

SOUTH AFRICAN ASCOMYCETES IN THE NATIONAL HERBARIUM.

By Ethel M. Doidge.

PART V.

During recent years, a number of South African fungi have been studied critically by workers in Europe, and detailed descriptions published in the *Annales Mycologici* and elsewhere; in many cases changes in nomenclature have been made. It seems desirable that this work should be readily available to South African mycologists, and an indication given of the material of such fungi which is available for study.

In the present paper, descriptions are given of a number of fungi which have been studied in this way, the descriptions being translated freely and adapted from the work quoted in each case. A number of original descriptions of fungi apparently undescribed or hitherto unrecorded from South Africa, are also included. I am indebted to Dr. H. Sydow for help with some of the critical species, and especially for comparing South African material with types available in Europe.

The last paper of this series was Part IV, published in *Bothalia* Vol. 2 (1927) pp. 229-241; it included descriptions of ascomycetes numbered 136-159.

160. *Irene Ekebergiae* Doidge nov. sp.

Plagulae amphigenae, sparsae, orbiculares v. irregulares, 1-2 mm. diam.; mycelium reticulatum ex hyphis undulatis, fuscis usque brunneis, 7.5-10 μ latis, septatis (articulis 12-35 μ longis) opposite ramosis compositum; hyphopodia capitata alternata, recta, curvata v. uncinata, 15-35 μ longa, cellula basali cylindracea v. gibbosa, 5-12.5 μ longa, cellula superiore clavata, cylindracea v. irregulare, saepe sublobata, 10-17.5 μ lata; hyphopodia mucronata numerosa, plerumque opposita, haud pallidiores, 20-25 μ longa, ampullacea, e basi ventricoso-dilatata, 8-10 μ lata, subito in collum longiusculum rectum, obliquum v. curvatum 3-4 μ latum attenuata; perithecia sparsa, globosa, atra, 120-160 μ diam., cellulis parietis convexis; asci non visi; spores ellipsoideae, 4-septatae, brunneae, utrinque rotundatae, constrictae, 47-58 \times 22-27.5 μ .

Hab. in foliis *Ekebergiae pterophyllae* Hofmeyr, Lydenburg, leg. Keet, 28909.

Colonies amphigenous, scattered, isolated or subconfluent, often more numerous on the lower surface of the leaf, dense, black, small, round to irregular in outline, 1-2 mm. diam. Mycelium reticulate, often forming a dense network, especially near the centre of the colony. Hyphae undulating to tortuous, at first pale fuscous, soon becoming fuscous, and older hyphae are dark reddish brown [Natal brown (*Ridgway)]; hyphae 7.5-10 μ thick, usually rather densely branched, cells 12-35 μ long; branches mostly opposite, less frequently irregular, anastomosing freely. Capitulate hyphodia alternate or unilateral, fairly numerous, straight, curved or uncinata, 15-35 μ long; basal cell cylindrical or gibbous, straight or curved, 5-12.5 μ long, 6-10 μ thick; apical cell very variable in form, clavate, cylindrical or irregular, often sublobed, rounded or flattened at the apex, 10-17.5 μ broad. Mucronate

*Ridgway colour standards and nomenclature, Washington, 1912.

hyphopodia very numerous, especially near the centre of the colony, on separate branches or interspersed with the capitate hyphopodia, usually opposite, not paler than the hyphae, flask-shaped, 20–25 μ long, 8–10 μ thick at the swollen base, narrowing suddenly into a rather long neck, which is straight, oblique or curved and 3–4 μ thick. Perithecia (not mature) scattered, black, globose, 120–160 μ diam., outer wall composed of convex cells; the perithecia would probably be larger when mature. Asci not seen. Spores ellipsoid, 4-septate, broadly rounded at both ends, constricted at the septa, 47–58 μ long; central cell 22–27.5 μ broad, tapering slightly towards the ends.

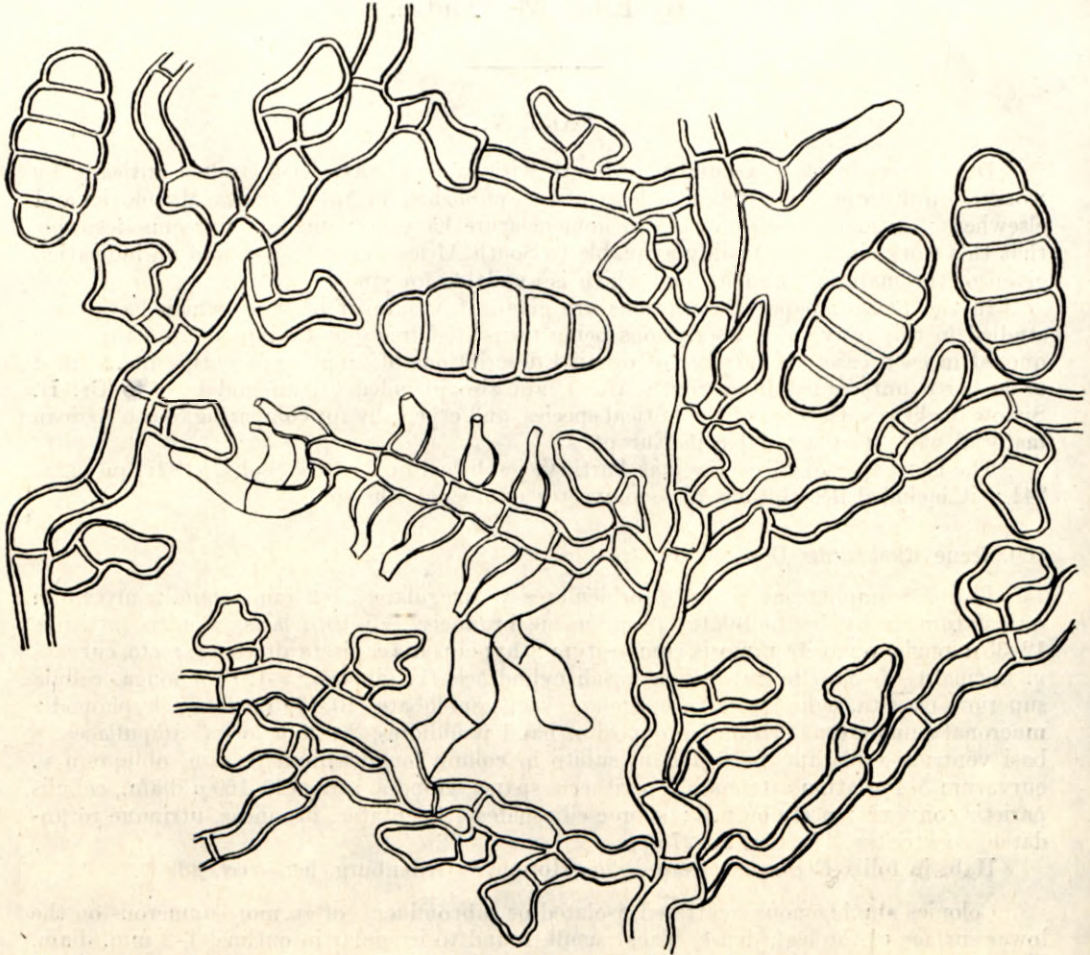


FIG. 1.—*Irene Elsebergiae*. Spores, and hyphae with capitate hyphopodia and mucronate hyphopodia.

On leaves of *Ekebergia pterophylla* Hofmeyr, Lydenburg, Transvaal, Keel, 28909.

161. *Meliola Acridocarpi* Doidge nov. sp.

Plagulae semper epiphyllae, irregulariter sparsae, atrae, orbiculares v. plus minus irregulares, usque 4 mm. diam. Mycelium ex hyphis plus minus dense reticulato-ramosis, rectiusculis, septatis, pellucide brunneis, 7.5–8 μ crassis compositum. Hyphopodia capitata numerosa, alternantia, rarius unilateralia, 18.5–24 μ alta;

cellula basali cylindracea, $3.75-6 \mu$ longa et $7.5-10$ lata; cellula apicali integra, ovata v. globulosa, $12.5-15 \mu$ diam. Hyphopodia mucronata numerosa, opposita v. alternantia, lageniformia, $16-23 \mu$ longa, in parte inferiore $8.5-10 \mu$ lata, sursum sensim vel e medio abrupte in collum attenuata. Perithecia in centro plagularum aggregata, globosa, verrucosa, atra $150-200 \mu$ diam., pariete membranaceo e cellulis $13-18 \mu$ diam. irregulariter angulosis extus conico-prominulis composito. Setae peritheciales paucae (5-12) sat rigidae, septatae, $75-100 \mu$ longa, inferne brunneae, subopacae, $10-12 \mu$ crassae, sursum sensim leniterque attenuatae et dilutiores, ad apicem scabrae, rectae v. uncinatae, $5-6.5 \mu$ crassae. Asci 2-3-spori ovati v. ellipsoideae. $60-65 \times 17.5-25 \mu$, sacile diffuentes. Sporae oblongae, utrinque haud vel leniter tantum attenuatae, late rotundatae, leniter constrictae, pellucide brunneae, $40-45 \times 15-16 \mu$.

Hab. in foliis *Acridocarpì natalitiì* Juss., Oribi Gorge, prope Port Shepstone, leg. *McClellan*, 31054.

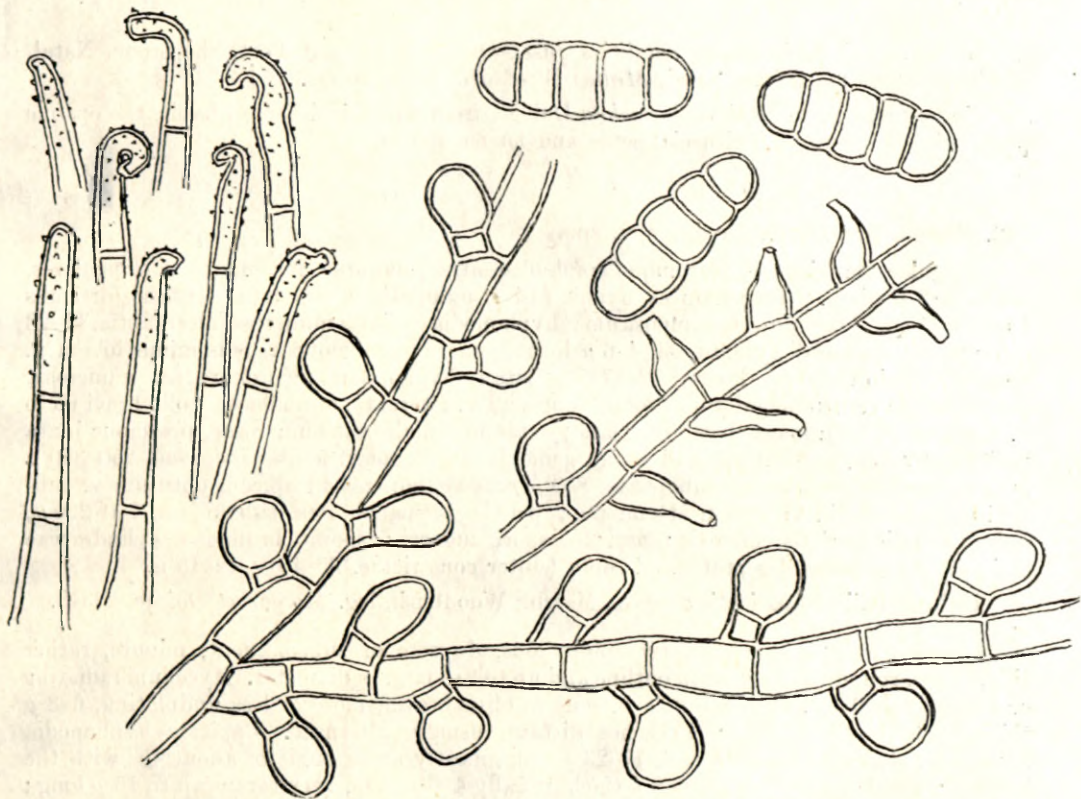


FIG. 2.—*M. Acridocarpì*. Spores, tips of perithecial setae, and hyphae with capitulate and mucronate hyphopodia.

Colonies epiphyllous, scattered, more or less circular or irregular, up to 4 mm. diam., dense, dull black. Mycelium more or less closely reticulate, brown (tawny olive to sayal brown or snuff brown, Ridgway) pellucid. Hyphae usually straight, mostly $7.5-8 \mu$ thick, rarely up to 10μ , with cells $15-20 \mu$ long, branching freely; branches opposite or irregular. Capitulate hyphopodia alternate or unilateral; often rather regularly alternate, one to each cell of the hypha, but more or less irregular where the mycelium is closely reticulate; mostly inclined forward at an angle of ca. 45° with the hyphae, $18.5-24 \mu$ long; basal cell short, cylindrical, $3.75-6 \mu$ long and $7.5-10 \mu$ broad; apical cell sub-globose to ovate, entire,

12·5–15 μ diam., rarely flattened or irregular through contact with neighbouring hyphopodia or hyphae. Mucronate hyphopodia numerous, on separate short branches or interspersed with the capitate hyphopodia, not paler than the hyphae, opposite or alternate, lageniform, 16–23 μ long, 8·5–10 μ broad at the base, narrowing suddenly or rather gradually into a neck which is more or less curved, rarely straight, about half the total length of the hyphopodium and 3·5–4 μ thick. Mycelial setae none. Perithecia closely crowded in the centre of the colony, black, carbonaceous, globose, verrucose, 150–200 μ diam. ; wall membranous, formed of cells 13–18 μ diam., more or less angular, convex or conical at the surface. Perithecial setae 5–12, rigid, septate, 3–4-celled, 75–100 μ long, dark brown, sub-opaque, 10–12 μ thick at the base, tapering somewhat to the apex which is lighter brown, pellucid, obtusely rounded, 5–6·5 μ thick, straight, bent or uncinat; apical cell scabrous. Asci 2–3-spored, ellipsoid or ovate, rounded above, sessile or sub-pedicellate, 60–65 \times 17·5–25 μ , evanescent. Spores 4-septate, oblong, more or less constricted at the septa, not tapering, or tapering very slightly to broadly rounded ends, mostly 40–45 \times 15–16 μ , rarely up to 47·5 μ long and 17·5 μ broad.

on leaves of *Acridocarpus natalitius* Juss., Oribi Gorge, near Port Shepstone, Natal, McClean, 31054 ; Inanda, Natal, Medley Wood 575, 9514, 10357.

