

42. *DISCOSIA* Libert

Pl. Crypt. Ard. Exs. #346, 1837.

= *Cryptostictella* Grove, J. Bot. Lond. 50: 52, 1912; fide Petrak & Sydow, Ann. mycol. 23: 209-294, 1925.

= ? *Leptina* Batista & Peres apud Batista, Peres & Farr, Saccardoia 1: 25, 1960; fide Sutton, Mycol. Pap. 141: 109, 1977.

= *Discosiospora* Ramaley, Mycotaxon 35: 101, 1989.

Conidiomata stromatic, variable from applanate to pycnidoid, intraepidermal to subepidermal or subperidermal in origin, immersed to suberumpent, occasionally appearing as conical blisters, unilocular to plurilocular, glabrous, dark brown to dull or glistening black, often pruinose, dehiscing by a circular area of dehiscence or by irregular rupture of the covering layer; basal stroma in applanate conidiomata well developed, of *textura angularis*, cells thick-walled and dark pigmented in the basal layers, becoming progressively thin-walled and paler toward the conidial hymenium; covering layer variable in thickness, of *textura angularis* to *textura epidermoidea*, cells thick-walled and brown, often with occluded lumina; walls, in stromatic indeterminate or pycnidoid forms, of *textura angularis*, cells thick-walled and dark brown to brown; locules in multilocular conidiomata often separated by *textura porrecta* or *textura prismatica*, cells thin-walled, pale brown to almost colourless. Conidiophores arising at the base only, or at the base and part way up the sides, or all around the cavity of the conidioma, mostly reduced to conidiogenous cells, or long, septate and irregularly branched in a few species, colourless, thin-walled, smooth, invested in mucus. Conidiogenous cells discrete, rarely integrated, ampulliform, clavate, lageniform, narrow conical, subcylindrical, or cylindrical, colourless, thin-walled, smooth. Conidiogenesis: ontogeny holoblastic by apical wall-building in the first conidium and by replacement wall-building in subsequent conidia; maturation by moderate diffuse wall-building synchronous with conidium ontogeny; delimitation by a double septum; secession by fission of the double septum; proliferation of conidiogenous cells enteroblastic-percurrent, producing additional conidia at higher levels; conidiogenous cells with annellations; regeneration of conidiogenous cells absent. Conidia cylindrical, fusiform, naviculate or subcylindrical, straight or curved, euseptate, cells of varying lengths, colourless, almost colourless, pale olivaceous, or brown, smooth, bearing a cellular, unbranched (branched in one species), filiform or attenuated appendage at each end; appendages of type A maintaining protoplasmic continuity with conidium body and characteristically inserted on the basal and apical cells on the concave side of the conidium: in subpolar or polar position at the distal ends, medianly, or close to the septa separating the distal cells from the median cells.

Lectotype anamorph-species: *Discosia strobilina* Libert, fide Subramanian & Reddy (1974).

Teleomorph: Unknown.

Over 70 species have been accommodated in *Discosia*. In spite of the recent revision of the genus by Subramanian & Reddy (1974), the status of some of the species names remains in doubt and identification of some of the species is still cumbersome. These authors distinguished the taxa by the septation of the conidia, varying proportional lengths of the conidial cells, and the conidium size. They recognized five species in four sections, but they could not confidently apply epithets to three other species. Nag Raj (1991) indicated that their choice of *D. julia* Spegazzini as a typical example of one of the sections is untenable, since Spegazzini's use of the name was actually intended for a species of *Pilidium* present on the type specimen. Vanev (1991) has opted to designate *D. artocreas* Tode : Fries as the lectotype species for the genus and has proposed to recognize 31 species in six sections characterized by the number of septa, relative lengths of the median cells and points of origin of conidium appendages. In view of the impending publication of a comprehensive treatment of the genus by Vanev, I have limited my accounts to only a few species in this book.

KEY TO SPECIES

A. Conidia 4-septate . . . . .	<i>D. poikilomera</i> (42.10)
A. Conidia 3-septate . . . . .	B
B. Conidiomata pycnidoid . . . . .	C
B. Conidiomata indeterminate . . . . .	F
B. Conidiomata applanate . . . . .	G

- C. Conidium appendages branched (bifid or trifid), inserted in a median or submedian position on the end cells; conidiomata pycnidoid . . . . . *D. ceanothi* (42.4)
- C. Conidium appendages not branched . . . . . D
- D. Conidium appendages inserted about 1-1.5  $\mu\text{m}$  from end septa . . . . . *D. pyri* (42.11)
- D. Conidium appendages polar . . . . . E
- E. Conidia with a mean length of 21  $\mu\text{m}$ ; combined mean length of median cells of 15.5  $\mu\text{m}$ ; mean length of basal appendage = 6.5  $\mu\text{m}$  . . . . . *D. lauricola* (42.7)
- E. Conidia with a mean length of 17.5  $\mu\text{m}$ ; combined mean length of median cells of 13  $\mu\text{m}$ ; mean length of basal appendage = 8.2  $\mu\text{m}$  . . . . . *D. eucalypti* (42.5)
- F. Conidia colourless; two median cells relatively shorter than the end cells; appendages polar . . . . .  
     . . . . . *D. novae-zelandiae* (42.8)
- F. Conidia pigmented; two median cells relatively longer than the end cells; appendages inserted about 1-1.5  $\mu\text{m}$  from the end septa . . . . . *D. pleurochaeta* (42.9)
- G. Conidium appendages inserted about 1-2  $\mu\text{m}$  from end septa . . . . . H
- G. Conidium appendages subpolar . . . . . I
- H. Mean conidium length/width ratio = 5.1:1; combined mean length of median cells = 10  $\mu\text{m}$ ; ratio of mean lengths of median cells (base towards apex) = 1.00:0.55 . . . . . *D. brasiliensis* (42.3)
- H. Mean conidium length/width ratio = 7.3:1; combined mean length of median cells = 17.5  $\mu\text{m}$ ; ratio of mean lengths of median cells (base towards apex) = 1.00:0.53 . . . . . *D. blumencronii* (42.2)
- I. Conidiophores unbranched or branched, 0-2-septate; third cell of conidium (base towards apex) longer than all other cells; mean conidium length/width ratio = 5.4:1 . . . . . *D. fraxinea* (42.6)
- I. Conidiophores reduced to conidiogenous cells; third cell of conidium not longer than all other cells; mean conidium length/width ratio > 5.4:1 . . . . . J
- J. Conidiogenous cells conical to ampulliform and 4-6  $\mu\text{m}$  long; mean conidium length/width ratio = 7.2:1; mean conidium width = 2.5  $\mu\text{m}$ ; ratio of mean lengths of median cells (base towards apex) = 1.00:0.60; mean length of appendages = 10  $\mu\text{m}$  . . . . . *D. artocreas* (42.1)
- J. Conidiogenous cells narrow, elongate, conical and 10-13  $\mu\text{m}$  long; mean conidium length/width ratio = 9.9:1; mean conidium width = 2.2  $\mu\text{m}$ ; ratio of mean lengths of median cells (base towards apex) = 1.00:0.65; mean length of appendages = 15  $\mu\text{m}$  . . . . . *D. strobilina* (42.12)

### SYNOPTIC KEY TO SPECIES

- |   |   |   |
|---|---|---|
| <p>I. <i>Conidiomata</i>:</p> <p>A. <i>Nature</i>:</p> <p>    a. applanate to discoid:<br/>        1, 2, 3, 6, 12</p> <p>    b. pycnidoid:<br/>        4, 5, 7, 10, 11</p> <p>    c. indeterminate:<br/>        8, 9</p> <p>B. <i>Origin</i>:</p> <p>    a. subcuticular:<br/>        1, 3</p> <p>    b. subepidermal:<br/>        5, 8, 11</p> <p>    c. intra-epidermal:<br/>        2, 4, 5, 6, 7, 8, 9, 10, 12</p> <p>C. <i>position in relation to substrate</i>:</p> <p>    a. partly erumpent:</p> | <p>1, 2, 3, 4, 5, 7, 9, 10, 12</p> <p>b. erumpent:<br/>6</p> <p>c. immersed:<br/>5, 7, 8, 11</p> <p>D. <i>locule disposition</i>:</p> <p>    a. unilocular:<br/>        4, 5, 6, 7, 8, 9, 10, 11, 12</p> <p>    b. plurilocular:<br/>        1, 2, 3, 5, 6, 7, 10, 12</p> <p>II. <i>Conidiophores</i>:</p> <p>A. <i>Configuration</i>:</p> <p>    a. reduced:<br/>        1, 2, 3, 4, 6, 7, 8, 9, 10, 12</p> <p>    b. not so:<br/>        4, 5, 6, 8, 10, 11</p> | <p>B. <i>Origin</i>:</p> <p>    a. all around the cavity:<br/>        4, 5, 8, 11</p> <p>    b. at the base only:<br/>        1, 2, 3, 6, 9, 10, 12</p> <p>    c. at the base and part way up the sides:<br/>        7</p> <p>C. <i>Type of branching</i>:</p> <p>    a. none:<br/>        1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12</p> <p>    b. irregular:<br/>        5</p> <p>    c. sparse:<br/>        4, 6, 8, 10, 11</p> <p>III. <i>Conidiogenous cells</i>:</p> |
|---|---|---|

- A. *Shape*:  
 a. subcylindrical:  
 4, 5, 6  
 b. ampulliform:  
 1, 2, 3, 4, 6, 7, 8, 9, 10  
 c. lageniform:  
 2, 3, 4, 6, 9, 10, 11  
 d. conical:  
 1, 10  
 e. narrow conical:  
 8, 11, 12  
 f. clavate:  
 5  
 g. cylindrical:  
 4
- B. *Mean length*:  
 a. up to 8  $\mu\text{m}$ :  
 1, 2, 3, 7, 8, 10, 11  
 b. 9-15  $\mu\text{m}$ :  
 9, 12  
 c. up to 40  $\mu\text{m}$ :  
 4, 5, 6
- C. *Mean width*:  
 a. 1.5-2.4  $\mu\text{m}$ :  
 4, 5, 6, 7, 10, 11, 12  
 b. 2.5-2.9  $\mu\text{m}$ :  
 1, 8, 9  
 c. 3  $\mu\text{m}$ :  
 2, 3
- IV. *Conidia*:  
 A. *Septation*:  
 a. 3-septate:  
 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12  
 b. 4-Septate:  
 10  
 B. *Pigmentation*:  
 a. almost colourless:  
 1, 3, 4, 5 (median cells), 6, 7, 10, 12  
 b. pale olivaceous/pale brown:  
 2, 4, 9  
 c. colourless:  
 8, 11  
 C. *Mean conidium length*:  
 a. 14-17  $\mu\text{m}$ :  
 5, 6, 8, 10  
 b. 18-22.5  $\mu\text{m}$ :  
 1, 3, 4, 7, 11, 12  
 c. 25-32  $\mu\text{m}$ :  
 2, 9
- D. *Mean conidium width*:  
 a. 2.2  $\mu\text{m}$ :  
 8, 12  
 b. 2.5-2.9  $\mu\text{m}$ :  
 1, 5, 7, 11  
 c. 3-3.5  $\mu\text{m}$ :  
 2, 3, 4, 6, 9, 10
- E. *Mean conidium length/width ratio*:  
 a. between 5.1:1 and 5.8:1  
 3, 4, 6, 10  
 b. between 6.4:1 and 7.5:1  
 1, 2, 5, 8, 9  
 c. between 8.4:1 and 9.9:1  
 7, 11, 12
- F. *Mean total length of median cells*:  
 a. 10  $\mu\text{m}$  or less:  
 3, 6, 8  
 b. 11-15  $\mu\text{m}$ :  
 1, 4, 5, 10, 12  
 c. 15.5-21  $\mu\text{m}$ :  
 2, 7, 9, 11
- G. *Mean length of conidial cells*:  
 G-1. basal cell:  
 a. 2.5-2.7  $\mu\text{m}$ :  
 5, 10, 11  
 b. 3-3.7  $\mu\text{m}$ :  
 1, 4, 6, 7  
 c. 4-4.5  $\mu\text{m}$ :  
 3, 8, 12  
 d. above 5  $\mu\text{m}$ :  
 2, 9  
 G-2. second cell from base:  
 a. up to 3  $\mu\text{m}$ :  
 6, 8, 10  
 b. 6-7.5  $\mu\text{m}$ :  
 1, 3, 4, 5  
 c. 8-8.5  $\mu\text{m}$ :  
 7, 11, 12  
 d. 10-11.5  $\mu\text{m}$ :  
 2, 9  
 G-3. third cell from base:  
 a. 3-4.5  $\mu\text{m}$ :  
 1, 3, 8  
 b. 5.5-6.5  $\mu\text{m}$ :  
 2, 4, 5, 6, 9, 10, 12  
 c. 7-8  $\mu\text{m}$ :  
 7, 11
- G-4. fourth cell:  
 2.7  $\mu\text{m}$ :  
 10  
 G-5. apical cell:  
 a. 2.5-3.5  $\mu\text{m}$ :  
 1, 3, 4, 5, 7, 10, 11  
 b. 3.6-4  $\mu\text{m}$ :  
 2, 6, 12  
 c. 4.5-5  $\mu\text{m}$ :  
 8, 9
- H. *Ratio of mean lengths of conidial cells (base toward apex)*:  
 H-1. 4-celled conidia:  
 1.00:0.59:0.71:1.11  
 8  
 1.00:0.85:1.71:1.14  
 6  
 1.00:1.61:1.61:0.89  
 4  
 1.00:1.70:0.95:0.87  
 3  
 1.00:1.88:1.22:0.82  
 12  
 1.00:1.90:1.00:0.81  
 9  
 1.00:2.13:1.13:0.75  
 2  
 1.00:2.14:1.28:0.77  
 1  
 1.00:2.22:2.11:1.00  
 5  
 1.00:2.66:2.46:0.83  
 7  
 1.00:2.96:2.96:1.00  
 11  
 H-2. 5-celled conidia:  
 1.00:1.00:2.60:1.08:1.00  
 10
- I. *Appendages*:  
 a. branching:  
 present:  
 4  
 absent:  
 1-3, 5-12  
 b. Mean length of apical appendage:  
 6-9  $\mu\text{m}$ :  
 5, 7, 8, 10  
 10-12.5  $\mu\text{m}$ :  
 1, 2, 3, 9, 11

15.5 µm:	d. Mean length of basal	on basal cell:
4, 6, 12	appendage:	polar:
c. Insertion of appendage	6-8.5 µm:	7, 8
on the apical cell:	5, 7, 8, 10	subpolar:
polar:	10-13.5 µm:	5, 6, 12
5, 6, 7, 8	1, 2, 3, 6, 9, 11	1-2.5 µm from septum:
1-2 µm from septum:	15-15.5 µm:	2, 3, 4, 9, 10, 11
2, 3, 4, 9, 10, 11, 12	4, 12	2-3 µm from septum:
2-2.5 µm from septum:	e. insertion of appendage	1
1		

42.1. *Discosia artocreas* Tode : Fries

Fig. 42.1

Summa veg. Scand. 2: 423, 1849.

= *Sphaeria artocreas* Tode, F. Meckl. 2: 77, 1791; Fries, Syst. myc. 2: 523, 1823.

= *Phacidium platani* Schweinitz, Trans. Am. Phil. Soc., N.S., 4: 243, 1834.

= *Discosia faginea* Libert, Pl. Crypt. Ard., fasc. IV, exs. #345, 1837.

= *Discosia artocreas* Tode : Fries var. *quercina* Desmazières, Pl. Crypt. Fr. #62.

= *Discosia maculicola* Gerard, Bull. Torrey bot. Cl. 4: 47, 1873.

= *Discosia syzygiae* Mhaskar & Rao, Botanique, Nagpur 7: 18, 1976.

= *Cryptostictis glandicola* Starbäck, Bih. K. Svenska Vet. Akad. Handl. Stockholm 19(2): 86, 1894; fide Sutton, Mycol. Pap. 88: 47, 1963.

= *Cryptostictis niesslii* Oudemans, Ned. kruidk. Arch. 3, ser. 2: 725, 1902; fide Sutton, *ibid.*: 47, 1963.

= *Cryptostictis paeoniae* Tehon & Daniels, Mycologia 17: 243, 1925; fide Sutton, *ibid.*: 47, 1963.

