

Notulae to the Italian flora of algae, bryophytes, fungi and lichens: 7

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Abstract

In this contribution, new data concerning algae, bryophytes, fungi, and lichens of the Italian flora are presented. It includes new records and confirmations for the algae genus *Chara*, the bryophyte genera *Cephalozia*, *Conardia*, *Conocephalum*, *Didymodon*, *Sphagnum*, *Tetraplodon*, and *Tortula*, the fungal genera *Endophyllum*, *Gymnosporangium*, *Microbotryum*, *Phragmidium*, and *Pluteus*, and the lichen genera *Candelariella*, *Cladonia*, *Flavoplaca*, *Lichenothelia*, *Peltigera*, *Placolecis*, *Rinodina*, *Scytinium*, and *Solenopsisora*.

Keywords

Ascomycota, Basidiomycota, Bryidae, Charophyceae, Jungermanniidae

How to contribute

The text of the records should be submitted electronically to: Cecilia Totti (c.totti@univpm.it) for algae, Marta Puglisi (mpuglisi@unict.it) for bryophytes, Alfredo Vizzini (alfredo.vizzini@unito.it) for fungi, Sonia Ravera (sonia.ravera@unimol.it) for lichens.

Floristic records

ALGAE

Chara globularis Thuill. (Charophyceae)

+ **LIG:** via Scarpanto, Genova Pegli (Genova) cement tank for irrigation purposes (UTM WGS84: 32T 484124.4920804), 195 m, 6 June 2018, D. Dagnino, C. Turcato (GE-578, FI). – Species new for the flora of Liguria.

The site of discovery belongs to a private property within an agricultural area in proximity of the city of Genova, characterized by a Mediterranean climate. The persistence of this site is strictly dependent on the use of the irrigation tank (assuring the water flow) and its management (e.g., cleaning-up of the tank, use of fertilizers, etc). *Chara globularis* is very similar to *Chara delicatula* C.Agardh (following Bazzichelli and Abdelahad 2009), from which it is distinguished because of the characteristics of the stipuloid (rudimentary), of the leaflets (shorter) and by the isostic cortex (Bazzichelli and Abdelahad 2009). Another difference is in their ecology: *Chara delicatula* has been reported in oligotrophic lakes with low calcium concentration, while *C. globularis* has

been observed in lakes rich in calcium and phosphorus (Krause 1997). *Chara globularis* is the species most frequently reported in Italy after *Chara vulgaris* L. It has been reported in Trentino-Alto Adige, Piemonte, Lombardia, Veneto, Friuli Venezia Giulia, Toscana, Marche, Umbria, Lazio, Sardegna, and Sicilia (Bazzichelli and Abdelahad 2009).

D. Dagnino, C. Turcato, G. Barberis

Chara contraria A.Braun ex Kützing (Charophyceae)

+ **LIG**: agricultural landscape along via Scarpanto, hills near Genova Pegli (Genova) cement tank for irrigation purposes (UTM WGS84: 32T 484112.4921069), 230 m, 6 June 2018, D. Dagnino, C. Turcato (GE 572, FI); Rio Pareto valley, Valbrenna (Genova) puddle close to the road (UTM WGS84: 32T 507040.4935428), 960 m, 1 September 2018, D. Dagnino, A. Costa (GE 571, FI). – Species new for the flora of Liguria.

+**PIE**: Brignola lake, Maudagna valley, Alps of Cuneo, Magliano Alpi (Cuneo) (UTM WGS84: 32T 402318.4894083), 2139 m, 9 August 2018, D. Dagnino, C. Calise (GE 570, FI); tributary placed northeast of Molino del Pio, along the SP147 road, Borbera valley, Carrega Ligure (Alessandria), puddle close to the road (UTM WGS84: 32T 512404.4942485), 685 m, 10 September 2018, D. Dagnino, C. Turcato (GE 573, FI); Northern slope of Costa Lavezzara, “Alberghi” road, Bosio (Alessandria) ditch along the road (UTM WGS84: 32T 483847.4933913 and UTM WGS84: 32T 483795.4933883), 573 m, 12 July 2018, D. Dagnino, C. Turcato, G. Barberis (GE 574, FI; GE 590, FI); Northwestern slopes of M. Tobbio, along the road between Capanne di Marcarolo and Eremiti, Bosio (Alessandria), cane field of *Phragmites australis* (Cav.) Trin. ex Steud. (UTM WGS84: 32T 484135.4938346), 551 m, 12 July 2018, D. Dagnino, C. Turcato, G. Barberis (GE 575). Between C.na Meriana e C. Acquestriate, Voltaggio (Alessandria), puddles along the creek (UTM WGS84: 32T 488217.4937024), 457 m, 12 July 2018, D. Dagnino, C. Turcato, G. Barberis (GE 576, FI). – Species new for the flora of Piemonte.

The listed sites differ from each other in ecological (puddles, cement tank, cane field, lake) and climatic conditions (Mediterranean, Continental, and sub-Alpine). *Chara contraria* was found in connection with the habitat of Community interest cod. 7220* (GE 571 and GE 573) and cod. 3130 (GE 570). Except for the alpine site (GE 570), where *C. contraria* covers more than 1,000 m², all the sites occupy much smaller areas and are subjected to human frequentation. Some of them belong to protected areas (i.e., Site of Community Importance “Alte Valli Pesio e Tanaro” cod. IT1160057, GE 570 and “Capanne di Marcarolo” cod. IT 1180026, GE 574, 576, 590). The difficulties in distinguishing *C. contraria* from *C. vulgaris* L. could explain the low number of reports in Italy, where the species is known from Veneto, Lombardia, Lazio, Sicilia (Bazzichelli and Abdelahad 2009), Trentino-Alto Adige (Bolpagni et al. 2013) and Friuli Venezia Giulia (Tomasella and Oriolo 2007). We identified the specimen GE 570 as *C. contraria* f. *hispidula* (A.Braun) A.Braun, according to Mouronval et al. (2015); this taxon is not listed in the Italian flora (Bazzichelli and Abdelahad 2009).

D. Dagnino, C. Turcato, G. Barberis

BRYOPHYTES

Cephalozia pleniceps (Austin) Lindb. (Cephaloziaceae)

+ **FVG**: Casera Cordin Grande, Paularo (Udine), on moist soil in a peat bog (UTM WGS84: 33T 359977.5159429), 1726 m, 26 October 2014, *F. Sguazzin*, *L. Boemo*, *A. Boemo* (Bryophytorum Herbarium F. Sguazzin). – Species new for the flora of Friuli Venezia Giulia.

