

SOUTH AFRICAN ASCOMYCETES

IN THE

NATIONAL HERBARIUM.

By ETHEL M. DOIDGE.

PART III.

A LARGE proportion of the fungi described in this paper were collected recently in the George, Knysna, and Humansdorp Districts, where the forests appear to be very rich in species. For assistance in the determination of the host plants I have to thank Mr. Phillips, the Forest Research Officer at Deepwalls, Knysna, and Mr. Fourcade, as well as the members of the staff of the National Herbarium.

The recent monograph by Fitzpatrick on the *Coryneliaceae* rendered necessary a revision of the fungi of this group, and all the South African collections in the Herbarium have been examined and the nomenclature revised accordingly.

I am indebted to Dr. Sydow for the determination of a number of *Phyllachoras* on grasses and for descriptions of a number of new species, and to Dr. Butler, of the Imperial Bureau of Mycology, for a number of references in literature not obtainable locally.

86. *Hysterographium Fraxini* (Pers), De Not., var. *Oleastri*, Desm.

Syll. Fung. II, p. 776.

On twigs of *Olea verrucosa*, Wellington, Cape Province, November, 1910, Doidge [990].

Perithecia scattered on entirely or partially decorticated twigs, superficial, straight, or occasionally slightly curved, ellipsoid, hard, black, rounded at the ends, 0.75–1.5 mm. long, 0.5–0.7 mm. broad; longitudinal fissure smooth, with swollen inflexed lips; asci clavate, rounded at the apex, briefly pedicellate, 170–210 × 34–45 μ , eight-spored, paraphysate; paraphyses filiform, flexuous; spores distichous, ellipsoid-oblong, very slightly constricted at the medial septum, muriform with 7–9 transverse and 2–3 longitudinal septa, fuscous, 34–36 × 16–18 μ .

87. *Hysterographium spinicolum*, sp. nov.

On thorns of *Acacia spirocarpoides*, Weenen, Natal, 30.7.12 [2542].

Perithecia scattered, oriented with their length parallel with the long axis of the thorn, linear, 0.5–1.5 mm. long, 0.3–0.4 mm. broad, acutely rounded at both ends, black, carbonaceous, lips at first closely connivent, finally open in the middle, forming an elliptic aperture exposing the reddish-brown disk; asci paraphysate, linear-oblong, eight-spored, pedicellate, 130–140 × 13–16.5 μ ; paraphyses filiform, numerous; spores monostichous or subdistichous, slightly constricted at the medial septum, golden-brown, oblong to ellipsoid, muriform, with 5–6 transverse septa and 1–2 longitudinal septa, 20–22 × 8–10 μ .

Hysterographium spinicolum, Doidge, sp. nov.

Perithecia sparsa, lineares, 0.5–1.5 × 0.3–0.4 mm., utrinque acutiuscula, atra, carbonacea, longitudinaliter rimosa, dein aperta; asci paraphysati, oblongo-lineares, octospori, stipitati, 130–140 × 13–16.5 μ ; paraphysibus numerosis, linearibus; sporae monostichae v. subdistichae, medio leniter constrictae, luteo-brunneae, oblongae v. ellipticae, muriformae, transverse 5–6 septatae, in longitudinem 1–2 septatae, 20–22 × 8–10 μ .

Hab. in spinis *Acaciae spirocarpoides*, Weenen, Natal, 30.7.12 [2542].

88. *Hysterographium Acaciae*, n. sp.

On bark of *Acacia giraffae*, Smitskraal, Boshof District, Orange Free State, 22.9.11, Burt-Davy [1904].

Perithecia gregarious, at first almost spherical, later somewhat elliptic, up to 0.5 mm. diameter, black, carbonaceous, lips closely connivent; asci oblong or clavate, paraphysate, eight-spored, somewhat thickened round the apex, briefly pedicellate, $100-120 \times 18-21 \mu$; paraphyses filiform; spores distichous, ellipsoid, not constricted, fuscous, muriform, with 6-8 transverse and 1-2 longitudinal septa, $27-30 \times 10 \mu$.

Hysterographium Acaciae, Doidge, n. sp.

Perithecia gregaria, elliptica v. rotundata, atra, carbonacea, 0.5 mm. diametro, labiis arcte conniventibus; asci oblongi v. clavati, paraphysati, octospori, apice parum incrassati, breve stipitati, $100-120 \times 18-21 \mu$; paraphysibus linearibus; sporae distichae ellipticae, non constrictae, fuscae, muriformae, transverse 6-8 septatae, in longitudinem 1-2 septatae, $27-30 \times 10 \mu$.

Hab. in corticis *Acaciae giraffae*, Boshof District, 22.9.11, leg. Burt-Davy [1904].

89. *Cyclothea Bosciae*, n. sp.

On leaves of *Boscia caffra*, Ebb and Flow, Wilderness, George District, 10.5.23, Doidge [17125].

Forms on the leaves numerous, subcircular, brown spots 2.5 mm. diameter, most conspicuous on the under surface, less sharply defined, but visible on the upper surface and showing concentric zoning; old spots are thin and somewhat translucent. Intramatrical hypostroma very copious, consisting of closely interwoven hyaline hyphae, and penetrating right through the mesophyll. Hyphal strands from the hypostroma grow through the numerous stomata in the lower epidermis and produce the thinly crustaceous, dull-black, superficial ascostromata. Loculi linear, irregular in form and size, curved or bent, closely crowded, and dehiscing by longitudinal slits. Hypothecium thin, colourless; outer wall of loculi radial in structure, consisting of hyphae about 3.5μ thick. Asci paraphysate, not staining blue with iodine, sessile, saccate or cylindrical, eight-spored, not thickened round the apex, $33.3-46.6 \times 10-13.3 \mu$; paraphyses not numerous, filiform, septate. Spores two-celled, hyaline, subdistichous, $11.6-13.3 \times 8.3 \mu$, upper cell slightly broader and more broadly rounded than lower.

Cyclothea Bosciae, Doidge, n. sp.

Stromata superficialia, 2-5 mm. diametro, hypophylla ex hypostromate incolore, subepidermali, copiose per stromata numerosa prorumpente oriunda; loculis linearibus, gregariis, irregularibus; hypothecio tenue incolore; asci paraphysati, saccati v. cylindranei, octospori, $33.3-46.6 \times 10-13.3 \mu$; sporae 1-septatae, hyalinae, $11.6-13.3 \times 8.3 \mu$, loculo supero parum latiore.

Hab. in foliis *Bosciae caffrae*, Wilderness, George District, 10.5.23, leg. Doidge [17125].

90. *Macowaniella myrsinicola*, n. sp.

On leaves of *Myrsine melanophleos*, Greytown, Natal, 16.2.22, Doidge [15529]; Montagu Pass Road, George District, 9.5.23, Doidge [17105].

Conidial stage only: Claridge, Natal, 31.5.15, Doidge [8995]; East London, 24.11.17, Doidge [10908].

Stromata epiphyllous, round, superficial, up to 2 mm. diameter, crowded towards the midrib of the leaf, often in contact with one another, but the outline of each circular stroma is always evident and they do not become merged into a continuous mass. Loculi elliptic, straight, or branched and irregular in form, scattered or in small groups, and sometimes arranged more or less in a circle, but not with their axes on radiating lines, $330-480 \times 175-320 \mu$, $50-70 \mu$ high, dehiscing by a longitudinal slit. Hypothecium delicate, pseudocellular: covering membrane radial in structure. Asci paraphysate, ovate to clavate, eight-spored, thickened round the apex, briefly pedicellate, not staining blue with

iodine, $40-44 \times 20-23 \mu$. Spores fuscous, distichous or subtristichous, two-celled, ellipsoid, rounded at both ends, $17-20 \times 7.5-8.5 \mu$, cells subequal, or upper cell somewhat shorter and broader than the lower. Hypostroma epidermal and subepidermal: there is a distinct layer of colourless mycelium between the epidermis and the palisade cells, with hyphae extending downwards into the latter, but the hypostroma is much less strongly developed than in *Macowaniella congesta*. Superficial mycelium fuscous; hyphae $3-3.5 \mu$ thick, tortuous, branching irregularly and anastomosing, bearing small, dark-brown, one-celled hemispherical hyphopodia, $6-6.5 \times 3 \mu$. Conidiophores erect, dark-brown, $13-16 \times 3.5 \mu$, bearing at their tips conidia similar in form to those of *Asterodthis solaris*: conidia four-celled, brown, cylindrical or club-shaped, straight or slightly curved, somewhat constricted at the septa, $37-44 \times 6.5-7 \mu$.

Macowaniella myrsinicola, Doidge, n. sp.

Stromata ascophora epiphylla, rotundata, usque 2 mm. diametro, hypostromate epidermale et subepidermale oriunda, pluries affixa; loculi elliptici, recti v. furcati, sparsi v. subgregarii, $330-480 \times 175-320 \mu$, $50-70 \mu$ alti, hypothecio tenue; asci aparaphysati, ovati v. clavati, octospori, apice incrassati, breviter stipitati, $40-44 \times 20-23 \mu$; sporae fuscae, distichae v. subtristichae, ellipticae, utrinque rotundatae, loculis subaequalibus v. loculo supero parum brevior et latior, $17-20 \times 7.5-8.5 \mu$; mycelium epiphyllum fuscum, ex hyphis $3-3.5 \mu$ latis, tortuosis, ramosis compositum; hyphopodia parva, brunnea, continua, hemisphaerica, $6-6.5 \times 3 \mu$; conidiis 3-septatis, brunneis, cylindraceis v. clavatis, $37-44 \times 6.5-7 \mu$.

Hab. in foliis *Myrsine melanophleas*, Greytown, Natal, 16.2.22, leg. Doidge [15529].

