turn, is characterized by garrigue and heavily degraded grassland fragments, reflecting high solar radiation and water stress in summer. These two elements currently make it almost impossible to recover the more or less recently cleared woods. From 1100 m up to the summits, where disturbance has not greatly affected the natural environment, the original vegetation at present consists of beech woodlands where *Alnus cordata* (Loisel.) Loisel is still frequently found, featuring huge specimens sometimes reaching the highest altitudes along with beech, above which, near the crests, scattered patches of rocky and herbaceous vegetation occur.

Floristic catalogue

As in previous works (Garofalo et al., 1999; Aprile et al., 2001, 2002-2003a, 2002-2003b) in the following floristic catalogue the species are arranged in

alphabetical order. For each species summary information is given about the substrate, and the sample plots can be identified by referring to the numbers on the list of sites (see below).

The nomenclature is applied according to Nimis (1993a), and Nimis & Martellos (2004, 2008). Where it seemed appropriate, the views of Poelt (1969), Ozenda & Clauzade (1970), Clauzade & Roux (1985) and Wirth (1980, 1995) were also taken into account. For some critical groups, the monographs of Versegny (1962), Poelt (1966), Vitikainen (1994), Nimis (1992, 1993b) and Tretiach and Hafellner (1998) were also checked. The samples collected in the field are kept in the lichen collection stored in the Herbarium of the Department of Arboriculture, Botany and Plant Pathology of the University of Naples Federico II in Portici (PORUN).

For the species already recorded in the study area, the names of the authors of the reports and the collection stands are given in brackets. One or two asterisks respectively precede the species which are new for the Sorrento Peninsula and for southern Italy. New records for the Campania region are marked by a circle. Finally, the species never before recorded for the Italian mainland are marked by two circles.

List of collection sites

1) Acqua dei Porci, 700-900 m; 2) Acqua dell'Orto, 776 m; 3) Sorgente dell'Acqua Santa spring, 1200-1250 m; 4) Acqua delle Scorchie, 1161 m; 5) Acqua Fredda, 900 m; 6) Acquata, 100 m; 7) Belvedere, 900 m; 8) Bosco Annunziata, 550 m; 9) Campo del Pero, 1158 m; 10) Castellone, 1200-1250 m; 11) Cist. a Menatora, 980 m; 12) Colle di Carpaneto, 804 m; 13) Colle Frisco, 700 m; 14) Colle Garofalo, 1026 m; 15) Colle Giordano, 200-520 m; 16) Colle S. Angelo, 982 m; 17) Amalfi Coast, 100 m; 18) Croce dell'Eremita, 800 m; 19) Croce della Conocchia, 1100 m; 20) Grotta Piana, 402 m; 21) Il Castello, 1005 m; 22) La Punta, 418 m; 23) Le Chianche, 308 m; 24) Mt. Brusale, 642 m; 25) Mt. Calabrice, 1100 m; 26) Mt. Caliello, 1326 m; 27) Mt. Candelitto, 1201 m; 28) Mt. Cavillo, 1316 m; 29) Mt. Cerasuolo, 1100-1216 m; 30) Mt. Cerreto, 1300-1316 m; 31) Mt. Cervegialano, 1203 m; 32) Mt. Coppola, 318 m; 33) Mt. del Demanio, 931m; 34) S. M. del Popolo, 426-551 m; 35) Mt. Della Rena, 551m; 36) Mt. di Chiunzi, 895 m; 37) Mt. di

Mezzo, 1425m; 38) Mt. Faito-Castellammare di Stabia roadside, 1100-800 m; 39) Mt. Faito, 800-1155 m; 40) Mt. Finestra, 1155 m; 41) Agerola-Amalfi and Castellammare-Agerola roadsides; 42) Mt. l'Uomo a Cavallo, 420m; 43) Mt. Lattari, 837 m; 44) Mt. Murillo, 980 m; 45) Mt. Muto, 600 - 668 m; 46) Mt. Pendolo, 600 m; 47) Mt. Piano, 357 m; 48) Mt. Rotonondo, 1029 m; 49) Mt. S. Erasmo 989 m; 50) Mt. S. Michele, 1300-1444 m; 51) Mt. Tre Colli, 1122 m; 52) Madonna di Loreto, 650 m; 53) Montalto, 740 m; 54) Colle Monticelli, 257 m; 55) Ostello dei Galli, 156 m; 56) Sorrento Peninsula 100-500 m; 57) Pizzo delle Monache, 640 m; 58) Punta Campanella, 100 m; 59) S. Pietro, 100 m; 60) S. Angelo a Tre Pizzi, 1100-1400 m; 61) S. Michele Sanctuary, 1200 m; 62) Selva di Casola, 440 m; 63) Trail to S. Angelo a tre Pizzi, 1200 m; 64) Spina Infuocata, 1100 m; 65) Vico Equense-Mt. Faito roadside, 400-1100 m; 66) Telegrafo, 150 m; 67) Termini; 200 m; 68) Vena Bianca, 496 m; 69) Vena Galli, 655 m; 70) Vena Scalandrone, 1028 m; 71) Vena Secata, 564-1135 m; 72) Vena Spaccata, 500 m; 73) Vene di Falconara, 890 m; 74) Vena del Covello, 1051 m; 75) Vico Equense, 400 m.

Data analysis

In addition to the floristic list, the composition of the lichen flora in each of the 75 above-mentioned sample plots was studied by multivariate statistical methods (Podani, 2007) and a classification analysis (cluster analysis) and an ordination analysis (PCA, Principal Component Analysis) are presented. Lichen species occurring in each plot were recorded and the relation of species diversity to the sample plots was examined by numerical classification and principal components analysis. These tests were carried out on a 90X75 sub-matrix. Only species with a frequency degree higher than 10% were included in the analysis.

Cluster analysis was performed according to the group average link method (upgma) with chord distance for binary data as the dissimilarity coefficient, in order to identify the classification dendrogram. For ordination analysis a centred PCA was applied, obtaining the biplot of the species-stations dispersion and the screeplot showing the percentage of variability explained by each of the detected axes.

FLORISTIC CATALOGUE

- **Acarospora cervina* A. Massal. - Calcicolous. Common on sunny rocks.
1 (700 m); 29 (1200 m); 39 (1100 m); 61 (1200-1300 m).
- **Acarospora glaucocarpa* (Ach.) Körb. - Saxicolous. Rare on crumbly limestone.
73.
- °*Acarospora macrospora* (Hepp) Bagl. Calcicolous. Sporadic in fissures of calcareous rocks.
61 (1200-1300 m).
A common species in the Alps, there are only two records from southern Italy, namely from Puglia (Jatta, 1875; 1889) and Calabria (Puntillo, 1993; 1996).
- Acrocordia conoidea* (Fr.) Körb. - Calcicolous. Frequently found on shady rocks.
2; 5; 9; 12; 16; 21; 26; 27; 29 (1216 m); 30; 31; 33; 36; 37; 39 (1131 m); 40; 43; 44; 45 (668 m); 48; 49; 50 (1444 m); 51; 53; 71; 72 (1135 m); 74; 75.
(Ricciardi et al.: Castellammare di Stabia – Mt. Faito road, 300-500 m sub *Arthopyrenia conoidea*).
- Acrocordia gemmata* (Ach.) A. Massal. - Epiphytic. Uncommon on the bark of various trees.
73.
- (Jatta: Mts. Lattari; Nimis and Tretiach: Amalfi Coast, Mt. Cerreto, 600 m).
- Agonimia tristicula* (Nyl.) Zahlbr. - Terricolous. Sporadic along road cuttings.
17; 68.
(Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico of Chiunzi on Mt. Cerreto, 650 m and Positano, 90 m).
- **Amandinea punctata* (Hoffm.) Coppins et Scheid. - Epiphytic. Widespread all over the Lattari on the bark of *Quercus ilex* L. and *Castanea sativa* Miller.
- Anaptychia ciliaris* (L.) Körb. - Epiphytic. Usually found on trees.
29 (1100 m); 45 (600 m); 46; 64.
(Jatta: Mts. Lattari sub *Parmelia ciliaris* var. *vulgaris*; Ricciardi et al.: Trail to Mt. S. Angelo a Tre Pizzi, 1200-1440 m).
- Anema decipiens* (A. Massal.) Forssell - Saxicolous. Found all over the study area on calcareous rocks. (Nimis and Tretiach: Amalfi Coast, Positano, 90 m).
- Anema nummularium* (Durieu et Mont.) Nyl. - Saxicolous. Frequent together with the previous species.
(Nimis and Tretiach: Amalfi Coast, Positano, 90 m).
- **Aplotomma turgida* (A. Massal.) A. Massal. - Epiphytic.

- Often occurring on the bark of various trees.
2; 5; 9; 12; 16; 21; 26; 27; 29 (1216 m); 30; 31; 33; 36; 37; 39 (1131 m); 40; 43; 44; 45 (668 m); 48; 49; 50 (1444 m); 51; 53; 71; 72 (1135 m); 74; 75.
- °**Arthonia albopulverea** Nyl. - Epiphytic. Usually found on the trunks of *Quercus ilex*.
20; 32; 34 (426 m); 42; 47; 67; 70; 72 (564 m).
This is the first record in Campania for this species, previously recorded in southern Italy only in Puglia (Nimis and Tretiach 1999) and Calabria (Puntillo 1996).
- Arthonia excipienda** (Nyl.) Leight. - Epiphytic. Common on smooth bark of various trees.
8; 15; 22; 23; 24; 37; 55; 63; 69.
(Nimis and Tretiach (sub *A. dispersa* s. l.): Amalfi Coast, Positano, 90 m, Termini, 200 m).
- Arthonia punctiformis** Ach. - Corticolous. Widespread in all the study area on trunks of various trees.
6; 8; 15; 20; 22; 23; 24; 32; 34 (426 m); 35; 42; 47; 55; 56; 59; 60; 63; 67; 69; 70; 73.
(Nimis and Tretiach: Amalfi Coast, Positano, 90 m, Sorrento Peninsula, Punta Campanella, 30-100 m).
- Arthonia radiata** (Pers.) Ach. - Epiphytic. Found mainly on the bark of *Castanea sativa*.
2; 5; 9; 12; 16; 21; 26; 27; 29 (1216 m); 30; 31; 33; 36; 37; 39 (1131 m); 40; 43; 44; 45 (668 m); 48; 49; 50 (1444 m); 51; 53; 71; 72 (1135 m); 74; 75.
(Ricciardi et al.: Castellammare di Stabia - Mt. Faito road, 300-500 m sub *A. radiata* var. *radiata*).
- ***Arthopyrenia analepta** (Ach.) A. Massal. - Epiphytic. Regularly found throughout the study area on the bark of *Fraxinus ornus* L. and of *Sorbus* spp.
- Arthopyrenia cinereopruinosa** (Schaer.) A. Massal. - Epiphytic. Abundant on trunks of various species of *Quercus* mainly on *Quercus ilex*.
6; 8; 15; 20; 22; 23; 24; 32; 34 (426 m); 35; 42; 47; 55; 56; 59; 60; 63; 67; 69; 70; 73.
(Nimis and Tretiach: Amalfi Coast, Positano, 90 m).
- Aspicilia calcarea** (L.) Mudd var. *calcarea* - Saxicolous. On limestone; it is the most frequent species belonging to this genus in the study area. Frequently together with *Verrucaria fuscula*.
2; 5; 6; 8; 9; 12; 15; 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 32; 33; 34 (426 m); 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (668 m); 47; 48; 49; 50 (1444 m); 51; 53; 55; 56; 59; 60; 63; 67; 69; 70; 71; 72 (1135 m); 73; 74; 75.
(Jatta: Castellammare sub *A. calcarea* var. *concreta*; Ricciardi et al.: S. Michele Sanctuary, 1278 m; Mt. S. Angelo a Tre Pizzi, 1200-1444 m; Nimis and Tretiach: Amalfi Coast, Scala, 200 m, Termini, 200 m).
- Aspicilia calcarea** var. *reagens* (Zahlbr.) Szatala - Saxicolous. Ubiquitous, growing together with the previous species.
2; 5; 6; 8; 9; 12; 15; 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 32; 33; 34 (426 m); 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (668 m); 47; 48; 49; 50 (1444 m); 51; 53; 55; 56; 59; 60; 63; 67; 69; 70; 71; 72 (1135 m); 73; 74; 75.
(Ricciardi et al.: Castellone, 1230 m sub *Aspicilia calcarea* var. *reagens* f. *ochracea*).
- ***Aspicilia cheresina** (Müll. Arg.) Hue var. *cheresina* - Saxicolous. Frequent on calcareous rocks.
2; 5; 9; 12; 16; 21; 26; 27; 29 (1216 m); 30; 31; 33; 36; 37; 39 (1131 m); 40; 43; 44; 45 (668 m); 48; 49; 50 (1444 m); 51; 53; 71; 72 (1135 m); 74; 75.
- ***Aspicilia contorta** (Hoffm.) Kremp. subsp. *contorta* - Saxicolous. Very common particularly on moist stones. 2; 5; 9; 12; 16; 21; 26; 27; 29 (1216 m); 30 (1316 m); 31; 33; 36; 37; 40; 41; 43; 44; 45 (668 m); 48; 49; 50 (1444 m); 51; 53; 71; 72; 74; 75.
- ***Aspicilia contorta** (Hoffm.) Kremp. subsp. *hoffmanniana* S. Ekman et Fröberg - Calcicolous. Recurrent with *A. calcarea* and *Lobothallia radiosa*.
2; 5; 9; 12; 16; 21; 26; 27; 29 (1216 m); 30; 31; 33; 36; 37; 39 (1131 m); 40; 43; 44; 45 (668 m); 48; 49; 50 (1444 m); 51; 53; 71; 72 (1135 m); 74; 75.
- ***Aspicilia coronata** (A. Massal.) Anzi - Calcicolous. Fairly frequent.
9; 16; 26; 29 (1216 m); 31; 37; 43; 44; 45 (668 m); 49; 50 (1444 m); 51; 74.
- ***Aspicilia farinosa** (Flörke) Arnold - Saxicolous. Sporadic on limestone.
16; 50 (1444 m).
- ***Bacidia absistens** (Nyl.) Arnold - Epiphytic. Common on the bark of many tree species.
6; 20; 32; 34 (426 m); 42; 47; 56; 59; 60; 67; 70; 73.
- ***Bacidia arceutina** (Ach.) Arnold - Epiphytic. Sporadic on the bark of *Castanea sativa*.
39 (800-900 m).
- ***Bacidia fraxinea** Lönnr. - Corticolous. Occasionally found on various species of *Quercus*.
71.
- ***Bacidia incompta** (Hook.) Anzi - Epiphytic. Rather common on the bark of various trees.
29 (1200 m).
- ***Bacidia rosella** (Pers.) De Not. - Epiphytic. Rare on the trunks of *Fagus sylvatica* L.
39 (1100 m).
- Bacidia subincompta** (Nyl.) Arnold - Epiphytic. Uncommon on the bark of *Acer neapolitanum* Ten.
39 (1100 m).
(Ricciardi et al.: Mt. S. Angelo a Tre Pizzi, 1300 m).
- ***Bacidina delicata** (Leight.) V. Wirth et Vezda - Epiphytic. Only found on the bark of various trees.
32.
- Bacidina phacodes** (Körb.) Vezda - Corticolous. Fairly common on *Pinus nigra* Arnold and other conifers.
29 (1100 m); 61 (1200 m).
(Nimis and Tretiach: Amalfi Coast, Scala, 200 m).
- Bactrospora patellarioides** (Nyl.) Almq. var. *patellarioides* -