Cephalozia pleniceps is a circumpolar-boreo-arctic montane floristic element (Dierßen 2001). It grows creeping on specimens of *Sphagnum centrale* C.E.O.Jensen. It is a small, pale green leafy liverwort with longitudinally inserted, bilobed leaves and has no underleaves. The leaves are divided with the lobes rather shortly triangular, not drawn out to long, narrow points (Lockhart et al. 2012). According to Aleffi et al. (2008), the presence in Italy of *C. pleniceps* is restricted to a number of northern localities in the Administrative Regions of Valle d’Aosta, Piemonte, Lombardia, Trentino-Alto Adige, and Veneto. The report for Toscana (between Pariana and S. Carlo) by Ferrarini and Marchetti (1983) corresponds to *C. lunulifolia* (Dumort.) Dumort. Other old records for Piemonte, Lombardia and Friuli Venezia Giulia correspond to *C. bicuspidata* (L.) Dumort. Considering the confusion among *C. lunulifolia*, *C. connivens* (Dicks.) Lindb., *C. macrostachya* Kaal., and *C. bicuspidata* (L.) Dumort, herbarium material pre-dating Müllers’ flora (1951–58) should be revised (Aleffi et al. 2008). The species is not widespread in the Mediterranean basin, being reported only for Montenegro, Turkey, Spain, France, and Italy (Ros et al. 2007). Its range includes central and eastern Europe, including Fennoscandia, Baltic States, Poland, Belarus, Ukraine, Russia, Caucasus, Switzerland, Austria, Slovakia, Slovenia, and Romania (Lockhart et al. 2012). According to Hodgetts (2015), *C. pleniceps* is considered Vulnerable in Ireland, Spain and Czech Republic, Critically Endangered in Italy, Regionally Extinct in Netherlands, Data Deficient in Bulgaria and Hungary, Near Threatened in Slovenia.

S. Poponessi, F. Sguazzin, M. Aleffi

Conardia compacta (Müll.Hal.) H.Rob. (Amblystegiaceae)

+ **TAA**: Castle ruin of Salegg, Sciliar-Catinaccio Nature Park (Naturpark Schlern-Rosengarten), Castelrotto (Bolzano) at the foot of the castle wall, shady, damp soil, calcareous/dolomite coarse gravel (UTM WGS84: 32T 696170.5156802), 1110 m, 30 March 2018, *W. Tratter*, conf. *D. Spitale* (Herb. BOZ: BRYO 2615); on the northern site of the castle ruin of Castelvecchio di Siusi, Sciliar-Catinaccio Nature Park (Naturpark Schlern-Rosengarten), Castelrotto (Bolzano), at the foot of the castle rocks (dolomite) on damp soil and under boulders, (UTM WGS84: 32T 696956.5156837), 1210 m, 2 April 2018, *W. Tratter* (Herb. BOZ: BRYO 2617). – Species confirmed for the flora of Trentino-Alto Adige.

The occurrence at the castle ruin of Salegg is new, while the presence at the castle ruin of Castelvecchio di Siusi is confirmed after more than 100 years (Dalla Torre and Sarnthein 1904). Cortini Pedrotti (2006) reported this rare species for old walls, clay soil, damp, alkaline, shady substrates, especially dolomitic rocks, distributed from the hilly to the subalpine zone. According to Aleffi et al. (2008), this species occurs in Italy only in three Administrative Regions: Piemonte, Lombardia and Trentino-Alto Adige. In the latter Region, records have not been confirmed over the last 50 years. *C. compacta* is considered threatened in many European countries (Hodgetts 2015).

P. Mair, W. Tratter, D. Spitale

Conocephalum salebrosum Szweyk., Buczk. & Odrzyk (Conocephalaceae)

+ **CAL:** Pachina torrent, Canolo (Reggio Calabria), on calcareous rocks (UTM WGS84: 33S 602074.4241854), 630 m, 1 July 2018, leg. *G. Spanpinato*, det. *M. Puglisi* (CAT). – Species new for the flora of Calabria.

Conocephalum salebrosum is a recently described species, strictly related to *C. conicum* (L.) Dumort. It was considered a cryptic species of the *C. conicum* complex, originally detected on the basis of isozyme studies (Szweykowski et al. 2005). Later, some morpho-anatomical differences were found in the structure of archegoniophores and sporophytes, as well as in sterile thalli, thus establishing a set of diagnostic characters distinguishing *C. conicum* from *C. salebrosum*. It is reported as a holarctic species, widespread throughout Europe, eastern Asia and North America. Conversely, in Italy this species is known only for a few localities of the northern and central peninsula, where it was collected on moist substrata (rocks, soil, sandstone) (Tacchi et al. 2009, Privitera et al. 2010, Poponessi et al. 2014, Ravera et al. 2017). In the summer 2018, during a field study carried out along the humid areas of the Thyrrhenian slope (eastern foothills) of the Aspromonte massif, *C. salebrosum* was collected along stream banks where it colonized damp calcareous rocks mixed to *Oxyrrhynchium speciosum* (Brid.) Warnst. The site is characterized by the presence of the rare fern *Woodwardia radicans* (L.) Sm.. The vegetation belongs to the alliance *Adiantion capilli-veneris* Br.-Bl. ex Horvatic 1939, referred to the habitat 7250 Mediterranean wet inland cliffs of the 92/43/EC Habitat Directive.

M. Puglisi

Didymodon umbrosus (Müll.Hal.) R.H.Zander (Pottiaceae)

+ **MAR:** Fiorenzuola di Focara (Pesaro) (UTM WGS84: 33T 325211.4868748 on moist wall, 165 m, 5 September 2018, leg. and det. *F. Prosser*, conf. *J. Kučera* (Herb. Prosser No. 03054). – Species new for the flora of Marche.

Didymodon umbrosus was reported in Italy only from Sicilia (Aleffi et al. 2008), where it was found by Gueli et al. (2001). According to Frahm (2006), it is probably a

neophyte of American origin, found for the first time in Europe in Barcelona (Spain) by Casas de Puig (1970). It is a robust plant with leaves up to 2 mm long, mamilllose rather than papillose, bistratified at margin, with cells of the lower part clearly different from those of the median and upper parts. The specimens from Fiorenzuola lack the typical specialized asexual reproduction by multicellular tubers on proximal rhizoids, as also noted by Jan Kučera who confirmed the determination.

F. Prosser

Sphagnum angustifolium (C.E.O.Jensen ex Russow) C.E.O.Jensen (Sphagnaceae)

+ **FVG**: Corona Mountain, Pontebba (Udine), in a peat bog, (UTM WGS84: 33T 371686.5156999), 1757 m, 2 November 2014, *F. Sguazzin*, *L. Boemo*, *A. Boemo* (Bryophytorum Herbarium F. Sguazzin). – Species new for the flora of Friuli Venezia Giulia.