Closely related to *Meliola claviculata* Doidge, from which it differs in habit, the opaque perithecia, the septate perithecial setae and longer spores.

162. *Meliola Impatientis* Doidge nov. sp.

Plagulae amphigenae, plerumque epiphyllae, atrae, minutae, irregulares v. orbiculares, usque 2·5 μ diam. ; mycelium ex hyphis fuscis, undulatis, 6–8 μ latis, septatis (articulis 15–25 μ longis) laxe ramosis compositum ; hyphopodia capitata numerosa, alternantia, 17–23 μ longa, cellula basali cylindracea, 4–6 μ longa, superiore subglobosa, plus minus lobata v. truncata, latiore quam longa, 12–17·5 μ lata ; hyphopodia mucronata sat numerosa, plerumque in centro plagularum evoluta, opposita v. alternata, ampullacea, collo brevi recto v. curvato, 20–25 μ longa, basi 6–8 μ lata ; setae myceliales sat numerosae, praecipue juxta perithecia evolutae, simplices, ad basim geniculatae, rectae v. leniter incurvae, 250–350 μ longae, basi atro-brunneae, subopaeae, 8–9 μ crassae, sursum ad apicem obtusum v. sub-acutum subpellucidem sensim attenuatae ; perithecia sparsa, atra, subglobosa, 160–220 μ , daim., cellulis parietis convexis ; asci 2–4 spori, fugaces ; sporae brunneae, cylindraceae utrinque rotundatae, 4-septatae, ad septa leniter constrictae, 35–40 \times 12–15 μ .

Hab. in foliis *Impatientis capensis* Meerb., Woodbush, leg. Morgan et Doidge, 28348.

Colonies amphigenous, mostly epiphyllous, discrete or subconfluent, minute, rather thin, black, round to irregular in outline and up to 2·5 mm. in diameter. Mycelium radiating or loosely reticulate. Hyphae pale fuscous to olive brown, more or less undulating, 6–8 μ thick, cells 15–25 μ long ; branches distant, usually alternate. Capitate hyphopodia numerous, alternate or unilateral, 17–23 μ long, mostly at an angle of about 45° with the hyphae ; basal cell cylindrical 6–8 μ thick, usually 4–6 μ long, very rarely up to 15 μ long ; apical cell subglobose to irregular, often bluntly angular, truncate or with 2–3 shallow, rounded lobes, often broader than long, 12–17·5 μ broad. Mucronate hyphopodia numerous in the older part of the colony, produced on special hyphal branches, opposite or alternate, paler than the hyphae, ampulliform, 20–25 μ long, 6–8 μ diameter at the base, tapering rather gradually into a short neck which is straight or curved. Mycelial setae produced mostly in the neighbourhood of the perithecia, fairly numerous, simple, geniculate near the base, straight or slightly incurved, 250–300 μ long ; dark brown, subopaque and 8–9 μ thick at the base, tapering gradually towards the apex which is somewhat paler, pellucid, obtuse or occasionally subacute. Perithecia scattered, black, globose, 160–220 μ diam., cells of the outer wall convex. Asci 2–4-spored, disappearing early. Spores olive brown, cylindrical, 4-septate, slightly constricted, broadly rounded at both ends.

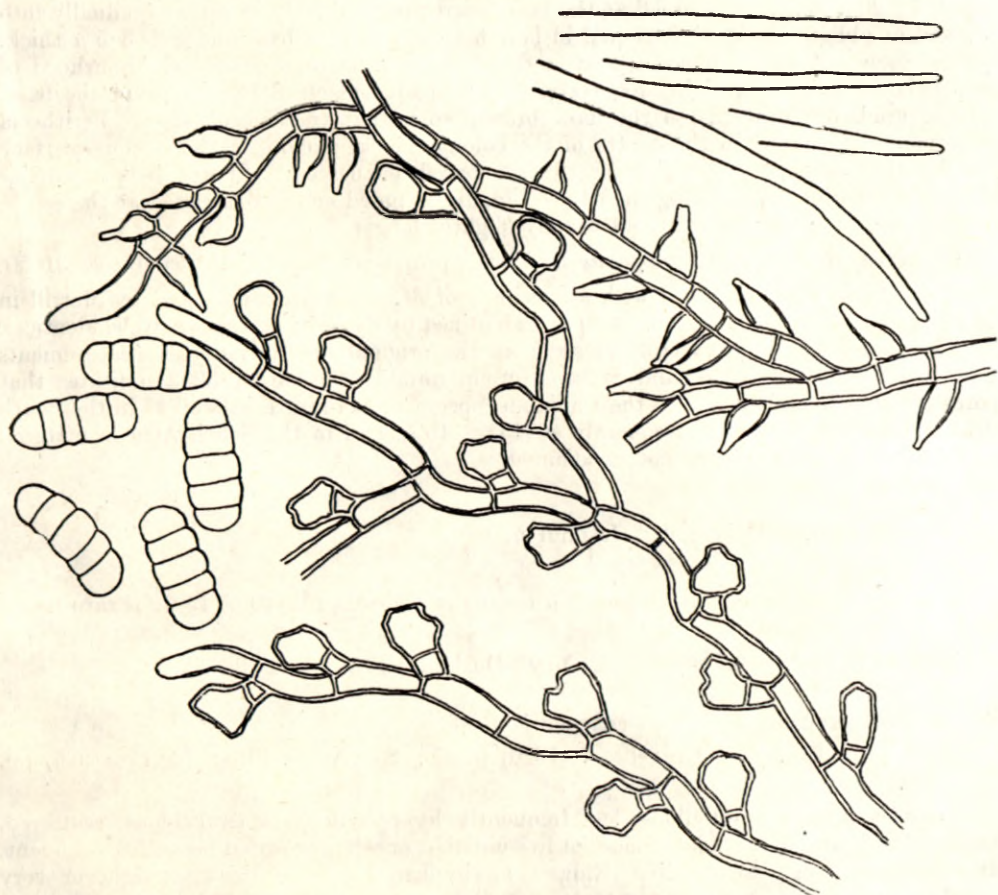


FIG. 3.—Spores, tips of mycelial setae, and hyphae with capitate and mucronate hyphopodia.

On leaves of *Impatiens capensis* Meerb., Woodbush, Pietersburg District, Transvaal, Morgan and Doidge, 28348.

163. *Meliola jasminicola* P. Henn.

Hedwigia 34 (1895) p. 11; Stevens, Ann. Myc. 26 (1928) p. 257.

Colonies amphigenous, mostly epiphyllous, also on the petioles, not causing leaf spots, irregularly scattered, dull black, more or less round, 1–3 mm. diam.; when numerous becoming confluent and forming larger, irregular blotches. Mycelium more or less reticulate, rather densely so in the older part of the colony, composed of cinnamon brown hyphae which are straight or somewhat undulating, mostly 7–8 μ thick, in places up to 10 μ ; cells mostly 20–30 μ long; branches fairly numerous, mostly opposite and at an acute angle with the main hyphae. Capitate hyphopodia numerous, alternate, unilateral or opposite,

2-celled, broadly clavate, rarely cylindrical, straight or slightly curved, mostly inclined forward towards the hypha, 17–23 μ long; basal cell cylindrical, 5–8 μ long, 7–8 μ broad; apical cell ovate to cylindrical, entire, broadly rounded above, 9–10 μ broad. Mucronate hyphopodia numerous in the older parts of the colony, on separate hyphal branches or interspersed with the capitate hyphopodia, usually opposite, not paler than the hyphae, flask-shaped, 17–20 μ long, 7–8 μ broad at the base, narrowing suddenly or rather gradually into a curved or oblique neck, about equal in length to the swollen base and 2.5–3.5 μ thick. Mycelial setae not very numerous, scattered, but more numerous in the neighbourhood of the perithecia, simple, straight, 400–600 μ long; opaque, black, 8–12 μ thick at the base, tapering gradually upwards to the dark brown, somewhat translucent apex. Perithecia not numerous, grouped in the centre of the colony, black, globose, carbonaceous, surface cells slightly convex, 240–300 μ diam., Asci 2-spored, evanescent. Spores 4-septate, cylindrical, not tapering, or tapering slightly to broadly rounded ends, constricted at the septa, 35–50 \times 12.5–17.5 μ ; central cell usually slightly longer.

On leaves of *Jasminum streptopus* E. Mey., Springfield, Natal. *Medley Wood*, 31050.

This fungus was compared with a specimen of *M. jasminicola* collected by Merrill in the Philippines (Flora Philip. No. 7469) and identified by Sydow; it appears to be identical.

The spores are very variable in size; in the original description the measurements given are 30–36 \times 10–15 μ , and Stevens' group number (l.c.) 3111–3233 indicates that spores are 40 μ long or less. In the Philippine specimen examined, as well as in the South African collection they were frequently 40–45 \times 15 μ , and in the South African material spores up to 50 μ long were not uncommon.

164. *Meliola oleicola* Doidge var. *Jasmini* n. var.

Bothalia 2 (1928) p. 458.

A typo recedit hyphodiis (usque 25 μ longis) et sporidiis (35–40 \times 15–18 μ raro usque 42.5 μ longis) minoribus.

Hab. in foliis *Jasmini streptopi* E. Mey., Durban, leg. *Bottomley* 11379.

165. *Meliola perpusilla* Syd. var. *congoensis* Beeli.

Bull. Jard. Bot. Etat Bruxelles 7 (1920) p. 97; *Sacc. Syll. Fung.* XXIV (1926) pp. 271, 272.

Colonies mostly epiphyllous, less frequently hypophyllous or caulicolous, scattered, small, up to 2 mm. diam., black, more or less circular, or when crowded becoming confluent. Mycelium radiating, tawny olive (Ridgway); hyphae 7.5–10 μ thick, straight or very slightly undulating; branching remote, usually opposite, cells 20–30 μ long. Capitate hyphopodia alternate or unilateral, cylindrical to sub-clavate, inclined forwards towards the hypha, mostly at an angle of ca. 45°, 17–25 μ long; basal cell short, cylindrical, 2–6 μ long, 7–9 μ broad; apical cell ovate, rounded above, 15–17 μ long and 9–10 μ broad. Mucronate hyphopodia not numerous, usually opposite, lageniform, 12–15 μ long, 7–8 μ broad at the base, narrowed above into a short neck ca. 4 μ thick. Mycelial setae not very numerous, straight or slightly curved, simple, 200–400 μ long, dark brown, sub-opaque, 8–10 μ thick at the base, tapering gradually upwards to the paler, translucent, subacute apex. Perithecia scattered, black, globose, 150–200 μ diam., surface cells slightly convex, Asci ovate, 2–4-spored, 40–50 \times 25–30 μ . Spores oblong, broadly rounded at both ends, 4-septate, slightly constricted at the septa, olive brown, 35–40 \times 12.5–16 μ .

on leaves of *Secamone frutescens* Decne., Karkloof, near Maritzburg, Natal, *Doidge*, 14958.

On comparison with a specimen of *Meliola perpusilla* Std. (No. 11423 in Baker's *Fungi Malayana*, det. Saccardo) the South African fungus was found to differ in the size of the perithecia and spores; these agreed in measurement with those of Beeli's var. *congoensis*.

166. *Meliola Ptaeroxyli* Doidge, nov. sp.

Plagulae amphigenae, irregulariter sparsae, orbiculares v. plus minus irregulares, atrae, usque 4 mm. diam.; mycelium ex hyphis fuscis rectiusculis ramosis, $7.5-12.5 \mu$ crassis, breviter articulatis, torulosus compositum. Hyphopodia capitata numerosa, unilateralia v. alternantia, irregularia, $20-40 \mu$ longa; cellula basali plerumque cylindracea, $5-12.5 \mu$ longa et $6-9 \mu$ lata; apicali cylindracea, ovata, clavata vel irregulariter 2-3-lobata, recta v. curvata, $10-18 \mu$ lata. Hyphopodia mucronata saepe numerosa, variabilia, $20-27.5 \mu$ longa, in parte infera $7.5-10 \mu$ lata, e medio plerumque subito in collum cylindraceum, rectum obliquum v. curvatum transeuntia. Setae myceliales sat numerosae, rectae vel subrectae, usque 750μ longae, ad basim $8-10 \mu$ latae opae atrobrunneae, apicem versus sensim attenuatae et dilutiores, ad apicem obtusae, sub-acutae v. nonnunquam minute bi-denticulatae. Perithecia sparsa vel pauca aggregata, globosa, atra, $180-300 \mu$ diam., verrucosa. Asci ovati, facile diffluentes, 2-3-sporei. Sporae oblongae, 4-septatae, utrinque leniter attenuatae, late rotundatae, $50-60 \times 20-23 \mu$.

Hab. in foliis *Ptaeroxyli obliqui* (Thun.) Radkb., in silvis Marwaqa, prope Bulwer, Natal, leg. Morgan et Doidge 30899.

