

THE GENUS PRAGMOPORA¹

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Six species of fungi considered to belong in the genus *Pragmopora* Massalongo are discussed from a morphological and taxonomic standpoint. Three new combinations are proposed, *P. abietina* (Ell. & Ev.) (= *Scleroderris abietina* Ell. & Ev.), *P. pithya* (Fr.) (= *Cenangium pithyum* Fr.), and *P. viticola* (Schw.) (= *Peziza viticola* Schw.). One new species, *P. pini*, is described. Eight species previously referred to *Pragmopora* are excluded. *Pragmopora* shows similarities to *Tympanis* and *Durandiella*.

The genus *Pragmopora* was erected by Massalongo (1855) based on *Pragmopora amphibola*. This is a very small, flat, black discomycete of very hard consistency occurring on the bark of *Pinus sylvestris*. It suggests species of the genus *Tympanis* in gross appearance but differs in that its asci are eight-spored. The ascospores are elongate-fusoid to subfiliform, one- to four-celled and because of the spores it has been placed in *Scleroderris*.

Groves (1965) has shown that the type species of *Scleroderris* belongs in *Godronia* and in this genus the apothecia are more or less urceolate, softer, more fleshy-leathery in consistency, and with a different tissue structure. *Pragmopora* is much more similar to *Durandiella* but possesses a combination of characters that seem to warrant its recognition as a distinct genus. The apothecia are, in general, smaller, more superficial, and more scattered than in *Durandiella*. The ascospores of *Pragmopora* are generally more fusoid than in *Durandiella* and in some of the species become many-septate, whereas in *Durandiella* they are rarely more than five-septate. Possibly the most decisive character separating *Pragmopora* and *Durandiella* is that in the latter there is a conidial state with elongate-fusiform to subfiliform conidia. The conidial relations of *Pragmopora* are still obscure, but what evidence there is suggests that the conidial state of *Pragmopora* is more like that of *Tympanis* than of *Durandiella*. The tissue structure is essentially the same in *Tympanis*, *Durandiella*, and *Pragmopora*.

Pragmopora therefore seems to be a suitable genus for bringing together a small group of related species which are similar to but distinct from *Tympanis* and *Durandiella*.

Rehm (1890) transferred a second species to *Pragmopora*, *Tympanis bacillifera* Karst., which seems to belong here.

Schroeter (1893) described several species in *Pragmopora* that appear to be lichens; these are listed as "doubtful or excluded species" since I have not examined any of them.

During a study of material of *Durandiella* and *Godronia* three other species were encountered which seemed to belong more properly in *Pragmopora*, and some years ago a fungus was received from Dr. John Ehrlich that appears to be an undescribed species belonging in this genus. It was therefore thought desirable to make a comparative study of these species and bring them together in the one genus.

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These fungi are small and inconspicuous and appear to be rare or seldom collected. I have only once collected one myself and then was unsuccessful in obtaining cultures. The only species of which I have seen cultures is *P. pithya*.

***Pragmopora* Massalongo Framm. Lich. p. 12. 1855**

Apothecia erumpent-superficial, sessile, narrowed below, circular to undulate, black, glabrous, hard, horny to cartilaginous in consistency; hymenium plane to slightly concave, more fleshy than the excipulum; medullary excipulum *textura epidermoidea* composed of thick-walled, interwoven, brownish to subhyaline hyphae; ectal excipulum a rind-like zone similar in structure but with the cells thicker-walled, darker colored, and arranged in more or less parallel rows; asci cylindric-clavate, eight-spored; ascospores hyaline, elongate-fusiform to subfiliform, one- to many-septate; paraphyses filiform, septate, simple or branched, the tips slightly swollen and forming an epithecium; conidial state similar to *Pleurophomella* or unknown.

Type species: *P. amphibola* Massal. Framm. Lich. p. 13.

- | | |
|---|-----------------------|
| 1. Ascospores mostly less than 20 μ in length..... | <i>P. amphibola</i> |
| 1. Ascospores mostly more than 20 μ in length..... | 2 |
| 2. Ascospores mostly more than 50 μ in length..... | 3 |
| 2. Ascospores mostly 20–50 μ in length..... | 4 |
| 3. Asci less than 100 μ in length, ascospores (9)15(17)-septate, on <i>Abies</i> | <i>P. abietina</i> |
| 3. Asci mostly more than 110 μ in length, ascospores consistently more than 15-septate..... | <i>P. pithya</i> |
| 4. Ascospores one- to three-septate, on <i>Vitis</i> | <i>P. viticola</i> |
| 4. Ascospores three- to five-septate, on <i>Picea</i> | <i>P. bacillifera</i> |
| 4. Ascospores mostly 11- to 15-septate, on <i>Pinus</i> | <i>P. pini</i> |

***Pragmopora abietina* (Ell. & Ev.) comb. nov.**

Fig. 12

≡ *Scleroderris abietina* Ell. & Ev. Amer. Nat. 31: 427. 1897.

≡ *Godronia abietina* (Ell. & Ev.) Seaver, N. Amer. Cup-Fungi, Inoperc. p. 332. 1951.

Apothecia erumpent-superficial, gregarious, separate, circular to slightly undulate, sessile, narrowed below, 0.4–0.6 mm in diameter, about 0.2 mm in height, black, glabrous, hard, horny to cartilaginous in consistency, becoming more fleshy-leathery when moist; hymenium black, at first concave, soon plane to slightly convex, with a slightly raised margin, more fleshy than the excipulum; tissue of the medullary excipulum *textura epidermoidea*, composed of brownish, thick-walled, interwoven hyphae mostly 2.0–3.5 μ in diameter; ectal excipulum a rind-like outer zone, somewhat similar in structure but approaching *textura oblita* with the hyphae arranged in more definite obliquely parallel rows, the cells slightly larger and the walls thicker and darker; hypothecium lacking or very indistinct; asci clavate, narrowed fairly abruptly into a short stalk, eight-spored, pore not staining blue with iodine, (70)75–90 \times (13.0)14.0–15.0(16.0) μ ; ascospores hyaline, filiform, narrowed toward the ends and one end usually more attenuated than the other, straight or flexuous, (9)15(17)-septate, fasciculate in the ascus, 50–75 \times (3.0)3.5–4.5(5.0) μ ; paraphyses hyaline, filiform, septate, simple or branched, 1.5–2.5 μ in diameter, the tips slightly swollen and embedded in a brownish gelatinous matrix forming an epithecium.