Sphagnum angustifolium forms loose carpets of slender green or yellowish shoots in minerotrophic flushes on banked and raised bogs, or in woodland (Lockhart et al. 2012). It is rarely found in Italy and has been confirmed only for Valle d’Aosta, Piemonte and Lombardia; according to Aleffi et al. (2008), this taxon is reported, with old reports, for Emilia-Romagna too. In the Mediterranean basin it is known for Bulgaria, Spain, France, Italy, Portugal, Serbia, Slovenia, and, with only a single locality, for Greece and Montenegro (Ros et al. 2013). Besides Europe, this species is reported for North America and Asia. It is assigned to the Circumpolar Boreal-montane geographic element (Smith 2004). According to Hodgetts (2015), *S. angustifolium* is considered Vulnerable in Serbia and Near Threatened in Hungary, Switzerland, and Germany.

S. Poponessi, F. Sguazzin, M. Aleffi

Tetraplodon angustatus (Hedw.) Bruch & Schimp. (Splachnaceae)

+ **TAA**: 0,5 km SW of Bad Maistatt, Alta Val Pusteria, Villabassa (Bolzano) on top of a boulder wall along the forest road in spruce forest (UTM WGS84: 33T 284500.5178500) 1370 m, 9 May 2013, *W. Tratter*, conf. *P. Mair* (Herb. BOZ: BRYO 1086); 0,5 km E Ober-Gerstgras Hof, Val di Senales, Gruppo di Tessa (Bolzano) on a shaded rock in a boulder field on the hillside above the road (UTM WGS84: 32T 638500.5177500), together with *Tetraplodon mnioides* (Hedw.) Bruch & Schimp. on boulders densely covered by bryophytes (*Hedwigia ciliata* (Hedw.) P.Beauv. and *Hypnum cupressiforme* Hedw.) and lichens, 1800 m, 12 June 2014, *W. Tratter*, conf. *P. Mair* (Herb. BOZ: BRYO 4610); ‘Rotwandwiesen’ on path no. 15a, in direction of Passo Monte Croce Comelico, Croda Rossa di Sesto, Tre Cime Nature Park (Naturpark Drei Zinnen) (Bolzano) (UTM WGS84: 33T 291498.5164664), together with *T. mnioides* within a bryophyte cushion consisting mostly of *Campylium stellatum* (Hedw.) Lange & C.E.O.Jensen and scattered shoots of *Tayloria serrata* (Hedw.) Bruch & Schimp., 1950 m, 27 July 2016, *W. Tratter*, conf. *P. Mair* (Herb. BOZ: BRYO 4612). – Species confirmed for the flora of Trentino-Alto Adige.

All specimens were found with abundant capsules. The type of substrate is undetermined in all three sites, but considering the environmental context it is likely that the species have grown above remains of dung/excrements, probably of chamois in the higher places, or on bones of animal carcasses. According to Cortini Pedrotti (2001), this species grows on dung, dead animals and plants in decomposition, from the subalpine to the alpine zone. Dierßen (2001) mentions also decaying bones of deer and sheep and, less frequently, dung and decaying wood. Therefore, the distribution is typically scattered. Previously, *T. angustatus* was reported for Trentino-Alto Adige from the eastern part of the Bolzano province – Val Pusteria and some lateral valleys (Dalla Torre and Sarnthein 1904) – and for the Trentino province before 1900 (according to Lorentz 1865, in Aleffi et al. 2008). According to Aleffi et al. (2008), the species is signaled also for Lombardia and Emilia Romagna. The species is not widespread in Europe, where it is considered Vulnerable in Czech Republic, Slovakia, and Romania and Endangered in Switzerland (Hodgetts 2015).

P. Mair, W. Tratter, D. Spitale

Tetraplodon mnioides (Hedw.) Bruch & Schimp. (Splachnaceae)

+ **TAA:** 0,5 km E Ober-Gerstgras Hof, Val di Senales, Gruppo di Tessa (Bolzano) on a shaded rock in a boulder field on the hillside above the road (UTM WGS84: 32T 638500.5177500), 1800 m, 12 June 2014, *W. Tratter*, conf. *P. Mair* (Herb. BOZ: BRYO 4611), together with *Tetraplodon angustatus* (Hedw.) Bruch & Schimp.; Innerfeldtal, 1,5 km S Dreischusterhütte, on the «Dolomitenhöhenweg», Tre Cime Nature Park (Naturpark Drei Zinnen), Dolomiti di Sesto, Sesto (Bolzano) (UTM WGS84: 33T 293500.5170500), 1730 m, 21 July 2015, *W. Tratter*, conf. *P. Mair* (Herb. BOZ: BRYO 4615); ‘Rotwandwiesen’ on path no. 15a, in direction of Passo Monte Croce Comelico, Croda Rossa di Sesto, Tre Cime Nature Park (Naturpark Drei Zinnen) (Bolzano) (UTM WGS84: 33T 300500.5169500), with *T. angustatus* and *Tayloria serrata* (Hedw.) Bruch & Schimp. 1950 m, 27 July 2016, *W. Tratter*, conf. *P. Mair* (Herb. BOZ: BRYO 4612). – Species confirmed for the flora of Trentino-Alto Adige.

All specimens were found with abundant capsules. In Italy, this species is considered rare, growing on dung, dead animals and plants in decomposition in the subalpine zone (Cortini Pedrotti 2001). Dierßen (2001) reports similar substrate preference as for *T. angustatus*, i.e., decaying bones of deer and sheep, occasionally dung and bogs or the surface of cadavers; it grows alongside paths and tracks. This species is rare in Italy, where it is recorded with old reports for Piemonte and Trentino-Alto Adige and with recent records for Lombardia (Aleffi et al. 2008). For Trentino-Alto Adige, *T. mnioides* was reported only once by Dalla Torre and Sarnthein (1904: “Taufers: St. Wolfgang im Reintal”). In Europe, it is considered threatened in many countries, i.e., Endangered in Slovakia, Romania, and Slovenia and Vulnerable in Czech Republic, Switzerland, and Montenegro (Hodgetts 2015).

P. Mair, W. Tratter, D. Spitale

***Tortula cernua* (Huebener) Lindb. (Pottiaceae)**

+ **TAA:** Castle ruin of Salegg, Sciliar-Catinaccio Nature Park (Naturpark Schlern-Rosengarten), Castelrotto (Bolzano) at the foot of the castle wall, shady, damp soil, calcareous/dolomite coarse gravel (UTM WGS84: 32T 696170.5156802), 1110 m, 30 March 2018, *W. Tratter* (Herb. BOZ: BRYO 2616); on the northern site of the castle ruin of Castelvecchio di Siusi, Sciliar-Catinaccio Nature Park (Naturpark Schlern-Rosengarten), Castelrotto (Bolzano), at the foot of the castle rocks (dolomite) on damp soil and under boulders, (UTM WGS84: 32T 696956.5156837), 1210 m, 2 April 2018, *W. Tratter*, conf. *D. Spitale* (Herb. BOZ: BRYO 2618). – Species confirmed for the flora of Trentino-Alto Adige.