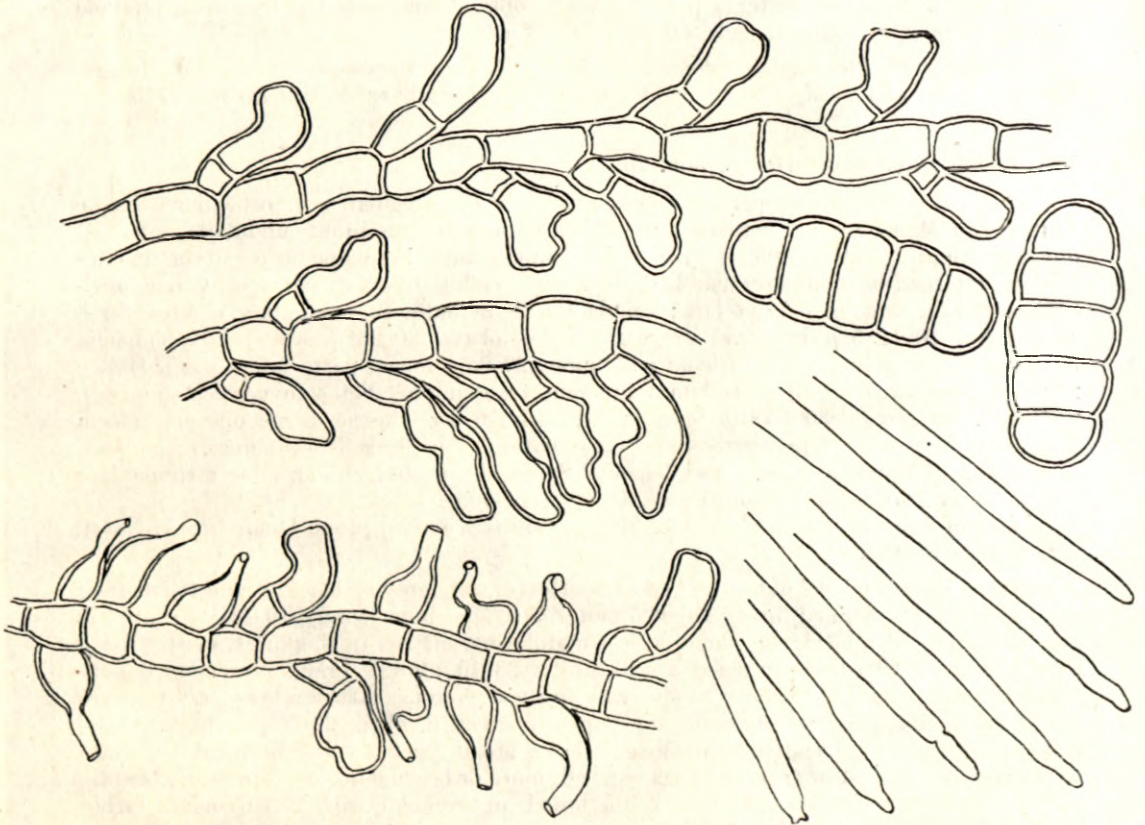


FIG. 4.—*Meliola Ptaeroxyli*. S pores, tips of mycelial setae, and hyphae with capitate and mucronate hyphopodia.

Colonies amphigenous, scattered, on indefinite brownish leaf spots, up to 4 mm. diam. Mycelium radiating, formed of tawny olive (Ridgway) hyphae, which are usually straight, torulose, $7.5-12.5 \mu$ thick, with very short cells $7.5-12.5 \mu$ long, often constricted at the septa; freely branched, branches often opposite. Capitate hyphopodia unilateral or

alternate, irregular in form and size, straight or sinuous, 20-40 μ long; near the centre of the colony often closely crowded, with series of 3-5 or more on one side of the hypha; nearer the margin often more regularly alternate, and on some branches distant; usually inclined forward, forming an acute angle with the hypha; basal cell usually more or less cylindrical, straight or bent, rarely irregular, 5-12.5 μ long, usually 6-9 μ broad, rarely ventricose and up to 12.5 μ ; apical cell cylindrical, ovate, clavate, or sub-lobed and irregular in outline, rounded or truncate at the apex, straight, curved or bent, entire or with 2-3 obtuse shallow lobes, 10-18 μ broad. Mucronate hyphopodia numerous in some colonies, interspersed with the capitate hyphopodia, mostly opposite, but occasionally alternate or unilateral, not paler than the hyphae, lageniform, straight, gibbous or curved, 20-27.5 μ long, 7.5-10 μ broad at the more or less swollen base, constricted into a neck about half the entire length of the hyphopodium and ca. 3.5 μ thick, direct or oblique, more or less curved. Setae fairly numerous, straight, up to 750 μ long; blackish brown, opaque, 8-10 μ thick at the base; tapering upwards to the apex, which is brown, more or less pellucid, 2.5-4 μ thick, simple, rounded or sub-acute, frequently constricted or sub-torulose near the tip and occasionally minutely bidentate. Perithecia not very numerous, scattered or more or less grouped, black, globose, 180-300 μ diam.; surface cells strongly convex, 15-25 μ diam. Asci 2-3-spored, ovate. Spores 4-septate, oblong, constricted at the septa, tapering slightly to broadly rounded ends, 50-60 \times 20-23 μ .

on leaves of *Ptaeroxylon obliquum* (Thunb.) Radkl., Marwaqa Forest near Bulwer, Natal, *Morgan* and *Doidge*, 30899; Buccleuch, near Maritzburg, Natal, *Doidge*, 9715.

167. *Meliola xumenensis* Doidge nov. sp.

Plagulae epiphyllae, dispersae, tenues, atro-griseae, irregulares v. orbiculares usque 3 mm. diam. Mycelium laxe reticulatum ex hyphis ramosis, plus minus undulatis, septatis, olivaceo-brunneis, plerumque 6-8 μ latis compositum. Hyphopodia capitata modice copiosa, alternantia v. unilaterialia, 27.5-45 μ alta; cellula basali cylindracea, variae longitudinis, 6-12 μ longa et 7-7.5 μ lata; cellula apicali cylindracea, uncinata v. sinuosa, rarissime recta, 10-12.5 μ lata, vel irregulariter 2-3-lobata, 20-23 μ lata. Hyphopodia mucronata plerumque opposita, haud pallidiores, 20-25 μ longa, parte infera 6-9 μ lata, e medio sensim, raro subito in collum tenuiorem transeuntia. Setae myceliales simplices, rectae, v. sub-rectae, 300-600 μ longae; ad basim 6-9 μ crassae, atrae opacae, apicem brunneum sub-pellucidem versus sensim attenuatae. Perithecia laxe aggregata, globosa, atra, scabra, 180-200 μ diam. Asci 2-sporei. Sporae 4-septatae, cylindraceae utrinque late rotundatae, ad septa leniter constrictae, 45-50 \times 17-19 μ .

Hab. in foliis *Jasmini streptopi* E. Mey., in silvis Xumeni, prope Donnybrook, Natal, leg. *Morgan* et *Doidge*, 29897.

Colonies epiphyllous, not on leaf spots, scattered, thin, greyish black, round to irregular in outline, poorly defined, up to about 3 mm. diam. Mycelium loosely reticulate; hyphae light brownish olive (Ridgway) more or less undulating, uneven in thickness, mostly 6-8 μ thick but up to 10 μ thick in places; cells mostly 25-40 μ long; branching rather remote opposite or alternate. Capitate hyphopodia fairly numerous, rather remote, alternate or unilateral, inclined forward towards the hypha or erect, 2-celled, 27.5-45 μ high; basal cell more or less cylindrical, 6-12.5 μ long, 7-7.5 μ broad; apical cell cylindrical to clavate with broadly rounded or truncate apex, curved, more or less uncinata or sinuous, abruptly bent, or rarely almost straight, 10-12.5 μ broad, or irregular with 2-3 rounded, rather shallow lobes and 20-23 μ broad. Mucronate hyphopodia fairly numerous in the older parts of the colony, on separate short branches or interspersed with the capitate hyphopodia, usually opposite, not paler than the hyphae, straight or slightly curved, 20-25 μ high 6-9 μ broad at the base, tapering gradually into a neck which is 3-4 μ thick at the apex, rarely constricted abruptly at the centre. Mycelial setae not very plentiful, more numerous round the base of the perithecia, simple, straight or slightly curved, 300-600 μ long; black, opaque, 7.5-9 μ thick at the base; tapering gradually upwards to the brown, more or less translucent

apex, which is rounded and usually ca. $3.5-4 \mu$ thick. Perithecia fairly numerous, more or less grouped near the centre of the colony, black, globose, scabrous, $180-200 \mu$ diam. Asci 2-spored, evanescent. Spores 4-septate, cylindrical, concolorous with the mycelium, broadly rounded at the ends, slightly constricted at the septa, $45-50 \times 17-19 \mu$.

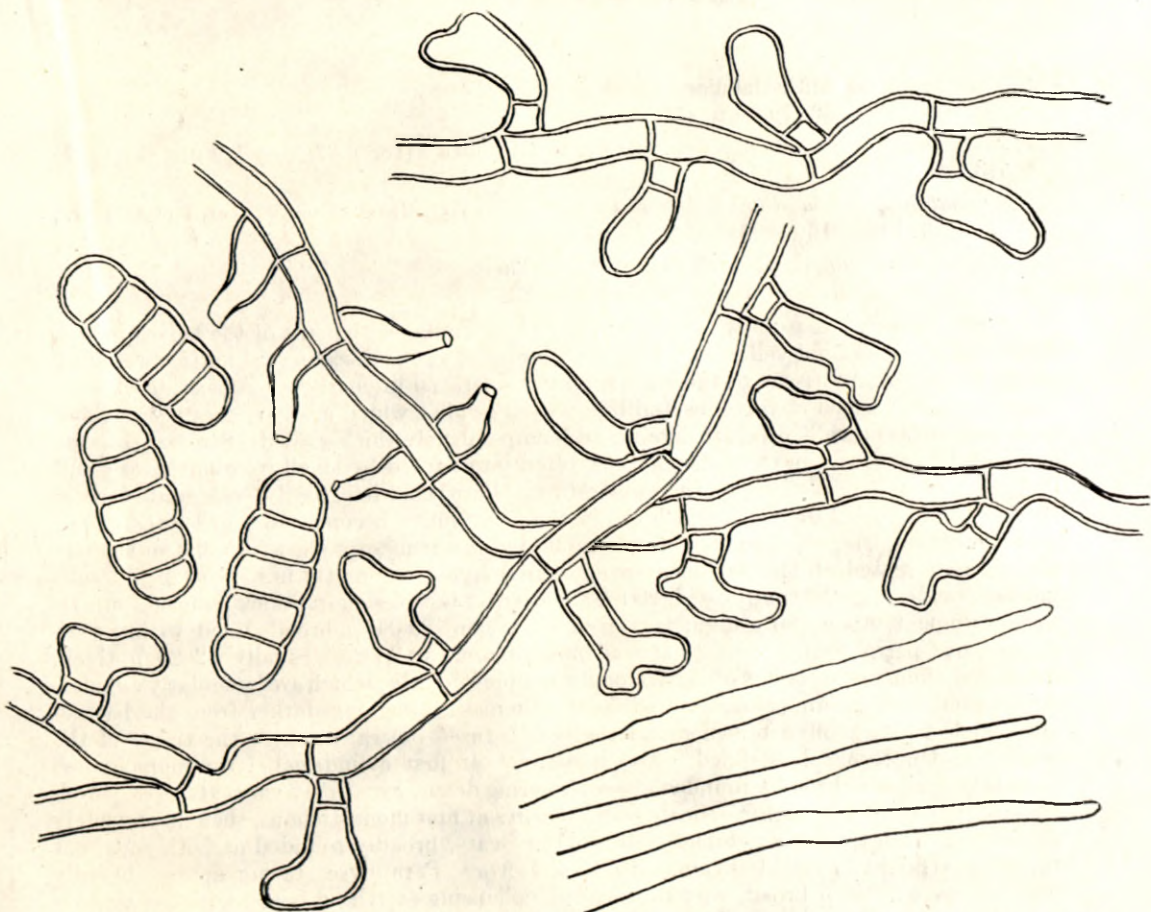


FIG. 5.—*Meliola Xumenensis*. Spores, tips of mycelial setae, and hyphae with capitate and mucronate hyphopodia.

on leaves of *Jasminum streptopus* E. Mey., Xumeni Forest, near Donnybrook, *Morgan* and *Doidge*, 29897; Karkloof, near Maritzburg, *Doidge* 14942.

In collection 29897, associated with *Meliola gemellipoda*, the latter occurring mostly on the stems.

168. *Meliola rhoina* Doidge.

Bothalia 2 (1928) p. 454.

on leaves of *Harpephyllum caffrum* Burch., East London, *Doidge*, 10926; Howieson's Poort, near Grahamstown, *Doidge*, 10958; Pirie Forest, Kingwilliamstown, *Doidge*, 12269, 22396; Marwaqa Forest near Bulwer, *Morgan* and *Doidge* 31899.

The *Meliola* sp. on *Harpephyllum caffrum* was not mentioned in the revision of the genus in *Bothalia* (loc. cit.) as its identity was doubtful. A careful study has now been made of a number of collections, and this fungus cannot be distinguished from *Meliola rhoina*, which is a very variable species.

In addition to the occurrences of *Meliola rhoina* on *Rhus* spp. previously recorded, it has been found on:—

Rhus MacOwani Schonl., Alexandria Forest, *Doidge* 22372 ;

Rhus natalensis Bernh., East London, *Doidge*, 22389.

169. **Physalosporina Sutherlandiae** (Kalch. et Cke.) Petrak
in *Ann. Myc.* 32 (1934) p. 411.