91. *Polyrhizon Celastris*, n. sp.

On leaves of *Celastrus acuminatus*, Deepwalls, Knysna District, 13.5.23, Doidge [17207].

Epiphyllous, on yellow-brown leaf spots, up to 5 mm. diameter; opposite the centre of each collective stroma there is a yellowish spot visible on the lower side of the leaf; each collective stroma is composed of a large number of single stromata developing in concentric rings. Single stromata crowded, spherical in outline, $300-600 \mu$ in diameter, irregular in height, $30-50 \mu$: outer wall opaque, radiating in structure, consisting at the margin of brown hyphae, $4-5 \mu$ thick. Each stroma has only a few loculi, arranged round a central sterile column which is connected with the dark epidermal hypostroma; the peripheral part of the stroma lies free on the surface of the leaf. Hypothecium pseudocellular, pale fuscous. Asci paraphysate, eight-spored (material rather old and asci not well seen); spores dark-brown, opaque, almost black, two-celled, constricted, smooth, $26-28.5 \times 11.5-13.5 \mu$, upper cell somewhat broader.

Polyrhizon Celastris, Doidge, n. sp.

Stromata epiphylla, orbicularia, usque 5 mm. diametro, e pluribus ascomatibus circinantibus concreta; ascomata partialia pede centrali epidermide innata v. marginem radiatim ex hyphis $4-5 \mu$ crasses contexta, $300-600 \mu$ diametro, $30-50 \mu$ alta, loculi pauci, immersi; asci octospori, paraphysati; sporae atro-brunneae, opacae, 1-septatae, constrictae, leves, $26-28.5 \times 11.5-13.5 \mu$, loculo supero paulo latiore.

Hab. in foliis *Celastris acuminati*, Deepwalls, Knysna District, 13.5.23, leg. Doidge. [17207].

92. *Hysterostoma Faureae*, n. sp.

On leaves of *Faurea McNaughtonii*, Gouna Forest, Knysna District, 23.5.23, Phillips [17293].

Stromata epiphyllous, less frequently hypophyllous, numerous, dull-black, minute, $300-400 \mu$ diameter, elevated in the centre into a slight papilla, which eventually breaks away and forms an irregularly circular opening. The stroma is surrounded by a fringe of radiating hyphae, which are brown, $4-6 \mu$ thick, frequently septate, often adhering by their

lateral walls and forming strands of 2-3 hyphae, and bearing a few hemispherical hyphopodia. The radiating hyphae often give rise to smaller secondary stromata, and thus form groups which are up to 2 mm. diameter.

The loculi are solitary or few in each stroma, round or irregular in outline, 70-90 μ high. The covering membrane is composed of radiating hyphae 3-3.5 μ thick. The hypothecium is thin, hyaline, and composed of delicate hyphae: it is connected at many points with the subcuticular hypostroma. Hypostroma hyaline, lying between the cuticle and the epidermis and causing disorganization and discoloration of the contents of the epidermal cells. Asci paraphysate, eight-spored, clavate or narrow ovate, slightly thickened round the apex, 45-50 \times 20-23 μ , not staining blue with iodine. Spores olivaceous-brown, distichous, two-celled, constricted, 20-23 \times 8.5-10 μ ; they appear to be surrounded by a mucilaginous envelope when immature; upper cell broader and more broadly rounded than the lower.

Hysterostoma Faureae, Doidge, n. sp.

Stromata epiphylla, sparsa, atra, minuta, 300-400 μ diametro, ex hypostromate sub, cuticulari oriunda, pluries affixa, periphice in hyphas radiantibus dissoluta. Hyphae brunneae, 4-6 μ crassae, hyphopodiis paucis hemisphericis. Loculi pauci vel solitarii, 70-90 μ alti, hypothecio tenui. Asci paraphysati, octospori, clavati v. ovati, apice lenitee incrassati, 45-50 \times 20-23 μ . Sporae distichae, 1-septatae, constrictae, brunneae 20-23 \times 8.5-10 μ , loculo supero latiore.

93. *Palawaniella Dovyalidis*, n. sp.

On leaves of *Dovyalis rhamnoides*, Ebb and Flow, Wilderness, George District, 15.5.23, Doidge [17117]; Bathurst District, 14.7.19, Doidge [12347].

Ascigerous stromata, epiphyllous, dull-black, opaque, carbonaceous, attached to the leaf at many points, superficial, minute, 190 μ diameter, or up to 360 \times 200 μ , forming groups up to 5 mm. diameter, developing centrifugally, outer wall very opaque, radiating in structure, composed of hyphae about 5 μ thick. Hypostroma well developed in the epidermal cells under each ascostroma, forming dense knots of hyphae in the epidermal cells, which are hyaline for the most part, but fuscous where they are connected by numerous delicate processes with the superficial hypothecium. These knots of hyphae in the epidermal cells are connected by delicate subepidermal strands, which also penetrate between the palisade cells. Loculi 1-2 in each stroma, opening by a round pore or by stellate fissures in the outer wall. Loculi flat, hypothecium thin. Asci four-spored, paraphysate, clavate, sessile or with a short foot, thickened round the apex, 33-40 \times 13.5-16.5 μ . Spores pale fuscous, two-celled, not constricted, clavate, 15-18 \times 5-6.3 μ , upper cell much longer than the lower, lower cell not more than 3.5 μ long. Pycnidia similar to the ascostromata, conidia hyaline, subspherical to ellipsoid, 6.5-13.5 \times 5-6.5 μ .

Palawaniella Dovyalidis, Doidge, n. sp.

Stromatis ascigeris epiphyllis, tota longitudine matrice adnatis, superficialibus, atris, opacis, carbonaceis, sparsis, minutis, rotundatis v. ovalibus, 190 μ diametro v. 360 \times 200 μ , saepe plus minus confluentibus et tunc usque 5 mm. diametro, in medio crassis, marginem v. tenuioribus, radiatim ex hyphis 5 μ crassis contextis; hypostromate epidermide bene, subepidermide parum evoluta; loculis in stromatibus singulis v. duobus, tandem poro rotundo v. stellatim disruptentibus; hypothecio tenui; ascis 4-sporis, paraphysatis, clavatis, sessilibus v. brevis stipitatis, apice incrassatis 33-40 \times 13.5-16.5 μ ; sporis fuscis, clavatis, 1-septatis, haud constrictis, 15-18 \times 5-6.3 μ , loculo supero longiore, infero ca. 3.5 μ longo.

Hab. in foliis *Dovyalidis rhamnoides*, Wilderness, George District, 15.5.23, leg. Doidge [17117].

94. *Asterinella Pterocelastri*, n. sp.

On leaves of *Pterocelastrus variabilis*, var. *tricuspidatus*, Storms River, Humansdorp District, 15.5.23, Doidge [17190]; Deepwalls, Knysna District, 13.5.23, Doidge [17222].

Hypophyllous, forming thin irregularly circular, sooty blotches up to 1 cm. diameter, often confluent and covering larger areas of the leaf; mycelium copious, reticulate, composed of pale fuscous hyphae 3–4 μ thick; hyphae straight or subtorulose, without hyphopodia, branching and anastomosing profusely; thyriothecia fuscous, only slightly darker than the mycelium, flattened-hemispherical, 150–180 μ diameter, composed of radiating hyphae about 3 μ thick, cells 3–3.5 μ long in the centre, longer near the periphery, margin fimbriate, the radiating hyphae running out and anastomosing with the mycelial hyphae; asci paraphysate, eight-spored, ovate, thin-walled, not staining blue with iodine, 30–37 \times 20–25 μ ; spores conglobate, ellipsoid, two-celled, slightly constricted, pale fuscous, thin-walled, delicate, smooth, 17–20 \times 6.5–8.5 μ , upper cell slightly broader and more broadly rounded than the lower.

Asterinella Pteroclastris, Doidge, n. sp.

Hypophylla, plagulas primitus, orbiculares, usque 1 cm. diametro, sed mox confluyendo majores et irregulares formans; mycelium ex hyphis fuscidulis, 3–4 μ latis, rectis v. subtorulosis, ramosis formatum; hyphopodia desunt; thyriothecia orbicularia, 150–180 μ diametro, radiatim ex hyphis 3 μ crassis contexta, fimbriata; asci paraphysati, octospori, ovati, 30–37 \times 20–25 μ ; sporae conglobatae, ellipsoideae, 1-septatae, leves leniter constrictae, fuscae, 17–20 \times 6.5–8.5 μ , cellula superiore leniter latiore.

Hab. in foliis *Pteroclastris variabilis*, Storms River, Humansdorp District, 15.5.23, leg. Doidge [17190].

95. *Asteromyxa inconspicua*, n. sp.

On leaves of *Chilianthus arboreus*, Van Stadens Pass, Cape Province, 19.5.23, Doidge [17252].

Forming minute, very inconspicuous, black spots on the upper surface of the leaves. Mycelium radiating, composed of fuscous, slender hyphae, without hyphopodia, 3–5 μ thick, septate, branching irregularly and anastomosing, with a tendency to adhere to adjoining hyphae by the lateral walls, and so form radiating strands, 2–4 hyphae in breadth; often producing at the tips of the lateral branches large, oval, brown conidia 16–20 \times 11–13 μ . Thyriothecia few, 1–3 in centre of mycelium, circular, at first flat, shield-shaped, radiating in structure, composed of radiating hyphae about 3 μ thick, later becoming almost hemispherical and more irregular in outline, 160–270 μ diameter. Asci fugaceous, eight-spored, ovate, paraphysate, sessile, about 30–35 \times 22–24 μ ; interior of thyriothecium filled at maturity with dirty-brown mucilaginous matter in which the groups of spores are embedded, the asci having disappeared. The swelling of this mucilage forces apart the radiating cells of the covering membrane, which disintegrates. Spores elliptic, two-celled, pale fuscous, somewhat constricted, upper cell slightly broader, 17–22 \times 6–8.5 μ .