The habitats preferred by this rare species are alkaline rock crevices, walls, soils of damp habitats, from the hilly to the alpine zone (Cortini Pedrotti 2001). Dierßen (2001) emphasized the alkaline preference of this species, e.g., lime waste and basic lake-sides as well as mortar, rocks etc. Dalla Torre and Sarnthein (1904) reported an observation in the area of the “Schlerngebiet” and several occurrences within the province of Bolzano. There are old reports (before 1950) for Trentino-Alto Adige, Veneto, and Friuli- Venezia Giulia and more recent records for Lombardia (Aleffi et al. 2008). In Europe, *T. cernua* is considered threatened in many countries (Hodgetts 2015).

P. Mair, W. Tratter, D. Spitale

FUNGI***Endophyllum sempervivi* (Alb. & Schwein.) de Bary (Pucciniaceae)**

+ **CAL:** Monte Pollino, Parco Nazionale del Pollino (Cosenza), on leaves of *Sempervivum tectorum* L. (UTM WGS84: 33S 601578.4417919), 2193 m, 6 May 2018, *D. Puntillo* (CLU No. 82). – Species new for the flora of Calabria.

As all the species of the genus, *E. sempervivi* has two spore stages: spermogonia and aecia. Spermogonia are subepidermal, scattered amongst the aecidia, roundish, sunken into the leaf tissue just protruding as small brown cones. The aecia are crateriforms where the aeciospores are produced. Germinating aeciospores give rise to a protobasidium; they act as teleospores, aecidioid telia with aeciditeliopores (Horst 2013). Infested leaves are strongly elongated and appear reddish at the apex. The infection is observable especially when the plants produce the first leaf rosettes. The species is present in Europe, including the Italian Alps, USA and Canada (Tykhonenko and Heluta 2017). In Calabria, it is quite common throughout the territory of the Pollino National Park.

D. Puntillo, M. Puntillo

***Gymnosporangium sabinae* (Dicks.) G. Winter (Pucciniaceae)**

+ **CAL**: Orto Botanico Università della Calabria, Rende (Cosenza), hypophyllous on leaves of *Pyrus amygdaliformis* Vill. (UTM WGS84: 33S 605850.4357176), 213 m, 19 September 2018, *D. Puntillo* (CLU No. 169). – Species new for the flora of Calabria.

The genus *Gymnosporangium* R. Hedw. ex DC. includes heteroecious, demicyclic (lacking uredinia) rusts with plants belonging to Rosaceae subfam. Maloideae (*Amelanchier*, *Crataegus*, *Cydonia*, *Malus*, *Pyrus*, and *Sorbus*) as alternate hosts and species of *Juniperus* and *Cupressus* (in Europe) as telial hosts (Kern 1911, Helfer 2005). The collected specimen had hypophyllous roestelioid aecia on gall-like protuberances growing on *Pyrus amygdaliformis* Vill. leaves. In Italy, this species is known for Toscana (Barsali 1906, Saccardo 1912, Verona 1932 sub *Gymnosporangium fuscum* DC.), and Valle d'Aosta (Traverso 1912). It is also known in aecidal form from Piemonte, Liguria, Lombardia, Veneto, Friuli Venezia Giulia, Emilia-Romagna, Lazio, Umbria, and Campania and in teleutosporic form from Piemonte, Friuli Venezia Giulia, Campania, and Puglia (Trotter 1910), Piemonte (Noelli 1905) and Lazio (Cecchi 1942).

D. Puntillo

***Microbotryum saponariae* M. Lutz, Göker, Piątek, Kemler, Begerow & Oberw. (Microbotryaceae)**

+ **CAL**: Piano di Maio, Rende (Cosenza) on anther of *Saponaria officinalis* L. (UTM WGS84: 33S 605703.4355968), 213 m, 19 July 2012, *D. Puntillo* (CLU No. 80). – Species new for the flora of Calabria.

For a long time, *Microbotryum violaceum* s.l. included many taxa, revealed recently by molecular investigations (Lutz et al. 2005), as *M. saponariae*. *Microbotryum saponariae*, as typical of the genus, cause anther-smut disease characterized by production of violet-coloured fungal spores instead of pollen in the anther of infected flowers of *Saponaria* (Caryophyllaceae), with reduced ovaries that become sterile. For Italy, Tomasi (2013) listed 13 species of *Microbotryum*. All the old collections indicated by Ciferri (1938) do not belong to *M. saponariae*, because the specimens were collected on different genera of the family (“in antheris staminibusque Caryophyllacearum plurimarum”), but never on *Saponaria officinalis* L. On the contrary, the record by Venturella (1991) for Sicilia and by Tomasi (2013) for Friuli-Venezia Giulia are to be referred to *M. saponariae*.

D. Puntillo

***Phragmidium mucronatum* (Pers.) Schltld. (Phragmidiaceae)**

+ **CAL:** Piano del Ratto, Pollino National Park (Cosenza), hypophyllous on *Rosa canina* L., (UTM WGS84: 33S 609643.4414547), 1384 m, 19 July 2018, D. Puntillo (CLU No. 100). – Species new for the flora of Calabria.

The genus *Phragmidium* Link is characterized by uredinial paraphyses, by erumpent or +/- pulverulent telia, by 3–9-celled verrucose and pedicellate teliospores provided by two or more germ-pores (including apical cell). *Phragmidium mucronatum* is distinguished by teliospores mostly 7-celled, ellipsoid with apical long papilla (15–21 µm). In Italy, it has been recorded for Lombardia, Friuli Venezia Giulia, and Veneto under the name *Phragmidium rosarum* Rabh. (Saccardo 1873); in Emilia-Romagna also under the name *P. rosarum* (Passerini 1877) and in Umbria as *Phragmidium subcorticium* (Schrank) G.Winter (Trotter 1910). More recently, it has been confirmed for Friuli Venezia Giulia (Tomasini 2007).

D. Puntillo

***Pluteus pellitus* (Pers.) P.Kummer (Pluteaceae)**

+ **CAL:** Orto Botanico Università della Calabria, Rende (Cosenza), on a dead trunk belonging to a downy oak (*Quercus pubescens* Willd.) tree (UTM WGS84: 33S 606118.4357233), 220 m, 9 October 2018, G. Sicoli, A.B. De Giuseppe, N.G. Passalacqua (CLU No. 303). – Species new for the flora of Calabria.