Syn. *Stigmatea Sutherlandiae* Kalch. et Cke. in *Grevillea* 9 (1880) 32 ; *Syll. Fung.* 1 (1882) 543.

Stigmatula Sutherlandiae (Kalch. et Cke.) Syd. in *Bull. Herb. Boiss.* 2, ser. 1 (1901) 78 ; *Syll. Fung.* 16 (1902) 454.

Hyponectria Sutherlandiae (Kalch. et Cke.) Theiss.
in *Verhandl. Zool. Bot. Ges.* 69 (1920) 23.

Stroma extensive, usually spreading from the margins or the tips of the leaves, which show a yellowish or light yellowish-brown discoloration, and permeating the entire mesophyll at the leaf. Ground tissue of the stroma almost sclerotial in character, consisting of loose plectenchyma, formed of tortuous and interwoven hyphae which are very freely branched, rather closely septate, 3–6 μ thick, hyaline and comparatively thick-walled. Stromatal tissue developed most freely in the palisade cells, often interrupted by small irregular spaces and including shrunken vestiges of the substratum. Perithecia irregularly scattered, usually single ; sometimes 2 or more, which are in close proximity become more or less confluent and form small, irregular groups ; deeply immersed in the mesophyll, with a flat or slightly convex base seated on the flattened spongy parenchyma or slightly immersed in it ; sub-globose, ovate, slightly compressed, 200–300 μ diam. Ostioles short, thick, conical, punctiform-erumpent, about 80 μ high, traversed by a pore 20–30 μ broad, lined within with filamentous periphyses. Perithecial wall membranous to fleshy, usually 12–20 μ thick, composed of numerous layers of very strongly compressed cells, which are irregularly angular, thin-walled, 5–12 μ diam., hyaline or subhyaline in mass, becoming darker from the base of the ostiole to dark olive brown round the pore ; fused outwardly with the tissue of the stroma and not sharply defined. Asci numerous, at first cylindrical, later more or less clavate or fusiform, broadly rounded above, tapering downwards into a short stalk, 8-spored, 60–75 \times 10–18 μ , with a thin delicate wall. Spores at first monostichous, then incompletely distichous, often transverse, broadly ellipsoid or ovate, broadly rounded at both ends, not tapering, straight, 1-celled, hyaline, 10–15 \times 7–9 μ . Paraphyses rather sparse, broadly filamentous, ca. 2–4 μ broad, very thin-walled, collapsing early and becoming mucilaginous and unrecognisable.

on dying leaves of *Sutherlandia frutescens* R. Br., Boschberg, near Somerset East, *MacOwan* 1415, 3684, 20846, 21978 (*Rabh. Fung. Eur.* 3344).

Petrak (loc. cit.) discusses at length the systematic position and synonymy of this fungus.

170. **Anthostomella Cassinopsidis** (K. et Cke.) Rehm.

Ann. Myc. 4 (1906) p. 341 and 5 (1907) p. 545, (erronee *A. Cassinopsidis*) ; *Sacc. Syll. Fung.* XXII (1913), p. 94.

Syn. *Diplodia cassinopsidis* Kalch. et Cke., *Grevillea* IX (1880), p. 19.

Sphaeropsis Cassinopsidis (Kalch. et Cke.) Pазsch., *Rabh. Fung. Eur.* 4488.

Anthostomella Cassinopsidis (Kalch. et Cke.) Petr. et Syd., *Ann. Myc.* 23 (1925) p. 216.

Perithecia more or less scattered, sometimes distant, sometimes close to one another, occasionally crowded ; developing under the epidermis, which becomes raised, pustuliform,

with only the ostiole punctiform-erumpent; globose, black, very variable in size, usually ca. 300–500 μ diam., seldom somewhat larger; ostiole truncate-conical, traversed by a round pore. Perithecial wall mostly about 12–15 μ thick below; above it is fused with the outer wall of the epidermis, forming an epidermal clypeus which extends over and beyond the perithecium, and round its sides almost to the base; in this way the membrane at the sides becomes up to 75 μ thick, and when the perithecia are close together, these become fused and the single perithecia have the appearance of loculi sunk in a stroma. Asci cylindrical, thin-walled, broadly rounded above, tapering below into a rather short stalk, 8-spored, sp. part 100–120 \times 12–15 μ . Spores obliquely monostichous, elongate-ellipsoid or ovate, not tapering towards the broadly rounded ends or only slightly so, straight, rarely slightly curved, 1-celled, dark brown, almost opaque, 15–25 \times 8–12 μ . Paraphyses numerous, filamentous.

on stems of *Cassinopsis* sp., Cape, MacOwan, Rabenhorst-Pazschke, Fung. Europ. et extra-Europ. nr. 4488.

Rehm's species *Anthostomella Cassinopsidis* was described from a specimen collected by MacOwan and handed to him by Pazschke; his description agrees fairly well with that given by Petrak and Sydow of the fungus distributed by Pazschke as nr. 4488 of the Fungi europ. et extra-europ., and I think there is little doubt that it was part of the same collection.

In the *Annales Mycologici* 4 (1906) the name of the fungus was given as *An. Cassinopsidis* and the host *Cassionopsis* sp. So far as I am aware there is no such genus as *Cassionopsis*, and this was obviously a clerical error. The name of the host and the specific name of the fungus were given correctly in the *Sylloge Fungorum* (loc. cit.).

171. *Mycosphaerella Aloes* Syd.

in Ann. Myc. 37 (1939) 181.

Stromata amphigenous, but mostly epiphyllous, round to elliptic or irregular in outline in groups 2–4 mm. diam., appearing first near the tip of the leaf, later spreading gradually and evenly downwards and becoming ever more numerous; the areas of the leaf which are invaded become dead and dark brown in colour. Stromata developing chiefly in the epidermis, sometimes consisting of a single, very thick-walled perithecium on a short, broadly truncate, inverted-conical basal stroma; but usually the stroma is tuberculate, irregularly circular or elliptic in outline, formed by the fusion of 2–3 perithecia, of which the more or less flattened apices break through cracks in the epidermis; they are more or less convex below and sunk into the mesophyll, usually 150–250 μ diam., seldom somewhat larger. At the base the stroma attains to a thickness of 80 μ ; it becomes gradually thinner at the sides and is often only 18–25 μ thick at the apex; it is parenchymatous and consists of cells which are irregularly polyhedral, thin-walled, translucent, blackish-brown, 6–12 μ diam., running out at the base and at the sides into rather short-celled tortuous hyphae 3–5 μ thick, which penetrate more deeply into the substratum.

Perithecia globose, broadly ovate or rather irregular, 120–180 μ diam., seldom somewhat larger, provided with a papilla, which is traversed by a rather indefinite irregular pore. Asci few, seldom more than six in a perithecium, 8-spored, broadly clavate, broadly rounded above, saccate below and then suddenly constricted, almost sessile, or with a very short, thick knob-like foot, 46–60 \times 14–22 μ . Spores more or less distichous, cylindrical, clavate or somewhat fusiform, obtusely rounded at both ends, not attenuate above or very slightly so, tapering gradually and more definitely below, straight or slightly bent, 1-septate, not constricted, hyaline, with thick episore, 17–23 \times 3.5–5 μ ; loculi equal or sub-equal. Paraphysoids rather numerous, indefinitely filamentous, erect, arising from the hyaline inner tissue of the perithecia, tardily becoming mucilaginous.

on dying apices of leaves of *Aloe lineata* Harv., Port Elizabeth, Doidge, 2293.

172. *Baumiella caespitosa* P. Henn.

in Bot. Ergebnisse der Kunene-Sambesi Exped. (1903) 165; Syll. Fung. 17, p. 708; v. Höhnel, Fragmente zur Mykologie no. 618.

Syn. *Gibbera tinctoria* Mass., in Bull. Bot. Gard. Kew (1911) 226; Syll. Fung. 24, p. 923; Eyles in Rhod. Agr. Jour. 23 (1926) 642; Hopkins in Trans. Rhod. Sc. Ass. 35 (1938) 101.

Stromata epiphyllous, erumpent, closely crowded and covering the greater part of the leaf surface; (in Henning's type the stromata are in scattered, orbicular groups and the individual stromata not so closely crowded), black, round to irregular in outline, up to 1 mm. diam., verrucose or pulvinate, usually rough externally with irregular projections. The hypostroma consists of a parenchymatous tissue of very thin-walled, hyaline or yellow cells, very variable in form and size, often 3–10 μ diam., rounded, angular, cylindrical or quite irregular, becoming almost hyaline and filamentous below, and becoming resolved into numerous hyphae which penetrate more deeply into the mesophyll of the leaf. After breaking out from the tissues of the host, the ground tissue of the stroma consists of thin-walled, translucent blackish-brown or greyish-brown, rounded or angular cells, mostly 10–15 μ diam.; below and at the sides, the cells are often orientated in more or less vertical rows. The stroma is homogeneous without a firm outer crust, the outer layers of cells being very irregular and loosely compacted; it is rather more compact and smaller celled in the somewhat convex processes over the ostioles of the perithecia.

Loculi monostichous, one or few in each stroma, globose to ovate, 120–160 μ diam., with very short truncate-conical ostioles, traversed by an indefinite pore; locular wall consisting of several layers of hyaline, much compressed cells, but not clearly defined. Asci briefly pedicellate, fusiform, straight or curved, 112·5–135 \times 30–42·5 μ ; sp. part 85–100 μ long, narrowed above into an apical beak traversed by a pore, apices of the asci converging towards the ostiole. Spores distichous or conglobate, hyaline, cylindrical, rarely sub-clavate, 1-septate, not constricted, rounded at both ends, mostly 40–42·5 \times 10–11·5 μ , rarely 35 or 47 μ long. Paraphysoids well developed, consisting of plates of cells almost entirely separating the asci.

on leaves of *Monotes glaber* Sprague, Salisbury, Eyles 1967, 14006.

Apart from the grouping of the stromata, the greatest difference between the fungus examined and the type, lies in the size of the spores. Hennings states that they are 26–33 \times 9–13 μ ; Sydow in his study of a portion of the type specimen found this length to be correct, they were not longer than 35 μ , but they were a little narrower. Von Höhnel, however, (loc. cit.) after re-examining the type gives the following spore measurements:—24–42 \times 7–9·5 μ ; it is possible that he examined a more mature piece of the material, and that the specimen described above is still better developed. Both Hennings and Von Höhnel speak of 1- or 3-septate spores; 3-septate spores were not observed by Sydow in the type material nor in the specimen collected by Eyles. The latter must be regarded as a form of *Baumiella caespitosa* Henn. until further collections can be examined. The type was collected by Baum on leaves of *Monotes dasycantha* Gilg. near Quiriri, South West Africa (Baum 727, 1900).

Judging by the description, *Gibbera tinctoria* Mass. on *Monotes glaber* from Rhodesia, differs widely from *Baumiella caespitosa*; a portion of the type specimen was examined by Sydow, and he found this fungus identical with the *Baumiella* in habit and structure of the stroma. Unfortunately no ascospores could be found, but he is convinced that the two fungi are identical. The type of *Gibbera tinctoria* Mass. was collected on leaves of *Monotes glaber* at Hunyani, S. Rhodesia by Allen. (Rhod. Agric. Dept. Herb. 737).

173. *Venturia Cephalariae* Kalch. et Cke.

South African Fungi in Grevillea IX (1880) p. 31, tab. 137, fig. 36; Sacc. Syll. Fung. I (1882) p. 593.

Leaf spots scattered, round or somewhat irregular in outline, light brown with a purple margin, up to 4 mm. diam. Perithecia epiphyllous, in groups; at first veiled by the cuticle

in which is developed a thin plate of fungous tissue, composed of pale fuscous to dark brown, tortuous, branching and anastomosing hyphae ca. $5\ \mu$ thick, and extending towards the edge of the leaf spot. Perithecia in small or larger groups, globose, $100\text{--}125\ \mu$ diam., or if crowded, ovate to ellipsoid through mutual pressure and sometimes $60\text{--}75\ \mu$ diam., but uniformly ca. $125\ \mu$ high; ostiole erumpent, flat or broadly conical, traversed by a pore $15\text{--}20\ \mu$ broad, crowned with 6 to 12 or more numerous setae; setae erect, rigid, straight or slightly and irregularly curved, not septate, $25\text{--}42.5\ \mu$ long, blackish-brown, sub-opaque, $5\text{--}7\ \mu$ thick at the base and tapering upwards to the paler, pellucid, rounded or sub-acute apex. Perithecial wall membranous, below composed of yellow brown, thin-walled, round to oval, somewhat angular cells $5\text{--}7\ \mu$ diam.; cells smaller, $5\text{--}7\ \mu$ diam. and darker brown above, where the wall is continuous with the hyphal plate in the cuticle. Asci numerous, 8-spored, clavate or clavate-ellipsoid, straight or slightly curved, often narrowing slightly towards the rounded apex, tapering gradually downwards, sessile or sub-sessile, $55\text{--}60 \times 11\text{--}12.5\ \mu$; with a firm wall, ca. $1.5\ \mu$ thick, not thickened at the apex when mature. Spores distichous, clavate, very unequally 1-septate, pale fuscous, broadly rounded above, tapering to the base, not constricted at the septum, $20\text{--}23 \times 9\text{--}10\ \mu$; lower cell only $6\text{--}6.5\ \mu$ long, conical.

on leaves of *Cephalaria attenuata* (L.f.) R. et Sch., Somerset East, *MacOwan 1338*, 20813.

174. *Phaeosphaerella congregata* (Syd.) Doidge n. comb.

Syn. *Parodiella congregata* Syd., Ann. Myc. 10 (1912) p. 37.