Asteromyxa, Theiss et Syd. (Ann. Myc., XV, 1917, p. 419), is a monotypic genus, which bears among the ahyphopodiate genera the same relation to *Asterinella* as *Englerulaster* does to *Asterina* among the hyphopodiate genera. It is based on *A. hirtula* (= *Dimeriella hirtula*, Speg) as type, and this species has a number of setae on the thyriothecium. *Asteromyxa inconspicua* has all the characters of the genus *Asteromyxa* except the setae, and is therefore assigned to that genus. The diagnosis of the genus *Asteromyxa* must be broadened to include species whose thyriothecia have no setae, or else a new genus must be established for these.

Asteromyxa inconspicua, Doidge, n. sp.

Epiphylla, plagulas minutas parum perspicuas formans: mycelium laxè ramosum ex hyphis tenuibus fuscis, 3–5 μ crassis compositum; hyphopodia nulla; thyriothecia pauca in quaque plagula, hemisphaerica, 160–270 μ diametro, radiatim ex hyphis ca. 3 μ crassis contexta, mox mucose dissoluta; asci evanescentes, octospori, ovati, paraphysati, 30–35 \times 22–24 μ ; sporae ellipticae, 1-septatae, leniter constrictae fuscae leves, 17–22 \times 6–8.5 μ .

Hab. in foliis *Chilianthi arborei*, Van Stadens Pass, Cape Province, 19.5.23, leg. Doidge [17252].

96. *Parasterina reticulata*, n. sp.

On leaves of *Celastrus buxifolius*, Durban, Natal, 1897, Medley Wood (Wood Nos. 6452 and 6458) [9500 and 9518]; East London, 24.11.17, Doidge [10913].

On *Celastrus nemorosus*, Knysna, Cape Province, 3.6.12, Pienaar [2429]; Umgeni, Natal, 16.7.15, Medley Wood [9023]; Van Stadens Pass, Cape Province, 9.3.16, Bottomley [9558]; Alice, Cape Province, 18.11.17, Doidge [10974]; Langholm, Bathurst District, 14.7.18, Doidge [12370]; Howiesons Poort, near Grahamstown, 12.7.19, Doidge [12386]; Van Stadens Pass, 19.5.22, Doidge [17262].

On *Celastrus ruber*, Kentani, Cape Province, 10.4.15, Pegler (Pegler No. 2336) [9069].

On *Celastrus Harveyanus*, Henley, Natal, 24.5.15, Doidge [9000]; Claridge, Natal, 31.5.15, Doidge [8997].

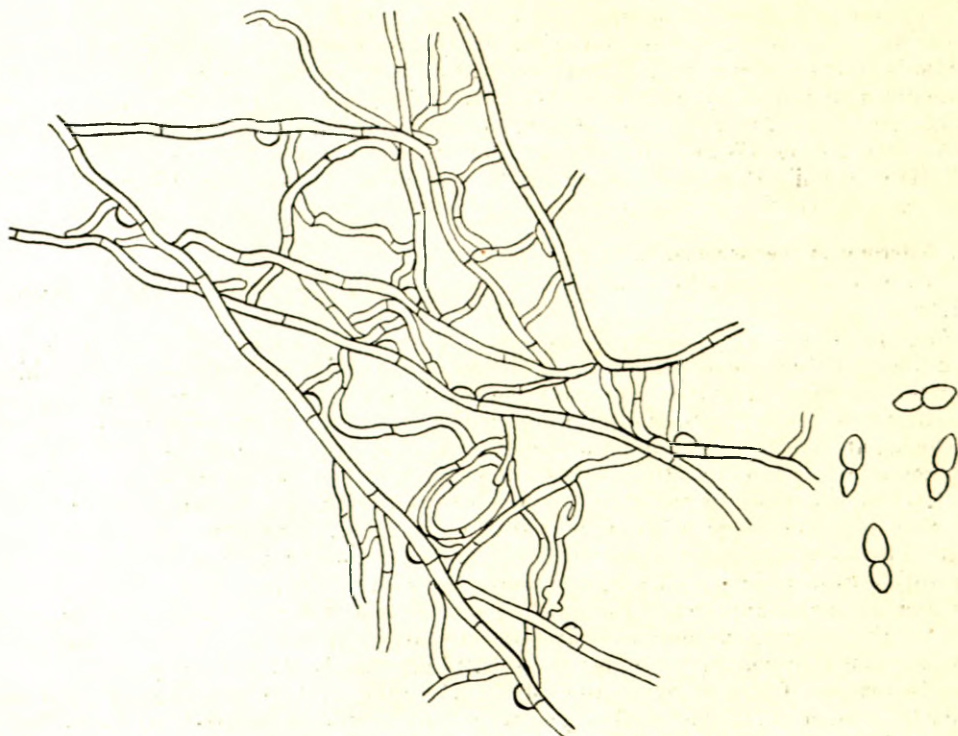


Fig. 1.

Parasterina reticulata.

On *Celastrus pyracanthus*, Pirie Forest, Kingwilliamstown, 8.7.19, Doidge [12330].

On *Celastrus Senegalensis*, Nelspruit, Transvaal, 18.10.13, Van der Bijl [7076]; Rikatli, Portuguese East Africa, September, 1918, Junod [11725].

On *Elaeodendron croceum*, Woodville Forest, George District, 11.11.17, Doidge [10941]; Kentani, Cape Province, 17.4.12, Pegler [2253].

On *Pleurostyhia capensis*, Kentani, Cape Province, 20.7.12, Pegler [2532].

On *Putterlichia pyracantha*, East London, 19.7.19, Doidge [12407].

On *Putterlichia verrucosa*, Winkle Spruit, Natal, 28.5.15, Doidge [9007]; Umgeni, Natal, 16.7.15, Medley Wood [9033]; Kentani, Cape Province, 15.12.14, Pegler. (Pegler No. 1967) [8783].

Amphigenous, forming thin, black growths up to 1 cm. diameter, frequently numerous, especially on the upper surface, and coalescing to form a continuous growth covering the leaf surface. Mycelium radiating, composed of brown, fairly straight hyphae about $3.5\ \mu$ thick, the primary hyphae radiating like the spokes of a wheel and giving rise to numerous branches which anastomose and form a continuous open network. The form of the network varies slightly in different specimens: in some the radiating hyphae are more marked, in some the meshes of the network are irregularly angular, in others they tend to be curved. Hyphopodia not very numerous, sometimes rare, most easily seen on the younger hyphae, unilateral or alternate, continuous, hemispherical or obliquely flattened, sometimes sublobed, $3.5\text{--}4\ \mu$ high, $8\text{--}13\ \mu$ broad. Thyriothecia scattered, fairly numerous more crowded towards the centre of the mycelium, flattened-hemispherical, $220\text{--}250\ \mu$ diameter, dehiscing by stellate fissures, the central part later falling away and exposing the asci, dark-brown, opaque, radiating in structure, composed of radiating hyphae about $3\ \mu$ thick; margin fimbriate, radiating hyphae running out and anastomosing with the mycelial hyphae. Asci numerous, paraphysate, eight-spored, ovate or broadly ellipsoid, slightly thickened round the apex, sessile, $40\text{--}43 \times 23.5\text{--}26\ \mu$. Paraphyses filiform, flexuous; fairly numerous, slightly exceeding the asci. Spores distichous, two-celled, brown ellipsoid, constricted at the septum, smooth, rounded at both ends, $20\text{--}23.5 \times 8\text{--}9\ \mu$, loculi ellipsoid, upper loculus slightly broader.

Parasterina reticulata, Doidge, n. sp.

Amphigena, plagulas tenues, orbiculares, usque 1 cm. latas, dein confluentes et plus minus effusas formans; mycelium reticulatum ex hyphis longiusculis, ramosis radiantibus, brunneis, ca. $3.5\ \mu$ crassis compositum; hyphopodia haud numerosa, alternantia v. solitaria, sessilia, hemisphaerica v. rarius sublobata, $3.5\text{--}4\ \mu$ alta, $8\text{--}13\ \mu$ lata; thyriothecia sparsa, sat numerosa, rotundata $220\text{--}250\ \mu$ diametro, primitus stellatim dehiscentia per aetatem late aperta, radiatim ex hyphis, $3\ \mu$ crassis contexta, fimbriata; asci numerosi paraphysati, octospori, ovati v. late elliptici, sessiles $40\text{--}43 \times 23.5\text{--}26\ \mu$, paraphysibus, filiformis, flexuosis, sat numerosis; sporae distichae, 1-septatae, brunneae, ellipticae, constrictae, laeves, utrinque rotundatae, $20\text{--}23.5 \times 8\text{--}9\ \mu$, loculo supero parum majore.

Hab. in foliis *Celastris Senegalensis*, Rikatli, Portuguese East Africa, 1918, leg. Junod [11725].

97. *Parasterina laxa*, Doidge.

Syn. *Parasterina brachystoma* (Rehm) Th., var. *laxa* (Trans. Roy. Soc. S. Africa VII, p. 245, 1920).

On leaves of *Grumilea capensis*, Woodbush, Zoutpansberg District, 3.8.11, Doidge [1758].

On *Oxyanthus Gerrardi*, Berea, Durban, 28.1.18, Van der Bijl [11366].

On *Plectronia obovata*, Deepwalls, Knysna District, 13.5.23, Doidge [17226].