Pluteus pellitus is an agaricaceous, lignicolous, saprotrophic fungus, showing pileate and stipitate basidiomata, with a whitish pileus but pale brown around centre, pleurocystidia provided with 2–4 apical hooks, and clamp connections on the pileipellis hyphae, clearly distinguishing it from *Pluteus petasatus* (Fr.) Gillet (Justo et al. 2014). This species is widely distributed in northern and central Italy, but apparently not detected in southern Italy so far, except for Sicily.

G. Sicoli, A.B. De Giuseppe, N.G. Passalacqua

LICHENS***Candelariella efflorescens* R.C.Harris & W.R.Buck (Candelariaceae)**

+ **CAM:** Fosso di Pruno, Pruno di Laurino, Laurino (Salerno), on *Alnus glutinosa* (L.) Gaertn. (UTM WGS84: 33T 533363.4457236), 600 m, 12 May 2010, S. Ravera (Herb. Ravera). – Species new for the flora of Campania.

Candelariella efflorescens is a widespread species, recorded in temperate parts of North America and Europe (Westberg 2004). It is easy to find in the field because of its yellow thallus, characteristic of this genus. However, according to Nimis (2016), its distribution in Italy is still poorly known because of the similarity with the more

common *C. reflexa* (Nyl.) Lettau., usually growing in exposed and nitrogen-enriched localities. It differs from *C. efflorescens* by its distinctly effigurate almost rosette-like thallus, with lobes up to 0.6 mm long. Furthermore, the soredia are larger and formed in crateriform soralia arising in the center of the thallus and not from the margin as in *C. efflorescens*. This specimen was found in a riparian wood, in moderately shaded and humid conditions in the “Cilento, Vallo di Diano and Alburni” National Park.

S. Ravera

Candelariella subdeflexa (Nyl.) Lettau (Candelariaceae)

+ **CAM:** Marina di Pisciotta (Salerno), on *Pyrus* sp. (UTM WGS84: 33T 519319.4439914), 20 m, 22 February 2011, leg. G. Brunialti, V. Genovesi, S. Ravera, det. S. Ravera (Herb. Ravera). – Species new for the flora of Campania.

Candelariella subdeflexa is a mild-temperate, perhaps holarctic epiphytic lichen recorded in North America, southern and central Europe, North Africa, and New Zealand (Westberg 2004). It is characterised by its gray, squamulose thallus and biatorine apothecia. The lack of a thalline margin and algae at all stages of development is an uncommon character shared by few species (Westberg 2007). Among them, *C. subdeflexa* and the recently described *C. blastidiata* Yakovch. represent a “species pair” where *C. subdeflexa* reproduces by sexual propagules and *C. blastidiata* mostly vegetatively. Moreover, *C. subdeflexa* morphologically differs from the latter by having an epinecral layer and the absence of blastidia (Yakovchenko et al. 2017). *Candelariella subdeflexa* is included in the Italian red list of epiphytic lichens as “Near-threatened” (Nascimbene et al. 2013), but it is easily overlooked as the apothecia are small, mostly c. 0.2–0.4 mm wide.

S. Ravera

Candelariella viae-lacteeae G.Thor & V.Wirth (Candelariaceae)

+ **CAM:** Marina di Pisciotta (Salerno), on *Olea europaea* L. (UTM WGS84: 33T 519319.4439914), 20 m, 22 February 2011, leg. G. Brunialti, V. Genovesi, S. Ravera, det. S. Ravera (Herb. Ravera). – Species new for the flora of Campania.

Candelariella viae-lacteeae is a mild-temperate lichen. It is characterised by a grey thallus, uniformly composed of delicate granular blastidia. In a sterile state, *C. viae-lacteeae* could be confused with the recently described (Yakovchenko et al. 2017) *C. blastidiata* Yakovch. Accordingly, Italian herbarium specimens should be checked, considering also that *C. viae-lacteeae* is included in the Italian red list of epiphytic lichens as “Data Deficient” (Nascimbene et al. 2013) and it is easily overlooked. The specimen from Marina di Pisciotta was collected on a centenary olive tree, in an olive grove not far from the sea.

S. Ravera

***Catillaria servitii* Szatala (Catillariaceae)**

+ **CAM:** Marina di Camerota (Salerno), on *Juniperus* sp. (UTM WGS84: 33T 527578.4430836), 0 m, 24 February 2011, leg. G. Brunialti, V. Genovesi, S. Ravera, det. S. Ravera (Herb. Ravera). – Species new for the flora of Campania.

Catillaria servitii is a Mediterranean epiphytic lichen, common on twigs and boles of shrubs in natural or semi-natural vegetation along the coast, in areas with maritime winds. It is closely related to *C. mediterranea* Hafellner, but mostly differs for the number of spores per ascus and ecology, the latter typically occurring on several foliose and fruticose lichens (Tretiach and Hafellner 1998). Italian populations were described as *Catillaria praedicta* Tretiach & Hafellner, and only recently *C. servitii* has been found to be the earliest legitimate name for *C. praedicta* (Şenkardeşler et al. 2014). This species has been recorded in Toscana, Sardegna, Puglia, and Sicilia (Nimis 2016). The specimen from Marina di Camerota was found within Mediterranean macchia plants close to the sea, on wood of *Juniperus* shrubs.

S. Ravera

***Cladonia conista* (Ach.) Robbins (Cladoniaceae)**

+ **LOM:** surroundings of Sant’Alberto di Butrio, Abbazia Sant’Alberto, Ponte Nizza (Pavia), on basic soil at the edge of a footpath in a chestnut grove (UTM WGS84: 32T 511581.4966732), 679 m, 14 April 2017, leg. G. Gheza, det. H. Mayrhofer (Herb. Gheza). – Species confirmed for Lombardia.

Cladonia conista has been considered as a simple chemotype of *Cladonia humilis* (With.) J.R.Laundon, but recently Pino-Bodas et al. (2012) confirmed that the two species are well distinct. This species has been reported so far in Italy only from acidic dry grasslands in the Po Plain (Gheza et al. 2018). The record reported here is the first for the Apennines and for basic substrates, therefore widening the knowledge about the geographical distribution and the ecology of this species in Italy. The analyzed specimen contained fumarprotocetraric and bourgeanic acids, and differed slightly in morphology from those reported by Gheza et al. (2018), having short and wide cups on the podetia and soredia along the margin of the primary squamules, whereas the specimens from the Po Plain had more slender podetia and esorediate squamules.