Perithecia epiphyllous, minute, black shining, developing in close, round to irregular groups $1\text{--}5$ mm. diam.; leaf tissues not discoloured; immersed, sub-cuticular, more or less closely crowded, globose, $60\text{--}100\ \mu$ diam. Perithecial wall membranous, at first olivaceous tinged with dull bluish-green at the apex, then becoming yellowish-brown at the base, darker brown and sub-opaque at the apex; at the base formed of several layers of more or less angular, thin-walled cells, $7\text{--}8\ \mu$ diam.; more closely parenchymatous at the apex, composed of cells $3\text{--}6\ \mu$ diam.; traversed by a round pore $15\text{--}20\ \mu$ diam. Asci few, (2-7) in each perithecium, 8-spored, paraphysate, sessile or sub-sessile, very variable in form and size; sometimes ovate or sub-globose, $30\text{--}40 \times 20\text{--}30\ \mu$, sometimes elongated, saccate, $50\text{--}65 \times 15\text{--}20\ \mu$; with a firm wall ca. $1\ \mu$ thick, more or less thickened at the apex. Spores distichous to tristichous, ellipsoid-oblong to sub-clavate, $26\text{--}30 \times 6\text{--}7.5\ \mu$, rounded at both ends or occasionally sub-truncate below, constricted at the septum; at first sub-hyaline, then dark (olive-grey to iron grey, Ridgway); cells sub-equal or the upper slightly shorter and broader.

on leaves of *Limnanthemum thunbergianum* Griseb., Belfast, *Doidge*, 765.

In the revision of the genus *Parodiella* by Theissen and Sydow (Ann. Myc. 15, 1917, p. 112) this species is excluded, and it is suggested that it probably belongs to the genus *Phaeosphaerella*.

175. *Cryptodidymosphaeria clandestina* Syd.

in Ann. Myc. 37 (1939) 192-196.

Syn. *Phaeodothis Tristachyae* Syd. in Ann. Myc. 10 (1912) 4; Doidge in Bothalia 1 (1922) 67.

Perithecia parasitic in the stromata of Phyllachoraceae, entirely filling the cavities of the perithecia of the host, and conforming with them in shape and size, flattened-globose or somewhat irregular, $150\text{--}250\ \mu$ diam.; ostiole papilliform, usually fused with the ostiole of the host fungus, rarely erumpent through a small longitudinal crack, traversed by a round, poorly defined pore about $15\ \mu$ diam. Wall membranous, almost fleshy, $6\text{--}10\ \mu$ thick, composed of 2-3 layers of round or irregularly angular cells; at the sides these are somewhat elongated and arranged in more or less vertical, ascending rows; cells rather thick-walled, light yellow brown or honey yellow, often somewhat darker near the apex of the perithecium, $3\text{--}5\ \mu$ diam.; the outer surface of the perithecial wall is fused and merged with that of the

host and is thus not sharply defined. When the *Phyllachora* is attacked at an early stage of its development, its perithecia are not formed and then the perithecia of the parasite develop in the mesophyll of the leaves, under the phyllachoroid clypeus. Asci rather numerous, 8-spored, clavate, broadly rounded above, tapering gradually downwards, sessile or with a rather thick, knob-like foot, wall rather thick, slightly but definitely thickened round the apex, p. sp. $60-70 \times 8-10 \mu$. Spores more or less distichous, fusiform or biconical, tapering slightly to both obtusely rounded ends, but often somewhat more definitely towards the lower end, straight or somewhat asymmetrical, seldom slightly curved, 1-septate at or near the middle, not constricted or slightly so, rather dark grey-brown or olive brown, $11-17 + 4-5 \mu$. Paraphyses typical, filiform, simple or somewhat branched, about $1-1.5 \mu$ thick, only tardily becoming mucilaginous.

Pycnidia similar to the perithecia in growth and development, but often somewhat smaller and not completely filling the cavity of the host perithecium, fusing above with the inner wall of the latter, but not always reaching to the base, so that a small, irregularly crescent-shaped space is left between the pycnidial wall and the wall of the host perithecium; this space is filled with yellow brown vestiges of the fruiting layer of the host, permeated by the subhyaline, indistinctly septate, loosely branched hyphae of the parasite. Pycnidial wall finely and often very delicately membranous, $6-8 \mu$ thick, consisting of 2-3 layers of cells; cells very pale yellow or yellow brown, $3-5 \mu$ diam., round or somewhat elongated. Conidia massive, ellipsoid or ovate, broadly rounded at both ends, straight, rarely somewhat asymmetrical or very slightly curved, 1-celled, very pale greyish brown, $6.5-9.5 \times 3-4.5 \mu$, borne on somewhat conical or papilla-like conidiophores over the whole inner surface of the pycnidial cavity.

on *Phyllachora Tricholaenae* P. Henn., on *Rhynchelytrum repens* (Willd.) Hubb., Donkerpoort, Pretoria distr., *Doidge and Bottomley*, 29738.

on *Phyllachora Doidgeae* Syd., on *Cymbopogon marginatus* (Steud.) Stapf, Donkerpoort, *Doidge and Bottomley*, 29744, 29800.

on *Phyllachora Cynodontis* (Sacc.) Niessl., on *Cynodon Dactylon* L., Donkerpoort, *Doidge and Bottomley*, 29749.

on *Phyllachora* spp. on *Tristachya leucothrix*, Trin., (Type of *Phaeodothis Tristachyae* Syd.) Mooi River, Natal, *Burt Davy*, 1470; and on *Eragrostis* sp., Donkerpoort, *Doidge and Bottomley*, 29746.

Sydow took as his type a collection on *Phyllachora afra* Syd. on the leaves of *Sporobolus pyramidalis*, made by Deighton in Sierra Leone. He states that probably other *Phaeodothis* spp. on grasses, particularly the South African species *Ph. Tristachyae* Syd. will prove to be only *Phyllachora* plus *Cryptodimosphaeria*, and that this must be decided by an examination of good material. The size of the spores of *Ph. Tristachyae* in the original description is given as $12-13.5 \times 3-4 \mu$; a careful examination of the type collection indicates that spores up to $15 \times 5 \mu$ are not infrequent, and I can find nothing to differentiate this species from *Cryptodidymosphaeria clandestina*.

The conidial stage appears to be identical with *Coniothyrium occultum* Syd. (Ann. Myc. 35 (1937), 281, and loc. cit.).

176. *Dimerosporiopsis Engleriana* P. Henn.

in Hedwigia XL (1901) p. (173); Syll. Fung. XVII (1905) 681; Sydow in Ann. Myc. XVIII (1920) pp. 181-182.

Syn. *Dimerosporium Englerianum* P. Henn. in Pilz. Ostaf. (1931) p. 31.

Dimerium Englerianum Sacc. et D. Sacc. in Syll. Fung. XVII p. 537.

Aloysiella ruwenzorensis Mattir. et Sacc. in Annali di Botanici VII (1908) p. 143.

Othia deformans Pat. in Bull. Soc. Myc. France XXXIV (1918) p. 19.

Gibbera Engleriana (P. Henn.) van der Byl in South Afr. Journ. Sci. 25 (1928) p. 182.

?*Antennularia (Coleroa) Engleriana* (P. Henn.) v. Hohn., Fragm. Myk. XI (1909) 5.

Fungus caulicolous, causing some thickening and distortion of the affected parts, and covering them with a dark brown to black mycelial growth, which is often continuous for several centimetres. Mycelium extending through the cortex, and producing in the tissues of the host numerous small cushions, cellular in structure and irregular in form and size; these are brown, and formed of cells which may be irregularly polygonal and 5-10 μ diam., or, especially towards the periphery, with a tendency to become cubical and to develop in rows at right angles to the surface of the stem. At the surface, these cushions give rise to tufts of erect hyphae, which become so numerous as to completely clothe the stem with a turf-like growth. Erect hyphae brown, thick-walled, 5-6 μ thick, up to 400 μ , high, septate; cells 20-25 μ long; sparingly branched and often tortuous and tangled. Perithecia numerous, nestling amongst the erect hyphae and attached to them at the base, globose or somewhat flattened, not setose, 220-350 μ diam., 250-300 μ high, collapsing and becoming cupulate when dry. Perithecial wall rough externally, grossly verrucose, olivaceous, composed of several layers of irregularly polygonal cells 10-15 μ diam.; without true ostiole, but with a thin place at the apex which breaks down and forms an irregular pore. Asci 8-spored, paraphysate, cylindrical, rounded above, up to 100 μ long; sporiferous part 75-80 \times 10-12.5 μ ; sterile portion below tapering to a well-defined foot. Paraphyses not numerous, hyaline, filiform. Spores distichous, 1-septate, pale olivaceous, clavate-ellipsoid rounded at ends, very slightly constricted at the septum, pluriguttulate, 16-19 \times 6-7 μ . The spores examined from these South African collections were barely mature; the dimensions of the spores are given elsewhere as 18-25 \times 7-10 μ .

on *Erica cristaeiflora* Salisb., on stems Tulbagh, *Dippenaar* (van der Byl, loc. cit.).

Erica imbricata L., Klapmuts, *Acock*, 27668.

Erica leucopelta Tausch., bush behind village, Knysna, *Bottomley*, 30729.

Erica peltata Andr., Knysna, *Bottomley*, 30730.

Erica spp., Cape, MacOwan; Hermanus, *Pole Evans*, 27697, 27704; Tulbagh, *Dippenaar* (v. d. Byl).

Scyphogene inconspicua Brogn., Hermanus, *Pole Evans*, 27703, *Louwrens*, 30731.

This fungus was first described by Hennings on *Ericinella Manii* collected by Volkens in tropical Africa, and it appears to be a very common parasite on various genera of the Ericaceae in tropical Africa. Its nomenclature has been discussed by Sydow (loc. cit.) and der Byl (l.e.); the latter author puts it into the genus *Gibbera*. Dr. Sydow states (in litt.) that "It is difficult at present to say to what genus it should be assigned, as the genera *Coleroa*, *Antennularia*, *Gibbera*, *Otthia* and similar ones need revision. I think, however, that the fungus can hardly be called a *Coleroa* or *Antennularia*. Its relationship is rather with *Gibbera* and *Otthia*. The fungus has twice been put into a separate genus, namely *Dimerosporiopsis* (1901) and *Aloysiella* (1908). It might well prove that the fungus really represents a distinct genus. Therefore I would propose to name it for the present *Dimerosporiopsis Engleriana* Henn."

177. *Pseudothyridaria moroides* Syd.

in Ann. Myc. 37 (1939) 182-184.

Stromata solitary, distant, gall-like, carinate, parallel with the axis of the stem, from which they become erumpent through longitudinal cracks; on the smaller twigs these are up to 13 mm. long, about 4 mm. broad and up to 2 mm. high; on larger stems they may be up to 3.5 cm. long, 7.5 mm. broad and 4 mm. high; on old branches lesions have been seen up to 7 cm. long and 5 mm. broad, but in these the stromata are old and brittle or broken down. The hypostroma which seems to originate between the wood and the cortex, either consists of a parenchymatous tissue of very thin-walled, hyaline or sub-hyaline, rounded-angular cells, 4-10 μ diam., which includes discoloured and collapsed remnants of the substratum, or takes the form of erect plates, 150-200 μ thick, orientated in the direction of the longitudinal axis of the host, tapering inwards and pressing like wedges between the

cells of the host. After breaking out from the host tissues, the stroma spreads on both sides of its longitudinal axis, forming irregular stromatal cushions, with a definite fissure or fold in the centre which remains sterile; the folded and wrinkled stromatic surface is dull grey or brownish black, in the fertile parts closely verrucose throughout the formation of convex processes over the ostioles of the perithecia. Ground tissue of the stroma parenchymatous, pale grey or greyish brown within, and composed of round or irregularly angular, or elongated cells 5–12 μ diam.; at the surface there is an apical crust, 90–140 μ thick, composed of greyish-black, thick-walled opaque cells arranged in more or less definite vertical rows.

Perithecia monostichous, completely and often deeply immersed, in the stroma, globose or globose-ovate, often somewhat flattened and irregular through mutual pressure, 200–400 μ diam., rarely larger. Ostioles cylindrical, completely innate in the stroma, punctiform-erumpent, not emerging or barely so, truncate, not grooved, traversed by a pore 30–40 μ broad. Perithecial wall membranous, often definitely recognisable only at the base and the sides, 15–20 μ thick, consisting of several layers of much-compressed subhyaline cells. Asci numerous, 8-spored, cylindrical-clavate, broadly rounded above, tapering slightly but decidedly downwards into a short stalk, thin-walled, p. sp. 100–130 \times 6–8 μ . Spores obliquely monostichous or incompletely distichous, fusiform, tapering more or less to the obtusely rounded ends, straight or slightly bent, 3-septate, less frequently 1–2-septate, not constricted, or very slightly constricted in the middle, light yellow brown or honey yellow, 16–30 \times 4–6 μ . Paraphyses very numerous, rather coarsely filamentous, usually simple 1.5–2.5 μ thick, exceeding the asci.

on stems of *Rubus pinnatus* Willd., Xumeni Forest, near Donnybrook, Natal, *Morgan* and *Doidge*, 30374.

178. *Ceratosphaeria crinigera* (Cke.) Sacc.

Syll. Fung. II (1883) p. 227.

Syn. *Sphaeria* (*Cerastoma*) *crinigera* Cke. in *Grevillea* I (1873) p. 156.