Foliicolous. Conidiomata stromatic, epiphyllous or hypophyllous, scattered to gregarious and often confluent, subcuticular in origin, applanate to discoid, partly erumpent, rounded to irregular in outline, often with lobed margins, 150-500 µm wide, up to 60 µm deep, unilocular to plurilocular, glabrous, surface somewhat rugose or convoluted, glistening brownish black; basal stroma only a few cell layers and up to 20 µm thick, of *textura angularis*, cells thick-walled and pale brown in the lower layers, becoming thin-walled and paler above; upper wall membranous, of *textura epidermoidea*, cells thick-walled and dark brown; columnar interocular tissue thin, of almost colourless *textura prismatica*; area of dehiscence central or lateral, seemingly ostiolate, circular or oval, occasionally more than one per conidioma. Conidiophores reduced to conidiogenous cells, restricted to the basal part of the locule, arising from the upper cells of the basal stroma, invested in mucus. Conidiogenous cells conical to ampulliform, colourless, smooth, 4-6 X 2-3(-3.5) [ $\bar{x}$  = 5 X 2.5] µm, with up to 2 annellations. Conidia subcylindrical, straight or slightly curved, 3-septate, cells unequal, almost colourless, wall thin, smooth, and without constrictions at the septa, (12.5-)14-22 X 2-3 [ $\bar{x}$  = 18 X 2.5] µm, bearing appendages; basal cell obconic with a narrow perprolate but truncate base bearing minute marginal frills, 2.5-4.5 [ $\bar{x}$  = 3.5] µm long; median cells 2, cylindrical, together 8-14.5 [ $\bar{x}$  = 11.7] µm long (second cell from the base (4-)5.5-9.5 [ $\bar{x}$  = 7.5] µm long; third cell (2.5-)3.5-6 [ $\bar{x}$  = 4.5] µm long); apical cell subconical with a rounded apex, 2-3.5 [ $\bar{x}$  = 2.7] µm long; appendages tubular, slender, attenuated towards apex, flexuous; appendage on the apical cell single, unbranched, (4-)6-12 [ $\bar{x}$  = 10] µm long, inserted about 2-2.5 µm from the basal septum; appendage on the basal cell single, unbranched, excentric, (5-)7-12 [ $\bar{x}$  = 10] µm long, inserted about 2-3 µm from the apical septum; mean conidium length/width ratio = 7.2:1.

Habitat: On leaves of *Fagus sylvatica*, *Fagus* sp., *Gaultheria procumbens*, *Platanus orientalis*, *Quercus* sp., *Syzygium cumini*, *Smilax rotundifolia*, and leaves of undetermined plants.

Specimens examined: 1. BPI, Fries — Scleromyceti Sueciae #151, 1821 [authentic for the name; type in UPS]; 2. FH, Libert — Pl. Crypt. Ard., fasc. IV, exs. #345, on fallen leaves of *Fagus* sp., Autumn [isotype of *D. faginea*]; 3. PC, on leaves of *Fagus sylvatica*, France, Autumn 1896, Léveillé; 4. PC, W.Migula — Kryptog. Germaniae, Austriae et Helvetiae exsiccatae, Fasc. 23 & 24 Pilze #136, on leaves of *Fagus* sp., Sonntagsberg near Rosenau, Southern Austria, VIII.1904, F.Matouschek; 5. PC, Desmazières — Pl. Crypt. Fr. #62, on leaves of *Quercus* sp., Autumn 1863, Desmazières #8; 6. BPI, Schweinitz — Syn. Am. bor. #2060, on leaves of *Platanus orientalis*, Bethlehem, Pennsylvania, U.S.A., Schweinitz [type of *Phacidium platani*]; 7.

AMH #1938, on fallen leaves of *Syzygium cumini*, Purandhar, Maharashtra State, India, 11.III.1971, D.N.Mhaskar [type of *D. syzygiae*]; 8. NY, on leaves *Gaultheria procumbens*, Newfield, New Jersey, U.S.A., issued in Ellis — North American Fungi #1175, [type of *D. maculicola*]; 9. NY, on *S. rotundifolia*, Poughkeepsie, New York, 1872, W.R.Gerard #762 (sub *D. maculicola* Gerard).

Known distribution: Austria, France, India, Sweden, U.S.A.

42.2. *Discosia blumencronii* Bubák

Fig. 42.2

Annls. naturh. Mus. Wien. 23: 106, 1906; Saccardo, Syll. Fung. 22: 1162, 1913.

Foliicolous, not associated with leaf spots. Conidiomata stromatic, amphigenous, scattered to gregarious, occasionally confluent, seemingly superficial but in reality intraepidermal in origin, rounded to oval in outline, applanate but lenticular or discoid in sectional view, partly erumpent, 210-310  $\mu\text{m}$  diam., 40-100  $\mu\text{m}$  deep, irregularly plurilocular, glabrous, occasionally rugose, glistening black; basal stroma 20-30  $\mu\text{m}$  thick, of *textura angularis*, cells mostly thick-walled and brown, becoming thin-walled and paler only near the conidial

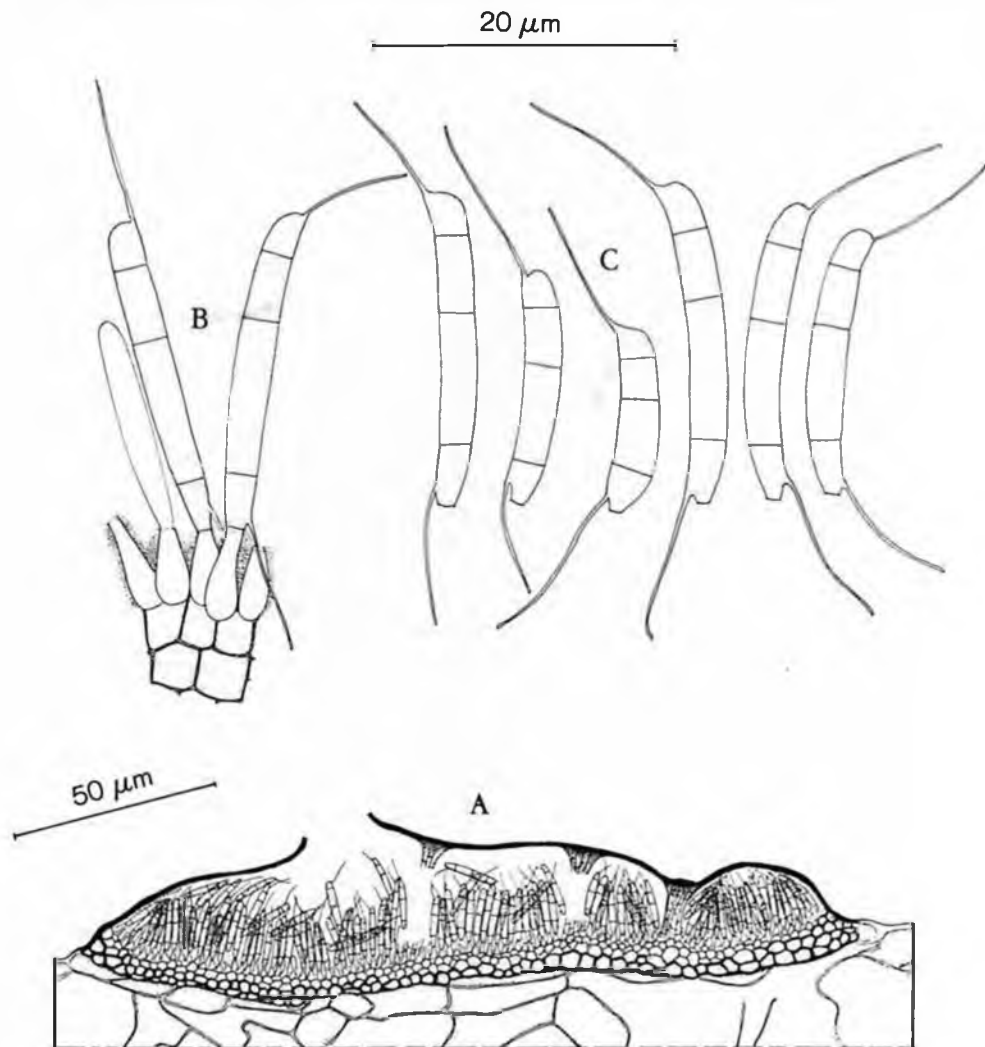


Figure 42.1. *Discosia artocreas* ex BPI, Fries - Scleromycetes Sueciae #151. A. Vertical section of a conidioma. B. Conidiogenous cells with developing conidia. C. Mature conidia.

hymenium; upper wall thick, of textura epidermoidea, cells thick-walled and dark brown; interocular tissue of textura prismatica, cells moderately thick-walled, pale brown to brown; area of dehiscence seemingly ostiolar, circular or oval, 30-40  $\mu\text{m}$  diam., eventually wide open following a break in the upper wall. Conidiophores arising from the upper cells of the basal stroma, reduced to conidiogenous cells, invested in mucus. Conidiogenous cells ampulliform to lageniform, colourless, smooth, 6-9 X 2.5-3.5 [ $\bar{x}$  = 7.2 X 3]  $\mu\text{m}$ . Conidia subcylindrical, straight or slightly curved, 3-septate, cells unequal, pale brown, wall smooth and imperceptibly constricted at the septa, 20-33 X 3-4 [ $\bar{x}$  = 26.5 X 3.5]  $\mu\text{m}$ , bearing appendages; basal cell obconic with a truncate base and minute marginal frills, 4-6.5 [ $\bar{x}$  = 5.3]  $\mu\text{m}$  long; median cells 2, cylindrical, together (11.5-)13.5-22 [ $\bar{x}$  = 17.5]  $\mu\text{m}$  long (second cell from the base 8-14 [ $\bar{x}$  = 11.3]  $\mu\text{m}$  long; third cell 3.5-8 [ $\bar{x}$  = 6]  $\mu\text{m}$  long); apical cell subconical with a rounded apex, 3.5-4.5(-5) [ $\bar{x}$  = 4]  $\mu\text{m}$  long; appendages tubular, broader at the base, gradually attenuated toward their ends, flexuous; appendage on the apical cell (10-)11-13

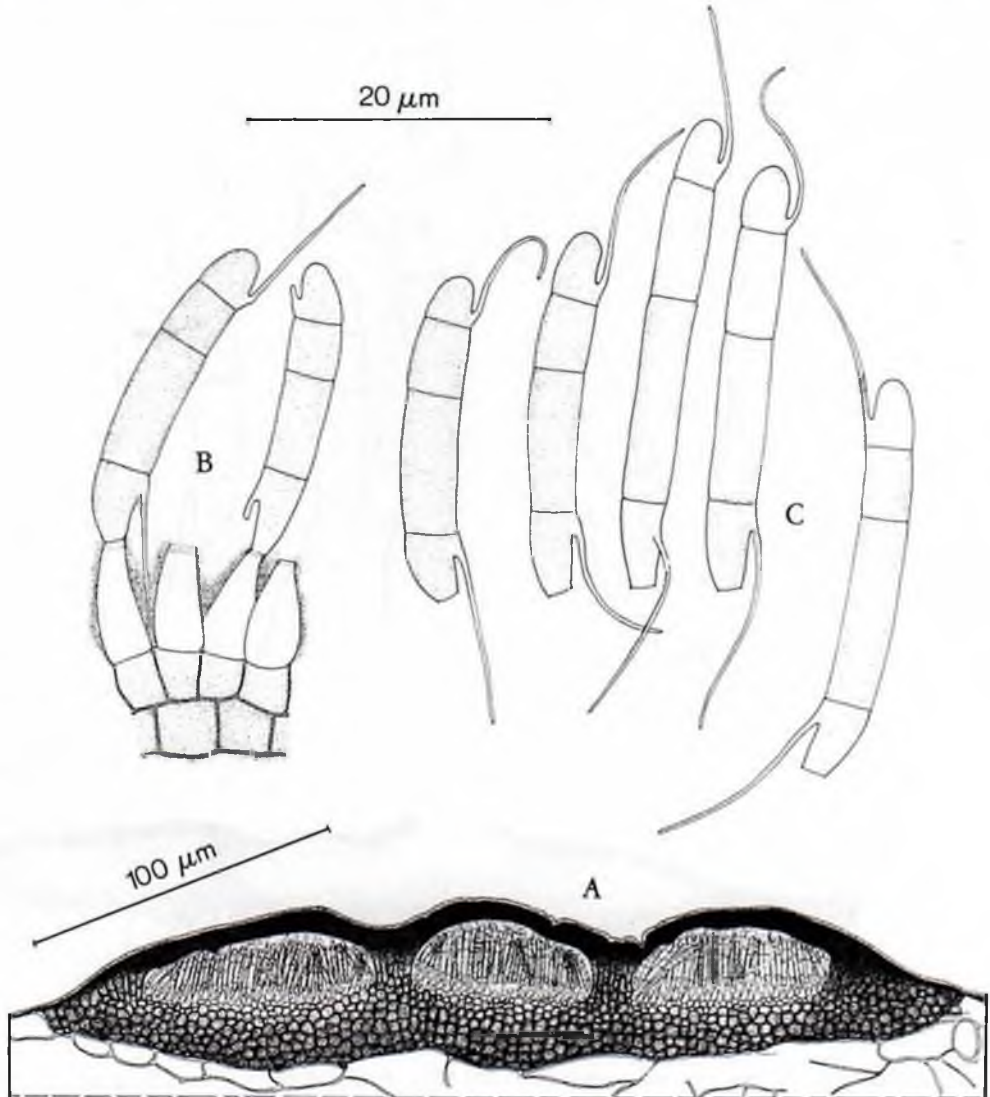


Figure 42.2. *Discosia blumenconii* ex holotype in BPI. A. Vertical section of a conidioma. B. Conidiogenous cells with developing conidia. C. Mature conidia.

[ $\bar{x}$  = 11.8]  $\mu\text{m}$  long, inserted about 1-2  $\mu\text{m}$  from the basal septum; appendage on the basal cell 12-15 [ $\bar{x}$  = 13.5]  $\mu\text{m}$  long, inserted about 1-2.5  $\mu\text{m}$  from the apical septum; mean conidium length/width ratio = 7.3:1.

Habitat: On dead leaves of *Rhododendron ponticum*.

Specimen examined: BPI [Holotype], Sandschak, Turkey, VI.1908, Blumencron.

Known distribution: Turkey.

42.3. *Discosia brasiliensis* (Spegazzini) Nag Raj comb. nov.

Fig. 42.3

= *Discosia artocreas* (Tode : Fries) Fries var. *brasiliensis* Spegazzini Bol. Nac. Cienc. Córdoba. 23: 162, 1919.

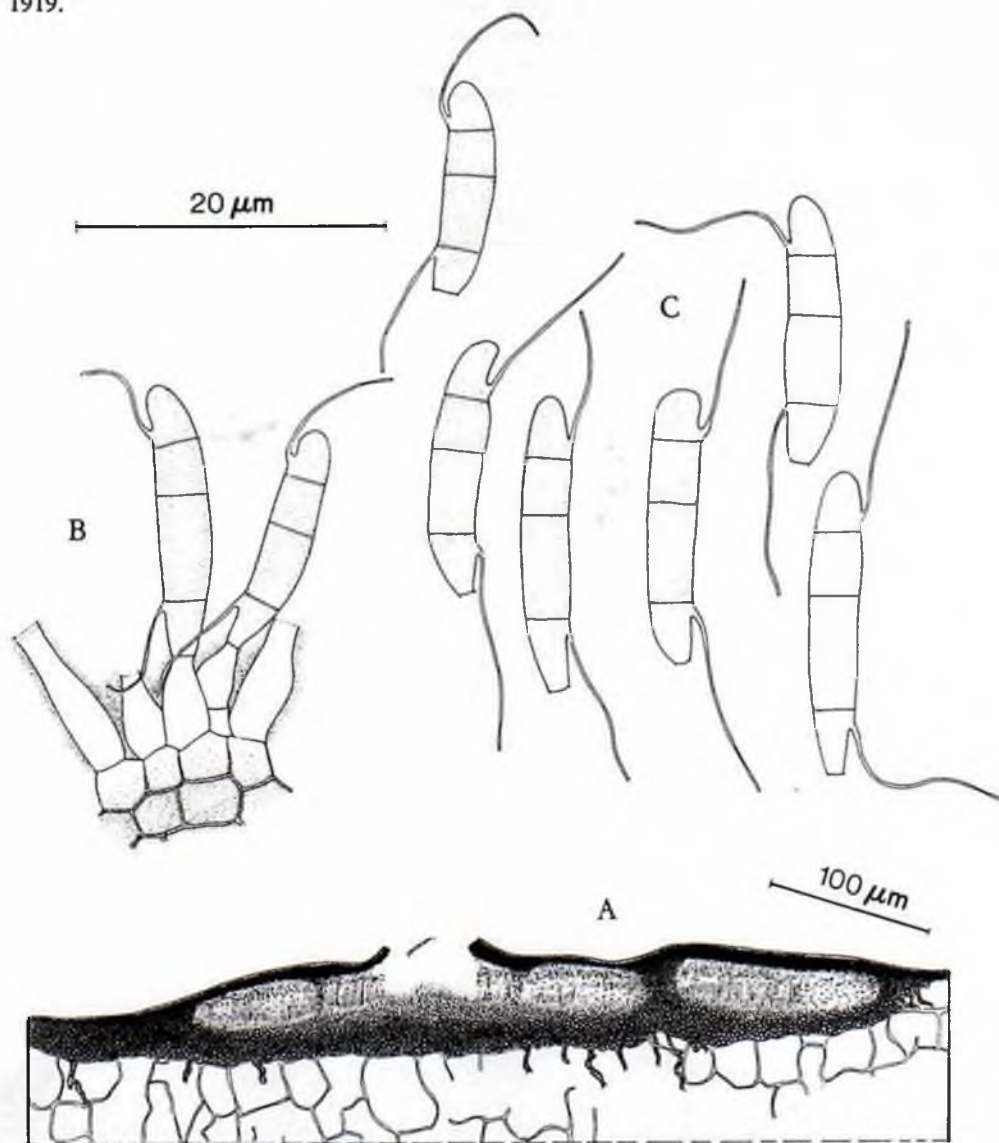


Figure 42.3. *Discosia brasiliensis* ex holotype in LPS 12027. A. Vertical section of a conidioma. B. Conidiogenous cells with developing conidia. C. Mature conidia.



