

Notulae to the Italian flora of algae, bryophytes, fungi and lichens: 5

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Abstract

In this contribution, new data concerning bryophytes, fungi, and lichens of the Italian flora are presented. It includes new records and confirmations for the bryophyte genera *Diplophyllum* and *Ptychostomum*, the fungal genera *Arrhenia*, *Gymnosporangium*, and *Sporidesmium* and the lichen genera *Arthonia*, *Coenogonium*, *Flavoplaca*, *Gyalolechia*, *Parmotrema*, *Peltigera*, *Pterygiopsis*, *Squamarina*, *Tornabea*, and *Waynea*.

Keywords

Ascomycota, Basidiomycota, Bryidae, Jungermanniidae, floristic data

How to contribute

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

Floristic records

BRYOPHYTES

Errata corrigere. *Paludella squarrosa* (Hedw.) Brid. (Meesiaceae), erroneously reported as new for Trentino-Alto Adige in Ravera et al. (2017), is confirmed to occur in this region, but new only for the mentioned site.

Diplophyllum obtusifolium (Hook.) Dumort. (Scapaniaceae)

+ **FRV:** Alta Carnia, (Udine), on moist soil, (UTM WGS84 33T 359573.5156682), ca. 1632 m, 19 October 2014, *F. Sguazzin*, *L. Boemo*, *A. Boemo* (Bryophytorum Herbarium F. Sguazzin). – Species confirmed for the flora of Friuli Venezia Giulia.

Diplophyllum obtusifolium is a montane-arctic-circumpolar liverwort species (Dirßen 2001). It was found together with *Sphagnum palustre* L., a surprising finding because usually it is a pioneer species colonizing soils banks and track sides (Lockhart et al. 2012). According to Aleffi et al. (2008), the presence in Italy of *D. obtusifolium* is restricted to a number of northern localities with the only exception of Abruzzo. Its occurrence in Lazio and Marche has not been confirmed over the last 50 years. The herbarium specimen collected by Rossetti and kept in the Herbarium of the University of Pisa (PI) for Toscana (leg. Rossetti, August 1891, Forno Volasco, Apuan Alps) actually refers to *Diplophyllum obtusatum* (R.M.Schust.) R.M.Schust. (Aleffi et al. 2008). After 114 years since the first report of the species, the present finding is a confirmation for Friuli Venezia Giulia (Bizzozzero 1885, Loitlesberger 1905, Glowacki 1908). This species seems rare in the Mediterranean basin, being recorded only for

Bosnia-Herzegovina, Bulgaria, Serbia, Spain, France, and Italy (Ros et al. 2007). It was reported from Portugal by Ros et al. (2007), based on a record taken from phytosociological relevés from the Serra da Estrela. After a revision of the material, this record was correctly re-attributed to *Diplophyllum taxifolium* (Wahlenb.) Dumort. (Ellis et al. 2012). With reference to its global distribution, *D. obtusifolium* occurs throughout the western part of North America, and is also widespread in Asia, Europe, and eastern North America. According to Hodgetts (2015), it is considered Endangered (EN) in Hungary and Netherlands, Near Threatened (NT) in Luxemburg, Ireland and Italy, Vulnerable (VU) in Germany.

S. Poponessi, F. Sguazzin, M. Aleffi

Ptychostomum subneodamense (Kindberg) J.R.Spence (Bryaceae)

+ **TAA**: Kirchbergtal, south of Santa Gertrude (Bolzano) on the right bank of the Kirchbergbach, among the stones and the low vegetation of the stream (UTM WGS84 32T 643004.5147513), 1735 m, 27 June 2017, *F. Sguazzin* (Bryophytorum Herbarium F. Sguazzin). – Species confirmed for the flora of Trentino-Alto Adige.