Host: *Abies* sp.

SPECIMENS EXAMINED: TYPE. Bay of Islands, Newfoundland, Rev. A. C. Waghorne 61, 26 May 1896. BM, NYS.

NEWFOUNDLAND: BM, Bay of Islands, 19 Sept. 1898.

This species was evidently collected on more than one occasion by the Rev. A. C. Waghorne in Newfoundland but does not seem to have been collected anywhere else. The long spores, usually 15-septate, are quite distinctive. No conidial state was observed in the material examined. It seems to be a good *Pragmopora*.

- Pragmopora amphibola* Massal. Framm. Lich. p.13. 1855. Fig. 8
 = *Peziza amphibola* (Massal.) Hepp. Flecht. Eur. n. 711. 1860.
 = *Tympanis amphibola* (Massal.) Karst. Notis. ur Sällsk. pro Fauna
 Fl. Fenn. 11: 252. 1871.
 = *Sclerodermis amphibola* (Massal.) Gill. Disc. p. 198. 1879.
 = *Lecanidion amphibolum* (Massal.) D. Sacc. Bizzoz. Flor. Ven. Crittog.
 1: 350. 1899.
 = *Stictis sphaeroides* Niessl. Hedw. 15: 116. 1876.

Apothecia erumpent-superficial, scattered to gregarious, separate or rarely subcespitate, circular or undulate, sessile, slightly narrowed below, 0.3–0.5 mm in diameter, 0.2–0.3 mm in height, black, glabrous, hard, horny to cartilaginous in consistency, becoming more fleshy-leathery when moist; hymenium black, at first concave, soon plane to slightly convex, with a slightly raised margin, more fleshy than the excipulum; tissue of the medullary excipulum *textura epidermoidea* composed of brownish, thick-walled, interwoven hyphae, mostly 2.0–3.0 μ in diameter; ectal excipulum a rind-like zone somewhat similar in structure, but approaching *textura oblita* with the hyphae arranged more definitely in obliquely parallel rows, the cells slightly larger and the walls thicker and darker; hypothecium lacking or very indistinct; asci clavate, tapering below to a short stalk, four- or eight-spored, pore not staining blue with iodine, (50)55–75(85) \times 7.5–10.0 μ ; ascospores hyaline, elongate-fusiform to subclavate, straight or slightly curved, three- to five-septate, irregularly biseriate to uniseriate in four-spored asci, (12)14–20(22) \times 2.5–4.0 μ ; paraphyses hyaline, filiform, septate, simple or branched, 1.5–2.0 μ in diameter, the tips swollen up to 5.0 μ and embedded in a brownish gelatinous matrix forming an epithecium.

Host: *Pinus sylvestris* L.

SPECIMENS EXAMINED: LECTOTYPE. Massalongo Lichenes exsiccati Italiae 179, K.

EXSICCATI: Sacc. Myc. Ven. 1388; Sacc. Myc. Ital. 676; Rabh. Fung. Eur. 2109 as *Stictis sphaeroides*, 2960; Roum. Fung. Sel. Gall. Exs. 7266.

ITALY: UPS specimen det. Massalongo (could not read locality, presumably Italy). FINLAND: H Nylandia, Hogland, 17 July 1868, det. W. Nylander; Helsingfors, W. Nylander; UPS Mustiala, 15 May 1869, P. A. Karsten.

Massalongo (1855) described *Pragmopora* as a doubtful genus of lichens and listed only the one species, *P. amphibola*, without describing it separately; his account is therefore treated as a *descriptio generico-specifica*.

Nylander (1869) pointed out that no lichen thallus was present in this fungus and the iodine reaction of lichens was lacking. Subsequent authors have not considered it to be lichenicole.

Karsten (1871*c*) described a conidial state associated with the apothecia consisting of small, black, verruciform spermogonia producing oblong, one-celled hyaline conidia $3-4 \times 1.0-1.5 \mu$. The genetic connection of this state has never been established culturally.

Stictis sphaeroides Niessl is a name applied to a fungus distributed in Rabenhorst Fungi Europaei 2109 in 1876 with a description on the label which was copied in Hedwigia 15, p. 116, 1876. The description fits *P. amphibola* very well and Saccardo (1889) and Rehm (1890) both considered *S. sphaeroides* to be a synonym of *P. amphibola*. A specimen of Rabh. Fung. Eur. 2109 in BPI was seen but was not examined microscopically since the material was very scanty. It resembled *P. amphibola* in gross appearance.

Pragmopora bacillifera (Karst.) Rehm Rabh. Krypt.-Fl. I, 3: 340. 1890.

Figs. 3, 6, 13

≡ *Tympanis bacillifera* Karst. Notis. Sällsk. Faun. Fl. Fenn. Forh. 11: 252. 1871.

≡ *Patellaria bacillifera* (Karst.) Karst. Notis. Faun. Fl. Fenn. 13: 235. 1874.

≡ *Scleroderris bacillifera* (Karst.) Sacc. Syll. Fung. 8: 595. 1889.