Epiphyllous, forming black, carbonaceous spots up to 10 mm. diameter; mycelium radiating, more or less reticulate, formed of straight, brown hyphae $5\text{--}6.5\ \mu$ thick, frequently septate, cells $16\text{--}24\ \mu$ long, branching irregularly and anastomosing; hyphopodia alternate or unilateral, continuous, sessile, briefly cylindrical, clavate, hemispherical or pyriform straight or subuncinate, $6.5\text{--}13.5\ \mu$ high, $6\text{--}13.5\ \mu$ broad; thyriothecia hemispherical, scattered, $200\text{--}350\ \mu$ diameter, composed of radiating hyphae about $3\ \mu$ thick; dehiscence at first stellate, later the whole central portion falls away, leaving only the margin with its fimbriate hyphae running out into the mycelium; asci eight-spored, subspherical or broadly ovate, sessile, thickened round the apex, staining golden-brown with iodine, $53\text{--}65 \times 40\text{--}50\ \mu$; spores conglobate, constricted, brown, 1-septate, minutely verrucose at maturity, $30\text{--}33 \times 15\text{--}16.5\ \mu$, cells subequal or upper cell broader by $2\text{--}3\ \mu$, each cell almost spherical or ovate.

98. *Asterina gerbericola*, n. sp.

On leaves of *Gerbera cordata*, Storms River, Humansdorp District, 15.5.23, Doidge [17175].

Epiphyllous, forming small black spots up to 5 mm. diameter; mycelium delicate, formed of sinuous, brown hyphae $3-3.5 \mu$ thick, branching irregularly and anastomosing, cells $24-27 \mu$ long; hyphopodia distant, not very numerous, alternate, one-celled, sessile, erect or decumbent, variously lobed, lobes rounded, frequently there are three lobes which are themselves sublobed, $6-10 \mu$ high and $8-13 \mu$ broad; thyriothezia numerous, developing at the tips of secondary hyphae, at first fan-shaped, later flattened-hemispherical, $120-130 \mu$ diameter, composed of radiating hyphae $2-2.5 \mu$ thick, margin fimbriate, dehiscence stellate; asci aparaphysate, eight-spored, broadly ovate or subspherical, $20-23 \times 23-30 \mu$, not staining blue with iodine; spores conglobate, two-celled, slightly constricted, dark-brown, opaque, cylindrical, broadly rounded at both ends, verrucose at maturity, $13.5-16.5 \times 7-8.3 \mu$, cells subequal.

This species closely resembles *Asterina undulata*, from which it differs chiefly in the size and form of the hyphopodia, better developed mycelium, and longer verrucose spores.

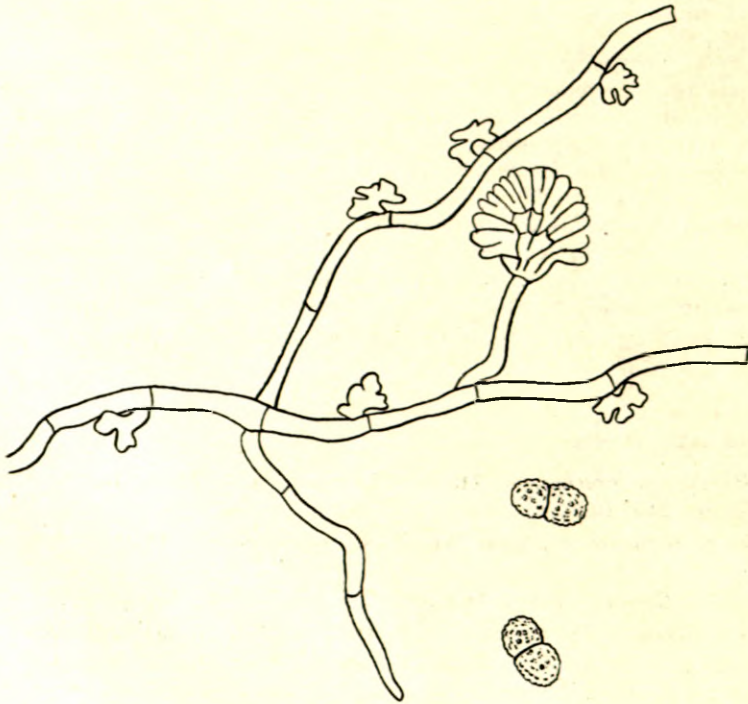


Fig. 2.

Asterina gerbericola.

Asterina gerbericola, Doidge, n. sp.

Plagulas epiphyllas, usque 5 mm. diametro atras formans; mycelium tenue, ex hyphis sinuosis, brunneis, ramosis $3-3.5 \mu$ latis, septatis (articulis $24-27 \mu$ longis) compositum; hyphopodia haud numerosa, alternantia, sessilia, varie lobata, $6-10 \mu$ alta, $8-13 \mu$ lata; thyriothezia numerosa in summis hyphis secundariis oriunda, orbicularia $120-130 \mu$ diametro, radiatim ex hyphis $2-2.5 \mu$ crassis contexta, ambitu fimbriata, stellatim dehiscencia; asci aparaphysati, octospori, ovato-globosi $20-23 \times 30 \mu$; spora con-

globatae, 1-septatae, cylindratae, leniter constrictae, utrinque late rotundatae, brunneae, opacae, verrucosae, $13.5-16.5 \times 7-8.3 \mu$, loculis fere aequalibus.

Hab. in foliis *Gerberae cordatae*, Storms River, Humansdorp District, leg. Doidge [17175].

Asterina undulata affinis.

99. *Asterina Streptocarpi*, n. sp.

On leaves of *Streptocarpus Rexii*, Deepwalls, Knysna District, 13.5.23, Doidge [17223].

Epiphyllous, forming minute black spots up to 3 mm. diameter; mycelium undulate, formed of flexuous hyphae $3.5-5 \mu$ thick, irregularly branched cells $16-20 \mu$ long; hyphopodia one-celled, alternate, fairly numerous, usually erect, plurilobate, with 2-5 (usually 3) main lobes, which are again sublobed, $6-10 \mu$ high, $8-13.5 \mu$ broad;

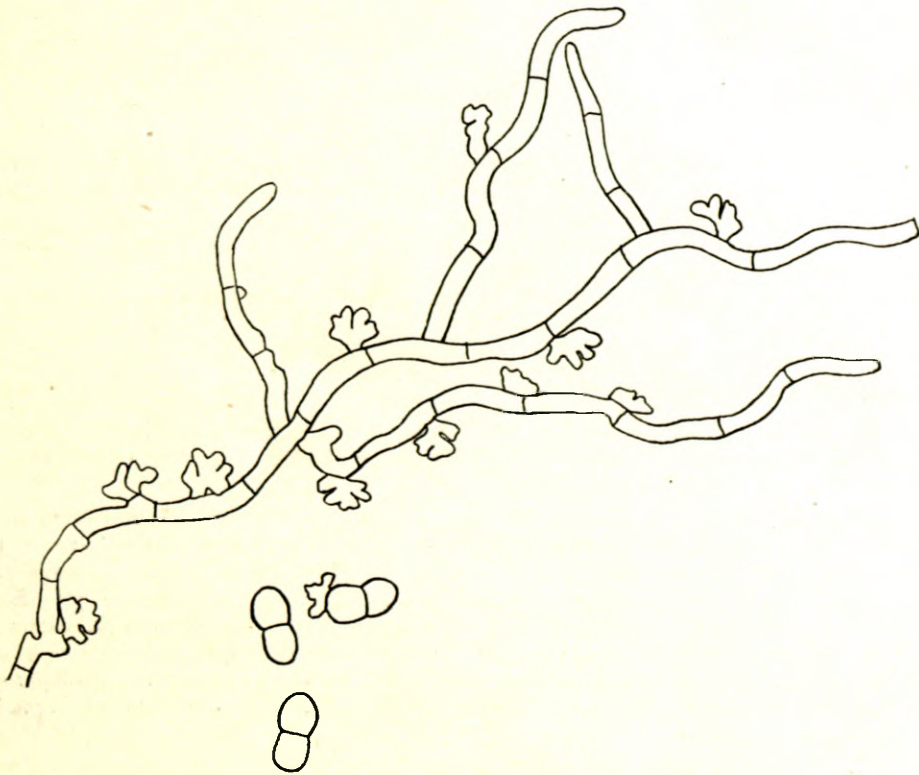


Fig. 3.

Asterina streptocarpi.

thyriothechia developed at the tips of lateral branches, flattened-hemispherical, reddish-brown, $100-150 \mu$ diameter, dehiscence stellate, formed of radiating hyphae $2.5-3 \mu$ thick (cells $5-6 \mu$ long); margin at first smooth, later fimbriate, a number of flexuous hyphae running out and anastomosing with the mycelial hyphae; asci aparaphysate, four-spored, sessile, not staining blue with iodine, globose or broadly ovate, $20-24 \times 23-24 \mu$; spores conglobate, two-celled, brown, smooth, constricted, cylindrical, broadly rounded at both ends, $16-18 \times 7-8.5 \mu$, cells equal, or upper cell slightly broader.

This species is closely related to *A. undulata*, *A. gerbericola*, and *A. dilabens*, Syd.; like the two former, it has thyriothechia, which originate at the tips of lateral branches. It is nearest *A. gerbericola*, from which it differs chiefly in its smooth spores, coarser, undulate hyphae, and more numerous hyphopodia.

Asterina Streptocarpi, Doidge, n. sp.