Foliicolous. Conidiomata stromatic, amphigenous, scattered to gregarious, and sometimes confluent, seemingly superficial but subcuticular in origin, applanate, partly erumpent, rounded, oval or irregular in outline with somewhat upturned edges, 350-650  $\mu\text{m}$  diam., 60-70  $\mu\text{m}$  deep, irregularly loculate, locules separated by columnar, pale brown to almost colourless textura porrecta, glabrous, dark brown to black; basal stroma 20-30  $\mu\text{m}$  thick, of textura globulosa, cells brown, thick-walled, becoming paler and thin-walled only toward the conidial hymenium; upper wall thinner, of textura epidermoidea, cells thick-walled and dark brown; area of dehiscence seemingly ostiolar, circular or oval, 40-50  $\mu\text{m}$  diam. Conidiophores reduced to conidiogenous cells, restricted to the basal part of the locules, arising directly from the upper layer of cells of the basal stroma. Conidiogenous cells ampulliform to lageniform, colourless, smooth, 5-10 X 2.5-3.5 [ $\bar{x}$  = 7.5 X 3]  $\mu\text{m}$ , invested in mucus. Conidia subcylindrical, straight or slightly curved, 3-septate, cells unequal, almost colourless, wall smooth and not constricted at the septa, 15-20(-21) X 3-4 [ $\bar{x}$  = 18 X 3.5]  $\mu\text{m}$ , bearing appendages; basal cell obconic, with truncate base and minute marginal frills, 3.5-4.5(-5) [ $\bar{x}$  = 4]  $\mu\text{m}$  long; median cells 2, cylindrical, together 7.5-12.5 [ $\bar{x}$  = 10]  $\mu\text{m}$  long (second cell from the base 4.5-8 [ $\bar{x}$  = 6.8]  $\mu\text{m}$  long; third cell 3-4.5 [ $\bar{x}$  = 3.8]  $\mu\text{m}$  long); apical cell subconical with a rounded apex, 3-4 [ $\bar{x}$  = 3.5]  $\mu\text{m}$  long; appendages tubular, broad at the base, angustate, flexuous, inserted approximately 1  $\mu\text{m}$  short of the septa separating the end cells from the median cells; apical appendage 9-13 [ $\bar{x}$  = 11]  $\mu\text{m}$  long; basal appendage 10-14 [ $\bar{x}$  = 12]  $\mu\text{m}$  long; mean conidium length/width ratio = 5.1:1.

Habitat: On leaves of undetermined member of Bignoniaceae.

Specimen examined: LPS 12027 [Holotype], Apiahy, Brazil, J.D.Anisitz 117.

Known distribution: Brazil.

42.4. *Discosia ceanothi* (Ramaley) Nag Raj comb. nov.

Fig. 42.4

= *Discosiospora ceanothi* Ramaley, Mycotaxon 35: 103, 1989.

Foliicolous. Conidiomata stromatic, pycnidoid, epiphyllous, scattered to gregarious and occasionally confluent, intra-epidermal in origin, innate erumpent, oval to depressed globose, (80-)130-240(-350)  $\mu\text{m}$  diam., 70-210  $\mu\text{m}$  deep, unilocular, glabrous, pale brown when young, darkening with maturity; wall up to 30  $\mu\text{m}$  thick, of textura angularis with thick-walled and brown cells in the outer layers, and of textura prismatica with thin-walled and colourless to almost colourless cells in the inner layers near the conidial hymenium; dehiscence seemingly ostiolar, but in reality by a central or excentric split in the apical wall. Conidiophores arising all around the cavity of the conidioma, unbranched or occasionally branched and 0-2-septate at the base, up to 50  $\mu\text{m}$  long, often reduced to conidiogenous cells, colourless, smooth, invested in mucus. Conidiogenous cells subcylindrical, lageniform or ampulliform, colourless, smooth, 5-30(-40) X 1.5-2.5  $\mu\text{m}$ , with up to 3 annellations. Conidia naviculate to subcylindrical, narrow toward the base, straight or slightly curved, 3-septate, almost colourless to pale brown, wall smooth and without constrictions at the septa, (14-)18-24(-27) X 3-3.5(-4) [ $\bar{x}$  = 21 X 3.2]  $\mu\text{m}$ , bearing an appendage at each end; basal cell narrow obconic with a truncate base, (2.5-)3-4.5 [ $\bar{x}$  = 3.7]  $\mu\text{m}$  long; 2 median cells more or less equal, each 4-8 [ $\bar{x}$  = 6]  $\mu\text{m}$  long, together 8-16(-17) [ $\bar{x}$  = 12]  $\mu\text{m}$  long; apical cell subconical with an acute apex, 3-3.5(-4) [ $\bar{x}$  = 3.3]  $\mu\text{m}$  long; appendages tubular, broader at the base, gradually attenuated toward the tip, inserted on the end cells about 1.5-2  $\mu\text{m}$  from the end septa, bifurcate, occasionally trifurcate, branches flexuous; apical appendage branches (8.5-)11-20 [ $\bar{x}$  = 15.5]  $\mu\text{m}$  long; basal appendage branches 13-16(-17) [ $\bar{x}$  = 14.5]  $\mu\text{m}$  long; mean conidium length/width ratio = 5.8:1.

Habitat: On leaves of *Ceanothus fedleri*.

Specimen examined: BPI 72043 [Holotype], ca 0.5 mi ex initio, Hermosa Trail, La Plata Co., Colorado, U.S.A., X.1987, A.W.Ramaley [also in DAOM 215268].

Known distribution: U.S.A.

Ramaley (1989) briefly described the growth characteristics of the fungus on PDA at room temperature (ca 16° C): 28 mm diam. in 14 days; adpressed mycelium, tan to apricot in early phase of growth, browning with age; scattered, unilocular, occasionally plurilocular conidiomata with one or several points of dehiscence; conidia variable in shape and size with somewhat constricted walls often bearing unbranched appendages.



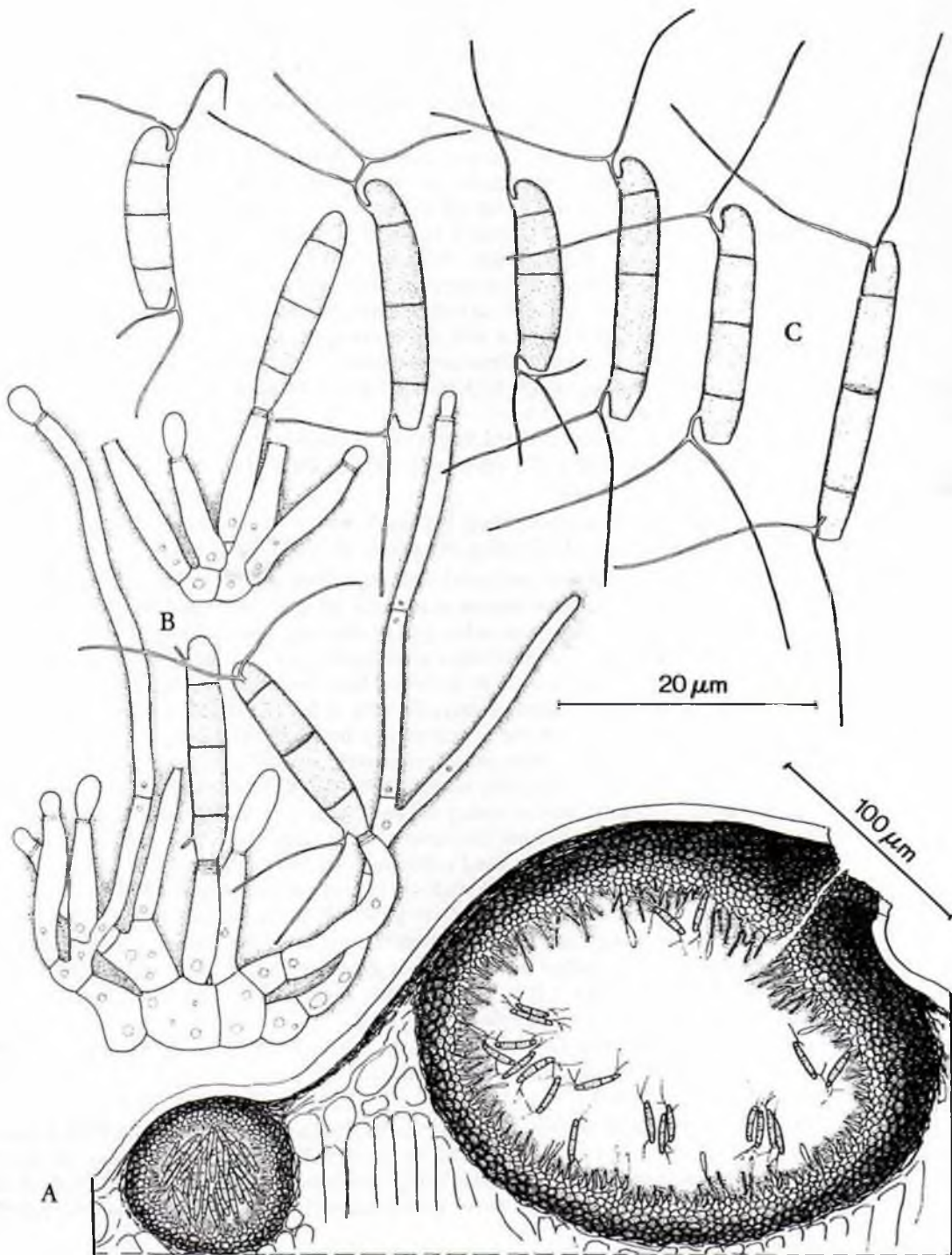


Figure 42.4. *Discosia ceanothi* ex holotype in BPI. A. Vertical section of a conidioma. B. Conidiogenous cells with developing conidia. C. Mature conidia.

42.5. *Discosia eucalypti* (Patouillard) Nag Raj comb. nov.

Figs. 42.5 &amp; 42.5.1

= *Cryptostictis eucalypti* Patouillard, Catalogue raisonné des Plantes cellulaires de la Tunisie, Paris: 123, 1897.

Foliicolous. Conidiomata stromatic, pycnidoid, amphigenous, scattered to gregarious, occasionally confluent, immersed at first, erumpent later, intra-epidermal to subepidermal in origin, rounded to oval, globose to depressed globose in sectional view, 240-460  $\mu\text{m}$  diam., 120-420  $\mu\text{m}$  deep, unilocular with the locule occasionally irregularly convoluted, sometimes plurilocular, glabrous, brown to almost black, seemingly ostiolate, but dehiscing by a break in the apical wall; wall 25-40  $\mu\text{m}$  thick (up to 50  $\mu\text{m}$  thick in the area of dehiscence), of *textura angularis* to *textura prismatica*, cells thick-walled and brown to dark brown, much darker in the area of dehiscence, becoming thin-walled and paler toward the conidial hymenium. Conidiophores arising all around the cavity of the conidioma, unbranched or irregularly branched and septate mostly at the base, colourless, smooth, up to 40  $\mu\text{m}$  long, invested in mucus. Conidiogenous cells clavate to subcylindrical, colourless, thin-walled, smooth, (5-)13-20(-23) X 1.5-2(-3.5) [ $\bar{x}$  = 16.5 X 1.7]  $\mu\text{m}$ , with up to 4 annellations. Conidia fusiform to naviculate, 3-septate with septa thicker and darker than periclinal walls, wall smooth and without constrictions at the septa, 14-21 X 2.5-3 [ $\bar{x}$  = 17.5 X 2.7]  $\mu\text{m}$ ; basal cell obconic with a truncate base, colourless to almost colourless, 2-3.5(-4) [ $\bar{x}$  = 2.7]  $\mu\text{m}$  long; 2 median cells subcylindrical, almost colourless, together (10-)11-15 [ $\bar{x}$  = 13]  $\mu\text{m}$  long (second cell from the base (5-)5.5-6.5(-7) [ $\bar{x}$  = 6]  $\mu\text{m}$  long, third cell 5-6.5(-7) [ $\bar{x}$  = 5.7]  $\mu\text{m}$  long); apical cell conical with a rounded apex, colourless, 2.5-3 [ $\bar{x}$  = 2.7]  $\mu\text{m}$  long; appendages filiform, flexuous; apical appendage single, unbranched, polar, 4-13 [ $\bar{x}$  = 9]  $\mu\text{m}$  long; basal appendage single, unbranched, eccentric, inserted slightly above the conidium base, (3-)5-11.5 [ $\bar{x}$  = 8.2]  $\mu\text{m}$  long; mean conidium length/width ratio = 6.4:1.

Habitat: On leaves of *Eucalyptus* sp. and *Laurus* sp.

Specimens examined: 1. FH [Type], on rotting leaves of *Eucalyptus* sp., Souk-el-Arba, Tunisia, 31.X.1892; 2. FH, Roumeguère — Fungi Gallici exsiccati #1032, Appollon, Anduze (Gard), X.1878, J.Therry [as *D. laurina* Nob. in Herb., *D. artocreas* Fries f. *laurina* Saccardo in litt.].

Known distribution: France, Tunisia.

On leaves of *Eucalyptus* sp., the fungus occurs on irregular leaf spots with narrow, dark brown and somewhat diffuse margins. On leaves of *Laurus* sp., the conidiomata are predominantly hypophyllous, appearing as dull brown, elevated specks with a circular or oval, dark brown, punctiform opening, and lenticular in sectional view.

42.6. *Discosia fraxinea* (Schweinitz) DiCosmo comb. nov.

Fig. 42.6

= *Phacidium fraxineum* Schweinitz, Trans. Am. Phil. Soc. N.S., 4: 243, 1834.

= *Discosia clypeata* De Notaris, R. Accad. Sci. Torino Mem. ser. 2, 10: 360, 1849.

= *Phlyctidium clypeatum* De Notaris, R. Accad. Sci. Torino Mem. ser. 2, 7: 8, 1845.

= *Discosia magna* Peck, 47th Rep. N.Y.St. Mus.: 21, 1894.