The old name *Bryum subneodamense* Kindb., which was recorded for Italy by Cortini Pedrotti (2001), was considered a synonym of *Ptychostomum pseudotriquetrum* (Hedw.) J.R.Spence & H.P.Ramsay by Ros et al. (2013), but later Spence (2013 and in FNA 2014) claimed that *P. subneodamense* is a distinct species. *Ptychostomum subneodamense* is a temperate-arctic-circumpolar species; in Europe, it is regionally threatened (Dierßen 2001). Formerly, this species was known only for Valle d’Aosta (Vaccari 1913, sub *Bryum neodamense* Itzigs. var. *ovatum* Lindb. & Arr.), Veneto (Venturi 1899, sub *Bryum neodamense* Itzigs. var. *ovatum* Lindb.) and Trentino-Alto Adige (Geheeb 1883, sub *Bryum ovatum* Jur.; Venturi 1899, sub *Bryum neodamense* Itzigs. var. *ovatum* Lindb.). Moreover, Holyoak and Hedenäs (2006) mention a herbarium specimen of *Bryum subneodamense* Kindberg collected nearby Gorizia (Friuli Venezia Giulia) by Loitlesberger (March 1903, S) and reviewed by Podpěra (1942). Therefore, our record represents the confirmation of the occurrence in Italy of this rare species after 115 years from its last report.

F. Sguazzin

FUNGI

Arrhenia spathulata (Fr.) Redhead (Hygrophoraceae)

+ **CAL**: Bosco di Mavigliano, Montalto Uffugo (Cosenza), on the moss *Pleurochaete squarrosa* (Brid.) Lindb. (UTM WGS84: 33S 604782.4360104), 200 m, 25 February 2017, *D. Puntillo* (CLU No. 56); Imbutillo, Curinga (Catanzaro) on the moss *P. squarrosa* (UTM WGS84 33S 606081.4298323) 1 m, 24 November 2017, *D. Puntillo* (CLU No. 72). – Species new for the flora of Calabria.

This species is recognizable for its spatuliform, petaliform to flabelliform (fan-shaped) basidiome, for its little raised anastomatized and spaced veins, for the short and lateral stipe and for the flexible and wavy margin. *Arrhenia spathulata* grows on soil with *P. squarrosa* or other mosses. It was known so far from Piemonte (Pollini 1824), Trentino-Alto Adige (Marisa et al. 1986), Toscana (Barluzzi et al. 1996, Perini et al. 1999), Marche (Maletti 2016), Lazio (Granito and Lunghini 2011), Campania (Violante et al. 2002), Sicilia (Signorello and Napoli 1994, Lantieri 2006, Lantieri et al. 2009), Lombardia, Veneto, Emilia-Romagna, and Puglia (Onofri et al. 2005).

D. Puntillo

Gymnosporangium clavariiforme (Wulfen) DC. (Pucciniaceae)

+ **CAL**: Piano di Novacco, Saracena (Cosenza), on twigs of *Juniperus communis* L. (UTM WGS84: 33S 589506.4406265), 1305 m, 24 May 2014, D. Puntillo (CLU No. 69). – Species new species for the flora of Calabria.

This species is a heteroecious rust, growing on *Juniperus* as primary host. During spring, it produces a set of orange tentacle-like spore tubes (tetial stage) with a jelly-like consistency when wet. The secondary host is *Crataegus*, where *G. clavariiforme* produces yellowish depressions on the leaves (spermogonial and aecial stage). The species is widespread in Austria, Belgium, Dalmatia, Finland, Germany, Great Britain, and Hungary (De Toni 1888). In Italy, it has been recorded from Val d'Aosta (Traverso 1912), Trentino-Alto Adige (Hellrigl 2010), and Friuli Venezia Giulia (Tomasi 2014).

D. Puntillo

Sporidesmium bacidiicola Alstrup (Sporidesmiaceae)

+ **SIC**: Monte Egitto, Bronte (Catania), western slope of the Etna, in an ancient *Quercus congesta* forest, on bark, parasitic on *Physcia tenella* (Scop.) DC. (UTM WGS84: 33S 493690.4179961), 1550 m, 6 October 2017, leg. D. Cataldo, det. W. v. Brackel (Herb. Brackel 7990). – Species new for the flora of Italy (Sicilia).