Plagulas epiphyllas, atras, minutas, usque 3 mm. diametro formans; mycelium undulatum, ex hyphis flexuosis, ramosis, 3.5–5 μ latis, septatis (articulis 16–20 μ longis) compositum; hyphopodia continua, modice copiosa, alternantia, plurilobata, 6–10 μ alta, 8–13.5 μ lata; thyriothechia in summis hyphis secundariis oriunda, orbicularia, 100–150 μ diametro, brunnea, radiatim ex hyphis, 2.5–3 μ crassis (cellulis 5–6 μ longis) contexta; ad ambitum hyphis flexuosis fimbriata, stellatim dehiscentia; asci aparaphysati, 4-sporei, ovato-globosi, 20–24 \times 23–24 μ ; sporae conglobatae, 1-septatae, constrictae, leves, cylindraceae, utrinque late rotundatae, 16–18 \times 7–8.5 μ , cellulis aequalibus v. superiore leniter latiore.

Hab. in foliis *Streptocarpi Rexii*, Deepwalls, Knysna District, 13.5.23, leg. Doidge [17223].

A. gerbericola affinis.

100. *Asterina celtidicola*, P. Henn., var. *microspora*, Doidge.

Trans. Roy. Soc. S. Africa, VIII, p. 260, 1920.

On leaves of *Kiggelaria africana*, Keurkloof Forest, George District, 9.5.23, Doidge [17111]; Deepwalls, Knysna District, 13.5.23, Doidge [17221]; Storms River, Humansdorp District, 15.5.23, Doidge [17191].

On stems of *Capparis trifolia*, Ebb and Flow, Wilderness, George District, 10.5.23, Doidge [17123].

This variety was originally collected on *Maerua pedunculosa* and *Oncoba Kraussiana* in Natal.

101. *Amazonia Goniomae*, n. sp.

On leaves of *Gonioma Kamassi*, Deepwalls, Knysna District, 13.5.15, Doidge [17209]; Storms River, Humansdorp District, 15.5.23, Doidge [17230]; Keurkloof Forest, George District, 9.5.23, Doidge [17109].

Amphigenous, forming irregularly circular, dull-black spots up to 7 mm. diameter; mycelium dense, radiating, consisting of meliola-like hyphae 6.5–9 μ thick, frequently septate, cells 20–27 μ long, with numerous usually opposite, less frequently unilateral branches; capitata hyphopodia, two-celled, stipitate, straight or curved, clavate-cylindrical, sometimes sublobed, 20–27 \times 8.6–10 μ , stalk cell short, cylindrical; thyriothechia scattered, 160–200 μ diameter, flattened, shield-shaped, circular, formed of radiating hyphae about 6 μ thick, margin very briefly fimbriate; asci aparaphysate, evanescent, two-spored; spores flattened-cylindrical, 4-septate, slightly constricted at the septa, brown, broadly rounded at both ends, 40–47 \times 15–16.5 \times 10–12 μ .

Amazonia Goniomae, Doidge, n. sp.

Amphigena, plagulas atras irregulares v. orbiculares, usque 7 mm. diametro formans; mycelium densum, ex hyphis, brunneis, 6.5–9 μ crassis, septatis, ramosis compositum, cellulis 20–27 μ longis, ramis numerosis, oppositis v. rarius unilateralibus, hyphopodia capitata alternantia, numerosa, recta v. curvata, stipitata, 20–27 \times 8.6–10 μ , cellula superiore clavato-cylindracea interdum sublobata; thyriothechia sparsa orbicularia, 160–200 μ diametro, radiatim ex hyphis, ca. 6 μ crassis contexta, ambitu hyphis similibus fimbriata; asci aparaphysati bispori; sporae oblongae, 4-septatae, leniter constrictae, brunneae, utrinque late rotundatae, 40–47 \times 15–16.5 μ .

Hab. in foliis *Goniomae Kamassi*, Deepwalls, Knysna District, 13.5.23, leg. Doidge [17209].

102. *Morenoella Phillipsii*, n. sp.

On leaves and stems of *Ocotea bullata*, Deepwalls, Knysna District, 13.5.23, Doidge [17205]; Montagu Pass Road, George District, 9.5.23, Doidge [17127].

Forming thin, spreading black growths on the under-side of the leaves, and densely clothing the stems and petioles of young seedlings. Hyphae fuscous, undulating, 3–3.5 μ thick, branching irregular, septa obscure, hyphopodia alternate or unilateral, continuous, briefly cylindrical, straight or subuncinate, 6–15 \times 3.5–5 μ , sometimes anastomosing with another hyphopodium or with a branchlet to form a circle or oval; thyriothecia numerous, scattered, elliptic to linear, occasionally almost circular, straight, curved or bent at an angle, 240–600 \times 90–160 μ , radiating in structure, formed of hyphae about 3 μ thick, raggedly fimbriate at the margin, dehiscing by a longitudinal slit, which later becomes widely distended, exposing the asci: asci aparaphysate, eight-spored, ovate, numerous, thickened

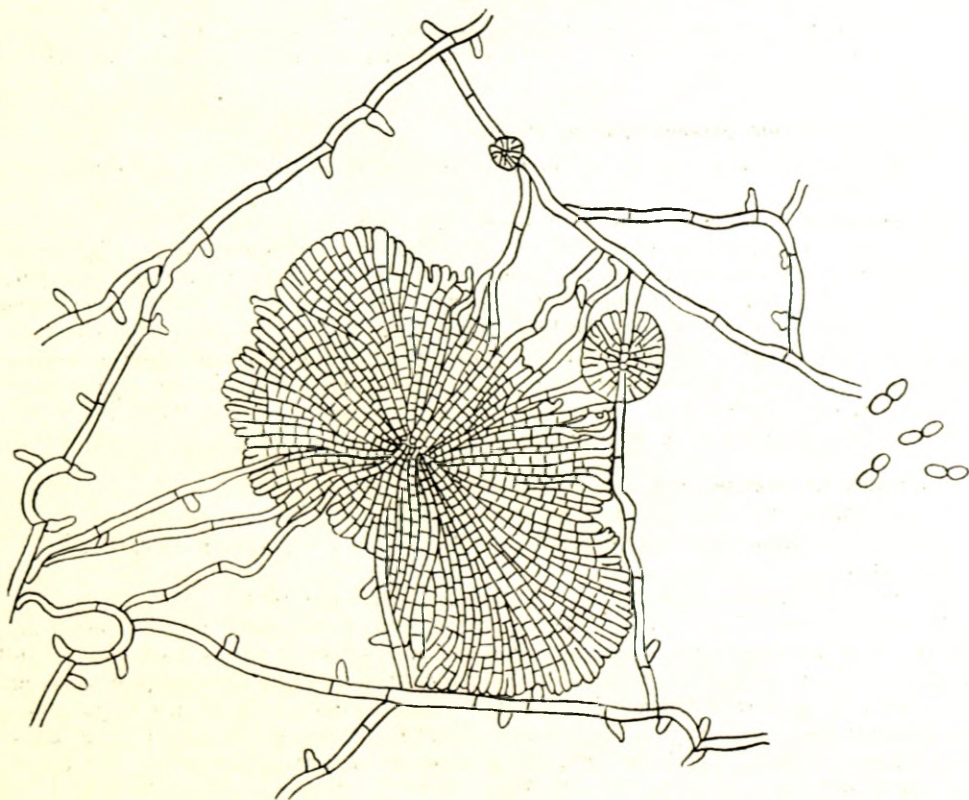


Fig. 4.

Morenoella Phillipsii.

round apex, sessile or with a short foot, not staining blue with iodine, 26–33.5 \times 18–20 μ ; spores tristichous or conglobate, fuscous, 1-septate, ellipsoid, rounded at both ends, very deeply constricted, so that the cells very often fall apart before the spore germinates, 13.5–15 \times 5–6.3 μ , each cell ellipsoid.

My attention was drawn to this fungus by Mr. Phillips, the Assistant Officer for Sylvicultural Research, who is stationed at Deepwalls, in the Knysna District, and is conducting investigations into the regeneration of the indigenous forest. The stems of young *Ocotea bullata* seedlings are frequently densely clothed with the mycelium of *Morenoella Phillipsii*, which completely covers the stems for 10, 20, or 30 cm. It is not

improbable that the fungus has a serious effect on the growth of stinkwood seedlings.

In several stem sections I thought that I detected the presence of a subcuticular hypostroma, but failed to establish any connection between this and the thyriothecia; there was no trace of this in leaf sections. I have therefore assigned the fungus to the genus *Morenoella*.

Morenoella Phillipsii, Doidge, n. sp.

Hypophylla et caulicola, plagulas tenues, effusas hypophyllas formans atque caules late et dense obtegens; mycelium ex hyphis fuscis, undulatis, 3-3.5 μ latis, ramosis, obscure septatis compositum; hyphopodia alternantia, breve cylindracea, recta v. subuncinata, 6-15 \times 3.5-5 μ ; thyriothecia numerosa, sparsa, elliptica v. linearia, recta, curvata vel geniculata, 240-600 \times 90-160 μ , radiatim ex hyphis ca. 3 μ crassis composita, ambitu fimbriata, primum rima angusta longitudinali deinde late aperta; asci aparaphysati, octospori, ovati, numerosi, apice incrassati, 26-33.5 \times 18-20 μ ; sporae tristichae v. conglobatae, fuscae, medio septatae et valde constrictae, ellipsoideae, 13.5-15 \times 5-6.3 μ .

Hab. in foliis *Ocoteae bullatae*, Deepwalls, Knysna District, 13.5.23, leg. Doidge [17205].

103. *Phragmothyriella parenchymatica*, Doidge.

Syn. *Zukalia parenchymatica*, Doidge (Trans. Roy. Soc. S. Africa, VIII, p. 114, 1920).

On leaves of *Xymalos monospora*, Kentani, 3.3.15, Pegler [8864].