- Epiphytic. Rare on the trunks of various of species of *Quercus*.
57 (100-500 m).
(Nimis and Tretiach: Punta Campanella, 30-100 m).
- ***Bagliettoa baldensis** (A. Massal.) Vezda - Calcicolous. Rarely found.
32.
- Bagliettoa cazzae** (Zahlbr.) Vezda et Poelt - Saxicolous. Regularly found on compact limestone throughout the study area (Nimis and Tretiach: Amalfi Coast, Scala, 200 m).
- Bagliettoa parmigera** (J. Steiner) Vezda et Poelt - Saxicolous. Common throughout the study area on calcareous rocks. (Nimis and Tretiach: Amalfi Coast, Mt. Cerreto, 600 m and Scala, 200 m).
- Bagliettoa parmigerella** (Zahlbr.) Vezda et Poelt - Saxicolous. Widespread on limestone. (Ricciardi et al.: between Mt. Faito and Mt. Cerasuolo, 1000-1200 m sub *Verrucaria sphinctrinella*; Nimis and Tretiach: Amalfi Coast, Mt. Cerreto, 600 m Scala, 200 m, Punta Campanella, 30-100 m).
- Bilimbia lobulata** (Sommerf.) Hafellner et Coppins - Terricolous. Sporadic on calcareous soil.
61 (1200-1300 m).
(Ricciardi et al.: trail between the Castellone and the Sorgente dell'Acqua Santa spring, 1200-1250 m sub *Toninia lobulata*).
- * **Bilimbia sabuletorum** (Schreb.) Arnold - Terricolous and on plant debris. Fairly common.
2; 4; 8; 11; 15 (200-520 m); 20; 25; 27; 29 (1216 m); 30 (1316 m); 31; 33; 36; 37; 40; 42; 43; 44; 45 (668 m); 48; 49; 50 (1444 m); 52; 54; 73; 74; 76; 77.
- Buellia disciformis** (Fr.) Mudd - Epiphytic. Frequently found on the trunks of various trees.
2; 5; 8; 9; 12; 15; 16; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 33; 35; 36; 37; 39 (1131 m); 40; 43; 44; 45 (668 m); 48; 49; 50 (1444 m); 51; 53; 55; 63; 69; 71; 72 (1135 m); 74; 75.
(Ricciardi et al.: Mt. Cerasuolo, 1100 m; Nimis and Tretiach: Termini, 200 m).
- ***Buellia erubescens** Arnold - Epiphytic. Very rare on the trunks of conifers.
39 (1100 m).
- ***Buellia schaereri** De Not. - Epiphytic. Sporadic on conifer bark.
39 (1100 m).
- ***Buellia stellulata** (Taylor) Mudd - Calcicolous. Fairly common.
8; 15 (520 m); 22; 23; 24; 35; 55; 63; 69.
- ***Calicium abietinum** Pers. - Corticolous. Rare on the trunks of *Castanea sativa*.
39 (1100 m).
- ***Calicium adpersum** Pers. - Epiphytic. Uncommon on the bark of various species of *Quercus*.
40.
- ****Calicium lenticulare** Ach. - Epiphytic. Rare on the bark of *Castanea sativa*.
61 (1100 m).
This species is known for North and Centre Italy (Nimis & Martellos, 2008). This is the first record from southern Italy. The species is listed in the Red List of lichens for Italy (Nimis & Martellos, *ibid.*) as a rare species requiring protection in Italy.
- Caloplaca albopruinosa** (Arnold) H. Olivier - Saxicolous. Rather common on calcareous rocks.
8; 15; 22; 23; 24; 31; 35; 43; 55; 63; 69.
(Nimis and Tretiach: Punta Campanella, 30-100 m and Termini, 200 m).
- Caloplaca alociza** (A. Massal.) Mig. - Calcicolous. Frequently found.
15 (520 m); 16; 21; 23; 26; 27; 29 (1216 m); 30 (1316 m); 31; 36; 37; 39 (1131 m); 40; 43; 44; 45 (668 m); 48; 49; 50 (1444 m); 51; 55; 63; 69; 71; 74; 75.
(Nimis and Tretiach: Sorrento Peninsula, Punta Campanella, 30-100 m and Termini, 200 m).
- Caloplaca aurantia** (Pers.) Hellb. - Calcicolous. Very common.
2; 5; 8; 9; 12; 15; 16; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 33; 35; 36; 37; 39 (1131 m); 40; 43; 44; 45 (668 m); 48; 49; 50 (1444 m); 51; 53; 55; 63; 69; 71; 72 (1135 m); 74; 75.
(Nimis and Tretiach: Amalfi Coast, Scala, 200 m and Positano 90 m, Termini, 200 m).
- ***Caloplaca cerina** (Hedw.) Th. Fr. var. *cerina* - Epiphytic. Rare on the bark of the branches of *Sambucus ebulus* L., *S. nigra* L. and *Acer neapolitanum*.
39 (1100 m).
- Caloplaca cerinella** (Nyl.) Flagey - Corticolous. Frequent on the bark of various trees.
11; 59; 68.
(Nimis and Tretiach: Termini, 200 m).
- Caloplaca chalybaea** (Fr.) Müll. Arg. - Calcicolous. Sporadic on rocks with various species of *Aspicilia*.
29 (1100 m); 39 (1100 m); 61 (1300 m).
(Jatta: Mts. Lattari sub *Callospisma chalybaeum*).
- ***Caloplaca chrysodeta** (Räsänen) Dombr. - Saxicolous. Recurrent on limestone.
9; 15 (520 m); 22; 23; 24; 26; 29 (1216 m); 30 (1316 m); 36; 37; 40; 44; 45 (668 m); 48; 49; 50 (1444 m); 51; 55; 69; 71; 75.
- ***Caloplaca cirrochroa** (Ach.) Th. Fr. - Calcicolous. Common on vertical surfaces.
30 (1316 m); 36; 40; 45 (668 m); 48; 49; 71; 75.
- Caloplaca citrina** (Hoffm.) Th. Fr. - Calcicolous. Sporadic on tilted surfaces of calcareous rocks and roadside walls.
8; 9; 15; 16; 22; 23; 24; 26; 31; 35; 37; 43; 44; 50 (1444 m); 51; 55; 63; 69.
(Nimis and Tretiach: Punta Campanella, 30-100 m).
- Caloplaca coronata** (Körb.) J. Steiner - Saxicolous. Very rare.
31.
(Nimis and Tretiach: Amalfi Coast, Positano, 90 m).

- ***Caloplaca crenulatella** (Nyl.) H. Olivier - Saxicolous. Rare, found on walls.
1 (900 m).
- ***Caloplaca cretensis** (Zahlbr.) Wunder - Saxicolous. Rare, found on limestone.
15 (200 m).
This is the second record for Campania after that of Nimis and Tretiach (2004) of a hitherto unreported species for mainland southern Italy and known, in the rest of Italy, only for Molise (Nimis and Tretiach 1999) and Sicily (Nimis et al. 1994).
Species on the Red List of lichens for Italy of Nimis & Martellos (2008) as rare and requiring protection in Italy and Campania. Uncommon in the study area.
- Caloplaca erythrocarpa** (Pers.) Zwackh - Saxicolous. Ubiquitous on calcareous rocks with various *Aspicilia* species.
2; 5; 6; 8; 9; 12; 15; 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 32; 33; 34 (426 m); 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (668 m); 47; 48; 49; 50 (1444 m); 51; 53; 55; 56; 59; 60; 63; 67; 69; 70; 71; 72 (1135 m); 73; 74; 75.
(Jatta: Mts. Lattari, sub *Callopisma erythrocarpeum*, Sorrento, sub *Callopisma arenarium*; Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m).
- Caloplaca ferrarii** (Bagl.) Jatta - Saxicolous. Rather rare on rocks in open lands. 10; 62 (1400 m).
(Ricciardi et al.: Castellone, 1230 m, Mt. di Mezzo, 1425 m).
- Caloplaca ferruginea** (Huds.) Th. Fr. - Epiphytic. Frequently found on the bark of various trees.
2; 5; 6; 8; 9; 12; 15; 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 32; 33; 34 (426 m); 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (668 m); 47; 48; 49; 50 (1444 m); 51; 53; 55; 56; 59; 60; 63; 67; 69; 70; 71; 72 (1135 m); 73; 74; 75.
(Jatta: Castellammare sub *Callopisma ferrugineum*; Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m).
- Caloplaca flavescens** (Huds.) J. R. Laundon - Saxicolous. Frequent on limestone in open ground.
29 (1216 m); 39 (1100 m); 53.
(Jatta: Mts. Lattari and Cava sub *Amphiloma murorum*).
- ***Caloplaca flavorubescens** (Huds.) J. R. Laundon var. **flavorubescens** - Epiphytic. Common on the trunks of various trees, with *Xanthoria parietina* at woodland edges.
2; 5; 9; 12; 21; 26; 27; 29 (1216 m); 30 (1316 m); 33; 36; 37; 39 (1131 m); 40; 45 (668 m); 48; 49; 50 (1444 m); 51; 53; 71; 72 (1135 m); 74; 75.
- Caloplaca granulosa** (Müll. Arg.) Jatta - Calcicolous. Rare.
10.
(Jatta: Mts. Lattari sub *Amphiloma granulorum*).
- ***Caloplaca haematites** (St.-Amans) Zwackh - Epiphytic. Uncommon on the bark of *Juglans regia* L. and *S. nigra*.
39 (1100 m), 77.
- ***Caloplaca herbidella** (Hue) H. Magn. - Epiphytic and lignicolous. Very common on wood and bark of *Castanea sativa* all over the study area.
- Caloplaca holocarpa** (Ach.) A. E. Wade - Saxicolous. Common on sunny rocks.
29 (1216 m); 37; 49; 50 (1444 m); 51.
(Jatta: Mts. Lattari sub *Callopisma auranticum* var. *holocarpa*; Nimis and Tretiach: Termini, 200 m).
- ***Caloplaca inconnexa** (Nyl.) Zahlbr. var. **inconnexa** - Parasitic on crustose lichens. Frequent with *Aspicilia calcarea* var. *calcarea*.
2; 5; 9; 12; 21; 26; 27; 29 (1216 m); 30 (1316 m); 33; 36; 37; 39 (1131 m); 40; 45 (668 m); 48; 49; 50 (1444 m); 51; 53; 71; 72 (1135 m); 74; 75.
- Caloplaca interfulgens** (Nyl.) J. Steiner - Calcicolous. Sporadic on sunny rocks.
50 (1400 m).
(Ricciardi et al.: Mt. S. Michele 1400 m).
Previously recorded in Sicily (Nimis & Martellos, 2008), Sardinia (Nimis & Poelt, 1987) and Campania only at Capo Palinuro (Nimis and Tretiach 2004). This is therefore the second record for Campania of a species whose distribution in the Mediterranean area is little known.
- Caloplaca lactea** (A. Massal.) Zahlbr. - Calcicolous. Common.
8; 15; 22; 23; 24; 35; 55; 63; 69.
(Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m).
- Caloplaca luteoalba** (Turner) Th. Fr. - Epiphytic. On the trunks of various trees.
29 (1100 m).
(Ricciardi et al.: Mt. Cerasuolo 1100 m)
- ***Caloplaca marmorata** (Bagl.) Jatta - Calcicolous. Rare.
59 (100 m).
- ***Caloplaca oasis** (A. Massal.) Szatala - Parasitic. Frequently found mainly on endolithic species of *Verrucaria*.
2; 5; 9; 12; 21; 26; 27; 29 (1216 m); 30 (1316 m); 33; 36; 37; 39 (1131 m); 40; 45 (668 m); 48; 49; 50 (1444 m); 51; 53; 71; 72 (1135 m); 74; 75.
- ***Caloplaca obscurella** (Körb.) Th. Fr. - Epiphytic. On the bark of *Robinia pseudacacia* L. and *Juglans regia*.
Widespread all over the study area.
- Caloplaca ochracea** (Schaer.) Flagey - Saxicolous. Fairly common on limestone rocks in open ground.
2; 5; 9; 12; 21; 26; 27; 29 (1216 m); 30 (1316 m); 33; 36; 37; 39 (1131 m); 40; 45 (668 m); 48; 49; 50 (1444 m); 51; 53; 71; 72 (1135 m); 74; 75.
(Nimis and Tretiach: Amalfi Coast, Scala, 200 m, Punta Campanella, 30-100 m).
- Caloplaca polycarpa** (A. Massal.) Zahlbr. - Calcicolous. Common.
6; 8; 15; 20; 22; 23; 24; 32; 34 (426 m); 35; 42; 47; 55; 56; 59; 60; 63; 67; 69; 70; 73.
(Nimis and Tretiach: Amalfi Coast, Mt. Cerreto, 600 m Scala, 200 m).

- Caloplaca pyracea** (Ach.) Th. Fr. - Epiphytic. Widespread in the study area. Most frequently found growing on the bark of various *Quercus* species.
(Nimis and Tretiach: Termini, 200 m).
- ***Caloplaca spalatensis** Zahlbr. - Calcicolous. Rare.
15 (520 m); 23.
- Caloplaca teicholyta** (Ach.) J. Steiner - Calcicolous. Common along roads and in urban areas.
6; 8; 15; 20; 22; 23; 24; 32; 34 (426 m); 35; 42; 47; 55; 56; 59; 60; 63; 67; 69; 70; 73.
(Nimis and Tretiach: Punta Campanella, 30-100 m and Termini, 200 m).
- Caloplaca ulcerosa** Coppins et P. James - Epiphytic. Usually found on the bark of various trees.
6; 8; 15; 20; 22; 23; 24; 32; 34 (426 m); 35; 42; 47; 55; 56; 59; 60; 63; 67; 69; 70; 73.
(Nimis and Tretiach: Termini, 200 m).
- Caloplaca variabilis** (Pers.) Müll. Arg. - Calcicolous. Widespread in the study area.
2; 5; 6; 8; 9; 12; 15; 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 32; 33; 34 (426 m); 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (668 m); 47; 48; 49; 50 (1444 m); 51; 53; 55; 56; 59; 60; 63; 67; 69; 70; 71; 72 (1135 m); 73; 74; 75.
(Ricciardi et al.: Castellone, 1250 m sub *C. alpestris*).
- ***Caloplaca velana** (A. Massal.) Du Rietz var. *velana* - Calcicolous. Rare on open ground.
29 (1100 m).
- ***Caloplaca xantholyta** (Nyl.) Jatta - Calcicolous. Sporadic on tilted rocks and in humid areas.
30 (1300 m); 61 (1300 m).
- ***Candelaria concolor** (Dicks.) Stein - Epiphytic. Rare, most often found on the bark of *Robinia pseudacacia*.
39 (1131 m).
- Candelariella aurella** (Hoffm.) Zahlbr. - Saxicolous. Frequently found on various rocks.
2; 5; 6; 8; 9; 12; 15; 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 32; 33; 34 (426 m); 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (668 m); 47; 48; 49; 50 (1444 m); 51; 53; 55; 56; 59; 60; 63; 67; 69; 70; 71; 72 (1135 m); 73; 74; 75.
(Ricciardi et al.: Castellammare di Stabia - Mt. Faito road, 250-900 m).
- ***Candelariella faginea** Nimis, Poelt et Puntillo - Epiphytic. Very common on *Fagus sylvatica*.
2; 5; 9; 12; 16; 21; 26; 27; 31 (1216 m); 32; 33; 35; 38; 39; 41 (1131 m); 42; 45; 46; 47 (600 m); 50; 51; 52 (1444 m); 53; 55; 73; 74 (1135 m); 76; 77.
- ***Candelariella medians** (Nyl.) A. L. Sm. - Calcicolous. Rare.
76.
- ***Candelariella reflexa** (Nyl.) Lettau - Epiphytic. Rare on the trunks of various trees.
5.
- ***Candelariella vitellina** (Hoffm.) Müll. Arg. - Saxicolous. Common on wet rocks.
1, 40 (1100 m).
- Candelariella xanthostigma** (Ach.) Lettau - Epiphytic. Very common on the bark of various *Quercus* species.
2; 5; 9; 12; 16; 21; 26; 27; 31 (1216 m); 32; 33; 35; 38; 39; 41 (1131 m); 42; 45; 46; 47 (600 m); 50; 51; 52 (1444 m); 53; 55; 73; 74 (1135 m); 76; 77.
(Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m and Positano, 90 m, Termini, 200 m).
- ****Catillaria atomarioides** (Müll. Arg.) H. Kilius - Calcicolous. Rare on shady rocks.
1.
First record in Campania of a very much overlooked Italian mainland species (Nimis & Martellos, 2008).
- Catillaria lenticularis** (Ach.) Th. Fr. - Saxicolous. Rare on wet limestone rocks in shady areas.
63 (1300 m).
(Nimis and Tretiach: Amalfi Coast, Scala, 200 m and Positano 90 m).
- °**Catillaria mediterranea** Hafellner - Epiphytic. Rare on the bark of *Castanea sativa*.
41 (1100 m).
First record for Campania of a species hitherto reported only for the southern mainland of Italy (Nimis & Martellos, 2008).
- Catillaria nigroclavata** (Nyl.) Schuler - Epiphytic. Common on the trunks of various trees, often with *Xanthoria parietina*.
2; 5; 9; 12; 16; 21; 26; 27; 31 (1216 m); 32; 33; 35; 38; 39; 41 (1131 m); 42; 45; 46; 47 (600 m); 50; 51; 52 (1444 m); 53; 55; 73; 74 (1135 m); 76; 77.
(Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m, Termini, 200 m).
- °**Catillaria picila** (A. Massal.) Coppins - Saxicolous. Rare on limestone.
7.
New species for Campania. For the rest of Italy it has only recently been confirmed for Molise (Nimis and Tretiach, 2001). Earlier records are reported by Nimis & Martellos (2008) who only recently confirmed its presence in Molise.
- ***Cephalophysia leucospila** (Anzi) H. Kilius et Scheid. - Calcicolous. Rare, on sunny rocks.
18.
- ***Chaenotheca furfuracea** (L.) Tibell - Epiphytic. Rather rare in humid areas on mosses growing on *Castanea sativa* trunks.
41 (1100 m).
- ***Chrysothrix candelaris** (L.) J. R. Laundon - Epiphytic. Sporadic on the bark of various conifers at higher elevations (1100 m).
4; 8; 9; 13; 18; 24; 25; 26; 27; 30; 31; 37; 38; 39; 41 (800-1200 m); 42; 49; 50; 60; 62; 66; 73; 74.
- Cladonia coniocraea** (Flörke) Spreng. - Epiphytic. Rather rare on moss-covered basal parts of the trunks of *Castanea*