G. Gheza, H. Mayrhofer

***Cladonia grayi* G.Merr. ex Sandst. (Cladoniaceae)**

+ **LOM:** surroundings of Passo del Vivione, Schilpario (Bergamo), on acidic organic soil at the edge of a footpath in a subalpine pasture with *Rhododendron* and *Vaccinium* (UTM WGS84: 32T 592509.5098876), 1830 m, 19 August 2016, leg. G. Gheza, det. H. Mayrhofer (Herb. Gheza). – Species new for the flora of Lombardia.

Cladonia grayi is a species of the *C. chlorophaea* complex in broad sense, characterized by the presence of grayanic acid (Coassini Lokar et al. 1986). The analyzed specimen contained only grayanic acid, even if the species can sometimes contain also fumarprotocetraric acid as accessory substance (Coassini Lokar et al. 1986). It occurs under *Rhododendron* shrubs at the edge of a footpath, together with *Cladonia chlorophaea* (Sommerf.) Spreng., *C. deformis* (L.) Hoffm. and *C. pyxidata* (L.) Hoffm.

G. Gheza, H. Mayrhofer

Cladonia pulvinata (Sandst.) Herk & Aptroot (Cladoniaceae)

+ **LOM**: trail between Pianezza and the Diga del Gleno, Vilminore di Scalve (Bergamo), on soil at the edge of the trail in a small clearing in a coniferous wood (UTM WGS84: 32T 583715.5095347), 1480 m, 30 April 2018, leg. G. Gheza, det. H. Mayrhofer (Herb. Gheza, GZU); trail verging the peat bog of Pian Gembro, Trivigno (Sondrio), on soil in a clearing with shrubs of *Erica carnea* and schist outcrops at the edge of the trail (UTM WGS84: 588899.5113126), 1375 m, 18 August 2018, G. Gheza (Herb. Gheza). – Species confirmed for Lombardia.

Cladonia pulvinata is a taxon of the *C. cervicornis* group raised at species level by Herk and Aptroot (2003) whose distinction from *C. cervicornis* is confirmed also by genetic data (Pino-Bodas et al. 2010, 2013). It is characterized by greenish-brown, slightly or not incised squamules which are often erected and not curled upwards when dry and by the presence of psoromic acid (P+ yellow) (Herk and Aptroot 2003). The records from Vilminore di Scalve (Val di Scalve, Orobic Prealps) and Pian Gembro (Valtellina, Rhaetic Alps) widen the Italian range of the species, which was known so far only from dry habitats in lowland areas (Gheza et al. 2018). They are also the first records of this species for the Alps (see Nimis et al. 2018). Furthermore, the specimen from Vilminore di Scalve had some podetia, being the first fertile one found in Italy. The two clearings in which the species was recorded had a semi-dry vegetation dominated by ericaceous shrubs (*Erica carnea* L., *Vaccinium myrtillus* L.) and a lichen vegetation dominated, besides *C. pulvinata* itself, by *C. floerkeana* (Fr.) Flörke in the first site and by *C. cervicornis* (Ach.) Flot. in the second site. The species could be more widespread in montane areas where proper habitat conditions occur and should also be looked for in *Pycnothelio-Cladonietum cervicornis* lichen vegetation in montane and alpine heaths.

G. Gheza, H. Mayrhofer

Cladonia subcervicornis (Vain.) Kernst. (Cladoniaceae)

+ **CAM**: Capo Palinuro, Centola (Salerno), (UTM WGS84: 33T 523341.4431313), on humus in crevices on rocks and boulderson a promontory overlooking the sea, 50 m, 12 April 2011, leg. G. Brunialti, V. Genovesi, S. Ravera, det. S. Ravera (Herb. Ravera). – Species new for the flora of Campania.

Cladonia subcervicornis (Vain.) Kernst. is a locally abundant lichen species in W Europe, Greenland and Macaronesia usually growing on siliceous rocks and on soil rich in humus in open habitats (James 2009). The primary thallus forms dense mats or small cushions of erected squamules, rather thick, up to 2 cm tall, but podetia appear very variable, branched or scyphoid, because of an unusual non-linear morphogenesis (Hammer 1992). This species has been recorded in Veneto, Piemonte, Liguria, Toscana, Sardegna, and Calabria, but it is probably somehow overlooked and more widespread in Tyrrhenian Italy (Nimis 2016).

S. Ravera

Flavoplaca flavocitrina (Nyl.) Arup, Frödén & Søchting (Teloschistaceae)

+ **BAS**: Monastery of Monticchio near Melfi (Potenza), on a wall (UTM WGS84: 33T 551880.4531800), 810 m, 16 April 1997, *P.L. Nimis*, *M. Tretiach* (sub *Caloplaca citrina*, very untypical!), rev. *P.L. Nimis*, 25 January 2019 (TSB No. 29663). – Species new for the flora of Basilicata.

+ **CAM**: Sorrento Peninsula, Punta Campanella (Napoli), on cement walls (UTM WGS84: 33T 442850.4491250), 30100 m, 19 April 2000, *P.L. Nimis*, *M. Tretiach* (sub *Caloplaca citrina*), rev. *P.L. Nimis*, 25 January 2019 (TSB No. 31713). – Species new for the flora of Campania.

+ **FVG**: Friulian plain, Tarcento (Udine), on a cement wall (UTM WGS84: 33T 362100.5119400), 250 m, August 1979, *P.L. Nimis* (sub *Caloplaca citrina*), rev. *P.L. Nimis*, 25 January 2019 (TSB No. 2793); Cemetery of Sant'Anna (Trieste), on a cement wall (UTM WGS84: 33T 406200.5053500), 2050 m, May 1995, *P.L. Nimis* (sub *Caloplaca citrina*), rev. *P.L. Nimis*, 25 January 2019 (TSB No. 20621). – Species new for the flora of Friuli Venezia Giulia.

+ **LAZ**: Anzio, Villa di Nerone (Roma), on tuff and cement wall (UTM WGS84: 33T 301250.4591100), 020 m, 1987, *P.L. Nimis*, *M. Tretiach* (sub *Caloplaca citrina*), rev. *P.L. Nimis*, 25 January 2019 (TSB No. 10013). – Species new for the flora of Lazio.

+ **MOL**: Road between Ururi and Serracapriola, half way, Casone Cantalupo (Campobasso), on wall along a creek (UTM WGS84: 33T 507900.4626350), 95 m, 13 April 1998, *P.L. Nimis*, *M. Tretiach* (sub *Caloplaca citrina*), rev. *P.L. Nimis*, 25 January 2019 (TSB No. 30202). – Species new for the flora of Molise.