Thyriothecia epiphyllous, scattered, 300-400 μ diameter and about 170 μ high, fuscous, irregularly parenchymatous in texture, paler towards the margin, with a single polyascous hymenium; asci numerous, ellipsoid-ovate, briefly pedicellate, 50-60 \times 20-30 μ ; spores obliquely distichous or conglobate hyaline or yellowish, 5-7-septate, ellipsoid, sometimes slightly curved, 30-40 \times 8-10 μ ; mycelium pale yellowish-brown, consisting of hyphae, 3.5-5 μ thick; these are copiously branched and anastomosing, forming in the neighbourhood of the perithecia a continuous pseudo-parenchymatous layer, so that the covering wall of the thyriothecium merges gradually into the mycelium.

104. *Ascostratum insigne*, Syd.

Ann. Myc., X, 1912, pp. 41-42, fig. 2.

On rind of *Euphorbia* sp., Amanzimtoti, Natal, 10.7.11, Doidge [1660], 20.5.13, Doidge [6625].

In each case closely associated with *Pleomassaria gigantea*, Syd.

Stromata scattered, erumpent, later superficial, round or irregular in form, rather flat, $\frac{1}{2}$ - $\frac{3}{4}$ mm. diameter, the entire length of the base being attached to the host; outer wall dark-brown, almost black; inner part of stroma composed of light-coloured plectenchyma, and containing numerous irregularly scattered loculi; loculi each with a single ascus; asci ovate-globose, slightly thickened round the apex, eight-spored, 60-70 \times 40-55 μ ; spores oblong or broadly fusiform, straight or often asymmetrical, obtuse at both ends, 7-9-septate, not constricted, hyaline, 45-58 \times 16-18 μ .

105. *Irene implicata*, n. sp.

On leaves of *Chilianthus arboreus*, Van Stadens Pass, 19.5.23, Doidge [17251].

Mycelium hypophyllous, forming rather indefinite round, grey-black spots, 2-4 mm. diameter. Hyphae pale fuscous, rather thin-walled, subtorulose, 5-6.6 μ thick, cells variable in length, branching irregularly anastomosing and forming a tangled network amongst the lepidote scales on the under side of the leaf. Capitate hyphopodia usually alternate or unilateral, sometimes opposite, stipitate, 20-40 \times 10-20 μ ; stipe cell usually cylindrical or constricted at base, 3.5-16 μ in length; terminal cell very variable in form and dimensions, club-shaped, truncate, or variously and fantastically lobed. Mucronate hyphopodia, solitary, opposite or in whorls of 3 or 4, slender lageniform, straight or curved, 16-27 \times 5-6.5 μ . Setae none. Perithecia crowded together in the centre of the mycelium globose, somewhat

flattened, verrucose, carbonaceous, 240–290 μ diameter, collapsing at maturity; outer wall composed of rounded or conical cells, which are irregularly polygonal at the base and about 10 μ in diameter. Asci two-spored, evanescent. Spores brown, 4-septate, elliptic, constricted at the septa, straight or slightly curved, tapering somewhat toward the rounded ends, 50–54 μ long; medial cell longer than the others and 20–23.5 μ broad; terminal cells are not more than 13–14 μ broad.

Irene implicata, Doidge, n. sp.

Hypophylla, plagulas parum perspicuas, griseolas, orbiculares, 2–4 mm. latas formans; mycelium laxe ramosum, implicatum ex hyphis fuscis, subtorulosis, 5–6.6 μ crassis compositum; hyphopodia capitata alternantia v. raro opposita, 20–40 \times 10–20 μ , cellula inferiore cylindrica v. basim constricta, 3.5–16 μ longa, superiore irregularia, clavata



Fig. 5.

Irene implicata: mycelium with capitate and mucronate hyphopodia, and spores.

truncata v. varie lobata; hyphopodia mucronata plerumque opposita, angusta, lageniformia, recta v. curvata, 16–27 \times 5–6.5 μ ; perithecia in centro plagularum pauca conferta, atra, carbonacea, verrucosa, 240–290 μ , in sicco collapsa; asci bispori; sporae brunneae, 4-septatae, ellipticae ad septa constrictae, rectae v. subcurvatae; utrinque attenuatae, 50–54 μ longae; cellula media 20–23.5 μ lata, cellulis extimis 13–14 μ latis.

Hab. in foliis *Chilianthi arborescentis*, Van Stadens Pass, 19.5.23, leg. Doidge [17251].

106. *Irene Peglerae*, Doidge.

Trans. Roy. Soc., V, p. 730, 1916.

On *Halleria lucida*, Keurkloof Forest, George District, 9.5.23, Doidge [17116]; Storms River, Humansdorp District, 15.5.23, Doidge [17182]; Deepwalls, Knysna District, 13.5.23, Doidge [17200].

This species was originally collected at Kentani on *Anastrabe integerrima*; it appears to be very common on *Halleria lucida* in the coast forest belt.

107 *Meliola comata*, Doidge.

Trans. Roy. Soc. S. Africa, VIII, p. 111, 1920.

On leaves of *Pyrenacantha scandens*, Woodville Forest, George District, 11.11.17, Doidge [11020]; Storms River, Humansdorp District, 15.5.23, Doidge [17192]; Deepwalls, Knysna District, 13.5.23, Doidge [17208].

The host of *M. comata* was previously (loc. cit.) incorrectly determined as (?) *Ipomoea* sp.

108. *Meliola Evansii*.

Trans. Roy. Soc. S. Africa, VIII, p. 112, 1920.

On leaves of *Celastrus acuminatus*, Deepwalls, Knysna District, 13.5.23, Doidge [17206].

On *Elaeodendron croceum*, Deepwalls, Knysna District, 13.5.23 [17216].

M. Evansii has previously been recorded on *Mystrozyton* at Mossel Bay and *Celastrineae* undetermined from the Zoutpansberg.

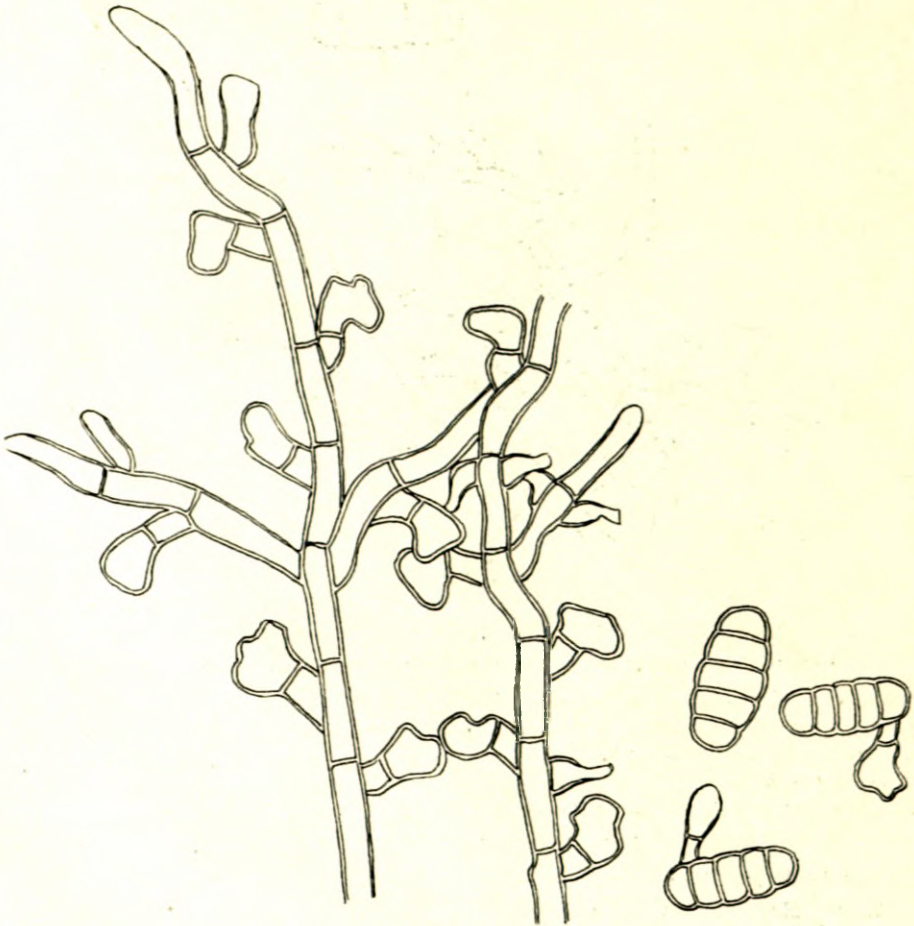


Fig. 6.

Meliola Knowltoniae.

109. *Meliola Knowltoniae*, n. sp.

On leaves of *Knowltonia vesicatoria*, Storms River, Humansdorp District, 15.5.23, Doidge [17177].

Epiphyllous, forming rather thin, black, carbonaceous spots up to 5 mm. diameter; mycelium consisting of brown, opaque, rather sinuous hyphae 9–11 μ thick (usually 10 μ); cells for the most part 35–40 μ long, branches opposite; capitate hyphopodia alternate, brown, opaque, usually one to each cell, stipitate, 27–34 \times 13.5–17 μ , majority at an angle of about forty-five degrees with hypha, but sometimes more widely divergent, stipe cell cylindrical, 6.5–10 μ long, terminal cell club-shaped, sublobed or subuncinate, curving towards or away from the hyphae, but usually the latter; mucronate hyphopodia fairly numerous near centre of mycelium, opposite, not lighter in colour than the capitate hyphopodia, 16–17 \times 8–10 μ , ampulliform with rather a short neck, 3.5 μ thick; mycelial setae numerous in the neighbourhood of the perithecia, less numerous elsewhere, simple, straight or somewhat flexuous, 400–500 μ long, 10 μ thick at base, the majority tapering very gradually to the blunt and somewhat less opaque apex, which is 2–3 μ thick, a few of the setae are less tapering and have a blunt apex up to 5 μ thick; perithecia in groups in the centre of the mycelium, spherical, black, carbonaceous, slightly rough, 160–200 μ diameter; asci two-spored, evanescent; spores 4-septate, cylindrical-compressed, broadly rounded at both ends, slightly constricted at the septa, brown, 42–46 \times 16.5–20 \times 13.5 μ .