- sativa* or terricolous on humus.
41 (1100 m).
(Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m).
- Cladonia convoluta** (Lam.) Anders - Terricolous. Common on soil in rock fissures.
2; 5; 9; 12; 16; 21; 26; 27; 31 (1216 m); 32; 33; 35; 38; 39; 41 (1131 m); 42; 45; 46; 47 (600 m); 50; 51; 52 (1444 m); 53; 55; 73; 74 (1135 m); 76; 77.
(Ricciardi et al.: Mt. S. Michele 1350 m sub *Cladonia foliacea* var. *convoluta*; Nimis and Tretiach: Amalfi Coast, Scala, 200 m and Positano 90 m, Punta Campanella, 30-100 m and Termini, 200 m).
- Cladonia fimbriata** (L.) Fr. - Terricolous. Rare, found on shallow soil in humid environments.
41 (1100 m).
(Ricciardi et al.: Mt. Faito village, 1000 m; Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m and Mt. Cerreto, 600 m).
- Cladonia furcata** (Huds.) Schrad. - Terricolous. Rare. Found among grasses at the foot of higher-elevation cliffs.
63 (1300 m).
(Ricciardi et al.: sub *C. furcata* var. *racemosa*, below Mt. S. Michele 1400 m).
- Cladonia parasitica** (Hoffm.) Hoffm. - Epiphytic. On the basal part of the trunks of *Castanea sativa*.
39 (1000 m).
(Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m).
- Cladonia pocillum** (Ach.) O. J. Rich. - Terricolous. Very common on calcareous soil.
2; 5; 6; 8; 9; 12; 15; 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 32; 33; 34 (426 m); 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (668 m); 47; 48; 49; 50 (1444 m); 51; 53; 55; 56; 59; 60; 63; 67; 69; 70; 71; 72 (1135 m); 73; 74; 75.
(Jatta: Castellammare sub *C. pyxidata* var. *pocillum*; Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m Scala, 200 m).
- Cladonia pyxidata** (L.) Hoffm. - Terricolous. Fairly common: on soil, in rock fissures and on moss-covered basal parts of trunks.
2; 5; 6; 8; 9; 12; 15; 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 32; 33; 34 (426 m); 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (668 m); 47; 48; 49; 50 (1444 m); 51; 53; 55; 56; 59; 60; 63; 67; 69; 70; 71; 72 (1135 m); 73; 74; 75.
(Ricciardi et al.: Mt. Faito road, 250 m, Mt. Cerasuolo 1000-1300 m; Nimis and Tretiach: Punta Campanella, 30-100 m).
- Cladonia rangiformis** Hoffm. - Terricolous. Very common in clearings on plant detritus or on soil in rock cracks.
2; 5; 6; 8; 9; 12; 15; 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 32; 33; 34 (426 m); 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (668 m); 47; 48; 49; 50 (1444 m); 51; 53; 55; 56; 59; 60; 63; 67; 69; 70; 71; 72 (1135 m); 73; 74; 75.
(Jatta: Castellammare sub *C. pungens*; Ricciardi et al.: Mt. Faito, 1100 m sub *C. rangiformis* var. *pungens* f. *aberrans*; Nimis and Tretiach: Amalfi Coast, Scala, 200 m and Positano, 90 m, Punta Campanella, 30-100 m and Termini, 200 m).
- ***Cladonia subrangiformis** Sandst. - Terricolous. Not very common. On grass vegetation at the foot of cliffs at very high elevations.
50 (1300 m).
- ***Clauzadea chondrodes** (A. Massal.) Hafellner et Türk - Calcicolous. Frequently found on compact rocks all over the study area above above 800 m.
1; 4; 6; 8; 9; 10; 11; 13; 15; 18; 20; 24; 25; 26; 27; 30; 31; 33; 36; 37; 38; 39; 40; 41 (1131 m); 42; 47; 48; 49; 50; 53; 60; 62; 65; 66; 68; 72; 73; 75; 76.
- Clauzadea immersa** (Weber) Hafellner et Bellem. - Saxicolous. Frequent on limestone.
2; 5; 6; 8; 9; 12; 15; 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 32; 33; 34 (426 m); 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (668 m); 47; 48; 49; 50 (1444 m); 51; 53; 55; 56; 59; 60; 63; 67; 69; 70; 71; 72 (1135 m); 73; 74; 75.
(Jatta: Mts. Lattari sub *Hymenelia immersa*; Nimis and Tretiach: Punta Campanella, 30-100 m).
- Clauzadea monticola** (Schaer.) Hafellner et Bellem. - Saxicolous. Frequently found on compact rocks above 700 m.
2; 5; 9; 12; 16; 21; 26; 27; 29 (1216 m); 30; 31; 33; 36; 37; 39 (1131 m); 40; 43; 44; 45 (668 m); 48; 49; 50 (1444 m); 51; 53; 71; 72 (1135 m); 74; 75.
(Nimis and Tretiach: Termini, 200 m).
- ***Collema auriforme** (With.) Coppins et J. R. Laundon - Calcicolous. Rare on moss-covered rocks in shady zones.
19.
- ***Collema conglomeratum** Hoffm. - Epiphytic. Rarely found on the trunks of *Castanea sativa* in shady areas.
39 (1100 m).
Up till now, a species recorded almost throughout Italy except Campania, for which there were only historic sightings dating back to the late 19th century (Jatta: 1874, 1885, 1886, 1889).
- Collema crispum** (Huds.) F. H. Wigg. - Saxicolous or terricolous. Rare on soil or in calcareous rock fissures in humid areas.
61 (1300 m).
(Jatta: Mts. Lattari).
- Collema cristatum** (L.) F. H. Wigg. - Calcicolous. Rare on sunny rocks.
17, 56.
(Jatta: Mts. Lattari sub *C. multifidum*; Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m Scala, 200 m and Positano, 90 m).
- ***Collema fasciculare** (L.) F. H. Wigg. - Epiphytic. Uncommon on the barks of *Castanea sativa*.
39 (1100 m).
Species recently recorded in many regions of Italy (Nimis & Martellos, 2008) while for Campania the only reports available

were previously those of Jatta (1875) and Licopoli, 1871).

Species entered on the Red List of lichens for Italy (Nimis & Martellos, *ibid.*) as rare and to be protected nationwide and in Campania.

Collema flaccidum (Ach.) Ach. - Corticolous. Very rare on the bark of *Fagus sylvatica*.

50 (1440 m).

***Collema furfuraceum** (Arnold) Du Rietz - Epiphytic. Rare on the trunks of *Olea europaea* L.

76.

Collema multipartitum Sm. - Saxicolous. Rarely found on limestone.

17; 56.

(Nimis and Tretiach: Amalfi Coast, Positano, 90 m).

Collema nigrescens (Huds.) DC. - Corticolous. Common on the bark of *Robinia pseudacacia* and *Olea europaea*.

6; 8; 15; 20; 22; 23; 24; 32; 34 (426 m); 35; 42; 47; 55; 56; 59; 60; 63; 67; 69; 70; 73.

(Jatta: Castellammare sub *Synechoblastus vespertilis*; Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m).

Collema subflaccidum Degel. - Epiphytic. Very rare on the bark of various trees.

39 (1100 m).

(Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m).

Collema tenax (Sw.) Ach. - Terricolous. Between moss-covered limestone rocks.

2; 5; 6; 8; 9; 12; 15; 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 32; 33; 34 (426 m); 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (668 m); 47; 48; 49; 50 (1444 m); 51; 53; 55; 56; 59; 60; 63; 67; 69; 70; 71; 72 (1135 m); 73; 74; 75.

(Jatta: Stabian valleys and Cava sub *C. pulposum*; Ricciardi et al.: between Mt. Faito village and Mt. S. Angelo a Tre Pizzi 100-1300 m; Nimis and Tretiach: Amalfi Coast, Scala, 200 m and Positano, 90 m, Punta Campanella, 30-100 m).

Collema undulatum Flot. - Calcicolous. Uncommon on mossy rocks in shady areas.

4; 19; 39 (1100 m).

(Nimis and Tretiach: Amalfi Coast, Scala, 200 m).

Degelia plumbea (Lightf.) M. Jørg. et P. James - Epiphytic. Fairly common on the bark of *Castanea sativa*.

4; 19; 39 (1100 m).

(Ricciardi et al.: near Mt. Faito village, 1000 m sub *Parmeliella plumbea*; Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m and Mt. Cerreto, 600 m).

Dermatocarpon miniatum (L.) W. Mann - Saxicolous. Sporadic on shady and wet rocks.

4; 61 (1300 m).

(Ricciardi et al.: between Castellone and the Sorgente dell'Acqua Santa spring, 1200 m sub *D. miniatum* var. *complicatum*).

Diploicia canescens (Dicks.) A. Massal. - Epiphytic. Com-

mon on the trunks of various trees.

17; 56.

(Nimis and Tretiach: Termini, 200 m).

Diploschistes gypsaceus (Ach.) Zahlbr. - Saxicolous. Uncommon, found in rock fissures.

61 (1200 m).

(Jatta: Mts. Lattari sub *Urceolaria scruposa* var. *gypsacea*; Nimis and Tretiach: Amalfi Coast, Mt. Cerreto, 600 m).

***Diploschistes ocellatus** (Vill.) Norman - Saxicolous. Sporadic in rock fissures.

61 (1200 m).

***Diplotomma alboatrum** (Hoffm.) Flot. - Epiphytic. Rare on the bark of *Sambucus nigra*.

77.

Diplotomma hedinii (H. Magn.) P. Clerc et Cl. Roux - Calcicolous. Very common on rocks after above 700 m.

(Nimis and Tretiach: Punta Campanella, 30-100 m).

Dirina ceratoniae (Ach.) Fr. - Epiphytic. Rare on the bark of various trees.

57.

(Nimis and Tretiach: Punta Campanella, 30-100 m).

Dirina massiliensis Durieu et Mont. f. *massiliensis* - Calcicolous. Sporadic.

17; 57.

(Jatta (1909-1911: near Stabia, sub *D. repanda*; Nimis and Tretiach: Amalfi Coast, Scala, 200 m, Punta Campanella, 30-100 m).

°**Endocarpon adscendens** (Anzi) Müll. Arg. - Saxicolous and terricolous. Rarely found on calcareous rocks and soil.

16.

First record in Campania of a rare Italian mainland species where it had been reported in the south only for Calabria (Puntillo 1996) and, in the centre, only for Marche (Nimis and Tretiach 1999).

***Enterographa crassa** (DC.) Fée - Epiphytic. Rare on the bark of *Carpinus orientalis* Miller.

8.

Evernia prunastri (L.) Ach. - Epiphytic. Frequently occurring on the trunks of various trees.

2; 5; 6; 8; 9; 12; 15; 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 32; 33; 34 (426 m); 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (668 m); 47; 48; 49; 50 (1444 m); 51; 53; 55; 56; 59; 60; 63; 67; 69; 70; 71; 72 (1135 m); 73; 74; 75.

(Ricciardi et al.: Mt. Faito 1200 m sub *E. prunastri* var. *prunastri*; Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m, Termini, 200 m).

Flavoparmelia caperata (L.) Hale - Epiphytic. Frequent on the bark of various conifers and various species of *Quercus*.

2; 5; 8; 9; 12; 15; 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 33; 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (600 m); 48; 49; 50 (1444 m); 51; 53; 55; 63; 69; 71; 72 (1135 m); 74; 75.

(Jatta: Castellammare sub *Imbricaria caperata*; Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi

- pass on Mt. Cerreto, 650 m, Termini, 200 m).
- Flavoparmelia soledians** (Nyl.) Hale - Epiphytic. Very common on the bark of various trees all over the study area (Nimis and Tretiach: Termini, 200 m).
- Flavopunctelia flaventior** (Stirt.) Hale - Epiphytic. Sporadic, particularly on the trunks of conifers.
39 (1200 m); 61 (1200–1400 m).
(Ricciardi et al.: Mt. Cerasuolo 1100 m sub *Parmelia flaventior*).
- ***Fulgensia fulgens** (Sw.) Elenkin f. **fulgens** - Terricolous or saxicolous. Sporadic on crumbly limestone rocks and on the ground.
27; 29 (1216 m); 37; 50 (1444 m).
- ***Fulgensia fulgida** (Nyl.) Szatala - Like the previous species.
27; 29 (1216 m); 37; 50 (1444 m).
- Fuscidea stiriaca** (A. Massal.) Hafellner - Epiphytic. Sporadic on the bark of *Fagus sylvatica* between 1100 and 1400 m.
(Ricciardi et al.: between Castellone and Mt. S. Michele, 1200 m sub *Lecidea cyathoides*).
- Fuscopannaria mediterranea** (Tav.) M. Jørg. - Epiphytic. Mainly occurring on the basal parts of the trunks of *Quercus* sp. and *Castanea sativa*.
2; 4; 8; 11; 15 (200–520 m); 20; 25; 27; 28; 29 (1216 m); 30 (1316 m); 31; 34; 35; 39 (800–1200 m); 40; 45 (668 m); 46; 47; 48; 50 (1444 m); 52; 70; 71; 73; 74.
(Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m and Mt. Cerreto, 600 m).
- Fuscopannaria olivacea** (M. Jørg.) M. Jørg. - Epiphytic. Frequently found on the bark of various trees
2; 4; 8; 11; 15 (200–520 m); 20; 25; 27; 28; 29 (1216 m); 30 (1316 m); 31; 34; 35; 39 (800–1200 m); 40; 45 (668 m); 46; 47; 48; 50 (1444 m); 52; 70; 71; 73; 74.
(Nimis and Tretiach: Amalfi Coast, Mt. Cerreto, 600 m).
- Graphis scripta** (L.) Ach. - Epiphytic. Very common on the trunks of various trees, particularly on smooth bark.
2; 5; 6; 8; 9; 12; 15; 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 32; 33; 34 (426 m); 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (668 m); 47; 48; 49; 50 (1444 m); 51; 53; 55; 56; 59; 60; 63; 67; 69; 70; 71; 72 (1135 m); 73; 74; 75.
(Jatta: Mts. Lattari sub *G. scripta* var. *pulverulenta*).
- ***Gyalecta flotowii** Körb. - Epiphytic. Rare on the bark of various trees.
15 (520 m).
- °**Gyalecta hypoleuca** (Ach.) Zahlbr. - Saxicolous. Rarely found on calcareous rocks in shady areas.
61 (1400 m).
New species for Campania. In southern Italy the only other records are from Puglia (Rabenhorst, 1850; Vezda, 1965) and Calabria (Puntillo 1996).
- ***Gyalecta jenensis** (Batsch) Zahlbr. - Saxicolous. Rare in limestone rock fissures in shady areas.
29 (1200 m).
- The presence of this species, found recently throughout Italy (Nimis & Martellos, 2008), is further confirmed in Campania, a region where there had only been reports from the 19th century (Jatta 1882, 1889, 1892).
- ***Gyalecta leucaspis** (A. Massal.) Zahlbr. - Calcicolous. Very rare on shady rocks.
61 (1200–1400 m).
Second report in Campania for this species which was only recently found for the first time in this region on the Matese mountains. (Aprile et al., 2002-03b).
- Gyalecta luetkemulleri** Zahlbr. - Calcicolous. Frequently found in shady areas.
6; 20; 32; 34 (426 m); 42; 47; 55; 56; 59; 60; 67; 70; 73.
(Nimis and Tretiach: Amalfi Coast, Scala, 200 m and Positano, 90 m).
- Gyalecta thelotremella** Bagl. - Saxicolous. Rather common on calcareous rocks.
6; 20; 32; 34 (426 m); 42; 47; 55; 56; 59; 60; 67; 70; 73.
(Nimis and Tretiach: Amalfi Coast, Scala, 200 m, Punta Campanella, 30–100 m).
- Haematomma ochroleucum** (Neck.) J. R. Laundon var. **ochroleucum** - Epiphytic. Sporadic on the bark of various trees.
57 (200 m).
(Nimis and Tretiach: Termini, 200 m).
- ***Hymenelia epulotica** (Ach.) Lutzoni - Saxicolous. Rare on limestone.
29 (1216 m).
- Hymenelia prevostii** (Duby) Kremp. - Saxicolous. Sporadic on calcareous rocks.
8; 15; 22; 23; 24; 35; 55; 63; 69.
(Nimis and Tretiach: Punta Campanella, 30–100 m).
- Hyperphyscia adglutinata** (Flörke) H. Mayrhofer et Poelt - Epiphytic. Rather sporadic on the trunks of various trees.
13.
(Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m Scala, 200 m and Positano, 90 m, Termini, 200 m).
- ***Hypogymnia physodes** (L.) Nyl. - Epiphytic. Rather common on bark over 800 m.
29 (1200 m); 39 (1100 m); 63.
- Hypogymnia tubulosa** (Schaer.) Hav. - Corticolous. Common on the bark of various trees.
29 (1200 m); 39 (1100 m); 61 (1400 m).
(Ricciardi et al.: Mt. Faito village, 1000 m sub *Parmelia tubulosa*; Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m).
- Lecania cyrtella** (Ach.) Th. Fr. - Epiphytic. Sporadic on tree bark covered also by *Xanthoria parietina* and on woodland edges.
13; 39 (1100m).
(Nimis and Tretiach: Amalfi Coast, Positano, 90 m, Termini, 200 m).