The genus *Sporidesmium* consists of fungi with a mycelium lacking hyphopodia, brown macronematous conidiophores and solitary, euseptate, brown to subhyaline conidia, developing terminally and holoblastic. Most of the species are saprotrophic or parasites of vascular plants and fungi. Only two species are lichenicolous: *Sporidesmium lichenicola* Iturr., D.Hawksw. & J.L.Crane, living on *Leptogium* (Iturriaga et al. 2008), and *S. bacidiicola*, described from Denmark on *Bacidia rubella* (Hoffm.) A.Massal. (Alstrup 1991). Later, it was found growing also on *Fellhaneropsis vezdae* (Coppins & P.James) Sérus. & Coppins and on *Physcia adscendens* H.Olivier and was known until now only from Denmark, Poland, and Germany (Alstrup and Olech 1996, Czyżewska and Kukwa 2009, Alstrup et al. 2013, von Brackel 2014). This species is characterized by effuse colonies, an immersed mycelium, erect, brown, septate,

proliferating conidiophores, integrated conidiogenous cells, and brown, narrowly ellipsoid, 5–9(–12)-septate conidia.

D. Cataldo, W. v. Brackel

LICHENS

Arthonia granosa B. de Lesd. (Arthoniaceae)

+ **CAM**: Centola (Salerno), on *Quercus suber* L. (UTM WGS84: 32T 526512.4434694), 290 m, 25 February 2011, G. Brunialti, V. Genovesi, S. Ravera. – Species new for the flora of Campania.

It is a rare Mediterranean-Atlantic species, doubtfully lichenized, often collected on cork oak (e.g., Fos 1998, Ravera 2002, Rizzi et al. 2011, Boutabia et al. 2015). It is a characteristic lichen of the *Arthonietum granosae* Giralt & Gómez-Bolea 1987, an epiphytic community restricted to coastal stations with humid maritime winds. *Arthonia granosa* can be distinguished from other superficially similar *Arthonia* species by the white pruina on the round to oblong apothecia, hymenium I+ wine coloured and 1-septate guttulate spores 18–30 × 8–13 µm. In Italy, the species has been reported from Lazio, Sardegna, Puglia (Nimis 2016) and Sicilia (Ottonello et al. 2011). Due to its rarity, it is included in the Italian red list of epiphytic lichens under the “Vulnerable” category (Nascimbene et al. 2013).

S. Ravera

Coenogonium luteum (Dicks.) Kalb & Lücking (Coenogoniaceae)

+ **TOS**: Marina di Castagneto Carducci (Livorno), on *Juniperus macrocarpa* Sm. (UTM WGS84: 32T 624680.4784765), 8 m, 24 November 2017, L. Di Nuzzo, E. Bianchi, R. Benesperi. – Species confirmed for the flora of Toscana.

Coenogonium luteum is a crustose pantropical lichen with orange to pink apothecia and green thallus. Its distribution includes both hemispheres; in Italy, it is a mostly Tyrrhenian species (Nimis 2016). It occurs in shaded situations and, due to its rarity, it is included in the Italian red list of epiphytic lichens under the “Least Concern” category (Nascimbene et al. 2013).

L. Di Nuzzo, E. Bianchi, R. Benesperi

Flavoplaca limonia (Nimis & Poelt) Arup, Frödén & Søchting (Teloschistaceae)

+ **FVG**: Castle of San Giusto (Trieste), near the entrance on inclined surfaces of calciferous sandstone (UTM WGS84: 32N 871998.5066124), 80 m, 25 January 2016, P.L. Nimis (TSB No. 47501). – Species new for the flora of Friuli Venezia Giulia.