Meliola Knowltoniae, Doidge, n. sp.

Epiphylla, plagulas atras, usque 5 mm. diametro formans; mycelium ex hyphis, brunneis, opacis, subsinuosis, 9–11 μ crassis, septatis, ramosis, compositis, cellulis plerumque, 35–40 μ longis, ramis oppositis; hyphopodia capitata alternantia stipitata 27–34 \times 13.5–17 μ , cellula superiore, clavata, sublobata v. subuncinata; hyphopodia mucronata sat numerosa, opposita, 16–17 \times 8–10 μ , ampullacea; setae mycelicae rectae v. subflexuosae, simplicis 400–500 μ longae, basi 10 μ crassae, apicem obtusum v. sensim attenuatae; perithecia gregaria, globosa, atra, carbonacea, 160–200 μ diametro; asci bispori; sporae 4-septatae, cylindratae, utrinque late rotundatae, leniter constrictae, 42–46 \times 16.5–20 μ .

Hab. in foliis *Knowltoniae vesicatoriae*, Storms River, Humansdorp District, 15.5.23, leg. Doidge [17177].

110. *Meliola Toddaliae*, Doidge.

Trans. Roy. Soc. S. Africa, V, p. 732, 1916.

On leaves of *Fagara capensis*, Thun., Pirie Forest, 8.7.19, Doidge [12275]; Winters Kloof, Natal, 13.9.19, Doidge [12440].

On *Fagara Davyi*, Gouna Road, Low Forest, February, 1922, Keet [15531].

M. Toddaliae was originally described as occurring on *Toddalia lanceolata*, and is commonly found on this host.

111. *Perisporium irenicolum*, n. sp.

On *Irene Peglerae* on leaves of *Halleria lucida*, Deepwalls, Knysna District, 13.5.23, Doidge [17201].

Mycelium pale fuscous, hyphae very delicate, 1–2 μ thick, but well developed, forming a dense tangle between the hyphae of the *Irene*. Associated with this mycelium, and probably connected with it, are very numerous conidiophores and conidia of a *Helminthosporium* sp. Stevens (*Bot. Gazette*, 64, 1918, pp. 228–229) noticed similar conidia in connection with *Perisporium Meliolae*. Perithecia subspherical, rather taller than broad, smooth, 190–230 μ diameter, wall membranous, formed of irregular, polygonal cells about 6 μ diameter. Asci numerous, fascicled, eight-spored, clavate or cylindrical, sessile or with a short foot, 70–100 \times 18–20 μ , thickened round the apex, staining dull-purple with iodine, paraphysate. Spores distichous, fuscous, clavate, 5-septate when mature, slightly constricted at the medial septum, broadly rounded above, tapering to the lower end, 42–44 μ long, 13.5–16 μ thick at the broadest point, narrower and obtuse at the lower end.

The genus *Perisporium* was discarded by Theissen and Sydow (*Ann. Myc.*, 1917, p. 448), and the genus *Meliolina* established for species similar to *Meliola*, but with

ahyphopodiate mycelium. The present species does not agree well with the species of the genus *Meliolina* in that it has eight-spored fasciculate asci, but it is closely related to *Perisporium Meliolae*, Stevens (loc. cit.); it is therefore provisionally assigned to the genus *Perisporium*.

(?) *Perisporium irenicolum*, Doidge, n. sp.

Amphigenum in mycelio *Irene Peglerae* parasiticum; mycelio tenue, bene evoluto, hyphas fuscas, 1-2 μ cr. composito; perithecia subsphaerica, laeves, membranacea, 190-230 μ diametro; asci numerosi, aparaphysati, fasciculati, octospori, clavati v. cylindranei, sessiles v. breviter pedicellati, 70-100 \times 18-20 μ , apice incrassati; sporae distichae, fuscae, clavatae, 5-septatae, medio leniter constrictae, 42-44 \times 13.5-16 μ .

Hab. in foliis *Halleriae lucidae*, Deepwells, Knysna District, 13.5.23, leg. Doidge [17201].

112. *Phaeostigme circumsedens*, n. sp.

Parasitic on mycelium of (?) *Asterina* or (?) *Clypeolella* sp., on leaves of *Mikania capensis*, Storms River, Humansdorp District, 15.5.23, Doidge [17163].

Mycelium delicate, pale fuscous or olivaceous, *without hyphopodia*, composed of hyphae 2-3 μ thick, which branch and anastomose irregularly and closely invest the hyphae of the host. Perithecia scattered, spherical, somewhat papillate, but without a typical ostiole, subverrucose, brown, 100-120 μ diameter, wall consisting of irregular, polygonal cells, 6-10 μ diameter; asci eight-spored, paraphysate, narrow cylindrical or obclavate, thin-walled, rounded but not thickened at the apex, 40-50 \times 13-16 μ ; paraphyses filiform; spores distichous, two-celled, constricted, smooth, fuscous, cylindrical or broadly ellipsoid, broadly rounded at both ends, 11-13 \times 5-6.3 μ , cells subequal and almost spherical, or upper cell slightly broader and more broadly rounded than the lower.

Phaeostigme circumsedens, Doidge, n. sp.

Mycelium in (?) *Asterina* sp. v. (?) *Clypeolella* sp. parasiticum, mycelium (?) *Asterinae* arcte circumsedens, ex hyphis tenuibus, fuscidulis v. olivaceis, 2-3 μ latis, dense intricatis, ramosis et anastomosantibus, septatis compositum; perithecia sparsa, globosa, ostiolo typico carentia, 100-120 μ diametro, parenchymatica e cellulis, 6-10 μ diametro, composita; asci paraphysati, fasciculati, anguste cylindranei v. obclavatae, 40-50 \times 13-16 μ ; sporae distichae, 1-septatae, leves, fuscae, oblongae v. late ellipsoideae, utrinque late rotundatae, 11-13 \times 5-6.3 μ , loculis subaequalibus v. loculo supero paullo latiore.

Hab. in foliis *Mikaniae capensis*, Storms River, Humansdorp District, 15.5.23, leg. Doidge [17163].

113. *Chaetostigmella capensis*, Doidge.

Syn. *Phaeodimeriella capensis*, Doidge (Trans. Roy. Soc. S. Africa, V, p. 719, 1917, Plate LVIII, fig. 8).

On leaves of *Apodytes dimidiata*, Knysna, Cape Province, 3.6.12, Pienaar [2426].

The genus *Chaetostigmella* has been established by Sydow (Ann. Myc., 1917, p. 199) for the species with paraphyses, formerly assigned to the genus *Phaeodimeriella*. The mycelium of *Ph. capensis* was incorrectly described (loc. cit.) as having hyphopodia. The hyphopodiate mycelium is that of an *Asterina*, on which the *Chaetostigmella* is parasitic. *Ch. capensis* has abundant hyphae, 2-3 μ thick, which are at first fuscous, then brown, closely investing the hyphae of the host, branching profusely and forming a dense network between the hyphae of the *Asterina*.

114. *Chaetostigmella asterinicola*, Doidge.

Syn. *Phaeodimeriella asterinicola*, Doidge (Trans. Roy. Soc. S. Africa, VIII, p. 115, 1920).

This species, having paraphysate asci, must also be assigned to the genus *Chaetostigmella*.

115. *Phaeodimeriella plumbea*, n. sp.

Parasitic on *Asterina gerbericola*, Storms River, Humansdorp District, 15.5.23, Doidge [17176].

Mycelium well developed, closely investing the hyphae of the *Asterina*, and forming an open network between the hyphae of the host; mycelium greyish-green, younger hyphae almost hyaline, very slender, 1–2 μ thick, branching irregularly; perithecia numerous, black, globose, 80–100 μ diameter, with a crown of 6–12 setae; setae straight, brown, 3.5–5 μ thick at the base, tapering to an acute apex, 55–70 μ long; asci numerous, paraphysate, fasciculate, eight-spored, ellipsoid, sessile, 36.5–43 \times 10–13.3 μ ; spores distichous, brown, narrow-ellipsoid, 13.3–15 \times 3.3–3.5 μ , upper cell somewhat broadened just above the septum, giving the effect of a slight constriction at the septum.

Phaeodimeriella plumbea, Doidge, n. sp.

Mycelium hyphas *Asterinae* dense amplectens, ex hyphis plumbeis v. viridulis, 1–2 μ crassis, tenuibus, dense reticulatis, ramosis et anastomosantibus, septatis compositum; perithecia superficialia, atra, 80–100 μ diametro, setis 6–12 coronatis; setis rectis, brunneis, basim 3.5–5 μ crassis, ad apicem acutem attenuatis, 55–70 μ longis; asci numerosi, fasciculatis, paraphysati, octospori, ellipsoidei, sessiles, 36.5–43 \times 10–13.3 μ ; sporae distichae, anguste ellipsoideae, 1-septatae, brunneae, leniter constrictae, locula supero latiore, 13.3–15 \times 3.3–3.5 μ .

Hab. in foliis *Gerberae cordatae*, Storms River, Humansdorp District, 15.5.23, leg. Doidge [17176].

116. *Rizalia confusa*, n. sp.

On leaves of *Olea capensis*, Storms River, 15.5.23, Doidge [17172]; Assegai Bosch, 16.5.23, Doidge [17233].

On *Olea Pegleri*, Kentani, 6.5.15, Pegler (Pegler No. 2316) [9072] (immature).