- ***Lecania erysibe** (Ach.) Mudd - Saxicolous. Uncommon on calcareous rocks.
42; 55.
- Lecania inundata** (Körb.) M. Mayrhofer - Calcicolous. Rare.
57 (100 m).
(Nimis and Tretiach: Punta Campanella, 30-100 m).
- ***Lecania naegeli** (Hepp) Diederich et Van den Boom - Corticolous. Rather rare on the bark of *Fagus sylvatica*.
29 (1200 m).
- ***Lecania rabenhorstii** (Hepp) Arnold - Saxicolous. Rare on calcareous rocks.
61 (1200 m).
- Lecania spadicea** (Flot.) Zahlbr. - Saxicolous. Common on limestone all over the study area.
(Nimis and Tretiach: Punta Campanella, 30-100 m).
- ***Lecania turicensis** (Hepp) Müll. Arg. - Saxicolous. Rare on limestone.
13.
- Lecanographa grumulosa** (Dufour) Egea et Torrente - Calcicolous. Rare.
57 (100 m).
(Nimis and Tretiach: Amalfi Coast, Positano, 90 m, Punta Campanella, 30-100 m).
- Lecanora albescens** (Hoffm.) Branth. et Rostr. - Saxicolous. Very common on roadside walls and on limestone rocks in places with sparse vegetation cover.
15 (520 m); 16; 21; 23; 26; 27; 29 (1216 m); 30 (1316 m); 31; 36; 37; 39 (1131 m); 40; 43; 44; 45 (668 m); 48; 49; 50 (1444 m); 51; 55; 63; 69; 71; 74; 75.
(Nimis and Tretiach: Amalfi Coast, Scala, 200 m, Termini, 200 m).
- Lecanora allophana** Nyl. - Epiphytic. Common on the bark of *Sambucus nigra* and *Castanea sativa*.
2; 4; 8; 11; 15 (200-520 m); 20; 25; 27; 28; 29 (1216 m); 30 (1316 m); 31; 35; 36; 39 (1000 m); 40; 45 (668 m); 47; 48; 50 (1444 m); 51; 52; 70; 71; 73; 74.
(Jatta: Mts. Lattari sub *L. subfusca* var. *allophana*).
- Lecanora argentata** (Ach.) Malme - Epiphytic. Sporadic on the bark of *Alnus cordata* (Loisel.) Loisel.
61 (1100-1440 m).
(Ricciardi et al.: Mt. S. Angelo a Tre Pizzi, 1100-1300 m sub *L. subfusca*).
- °°**Lecanora bandolensis** B. de Lesd. - Calcicolous. Rare.
39 (1100 m).
This is the first record for mainland Italy of a species, hitherto found only in Sicily (Nimis & Martellos, 2008) and Sardinia (Nimis & Poelt, 1987).
- Lecanora carpinea** (L.) Vain. - Epiphytic. Very common on the bark of various trees.
2; 5; 6; 8; 9; 12; 15; 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 32; 33; 34 (426 m); 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (668 m); 47; 48; 49; 50 (1444 m); 51; 53; 55; 56; 59; 60; 63; 67; 69; 70; 71; 72 (1135 m); 73; 74; 75.
(Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m, Termini, 200 m).
- Lecanora chlorotera** Nyl. - Corticolous. Ubiquitous on the bark of various trees.
2; 5; 6; 8; 9; 12; 15; 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 32; 33; 34 (426 m); 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (668 m); 47; 48; 49; 50 (1444 m); 51; 53; 55; 56; 59; 60; 63; 67; 69; 70; 71; 72 (1135 m); 73; 74; 75.
(Ricciardi et al.: Mt. Faito village, 1000 m; Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m Scala, 200 m and Positano, 90 m, Punta Campanella, 30-100 m and Termini, 200 m).
- Lecanora crenulata** Hook. - Saxicolous. Fairly common on bare limestone rocks.
5; 9; 12; 16; 26; 27; 29 (1216 m); 30 (1316 m); 37; 39 (1131 m); 43; 44; 45 (668 m); 48; 49; 50 (1444 m); 51; 72; 74.
(Nimis and Tretiach: Amalfi Coast, Mt. Cerreto, 600 m).
- Lecanora dispersa** (Pers.) Sommerf. - Saxicolous. On limestone and a wide variety of rocks.
2; 5; 6; 8; 9; 12; 15; 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 32; 33; 34 (426 m); 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (668 m); 47; 48; 49; 50 (1444 m); 51; 53; 55; 56; 59; 60; 63; 67; 69; 70; 71; 72 (1135 m); 73; 74; 75.
(Ricciardi et al.: Vena Spaccata 500 m).
- ***Lecanora expallens** Ach. - Epiphytic. Rare on the barks of *Acer neapolitanum*.
39 (1100 m).
- ***Lecanora flotowiana** Spreng. - Saxicolous. Rare on calcareous rocks.
31.
- Lecanora hagenii** (Ach.) Ach. var. *hagenii* - Epiphytic. Sporadic on the bark of *Castanea sativa* and *Fagus sylvatica*.
29 (1150 m); 39 (1100 m).
(Jatta: Castellammare; Nimis and Tretiach: Termini, 200 m).
- Lecanora horiza** (Ach.) Linds. - Epiphytic. Uncommon on various species of *Prunus*.
73.
(Nimis and Tretiach: Termini, 200 m).
- Lecanora intumescens** (Rebent.) Rabenh. - Epiphytic. Common on trunks and young branches of *Fagus sylvatica*.
29 (1200 m); 61 (1300 m).
(Jatta: Mts. Lattari; Ricciardi et al.: Mt. Cerasuolo 1200 m; Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m).
- ***Lecanora leptyroides** (Nyl.) Degel. - Corticolous. Sporadic on the bark of *Fagus sylvatica*.
62 (1300 m).
- Lecanora poeltiana** Clauzade et Cl. Roux - Calcicolous. Rare.
57 (200 m).
(Nimis and Tretiach: Punta Campanella, 30-100 m).

Lecanora pruinosa Chaub. - Saxicolous. Uncommon on calcareous rocks with little tree cover.

29(1200 m), 44.

(Ricciardi et al.: Mt. Cerasuolo 1200 m and Mt. S. Angelo a Tre Pizzi 1150-1444 m; Nimis and Tretiach: Amalfi Coast, Scala, 200 m, Punta Campanella, 30-100 m and Termini, 200 m).

Lecanora pulicaris (Pers.) Ach. - Epiphytic. Common on the bark of various trees.

2; 4; 8; 11; 15 (200-520 m); 20; 25; 27; 28; 29 (1216 m); 30 (1316 m); 31; 35; 36; 39 (1000 m); 40; 45 (668 m); 47; 48; 50 (1444 m); 51; 52; 70; 71; 73; 74.

(Jatta: Mts. Lattari sub *L. subfusca* var. *chlarona*; Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m).

Lecanora rubicunda Bagl. - Epiphytic. Rarely found on the trunks of various trees.

57 (200 m).

(Nimis and Tretiach: Termini, 200 m).

Lecanora sambuci (Pers.) Nyl. - Epiphytic. Sporadic on the bark of *Sambucus nigra*.

29 (1200 m); 39 (1100 m).

(Ricciardi et al.: near Quisisana, 200-500 m)

***Lecanora symmicta** (Ach.) Ach. - Epiphytic. Rare on the old trunks of *Castanea sativa*.

39 (1100 m).

Lecanora umbrina (Ach.) A. Massal. - Epiphytic. With *L. sambuci* but less common.

29 (1200 m); 39 (1100 m).

(Ricciardi et al.: Castellammare di Stabia - Mt. Faito road, 250 m).

Lecidella elaeochroma (Ach.) M. Choisy - Epiphytic. Very common throughout the study area on the trunks of various trees.

2; 5; 6; 8; 9; 12; 15; 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 32; 33; 34 (426 m); 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (668 m); 47; 48; 49; 50 (1444 m); 51; 53; 55; 56; 59; 60; 63; 67; 69; 70; 71; 72 (1135 m); 73; 74; 75.

(Ricciardi et al.: Castellammare di Stabia - Mt. Faito road, 250-1100 m sub *Lecidea parasema* var. *parasema* and *Lecidea parasema* var. *elaeochroma*).

In the study area, samples were found which, due to their reaction to hypochlorite, according to Clauzade & Roux (1985), should be referred to *Lecidella euphorea* (Flörke) Hertelb. Moreover, a certain number of samples with a grey-green thallus are ascribed, according to Ricciardi et al. (ibid.), to the *parasema* variety, and others with a yellowish thallus to *flavicans* (Ach.) Hertel. Lastly, some samples with enlarged tips of the paraphyses containing large drops of oil would seem to show the presence also of *L. acbristotera* (Nyl.) Hertel et Leuckert. In line with Nimis & Martellos (2008), we think that these species should be deemed simple synonyms of *L. elaeochroma*.

Lecidella elaeochroma (Ach.) M. Choisy f. *soralifera* (Erichsen) D. Hawksw. - Epiphytic. Frequent on the bark of var-

ious trees.

2; 5; 8; 9; 12; 15; 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 33; 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (600 m); 48; 49; 50 (1444 m); 51; 53; 55; 63; 69; 71; 72 (1135 m); 74; 75.

(Nimis and Tretiach: Termini, 200 m).

Lecidella patavina (A. Massal.) Knoph et Leuckert - Saxicolous. Occurring sporadically at higher altitudes in deep cracks between exposed limestone rocks.

29 (1200 m); 61 (1300 m).

(Ricciardi et al.: Castellammare di Stabia - Mt. Faito road, 300 m sub *Lecidea stigmataea* incl. *L. patavina* Massal.).

***Lepraria incana** (L.) Ach. - Epiphytic. Uncommon, on the bark of *Castanea sativa*.

29 (1100 m).

First record in Campania of a species found throughout the rest of southern Italy (Nimis & Martellos, 2008).

Lepraria nivalis J. R. Laundon - Saxicolous. Rare on limestone.

57 (200 m).

(Nimis and Tretiach: Amalfi Coast, Mt. Cerreto, 600 m, Punta Campanella, 30-100 m).

***Leprocaulon microscopicum** (Vill.) Gams - Saxicolous. Rarely found on calcareous rocks.

29 (1200 m).

***Leptochidium albociliatum** (Desm.) M. Choisy - Terri-colous. Occurring rarely, on moist limestone rocks covered by moss and *Cistus* sp.

73 (500 m).

First record in Campania of this species hitherto reported for southern Italy only in Calabria and Basilicata, but with few stands in the rest of the mainland (Nimis & Martellos, 2008).

Leptogium brebissonii Mont. - Epiphytic. Very common on the bark of *Castanea sativa* Miller and of various *Quercus* species.

2; 5; 4; 8; 9; 12; 15 (200-520 m); 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30 (1316 m); 31; 33; 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (600 m); 48; 49; 50 (1444 m); 51; 53; 55; 63; 69; 71; 72 (1135 m); 74; 75.

(Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m).

***Leptogium cyanescens** (Rabenh.) Körb. - Epiphytic. On mossy trunks of *Fagus sylvatica*.

27; 29 (1216 m); 37; 50 (1444 m).

Leptogium lichenoides (L.) Zahlbr. - Epiphytic. Rather common on various moss-covered trees.

2; 5; 8; 9; 12; 15 (200-520 m); 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30 (1316 m); 31; 33; 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (668 m); 48; 49; 50 (1444 m); 51; 53; 55; 63; 69; 71; 72 (1135 m); 74; 75.

(Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m Scala, 200 m).

Leptogium massiliense Nyl. - Saxicolous. Common on cal-

careous rocks throughout the study area.

(Nimis and Tretiach: Amalfi Coast, Mt. Cerreto, 600 m Scala, 200 m).

Leptorhaphis oleae (A. Massal.) Körb. - Corticolous. Sporadic on the barks of *Olea europaea*.

57 (100 m); 58 (100 m).

(Nimis and Tretiach: Punta Campanella, 30-100 m).

Species which was only recently recorded for Campania thanks to Nimis and Tretiach (2004), while for the rest of Italy there are only historical reports for the Veneto (Massalongo, 1855, Aguirre-Hudson, 1991) and Liguria (Garovaglio, 1865).

***Lithothelium triseptatum** (Nyl.) Aptroot - Saxicolous. Frequent on limestone.

17.

***Lobaria amplissima** (Scop.) Forssell - Epiphytic. Rarely found on the bark of *Castanea sativa* and *Fagus sylvatica*. 61 (1100-1300 m).

Species included in the Red List of lichens for Italy (Nimis & Martellos, 2008) as a species to protect in Italy, since it is threatened with extinction. Also in the study area it is rather rare.

Lobaria pulmonaria (L.) Hoffm. - Epiphytic. On old trunks of *Fagus sylvatica* and *Alnus cordata*.

61 (1300 m); 62.

(Ricciardi et al.: between St. Michele Sanctuary and Mt. S. Angelo a Tre Pizzi, 1200-1350; Nimis and Tretiach: Amalfi Coast, Mt. Cerreto, 600 m).

Lobothallia radiosa (Hoffm.) Hafellner. - Saxicolous. Ubiquitous on calcareous rocks, growing together with *Aspicilia calcarea*, *Aspicilia contorta* and *Verrucaria fuscula*.

2; 5; 6; 8; 9; 12; 15; 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 32; 33; 34 (426 m); 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (668 m); 47; 48; 49; 50 (1444 m); 51; 53; 55; 56; 59; 60; 63; 67; 69; 70; 71; 72 (1135 m); 73; 74; 75.

(Ricciardi et al.: S. Michele, 1250 m sub *Lecanora subcircinata*).

Megaspora verrucosa (Ach.) Hafellner et V. Wirth var. **verrucosa** - Terricolous. Rare on mosses.

9 (1250 m).

(Ricciardi et al.: Sorgente dell'Acqua Santa spring, 1250 m sub *Aspicilia verrucosa*).

Melanohalea elegantula (Zahlbr.) O. Blanco, A. Crespo, Divakar, Essl., D. Hawksw. & Lumbsch - Epiphytic. Rare on the trunks of *Castanea sativa*.

39 (1100 m).

(Ricciardi et al.: Mt. Faito, 1100 m sub *Parmelia elegantula*; Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m).

Melanohalea exasperata (De Not.) O. Blanco, A. Crespo, Divakar, Essl., D. Hawksw. & Lumbsch - Epiphytic. Common, particularly on the young branches of various trees.

26; 29 (1200 m); 39 (1100 m); 61 (1200-1400 m).

(Jatta: Mts. Lattari sub *Imbricaria aspera*; Ricciardi et al.: Mt. S. Angelo a Tre Pizzi, 1200-1400 m sub *Parmelia aspera*; Nimis and

Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m).

***Melanohalea exasperatula** (Nyl.) O. Blanco, A. Crespo, Divakar, Essl., D. Hawksw. & Lumbsch - Epiphytic. Like the previous species, but more sporadic and generally found together with *Xanthoria parietina*.

26; 39 (1100 m).

***Melanohalea laciniatula** (H. Olivier) O. Blanco, A. Crespo, Divakar, Essl., D. Hawksw. & Lumbsch - Epiphytic. Sporadic on the trunks of *Alnus cordata* and *Fagus sylvatica*.

61 (1200-1400 m).

***Melanelixia fuliginosa** (Duby) O. Blanco, A. Crespo, Divakar, Essl., D. Hawksw. & Lumbsch - Epiphytic. Chiefly found on smooth bark like that of *Fagus sylvatica* and *Castanea sativa*.

27; 37 (1100 m); 61 (1200-1400 m).

Melanelixia glabra (Schaer.) O. Blanco, A. Crespo, Divakar, Essl., D. Hawksw. & Lumbsch - Corticolous. Very common all over the study area on the bark of various trees.

(Nimis and Tretiach: Amalfi Coast, Scala, 200 m).

Melanelixia subaurifera (Nyl.) O. Blanco, A. Crespo, Divakar, Essl., D. Hawksw. & Lumbsch - Epiphytic. Very common on the barks of various trees.