Foliicolous and fructicolous. Conidiomata stromatic, amphigenous, often predominantly epiphyllous, scattered to gregarious and often confluent, intra-epidermal in origin, rounded to irregular in outline with entire margins, applanate to discoid, erumpent, 700-1000  $\mu\text{m}$  diam., up to 80  $\mu\text{m}$  deep, unilocular to bilocular, glabrous, occasionally rugose, dull black; basal stroma up to 30  $\mu\text{m}$  thick, of *textura prismatica*, cells thick-walled, dark brown in the lowermost layers, becoming somewhat paler near the conidial hymenium; upper wall thick, almost black, of *textura epidermoidea*; interocular tissue of *textura prismatica*, cells thick-walled and dark brown below, becoming thin-walled and paler toward the outer layers; area of dehiscence seemingly ostiolar, circular or oval, becoming irregular and wide following a break in the upper wall. Conidiophores arising in the concavity of the locules from the uppermost layer of cells of the basal stroma, unbranched or occasionally branched and 0-2-septate, up to 50  $\mu\text{m}$  long, sometimes reduced to conidiogenous cells, colourless, smooth, invested in mucus. Conidiogenous cells subcylindrical to lageniform or ampulliform, colourless, smooth, 7-40 X 1.5-2.5  $\mu\text{m}$ . Conidia naviculate to subcylindrical, narrow toward the base, straight or slightly curved, mostly 3-septate, occasionally 2-septate, cells unequal, almost colourless, wall smooth and without constrictions at the septa, 12.5-19 X 2.5-3.5 [ $\bar{x}$  = 16.2 X 3]  $\mu\text{m}$ , bearing appendages; basal cell narrowly obconic with a truncate base bearing a prominent dehiscence scar, colourless below, almost colourless above, 2.5-4.5 [ $\bar{x}$  = 3.5]  $\mu\text{m}$  long; 2 median cells almost colourless, septa thicker and darker than the periclinal wall, together 6.5-11 [ $\bar{x}$  = 8.7]  $\mu\text{m}$  long (second cell



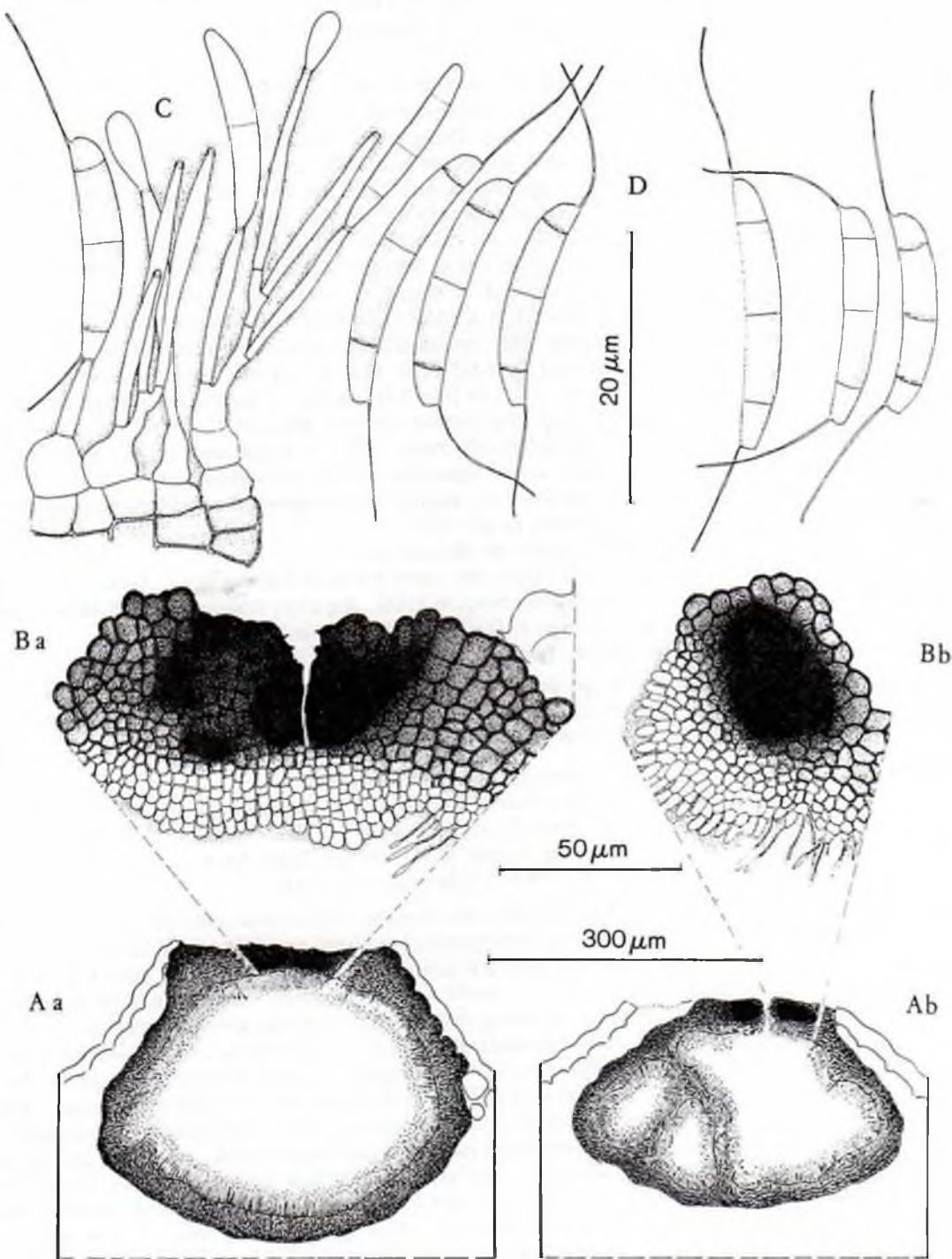


Figure 42.5. *Discosia eucalypti* ex holotype in FH. Aa, Ab. Vertical sections of unilocular and plurilocular conidiomata. Ba, Bb. Enlarged views of areas marked in Aa and Ab, to show tissue details in the dehiscence area. C. Conidiophores. D. Mature conidia.

from the base 2-4 ( $\bar{x}$  = 3)  $\mu\text{m}$ ; third cell 4.5-8 ( $\bar{x}$  = 6)  $\mu\text{m}$ ); apical cell subconical with an acute apex, almost colourless below, colourless near the apex, 3-5 ( $\bar{x}$  = 4)  $\mu\text{m}$  long; appendages tubular, slightly broad at the base, attenuated toward the apex, unbranched, flexuous; appendage on the apical cell single, polar, 10-21 ( $\bar{x}$  = 15.5)  $\mu\text{m}$  long; appendage on the basal cell single, subpolar, 6-20 ( $\bar{x}$  = 13)  $\mu\text{m}$  long; mean conidium length/width ratio = 5.4:1.

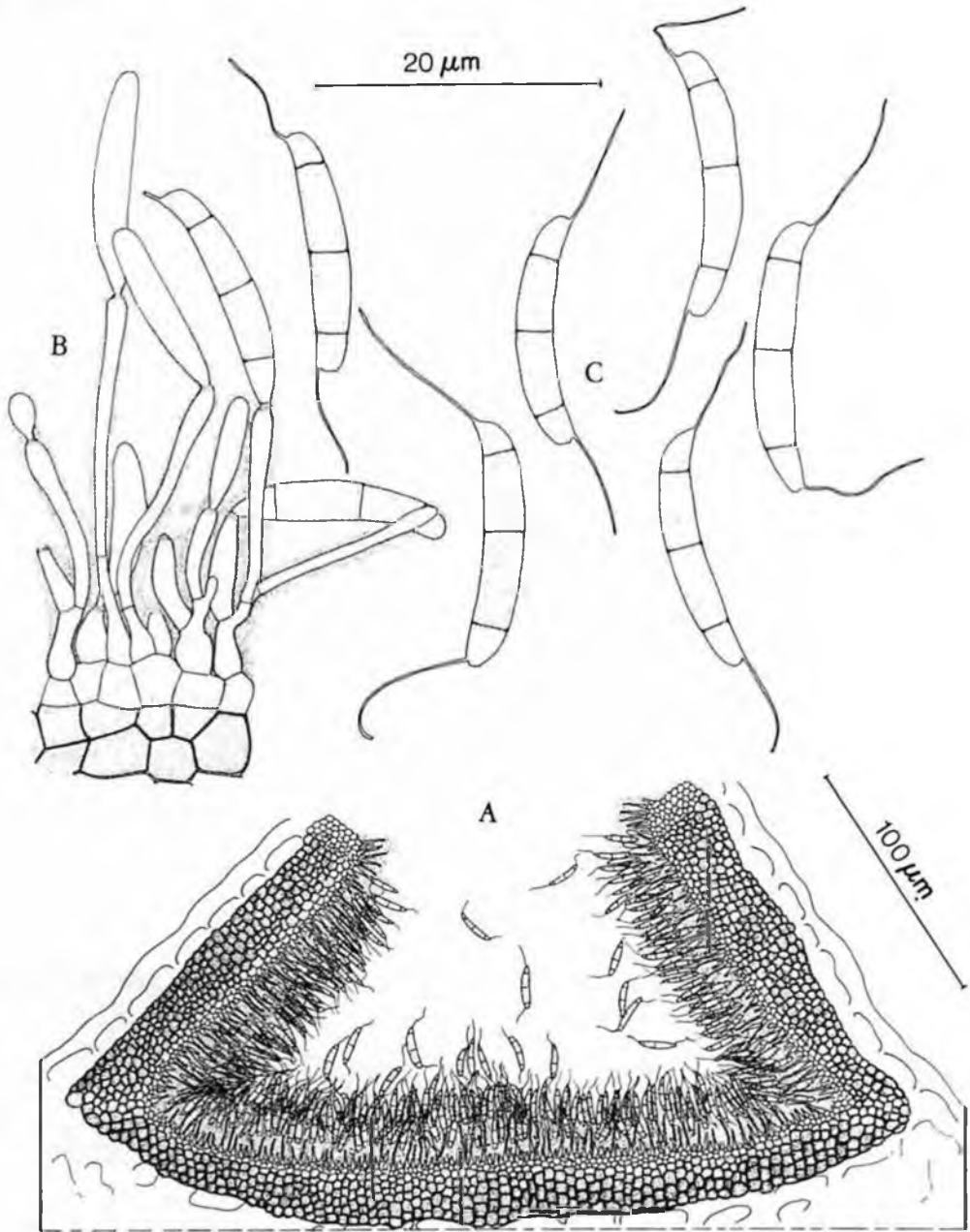


Figure 42.5.1. *Discosia eucalypti* ex F. Gallici Exs. #1032 in FH. A. Vertical section of a conidioma. B. Conidiophores. C. Mature conidia.

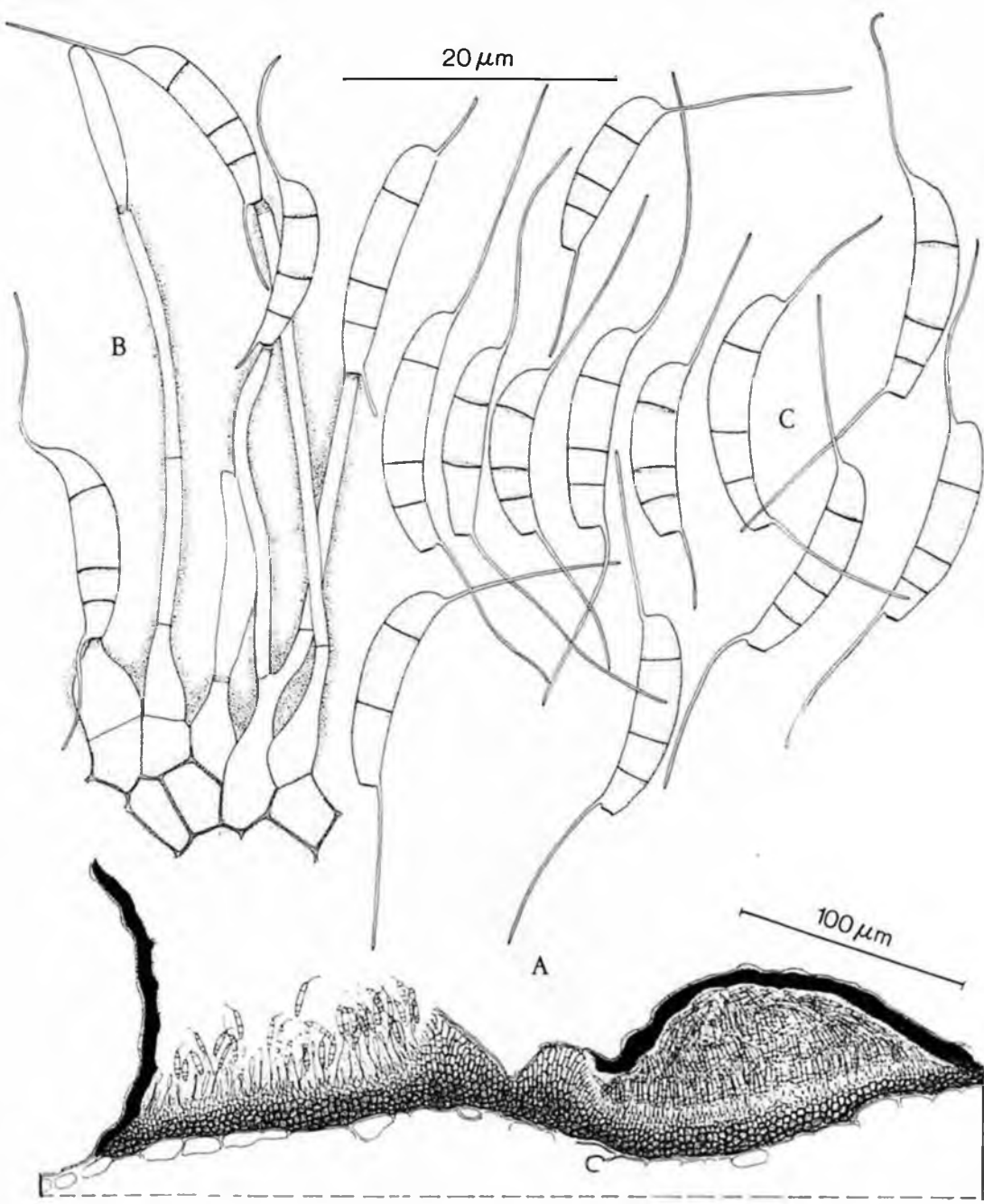


Figure 42.6. *Discosia fraxinea* ex Schweinitz #1059 in BPI. A. Vertical section of a conidioma. B. Conidiophores and conidiogenous cells with developing conidia. C. Mature conidia.

Habitat: On *Amelanchier vulgaris*, *Crataegus* sp., *Fraxinus americana*, *Populus* sp., *Sorbus americana* and undetermined leaves.

Specimens examined: 1. BPI, Bethlehem, Pennsylvania, U.S.A., Schweinitz #1059 [isotype of *Phacidium fraxineum*, also in FH]; 2. NYS, on samara of *F. americana*, Elizabethtown, New York, U.S.A., C.H. Peck [type of *Discosia magna* Peck]; 3. PC, ex Herb. L. Quelet, Eperges vere, Hazslinsky [as *D. clypeata* De Notaris]; 4. FH, on *A. vulgaris*, Giestrubel, Wiener-Wald, Austria, 8.V.1909, Höhnel; 5. FH, on *S. americana*, Giestrubel, Wiener-Wald, Austria, 8.V.1909, Höhnel; 6. FH, Fuckel — Fungi Rhenani #453, on leaves of *Crataegus* sp., raro, Hieme; 7. FH, Rabenhorst-Klotzsch. — Herb. viv. Micol. #1738, on rotting leaves of *Populus* sp., Frankfurt, Germany, Fresenius.

Known distribution: Austria, France, Germany, U.S.A.

#### 42.7. *Discosia lauricola* Nag Raj **anam.-sp. nov.**

Fig. 42.7

Foliicola. Conidiomata stromatica, pycnidioidea, hypophylla, dissita vel gregaria et confluentia, origine intraepidermalia, immersa, deinde partim erumpentia, atque quasi guttae elevatae, conoideae visa, ambitu ovali vel orbiculari, in sectione lenticularia, usque ad 800  $\mu\text{m}$  long., 200-800  $\mu\text{m}$  lat., 120-160  $\mu\text{m}$  alt., unilocularia vel plurilocularia, glabra, peripheraliter infuscata, in zona media pallescentia sed in area dehiscentiae atranti, sine ostiolo, sed per rimam stellarem vel trilobam parietis apicalis dehiscentia; paries circa loculum usque ad 20  $\mu\text{m}$  cr., basi usque ad 40  $\mu\text{m}$  cr., e textura angulari compositus, cellulis crassitunicatis et atrobrunneis, parietibus lateralibus pallescentibus; tela interocularis cylindracea vel late conica, 70-110  $\mu\text{m}$  cr., e textura prismatica composita, cellulis relative tenuitunicatis et brunneis vel pallide brunneis; loculi in conidiomatibus plurilocularibus ambitu ovali vel triangulari, 50-100  $\mu\text{m}$  lat., 40-110  $\mu\text{m}$  alt. Conidiophora in cellulas conidiogenas redacta, in mucro involuta. Cellulae conidiogenae ampulliformes, hyalinae, tenuitunicatae, laeves, 3-4 X 2-2.5 ( $\bar{x}$  = 3.5 X 2.2)  $\mu\text{m}$ , usque ad ter annulatum prolificantes. Conidia fusiformia vel naviculata, 3-septata, septis tenuibus, subhyalina, tenuitunicata, laevia, eguttulata, 14-27.5 X 2-3 ( $\bar{x}$  = 21 X 2.5)  $\mu\text{m}$ ; cellula basalis obconica, basi truncata, 2-4 ( $\bar{x}$  = 3)  $\mu\text{m}$  long.; cellulae medianae duae, cylindraceae, plus minusve aequales, ambae simul 10-21 ( $\bar{x}$  = 15.5)  $\mu\text{m}$  long. (a basi cellula secunda 5-11 ( $\bar{x}$  = 8)  $\mu\text{m}$ , tertia 4.5-10 ( $\bar{x}$  = 7.4)  $\mu\text{m}$ ); cellula apicalis conica, apice acuto, 2-3 ( $\bar{x}$  = 2.5)  $\mu\text{m}$  long.; appendices filiformes, flexuosae, nonramosae, polares; appendix apicalis singularis, 5-10 ( $\bar{x}$  = 7.5)  $\mu\text{m}$  long.; appendix basalis singularis, excentrica, (2-)5-8(-9) ( $\bar{x}$  = 6.5)  $\mu\text{m}$  long.; ratione conidii long./lat. = 8.4:1.