Perithecia innate, becoming erumpent and finally superficial, scattered or in small groups, surrounded at the base by brown hyphae, which are long, flexuous, septate, 2–3 μ thick; perithecia flask-shaped, rugulose, densely clothed—except in the upper part of the neck—with dark brown, simple, flexuous, septate setae, which are of varying length and obtuse at the apex; basal part of perithecia sub-globose to ovate, 300–450 μ diam.; neck 250–400 μ long, 150–180 μ thick, traversed by a pore which is up to 90 μ broad and closely lined with fine, hyaline paraphyses. Wall of perithecium dark brown to black, 60–75 μ thick, composed of numerous layers of flattened cells; inner layers brown, thin-walled and up to 12.5 diam., outer layers black, opaque, and structure not easily seen. Asci very numerous, 8-spored, cylindrical-clavate, rounded above, tapering towards the base, sessile, 70–75 \times 7.5–9 μ . Paraphyses hyaline, filiform, disappearing early. Spores obliquely monostichous, hyaline, cylindrical to ellipsoid, broadly rounded at the ends, 3-septate, not constricted at the septa, 9–11.5 \times 3.75–4 μ .

on rotting wood, Xumeni Forest, near Donnybrook, Natal, *Morgan* and *Doidge*, 30368.

On comparison the South African fungus is not found to differ from European specimens of this species. It was first described on pine wood in Great Britain, and its occurrence in South Africa is of interest.

179. *Eudarlucia australis* Spæg.

in *Revista sel Museo de la Plata* XV (1908) 22; Syd. in *Ann. Myc.* 24 (1926) 360–362.

Syn. *Myrmaecium cannae* Dearn. et Barth. in *Mycologia* 9 (1917) 347; Syll. Fung. 24, p. 759; Petrak in *Ann. Myc.* 25 (1927) 301.

Stromata developing in the uredo-sori of rust fungi; basal stroma growing into the mesophyll of the leaf, erumpent, more or less parenchymatous, consisting of light-coloured,

thin-walled cells, which, immediately under the loculi, are often in vertical rows. Loculi single more or less central, often completely immersed; or 2-3, of which 1 or 2 are lateral and project from the stromata; stroma often numerous and crowded, so that a large number of loculi are observed in close proximity. Loculi broadly ovate or ellipsoid, about 100-160 μ diam., quite closed without a trace of an ostiole, or, less frequently, very obtusely and broadly conical at the apex, which is traversed by a pore; the pore is irregularly round to angular. Walls of the loculi 15-25 μ thick, formed of several layers of round to angular, rather thin-walled cells; outer layers translucent, dark brown, 7-12 μ , or rarely up to 15 μ diam. not compressed or only slightly so; inner layers much compressed and usually hyaline. Asci rather numerous, 8-spored, cylindrical-clavate or cylindrical, broadly rounded above, tapering somewhat towards the base, quite sessile or with a short thick foot, thick-walled, not thickened at the apex or very slightly so, sporiferous part 65-80 \times 7.5-10 μ . Spores obliquely monostichous or incompletely distichous, fusiform, tapering to both bluntly rounded ends, straight, rarely slightly bent, usually with three cross walls of which only the central one is readily distinguishable, not constricted, or slightly constricted at the central septum, hyaline, 14-21 μ (mostly about 17 μ) long and 3.5-5 μ (usually 4 μ) broad. Paraphysoids very sparse. Conidial loculi (*Darluca*) smaller than the ascigerous loculi, are usually to be found in an empty or over-ripe condition on the edges of the stroma.

in uredo-sori of *Puccinia Eragrostidis-superbae* on leaves of *Eragrostis happula* Nees var. *divaricata*, Derdepoort, Pretoria Distr., *Doidge* and *Bottomley*, 29813, and on *Eragrostis superba*, without locality, 14124.

on *Uredo* undet. on leaves of *Eragrostis* sp., Irene, Pretoria Distr., *S. Smuts*, 17014.

In the first two numbers quoted, the uredo-spores and paraphyses of the *Puccinia* can be found beyond the edges of the stroma; traces of a rust have also been found in 17014.

It was suggested by Spegazzini (loc. cit.) that this is the ascus stage of *Darluca filum*, and in specimens collected at Costa Rica, Sydow actually found the conidial form in the same uredo-sori as the ascus stage. Petrak (l.c.) also found the conidia associated with the ascus stage of *Myrmaecium Cannae* Dearn. et Barth. in the uredo-sori of *Puccinia Cannae*, and states that the latter fungus is identical with *Eudarluca*. The South African fungus is not very well developed, but is definitely identical with the fungus described from the American collections; the *Darluca* stage has been detected associated with the *Eudarluca* in these collections also.

180. *Lasiosphaeria hispida* (Tode) Fuck.

Symb. myc. (1869) p. 147; Syll. Fung. II, p. 194; Seaver in Mycologia IV (1912) p. 119. Syn. *Lasiosphaeria capensis* Kalch et Cke. in Grevillea 9 (1880) p. 28, Syll. Fung. II, p. 195.

Perithecia more or less closely gregarious, surrounded by a web of black mycelium; the mycelium consists of dark brown to blackish brown hyphae, rather remotely septate, sparsely branched, 5-6 μ thick. Perithecia ovoid to pyriform, 300-500 μ diam., 450-600 μ high; outer wall rough and clothed with numerous, dark brown, remotely septate hairs, which are very long and flexuous near the base, shorter, straighter and more rigid towards the apex; the latter are 50-100 μ long, 6-7.5 μ thick at the base, and tapering somewhat to a blunt apex. Perithecial wall irregular in thickness; inner part dark brown, consisting of several layers of very much flattened cells; outside this is an irregular layer of rather loosely compacted pseudoparenchyma. Asci cylindrical-clavate, 8-spored, rounded above, tapering somewhat to the base and briefly pedicellate, 160-180 \times 12-18 μ . Spores distichous, twisted, subclavate or cylindrical, rounded at both ends, often bent near one end, 7-septate, at first hyaline, then pale fuscous, 50-80 \times 6-8 μ .

on bark, Somerset East, Cape. *MacOwan* 1397, 20817.

There is only a small part of the original collection in the Cryptogramic Herbarium; no further collections have been made. There appears to be no difference between this fungus and *Lasiosphaeria hispida* as defined by Seaver; for Seaver's list of synonyms see Mycologia (loc. cit.)

181. *Leptosphaeria Sacchari* van Breda.

Meded. v. Proefstat. v. Suikerr. in West Java (1892) p. 25 ; Butler, Fungi and Disease in Plants (1918), p. 381 ; van der Byl, Union Dept. Agric. Sc. Bull. 10 (1918) p. 15.

Perithecia developing in leaf spots, which are often numerous on a single leaf, scattered, more or less elliptic in outline, visible on both surfaces of the leaf, up to 15 mm. long and 5 mm. broad, dry, straw-coloured in the centre and sharply defined by a narrow, reddish purple or brownish margin ; this ring is not usually regular, but lobed, or broken by angular projections ; neighbouring leaf spots often become confluent, and form larger irregular blotches. The discoloured leaf tissues are permeated by fine, hyaline hyphae about $1\ \mu$ thick. Perithecia numerous, epiphyllous, rarely hypophyllous, arranged in rows between the finer veins of the leaf, remote from one another or more closely placed, but not crowded, immersed in the mesophyll, globose or sub-globose, $100\text{--}155\ \mu$ diam., narrowed above into an apical papilla ; papilla up to $75\ \mu$ long, erumpent, protruding slightly from the epidermis, traversed by a rather indefinite pore. Perithecial wall pale to darker yellowish brown, translucent, composed of rather thin-walled, angular, slightly compressed cells $5\text{--}10\ \mu$ diam. Asci fairly numerous, 8-spored, cylindrical to clavate, straight or curved, rounded above, briefly pedicellate with a short, knob-like foot, $70\text{--}80 \times 12\text{--}12.5\ \mu$; wall firm, slightly thickened at the apex. Spores distichous, 3-septate, fusoid to sub-clavate, tapering to rounded ends, constricted at the septa, at first hyaline, then fuscous, $20\text{--}25 \times 5\ \mu$. Paraphyses fairly numerous, hyaline, filamentous, ca. $1\ \mu$ thick, exceeding the asci.

on leaves of *Saccharum officinarum* L., Natal Sugar Estates, *McMartin*, 31040, 31041.

The so-called " ring spot " of sugar cane, caused by *Leptosphaeria Sacchari*, was first described in Java, and occurs in many countries where sugar cane is cultivated. It was recorded by van der Byl (loc. cit.) from Natal and Zululand in 1918.

182. *Sporormia transvaalensis* Doidge nov. sp.

Perithecia sparsa v. gregaria, immersa, deinde erumpentia et in maturitate partim denudata, globosa v. ovoidea, $450\text{--}500\ \mu$ diam., $500\text{--}700\ \mu$ alta, rugulosa, coriacea, opace nigra, pariete ca. $60\ \mu$ crasso, ostiolo conico-truncato v. sub-cylindraco, usque $200\ \mu$ longa ; asci cylindraco-ellipsoidei, 8-sporei, apice rotundati, breve stipitati, $95\text{--}110 \times 17.5\text{--}20\ \mu$, crasse tunicati ; sporae distichae, cylindracoae, 3-septatae, opace brunneae, profunde constrictae, facile secedentes, $40\text{--}45 \times 6\text{--}7\ \mu$, articulis subaequalibus, strato gelatinoso angusto obvolutae.

Hab. in fimo bovino, Kromrivier, leg. *Doidge*, 30235.

Perithecia scattered or in groups, immersed, later becoming more or less erumpent and often partly exposed at maturity, globose-ovoid, $450\text{--}500\ \mu$ diam., $500\text{--}700\ \mu$ high, opaque black, coriaceous, wall about $60\ \mu$ thick, outer layers opaque, tuberculate on the surface, inner layers dark brown to fuscous, composed of somewhat flattened, thin-walled cells ; ostiole a truncated cone or sub-cylindrical, up to $200\ \mu$ long. Asci cylindrical to ellipsoid, 8-spored, rounded at the apex, briefly stipitate, $95\text{--}110 \times 17.5\text{--}20\ \mu$, thick-walled, wall $1.5\text{--}2.5\ \mu$ thick. Paraphyses not seen (material rather old). Spores distichous, cylindrical, 3-septate, dark brown, opaque, deeply constricted and readily separating at the septa, surrounded by a thin mucous layer, $40\text{--}50 \times 6\text{--}7\ \mu$; segments sub-equal, medial segments cylindrical, terminal segments subcylindrical, tapering very slightly to broadly rounded ends.

on cow dung, Kromrivier, Rustenburg District, Transvaal, *Doidge*, 30235.

Gibbs, in the Journal of the Linnean Society 38 (1909) p. 416, mentions three species of *Sporormia* collected by Cheesman in the Matoppo Hills. One of these, *Sporormia pascua* Niessl has 7-septate spores, *Sp. Ambigua* Niessl and *Sp. intermedia* Auersw. have 3-septate spores, but differ from the fungus described above in the size of the perithecia, asci and spores. There appear to be no other records of fungi of this genus occurring in South Africa.

183. *Rhynchosphaeria Fagarae* Doidge nov. sp.

Perithecia sparsa v. pauca sub-aggregata, immersa, globosa, coriaceo-carbonacea, ostiola cylindracea usque 200 μ longa pertusa, 200–220 μ diam. Asci numerosi, clavati, apice rotundati, basim versus attenuati, breviter pedicellati, 8-spori, 45–60 \times 6–7.5 μ . Sporae distichae, clavatae, plus minus curvatae v. rectae, utrinque obtusae, 3-septatae, ad septa, praecipue medium, constrictae, ex hyalino brunneolae, 11–12.5 \times 3.5–3.75 μ .

Hab. in cortice *Fagarae capensis* Thunb., Boschfontein, Pretoria distr., leg. Doidge et Bottomley, 31067.

Perithecia scattered or in small groups, immersed in the cortex, seated at the base on the wood, sub-carbonaceous, globose, narrowed above into cylindrical ostioles, which protrude somewhat from the periderm, 200–220 μ , diam. Ostioles cylindrical, up to 200 μ long straight or curved, ca. 60–80 μ thick, often dilated somewhat near the entire apex; traversed by a pore lined with numerous fine, hyaline periphyses. Perithecial wall firm, 15–25 μ thick, blackish brown, outer layers opaque, inner more or less translucent, mostly 5–10 μ diam.; giving place within to a hyaline, filamentous layer. Outwardly the wall is connected with a tangle of loosely interwoven, fuscous hyphae, 2–2.5 μ thick, permeating the cortical tissues which are more or less broken down. Asci very numerous, lining about seven-eighths of the perithecial cavity, 8-spored, clavate, straight or slightly curved, rounded above, tapering at the base to a short stalk, 45–60 \times 6–7.5 μ ; wall very firm, not staining blue with iodine. Paraphyses very numerous, hyaline, slender, filiform, barely 1 μ thick, exceeding the asci. Spores distichous, clavate, 3-septate, hyaline then light brown, tapering to blunt ends, slightly constricted, sometimes more deeply at the central septum, 11–12.5 \times 3.5–3.75 μ ; the second cell from the upper end is the broadest.

on branches of *Fagara capensis* Thunb., Boschfontein, near Wolhuter's Kop, Pretoria distr., Doidge and Bottomley, 31067.

184. *Pseudovalsa longipes* (Tul.) Sacc.

in Syll. Fung. 2 (1883) p. 136; Winter in Rabh. Kryptog. Flora von Deutschland II, p. 787; Petrak in Ann. Myc. XXI (1923) pp. 323–324.

Syn. *Melanconis longipes* Tul. Carp. II, p. 139.

Calospora longipes (Tul.) Berlese in Icones fung. I (1894) p. 117 tab. CXXII fig i.

Coryneum Kunzei Corda Ic. Fung. IV, p. 46; Syll. Fung. III, p. 778.