Apothecia erumpent-superficial, separate or subcespitate, circular or undulate, sessile, slightly narrowed below, 0.3–0.6 mm in diameter, 0.2–0.3 mm in height, black, glabrous, hard, cartilaginous to horny in consistency, becoming more fleshy-leathery when moist; hymenium black, at first concave then plane to slightly convex, with a slightly raised margin, more fleshy than the excipulum; tissue of the medullary excipulum *textura epidermoidea* composed of interwoven, brownish, thick-walled hyphae mostly 2–3 μ in diameter; ectal excipulum *textura oblita*, the hyphae more or less obliquely parallel and with the walls very thick and black at the outside; hypothecium lacking or very indistinct; asci cylindrical-clavate, tapering to a fairly long stalk, eight-spored, not staining blue with iodine, $(60)65-80(100) \times (8.5)9.0-12.0(13.0) \mu$; ascospores hyaline, subfiliform to clavate-fusiform, mostly three- to five-septate, pointed at ends, straight or curved, more or less fasciculate to intertwined in the ascus, $20.0-45.0(57.0) \times (2.5)3.0-4.0(4.5) \mu$; paraphyses hyaline, filiform, septate, simple or branched, 1.5–2.0 μ in diameter, the tips clavate swollen up to 6.0 μ , embedded in a brownish, gelatinous matrix forming an epithecium.

Host: *Picea* spp.

SPECIMENS EXAMINED: TYPE. Karst. Fung. Fenn. 756. BM, FH, K.

EXSICCATI: Karst. Fung. Fenn. 840 (as *Tympanis amphibola*).

FINLAND: H Mustiala in *Abietis*, 3 May 1869, P. A. Karsten; K Mustiala in *Abietis*, May 1867, P. A. K. (as *Tympanis amphibola*). ONTARIO: DAOM 19839, Petawawa For. Expt. Stn.

Karsten (1871*b*) described this fungus as *Tympanis bacillifera*. Later (1871*c*) he noted its similarity to *T. amphibola* and stated that it was distinguished by its longer spores. He cited the specimen in Karsten Fung. Fenn.

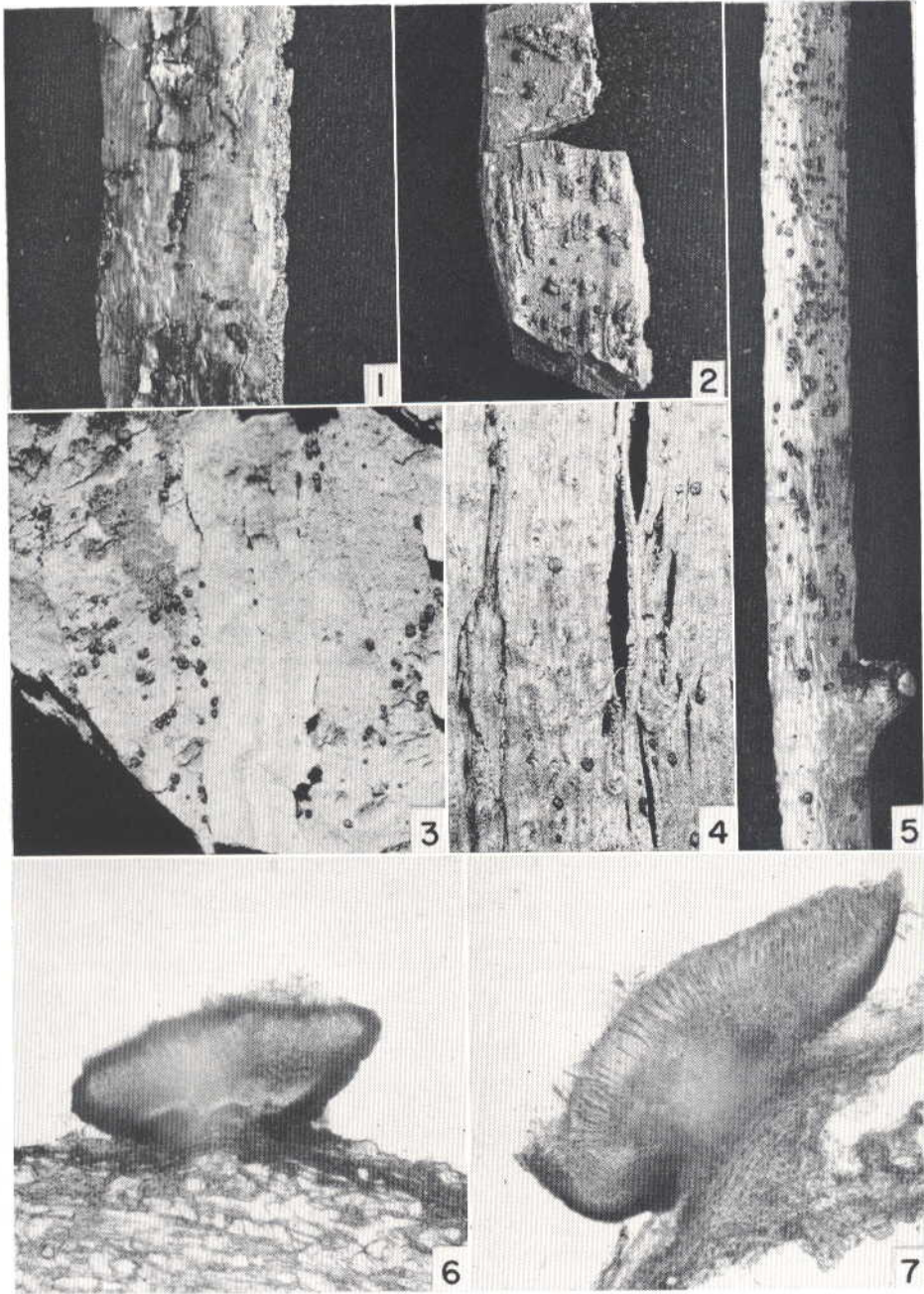


FIG. 1. *Pragmopora pithya*, apothecia, DAOM 105353. FIG. 2. *P. pithya*, conidial state, DAOM 113865. FIG. 3. *P. bacillifera*, apothecia, DAOM 19839. FIG. 4. *P. viticola*, apothecia, Ell. N. Am. Fung. 1317. FIG. 5. *P. pini*, apothecia, DAOM 114080. Magn. = 2× approx. FIG. 6. *P. bacillifera*, section of apothecium, DAOM 19839. FIG. 7. *P. pithya*, section of apothecium, DAOM 110495. Magn. = 75×.