Foliicolous. Conidiomata stromatic, pycnidiooid, hypophyllous, scattered to gregarious and confluent, intraepidermal in origin, immersed at first but becoming partly erumpent and appearing as elevated conoid pustules, oval or rounded in outline, lenticular in sectional view, up to 800  $\mu\text{m}$  long, 200-800  $\mu\text{m}$  wide, 120-160  $\mu\text{m}$  deep, unilocular to plurilocular, glabrous, dark brown at the periphery, becoming paler in the median zone but darker around the area of dehiscence; ostiole absent, dehiscence by a stellate or trilobate split in the apical wall; wall around the locule up to 20  $\mu\text{m}$  thick, at the base up to 40  $\mu\text{m}$  thick, of textura angularis, cells thick-walled and dark brown at the base, paler in the lateral walls; interocular tissue cylindrical to broad conical, 70-110  $\mu\text{m}$  thick, of textura prismatica, cells relatively thin-walled and brown to pale brown; locules in plurilocular conidiomata oval or triangular in outline, 50-100  $\mu\text{m}$  diam., 40-110  $\mu\text{m}$  deep. Conidiophores reduced to conidiogenous cells, lining the base of the locule and part way up the side walls, invested in mucus. Conidiogenous cells ampulliform, colourless, thin-walled, smooth, 3-4 X 2-2.5 ( $\bar{x}$  = 3.5 X 2.2)  $\mu\text{m}$ , with up to 3 annellations. Conidia fusiform to naviculate, 3-septate with thin septa, almost colourless, thin-walled, smooth, eguttulate, 14-27.5 X 2-3 ( $\bar{x}$  = 21 X 2.5)  $\mu\text{m}$ ; basal cell obconic with a truncate base, 2-4 ( $\bar{x}$  = 3)  $\mu\text{m}$  long; 2 median cells cylindrical, more or less equal, together 10-21 ( $\bar{x}$  = 15.5)  $\mu\text{m}$  long (second cell from the base 5-11 ( $\bar{x}$  = 8)  $\mu\text{m}$ , third cell 4.5-10 ( $\bar{x}$  = 7.4)  $\mu\text{m}$ ); apical cell conical with an acute apex, 2-3 ( $\bar{x}$  = 2.5)  $\mu\text{m}$  long; appendages filiform, flexuous, unbranched, polar; apical appendage single, 5-10 ( $\bar{x}$  = 7.5)  $\mu\text{m}$  long; basal appendage single, excentric, (2-)5-8(-9) ( $\bar{x}$  = 6.5)  $\mu\text{m}$  long; mean conidium length/width ratio = 8.4:1.

Habitat: On leaves of *Brachychyton populnei*, *Laurus* sp., and *Laurus nobilis*.

Specimens examined: 1. FH [TYPE], Rabenhorst-Winter — F. Europaei #1155, Bobol, Florence (Firenze), N. Italy, Winter, L. Caldesi [as *D. laurina* Caldesi]; 2. PC, Un. itin. crypt. 1866, on *Laurus nobilis*, Macomé, Dr. Marcucci ex Herb. Durieau de Maisonneuve, L. Montelay 1878 [sub *Discosia vagans* De Notaris; also

in FH]; 3. LISE 3413a, on leaves of *Brachychyton populnei*, Estremadura, Sacavem, Portugal, 10.V.1951, A.T.Vasconcelos #748 [as *Cryptostictis plantarum*].

Known distribution: Italy, Portugal.

42.8. *Discosia novae-zelandiae* Nag Raj anam. sp. nov.

Fig. 42.8

Foliicola. Conidiomata stromatica, indeterminata, hypophylla, subinde amphigena, dissita vel gregaria, raro confluentia, atque quasi guttae indistinctae, minutae, minutae, orbiculares vel ovals, brunneae visa, origine intraepidermalia vel subepidermalia, immersa vel partim erumpentia, subconica, 100-140  $\mu\text{m}$  lat., 70-100  $\mu\text{m}$  alt., unilocularia, glabra, atrobrunnea, loculo 50-80  $\mu\text{m}$  lat., 30-50  $\mu\text{m}$  alt., sine ostiolo, sed per rimam

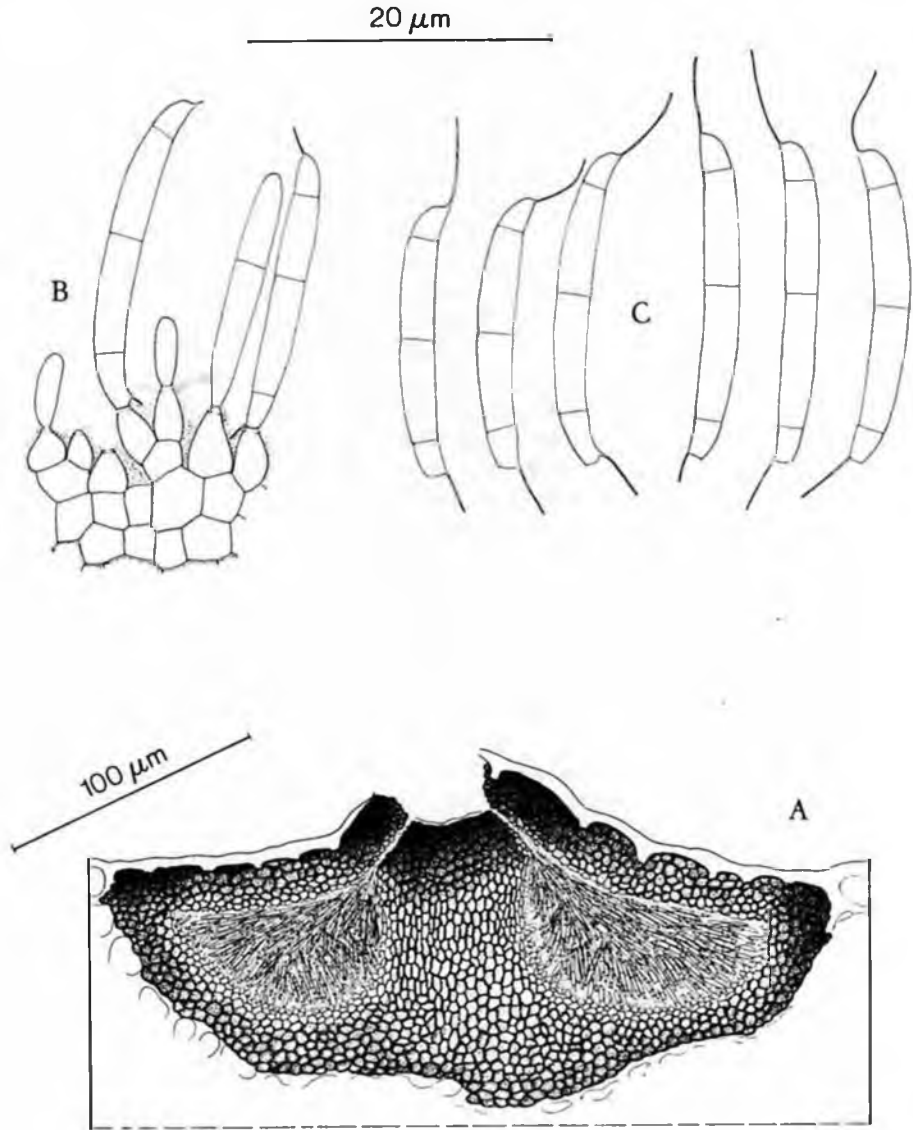


Figure 42.7. *Discosia lauricola* ex Rabenhorst-Winter, F. Europaci #1155 in FH. A. Vertical section of a conidioma. B. Conidiogenous cells with developing conidia. C. Mature conidia.



parietis apicalis dehiscentia; paries 10-15  $\mu\text{m}$  cr., e textura angulari, cellulis crassitunicatis et aurobrunneis compositus. Conidiophora circumcavitatem conidiomatis orientia, vulgo ad cellulas conidiogenas redacta, interdum ramosa et 1-septata, hyalina, in mucro involuta. Cellulae conidiogenae anguste conicae vel ampulliformes, hyalinae, tenuitunicatae, laeves, 4-7 X 2-3 [ $\bar{x}$  = 5.5 X 2.5]  $\mu\text{m}$ , usque ad ter prolificantes. Conidia fusiformia vel naviculata, 3-septata, septis tenuibus, pariete tenui, laevi, sine constrictione ulla ad septa, hyalina, 10-18 X 2-2.5 [ $\bar{x}$  = 14 X 2.2]  $\mu\text{m}$ , appendices ferentia; cellula basalis cuneiformis, basi truncata, 3.5-5 [ $\bar{x}$  = 4.2]  $\mu\text{m}$  long.; cellulae medianae duae, cuboideae vel brevicylindratae, ambae simul 4.5-6.5 [ $\bar{x}$  = 5.5]  $\mu\text{m}$  long. (a basi cellula secunda 2-3 [ $\bar{x}$  = 2.5]  $\mu\text{m}$ , tertia 2.5-3.5 [ $\bar{x}$  = 3]  $\mu\text{m}$ ); cellula apicali anguste conica, apice acuto, 3.5-6 [ $\bar{x}$  = 4.7]  $\mu\text{m}$  long.; appendices filiformes, flexuosae, nonramosae; appendix apicalis singularis, polaris, (4-)5-7 [ $\bar{x}$  = 6]  $\mu\text{m}$  long.; appendix basalis singularis, polaris, excentrica, 5-7 [ $\bar{x}$  = 6]  $\mu\text{m}$  long.; ratione conidii long./lat. = 6.4:1.

Foliicolous. Conidiomata stromatic, indeterminate, hypophyllous, occasionally amphigenous, scattered to gregarious, rarely confluent, appearing as indistinct, minute, rounded to oval, dull brown specks, intra-epidermal to subepidermal in origin, immersed or partly eruptent, subconical in sectional view, 100-140

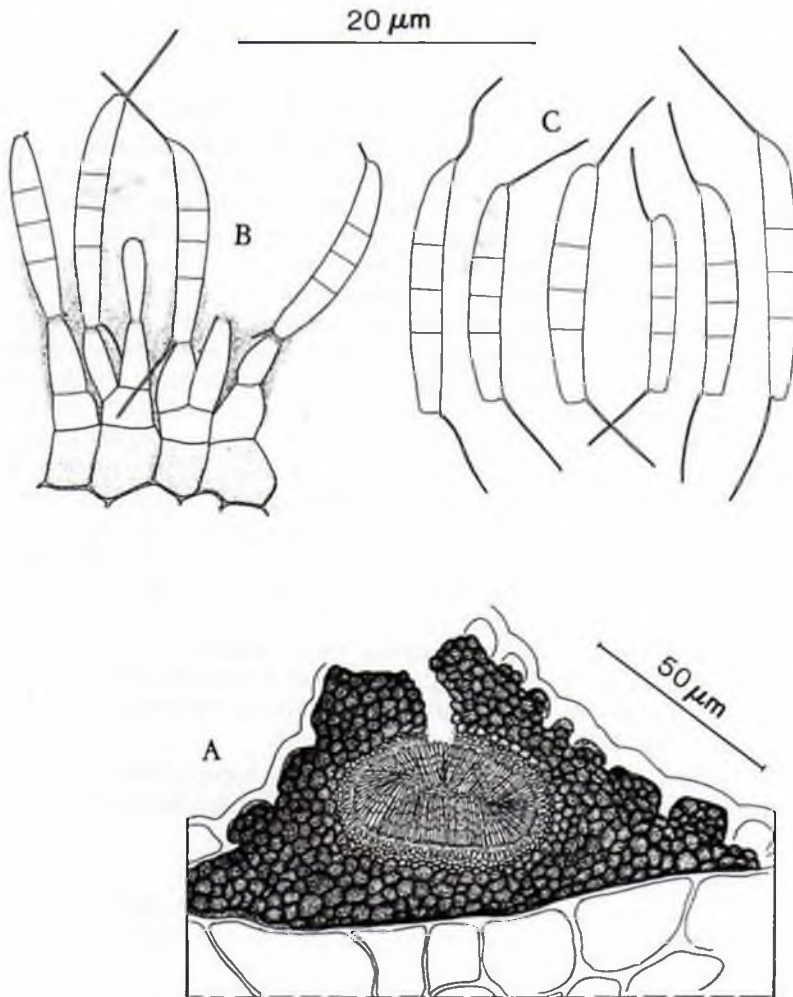


Figure 42.8. *Discosia novae-zelandiae* ex holotype in DAOM 215250. A. Vertical section of a conidioma. B. Conidiogenous cells with developing conidia. C. Mature conidia.

µm diam., 70-100 µm deep, unilocular, locules 50-80 µm diam., 30-50 µm deep, glabrous, dark brown; lacking an ostiole, but opening by an irregular split in the apical wall; wall 10-15 µm thick, of *textura angularis*, cells thick-walled, dark brown. Conidiophores arising all around the cavity of the conidioma, mostly reduced to conidiogenous cells, occasionally branched and 1-septate at the base, colourless, invested in mucus. Conidiogenous cells narrow conical to ampulliform, colourless, thin-walled, smooth, 4-7 X 2-3 [ $\bar{x}$  = 5.5 X 2.5] µm, with up to 3 annellations. Conidia fusiform to naviculate, 3-septate, septa thin, wall thin, smooth and without constrictions at the septa, colourless, 10-18 X 2-2.5 [ $\bar{x}$  = 14 X 2.2] µm, bearing appendages; basal cell cuneiform with a truncate base, 3.5-5 [ $\bar{x}$  = 4.2] µm long; median cells 2, cuboid to short cylindrical, together 4.5-6.5 [ $\bar{x}$  = 5.5] µm long (second cell from the base 2-3 [ $\bar{x}$  = 2.5] µm long, third cell 2.5-3.5 [ $\bar{x}$  = 3] µm long); apical cell narrow conical with an acute apex, 3.5-6 [ $\bar{x}$  = 4.7] µm long; appendages filiform, flexuous, unbranched; apical appendage single, polar, (4-)5-7 [ $\bar{x}$  = 6] µm long; basal appendage single, polar, excentric, 5-7 [ $\bar{x}$  = 6] µm long; mean conidium length/width ratio = 6.4:1.

Habitat: On dead leaf of *Beilschmeidia taraire*.

Specimen examined: DAOM 215250 [Holotype], Hongis Track, Scenic Reserve, Hwy. 30, New Zealand, 12.I.1974, B.Kendrick (KNZ 246b).

Known distribution: New Zealand.

42.9. *Discosia pleurochaeta* Montagne & Durieu

Fig. 42.9

Fl. Alg. 1: 587, 1849; Syll. Crypt. #994.

≡ *Discosia smilacina* de Notaris, R. Accad. Sci. Torino Mem. ser. 2, 10: 362, 1849.

Foliicolous, not associated with leaf spots. Conidiomata stromatic, epiphyllous, scattered to gregarious, seemingly superficial but in reality intraepidermal in origin and partly erumpent, indeterminate to umbonate, rounded to irregular in outline, 240-400 µm diam., 100-150 µm deep, unilocular, locule occasionally somewhat convoluted, glabrous, occasionally rugose, glistening black; basal stroma up to 50 µm thick, of *textura angularis*, cells thick-walled and dark brown, becoming thin-walled and paler only near the conidial hymenium; area of dehiscence seemingly ostiolar, circular or oval, 30-40 µm diam., eventually wide open following a break in the upper wall. Conidiophores arising from the upper cells of the basal stroma, reduced to conidiogenous cells, invested in mucus. Conidiogenous cells ampulliform to lageniform, colourless, smooth, (5-)7-11 X (1.5-)2.5-3(-4) [ $\bar{x}$  = 9 X 2.7] µm. Conidia subcylindrical, straight or slightly curved, 3-septate, cells unequal, pale brown to brown, wall smooth, 19.5-27(-30) X 3-3.5(-4) [ $\bar{x}$  = 25 X 3.3] µm, bearing appendages; basal cell obconic with a truncate base and minute marginal frills, 4.5-7 [ $\bar{x}$  = 5.5] µm long; median cells 2, cylindrical, darker than the end cells, together (12-)13-19(-20.5) [ $\bar{x}$  = 16] µm long (second cell from the base (7-)9-12 [ $\bar{x}$  = 10.5] µm long; third cell 4-7 [ $\bar{x}$  = 5.5] µm long); apical cell subconical with a rounded apex, 3-5 [ $\bar{x}$  = 4.5] µm long; appendages tubular, broader at the base, gradually attenuated toward the tip, flexuous; appendage on the apical cell (6-)8-13(-15) [ $\bar{x}$  = 10.3] µm long, inserted about 1-1.5 µm from the septum; appendage on the basal cell 7-17 [ $\bar{x}$  = 12] µm long, inserted about 1.5-2 µm from the septum; mean conidium length/width ratio = 7.5:1.