Stromata corticolous, seated on the wood, scattered, discrete, black, irregularly round to elliptic, 1–2.5 mm. diam., rather smooth above, surrounded and partially veiled by the ruptured cortex. *Perithecia* 4–12 in each stroma, globose or flattened by mutual pressure, 270–400 μ diam., 300–350 μ high; ostioles convergent, oblique and curved on marginal perithecia, 250–450 μ long, not prominent. Asci paraphysate, 8-spored, cylindrical-clavate, rounded at the apex, briefly pedicellate, 110–155 \times 20–22.5 μ ; wall about 1.5 μ thick thickened at the apex to 5–6 μ . Spores distichous or irregular, fusiform-clavate, hyaline, mostly 3-septate, less frequently 2- or 4–5-septate, tapering at both ends, terminal cells conical, not constricted, separating rather readily at the septa, 50–70 \times 7.5–9 μ . The spores are barely mature in these perithecia; according to Winter the mature spores are brown.

Conidial stage is a *Coryneum*; acervulae scattered or more or less crowded, sometimes on the same twigs as the ascerigerous stromata, black, disciform, erumpent, surrounded by the ruptured outer bark, 1–1.5 μ diam., 350–450 μ high; base composed of a loose web of brown, thin-walled hyphae, which become erect near the surface and give rise to numerous conidiophores. Conidiophores pale olivaceous to almost hyaline, more or less flexuous, up to 150 μ long, about 5 μ thick at the base and tapering upwards to 2.5–4 μ . Conidia olivaceous brown, 4–7-septate, frequently 5-septate, clavate, more or less curved, rarely straight, curvature usually more acute near the upper end, tapering somewhat to the apex which is paler, often sub-oblique, rounded, tapering gradually downwards into the conidiophore, 40–75 \times 12–14 μ .

on branches of *Quercus* sp., Wellington, *Doidge*, 2163.

The conidial stage has been collected several times on branches of *Quercus* sp., Wellington, *Doidge*, 987, 2161, 2162.

The ascospores are barely mature; Winter states that the mature spores are brown, in which case the fungus belongs to the genus *Pseudovalsia*, and not to *Calospora* as stated by Berlese who saw only hyaline spores. Petrak is also of the opinion that this species is a genuine *Pseudovalsia*. On comparison with European specimens, it was found that the South African fungus was identical with *Pseudovalsia longipes*. The species is rare in Europe.

According to Saccardo, the conidial stage is *Coryneum Kunzei*, Cda.

185. *Pleospora Doidgeae* Petr.

in Ann. Myc. 25 (1927) 293-295.

Syn. *Dictyochorella andropogonis* Doidge in Bothalia I (1922) p. 66.

Perithecia formed in a phyllachoroid stroma, usually scattered, less frequently close together and then arranged in longitudinal rows, flattened globose or ellipsoid, very variable in size, 150-320 μ diam. and 100-200 μ high; ostiole erumpent on the upper or lower leaf surface, conical truncate, opening by a round pore. Perithecial wall membranous, usually about 8-10 μ thick, composed of a few layers of rather closely compressed cells; the cells are irregular or polygonal, thin-walled, about 5-8 μ , rarely up to 10 μ diam., they are pale, translucent, yellow-brown or clove brown, but always darker coloured near the apex. It sometimes happens that single perithecia occur outside the phyllachoroid stroma, but near its edge; such perithecia have usually a stronger wall, up to 25 μ thick. Asci clavate or clavate-cylindrical, broadly rounded at the apex, more or less tapering below, sessile or with a short, thick foot, becoming greatly distended as they begin to mature, with a firm, thick wall, 8-spored, about 60-80 μ long, later up to 100 μ long, 12-15 μ broad. Spores ellipsoid or ellipsoid-fusiform, tapering considerably to the obtuse ends, straight or slightly curved, with three or very seldom four cross walls, decidedly and often deeply constricted at the centre, elsewhere not constricted at the septa or only very slightly so; the second cell from the apex often projects slightly, and is sometimes traversed by a longitudinal wall, which is often oblique and usually very inconspicuous. Spores comparatively light yellow-brown or olive-brown, 13-18 μ long, seldom up to 20 μ long, 6-7.5 μ broad. Paraphyses very numerous, coarsely filamentous, branched, 1-1.5 μ thick, coalescing above with the perithecial wall.

In a phyllachoroid stroma on leaves of *Cymbopogon validus* Stapf. (= *Andropogon nardus* L. var. *validus*), Tugela Valley near Mont-aux Sources, Natal, *Doidge*, 14104.

After making a detailed study of this fungus, Petrak came to the conclusion that it is not a Phyllachoraceae with muriform spores, but a typical *Pleospora* parasitic in the stroma of a *Phyllachora*. He considers it extremely unlikely that there is such a thing as a true phaeo-dictyosporous phyllachoroid fungus.

It seems likely that the stroma in which this fungus is parasitic is that of *Phyllachora Doidgeae* Syd., which it resembles, and which occurs commonly on leaves of *Andropogoneae*. As indicated in the original description (Bothalia loc. cit.) the fungus has a true *Hendersonia* pycnidial stage.

186. *Ophiobolus Stipae* Doidge nov. sp.

Perithecia sparsa vel laxe gregaria, subglobosa, atra, 250-350 μ diam., immersa; ostiolo truncato, conoideo, 85-90 μ alto et 125-135 μ lato, tandem erumpentia, glabra, pseudoparenchymatice contexta, obscure olivacea, cellulis parietis 12-15 μ diam.; asci fasciculati cylindraneo-clavati, 8-sporei, 100-150 \times 7-8 μ , breviter stipitati, ad apicem rotundati membrana in ascis junioribus ad apicem incrassata, usque ad 8 μ ; paraphyses copiosae,

hyalinae, circiter $1\ \mu$ crassae, filiformes, ascos quoad longitudinem aequantes vel superantes, sporae filiformes, fere ascorum longitudine, pluri-guttulatae, in massa flavo-brunneae; singulae subhyalinae, utrinque attenuatae, rectae vel flexuosae, $100-125 \times 2-2.5\ \mu$.

Hab. in vaginis *Stipae dregeanae* Steud., in silvis prope Donnybrook, leg. Morgan et Doidge, 29829.

Perithecia scattered or loosely grouped, sub-globose, black, $250-350\ \mu$ diam., immersed, at length erumpent; ostiole truncate, conoid, $85-90\ \mu$ high and $125-235\ \mu$ broad. Perithecia smooth, wall pseudoparenchymatous in structure, dark olivaceous, composed of cells $12-15\ \mu$ diam. Asci fasciculate, cylindrical-clavate, 8-spored, $100-150 \times 7-8\ \mu$, briefly stipitate, rounded at the apex; in the younger asci the wall is thickened at the apex, up to $8\ \mu$. Paraphyses copious, hyaline, about $1\ \mu$ thick, filiform, equalling the asci in length or longer. Spores filiform, almost as long as the asci, pluriguttulate, yellow-brown in mass, singly sub-hyaline, tapering to both ends, straight or flexuous, $100-120 \times 2-2.5\ \mu$.

on dying sheaths of *Stipa dregeana* Steud., Xumeni Forest near Donnybrook, Natal, Morgan and Doidge, 29829.

187. **Hysterostoma Acocantherae** (P. Henn.) Theiss. et Syd. in Ann. Myc. 13 (1915) pp. 238-239.

Syn. *Dimerosporium Acocantherae* P. Henn. in Engl. bot. Jahrb. XVII (1893) p. 4; Syll. Fung. XI, p. 259, on living leaves of *Acocanthera Schimperii* in Erythraea.

Stromata hypophyllous, circular in outline, dull black, 3-5 mm. diam., carbonaceous, rough in the centre and surrounded by a radiating fringe of hyphae. The hyphae are brown, irregular, septate, undulating and anastomosing, $4-5\ \mu$ thick. The central part of the stroma consists of numerous, closely crowded loculi, which are round to elliptic, irregular, $150-250\ \mu$ diam., or, if elliptic, up to $350\ \mu$ long, $100-150\ \mu$ high; outer covering rather thick, carbonaceous, breaking down irregularly at maturity. The hypostroma is epidermal, colourless, but produces in the air spaces under the stomata an opaque mass of dark brown plectenchyma, which grows through the stomata and produces the fruiting bodies, the hypothecium being thus in direct connection with the hypostroma at several points under each loculus. Hypothecium olive brown, cellular, irregular in thickness. Asci broadly ellipsoid or ovate, paraphysate, 8-spored, $75-90 \times 35-40\ \mu$, wall $2.5-3.5\ \mu$ thick, thickened round the apex, up to $10\ \mu$. Paraphyses numerous, hyaline, filiform, $2-2.5\ \mu$ thick, exceeding the asci. Spores usually distichous, brown, 2-celled, oblong or sub-clavate, rounded at both ends, more or less constricted at the septum, $30-33 \times 12.5-14\ \mu$; upper cell slightly larger and more broadly rounded, $15-17.5 \times 12.5-14\ \mu$, lower $12.5-16 \times 10-11.25\ \mu$.

on leaves of *Acocanthera* sp., Schagen, Nelspruit distr., Transvaal, Liebenberg 29906.

This fungus agrees with the description of *Hysterostoma Acocantherae*, but it is stated (Ann. Myc. loc. cit.) that the type specimen is poorly developed. The South African material shows an older stage, and is better developed. The *Acocanthera* sp. on which it is found differs from the common South African species, and may be a variety of *A. Schimperii*.

188. **Aphysa senniana** (Sacc.) Doidge n. comb.

Syn. *Phaeosphaerella senniana* Sacc. in Ann. Myc. 8 (1910) 337; Doidge in Trans. Roy. Soc. S. Afr. 8 (1920) 118; Sydow in Ann. Myc. 24 (1926) 270-271.

Amphigenous, not producing true leaf spots but often causing an indefinite light brown discolouration. Fruiting bodies in groups, which are more or less sharply defined, irregular or angular, seldom more or less circular, about 1-3 mm. diam., often coalescent and thus producing larger, irregular aggregates; individual fruiting bodies in these groups remote from each other or fairly close together, subcuticular, circular, more or less angular or irregular in outline, $100-170\ \mu$ in diam., and up to $50\ \mu$ high. In the crowded groups, two or more individuals may be in close proximity to one another and the edges of the covering membranes fuse. Basal layer perfectly flat, growing out of the epidermis, about $5-7\ \mu$ thick

filamentous, composed of small cells, sub-hyaline or pale yellow brown. Covering membrane flattened-conical, opening in the centre, or often more or less excentrically, by a round or irregular pore about $25\ \mu$ diam. Covering membrane about $5\ \mu$ thick, composed of 1-2 layers of rounded polyhedral cells; at the margin these are thin-walled, pellucid olive brown and about $5-7.5\ \mu$ diam.; in the centre near the pore, they are smaller, rather thick-walled, about $3-5\ \mu$ diam., blackish-brown and almost completely opaque. The covering membrane is not sharply defined at the margin, where it unites at an acute angle with the basal layer, often extending somewhat beyond the edges of the latter. Asci clavate, occasionally slightly distended at the base, tapering slightly to the broadly rounded apex, sessile or with a short, thick, knob-like foot, 8-spored, thick-walled, $35-45 \times 10-12.5\ \mu$. Spores more or less distichous, oblong to sub-clavate, obtusely rounded at both ends, tapering somewhat to the lower end, straight or somewhat asymmetrical, rarely slightly bent, 1-septate, cells equal in length or upper slightly shorter, more or less constricted, pellucid, comparatively light olive brown, $10-13 \times 5-6\ \mu$. Paraphyses numerous, hyaline or subhyaline, forming indefinite erect masses between the asci, which converge towards the centre of the covering membrane.

on leaves of *Protea caffra* Meisn., Fairy Glen, Pretoria, *Doidge*, 23421; The Willows, Pretoria distr., *van der Byl*, 5590.

on *Protea lepidocarpodendron* Linn., Wellington, Cape, *Doidge*, 1034, 2062.

on *Protea acaulis* Thunb., Wellington, *Doidge*, 1022; Klapmuts, *van der Byl*, 6845.

on *Protea* sp., Mont-aux-Sources, Natal, *Doidge*, 23420.

Originally described by Saccardo (loc. cit.) on dying leaves of *Protea abyssinica* from Erythraea, this fungus occurs commonly on leaves of *Protea* spp. in South Africa.

The South African fungus was studied by Sydow (loc. cit.) who expressed the opinion that it was a *Stigmatea* sp., but reserved his final opinion until more mature specimens had been examined. Further material studied was in better condition, but after an examination of this no amendment seems necessary to the description given by Sydow, from which the above is adapted.

In a previous publication, one of the hosts mentioned for this fungus was *Protea melaleuca*; this plant is now regarded as a form of *Protea lepidocarpodendron*.

189. *Gloniella natalensis* Doidge n. nom.

Syn. *Gloniella multiseptata* Doidge (not Spegazzini) in Trans. Roy. Soc. S. Africa 8 (1920) p. 119.

on stems of *Euphorbia triangularis* Desf., Amanzimtoti, *Doidge*, 5624.

The name *Gloniella multiseptata* has been used by Spegazzini (Fungi nonnulli Paraguariae et Fuegiae in Rev. mycol. XI 1889, p. 93; Sacc. Syll. Fung. IX, 1891, p. 1113) for a fungus on *Pernetia mucronata* "in Burnt Island, Fuegia". A change of name is therefore necessary for the South African fungus.

190. *Pseudographis Chrysophylli* Doidge nov. sp.