It is a species of the *F. citrina*-complex, characterised by large soredia/blastidia, a *limonia*-type of soralium, a pale yellow thallus, and a thick apothecial margin often covered by blastidia. *Flavoplaca limonia* is found on calcareous rocks or on base-rich, hard, siliceous cliffs in dry and in sun-exposed to shaded and damp situations, but also on twigs of maritime shrubs or on soil, below the montane belt. This species, described from calcareous cliffs along the coast of the Island of Marettimo, Sicilia (Nimis et al. 1994), proved to be quite widespread in southern Europe (see, e.g., Vondrák et al. 2009). Its hitherto known Italian distribution was limited to coastal localities of Puglia, Sicilia, and Sardegna, and an inland locality in Veneto (Nimis 2016), but the species is certainly more widespread, since in the past it was generally identified as “*Caloplaca citrina*”.

P.L. Nimis

Gyalolechia fulgida (Nyl.) Söchting, Frödén & Arup (Teloschistaceae)

+ **PIE**: Gremiasco (Alessandria), surroundings of the Osservatorio Astronomico Cà del Monte, on south-facing sandstone outcrops (UTM WGS84: 32T 506270.4962306), 682–687 m, 9 December 2016, *G. Gheza* (Herb. Gheza); Monte Vallassa (Alessandria), on a southeast-facing sandstone outcrop in the woods (UTM WGS84: 32T 507119.4962675), 725 m, 9 December 2016, *G. Gheza* (Herb. Gheza). – Species new for the flora of Piemonte.

+ **LOM**: surroundings of Agriturismo Guardamonte, Bagnaria (Pavia), on a southeast-facing sandstone rock face (UTM WGS84: 32T 507608.4962932), 720 m, 10 August 2016, *G. Gheza* (Herb. Gheza). – Species new for the flora of Lombardia.

Gyalolechia fulgida is a Mediterranean species found mainly on calcareous rocks in the Mediterranean belt (Nimis 2016). It was previously known for northern Italy only in one site in Liguria (Valcuvia Passadore et al. 2000). The three new sites recorded here, extending the Italian range of the species to Piemonte and Lombardia, are actually very close, being located on two mountainsides with the thermo-xeric character of a mountain placed along the boundary between Val Curone (Alessandria) and Val Staffora (Pavia). In these sites, *G. fulgida* was found together with the lichens *Placidium* sp., *Squamarina cartilaginea* (With.) P.James, *Squamarina stella-petraea* Poelt and with the moss *Grimmia* sp., in more or less sheltered concavities of sandstone outcrops, both on the thin soil layer over weathered sandstone and on the very rock.

G. Gheza

Parmotrema hypoleucinum (J. Steiner) Hale (Parmeliaceae)

+ **CAM**: Isola di Vivara, Procida (Napoli), on twigs of *Erica arborea* L. and *Olea europaea* L. (UTM WGS84: 33T 415034.4510875), 13 October 2008, *C. D'Antonio* (TSB No. 47500). – Species new for the flora of Campania.

This is a pantropical-pantemperate species with a Mediterranean-Atlantic distribution in Europe, found on twigs of trees and shrubs in undisturbed Mediterranean

maquis vegetation along the coasts, which can be easily distinguished from all other *Parmotrema*-species occurring in Italy by the white lower surface. It is a characteristic lichen of a rare and endangered epiphytic community, which is most frequent on undisturbed, coastal sand dunes, the *Parmotremetum reticulati-hypoleucini* Nimis & Schiavon (1986). Its distribution in Italy is predominantly Tyrrhenian, the species having been reported from Toscana, Lazio, Sardegna, Puglia, Basilicata and Calabria (Nimis 2016). The species is generally very rare and is, therefore, included in the Italian red list of epiphytic lichens as “Near-threatened” (Nascimbene et al. 2013). It is certainly declining, due to increasing touristic exploitation of coastal environments. The new record fills a gap in its distribution along the Tyrrhenian coasts of the Italian Peninsula.