2; 5; 6; 8; 9; 12; 15; 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 32; 33; 34 (426 m); 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (668 m); 47; 48; 49; 50 (1444 m); 51; 53; 55; 56; 59; 60; 63; 67; 69; 70; 71; 72 (1135 m); 73; 74; 75.

(Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m).

Melaspilea ochrothalamia Nyl. - Epiphytic. Rather rare on the bark of conifers.

16, 55.

(Nimis and Tretiach: Amalfi Coast, Scala, 200 m).

This is the second report of a species whose distribution in Italy and Campania is little known.

***Mycobilimbia hypnorum** (Lib.) Kalb et Hafellner - Terricolous. Very common on mosses and calcareous soil.

2; 4; 8; 11; 15 (200-520 m); 20; 25; 27; 28; 29 (1216 m); 30 (1316 m); 31; 35; 36; 39 (1000 m); 40; 45 (668 m); 47; 48; 50 (1444 m); 51; 52; 70; 71; 73; 74.

Mycobilimbia lurida (Ach.) Hafellner et Türk - Saxicolous and terricolous. Frequent on soil and in calcareous rock fissures.

2; 5; 8; 9; 12; 15 (200-520 m); 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 33; 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (600 m); 48; 49; 50 (1444 m); 51; 53; 55; 63; 69; 71; 72 (1135 m); 74; 75.

(Ricciardi et al.: Mt. Faito sub *Psora lurida*; Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m and Positano, 90 m).

Mycobilimbia sanguineoatra auct. (*Lecidea sanguineoatra* auct. p. p., non (Wulfen) Ach.) - Epiphytic. Very common on the bark of various trees.

- 2; 4; 8; 11; 15 (200-520 m); 20; 25; 27; 28; 29 (1216 m); 30 (1316 m); 31; 35; 36; 39 (1000 m); 40; 45 (668 m); 47; 48; 50 (1444 m); 51; 52; 70; 71; 73; 74.
(Nimis and Tretiach: Amalfi Coast, Mt. Cerreto, 600 m).
- Naetrocymbe fraxini*** (A. Massal.) R. C. Harris - Epiphytic. Rather rare on the bark of *Fraxinus ornus*.
8; 15; 22; 23; 24; 35; 55; 63; 69.
First report in Campania of a species from temperate climates, epiphytic on smooth bark or on deciduous trees. Hitherto reported for southern Italy in Calabria (Puntillo, 1992; 1996) and previously in Basilicata (Jatta, 1882; 1889).
- Naetrocymbe punctiformis*** (Pers.) R. C. Harris - Epiphytic. Rather common on the bark of various trees.
6; 20; 32; 34 (426 m); 42; 47; 56; 59; 60; 67; 70; 73.
(Jatta: Castellammare sub *Arthopyrenia punctiformis*; Nimis and Tretiach: Amalfi Coast, Scala, 200 m, Punta Campanella, 30-100 m).
- Nephroma bellum*** (Spreng.) Tuck. - Epiphytic. Present on the basal part of the trunks in beech forests.
29 (1200 m); 61 (1200-1400 m).
(Ricciardi et al.: Mt. Cerasuolo and Mt. S. Angelo a Tre Pizzi, 1100-1200 m).
- Nephroma laevigatum*** Ach. - Corticolous. Common on the bark of *Castanea sativa*.
2; 9; 16; 21; 26; 27; 29 (1216 m); 30 (1316 m); 33; 36; 37; 39 (1131 m); 40; 44; 48; 49; 50 (1444 m), 51; 71; 75.
(Ricciardi et al.: Castellone, 1200 m; Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m and Mt. Cerreto, 600 m).
- Normandina pulchella*** (Borrer) Nyl. - Epiphytic. Common above 800 m, particularly on the trunks of *Fagus sylvatica* and of various *Quercus* species.
1; 4; 6; 8; 9; 10; 11; 13; 15 (200-520 m); 18; 20; 24; 25; 26; 27; 31; 33; 34; 35; 36; 37; 38; 40; 42; 43; 47; 48; 49; 50; 53; 60; 62; 64; 65; 66 (400-1100 m); 71; 74; 75.
(Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m).
- Ochrolechia arborea*** (Kreyer) Almb. - Epiphytic. Like the previous species but much less common.
39 (1100 m).
(Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m).
- Ochrolechia balcanica*** Versegny - Epiphytic. Uncommon on the trunks of various species of *Quercus* in shady areas.
29 (1200 m).
(Ricciardi et al.: Mt. Cerasuolo 1200 m).
- Ochrolechia pallescens*** (L.) A. Massal. - Epiphytic. Frequently found on the bark of *Fagus sylvatica*.
2; 5; 9; 12; 16; 21; 26; 27; 29 (1216 m); 30; 31; 33; 36; 37; 39 (1131 m); 40; 43; 44; 45 (668 m); 48; 49; 50 (1444 m); 51; 53; 71; 72 (1135 m); 74; 75.
(Jatta: Mts. Lattari sub *Lecanora pallescens*).
- Ochrolechia subviridis*** (Høeg) Erichsen - Epiphytic. Uncommon on the bark of *Fagus sylvatica* and *Alnus cordata*.
39 (800-1100 m).
(Ricciardi et al.: Mt. Faito, Upper station of the cable car, 1100 m).
- Opegrapha atra*** Pers. - Corticolous. Common on various trees.
2; 9; 16; 21; 26; 27; 29 (1216 m); 30 (1316 m); 33; 36; 37; 39 (1131 m); 40; 44; 48; 49; 50 (1444 m), 51; 71; 75.
(Jatta: Mts. Lattari sub *O. bullata*; Ricciardi et al.: Quisisana, 250 m).
- Opegrapha calcarea*** Sm. - Saxicolous. Frequently found on limestone.
2; 5; 6; 8; 9; 12; 15; 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 32; 33; 34 (426 m); 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (668 m); 47; 48; 49; 50 (1444 m); 51; 53; 55; 56; 59; 60; 63; 67; 69; 70; 71; 72 (1135 m); 73; 74; 75.
(Nimis and Tretiach: Amalfi Coast, Scala, 200 m and Positano, 90 m, Punta Campanella, 30-100 m and Termini, 200 m).
- Opegrapha rupestris*** Pers. - Saxicolous. Very common on calcareous rocks.
2; 5; 6; 8; 9; 12; 15; 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 32; 33; 34 (426 m); 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (668 m); 47; 48; 49; 50 (1444 m); 51; 53; 55; 56; 59; 60; 63; 67; 69; 70; 71; 72 (1135 m); 73; 74; 75.
(Jatta: Mts. Lattari sub *O. saxatilis*; Nimis and Tretiach: Amalfi Coast, Mt. Cerreto, 600 m, Punta Campanella, 30-100 m).
- Opegrapha subelevata*** (Nyl.) Nyl. - Corticolous. Rather common on the trunks of various trees.
6; 20; 32; 34 (426 m); 42; 47; 55; 56; 59; 60; 67; 70; 73.
(Nimis and Tretiach: Punta Campanella, 30-100 m).
- Opegrapha varia*** Pers. - Epiphytic. Sporadic on the bark of *Castanea sativa*.
29 (1200 m).
(Ricciardi et al.: Quisisana, 350 m sub *O. lichenoides*).
- **Opegrapha vulgata*** Ach. - Epiphytic. Like the previous species but more common.
6; 20; 32; 34 (426 m); 42; 47; 55; 56; 59; 60; 67; 70; 73.
- Pachyphiale carneola*** (Ach.) Arnold - Epiphytic. Frequently found on the bark of various trees.
2; 4; 8; 11; 15 (200-520 m); 20; 25; 27; 28; 29 (1216 m); 30 (1316 m); 31; 35; 36; 39 (1000 m); 40; 45 (668 m); 47; 48; 50 (1444 m); 51; 53; 70; 71; 73; 74.
(Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m and Mt. Cerreto, 600 m).
- **Pannaria conoplea*** (Ach.) Bory - Corticolous. Common on the bark of *Castanea sativa*.
27; 29 (1216 m); 37; 50 (1444 m).
Prior to our survey, the only records for this species for Campania dated back to Jatta (1882; 1885; 1889). Species on the Red List of lichens for Italy (Nimis & Martellos, 2008) to be protected in Italy and Campania, given its rarity. Fairly common at the sites where it was found.

- Parmelia saxatilis** (L.) Ach. - Epiphytic. Ubiquitous on the bark of *Castanea sativa*, *Fagus sylvatica* and *Alnus cordata*. 2; 5; 9; 12; 16; 21; 26; 27; 29 (1216 m); 30; 31; 33; 36; 37; 39 (1131 m); 40; 43; 44; 45 (668 m); 48; 49; 50 (1444 m); 51; 53; 71; 72 (1135 m); 74; 75.
(Jatta: Castellammare sub *Imbricaria saxatilis*; Ricciardi et al.: Sorgente dell'Acqua Santa spring, 1250 m).
- Parmelia submontana** Hale - Epiphytic. Particularly common on the bark of *Castanea sativa*. 2; 5; 9; 12; 16; 21; 26; 27; 29 (1216 m); 30; 31; 33; 36; 37; 39 (1131 m); 40; 43; 44; 45 (668 m); 48; 49; 50 (1444 m); 51; 53; 71; 72 (1135 m); 74; 75.
(Ricciardi et al.: between Castellone and Mt. S. Michele, 1200-1400 m sub *P. contorta*).
- Parmelia sulcata** Taylor - Epiphytic. Very common on the bark of various trees; this is the most common species of *Parmelia* in the study area. 2; 5; 6; 8; 9; 12; 15; 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 32; 33; 34 (426 m); 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (668 m); 47; 48; 49; 50 (1444 m); 51; 53; 55; 56; 59; 60; 63; 67; 69; 70; 71; 72 (1135 m); 73; 74; 75.
(Ricciardi et al.: Mt. Cerasuolo, 1100-1200 m; Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m).
- Parmeliella testacea** M. Jørg. - Corticolous. Sporadic on the trunks of *Castanea sativa*. 27; 29 (1216 m); 37; 50 (1444 m).
First record in Campania of this species, hitherto reported in southern Italy only for Calabria (Puntillo 1996).
- Parmeliella triptophylla** (Ach.) Müll. Arg. - Epiphytic. Frequent on the bark of *Fagus sylvatica* and *Acer neapolitanum*. 5; 8; 9; 12; 16; 22; 24; 26; 27; 29 (1216 m); 30; 31; 35; 37; 39 (1131 m); 43; 44; 45 (600 m); 48; 49; 50 (1444 m); 51; 71; 72 (1135 m); 74.
(Jatta: Mts. Lattari and Cava sub *Lecothecium corallinoides*; Nimis and Tretiach: Amalfi Coast, Mt. Cerreto, 600 m).
- Parmelina pastillifera** (Harm.) Hale - Epiphytic. Very common on the bark of various trees above 800 m. (Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m).
- Parmelina quercina** (Willd.) Hale - Epiphytic. Found all over the study area on the trunks of various trees.
(Jatta: Mts. Lattari sub *Imbricaria aspera*; Ricciardi et al.: Mt. Faito, 1130 m, Mt. S. Michele, 1400 m; Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m, Termini, 200 m).
In the study area we found samples whose characteristics could be ascribed to *Parmelia carporrhizans* Taylor. This species, reported previously by Ricciardi et al. (1976-77) for Mt. Faito, according to Nimis & Martellos (2008) falls within the variability of *Parmelina quercina*.
- Parmelina tiliacea** (Hoffm.) Hale - Epiphytic. Abundant on various trees. 2; 5; 6; 8; 9; 12; 15; 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 32; 33; 34 (426 m); 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (668 m); 47; 48; 49; 50 (1444 m); 51; 53; 55; 56; 59; 60; 63; 67; 69; 70; 71; 72 (1135 m); 73; 74; 75.
(Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m Scala, 200 m, Termini, 200 m).
- *Parmeliopsis ambigua** (Wulfen) Nyl. - Corticolous. Sporadic on the trunks of *Castanea sativa*. 29 (1216 m).
- Parmotrema perlatum** (Huds.) M. Choisy - Epiphytic. Sporadic on various trees. 2; 5; 8; 9; 12; 16; 21; 22; 24; 26; 27; 29 (1216 m); 30; 31; 33; 35; 36; 37; 39 (1131 m); 40; 43; 44; 45 (600 m); 48; 49; 50 (1444 m); 51; 53; 71; 72 (1135 m); 74; 75.
(Ricciardi et al.: Spina Infuocata, 1100 m sub *Parmelia perlata*; Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m, Termini, 200 m).
- Peccania coralloides** (A. Massal.) A. Massal. - Saxicolous. Sporadic on limestone. 16.
(Nimis and Tretiach: Amalfi Coast, Positano, 90 m).
- Peltigera canina** (L.) Willd. - Terricolous. Sporadic, on epilithic bryophytes in dense woodland. 25; 29 (1200 m); 39 (1100 m).
(Jatta: Castellammare; Ricciardi et al.: Mt. Cerasuolo, 1150 m, Mt. S. Angelo a Tre Pizzi, 1200 m sub *Peltigera canina* subsp. *canina* var. *canina*).
- Peltigera collina** (Ach.) Schrad. - Epiphytic. Rarely found on moss-covered trunks of *Castanea sativa* and *Fagus sylvatica*. 25; 61 (1200-1400 m).
(Nimis and Tretiach: Amalfi Coast, Mt. Cerreto, 600 m).
- Peltigera degenii** Gyeln. - Terricolous. Uncommon, mainly on moss-covered soil in moist, shady places with little tree cover. 25; 39 (1100 m).
(Ricciardi et al.: between St. Michele Sanctuary and Mt. S. Angelo a Tre Pizzi, 1200-1300 m).
- Peltigera horizontalis** (Huds.) Baumg. - Terricolous. Rare, particularly found on mosses and on basal parts of trunks. 61 (1200-1400 m).
(Ricciardi et al.: Mt. Faito village, 1000-1100 m).
- *Peltigera polydactyla** (Neck.) Hoffm. - Terricolous and corticolous. Rare, mainly on terricolous bryophytes in shady areas and on the bark of various trees. 30 (1316 m).
- Peltigera praetextata** (Sommerf.) Zopf - Epiphytic or terricolous. Sporadic on the bark of *Castanea sativa* and on terricolous mosses. 25; 29 (1200 m); 39 (1100 m).
(Jatta: montibus Stabianis sub *P. rufescens* b. *innovans*; Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chi-