+ **PIE**: Alpi Cozie, on the ridge W above Colle del Vallonetto – Vallone dell'Arma (Cuneo), on calcareous cliffs and boulders in alpine vegetation (UTM WGS84: 32T 349987.4916483), 2500 m, 23 July 2000, *P.L. Nimis*, *M. Tretiach*, with *J. Hafellner* (sub *Caloplaca citrina*), rev. *P.L. Nimis*, 25 January 2019 (TSB No. 34086). – Species new for the flora of Piemonte.

+ **PUG**: Gravina in Puglia, necropolis (Bari), on soft calcareous rocks (UTM WGS84: 33T 619000.4520000), 330 m, 7 April 1996, *P.L. Nimis*, *M. Tretiach* (sub *Caloplaca citrina*), rev. *P.L. Nimis*, 25 January 2019 (TSB No. 22726). – Species new for the flora of Puglia.

+ **SAR**: Nuraghe Santu Antine (Sassari), on asbestos wall (UTM WGS84: 32T 480500.4481800), 350 m, May 1986, *P.L. Nimis* (sub *Caloplaca citrina*), rev. *P.L. Nimis*, 25 January 2019 (TSB No. 7489). – Species new for the flora of Sardegna.

+ **SIC**: Isole Pelagie, Linosa (Agrigento), near the lighthouse, on lava (UTM WGS84: 33S 308450.3971800), 15 m, 16 April 1992, *M. Tretiach* (sub *Caloplaca* gr. *citrina*, not typical!), rev. *P.L. Nimis*, 25 January 2019 (TSB No. 17319). – Species new for the flora of Sicilia.

In the last decade, the “*Caloplaca citrina*” complex, recently transferred to the genus *Flavoplaca* (Arup et al. 2013), has been the object of revision, both in northern (Arup 2006; Powell and Vondrák 2011) and southern Europe (Vondrák et al. 2009). This species complex, which still needs a thorough revision in Italy, occurs on a wide variety of substrata, from asbestos-cement, concrete and mortar to basic siliceous rocks or even eutrophicated wood. It is very tolerant to, and even favoured by, eutrophication (e.g. urine-deposits) and is common also in urban areas and along the main highways. Most earlier samples from Italy were filed under the name *Caloplaca citrina* (Hoffm.) Th.Fr., purported to be a widespread and very common species, reported from all Regions of Italy (Nimis 1992, 1993). That species, however, proved to have a rather restricted distribution in central and northern Europe, being largely substituted by other species in the Mediterranean region (see Nimis 2016). Pending a revision of the whole complex in Italy, here we report the presence of *Flavoplaca flavocitrina*, likely the most common species of the complex in Italy, as new to several Italian Administrative Regions. The species is characterized by a relatively thin, areolate-squamulose thallus with marginal yellow soralia, and differs from *Flavoplaca citrina* s.str. in molecular characters as well as in several, subtle morpho-anatomical features (see Arup 2006).

P.L. Nimis, E. Pittao

Lichenothelia convexa Henssen (Lichenotheliaceae)

+ **ITA (SAR)**: SE Monte Rasu, near the strada provinciale ex militare, Tertenia (Nuoro), schist rocks in the macchia, on rock and on *Ingvariella bispora* (Bagl.) Guderley & Lumbsch (UTM WGS84: 32S 546835.4387442), 450 m, 25 August 2014, *W. v. Brackel* (Herb. Brackel 8063). – Species new for the flora of Italy (Sardegna).

This species is a non-lichenized fungus growing on siliceous rocks, either directly on the rock or on the thalli of saxicolous lichens such as *Lecidea* Ach. and *Acarospora* A.Massal. It is known from several European countries (Austria, Czech Republic, France, Germany, Luxembourg, Netherlands, Sweden, United Kingdom), Asia (India, Turkey), and North America (California, Colorado, Maine, Washington). This species is characterized by dispersed, sometimes congregated, black, irregularly rounded stromata of c. 100–200(–400) µm diameter with a granular surface, 8-spored asci and 1–4-septate dark brown ascospores, 10–14 × 5.0–6.5 µm (Henssen 1987, Kocourková and Knudsen 2011, Muggia et al. 2015).

W. v. Brackel

***Lichenothelia scopularia* (Nyl.) D. Hawksw. (Lichenotheliaceae)**

+ **SAR:** S Arzachena near Via Stazzu Sarra Lucia, Olbia (Olbia-Tempio), granite rocks on the roadside, on rock (UTM WGS84: 32T 533126.4542134), 390 m, 6 August 2014, W. v. Brackel (Herb. Brackel 7795); Monte dei Sette Fratelli, near Rio Picocca, Burcei (Cagliari), granite rock in the macchia, on rock and on *Aspicilia* sp. (UTM WGS84: 32S 536539.4353080), 245 m, 24 August 2014, W. v. Brackel (Herb. Brackel 7922). – Species new for the flora of Sardegna.

This species is a widespread non-lichenized fungus growing on acid rock or mica schists, sometimes also on saxicolous lichens such as *Aspicilia* A.Massal., in Italy until currently known only from the Alps (Trentino-Alto Adige, Lombardia, Piemonte; Nimis 2016). This species is characterized by a black aerolate thallus, ascomata 12–170(–300) μm , 8-spored asci and 1–3-septate to submuriform golden to dark brown ascospores (Hawksworth 1981).

W. v. Brackel

***Peltigera extenuata* (Nyl. ex Vain.) Lojka (Peltigeraceae)**

+ **PIE:** I Ronchi, Valsesia (Vercelli), on terricolous mosses in mixed forest (UTM WGS84: 32T 417955.5079233), 1390 m, 20 August 2017, leg. C. Vallese det. R. Benesperi, C. Vallese (Herb. Benesperi). – Species new for the flora of Lombardia.

Peltigera extenuata is a foliose species characterized by the presence of strictly laminar soredia (Goward et al. 1995). It is a terricolous species ecologically and morphologically similar to *P. didactyla* (With.) J.R.Laundon, but differs having a C+ red reaction of the medulla (Nimis et al. 2016). It is often considered as a variety of the latter species, but according to Goffinet et al. (2003) these species are well distinct.

C. Vallese, J. Nascimbene, R. Benesperi

***Peltigera membranacea* (Ach.) Nyl. (Peltigeraceae)**

+ **LIG:** Margheria dei Boschi (Imperia), on terricolous mosses in a fir wood (UTM WGS84: 32T 388517.4867105), 1220 m, 23 April 2016, leg. M. Ottonello, det. R. Benesperi, C. Vallese (Herb. Benesperi). – Species new for the flora of Liguria.