756. Packets under this number were examined in K, FH, and BM. The specimen in BM was not examined microscopically but there was a sketch by Phillips with the specimen showing typical asci and spores and giving the spore size as $35-50 \times 3-5 \mu$.

Saccardo (1889) placed it in *Scleroderris* on the basis of the spore shape but I consider *Scleroderris* to be a synonym of *Godronia* which has a very different tissue structure.

Rehm (1890) transferred it to *Pragmopora* and emphasized its evident close relationship to *P. amphibola* Massal. Rehm's material was said to be on *Larix*.

Smith and Rea (1907) reported a specimen from Dunkeld, Perthshire, determined as *Scleroderris bacillifera* (Karst.) Sacc. by Boudier. They noted discrepancies in ascus and spore size between this specimen and that described for *S. bacillifera*. The specimen was kindly loaned for examination by the British Museum. The material was scanty but adequate for identification and the fungus proved to be the species described by Zeller and Goodding (1930) as *Scleroderris abieticola*, for which there is no satisfactory generic disposition available at present.

One collection of *P. bacillifera* was made by myself at the Petawawa Forest Experiment Station, Ontario, but I was unsuccessful in attempts to obtain cultures. No conidial state was found in this collection. Karsten (1871c) described verruciform spermogonia with minute spores $4 \times 1.5 \mu$. The genetic connection of this state would need to be established by cultures since such fruiting bodies could conceivably be the *Pleurophomella* state of one of the *Tympanis* species that occur on *Picea*.

Karsten (1871c, p. 237) described a fungus on *Salix* as *Patellaria bacilligera*. Later (1885) he based the genus *Sphaeropeziella* on this species but apparently because of a typographical error the name was written *P. bacillifera*. Rehm (1890) correctly wrote the name as *Sphaeropeziella bacilligera* and pointed out that it was quite different from *Pragmopora bacillifera*. This is re-emphasized here to avoid possible confusion.