- unzi pass on Mt. Cerreto, 650 m and Mt. Cerreto, 600 m).
- Peltigera rufescens** (Weiss) Humb. - Terricolous. Rather sporadic.
25; 29 (1200 m); 39 (1100 m).
(Ricciardi et al.: Mt. S. Angelo a Tre Pizzi, 1300 m sub *P. canina* ssp. *canina* var. *rufescens*).
- Pertusaria albescens** (Huds.) M. Choisy et Werner - Corticolous. Frequent on the bark of various trees.
2; 5; 9; 12; 16; 21; 26; 27; 29 (1216 m); 30; 33; 36; 37; 39 (1131 m); 40; 43; 44; 45 (668 m); 48; 49; 50 (1444 m); 51; 53; 71; 72 (1135 m); 74; 75.
(Ricciardi et al.: road to S. Michele Sanctuary, Mt. Cerasuolo, 1000-1300 m sub *P. albescens* var. *albescens* f. *albescens*).
In the study area, especially on the bark of *Castanea sativa* and *Fagus sylvatica*, we found samples whose characteristics would classify them as var. *globulifera* (Turn.) Poelt. This species, previously reported for the Sorrento Peninsula by Ricciardi et al. (1976-77) between Castellone and the Sorgente dell'Acqua Santa spring, 1200-1250 m, would, according to Nimis & Martellos (2008), fall within the variability of *Pertusaria albescens*.
- Pertusaria amara** (Ach.) Nyl. - Epiphytic. Sporadic on the trunks of *Fagus sylvatica* and *Alnus cordata*.
14; 61 (1200-1400 m).
(Jatta: Mts. Lattari; Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m).
- Pertusaria flavida** (DC.) J. R. Laundon - Epiphytic. Common on the bark of various species of *Quercus* between 500 m and 800 m.
(Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m).
- Pertusaria hymenea** (Ach.) Schaer. - Epiphytic. Sporadically on trunks of various deciduous species.
2; 5; 9; 12; 16; 21; 26; 27; 29 (1216 m); 30; 33; 36; 37; 39 (1131 m); 40; 43; 44; 45 (668 m); 48; 49; 50 (1444 m); 51; 53; 71; 72 (1135 m); 74; 75.
(Ricciardi et al.: between Mt. Faito and the surrounding mountains 1000-1400 m sub *P. wulfenii*; Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m).
- *Pertusaria leioplaca** DC. - Corticolous. Frequent on the bark of various trees.
2; 5; 9; 12; 16; 21; 26; 27; 29 (1216 m); 30; 33; 36; 37; 39 (1131 m); 40; 43; 44; 45 (668 m); 48; 49; 50 (1444 m); 51; 53; 71; 72 (1135 m); 74; 75.
- Pertusaria pertusa** (Weigel) Tuck. - Epiphytic. Very common on the bark of various trees.
2; 5; 6; 8; 9; 12; 15; 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 32; 33; 34 (426 m); 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (668 m); 47; 48; 49; 50 (1444 m); 51; 53; 55; 56; 59; 60; 63; 67; 69; 70; 71; 72 (1135 m); 73; 74; 75.
(Jatta: sub *P. communis* et sub *P. c.* var. *variolosa*, Mts. Lattari; Ricciardi et al.: Sorgente dell'Acqua Santa spring, 1200-1300 m)
- *Pertusaria pustulata** (Ach.) Duby - Epiphytic. Rarely found on the bark of various trees.
32.
- *Petractis clausa** (Hoffm.) Kremp. - Calcicolous. Uncommon on rocks.
29 (1200 m).
- *Phaeophyscia ciliata** (Hoffm.) Moberg - Epiphytic. Sporadic on the bark of *Olea europea* and *Robinia pseudacacia*.
66 (400-800 m).
- Phaeophyscia insignis** (Mereschk.) Moberg - Epiphytic. Common on the bark of *Quercus ilex*.
5; 16; 17.
(Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m).
- Phaeophyscia orbicularis** (Neck.) Moberg - Epiphytic. Rare on *Robinia pseudacacia*.
66 (700 m).
(Nimis and Tretiach: Amalfi Coast, Scala, 200 m).
- *Phlyctis agelaea** (Ach.) Flot. - Epiphytic. Common on the bark of *Fagus sylvatica*.
25; 29 (1200 m); 39 (1100 m).
- Phlyctis argena** (Spreng.) Flot. - Epiphytic. Present on the bark of *Ostrya carpinifolia* Scop. and *Acer neapolitanum*.
39 (1100 m); 45; 52.
(Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m).
- Physcia adscendens** (Fr.) H. Olivier - Epiphytic and saxicolous. Very common, occurring together with *Xanthoria parietina* on rocks and on the bark of various trees.
2; 5; 6; 8; 9; 12; 15; 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 32; 33; 34 (426 m); 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (668 m); 47; 48; 49; 50 (1444 m); 51; 53; 55; 56; 59; 60; 63; 67; 69; 70; 71; 72 (1135 m); 73; 74; 75.
(Nimis and Tretiach: Amalfi Coast, Scala, 200 m and Positano, 90 m, Termini, 200 m).
- Physcia aipolia** (Humb.) Fűrnrh. - Epiphytic. Ubiquitous on the bark of various trees.
2; 5; 6; 8; 9; 12; 15; 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 32; 33; 34 (426 m); 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (668 m); 47; 48; 49; 50 (1444 m); 51; 53; 55; 56; 59; 60; 63; 67; 69; 70; 71; 72 (1135 m); 73; 74; 75.
(Ricciardi et al.: Mt. Faito, upper station of the cable car, 1000 m; Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m).
- Physcia biziana** (A. Massal.) Zahlbr. var. **leptophylla** Vezda - Epiphytic. Sporadic on acid bark, particularly on *Quercus ilex*.
6; 15; 20; 23; 32; 34 (426 m); 42; 47; 55; 56; 59; 60; 63; 67; 69; 70; 73.
(Nimis and Tretiach: Amalfi Coast, Scala, 200 m and Positano, 90 m).
- *Physcia leptalea** (Ach.) DC. - Epiphytic. Occurring in sunny places, on the bark of fruit trees and especially at the tips of terminal branches.

- 2; 5; 6; 8; 9; 12; 15; 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 32; 33; 34 (426 m); 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (668 m); 47; 48; 49; 50 (1444 m); 51; 53; 55; 56; 59; 60; 63; 67; 69; 70; 71; 72 (1135 m); 73; 74; 75.
- *Physcia stellaris** (L.) Nyl. - Corticolous. Sporadic on the bark of *Castanea sativa*.
62 (1200-1400 m).
- *Physcia tenella** (Scop.) DC. - Epiphytic. Uncommon on the trunks of various trees.
39 (1100m).
- Physconia distorta** (With.) J. R. Laundon - Epiphytic. Frequently found on *Castanea sativa*.
39 (1100 m); 61 (1200 m).
(Jatta: Mts. Lattari sub *Parmelia pulverulenta* var. *vulgaris*; Ricciardi et al.: Mt. Faito village, Mt. Cerasuolo, 1100-1200 m sub *P. pulverulenta*).
- *Physconia grisea** (Lam.) Poelt subsp. *grisea* - Epiphytic. Rare on the bark of various trees.
8.
- Physconia servitii** (Nádv.) Poelt - Epiphytic. Rather rare on the bark of *Castanea sativa*.
39 (1100 m); 61 (1200 m).
(Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m).
- Physconia venusta** (Ach.) Poelt - Epiphytic. Frequent on the bark of various trees over 500 m.
(Ricciardi et al.: Mt. Faito, 1300 m, Mt. Cerasuolo, 1100 m; Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m).
- Placidium rufescens** (Ach.) A. Massal. - Saxicolous. Frequent on calcareous soil.
2; 5; 9; 12; 16; 21; 26; 27; 29 (1216 m); 30; 31; 33; 36; 37; 39 (1131 m); 40; 43; 44; 45 (668 m); 48; 49; 50 (1444 m); 51; 53; 71; 72 (1135 m); 74; 75.
(Nimis and Tretiach: Amalfi Coast, Positano, 90 m).
- Placidium squamulosum** (Ach.) Breuss - Terricolous. On roadside soil.
39 (800-1155 m).
(Nimis and Tretiach: Amalfi Coast, Positano, 90 m).
- Placolecis opaca** (Fr.) Hafellner - Saxicolous. Common on limestone.
20; 32; 42; 47; 55; 67; 70; 73.
(Nimis and Tretiach: Amalfi Coast, Positano, 90 m).
- Placynthium nigrum** (Huds.) Gray - Saxicolous. Sporadic on limestone in humid areas over 600 m.
(Ricciardi et al.: Mt. Faito, 1150 m; Nimis and Tretiach: Amalfi Coast, Mt. Cerreto, 600 m).
- Placynthium subradiatum** (Nyl.) Arnold - Calcicolous. Rare on rocks.
17; 56 (100 m).
(Nimis and Tretiach: Amalfi Coast, Positano, 90 m).
- Platismatia glauca** (L.) W. L. Culb. et C. F. Culb. - Epiphytic. Common on the trunks of various species of *Quercus* and *Castanea sativa*, often with *Hypogymnia physodes*. Between 700 m and 900-1000 m.
(Ricciardi et al.: Sorgente dell'Acqua Santa spring, 1250 m).
- Pleurosticta acetabulum** (Neck.) Elix et Lumbsch - Epiphytic. Common on the bark of various tree species especially in open places on isolated trees or also on tree trunks in cultivated fields.
2; 5; 6; 8; 9; 12; 15; 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 32; 33; 34 (426 m); 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (668 m); 47; 48; 49; 50 (1444 m); 51; 53; 55; 56; 59; 60; 63; 67; 69; 70; 71; 72 (1135 m); 73; 74; 75.
(Ricciardi et al.: Sorgente dell'Acqua Santa spring, 1250 m sub *Parmelia acetabulum*; Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m).
- Polyblastia albida** Arnold - Saxicolous. Uncommon on limestone in rocky habitats.
39 (1100 m); 62 (1200 m).
(Ricciardi et al.: S. Michele Sanctuary, 1270 m).
- *Polyblastia nidulans** (Stenh.) Arnold - Saxicolous. On sunny rocks.
61 (1300 m).
First record for southern Italy of this species which, in mainland Italy, had hitherto only been found in Abruzzo (Nimis and Tretiach 1999).
- Porina aenea** (Wallr.) Zahlbr. - Epiphytic. Rare on the bark of various trees.
57 (100 m).
(Nimis and Tretiach: Punta Campanella, 30-100 m).
- Porina linearis** (Leight.) Zahlbr. - Saxicolous. Sporadic on calcareous rocks.
31.
(Nimis and Tretiach: Amalfi Coast, Scala, 200 m).
- Porina oleriana** (A. Massal.) Lettau - Saxicolous. Rare on limestone.
17.
(Nimis and Tretiach: Amalfi Coast, Scala, 200 m).
- Protoblastenia calva** (Dicks.) Zahlbr. - Saxicolous. Frequent on sunny rocks over 1000 m.
(Ricciardi et al.: trail to Mt. S. Michele, 1300 m sub *P. siebenhaariana* var. *siebenhaariana*; Nimis and Tretiach: Amalfi Coast, Mt. Cerreto, 600 m).
- Protoblastenia incrustans** (DC.) J. Steiner var. *incrustans* Saxicolous. Together with the previous species, on limestone.
(Ricciardi et al.: S. Michele Sanctuary, 1275 m; Nimis and Tretiach: Amalfi Coast, Mt. Cerreto, 600 m and Positano, 90 m, Punta Campanella, 30-100 m and Termini, 200 m).
- Protoblastenia rupestris** (Scop.) J. Steiner - Saxicolous. On limestone rocks in shady areas or on walls.
2; 5; 9; 12; 16; 21; 26; 27; 29 (1216 m); 30; 31; 33; 36; 37; 39 (1131 m); 40; 43; 44; 45 (668 m); 48; 49; 50 (1444 m); 51; 53; 71; 72 (1135 m); 74; 75.

- (Ricciardi et al.: roadsides from Castellammare di Stabia to Mt. Faito, 250-300 m sub *P. rupestris* var. *rupestris*; Nimis and Tretiach: Termini, 200 m).
- *Protopannaria pezizoides** (Weber) M. Jørg. et S. Ekman - Terricolous. Rare on terricolous mosses at the base of old stands of *Castanea sativa*.
39 (1200 m).
- Protoparmeliopsis muralis** (Schreb.) M. Choisy - Saxicolous. Widespread both in rocky habitats and on rocks with no tree cover.
2; 5; 6; 8; 9; 12; 15; 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 32; 33; 34 (426 m); 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (668 m); 47; 48; 49; 50 (1444 m); 51; 53; 55; 56; 59; 60; 63; 67; 69; 70; 71; 72 (1135 m); 73; 74; 75.
The samples collected at the above sites, following Clauzade et Roux (1985), could be ascribed to *Lecanora muralis* (Schreb.) Rabenh. var. *versicolor* (Pers.) Tuck since they develop on limestone and their thallus has a whitish patina in the peripheral zone. This variety is reported for the Sorrento Peninsula by Ricciardi et al. at the Sorgente dell'Acqua Santa spring at around 1250 m. Also in this case we held to the opinion of Nimis (1993a) who does not believe this to be a proper variety insofar as its different morphology is to be attributed only to the type of substrate.
- Pseudevernia furfuracea** (L.) Zopf var. *furfuracea* - Epiphytic. Particularly common on the bark of *Castanea sativa* and *Fagus sylvatica*.
29 (1216 m); 39 (1100 m).
(Ricciardi et al.: Mt. Faito 1130 m sub *P. furfuracea*).
- Psora decipiens** (Hedw.) Hoffm. - Terricolous. Frequently found on soil and limestone over 700 m.
(Ricciardi et al.: trail to Mt. St. Angelo a Tre Pizzi, 1100-1300 m; Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m).
- Psora vallesiaca** (Schaer.) Timdal - Saxicolous. Fairly common in bare calcareous rock fissures.
39 (1100 m); 61 (1200 m).
(Ricciardi et al.: Sorgente dell'Acqua Santa spring, 1200 m sub *P. albilabra*).
- *Psorotichia allobrogensis** Hue - Saxicolous. Rare on calcareous rocks.
56 (100 m).
- *Psorotichia schaereri** (A. Massal.) Arnold - Saxicolous. Rare on limestone.
39 (800-1155 m).
- *Pterygiopsis affinis** (A. Massal.) Henssen - Saxicolous. Together with the previous species.
39 (800-1155 m).
- Punctelia borreii** (Sm.) Krog - Epiphytic. Common on the bark of various trees.
8; 9; 15 (520 m); 16; 20; 22; 23; 24; 26; 31; 35; 42; 43; 44; 55; 63; 69.
(Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m).
- *Punctelia subrudecta** (Nyl.) Krog - Corticolous. Frequently found on the trunks of various trees.
6; 8; 15; 20; 22; 23; 24; 32; 34 (426 m); 35; 42; 47; 55; 56; 59; 60; 63; 67; 69; 70; 73.
- *Pyrenula chlorospila** Arnold - Epiphytic. Sporadic on the bark of various trees.
17.
- Ramalina canariensis** J. Steiner - Epiphytic. Uncommon on the bark of various trees.
57 (300 m).
(Nimis and Tretiach: Termini, 200 m).
- Ramalina farinacea** (L.) Ach. - Epiphytic. Most common on the bark of various trees.
2; 5; 9; 12; 16; 21; 26; 27; 29 (1216 m); 30; 31; 33; 36; 37; 39 (1131 m); 40; 43; 44; 45 (668 m); 48; 49; 50 (1444 m); 51; 53; 73; 74 (1135 m); 76; 77.
(Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m).
- Ramalina fastigiata** (Pers.) Ach. - Epiphytic. Very common on the trunks of various trees.
2; 5; 9; 12; 16; 21; 26; 27; 29 (1216 m); 30; 31; 33; 36; 37; 39 (1131 m); 40; 43; 44; 45 (668 m); 48; 49; 50 (1444 m); 51; 53; 71; 74 (1135 m); 76; 77.
(Ricciardi et al.: Sorgente dell'Acqua Santa spring, 1250 m sub *R. fastigiata* var. *odontata*; Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m).
- Ramalina fraxinea** (L.) Ach. - Epiphytic. Most common on the bark of various trees.
2; 5; 9; 12; 16; 21; 26; 27; 29 (1216 m); 30; 31; 33; 36; 37; 39 (1131 m); 40; 43; 44; 45 (668 m); 48; 49; 50 (1444 m); 51; 53; 71; 72 (1135 m); 74; 75.
(Jatta: Castellammare; Ricciardi et al.: Mt. Cerasuolo, 1100 m, Mt. S. Michele, 1300 m sub *R. fraxinea* var. *fraxinea*; Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m).
In the above sites we also found samples to be ascribed to var. *caliciformis* Nyl. Also in this case, we believe that the taxonomic framework proposed by Nimis & Martellos (2008) is sound, according to which, in the context of the variability of the species, the differences were not so great as to support the subdivision into variety.
- *Ramalina obtusata** (Arnold) Bitter - Epiphytic. Sporadic on the bark of conifers.
39 (1100 m).
- **Ramalina pusilla** Duby - Epiphytic. Sporadic on various trees.
8.
The first stand in southern Italy of an uncommon species on the Italian mainland, for which there are only two records in Tuscany and Lazio (Nimis & Martellos, 2008).
- Ramalina subgeniculata** Nyl. - Epiphytic. Rather common on the bark of various trees.