P.L. Nimis, C. D’Antonio

Peltigera monticola Vitik. (Peltigeraceae)

+ **PIE:** Oropa (Biella), near the Santuario, on soil (UTM WGS84: 32T 420405.5053261), 1150 m, summer 1905, leg. *L. Micheletti* det. *D. Isocrono*, *E. Matteucci*, *S.E. Favero-Longo* (TO n. 3412); Crissolo (Torino), Pian del Re, near Fiorenza Lake, (UTM WGS84: 32T 348927.4951186), 2150 m, 10 September 2012, on serpentinite outcrops *D. Isocrono*, *E. Matteucci*, *S.E. Favero-Longo* (TO n. 2118). – Species new for the flora of Piemonte.

Peltigera monticola is a terricolous species, first described by Vitikainen (Vitikainen 1994), belonging to the large *Peltigera canina* group, a species complex that includes taxa that are sometimes difficult to identify (Miadlikowska et al. 2003) and, for this reason, often misunderstood. It is considered rare in Italy, where it has been reported for the Eastern Alps and Sardinia (Nimis 2016). The records reported here are the first for the Italian Western Alps. The first record from Piemonte is available through a herbarium specimen collected by Luigi Micheletti near Oropa and previously identified as *Peltigera canina* (L.) Willd.

D. Isocrono, E. Matteucci, S.E. Favero-Longo

Pterygiopsis affinis (A.Massal.) Henssen (Lichinaceae)

+ **MAR:** Gole della Rossa, Fabriano (Ancona), on calcareous rock (UTM WGS84: 33T 338355.4810338), 200 m, 3 November 2017, *L. Morosini*. – Species new for the flora of Marche.

+ **UMB:** Monte di Pale, Foligno (Perugia), near the Eremo di Santa Maria Giacobbe on calcareous rock (UTM WGS84: 33T 318298.4761664), 520 m, 30 August 2017, *L. Morosini*. – Species new for the flora of Umbria.

+ **BAS:** Parco dei Monaci (Matera), along Gravina stream on calcareous rock (UTM WGS84: 33T 639479.4496784), 130 m, 10 June 2016, *M. Tretiach*, *S. Ongaro*; Parco dei Monaci (Matera), along the Gravina stream on calcareous rock (UTM WGS84: 33T 640142.4495777), 125 m, 10 June 2016, *M. Tretiach*, *S. Ongaro*; Province of

Matera, on a calcareous rock wall (UTM WGS84: 33T 640199.4496976), 195 m, 10 June 2016, *M. Tretiach*, *S. Ongaro*; Contrada Murgia Timone (Matera), on calcareous rock (UTM WGS84: 33T 636965.4502634), 380 m, 10 June 2016, *M. Tretiach*, *S. Ongaro*. – Species new for the flora of Basilicata.

Pterygiopsis affinis is the only species of the genus *Pterygiopsis* known to occur in Italy. The genus is part of the family Lichinaceae, which includes several genera, with varied morphology and different photobionts. Some genera are particularly difficult to identify, and their taxonomic position is debatable. *Pterygiopsis affinis* is a crustose lichen with a placodioid, effigurate thallus, from bluish black to dark grey. Apothecia are lecanorine, with proper margin and red disc. Asci are multi-spored, with hyaline, sub-globose to broadly ellipsoid ascospores, ca. 6–12 × 3–6 µm. The photobiont is a chroococcoid, unicellular cyanobacterium (*Gloeocapsa*), with a yellowish mucilaginous cell envelope. *Pterygiopsis affinis* is a rare epilithic lichen, tolerating high solar radiation and prolonged drought. It grows on south-exposed rocks, often along seepage tracks. In Italy, *P. affinis* occurs from the Alpine regions to Puglia and Sardegna, but owing to lack of knowledge in several Regions (Nimis 2016), its frequency has been certainly underestimated.