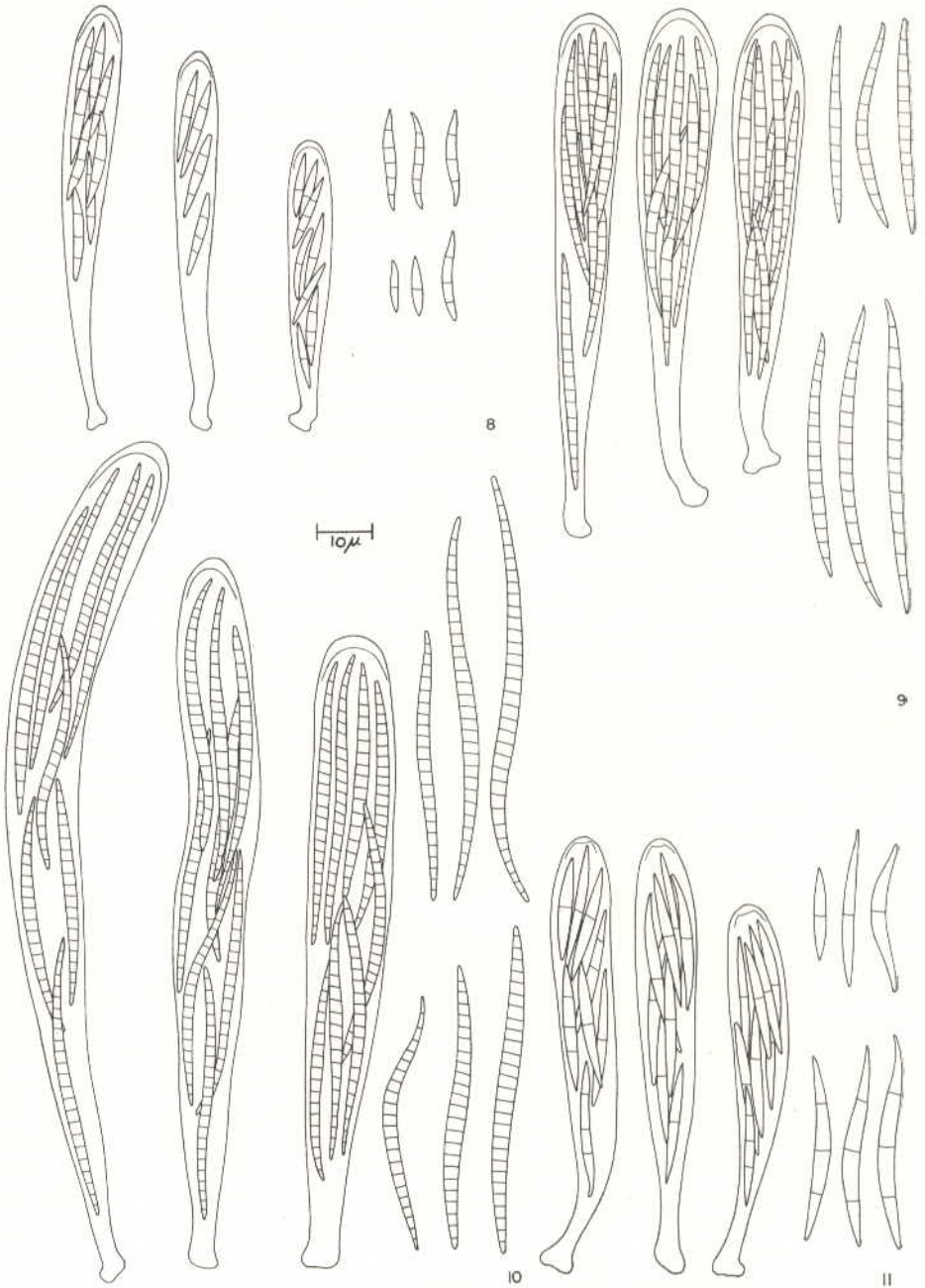
***Pragmopora pini* sp. nov.**

Figs. 5, 9

Apotheciis erumpentibus vel erumpenti-superficialibus, solitariis vel subcaespitosis, sessilibus, versus basim attenuatis, orbicularibus vel undulatis, 0.3-0.5 mm diam., 0.2-0.3 mm altis, atris, glabris, duris, cartilagineis vel corneis in sicco, carnosio-coriaceis in humido; hymenio atro, concavo vel plano, carnosioro quam excipulo, margine subelevato; excipulo medullari textura epidermoidea, hyphis 3-5 μ diam., in excipulo exteriore obscurioris et crassiorotunicatis; ascis cylindraco-clavatis, stipitatis, octosporis, poro in iodo leviter coerulescente, (80)90-110(120) \times 10-13 μ ; ascosporis hyalinis, elongato-fusiformibus vel subfiliformibus, rectis vel curvulis, 11-15-septatis, (30)35-50(57) \times 3.0-4.0 μ ; paraphysibus, hyalinis, filiformibus, septatis, simplicibus vel ramosis, 1.0-1.5 μ diam., ad apicem leviter incrassatis, 2.5 μ , epithecium formantibus.

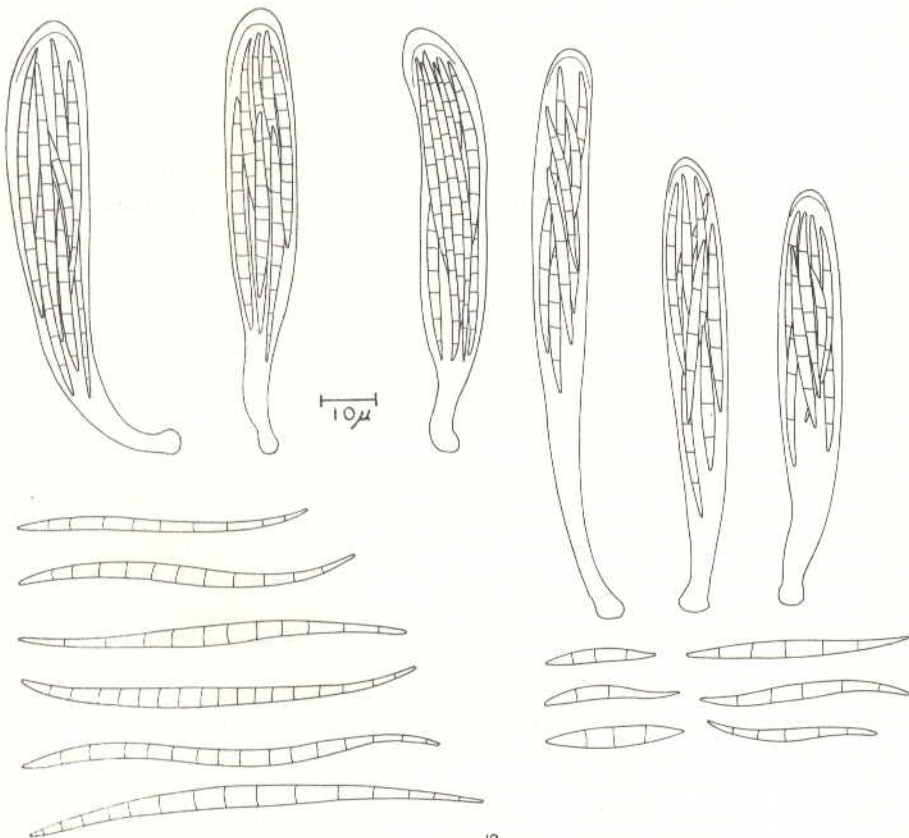
Hab.: *Pinus monticola* Dougl. ex Lamb.

Typus: DAOM 114080, on *Pinus monticola*, north slope of Nickleplate Mt., Bonner Co., Idaho, Coll. A. W. Slipp, 7 Aug. 1939. ID 1798.



FIGS. 8-13. Drawings of asci and ascospores. Fig. 8. *P. amphibola*. Fig. 9. *P. pini*. Fig. 10. *P. pithya*. Fig. 11. *P. viticola*. Fig. 12. *P. abietina*. Fig. 13. *P. bacillifera*.

Apothecia erumpent to erumpent-superficial, scattered to gregarious, separate or subcespitose, sessile, narrowed below, circular or slightly undulate, 0.3–0.5 mm in diameter and about 0.2–0.3 mm in height, black, glabrous, hard, cartilaginous to horny in consistency, becoming more fleshy-leathery when moist; hymenium black, concave to plane, more fleshy than the excipulum, with a slightly raised margin; tissue of the medullary excipulum *textura epidermoidea* composed of interwoven, brownish hyphae, 3–5 μ in diameter, the walls grown together, only slightly thickened in the central part, becoming strongly thickened toward the outside, ectal excipulum similar in structure but forming an outer rind-like zone where the walls of the hyphae are very thick and dark, and extreme outer cells sometimes subglobose; hypothecium lacking or very indistinct; asci cylindrical-clavate, tapering below to a slender stalk, eight-spored, pore slightly staining blue in iodine, (80)90–110(120) \times 10–13 μ ; ascospores hyaline, elongate-fusiform to subfiliform, pointed at ends, straight or curved, 11–15-septate, more or less intertwined in the ascus (30)35–50(57) \times 3.0–4.0 μ ; paraphyses hyaline, filiform, septate, simple or branched, 1.0–1.5 μ in diameter, the tips slightly swollen to 2.5 μ and embedded in a brownish gelatinous matrix forming an epithecium.