- 2; 5; 9; 12; 16; 21; 26; 27; 29 (1216 m); 30; 31; 33; 36; 37; 39 (1131 m); 40; 43; 44; 45 (668 m); 48; 49; 50 (1444 m); 51; 53; 71; 72 (1135 m); 74; 75.
- ***Rhizocarpon geographicum**(L.) DC. subsp. **geographicum** - Saxicolous. Rare on calcareous rocks in sparsely vegetated areas.
39 (1100 m).
- Rhizocarpon umbilicatum** (Ramond) Flagey - (Jatta sub *Diplotomma calcareum*, Mts. Lattari).
Saxicolous. Rare in calcareous rock fissures.
61 (1400 m).
- ***Rinodina bischoffii** (Hepp) A. Massal. - Saxicolous. Uncommon on bare limestone.
39 (1100 m).
- Rinodina dubyana** (Hepp) J. Steiner - Saxicolous. Rare on calcareous rocks.
57 (200 m).
(Nimis and Tretiach: Amalfi Coast, Scala, 200 m).
- Rinodina furfuracea** H. Magn. - Epiphytic. Sporadic on the bark of various trees.
57 (200 m).
(Nimis and Tretiach: Termini, 200 m).
Species reported in the Red List of lichens for Italy (Nimis & Martellos, 2008) as a species to be protected. It is rare and threatened with extinction throughout Italy. In the study area it was found in limited numbers at only one site where it is uncommon.
- ***Rinodina immersa** (Körb.) Zahlbr. - Saxicolous. Rarely found on limestone.
31.
- Rinodina lecanorina** (A. Massal.) A. Massal. - Saxicolous. Rare on calcareous rocks.
8.
(Jatta: Sorrento).
- ***Rinodina sophodes** (Ach.) A. Massal. - Epiphytic. Most common on the bark of various trees.
2; 5; 6; 8; 9; 12; 15; 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 32; 33; 34 (426 m); 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (668 m); 47; 48; 49; 50 (1444 m); 51; 53; 55; 56; 59; 60; 63; 67; 69; 70; 71; 72 (1135 m); 73; 74; 75.
- ***Rinodinella controversa** (A. Massal.) H. Mayrhofer et Poelt - Saxicolous. Sporadic on limestone.
20.
- ***Rinodinella dubyanoides** (Hepp) H. Mayrhofer et Poelt - Saxicolous. Frequently found on compact limestone.
2; 5; 6; 8; 9; 12; 15; 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 32; 33; 34 (426 m); 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (668 m); 47; 48; 49; 50 (1444 m); 51; 53; 55; 56; 59; 60; 63; 67; 69; 70; 71; 72 (1135 m); 73; 74; 75.
- ***Sarcogyne privigna** (Ach.) A. Massal. - Saxicolous. Rare on compact limestone.
39 (1100 m).
- Sarcogyne regularis** Körb. var. **regularis** - Saxicolous. Sporadic on more or less compact limestone.
39 (1100 m), 61 (1300 m).
(Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m Scala, 200 m, Termini, 200 m).
- Schismatomma decolorans** (Sm.) Clauzade et Vezda - Epiphytic. Rare on the bark of various trees.
57 (200 m).
(Nimis and Tretiach: Punta Campanella, 30-100 m and Termini, 200 m).
- Schismatomma dirinellum** (Nyl.) Zahlbr. - Epiphytic. Like the previous species.
57 (200 m).
(Nimis and Tretiach: Punta Campanella, 30-100 m).
- Schismatomma graphidioides** (Leight.) Zahlbr. - Epiphytic. Rare on the bark of various trees.
39 (1100 m); 57 (200 m).
(Nimis and Tretiach: Termini, 200 m).
- ***Schismatomma pericleum** (Ach.) Branth et Rostr. - Epiphytic. Particularly rare on the trunks of various species of *Acer*.
26.
Rare species in southern Italy (Nimis & Martellos, 2008) and included in the Red List of lichens for Italy (ibid.) as rare and requiring protection throughout Italy.
- Scoliosporum umbrinum** (Ach.) Arnold - Epiphytic. Present on the bark of *Quercus* sp. and *Castanea sativa*.
39 (800-1100 m); 61 (1200-1400 m).
(Nimis and Tretiach: Termini, 200 m).
- Solenopsisora candidans** (Dicks.) J. Steiner - Saxicolous. Common on vertical calcareous rocks.
26; 61 (1300 m).
(Ricciardi et al.: trail between Castellone and the Sorgente dell'Acqua Santa spring, 1100-1250 m; Nimis and Tretiach: Amalfi Coast, Mt. Cerreto, 600 m)
- Solenopsisora cesatii** (A. Massal.) Zahlbr. var. **cesatii** - Saxicolous. Uncommon on calcareous rocks.
57 (200 m).
(Nimis and Tretiach: Amalfi Coast, Positano, 90 m).
- Solenopsisora olivacea** (Fr.) H. Kilius subsp. **olivacea** - Saxicolous. Sporadic like the previous species.
57 (200 m).
(Nimis and Tretiach: Amalfi Coast, Scala, 200 m and Positano, 90 m).
- Solorina saccata** (L.) Ach. - Terricolous. Common on ground in calcareous rock fissures.
28; 39 (1100 m); 61 (1200-1400 m).
(Jatta: S. Angelo a Tre Pizzi; Ricciardi et al.: Sorgente dell'Acqua Santa spring, 1250 m; Nimis and Tretiach: Amalfi Coast, Mt. Cerreto, 600 m).
- ***Sphinctrina leucopoda** Nyl. -Parasitic. Mainly on *Perusaria pertusa* on the bark of *Castanea sativa* in humid areas.

- 39 (1100 m).
- ***Sphinctrina turbinata** (Pers.) De Not. – Parasitic on other lichens growing on the bark of *Fagus sylvatica* in humid areas.
29 (1200 m).
- Squamarina cartilaginea** (With.) P. James - Saxicolous. Very common on sunny rocks.
2; 5; 6; 8; 9; 12; 15; 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 32; 33; 34 (426 m); 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (668 m); 47; 48; 49; 50 (1444 m); 51; 53; 55; 56; 59; 60; 63; 67; 69; 70; 71; 72 (1135 m); 73; 74; 75.
(Jatta: Castellammare sub *Lecanora gypsacea* var. *dufourii*; Ricciardi et al.: Castellone, 1230 m, Mt. S. Angelo a Tre Pizzi, 1100-1444 m sub *S. crassa*; Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m and Mt. Cerreto, 600 m and Positano, 90 m).
- Squamarina concrescens** (Müll. Arg.) Poelt - Terricolous and saxicolous. Common both on limestone rocks and soil pockets.
Found throughout the study area.
(Nimis and Tretiach: Amalfi Coast, Positano, 90 m).
- Squamarina gypsacea** (Sm.) Poelt - Saxicolous and terricolous. Common on soil and sunny rocks often with *Lecidea lurida* and *Lecanora muralis*.
2; 5; 6; 8; 9; 12; 15; 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 32; 33; 34 (426 m); 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (668 m); 47; 48; 49; 50 (1444 m); 51; 53; 55; 56; 59; 60; 63; 67; 69; 70; 71; 72 (1135 m); 73; 74; 75.
(Nimis and Tretiach: Amalfi Coast, Scala, 200 m and Positano, 90 m, Punta Campanella, 30-100 m).
- Squamarina lentigera** (Weber) Poelt - Saxicolous and terricolous. Sporadic on soil and sunny rocks.
39 (1100 m).
(Jatta: Amalfi sub *Lecanora lentigera*).
- Staurolemma omphalioides** (Anzi) M. Jørg. et Henssen - Epiphytic. Rare on the bark of *Quercus* sp.
15 (552 m).
(Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m).
- Staurothele immersa** (A. Massal.) Dalla Torre et Sarnth. - Saxicolous. Rare on limestone.
39 (800-1155 m).
(Nimis and Tretiach, Amalfi Coast, Scala, 200 m).
- ***Strangospora pinicola** (A. Massal.) Körb. - Epiphytic. Rather common on the bark of *Pinus* sp.
29 (1200 m), 39 (1200 m).
- Synalissa symphorea** (Ach.) Nyl. - Saxicolous. Rarely found in fissures of calcareous rocks often with *Lecidea lurida* or with *Squamarina cartilaginea* f. *pseudocrassa*.
29 (1200 m).
(Nimis and Tretiach, Amalfi Coast, Positano, 90 m).
- ***Tephromela atra** (Huds.) Hafellner var. *calcareo* (Jatta) Clauzade et Cl. Roux - Saxicolous. Uncommon on calcareous rocks in open lands.
66 (400-1100 m).
- Tephromela atra** (Huds.) Hafellner var. *torulosa* (Flot.) Hafellner - Epiphytic. On the trunks of *Juglans regia*. Widespread in the study area.
(Nimis and Tretiach: Termini, 200 m).
- ***Thelidium decipiens** (Nyl.) Kremp. - Saxicolous. Rare at the base of shady rocks.
38 (800-1100 m)
- ***Thelotrema lepadinum** (Ach.) Ach. - Epiphytic. Rare on the bark of *Pinus* sp.
39 (1200 m).
- Tomasiella arthonioides** (A. Massal.) A. Massal. - Epiphytic. Uncommon on the bark of various trees.
57 (200 m).
(Nimis and Tretiach: Amalfi Coast, Positano, 90 m, Punta Campanella, 30-100 m).
- ***Toninia albilabra** (Dufour) H. Olivier - Terricolous. Principally found in sunny areas on ground in rock fissures.
61 (1200-1400 m).
- Toninia aromatica** (Sm.) A. Massal. - Saxicolous. Rare on limestone.
57 (200 m).
(Nimis and Tretiach: Punta Campanella, 30-100 m).
- °**Toninia athallina** (Hepp) Timdal - Saxicolous. Rare on calcareous rocks.
26.
New for Campania. Previously recorded in southern Italy only for Puglia (Jatta, 1889, Nimis and Tretiach 1999).
- ***Toninia candida** (Weber) Th. Fr.
Saxicolous. Rare on vertical calcareous rocks.
26.
- Toninia diffracta** (A. Massal.) Zahlbr. - Saxicolous and terricolous. Occurs both on rock debris and on calcareous soil amongst herbaceous vegetation.
29 (1200 m); 61 (1200-1400 m).
(Ricciardi et al: Mt. S. Angelo a Tre Pizzi, 1300 m).
- ***Toninia episema** (Nyl.) Timdal - Parasitic. Rarely found on *Aspicilia calcarea* and *Verrucaria fuscula*.
29 (1200 m).
- Toninia opuntioides** (Vill.) Timdal - Saxicolous. Sporadic on calcareous rocks.
39 (1000 m).
(Nimis and Tretiach: Amalfi Coast, Positano, 90 m).
- ***Toninia plumbina** (Anzi) Hafellner et Timdal – Parasitic: occurring on *Degelia plumbea*.
29 (1100 m).
Species entered on the Red List of lichens for Italy of lichens to protect (Nimis and Tretiach, 2008) as it is rare both in Italy and regionally in Campania. Uncommon also in the study area.
- Toninia sedifolia** (Scop.) Timdal - Terricolous. Common in fissures of rocks.
26; 39 (1100m).

- (Ricciardi et al.: S. Michele Sanctuary, 1250 m sub *T. coeruleonigricans*; Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m).
- ***Usnea filipendula** Stirt. - Epiphytic. Rarely found on young branches of *Fagus sylvatica*.
61 (1300 m).
- Verrucaria calciseda** DC. - Saxicolous. Rare in calcareous rocks.
57 (100-500 m).
(Ricciardi et al.: Quisisana, 250-300 m)
- Verrucaria canella** Nyl. - Saxicolous. Very rare on calcareous rocks.
(26).
- Verrucaria cyanea** A. Massal. - Saxicolous. Rare on limestone.
66 (600-1100 m).
(Ricciardi et al.: Quisisana, 250-300 m).
- Verrucaria dufourii** DC. - Saxicolous. Common on calcareous rocks.
2; 5; 8; 9; 12; 15 (200-520 m); 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 33; 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (600 m); 48; 49; 50 (1444 m); 51; 53; 55; 63; 69; 71; 72 (1135 m); 74; 75.
(Jatta: Mts. Lattari; Nimis and Tretiach: Amalfi Coast, Mt. Cerreto, 600 m).
- Verrucaria fuscula** Nyl. - Saxicolous. On limestone growing together with the various species of *Aspicilia*.
2; 5; 8; 9; 12; 15 (200-520 m); 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 33; 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (600 m); 48; 49; 50 (1444 m); 51; 53; 55; 63; 69; 71; 72 (1135 m); 74; 75.
(Ricciardi et al.: Castellammare di Stabia – Mt. Faito road, 450 m sub *Dermatocarpon insulare*).
- Verrucaria hochstetteri** Fr. - Saxicolous. Rare on calcareous rocks.
57 (200 m).
(Nimis and Tretiach: Amalfi Coast, Mt. Cerreto, 600 m).
- Verrucaria lecideoides** (A. Massal.) Trevis. - Saxicolous. Together with the previous species.
57 (200 m).
(Nimis and Tretiach: Amalfi Coast, Positano, 90 m).
- Verrucaria macrostoma** DC. - Saxicolous. Fairly common on limestone rocks or the plaster of retaining walls.
2; 5; 8; 9; 12; 15 (200-520 m); 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 33; 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (600 m); 48; 49; 50 (1444 m); 51; 53; 55; 63; 69; 71; 72 (1135 m); 74; 75.
(Nimis and Tretiach: Punta Campanella, 30-100 m).
- Verrucaria marmorea** (Scop.) Arnold - Saxicolous. Common on limestone rocks on hillsides up to the montane belt.
2; 5; 8; 9; 12; 15 (200-520 m); 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 33; 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (600 m); 48; 49; 50 (1444 m); 51; 53; 55; 63; 69; 71; 72 (1135 m); 74; 75.
(Jatta: Mts. Lattari sub *V. purpurascens*; Ricciardi et al.: Castellone, 1230 m).
- Verrucaria muralis** Ach. - Saxicolous. Rare on limestone.
26.
(Jatta: Mts. Lattari).
- Verrucaria nigrescens** Pers. - Saxicolous. Common on limestone in humid areas.
2; 5; 8; 9; 12; 15 (200-520 m); 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 33; 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (600 m); 48; 49; 50 (1444 m); 51; 53; 55; 63; 69; 71; 72 (1135 m); 74; 75.
(Jatta: Cava dei Tirreni sub *V. fusca*, Stabian valleys and Cava dei Tirreni sub *V. controversa*; Ricciardi et al.: Vena Spaccata, 560 m; Pizzo delle Monache, 640 m; Nimis and Tretiach: Amalfi Coast, Scala, 200 m and Positano, 90 m, Punta Campanella, 30-100 m).
- Verrucaria tectorum** (A. Massal.) Körb. - Saxicolous. Rather rare on calcareous rocks.
57 (200 m).
(Nimis and Tretiach: Termini, 200 m).
- Xanthoria calcicola** Oksner - Saxicolous. Fairly common on limestone in rocky habitats.
39 (1100 m); 66 (400 m); 73.
(Ricciardi et al.: Sorgente dell'Acqua Santa spring, 1250 m sub *X. ectanea*; Nimis and Tretiach: Punta Campanella, 30-100 m).
- Xanthoria parietina** (L.) Th. Fr. - Saxicolous. Most common on the bark of various trees and on limestone.
2; 5; 6; 8; 9; 12; 15; 16; 20; 21; 22; 23; 24; 26; 27; 29 (1216 m); 30; 31; 32; 33; 34 (426 m); 35; 36; 37; 39 (1131 m); 40; 42; 43; 44; 45 (668 m); 47; 48; 49; 50 (1444 m); 51; 53; 55; 56; 59; 60; 63; 67; 69; 70; 71; 72 (1135 m); 73; 74; 75.
(Ricciardi et al.: Mt. Faito village, 1100 m; Nimis and Tretiach: Amalfi Coast, between Ravello and the Valico di Chiunzi pass on Mt. Cerreto, 650 m, Termini, 200 m).

Conclusions

In the catalogue, 363 taxa are listed. Of these, 118 had never before been found in the Sorrento peninsula, 11 are new records for Campania and four for the southern Italian mainland. This is the first recorded occurrence of *Lecanora bandolensis* B. de Lesd. on the Italian mainland since up to now this species was only reported in Sardinia and Sicily. Importantly, the list comprises eight species included in the Red List of lichens for Italy of Italian lichens needing protection. In particular, in the study area *Calicium lenticulare* Ach., *Rinodina furfuracea* H. Magn. and *Schismatomma pericleum* (Ach.) Branth et Rostr., listed as rare throughout Italy, are very uncommon. *Caloplaca cretensis* (Zahlbr.) Wunder, which is considered a rare species both in Italy and Campania, also occurs sporadically in the location where it was found. Furthermore, *Lobaria amplissima* (Scop.) Forssell, reported as a species needing protection in northern Italy, is also rare in the study area. Finally, for *Collema fasciculare* (L.) F. H. Wigg, *Toni-na plumbina* (Anzi) Hafellner et Timdal and *Pannaria conoplea* (Ach.) Bory, which are considered rare in Campania, the rarity of the first two was confirmed, while the third proved fairly common.

Concerning the forms of growth, as codified by Nimis & Martellos (2008), crustose lichens were the most widespread (65%), followed by foliose lichens (21%), fruticose lichens (7%), squamulose lichens (6%) and leprous lichens (only 1%). As for the type of substrate, 47% of the lichens detected were epiphytic, 41% saxicolous, 11% terricolous and only 1% lignicolous.

Compared to the data reported elsewhere on lichens surveyed in other areas of Campania (Aprile et al., 2002-2003b), it may be worth mentioning that the values recorded for the Sorrento peninsula do not significantly differ from those occurring in other areas where similar studies were carried out. As regards growth forms, the highest affinities were found with the Matese mountains. As for the type of substrate, except epiphytic and saxicolous lichens which showed no major differences in the various areas, for lignicolous and saxicolous species the atypical nature of the lichen flora of the Matese was confirmed, compared to that of the other areas, being the only area where a considerably higher percentage (10%) of lignicolous lichens was found. Concerning

phytocoimatic groups, in the Sorrento peninsula, lichens with a generic temperate distribution are the most widespread. Also in this case, comparison with other areas of Campania where similar analyses were carried out, shows that the lichen flora of the Sorrento peninsula is most similar to that of the Matese mountains.

Data analysis

The lichen distribution in the study area showed a pattern strongly related to altitude and to environmental degradation due to human disturbance. Fig. 3 shows the dendrogram according to the numerical clustering of the sample plots.

Three main groups are evident, the first (cluster A) being strongly differentiated compared with the other two (cluster B and cluster C).