Habitat: On dead leaves of *Phillyrea latifolia*, *Smilax aspera*.

Specimens examined: 1. PC [Holotype], on leaves of *P. latifolia*, Alger, 10.II.1840; 2. PC, on dry leaves of *S. aspera*, nr. Genoa, Italy, de Notaris [type of *Discosia smilacina*].

Known distribution: Algeria, Italy.

In *Discosia smilacina*, conidiomata are predominantly hypophyllous, lenticular to applanate, often with lobed margins, rugose, and 40-80 µm deep; conidia almost colourless to pale fuliginous; other features agree with those of *D. pleurochaeta*.

42.10. *Discosia poikilomera* Fairman

Fig. 42.10

in Millspaugh & Nuttall, Publ. Field. Mus. (Bot.), 5: 331, 1923.

= *Discosia baarnensis* Vanev, Trans. Br. mycol. Soc. 79: 569, 1982; fide Nag Raj, Can. J. Bot. 69: 1248, 1991.

Foliicolous. Conidiomata stromatic, amphigenous but predominantly hypophyllous, scattered to gregarious and occasionally confluent, applanate, intra-epidermal in origin, partly erumpent, rounded to oval or irregular

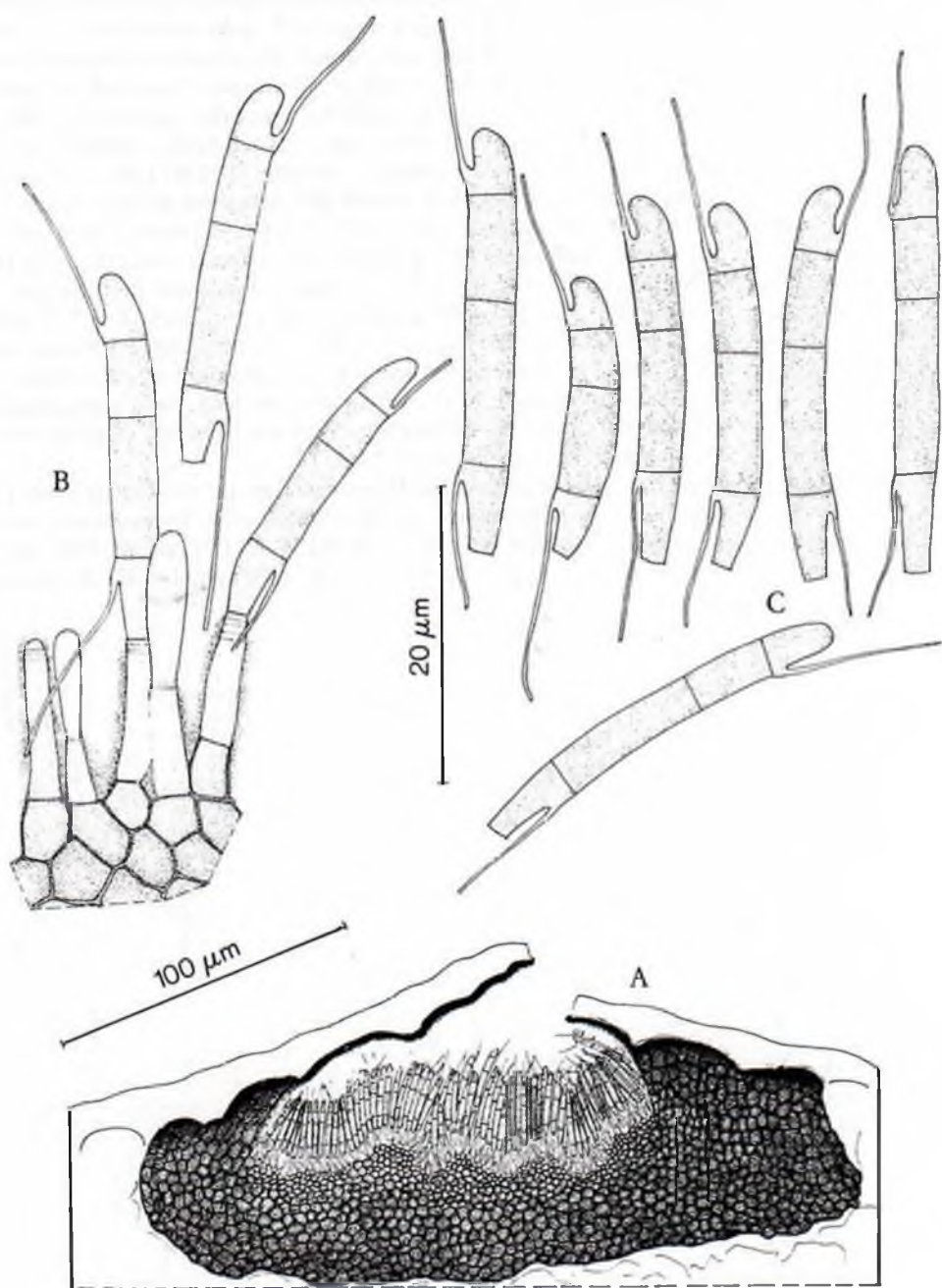


Figure 42.9. *Discosia pleurochaeta* ex type in PC. A. Vertical section of a conidioma. B. Conidiogenous cells with developing conidia. C. Mature conidia.

in outline, appearing somewhat rugose in surface view, lenticular to appressed conical in sectional view, 100-600  $\mu\text{m}$  wide, 60-100  $\mu\text{m}$  deep, unilocular to plurilocular, locules often irregularly convoluted, glabrous, dark brown to glistening black, dehiscing by a break in the host epidermis, or sometimes with a lateral circular area of dehiscence; basal stroma and upper sterile wall up to 30  $\mu\text{m}$  thick, of textura angularis, cells thick-walled, dark brown to brown, becoming paler toward the conidial hymenium; interlocular tissue of textura prismatica, cells columnar, thin-walled, brown to pale brown. Conidiophores arising from the upper cells of the basal stroma, most often reduced to conidiogenous cells, occasionally unbranched or sparsely branched and 1-2-septate at the base only, colourless, up to 25  $\mu\text{m}$  long, invested in mucus. Conidiogenous cells ampulliform to lageniform or conic, colourless, smooth, (3-)-4.5-13 X 1.5-3 [ $\bar{x}$  = 7.7 X 2.2]  $\mu\text{m}$ . Conidia cylindrical to naviculate, 4-septate, wall smooth and sometimes slightly concave between the septa, mostly almost colourless, colourless at both ends, 12.5-20(-25) X 2.5-4(-4.5) [ $\bar{x}$  = 16.5 X 3]  $\mu\text{m}$ , bearing appendages; basal cell short-cylindrical with a perprolate but truncate base, (1.5-)-2-3 [ $\bar{x}$  = 2.5]  $\mu\text{m}$  long; median cells 3, cylindrical, together 9-15 [ $\bar{x}$  = 12]  $\mu\text{m}$  long (second cell from the base (1.5-)-2-3(-4) [ $\bar{x}$  = 2.5]  $\mu\text{m}$  long; central cell (4.5-)-5-8 [ $\bar{x}$  = 6.5]  $\mu\text{m}$  long; fourth cell 2-3.5 [ $\bar{x}$  = 2.7]  $\mu\text{m}$  long); apical cell short cylindrical with an obtuse or rounded apex, 2-3 [ $\bar{x}$  = 2.5]  $\mu\text{m}$  long; appendages tubular, inserted on the concave side of the conidium, filiform, flexuous; apical appendage single, unbranched, inserted about 0.5-1  $\mu\text{m}$  below the tip of the apical cell, 3-11(-12) [ $\bar{x}$  = 6.8]  $\mu\text{m}$  long; basal appendage single, unbranched, inserted about 1  $\mu\text{m}$  below the lowermost septum separating the basal cell from the cell above, 3-10 [ $\bar{x}$  = 6.2]  $\mu\text{m}$  long; mean conidium length/width ratio = 5.5:1.

Habitat: On leaves of *Heteromeles arbutifolia*, *Heteromeles* sp. (= *Photinia* sp.) and *Laurocerasus lyoni*.

Specimens examined: 1. CUP(F) [Lectotype], on dead leaves of *L. lyoni*, Second left fork of Big Wash Canyon, Santa Catalina Island, California, U.S.A., 31.VII.1920, L.W.Nuttall #668 p.p. (sub *Phyllosticta laurocerasi*); 2. BPI, on *Heteromeles* sp., California, U.S.A., C.Wright 146 [as *D. smilacina* De Notaris in

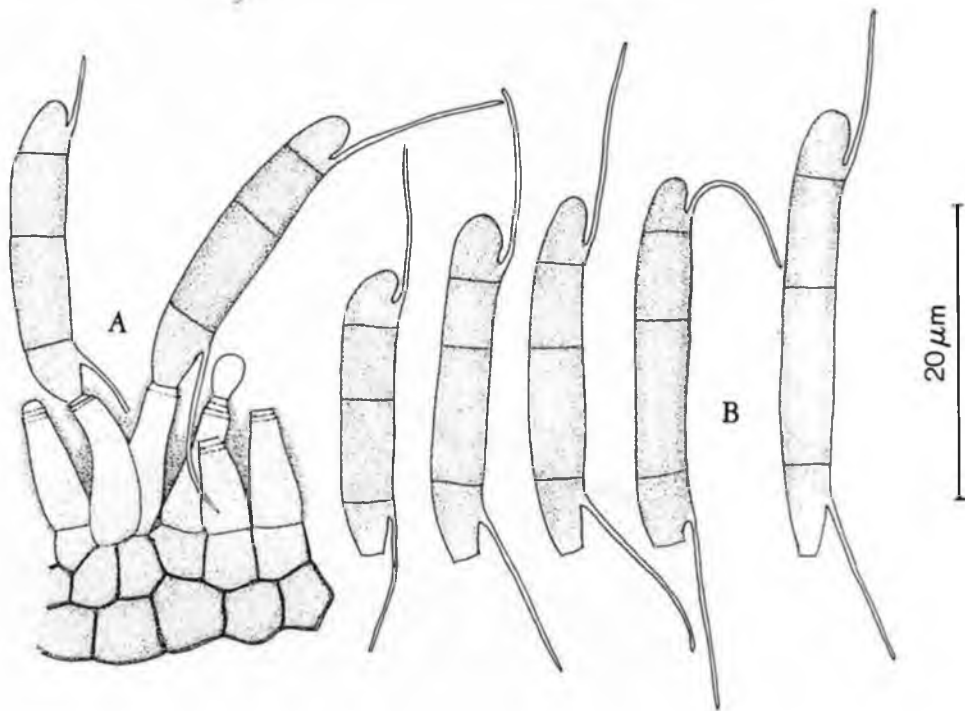


Figure 42.9.1. *Discosia pleurochaeta* ex type of *Discosia smilacina* in PC. A. Conidiogenous cells with developing conidia. B. Mature conidia.

Herb. U.S. North Pacific exploring Expedition under Cmdrs. Ringgold & Rodgers, 1853-1856; type of *Discosia baarnensis* Vanev; isotype in KJ; 3. NY, on *H. arbutifolia*, Sespe Creek, California, U.S.A., 7.X.1927, O.A.Plunkett.

Known distribution: U.S.A.

Vanev (1982), considered *D. smilacina* De Notaris different from *D. baarnensis* in conidium dimensions (22.5-29 X 3-4.5  $\mu\text{m}$ ), number of conidium septa (3) and points of insertion of conidium appendages (near

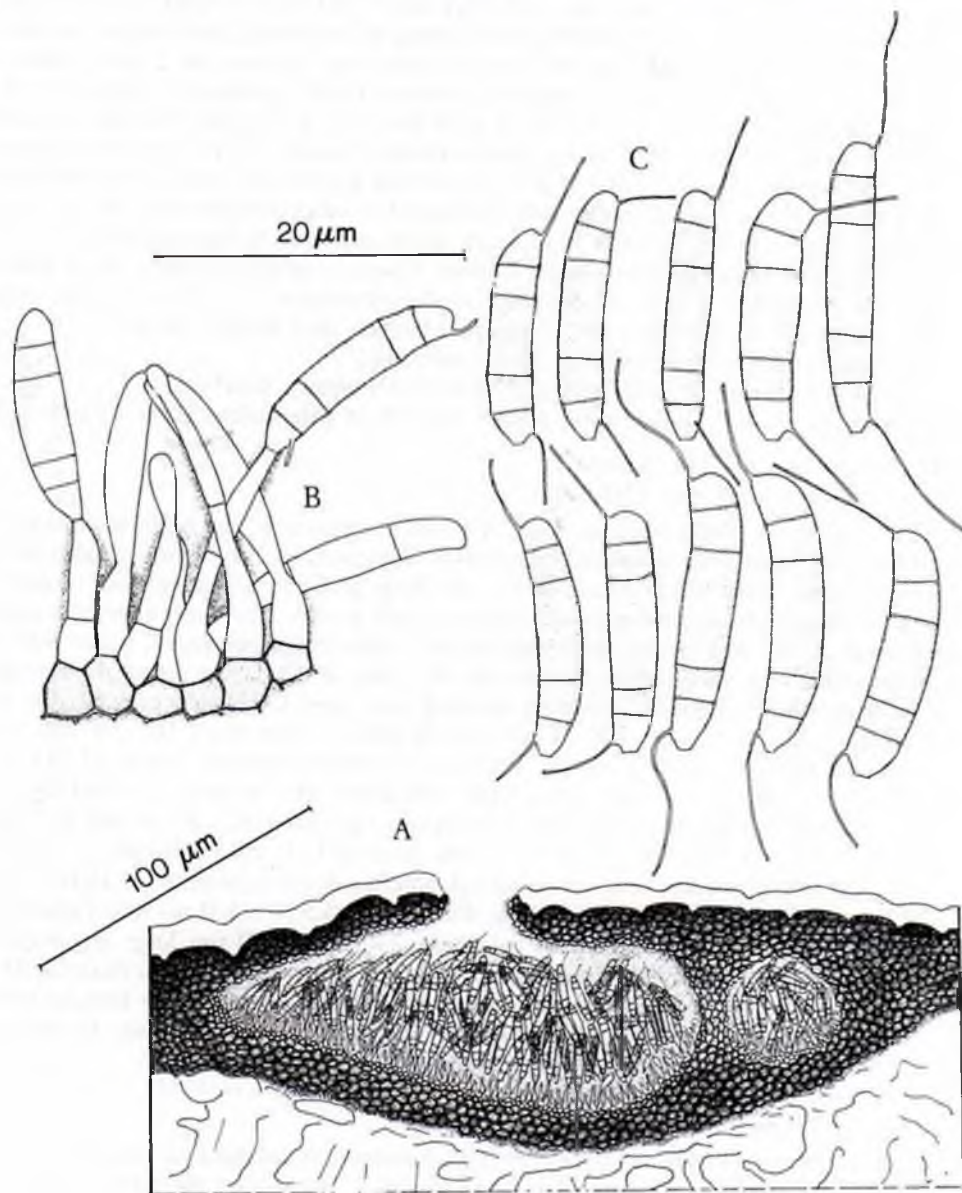


Figure 42.10. *Discosia poikilomera* ex lectotype in CUP(F). A. Vertical section of a conidioma. B. Conidiophores and conidiogenous cells with developing conidia.



the end septa).

42.11. *Discosia pyri* Koschkelova

Fig. 42.11

Bot. Mater. (Not. syst. Sect. crypt. Inst. bot. Acad. Sci. U.S.S.R.) 14: 132, 1961.

Foliicolous. Conidiomata stromatic, pycnidoid, hypophyllous, scattered to gregarious, subepidermal in origin, immersed, globose to depressed globose or oval, 50-140  $\mu\text{m}$  diam., 50-120  $\mu\text{m}$  deep, unilocular, glabrous, dark brown to black, seemingly ostiolate but dehiscing by a narrow fissure in the apical wall; wall 10-20  $\mu\text{m}$  thick, of *textura angularis*, cells thick-walled and brown to dark brown except for an inner layer of thin-walled, colourless cells. Conidiophores arising all around the cavity of the conidioma, sparsely septate and branched at the base, mostly with subverticillate clusters of conidiogenous cells, colourless, smooth-walled, up to 20  $\mu\text{m}$  long, invested in mucus. Conidiogenous cells lageniform or narrowly conical, colourless, thin-walled, smooth, 5.5-7.5 X 2-2.5 [ $\bar{x}$  = 6.5 X 2.2]  $\mu\text{m}$ , with up to 3 annellations. Conidia fusiform to naviculate, 3-septate, septa thin, wall thin, smooth, and not constricted at the septa, colourless, eguttulate, 19-25 X 2-3 [ $\bar{x}$  = 21.3 X 2.5]  $\mu\text{m}$ , bearing appendages; basal cell obconic with a truncate base, 2.5-3 [ $\bar{x}$  = 2.7]  $\mu\text{m}$  long; 2 median cells cylindrical to subcylindrical, more or less equal, each 7.5-8.5 [ $\bar{x}$  = 8]  $\mu\text{m}$  long (together 15-17 [ $\bar{x}$  = 16]  $\mu\text{m}$ ); apical cell more or less conical with a rounded apex, 2.5-3 [ $\bar{x}$  = 2.7]  $\mu\text{m}$  long; appendages tubular, filiform, flexuous, inserted on the terminal cells close to (1  $\mu\text{m}$  or less away from) the septa; apical appendage single, unbranched, 11-14 [ $\bar{x}$  = 12.5]  $\mu\text{m}$  long; basal appendage single, unbranched, 10-12 [ $\bar{x}$  = 11]  $\mu\text{m}$  long; mean conidium length/width ratio = 8.5:1.