Host: *Pinus monticola*.

This species is known to me only from the single collection that was sent by Dr. John Ehrlich in 1942. It was at first thought that it might be *Pragmomopora bacillifera* but the spores of the latter are rarely more than 5-septate whereas in this species they are consistently 11- to 15-septate, the asci are slightly larger, and the host is different.

Some *Pleurophomella*-like conidial fruiting bodies with minute spores were observed in this collection but since it was not possible to obtain cultures the genetic connection is not established.

In contrast to *P. amphibola*, *P. bacillifera*, and *P. abietina* the iodine reaction of the asci was positive, but the reaction was rather weak and was not observed in immature asci. It does not seem to justify the generic separation of this species from those mentioned above unless further studies reveal a correlation with other characters.

Pragmomopora pithya ([Fr.] Fr.) comb. nov.

Figs. 1, 2, 7, 10

[=*Dothidea pithya* Fr. Obs. Mycol. 2: 350. 18. 1818.]

≡ *Excipula pithya* [Fr.] Fr. Sclerom. Suec. 172. 1821.

≡ *Cenangium pithyium* ([Fr.] Fr.) Fr. Syst. Mycol. 2: 184. 1822. (non sensu Fuckel 1870).

≡ *Phacidium pithyium* ([Fr.] Fr.) Fr. Elench. Fung. 2: 131. 1828.

≡ *Triblidium pithyium* ([Fr.] Fr.) Fr. Summ. veg. Scand. p. 369. 1849.

≡ *Tympanis pithya* ([Fr.] Fr.) Sacc. Syll. Fung. 8: 583. 1889. (non Karst. 1871a necque sensu Rehm 1889).

= *Godronia pineti* Jørstad Medd. Norske Skogsforsøksv. 2: 130. 1925.

Apothecia erumpent to erumpent-superficial, scattered to densely gregarious, separate or cespitose in small clusters of up to about 10, at first globose, becoming circular to undulate or sometimes slightly elongated, sessile, narrowed below, 0.2–0.8 mm in diameter, 0.2–0.5 mm in height, black, glabrous, hard, horny to cartilaginous in consistency becoming more fleshy-leathery when moist; hymenium black or olivaceous when moist, concave to plane to finally slightly convex, with a slightly raised margin, more fleshy than the excipulum; tissue of the medullary excipulum *textura epidermoidea* composed of brownish, thick-walled, interwoven hyphae, 2.0–4.0(5.0) μ in diameter; ectal excipulum a rind-like outer zone somewhat similar in structure but approaching *textura oblita* with the hyphae arranged more definitely in obliquely parallel rows and the walls much thicker and darker colored; hypothecium indistinct, a few interwoven, slender hyphae; asci cylindrical-clavate, tapering below to a slender stalk, eight-spored, occasionally becoming multispored, pore staining blue with iodine, 100–140 \times 10–15 μ ; ascospores hyaline, filiform, pointed at ends, nearly straight or flexuous, many-septate, the individual cells 2.5–4.0 μ long, arranged more or less in two fascicles in the ascus, (45) 50–60(75) \times 3.0–4.0 μ ; paraphyses hyaline, filiform, septate, simple or branched, 1.0–1.5 μ in diameter, the tips slightly swollen up to 2.0–3.0 μ and embedded in a brownish gelatinous matrix forming an epithecium.

Host: *Pinus*, *Pseudotsuga*, *Larix* (fide Jørstad).

SPECIMENS EXAMINED: TYPE. Fries Sclerom. Suec. 172 (specimen in FH).

BRITISH COLUMBIA: DAOM 110495, on *Pseudotsuga*, Radium Hot Springs, 7–7–64, DAVFP 15951, CFB 6179. IDAHO: DAOM 110494, on *Pinus*, Orofino

Creek, ex herb. J. R. Hansbrough. NEW YORK: DAOM 113865; 113922, New Boston. FINLAND: DAOM 105353, Nylandia, Helsinki, Seutula, 28-10-45, Kujala 793, as *Godronia pineti*, specimen authenticated by Jørstad.

Fries (1822) described *Cenangium pithyum* in tribe *Triblidium*, occurring on *Pinus sylvestris*. He cited a specimen in Scler. Suec. 172 and under var. *b.* a specimen in Scler. Suec. 14. His var. *b.* appears to be the conidial state from the description and a specimen of Scler. Suec. 14 in K confirmed this but a satisfactory mount was not obtained. The specimen of Scler. Suec. 172 in FH was examined and proved to be this species with long, many-septate ascospores. According to Holm and Nannfeldt (1962) the specimen in FH is part of the original edition of *Scleromyceti Sueciae*.

The fungus never became widely known and confusion concerning its identity arose later. Fuckel (1870) described a fungus under the name *Cenangium pithyum* Fr. that was evidently a true *Tympanis* since the asci were multispored. Karsten (1871a) independently described *Tympanis pithya*, a fungus also occurring on *Pinus sylvestris* and which he had earlier distributed in Fung. Fenn. Exs. 661 under the name *Patellaria pithya* Karst. This fungus is a true *Tympanis* and was described as such by Karsten without any reference to *Cenangium pithyum* Fries.

Saccardo (1889), apparently confused by the fact that Fuckel had misidentified a *Tympanis* as *Cenangium pithyum* Fr., made a new combination *Tympanis pithya* (Fr.) Sacc. thereby creating a later homonym of *T. pithya* (Karst.) Karst. *T. pithya* (Fr.) Sacc. must be considered a synonym of *C. pithyum* Fr., although it was based on a misidentification.