S. Ongaro, L. Morosini, S. Martellos, M. Tretiach

Squamarina stella-petraea Poelt (Squamarinaceae)

+ **PIE**: Gremiasco (Alessandria), surroundings of the Osservatorio Astronomico Cà del Monte, on south-facing sandstone outcrops (UTM WGS84: 32T 506270.4962306), 682–687 m, 9 December 2016, *G. Gheza* (Herb. Gheza). – Species confirmed for the flora of Piemonte.

+ **LOM**: surroundings of Agriturismo Guardamonte, Bagnaria (Pavia), on a southeast-facing sandstone rock face (UTM WGS84: 32T 507608.4962932), 720 m, 10 August 2016, *G. Gheza* (Herb. Gheza). – Species new for the flora of Lombardia.

Squamarina stella-petraea is a Mediterranean species found mainly on calcareous rocks in the Mediterranean belt (Nimis 2016). It can be quite easily distinguished from other saxicolous *Squamarina* because of its rosulate white thallus, areolate in the middle and lobed at the margin. It was previously known for northern Italy only in one site in Piemonte (Nimis 2016) and one in Liguria (Valcuvia Passadore et al. 2000). The two new sites recorded here, extending to Lombardia the Italian range of the species, are located on two mountainsides of Monte Vallassa with thermo-xeric character. Here, *S. stella-petraea* was found together with *Squamarina cartilaginea* (With.) P.James, *Romjularia lurida* (Ach.) Timdal, and *Gyalolechia fulgida* (Nyl.) Söchting, Frödén & Arup in more or less sheltered concavities of sandstone outcrops. It was found with well-developed rosulate thalli, but also coalesced with *S. cartilaginea*.

G. Gheza

***Tornabea scutellifera* (With.) J.R. Laundon (Physciaceae)**

+ **TOS:** Marina di Castagneto Carducci (Livorno), on *Juniperus macrocarpa* Sm. (UTM WGS84: 32T 624591.4785396), 6 m, 10 July 2017, L. Di Nuzzo, E. Bianchi, R. Benesperi; Marina di Castagneto Carducci (Livorno), on *J. macrocarpa* (UTM WGS84: 32T 624680.4784765), 8 m, 24 November 2017, L. Di Nuzzo, E. Bianchi, R. Benesperi. – Species confirmed for the flora of Toscana.

Tornabea scutellifera is a fruticose epiphytic macrolichen strictly associated with semiarid and warm situations with frequent periods of high air humidity (Nimis and Tretiach 1997). It is included in the Italian red list of epiphytic lichens under the “Least Concern” category (Nascimbene et al. 2013). There are no recent records in the literature for Toscana (Micheli 1729; Savi 1825; Baglietto 1871; Saccardo 1894).

L. Di Nuzzo, E. Bianchi, R. Benesperi

***Waynea giraltiae* van den Boom (Ramalinaceae)**

+ **SIC:** Monte Egitto, Bronte (Catania), western slope of the Etna, in an ancient *Quercus congesta* forest, on bark (UTM WGS84: 33S 493690.4179961), 1550 m, 6 October 2017, leg. D. Cataldo, det. W. v. Brackel (Herb. Brackel 7197). – Species new for the flora of Italy (Sicilia).

Waynea giraltiae was recently described from Portugal; it was known until now only from the Iberian Peninsula (Portugal and Spain), growing in the lowland on the bark of *Quercus rotundifolia* Lam. (van den Boom 2010). This species is characterized by a squamulose to granulose thallus with thick-walled, hyaline, septate hairs, a well-defined upper cortex, marginate, greyish to blackish apothecia, asci *Bacidia*-type and hyaline, fusiform, (1–)3-septate ascospores, 12–18 × 2–2.5 µm. Sterile specimens may be mistaken for *Agonimia opuntiella* (Buschardt & Poelt) Vězda, but this species lacks the thick hyaline upper cortex, the hairs are composed of several hyphae and the upper surface is papillate. Sterile *Physconia servitii* (Nádv.) Poelt has a similar appearance, but also in this species, the hairs are composed of several strands of hyphae and the thallus is whitish-grey instead of greenish.

D. Cataldo, W. V. Brackel

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