Perithecia dispersa v. laxa aggregata, innato-erumpentia, demum sub-libera, primitus globosa v. ellipsoidea clausa, dein urceolata crasse marginata et discum labiis medio distantibus denudantia, disco pallido plerumque oblongo rarius orbiculare plano, margine irregulariter sub-crenulato, ruguloso cincta; postremo fere sessilia, atra, rugulosa, subnitida, usque $1.5\ \text{mm}$. longa et $1\ \text{mm}$ lata. Asci numerosi, plerumque 4-sporei, clavati, apice rotundati, basi, sensim attenuati, pedicellati, $175-200 \times 17.5-25\ \mu$, densissime paraphysati. Paraphyses filiformes, septatae, ca. $1.5\ \mu$ crassae, apice clavulatae, incrassatae usque $3-4\ \mu$. Sporae monostichae v. sub-distichae, transverse 7-septatae, rarissime 5-septatae, oblongae v. ellipsoideae, rectae v. curvatae, hyalinae, haud constrictae, crasse tunicatae, $35-50 \times 12-15\ \mu$.

Hab. in cortice *Chrysophylli magalismontanae* Sond., Boschfontein, Pretoria distr., leg Doidge et Bottomley, 31066.

Perithecia scattered or loosely grouped, developing under the periderm which soon becomes ruptured, becoming erumpent; at first flattened globose, closed, then urceolate with a thick margin, up to 1.5 mm. long and 1 mm. broad; the surface fissures longitudinally or more or less irregularly, exposing the disc which is oblong or irregularly circular, flat, pale yellowish to flesh colour; lips fairly distant, irregular, black, carbonaceous, rugulose, with numerous irregular cracks. The perithecium is attached by a broad foot, which penetrates the tissues of the host; the torn periderm is closely adherent to the sides of this basal portion. Inner part of perithecium sub-hyaline to pale yellowish brown, formed of closely interwoven hyphae; the ascus-bearing disc forms in this tissue, about half way between the foot and the outer crust, at first bowl-shaped, then more or less flat. Outer crust blackish brown, opaque, carbonaceous, irregular in thickness, 10–20 μ thick at the upper surface, where it fissures and falls away at maturity exposing the disc, 25–50 μ thick at the sides where the lips finally develop. Asci numerous, usually 4-spored, occasionally 2-spored, clavate, rounded at the apex, tapering gradually downwards to an irregular foot, 175–200 \times 17.5–25 μ ; wall ca. 1 μ thick, not thickened at the apex. Paraphyses very numerous, hyaline, simple, septate, flexuous, filamentous, ca. 1.5 μ thick; clavulate at the tip and thickened to 3.4 μ , exceeding the asci. Spores monostichous, the two upper spores oblique the two lower straight, or sub-distichous with the two upper spores parallel to one another; at first 1-septate, then 3-septate and finally 7-septate, rarely 5-septate, cylindrical, not tapering to the rounded ends or only slightly so, straight or curved, not constricted, very thick walled, 35–50 \times 12.5–15 μ ; wall 3.5–4.5 μ thick, cross walls 1.5–2 μ thick, lumen of cells ellipsoid to conical. The terminal cells occasionally develop germ tubes while still in the perithecium.

on bark of *Chrysophyllum magalismontanum* Sond., Boschfontein, near Wolhuter's Kop, Pretoria distr., Doidge and Bottomley, 31066.

191. *Tribliidiella rufula* (Sprengl.) Sacc.

Syll. Fung. II (1883) p. 757; Kalch. and Cke., Grevillea IX (1880) p. 26; Kalch., Grevillea X (1882) p. 145; Wakefield, Kong. Norske Vidensk. Selsk. Forhandl. 9, (1936) p. 53.

Perithecia scattered or in groups, erumpent, ellipsoid or oblong, or becoming confluent and irregular, up to 3 mm. long and 1 mm. broad, smooth, brownish black, corneo-coriaceous; disc brick red to reddish brown; lips swollen, transversely striate, curling inwards. Asci 8-spored, narrow cylindrical-clavate, rounded above, tapering below to a short foot, 200–240 \times 12.5–15 μ ; wall firm, ca. 1–1.5 μ thick, slightly thickened above (2.5 μ). Paraphyses numerous, sub-hyaline, 2–2.5 μ thick, exceeding the asci; at the tips, yellowish, sub-clavulate, 4–5 μ thick, conglutinate. Spores monostichous, oblong or sub-ellipsoid, broadly rounded at the ends, not tapering towards the ends or tapering slightly, slightly constricted at the septa, dark reddish brown, becoming opaque, 30–40 \times 10–12 μ .

on branches, Somerset East, *MacOwan* 1262, 1264, 1265, 1339; Witte Rivier, Dunbrody, Uitenhage distr., *Hoeg* 97 (Wakefield l.c.); Woodbush, N. Transvaal, *K. M. Putterill*, 31035.

I have not been able to trace MacOwan's specimens, which are all missing from our collections.

192. *Scolecopeltis Eugeniae* Doidge nov. sp.

Perithecia hypophylla, sparse, superficialia, facile secedentia opace atro-coerulea, rotundato-scutellata, tenuissime albo-marginata, 450–550 μ lata, margine in alam membranacearum 100–120 μ latam sensim tenuiore et pallidiore ambituque hyalinem abeunte, ex hyphis tenuibus 1–1.5 μ latis reticulatim denseque conjunctis texta, ostiolo distincto

rotundata 45–60 μ lato; asci numerosi, primitus oblongo-clavati, deinde ellipsoidei v. cylindracei, sub-sessiles, 150–160 \times 25–30 μ , ubique crassiuscule tunicati, apice haud incrassati, 4–8-spori; sporae paralleles, anguste clavatae, hyalinae, utrinque rotundatae, 90–120 μ longae (? maturae) supra latiores, 6.5–8.5 μ latae, deorsum sensim attenuatae, infra 3.5 μ latae, valde constrictae et facile secedentes, 4–6-septatae, cellulis sub-globosis.

Hab. in foliis *Eugenia Zeyheri* Harv., Alexandria, leg. Doidge, 22349.

Ascomata hypophyllous, scattered, superficial, readily becoming detached from the leaf surface, black with a thin white margin, more or less circular in outline, 450–550 μ diam. Covering membrane scutellate, opaque in the centre near the distinct round pore which is 45–60 μ diam., pellucid, blue grey or indigo blue near the margin, becoming gradually paler outwards, and thinning out into a hyaline membranous border 100–120 μ broad; covering membrane composed of delicate hyphae 1–1.5 μ thick, which are densely and closely reticulate and interwoven. Asci numerous, 2–8-spored, at first oblong-clavate, then ellipsoid or cylindrical, sessile or sub-pedicellate, rounded above, 150–160 \times 25–30 μ , rather thick-walled, wall 1.5–2 μ thick, not thickened at the apex. Spores parallel, twisted, narrow clavate, hyaline, rounded at both ends, 90–120 μ long, 6.5–8.5 μ broad near the upper end, and tapering gradually downwards to 3.5 μ at the lower end; 4–6-septatae, mostly 5-septate, deeply constricted and falling apart readily; cells sub-globose. Paraphysoids hyaline, poorly developed.

on leaves of *Eugenia Zeyheri* Harv., Alexandria, Cape, Doidge, 22349.

193 *Scolepeltis Morganae* Doidge nov. sp.

Perithecia plerumque hypophylla, opace atro-coerulea, sparsa, superficialia, facile secedentia, 400–450 μ lata, margine in alam membranacearum hyalinem, 50 μ latam ambitu abeunte, ex hyphis 2–2.5 μ latis maeandrice denseque conjunctis contenta, ostiolo distincto nullo, in maturitate centro irregulariter radiatim dehiscentia. Asci numerosi, lanceolati v. fusiformi, 4–8-spori, recti v. curvati, apice rotundati, haud v. vix incrassati, sessiles, 80–90 \times 20–22.5 μ . Sporae primo 2–3-stichae, deinde paralleles, hyalinae, clavatae, 5-septatae, constrictae, 40–65 μ longae, supra conico-rotundatae, 4–7.5 μ latae, deorsum sensim attenuatae, infra 2–3 μ latae, facile in articulos inaequales secedentes.

Hab. in foliis *Myrsinis africanae*, Woodbush, leg. Morgan et Doidge, 30487.

Ascomata mostly hypophyllous, opaque, blue-black, scattered, superficial, easily becoming detached from the leaf, 400–450 μ diam., surrounded by a hyaline zone which is up to 50 μ broad. Covering membrane scutellate, opaque in the centre, sub-pellucid bluish-green near the margin, becoming paler and thinning out rather rapidly into a hyaline, membranous border; not radiating in structure, composed of a close and intricate network of hyphae 2–2.5 μ thick; there is no central pore, at maturity a number of irregularly radiating cracks develop from the centre of the covering membrane. Asci numerous, lanceolate to fusiform, 4–8-spored, straight or curved, rather thin-walled, wall about 1 μ thick, not thickened at the apex or very slightly so, rounded above, sessile, 80–90 \times 20–22.5 μ . Spores at first 2–3-stichous, then parallel, hyaline, clavate, 5-septate, rounded conical at the apex, tapering gradually towards the base, constricted at the septa, 40–65 μ long; 4–7.5 μ broad near the second cell from the upper end, where the spore is broadest, tapering gradually to the lower end where it is 2–3 μ broad; readily breaking up into unequal segments, the lower cells being longer and narrower than the upper. Paraphysoids poorly developed, hyaline, filiform.

on leaves of *Mysine africana* L., Woodbush, Pietersburg distr., Transvaal, Morgan and Doidge, 30487.

194. *Scolepeltis Mysinis* Doidge, nov. sp.

Ascomata plerumque hypophylla, sparsa, superficialia, facile secedentia, atro-coerulea 600–750 μ diam., margine pallidiore in alam membranacearum usque 375 μ latam statim abeunte, scutellata, ubique ex hyphis 2–2.5 μ crassis maeandrice denseque conjunctis

contexta. Asci numerosissimi, 2-4-spori, clavati v. cylindranei, sessiles, recti v. curvati $150-220 \times 22-25 \mu$, pariete ca. 1.5μ crasso, apice haud v. leniter incrassato. Sporae clavatae v. oblongae, utrinque rotundatae, hyalinae, 3-septatae $60-102.5 \mu$ longae, supra $7.5-11.5 \mu$ latae, deorsum sensim attenuatae, infra $5-7.5 \mu$ latae.

Hab. in foliis *Myrsinis africanae*, Woodbush, leg. Morgan et Doidge, 30486.

Ascomata mostly hypophyllous, scattered, superficial, easily becoming detached from the leaf surface, blue-black, $600-750 \mu$ diam., surrounded by a conspicuous white margin up to 375μ broad. Covering membrane scutellate, with a distinct, sub-circular, central pore about 75μ diam., opaque, blue-black almost to the margin, where it is bluish-green, subpellucid; firmly compacted of closely interwoven hyphae $2-2.5 \mu$ thick, becoming paler and thinning out rather rapidly at the margin into a broad, hyaline, membranous border. Asci extremely numerous, 2-4-spored, clavate to cylindrical, sessile, broadly rounded above, straight or curved, $150-220 \times 22-25 \mu$; wall usually about 1μ thick, not thickened at the apex or slightly so, up to 6μ . Spores mostly clavate, less frequently oblong, rounded at both ends, hyaline, 3-septate, $60-102.5 \mu$ long; the second cell from the upper end is usually the broadest, $7.5-11.5 \mu$ broad, and the spore tapers gradually towards the lower end which is $5-7.5 \mu$ thick. It is possible that there are sometimes more than four spores in the ascus; the number is difficult to estimate in the mature ascus, as the spores fall apart within the ascus into cylindrical to ellipsoid or clavate segments, when they are barely mature. Paraphysoids numerous, very fine, hyaline.

on leaves of *Myrsine africana* L., Woodbush, Pietersburg distr., Transvaal, Morgan and Doidge, 30486; associated with *Sc. Morganae* and often on the same leaves.

195. *Scolecopeltis Strauchii* Doidge nov. sp.

Perithecia hypophylla, sparsa, superficialia, facile secedentia, opace atro-coerulea, rotundato-scutellata, $450-660 \mu$ lata, margine coerulee pellucido et sensim hyalino abeunte; ubique ex hyphis $2-2.5 \mu$ latis maeandrice denseque conjunctis contexta, ostiolo distincto subrotundato $40-45 \mu$ lato; asci pseudoparaphysati, 2-8-spori, ellipsoidei, breviter pedicellati, recti v. curvati, $90-120 \times 20-24 \mu$; sporae in asco paralleles, longitudine fere ascorum, hyalinae, utrinque attenuatae, apice rotundatae, 10-12-septatae, constrictae, facile in articulos secedentes, cellulis inaequalibus.

Hab. in foliis *Pleurostyliae capensis* Oliv., Alexandria, leg. Doidge et Strauch, 22371.

Ascomata hypophyllous, scattered, superficial, easily detached from the leaf surface, greenish-black, opaque, round to irregular in outline, $450-660 \mu$ diam. Covering membrane scutellate, opaque in the centre, pellucid dull bluish-green near the margin and becoming gradually hyaline towards the outer edge; not radiating in structure, but composed of reticulately and tortuously interwoven hyphae $2-2.5 \mu$ thick; with a distinct sub-circular central pore $40-45 \mu$ diam. Asci very numerous, 2-8-spored, ellipsoid, straight or curved, tapering towards both ends, rounded at the apex, contracted suddenly at the base into a short foot; wall firm, about 1μ thick, not thickened at the apex or very slightly so; $90-120 \times 20-24 \mu$. Spores parallel, straight or slightly twisted and almost the length of the ascus, hyaline, narrow fusiform, $75-100 \mu$ long; $6-8.5 \mu$ thick in the centre and tapering to both ends which are rounded or sub-acute, 10-12-septate, constricted, falling apart very readily at the septa. Paraphysoids numerous, filamentous, hyaline, forming erect masses between the asci which partially isolate them.

on leaves of *Pleurostylija capensis* Oliv., Alexandria, Cape, Doidge and Strauch, 22371.