Rehm (1889) added to the confusion by describing the *Tympanis* as *T. pithya* (Fr.) Karst., a quite erroneous citation since Karsten never made any combination in *Tympanis* based on Fries' epithet.

Jørstad (1925) described this species independently as *Godronia pineti*. Specimens from Finland collected by Dr. Kujala and identified as *G. pineti* Jørst. have been examined. Dr. Jørstad has informed me (in litt.) that the type material of *G. pineti* is very scanty but that he is certain that Dr. Kujala's material was correctly identified. Jørstad reported that he had found this species on *Larix* as well as *Pinus* and specimens on *Pseudotsuga* have been received from Dr. A. Funk.

Mr. R. F. Lucas of the Northeastern Forest Experiment Station, West Haven, Conn., was recently in communication with me regarding a basal canker of young white pine encountered in New York State. Examination of specimens sent by him revealed that the fungus involved was *Pragmopora pithya*. Mr. Lucas kindly provided cultures isolated from ascospores and conidia. The conidia were produced in *Pleurophomella*-like fruiting bodies. These cultures unquestionably establish the connection between the two states and are the only cultures of a *Pragmopora* species that I have seen.

These cultures produce conidia on the hyphae in a manner similar to that of *Tympanis* species. The conidia themselves are also similar to those of *Tympanis* but the conidia are produced less abundantly and the colonies are not as slimy or yeast-like as in most *Tympanis* species. In appearance they are very similar to cultures of *Durandiella lenticellicola* Groves (1954).

It is interesting that while *Pragmopora pithya* is more erumpent than most *Pragmoporas*, *Durandiella lenticellicola* is more superficial than most *Durandiellas*. For some time I hesitated on whether the latter was better placed as a *Pragmopora* or *Durandiella* but because of the elongated conidia I considered it to be a *Durandiella*. This disposition has been confirmed by establishing that the conidia of *P. pithya* are minute and like those of a *Tympanis* rather than a *Durandiella*. It seems probable that the conidial fruiting bodies that have been reported in association with *P. amphibola*, *P. bacillifera*, and *P. pini* are actually the conidial states of these species.

The positive iodine reaction of the ascus pore in *P. pithya* may appear somewhat anomalous, but in view of the weak and rather uncertain reaction observed in *P. pini* and the fact that much of the material of the other species examined was very scanty and often not in good condition, it does not seem justifiable to base a generic separation on this one character at this time.

Pragmopora viticola (Schw.) comb. nov.

Figs. 4, 11

≡ *Peziza viticola* Schw. Schr. Nat. Ges. Leipzig 1: 123. 1822.

≡ *Tympanis viticola* (Schw.) Fries, Syst. Myc. 2: 176. 1822.

≡ *Cenangium viticolum* (Schw.) Fckl. Jahrb. Nass. Ver. f. Naturk. 23-24: 270. 1870.

≡ *Godronia viticola* (Schw.) Seaver, Mycologia, 37: 343. 1945.

= *Peziza schweinitziana* Spreng. in L. Syst. Veg. ed. 16, 4(1): 515. 1827.

Apothecia erumpent-superficial, separate, circular to undulate or slightly elongated, sessile, slightly narrowed below, 0.2–0.8 mm in diameter, 0.1–0.3 mm in height, black, glabrous, hard, horny in consistency, becoming more fleshy-leathery when moist; hymenium slightly concave to plane, black, with a slightly raised margin, more fleshy than the excipulum; tissue of the medullary excipulum *textura epidermoidea* composed of brownish, thick-walled, interwoven hyphae 2–4 μ in diameter; ectal excipulum *textura oblita*, the hyphae more or less obliquely parallel and forming a rind-like outer zone of very thick-walled, blackish hyphae; hypothecium lacking or indistinct; asci narrowly clavate, narrowed below to a short stalk, eight-spored, pore not staining blue in iodine, (56)60–80(90) \times (9.0)10.0–11.0(12.0) μ ; ascospores hyaline, elongate-fusiform, pointed at ends, straight or slightly curved or slightly sigmoid, more or less fasciculate in the ascus, 23–35 \times 3.0–4.0 μ ; paraphyses hyaline, filiform, septate, simple or branched, 1.5–2.0 μ in diameter, the tips slightly swollen and embedded in a brownish, gelatinous matrix forming an epithecium.

Host: *Vitis* spp.

SPECIMENS EXAMINED: TYPE. Specimen ex Herb. Schweinitz examined in BPI, K, UPS. Failed to find asci or spores in mounts examined but gross appearance agreed with that of the Ellis specimens.

EXSICCATI: Ell. N. Amer. Fung. 1317.

NY Ellis Coll. 2233, Ellis Coll. March 1882.

The above description is based on the fungus distributed in Ellis North American Fungi 1317 as *Tympanis viticola* (Schw.). Seven packets of this number have been examined, in NY, FH, MICH, TRTC, and DAOM. There are three packets in NY stamped respectively "Ellis Collection", "Herbarium of Mr. F. S. Earle", and "Herbarium of Columbia University",

of which the latter appeared to contain the best material. For the most part the material in these packets is scanty and the apothecia looked immature but microscopic examination established that they are all the same fungus.

Two other packets in NY both labelled "Ellis Collection" were examined. Neither packet states the locality of collection, one bears the number 2233 and the date simply "Oct.", the other has no number but is dated "March 1882". These two specimens also proved to be the same fungus but are not in good condition.