Habitat: On fallen, dead leaves of *Pyrus communis*.

Specimen examined: LE [Holotype], 2.VI.1954, Turkmenia, Koschkelova.

Known distribution: Turkmenistan (Commonwealth of Independent States - former U.S.S.R.).

42.12. *Discosia strobilina* Libert

Fig. 42.12

Pl. crypt. Ard. exs. #346, 1837.

Fructicolous, occurring on cone scales. Conidiomata stromatic, amphigenous, discrete to aggregated and confluent, intraepidermal in origin, suberumpent, applanate, oval to almost rounded in outline with faintly lobed margins, 300-530  $\mu\text{m}$  diam., 70-130  $\mu\text{m}$  deep, glabrous, glistening black, unilocular to plurilocular, locules separated by columnar *textura porrecta*; basal stroma very thick, of *textura angularis*, cells mostly thick-walled and dark brown, becoming brown toward the upper layers; upper wall thinner, of *textura epidermoidea* with thick-walled, dark brown cells; area of dehiscence seemingly ostiolate, initially circular or oval and slightly papillate, ultimately breaking wide open. Conidiophores reduced to conidiogenous cells, restricted to the basal part of the locule, arising directly from upper layer of cells of the basal stroma. Conidiogenous cells narrowly conical, colourless to almost colourless, smooth, 10-13 [ $\bar{x}$  = 11.5]  $\mu\text{m}$  long, 1.5-2  $\mu\text{m}$  wide at the base, tapering to 1  $\mu\text{m}$  wide at the apex, invested in a thick layer of mucus. Conidia subcylindrical, straight or slightly curved, 3-septate, cells unequal, wall smooth and slightly constricted at the septa, 17-26 X 2-2.5 [ $\bar{x}$  = 22.3 X 2.2]  $\mu\text{m}$ ; basal cell obconic, colourless to almost colourless, 4-5 [ $\bar{x}$  = 4.5]  $\mu\text{m}$  long; 2 median cells subcylindrical, almost colourless, together 12-16 [ $\bar{x}$  = 14]  $\mu\text{m}$  long (second cell from the base 7-10 [ $\bar{x}$  = 8.5]  $\mu\text{m}$  long, third cell 4.5-6.5 [ $\bar{x}$  = 5.5]  $\mu\text{m}$  long); apical cell subconical with a rounded apex, colourless to almost colourless, 3-4.5 [ $\bar{x}$  = 3.7]  $\mu\text{m}$  long; appendage on the apical cell inserted about 1  $\mu\text{m}$  below the conidium apex, single, unbranched, filiform, flexuous, 15-16(-17) [ $\bar{x}$  = 15.5]  $\mu\text{m}$  long; appendage on the basal cell inserted about 1-1.5  $\mu\text{m}$  above the truncate conidium base, single, unbranched, filiform, flexuous, 14-16(-17) [ $\bar{x}$  = 15]  $\mu\text{m}$  long; mean conidium length/width ratio = 9.9:1.

Habitat: On dead cone scales of *Abies* sp.

Specimen examined: FH [Isotype], Libert — Pl. crypt. Ard. exs. #346.

Known distribution: France.

Subramanian & Reddy (1974) included *D. himalayensis* Diedicke, *D. theae* Cavara and *D. virginiana* Thümen as synonyms of *D. strobilina*. Type studies do not support these conclusions.

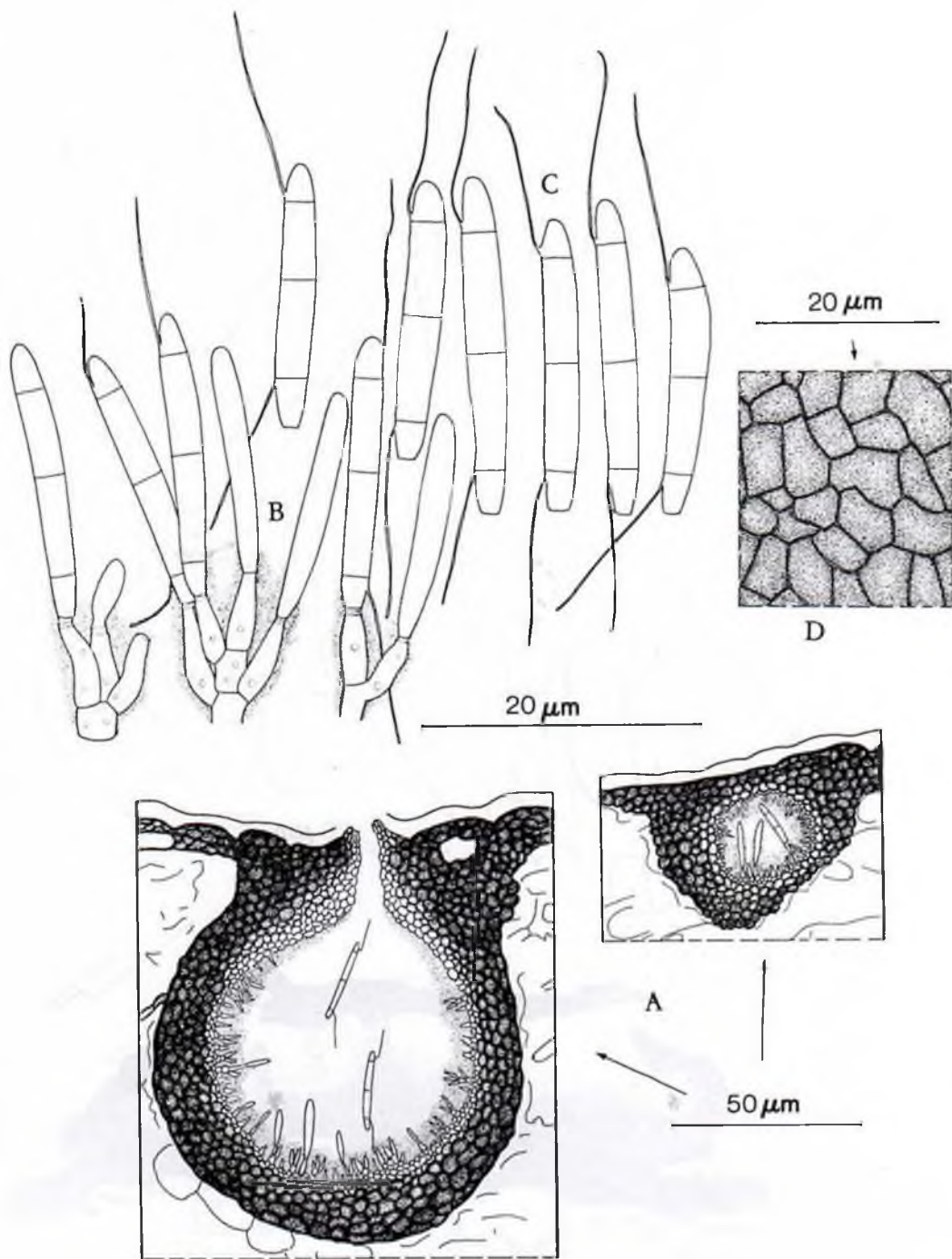


Figure. 42.11. *Discosia pyri* ex Holotype in LE. A. Vertical section of conidiomata. B. Conidiogenous cells with developing conidia. C. Mature conidia.



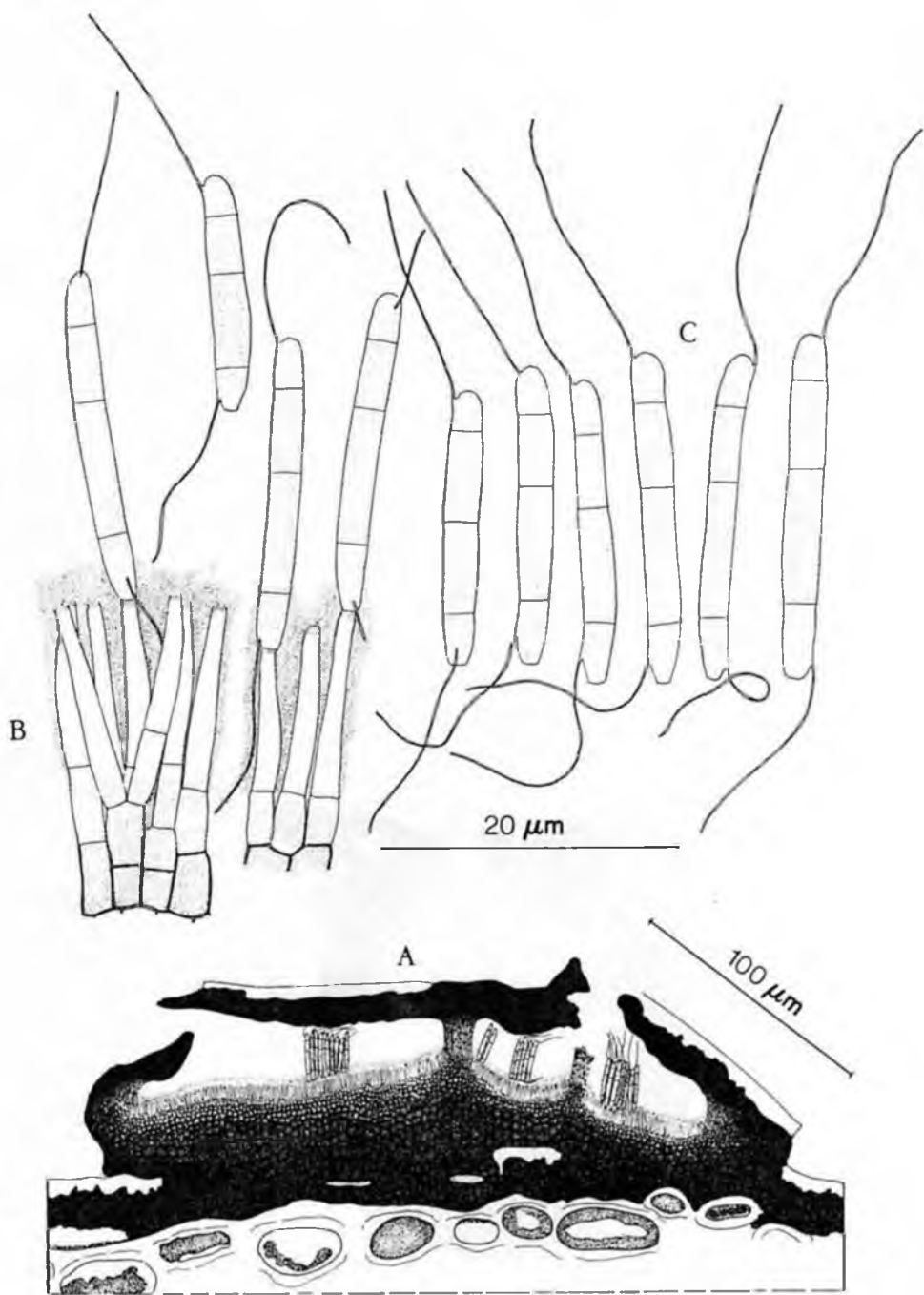


Figure 42.12. *Discosia strobilina* ex isotype in FH. A. Vertical section of a conidioma. B. Conidiogenous cells with developing conidia. C. Mature conidia.

Excluded and unexamined taxa

1. *Discosia acuta* Dearness, Rep. Canad. Arct. Exped. 1913-1918, IV, Bot. Part C: 18c, 1923.  
On stems of *Ranunculus nivalis*, N. Amer.  
= *Heteropatella umbilicata* (Persoon) Jaap, fide Wehmeyer.
2. *Discosia alnea* (Persoon) Berkeley, Outl. Br. Fungol.: 318, 1860.  
≡ *Xyloma alneum* Persoon, Syn. method. Fung.: 108, 1801.  
= *Dothidea alnea* Fries, Syst. Myc. 2: 564, 1823.  
= *Phlyctidium nitidum* Wallroth [citation to original publication could not be traced; binomial attributed to Wallroth in Saccardo, Syll. Fung. 3: 654, 1884].  
= *Discosia nitida* L veill , sec Saccardo, ibid.: 654, 1884.  
On leaves of *Alnus glutinosa*, *A. incanus*, *Magnolia* sp., in Germany, North America, Switzerland, and U.K.  
Not examined.
3. [*Discosia alnea* Cooke, Handb. Brit. Fungi Ed. 1, Vol. 1(2): 439, 1871.]  
Not examined. Grove (1937) considered it synonymous with *Discosia artocreas* Tode : Fries.
4. *Discosia alnea* (Persoon) Berkeley var. *juniperi* Roumegu re, F. Sci. Exs. #4585, Newfield, N.J., U.S.A., 1888.  
Not examined.
5. *Discosia aquatica* Fautrey, Rev. mycol. 15: 17, 1893.  
On *Sparganium erectum*, C te d'Or, France.  
Not examined.
6. *Discosia artocreas* Tode : Fries var. *ampelina* Spegazzini, Riv. Viticolt. Enol. Ital. 2(16): 500, 1878.  
On wilting leaves of *Vitis vinifera*.  
Not examined.
7. *Discosia artocreas* Tode: Fries var. *brasiliensis* Spegazzini, Bol. Acad. Nac. Cienc. C rdoba 23: 524, 1919.  
On leathery leaves of unidentified member of Bignoniaceae, nr. Apiahy, Brazil, Anisitz.  
= *Discosia brasiliensis* (Spegazzini) Nag Raj, q.v.
8. *Discosia artocreas* Tode : Fries var. *fagi* Desmazi res, Pl. crypt. N. Fr. #64.  
On *Fagus* sp. [in Herb. PAV].  
Not examined.
9. *Discosia artocreas* Tode : Fries var. *juglandis* Massalongo, Osserv. Fitol. (Madonna Verona) 2, extr. p. 10, 1908.  
On leaves of *Juglans regia*, nr. Tregnago, Verona, N. Italy.  
Not examined.
10. *Discosia artocreas* Tode: Fries var. *quercina* Desmazi res, Pl. Crypt. Fr. #62.  
= *D. quercicola* De Notaris, R. Accad. Sci. Torino Mem. ser. 2, 10: 360, (1846) 1849.  
On *Quercus* sp., Herb. NY; Saccardo — Mycoth. Ven. #515, on *Q. pedunculata*, IX.1875, ex Herb. PAV.  
= *Discosia artocreas* Tode : Fries, q.v.
11. *Discosia artocreas* Tode : Fries var. *sibirica* Saccardo, Malpighia 10: 275, 1896.  
On dead stems of *Geranium* sp., Asiatic Siberia.  
Not examined.
12. *Discosia artocreas* Tode : Fries var. *viticola* Curtis apud Cooke, Grevillea 6: 135, 1878.  
Not examined.