Peltigera membranacea is a foliose species growing on mosses, mossy rocks, at the base of trunks in old woodlands and on calcareous soils with an optimum in the mountain belt (Vitikainen 1994; Goward et al. 1995; Nimis et al. 2016). This species is characterized by the absence of lichen substances and a tomentose upper surface, and it may be distinguished by the lower surface with narrow veins with polygonal interstices and by the simple tomentose rizines (Goward et al. 1995; Benesperi and Giordani 2012). In accordance with the phylogenetic analysis of Miadlikowska and Lutzoni

(2000), *P. membranacea* is included in the *Peltigera* group with other common species for Italy, such as *P. canina* (L.) Willd., *P. rufescens* (Weiss) Humb., *P. praetextata* (Sommerf.) Zopf, *P. ponojensis* Gyeln., *P. didactyla* (With.) J.R.Laudon, or rare species, such as *P. lepidophora* (Vain.) Bitter and *P. kristinsonnii* Vitik.

C. Vallese, M. Ottonello, P. Giordani, R. Benesperi

Peltigera ponojensis (Stenh.) Gyeln. (Peltigeraceae)

+ **LIG**: S. Giovanni dei Prati (Imperia), on clayish soil (UTM WGS84: 32T 400010.4867831), 1170 m, 24 April 2016, *M. Ottonello det. R. Benesperi, C. Vallese*; Margheria dei Boschi (Imperia), on terricolous mosses in a fir wood (UTM WGS84: 32T 388517.4867105), 1220 m, 15 May 2016, leg. *M. Ottonello, det. R. Benesperi, C. Vallese* (Herb.Benesperi). – Species new for the flora of Liguria.

Peltigera ponojensis is a terricolous foliose species with a tomentose upper surface with upturned lobes (Vitikainen 1994; Nimis et al. 2016). According to Nimis and Martellos (2017) this species is rare on upland areas of Italian Alps. However, it could be more widespread since it can be confused with several *Peltigera* species as in the case of *P. rufescens* (Weiss) Humb. *P. ponojensis* has typical simple rhizines and thicker, paler and protuding veins (Vitikainen 1994; Goward et al. 1995; Benesperi and Giordani 2012).

C. Vallese, M. Ottonello, P. Giordani, R. Benesperi

Placolecis opaca (Dufour) Hafellner (Catillariaceae)

+ **TOS**: Convento del Petreto, Scansano (Grosseto), oak wood on the SW facing slope with *Lobaria pulmonaria* (L.) Hoffm., on shaded mossy calcareous rock (UTM WGS84: 32T 691415.4729062), 445 m, 25 February 2012, leg. *A. Guttová, L. Paoli, det. A. Guttová* (SAV); La Castellaccia, near Convento del Petreto, shaded calcareous outcrops in an oak forest with *Lobaria pulmonaria*, on overhanging rock (UTM WGS84: 32T 691764.4729809), 509 m, 1 September 2018, leg. *A. Béréšová, L. Paoli, det. A. Béréšová* (SAV). – Species confirmed for Toscana.

Placolecis opaca forms olive-brown placodioid thallus, frequently fertile, with characteristic orange medulla because of the production of anthraquinones. It grows on calcareous rocks. The species is reported mainly from the Mediterranean area, however, few isolated occurrences have been recorded also in central Europe, e.g., low altitudes of the western Carpathians (Czarnota et al. 2006). This species is distributed across Italy mainly in the Mediterranean (less often in submediterranean) belt (Nimis 2016). Records from Toscana date back to the 18th and 19th centuries (Nimis 1993), but recent data were missing (Nimis 2016).

L. Paoli, A. Guttová

***Rinodina oxydata* (A.Massal.) A.Massal. (Physciaceae)**

+ **TOS:** Riserva Naturale La Pietra, Roccastrada (Grosseto), on jasper outcrops at the top of the hill (UTM WGS84: 32T 672050.4771400), 420 m, 4 January 2019, *L. Paoli, Z. Fačkovcová*, det. *Z. Fačkovcová* (SAV). – Species new for the flora of Toscana.

Rinodina oxydata is a crustose species with rimose-areolate thallus. It grows mainly on siliceous rocks, occasionally on basalts, with a preference for humid and nutrient-rich substrates. Its distribution in Italy is still poorly understood: it seems widespread in the Alps, but has been occasionally found also in Mediterranean mountains (Nimis 2016). In the reported locality, it was accompanied by *R. aspersa* (Borrer) J.R.Laundon, *Lasallia pustulata* (L.) Mérat, *Monerolechia badia* (Fr.) Kalb, *Solenopsora vulturiensis* A.Massal.

L. Paoli, Z. Fačkovcová

***Scytinium teretiusculum* (Wallr.) Otálora, P.M. Jørg. & Wedin (Collembataceae)**

+ **TOS:** La Castellaccia, Scansano (Grosseto), shaded calcareous outcrops in oak forest with *Lobaria pulmonaria* (L.) Hoffm., on bark of *Quercus* sp. (UTM WGS84: 32T 691764.4729809), 509 m, 1 September 2018, leg. *A. Béréšová, L. Paoli*, det. *A. Béréšová* (SAV). – Species confirmed for Toscana.

This species generally grows on the basal parts of old trees, sometimes directly on soil or weathered rocks. It is considered a component of epiphytic *Lobarion* communities (Rose 1988). In Italy, there is an increasing number of records of *S. teretiusculum* (Nimis 2016). However, the occurrence in Toscana was reported only from the past (Rose 1988, van den Boom and Aptroot 1990) and recent data were missing (Nimis 2016). The reported specimen also contains an often overlooked epibryophytic species: *Agonimia opuntiella* (Buschardt & Poelt) Vězda.

L. Paoli, A. Guttová

***Solenopsora holophaea* (Mont.) Samp. (Catillariaceae)**

+ **TOS:** Cala San Quirico, Populonia (Livorno), in the fissures of siliceous sandstone, along the coast (UTM WGS84: 32T 621325.4759270), 10 m, 8 June 2018, *L. Paoli, Z. Fačkovcová* (SAV). – Species confirmed for Toscana.

Solenopsora holophaea has an epruinose thallus, made of shiny, red-brown, greenish-brown squamules (up to 2.5 mm wide) with rounded, entire margin; the outer lobes are loose, apothecia are frequent, sessile, often shortly stipitate, with disc red-brown up to blackish. In the Mediterranean region, it grows on basic siliceous soils and rock fissures (siliceous breccia, basalt, sandstone), especially along the coast, being able to tolerate direct sun in open habitats (Guttová et al. 2014, 2019). Recently developed habitat suitability maps suggest that the centres of high suitability for *S. holophaea* in

Italy are related to lower altitudes along the Tyrrhenian coastline, Sardegna, Sicilia, and the extreme south of Puglia (Guttová et al. 2019). Apart from Capraia island (Nimis et al. 1990), this is the only recent record in Toscana.

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