It is not at all certain that this is the fungus originally described by Schweinitz (1822) as *Peziza viticola*. I have examined four specimens purporting to be from the Schweinitz herbarium in K, UPS, BPI, and FH. The material is all very scanty and unsatisfactory and I failed to find asci or spores in the specimens at K, UPS, and BPI. There is a second specimen at K labelled "4746 *Tympanis viticola* Schw. Herb. Myc. Berk.". The number 4746 appears to be a Curtis serial number from a shipment of fungi sent to Berkeley in 1854. This specimen is also scanty but has asci with elongated, septate, primary ascospores that have produced many minute secondary ascospores and is evidently the fungus commonly known as *Corynella atrovirens* (Pers. ex Fr.) Boud. The specimen in FH is in the Curtis Herbarium and labelled simply "*Tympanis viticola* Schw.! Herb. Schw.". My notes state that this specimen resembles the Ellis specimens in gross appearance but when an apothecium was examined microscopically I found asci $73-122 \times 6-8 \mu$ and ascospores $15-21 \times 3-4 \mu$ that were clavate-fusoid to ellipsoid-fusoid and mostly three-septate. Thus microscopically it does not agree with the Ellis specimens and this fungus is unknown to me.

Fries (1822) placed *Peziza viticola* Schw. in *Tympanis*. He noted that he had seen dried specimens, probably the material I saw in UPS and in which I failed to find asci or spores.

Fuckel (1870) transferred the species to *Cenangium* but gave no description, merely noting "*Ascos maturos nondum vidi*". He cited a specimen in Fung. Rhen. 1760 and, predictably, a mount from an apothecium from this number in FH showed no asci or spores. Rehm (1889) thought that Fung. Rhen. 1760 was an immature *Tympanis*.

I also examined a specimen in Klotzsch Herb. Viv. Myc. 1193 labelled *Tympanis viticola* Schwein. but it, too, is immature.

Rehm (1889) stated that he knew of no German specimens but included a brief description based mainly on that of Fries (1822). He also added a brief description based on the specimen in Ell. N. Am. Fung. 1317 and noted that it had elongated spores.

Seaver (1945) placed the species in *Godronia*, erroneously attributing the combination to Thaxter. This was later corrected by Seaver (1951). Seaver's concept of the species was also based on the specimen in Ell. N. Am. Fung. 1317 and he placed it in *Godronia* because of the elongated spores. However, the gross appearance, tissue structure, and consistency are very different from *Godronia*.

It is clear that Ell. N. Am. Fung. 1317 for all practical purposes has been treated as a neotype of this species, and my impression from the immature Schweinitz material I have seen (in BPI, K, and UPS) is that the Ellis fungus

is the same. The fact that the fungus on the Schweinitz specimen in the Curtis Herbarium proved to be different makes the matter doubtful, but since there are evidently several Schweinitz specimens in existence and the possibility exists that mature apothecia may yet be found in some of them, it would seem to be unwise to change the concept of the species on the basis of this one apothecium examined which at best has doubtful claims to being recognized as a lectotype. There is no evidence that this is a specimen examined by Schweinitz when he drew up his original description.

The taxonomic position of this fungus remains somewhat doubtful. It is certainly not a *Cenangium*, *Tympanis*, or *Godronia* and the gross appearance, tissue structure, and spore shape all seem to point to its relationship with *Pragmopora*. No conidial state has been observed. However the material studied has all been rather unsatisfactory and the fungus should be re-studied from abundant fresh material.

Doubtful and Excluded Species

Pragmopora atrata ([Hedw.] Fr.) Korb. Saccardo Syll. Fung. 8: 795, 1889 = *Patellaria atrata* [Hedw.] Fr. Syst. Myc. 2: 160, 1822.

P. flavovirescens (Dicks.) Schroet. Krypt. Fl. Schles. 3: 128, 1893 is evidently a lichen.

P. furstingii (Korb.) Schroet. Krypt. Fl. Schles. 3: 128, 1893 is evidently a lichen.

P. kunzei (Flotow) Schroet. Krypt. Fl. Schles. 3: 128, 1893 is probably a lichen.

P. lecanactis (Massal.) Korb. Parerg. Lich. p. 279, 1859-65 is a synonym of *Patellaria atrata* [Hedw.] Fr. Syst. Myc. 2: 160, 1822 according to Rehm (1889).

P. loniceræ (Phill.) Schroet. Krypt. Fl. Schles. 3: 127, 1893 = *Durella connivens* (Fr.) Rehm. Ber. naturh. Ver. Augsburg 26: 9, 1881. This fungus was first described by Phillips (1887) as *Patellaria loniceræ*. It was transferred to *Durella* by Nannfeldt (1936) after examination of the type. Dennis (1956) agreed with Nannfeldt's disposition as to genus but considered it to be a synonym of the older *D. connivens*.

P. macrospora Bagl. & Carest. Comm. crittog. Ital. 2: 84, 1864 is a synonym of *Durella carestiae* (De Not.) Sacc. according to Saccardo (1889).

Pragmopora piceae Vel. Mon. Disc. Bohem. p. 82, 1934. Through the kindness of Dr. A. Pilát, National Museum, Prague, I was able to examine the two specimens cited by Velenovsky in his original description. The data on the packets corresponded with those cited in the description but in spite of the most careful scrutiny of this material the only fungus I could find on it was *Trybliopsis pinastri* (Fr.) Karst. This fungus has large, fusoid, two-celled ascospores $15-35 \times 9-11 \mu$, whereas Velenovsky described the ascospores of his *Pragmopora piceae* as $15-22 \times 2 \mu$ and four- to six-celled. Obviously Velenovsky saw a different fungus from *Trybliopsis pinastri* and his description strongly suggests a *Pragmopora*. His spore measurements could fit *P. amphibola* but this species occurs on *Pinus* and he stated that the host was *Picea* and the specimens examined are *Picea* but bear no fungus agreeing with his description. These discrepancies cannot be resolved from the information available and *P. piceae* Vel. will have to remain a doubtful species.

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