13. *Discosia artocreas* Tode : Fries f. *betulae* Desmazières, Pl. Crypt. France.  
On *Betula alba*, ex Herb. PAV.  
Not examined.
14. *Discosia artocreas* Tode : Fries f. *camphorae* Saccardo, Michelia 2: 281, 1881.  
On leaves of *Camphora officinarum*, Firenze, Italy, O.Penzig.  
Not examined.
15. *Discosia artocreas* Tode : Fries f. *fagi-sylvaticae* Saccardo, Mycoth. Veneta 1228 & 1533, PAV.  
On leaves of *Fagus sylvatica*, Bot. Gdn., Padova, XI.1877, ex Herb. PAV; Saccardo — Mycoth. Veneta #1533, on leaves of *F. sylvatica*, Padova, XI.1880, ex Herb. PAV.  
Not examined.
16. *Discosia artocreas* Tode : Fries f. *platani*, Herb. Georg Winter, ex Herb. Thümen [original citation not traceable].  
On *Platanus orientalis*, coll. G. Winter, 1.IX.1871, ex Herb. NY.  
Not examined.
17. *Discosia artocreas* Tode: Fries f. *polytrichii* Ellis & Everhart, Lloydia 18: 189, 1855.  
On *Polytrichum* sp., U.S.A.  
Not examined.
18. *Discosia biciliata* Fragoso, Bol. R. Soc. Española Hist. Nat. 17: 83, 1917.  
On dead branches of *Kerria japonica*, Madrid Bot. Gard., Spain, Caballero.  
Not examined. The description of the fungus suggests affinity with *Seimatosporium*.
19. *Discosia bombycina* Viswanathan apud Tilak & Viswanathan, Curr. Sci. 28: 252, 1959.  
On leaves of *Syzygium cuminum*, Poona, India.  
*Nomen dubium*; type specimen not accessible.
20. *Discosia bubakii* Kabát, Hedwigia 52: 359, 1912.  
On living leaves of *Epilobium angustifolium*, nr. Münchengrätz, Bohemia.  
= *Diploceras kriegerianum* (Bresadola) Nag Raj, q.v.
21. *Discosia circaeae* Lobik, Morbi Plant. Leningrad 17: 185, 1928.  
On leaves of *Circaea lutetiana*.  
Not examined.
22. *Discosia clypeata* (De Notaris) De Notaris, R. acad. sci. Torino Mem. ser. 2, 10: 360, (1846) 1849.  
= *Phlyctidium clypeatum* De Notaris, R. acad. sci. Torino Mem. ser. 2, 7: 8, 1845.  
On rotting leaves, Genova, Italy.  
= *Discosia fraxinea* (Schweinitz) DiCosmo, q.v.
23. *Discosia deflectens* Saccardo, Michelia 2: 145, 1880.  
On fallen leaves of *Ilex opaca*, S.Carolina, Ravencl.  
Not examined.
24. *Discosia dioscoreae* Sawada, Spec. Publ., Coll. Agric. Nat. Taiwan Univ. 8: 161, 1959 [not validly published (without Latin diagnosis)].  
On leaves of *Dioscorea alata*, Taiwan.  
*Nomen dubium*; type specimen not accessible.
25. *Discosia elliptica* Fresenius, Beitr. Myk. 2: 67, 1852.  
On lower surface of bark of *Salix caprea*, Cassel, Germany, Riess.  
Not examined.
26. *Discosia euphorbiae* Schröter, Krypt. Fl. Schles. 2: 392, 1897.  
On stems of *Euphorbia lucida* and *E. palustris*, Silesia.

- Not examined. = *Lepiothyrium euphorbiae* (Schröter) Saccardo & D.Saccardo, Syll. Fung. 18: 421, 1906.
27. *Discosia faginea* Libert, Pl. crypt. Arduenna, Cent. IV, exs. #345, 1837.  
On fallen leaves of *Fagus sylvatica*, France.  
= *D. artocreas* Tode : Fries, q.v.
28. *Discosia faginea* Libert & *alnea* De Notaris, R. acad. sci. Torino Mem. ser. 2, 10: 359, (1846) 1849.  
On leaves of *Alnus glutinosa*, Italy, V.Cesati.  
Not examined; type specimen not in PC.
29. *Discosia grammita* Berkeley & Curtis apud Berkeley, Grevillea 3: 7, 1874.  
On rotten *Paeonia arborea*, New England, U.S.A., Rev. I.D.Russell [Type in K].  
= *Seimatosporium grammitum* (Berkeley & Curtis) Nag Raj, q.v.
30. *Discosia himalayensis* Diedicke, Ann. Mycol. 14: 218, 1916.  
On living leaves of *Rhododendron complanatum*, Kumaon Hills, India, H.C.Butler [Type in HCIO].  
Not examined.
31. *Discosia hiptages* Tilak apud Tilak & Viswanathan, Curr. Sci. 28: 252, 1959.  
On leaves of *Hiptage bengalensis*, Poona, India.  
*Nomen dubium*; type specimen not accessible.
32. *Discosia ignobilis* Fautrey, Rev. Mycol. 12: 47, 1890.  
On rotting leaves of *Platanus orientalis*, Noidan, Côte d'Or, France, Fautrey.  
Not examined.
33. *Discosia jambolanae* Ahmad, Biologia 6(2): 135, (1960) 1961 [type designated on p. 258].  
On fallen leaves of *Eugenia jambolana*, W. Pakistan.  
= *Ciliochorella mangiferae* Sydow, fide Sutton (1980).
34. *Discosia julia* Spegazzini, Atti. Soc. Critt. Ital., ser. 2, 3(1): 66, 1881; *Michelia* 2: 281, 1881.  
= *Tracylla julia* (Spegazzini) Moesz, Bot. Kozlm. 13: 147, 1914.  
On *Populus tremula*, Mts. nr. Belluno, N. Italy.  
= *Pilidium concavum* (Desmazières) Höhnelt, fide Nag Raj (1991).
35. *Discosia laurina* Rabenhorst — F. Europaea Exs. #1155; Saccardo, Syll. Fung. 3: 656, 1884.  
On living leaves of *Laurus* sp., Florence, Italy, L.L.Caldesi.  
Not examined.
36. *Discosia leucostigma* Léveillé, Anns. Sci. nat. ser. 3(5): 286, 1846.  
On upper surface of leaves of *Ilex aquifolium*, France [no other data; type in PC?].  
Not examined.
37. *Discosia maculicola* Gerard, Bull. Torrey bot. Cl. 4: 47, 1873.  
On living leaves of *Smilax rotundifolia*, Poughkeepsie, summer and autumn; also in Ellis, NAF #1175,  
on languid leaves of *Gaultheria procumbens*, Newfield, New Jersey, U.S.A.  
= *Discosia artocreas* Tode : Fr.
38. *Discosia maculiformis* Sydow, Ann. mycol. 12: 164, 1914.  
On leaves of *Fagus sylvatica* var. *sieboldi*, Mt. Hakkoda, Prov. Mutsu, N.Japan, M.Miura.  
Not examined.
39. *Discosia magna* Peck, 47th Rep. NY St. Mus.: 21, 1874.  
On samara of *Fraxinus americana*, Elizabethtown, U.S.A.  
= *Discosia fraxinea* (Schweinitz) DiCosmo, q.v.
40. *Discosia minima* Berkeley & Curtis apud Berkeley, Grevillea 3: 7, 1874.  
On leaves of *Ilex* sp., Alabama, U.S.A., Beaumont [Type in K?].

- Not examined.
41. *Discosia minuta* Cesati, Kl. Herb. Myc. #1961.  
On leaves, N.Italy.  
Not examined.
42. *Discosia muscicola* (Nicot-Toulouse) Morelet, Ann. Soc. Sci. nat. Archéol. Toulon var. 20: 104, 1968.  
= *Amphichaeta muscicola* (Nicot-Toulouse) Nicot-Toulouse, Rev. Mycologie, N.S., 13: 58, 1948.  
= *Monochaetia muscicola* Nicot-Toulouse, Rev. Mycologie, N.S., 12: 130, 1947; [not validly published; no Latin diagnosis].  
On *Cephalozia bicuspadata*, France.  
Not examined.
43. *Discosia nitida* Léveillé, sec Saccardo, Syll. Fung. 3: 654, 1884.  
Not examined. See under *Discosia alnea*.
44. *Discosia nitidissima* Berkeley & Curtis [According to Subramanian & Reddy (1974) original citation is not traceable and a specimen exists in UPS; this probably is the same that Berkeley (1874) referred to as *Discosia nitida* Léveillé (see entry above)].
45. *Discosia nobilis* Petrak, Sydowia 5: 232, 1951.  
On dead leaves of ? *Quercus* sp., Costa Rica.  
= *Ciliochorella mangiferae* Sydow, q.v.
46. *Discosia ostiolata* Berkeley & Curtis, Amer. Acad. Arts. & Sci., Boston 4: 128, 1858.  
On dead leaves, Bonin Isl., Pacific rim.  
Not examined.
47. *Discosia passerinii* Saccardo, Michelia 1: 491, 1879.  
On stems of *Epilobium dodoneum*, Vigheffio, nr. Parma, Italy, Passerini.  
= *Seimatosporium passerinii* (Saccardo) Brockmann.
48. *Discosia pini* Heald, Mycologia 1: 216, 1909.  
On living hypocotyls of *Pinus ponderosa*, Forest Reserve, Halsey, Nebraska, U.S.A.  
Not examined.
49. *Discosia placentula* (Schweinitz) Ellis, Proc. Ac. Nat. Sci., Philadelphia 1895: 20, 1895.  
= *Sphaeria placentula* Schweinitz in herb.  
On leaves of *Tilia* sp.(?), Bethlehem, Pennsylvania, U.S.A.  
Not examined.
50. *Discosia platani* Outh, Mittheil. d. naturf. Ges. Bern, 1868: 61, 1868.  
On fallen leaves of *Platanus* sp., Bern, Switzerland.  
Not examined.
51. *Discosia podisomatis* Cooke & Ellis, Grevillea 7: 6, 1878.  
On *Podisoma macropus*, New Jersey, U.S.A., Spring 1877 [type reported to be in NY, see Subramanian & Reddy 1974].  
Not examined. Subramanian & Reddy (1974) considered this fungus a species of *Seimatosporium*.
52. *Discosia poonensis* Kalani, Curr. Sci. 35: 416, 1966.  
On leaves of *Cassia nodosa*, Poona, India, Naphade.  
Probably a species of *Diploceras* or *Monochaetinula*. Another collection under this name (on leaves of *Diospyros peregrina*, Poona, X.1968, S.R.Naphade) in AMH 723 and HClO 31126 has been examined. The HClO material is in a poor condition and bears only a species of *Pestalotiopsis* (also in a poor state).
53. *Discosia potentillae* Tehon, Mycologia 25: 253, 1933.  
On living leaves of *Potentilla canadensis*, U.S.A.

- Not examined.
54. *Discosia punicae* Shreemali & Reddy, Sci. & Cult. 37(10): 479, 1971.  
On *Punica granatum*, Jodhpur.  
Not examined; conspecific with *Monochaetinuula terminaliae* ?
55. *Discosia quercicola* De Notaris, R. accad. sci. Torino Mem. ser. 2, 10: 360, (1846) 1849.  
On leaves of *Quercus* sp., Milano and Navaro, Italy.  
= *Discosia artocreas* Tode : Fries.
56. *Discosia raveneliana* Thümen in schedu; [according to Subramanian & Reddy (1974), original citation not traceable; specimen in UPS].  
Not examined.
57. *Discosia rhododendri* Speschnew, Moniteur Jard. bot. Tifflis 4 : 10, 1906.  
On leaves of *Rhododendron* sp., Zichidziry, nr. Batum, Caucasia.  
= ? *D. theae* Cavara; not examined.
58. [*Discosia rosae* Edward *et al.*, Sydowia 26(1-6): 269, (1972), 1974; not validly published; contravention of Article 37].  
On dead branches of *Rosa* sp., Uthar Pradesh, India.  
Not examined; type not designated and specimen inaccessible.
59. *Discosia rugulosa* Berkeley & Curtis apud Berkeley, Grevillea 3: 7, 1874.  
On leaves of *Carya* sp., Alabama, U.S.A., Peters [Type in K?].  
Not examined.
60. *Discosia sampaii* Fragoso, Bol. Soc. Broter. Sér. 2, 2: 79, 1924.  
On stems of *Foeniculum vulgare*, Lusitania.  
Not examined.
61. *Discosia silvana* Saccardo, Ann. mycol. 2: 17, 1904.  
On dead stems of *Crepis* sp., Selva, Treviso, Italy, A.Saccardo.  
Not examined.
62. *Discosia smilacina* De Notaris, R. accad. sci. Torino Mem. ser. 2, 10: 362, (1846) 1849.  
On dry leaves of *Smilax aspera*, nr. Genoa, Italy. [Type in PC].  
= *Discosia pleurochaeta* Montagne & Durieu, q.v.
63. *Discosia splendida* Kirschstein apud Diedicke, Krypt. Fl. Brandenb. 9: 727, 1914.  
On dried stems of *Monotropa hypopitys*, State Forest in Rathenow, Germany, W.Kirschstein.  
Not examined.
64. *Discosia syzygii* Mhaskar & Rao, Botanique, Nagpur 7(1): 18, 1976.  
On fallen leaves of *Syzygium cuminum*, Maharashtra State, India.  
= *Discosia artocreas* Tode : Fries, q.v.
65. *Discosia tamarindi* Phadke & Rao, Maharashtra V.M. Patrika 12(2): 66, 1977.  
On leaves of *Tamarindus indica*, Maharashtra State, India.  
Conspecific with *Monochaetinuula terminaliae* Muthumary *et al.*
66. *Discosia tenzingii* Lacy, Indian Phytopath. 11: 82, 1958.  
On leaves of *Osbeckia crinita*, Darjeeling, India.  
Not congeneric with *D. strobilina*; excluded (fide Reddy & Subramanian 1974).
67. *Discosia theae* Cavara, Rev. Mycologie 11: 190, 1889.  
On wilting leaves of *Thea viridis*, Bot. Gdn., Pavia, N. Italy.

- Not examined. A lapsus calami in Saccardo (1892) gives an erroneous impression that Cavara (*op. cit.*) described this fungus and *Septoria theae* Cavara in identical terms.
68. *Discosia thesii* Hollós, Ann. Mus. Nat. Hungar. 5: 466, 1907.  
On *Thesium linophyllum*, nr. Nagy-Körös, Hungary.  
Not examined; type specimen believed to have been destroyed during the second world war; *nom. dub.*
69. *Discosia vagans* De Notaris, R. acad. sci. Torino Mem. ser. 2, 10: 361, (1846) 1849.  
On leaves of *Arbutus unedonis* and *Laurus nobilis*, Genoa, Italy [type not designated].  
Not examined.
70. *Discosia virginiana* Thümen, Mycotheca Universalis Cent. 20, #1985, 1881.  
On dead branches and leaves of *Juniperus virginiana*, Newfield, New Jersey, U.S.A., Ellis.  
= *D. artocreas* Tode : Fries, q.v.
71. *Discosia vitis* Schulzer, Verh. Zool. bot. Ges. Wien 20: 169-210, 1870.  
On branches of *Vitis vinifera*, Hungary.  
Not examined.
72. *Discosia wendlandiae* Patil & Thirumalachar, Sydowia 20: 37, (1966) 1968.  
On leaves of *Wendlandia notoniana*, Maharashtra State, India.  
Type specimen not in Indian Herbaria; the original illustration suggests that the fungus belongs in *Discosia* but species affinities can not be ascertained without access to the type specimen.

Binomials of dubious nomenclatural status.

Subramanian & Reddy (Kavaka 2: 88, 1974) attribute the following combinations to Morgan-Jones. As far as could be ascertained these combinations have not been formally published. I have not seen the type specimens of these three species.

1. *Discosia inaequalis* (Tehon & Stout) Morgan-Jones  
= *Cryptostictis inaequalis* Tehon & Stout, Mycologia 21: 191, 1929.  
On *Vitis rotundifolia*, Murphysboro, Jackson Co., Illinois, U.S.A., 23.VIII.1926 [type in BPI].
2. *Discosia paeoniae* (Tehon & Daniels) Morgan-Jones  
= *Cryptostictis paeoniae* Tehon & Daniels, Mycologia 17: 243, 1925.  
On leaves of *Paeonia officinalis*, Bloomfield, Johnson Co., Illinois, U.S.A., 25.VII.1922.  
= *Discosia artocreas* Tode : Fries, fide Sutton, Mycol. Pap. 88: 47, 1963.
3. *Discosia violae* (Tehon & Daniels) Morgan-Jones  
= *Cryptostictis violae* Tehon & Daniels, Mycologia 17: 244, 1925.  
On leaves of *Viola* sp., Rushville, Schuyler Co., Illinois, U.S.A., 13.VII.1922.

43. *DISCOSIELLA* Sydow & P.Sydow  
Leafl. Philipp. Bot. 5: 1546, 1912.

Lichenised fungus anamorphosis. Thallus crustose, irregular, net-like, fuliginous, or irregularly circular to oval, lobed to varying extent at the periphery, greyish green to ash-white or off-white. Conidiomata pycnidoid, seemingly superficial, dimidiate, unilocular, glabrous, dull brownish black to glistening black, clypeate, ostiolate; clypeus leathery, of *textura epidermoidea* or *textura intricata*; inner wall membranous, gelatinous, easily separable from the clypeus, of *textura angularis*, cells thin-walled, colourless. Conidiophores reduced to conidiogenous cells, arising in a dense palisade from cells of the inner wall all around the cavity of the conidioma. Conidiogenous cells discrete, of two kinds: macroconidiogenous cells ampulliform, conical, lageniform or subcylindrical, often with a broad inflated venter and a narrow attenuated neck, colourless, thin-walled, smooth; microconidiogenous cells arising in separate conidiomata, lageniform, thin-walled, colourless, smooth. Conidiogenesis: ontogeny holoblastic by apical wall-building in the first conidium and by replacement wall-building in subsequent conidia; maturation by moderate diffuse wall-building;