Two sample plots (66 and 74) with extreme floristic poverty may represent a further isolated cluster. However, floristic poverty, as well as the distribution in the PCA dispersion (see below), allow these two stations to be assimilated preferentially to cluster A. The list of the sample plots with their assignment to each of the three clusters is shown in Table 1.

PCA confirmed the groups identified by cluster analysis (Fig. 4). The biplot also showed the absence of differential species in cluster A, whereas clusters B and C were differentiated by two different groups of characteristic species (Table 2).

The floristic poverty of cluster A (Table 3) is worth mentioning, as no differential species were found, contrasting with the other two. This should depict the strong linkage to the fact that the sample plots in this group mainly included degraded environments (roadsides, urban settlements, ruderal or tourist areas, etc.).

This may represent the pattern of human disturbance upon the characteristics of these environments, regardless of other ecological factors (e.g. altitude). Floristic diversity is highest in cluster C, which consisted primarily of sites in the mountain belt, while it has intermediate values in cluster B, consisting of sites lower down in the foothills and hills. Cluster A sites, the most species-poor, were located at different altitudes and showed no clear relationship between altitude and species number. They probably correspond to local conditions of environmental

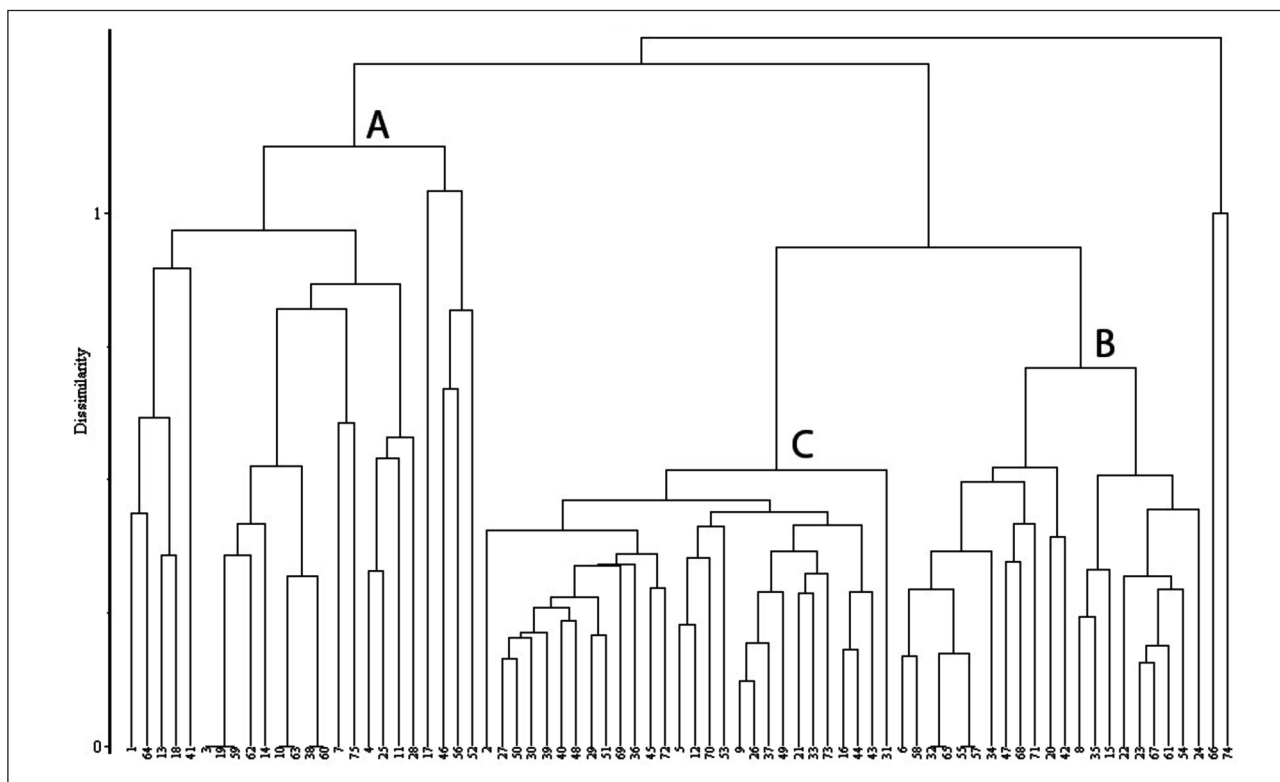


Fig. 3 - Dendrogram produced by cluster analysis on sample plots.

Table 1 - Attribution of the sample plots to the three clusters.

Cluster A		Cluster B		Cluster C	
N.	Sample plot	N.	Sample plot	N.	Sample plot
1	Acqua dei Porci	6	Acquata	2	Acqua dell'Orto
3	Sorgente dell'Acqua Santa spring	8	Bosco Annunziata	5	Acqua Fredda
4	Acqua delle Scorchie	15	Colle Giordano	9	Campo del Pero
7	Belvedere	20	Grotta Piana	12	Colle di Carpaneto
10	Castellone	22	La Punta	16	Colle S. Angelo
11	Cist.a Menatora	23	Le Chianche	21	Il Castello
13	Colle Frisco	24	Mt. Brusale	26	Mt. Caliello
14	Colle Garofalo	32	Mt. Coppola	27	Mt. Candelitto
17	Amalfi Coast	34	S. M. del Popolo	29	Mt. Cerasuolo
18	Croce dell'Eremita	35	Mt. Della Rena	30	Mt. Cerreto
19	Croce della Conocchia	42	Mt. l'Uomo a Cavallo	31	Mt. Cervegialano
25	Mt. Calabrice	47	Mt. Piano	33	Mt. del Demanio
28	Mt. Cavillo	54	Colle Monticelli	36	Mt. di Chiunzi
38	Mt. Faito-Castellammare di Stabia road	55	Ostello dei Galli	37	Mt. di Mezzo
41	Agerola-Amalfi and Castellammare-Agerola road	57	Pizzo delle Monache	39	Mt. Faito
46	Mt. Pendolo	58	Punta Campanella	40	Mt. Finestra
52	Madonna di Loreto	61	Santuario S.Michele	43	Mt. Lattari
56	Sorrento Peninsula	65	Vico Equense-Mt. Faito road	44	Mt. Murillo
59	S. Pietro	66	Termini	45	Mt. Muto
60	S. Angelo a Tre Pizzi	67	Vena Bianca	48	Mt. Rotondo
62	Selva di Casola	70	Vena Secata	49	Mt. S.Erasmo
63	Trail to S. Angelo a tre Pizzi			50	Mt. S.Michele
64	Spina Infuocata			51	Mt. tre Colli
66	Telegrafo			53	Montalto
74	Vena del Covello			68	Vena Galli
75	Vico Equense			69	Vena Scalandrone
				71	Vena Spaccata
				72	Vene di Falconara

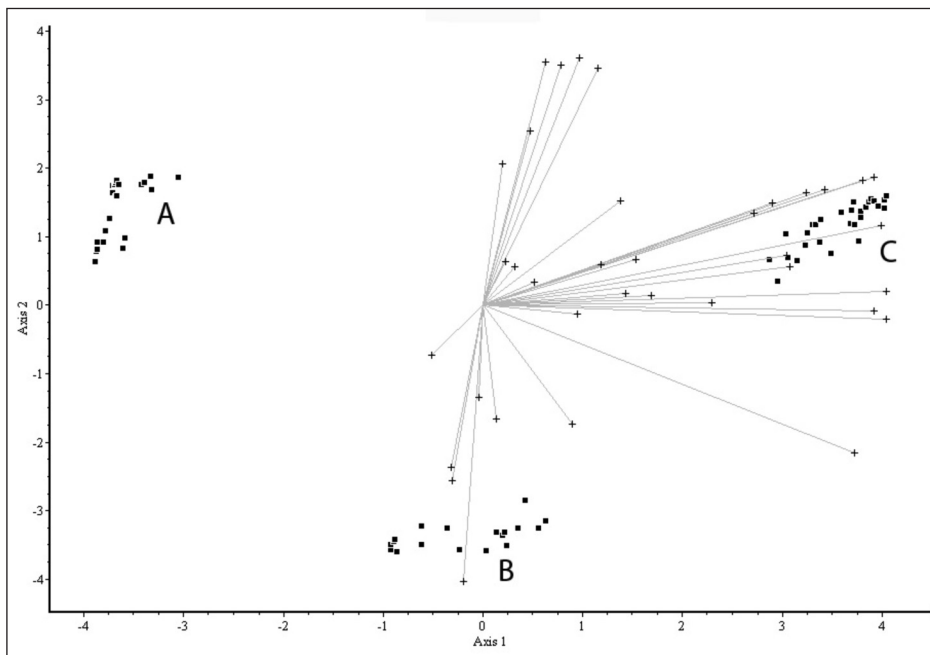


Fig. 4 - Biplot of the species-stations Principal Components Analysis (PCA). The squares represent the sampling stations whereas the arrows followed by a small cross show the species dispersion. Axes 1 and 2 explain respectively 49% and 24% of variability.

Table 2 - Differential species of clusters B and C, with the corresponding frequency classes (I: 0-20%; II: 20-40%; III: 40-60%; IV: 60-80%; V: 80-100%).

Differentials of cluster B				
Species	frequency			Distribution
	A	B	C	
<i>Arthonia punctiformis</i> Ach.	-	V	-	temperate - boreal montane
<i>Arthopyrenia cinereo pruinoso</i> (Schaer.) A. Massal.	-	V	-	suboceanic
<i>Caloplaca teicholyta</i> (Ach.) J. Steiner	-	V	-	suboceanic
<i>Collema nigrescens</i> (Huds.) DC.	-	V	-	suboceanic
<i>Punctelia subrudecta</i> (Nyl.) Krog	-	V	-	temperate
<i>Naetrocymbe punctiformis</i> (Pers.) R. C. Harris	-	IV	-	holarctic - mediterranean - boreal montane
<i>Opegrapha subelevata</i> (Nyl.) Nyl.	-	IV	-	suboceanic - mild temperate
<i>Opegrapha vulgata</i> Ach.	-	IV	-	temperate
<i>Bacidia absistens</i> (Nyl.) Arnold	-	III	-	suboceanic
<i>Buellia stellulata</i> (Tayl.) Mudd.	-	III	-	mild temperate - subtropical
<i>Caloplaca lactea</i> (A. Massal.) Zahlbr.	-	III	-	temperate
<i>Naetrocymbe fraxini</i> (A. Massal.) R. C. Harris	-	III	-	mild temperate
Differentials of cluster C				
<i>Acrocordia conoidea</i> (Fr.) Köerb.	-	-	V	mild temperate
<i>Aplotomma turgida</i> (A. Massal.) A. Massal.	-	-	V	suboceanic
<i>Arthonia radiata</i> (Pers.) Ach.	-	-	V	temperate
<i>Candelariella faginea</i> Nimis, Poelt & Puntillo	-	-	V	cool temperate
<i>Candelariella xanthostigma</i> (Ach.) Lettau	-	-	V	mild temperate - holarctic - cool temperate
<i>Catillaria nigroclavata</i> (Nyl.) Schuler	-	-	V	temperate - holarctic
<i>Cladonia convoluta</i> (Lam.) Anders	-	-	V	boreal montane - circumpolar
<i>Clauzadea monticola</i> (Schaer.) Hafellner et Bellè.	-	-	V	holarctic
<i>Ochrolechia pallescens</i> (L.) A. Massal.	-	-	V	suboceanic
<i>Pertusaria albescens</i> (Huds.) M. Choisy & Werner	-	-	V	temperate
<i>Pertusaria hymenea</i> (Ach.) Schaer.	-	-	V	suboceanic - mild temperate
<i>Pertusaria leioplaca</i> (Ach.) DC.	-	-	V	temperate - holarctic
<i>Placidium rufescens</i> (Ach.) A. Massal.	-	-	V	mild temperate - holarctic - mediterranean
<i>Ramalina fraxinea</i> (L.) Ach. var. <i>fraxinea</i>	-	-	V	mild temperate
<i>Ramalina subgeniculata</i> Nyl.	-	-	V	suboceanic

Table 3 - Floristic diversity (mean and standard error of the number of species) in the three clusters produced by cluster analysis.

Group	Floristic diversity	
	No. of species	SE
Cluster A	24.7	1.3
Cluster B	54.6	1.4
Cluster C	83.2	2.8

degradation due to human disturbance. By contrast, composition of both clusters B and C seemed linked to increasing altitude, cluster B being mainly widespread at predominantly hilly elevations, and cluster C occurring at higher altitudes (Fig. 5). For the last two groups a significant growth in species number

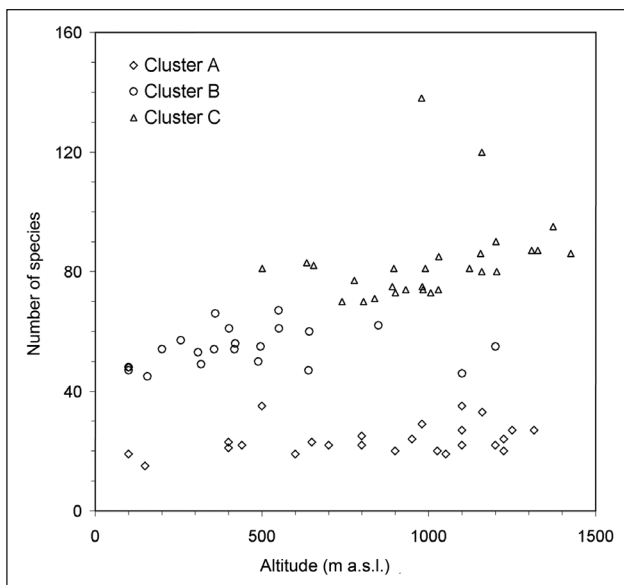


Fig. 5 - Relationship between species number and altitude in the stations of the three clusters.

occurs with increasing altitude.

This same trend was evident in the analysis of differential species. The graph (Fig. 6) shows a higher incidence of holarctic and broadly defined temperate species in mountain cluster C, while more numerous suboceanic species and, to a lesser extent, montane-boreal species are found in the hilly cluster B.

While working on this project, our friend and co-author Raffaele Garofalo passed away. Our grief at this loss is compounded by the fact that we were unable to see this project together with him through to completion. All those who knew him appreciated both his mildness of character and the determination and constancy which he applied to studying lichens. With affection and gratitude, we wish to dedicate this work to his memory.

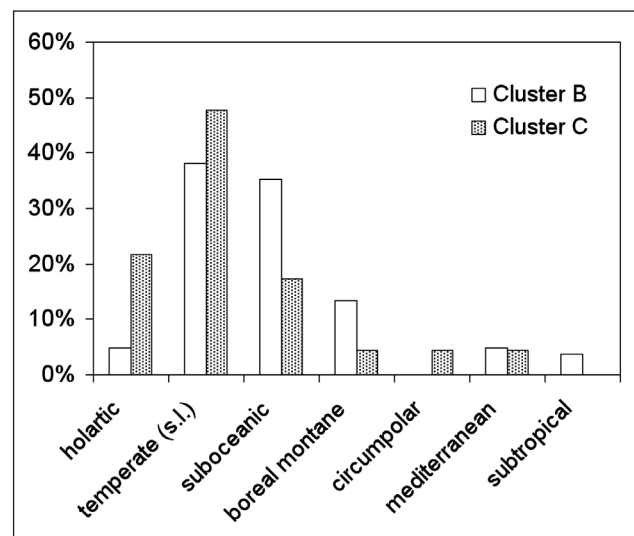


Fig. 6 - Phytoclimatic spectrum of differential species occurring in clusters B and C.

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Summary: A survey of the lichen flora of the Sorrento peninsula was carried out through field research and investigations in herbaria and in the literature. The flora was found to comprise 363 taxa, including 118 new taxa for the Sorrento peninsula, 4 for southern Italy and 11 for the Campania region. Furthermore, *Lecanora bandolensis* B. de Lesd. had never been reported in previous studies on the lichen flora of mainland Italy. Emphasis must be laid on the occurrence in this area of eight taxa mentioned in the Red List of lichens for Italy (Nimis & Martellos, 2008). As regards growth forms, analysis shows a high rate of crustose lichens (65%), followed by foliose (21%), fruticose (7%), squamulose (6%) and leprous (1%). As for the type of substrate, the most widespread were epiphytic (47%), and saxicolous (41%) lichens. Terricolous lichens accounted for 11% and lignicolous only 1%. These values are similar to those reported for other areas of Campania. With regard to phytoclimatic groups, in the Sorrento peninsula, lichens with a temperate distribution are the most widespread. Comparison with other areas in Campania shows that the lichen flora of the Sorrento peninsula is closest to that of the Matese mountains. The statistical analysis showed that the lichen distribution pattern in the study area is strongly related to altitude and to environmental degradation due to human disturbance.