Hypophyllous, forming very numerous, minute olivaceous or rusty-brown spots; these soon become confluent and cover large areas of the leaf-surface. Mycelium variable: there is a delicate mycelium composed of fine, pale fuscous hyphae, barely 1 μ thick, which branches and anastomoses to form an irregular network and produces conidia and erect, stouter hyphae. The conidia are pale fuscous, 4–7-septate, narrow clavate, 30–40 μ long, 3.5–5 μ broad at the rounded tip, tapering to a thickness of 1 μ at the base. The erect hyphae [(?) setae] are coarser, dark-brown, septate, obtuse, 3–3.5 μ thick and 60–100 μ long. The fine mycelium apparently gives rise to the coarser, darker mycelium, which produces the perithecia. This consists of abundant, straight, olivaceous or brown hyphae, 3–3.5 μ thick, without hyphopodia, branching and anastomosing irregularly and with some semi-erect branches. The perithecia are numerous, black, spherical with a rough wall, 80–100 μ diameter, bearing a few short, more or less erect hyphae, which are irregular in size and number. The lower half of the perithecium is surrounded by a tangle of hyphae. Asci few in each perithecium, eight-spored, sessile, paraphysate, ovate or broadly clavate, thin-walled, somewhat thickened round the apex, 40–50 \times 23–24 μ . Spores parallel, two-celled, narrow-cylindrical, not constricted, hyaline, not tapering to the rounded ends, 23–24.5 \times 6.5–8 μ , cells equal or subequal.

Rizalia confusa, Doidge, n. sp.

Hypophylla; mycelium bene evolutum, ex hyphis olivaceis, 3–3.5 μ crassis, ramosis, anastomosantibus, ahyphopodiatis compositum, setis erectis v. suberectis nonnullis; perithecia numerosa, basi mycelio suffulta, extus setis paucis, atris, irregulariter obsita, globosa, carbonacea, 80–100 μ diametro; asci pauci in quoque perithecio, octospori, paraphysati, sessiles, ovati v. late clavate, apice leniter incrassati, 40–50 \times 23–24 μ ; sporae parallelae, medio septatae, cylindraceae, haud constrictae, hyalinae, utrinque rotundatae et haud attenuatae, 23–24.5 \times 6.5–8 μ .

Hab. in foliis *Oleae capensis*, Storms River, Humansdorp District, 15.5.23, leg. Doidge [17172].

117. *Theissenula Woodiana*, Doidge.

Syn. *Zukalia Woodiana*, Doidge (Trans. Roy. Soc. S. Africa, VIII, p. 114).

On leaves of *Celastrus albatrus*, Winkle Spruit, Natal, 20.5.15, Doidge [9008]; Durban, 22.7.15, Medley Wood [9061].

The genus *Zukalia*, which was originally described as a "*Meliola hyalophragmia*," has been merged by Theissen and Sydow, in their recent revision of the Perisporiales, in the genus *Chaetothyrium* (Ann. Myc., XV, p. 477). An examination of the fungi classified under the genus *Zukalia* in the cryptogamic section of the National Herbarium shows that neither *Z. Woodiana* nor *Z. parenchymatica* can be placed in the genus *Chaetothyrium*; *Z. Woodiana* very closely resembles the type species of *Theissenula*, from which it differs chiefly in the occasional presence of 5-septate spores.

Hypophyllous, forming rusty-brown spots 10–15 mm. diameter; these are frequently so numerous as to coalesce and form continuous irregular brown patches. Mycelium fuliginous, tangled at the centre of the spots, radiating towards the circumference. Hyphae not hyphopodiate, about 3 μ thick, copiously branched. Conidia not observed. Perithecia numerous, crowded in irregular groups, superficial, globose, 95–115 μ diameter; perithecial wall at first parenchymatous in appearance. Asci aparaphysate, several in each perithecium, eight-spored, ellipsoid or ovate, briefly pedicellate, 30–40 \times 13–17 μ . Spores hyaline or yellowish, subdistichous or parallel in the ascus, narrow ellipsoid or subclavate; at first subequally 1-septate, later 3-septate or occasionally 5-septate, 18–24 \times 4–5 μ . The spore readily falls apart at the medial septum.

118. *Parenglerula Macowaniana* (Thüm), v. Höhn.

Frag. zur Myk., X, No. 525; in Sitzungsber. der Kais. Akad. d. Wiss. in Wien. Math. Nat., Kl. CXIX, 1, p. 465, 73, 1910.

Theissen, F., Mykologische Abhandlungen. Verk. Zool.-bot. Gesellsch. Wien., LXVI, pp. 347–350, 1916.

Syn. *Meliola Macowaniana*, Thüm, Flora, LX, p. 204, 1877; *Asterina Macowaniana*, Kalch et Cke., Grevillea, VII, p. 57, 1878, IX, p. 33, 1880, with diagnosis; Syll. Fung., I, p. 41; Exsicc. Thumen. Myc. Ilinio., 568; Rehm. Ascom. 395.

On leaves of *Celastrus buxifolius*, South Africa.

On leaves of *Celastrus buxifolius*, Ashburton, Natal, 22.4.16, Doidge [9700]; Bedford-Cape Province, 20.11.17, Doidge [10892]; Belmont Valley, Grahamstown, 15.11.17, Doidge [10949]; Alice, Cape Province, 18.11.17, Doidge [10973]; Grahamstown, 4.6.19, Britten [14213].

On *Celastrus polyacanthus*, Assegai Bosch, Humansdorp District, 16.5.23, Doidge [17246].

On *Elaeodendron capense*, Van Stadens Pass, Cape Province, 13.11.17, Doidge [10890].

On *Cassine capensis*, Van Stadens Pass, Cape Province, 13.4.17, Doidge [10885].

On *Scolopia Mundii*, Assegai Bosch, Humansdorp District, 16.5.23, Doidge [17245].

I have not had an opportunity of examining the original specimens, but from v. Höhnel's description there can be no doubt that the fungi mentioned above must be assigned to this species. The description is taken from that of v. Höhnel and Theissen; an examination of several recent collections entirely confirms their observations.

Usually epiphyllous, forming black circular spots 2–3 mm. diameter, which are usually so numerous as to become confluent, and large irregular areas are then covered by the mycelium. In the specimen on *Scolopia Mundii* [17245] the mycelium forms larger spots, up to 7 mm. diameter, and the leaf tissues underneath are discoloured to a yellowish-brown. No such discoloration was observed on the *Celastrus* leaves.

Mycelium consisting of stout, dark-brown, septate undulating, coarse-walled hyphae, 6–8 μ thick, branching profusely, spreading in an irregularly radial direction and furnished with numerous hyphopodia. Hyphopodia alternate or unilateral, unicellular, hemi-

spherical or irregularly oval, 6.5–14 μ high and 6–15 μ broad, having a light-coloured circular pore in the upper portion.

Perithecia produced in great profusion, densely aggregated in the central part of the mycelium, black, coarse, irregularly globular, very rough, almost tubercular, 50–120 μ in diameter, and without a trace of an ostiole. They are poised on a slightly narrowed base about 40 μ wide, from which the hyphae of the subiculum radiate. The perithecial wall disappears at maturity, falling apart into separate cellular filaments, which surround the asci and envelope them after the fashion of paraphyses. The asci and these filaments are embedded in a stiff mass of mucilage, staining a dingy-violet with iodine, which secretes an insoluble, dark-brown mass, which completely conceals the internal structure. The thin, coarse skin thus produced disintegrates, in consequence of the swelling of the mucilaginous content, into minute, irregular fragments often resembling cells, and thus simulates a dark-brown perithecial membrane.

The mature perithecia contain 1–10 oval, thick-walled asci, four- to eight-spored, broadly rounded above, constricted at base, 57–65 \times 40–50 μ . The cellular filaments representing the remains of the perithecial membrane dissolved by mucilaginous histolysis are two- to four-septate, grey-brown to dirty-yellow, smooth-walled, not constricted at the septa, obtuse, usually incurved, 20–45 \times 5–7 μ . They form at first a closed perithecial sheath, but are soon forced asunder, giving way to the outward pressure of the mucilage, which then forms a hardening coarse crust over the original membrane.

Spores bicellular, elongated ovoid, rounded at both ends, thick-walled, at first covered with a thin mucilaginous sheath, remaining hyaline for a long time, then turning dark-brown, 25–32 \times 13.5–15 μ . The transverse wall is situated below the centre, one cell being 15.5–18 μ and the other 12–15 μ long; the position of the wall is therefore more variable than is indicated by v. Höhnelt or Theissen. The upper cell is 12–15 μ broad, and the lower 8.5–13 μ .

119. *Capnodium citricolum*, McAlp.

Proc. Linn. Soc. of New South Wales, 1896, Part IV, p. 491.

Syll. Fung., XIV, p. 476.

On twigs of *Citrus* sp., Karreekloof, Lydenburg District, 24.7.19 [12313].

Effuse, black, crustaceous, covering the entire surface of the affected parts; some of the hyphae creeping, greenish or hyaline, copiously branched, septate, 6–8.5 μ thick, ascending branches short, simple, septate, bearing conidia which are hyaline or pale-greenish, continuous, uni- or biseptate, spherical, oval or elliptical, slightly constricted, 7.5–24 \times 4–11 μ , sometimes moniliform; other hyphae are dark-coloured, greenish-brown or almost black, very frequently septate, constricted, slightly or copiously branched, rigid, 9.5–11 μ thick, bearing brown conidia, which are mostly elliptic, uniseptate, 7.5–16 \times 5.5–8.5 μ . Perithecia and pycnidia are intermingled, opaque, black, oblong, oval, flask-shaped or club-shaped, 112–250 \times 52–112 μ . Asci cylindrical to clavate, sessile, rounded at the apex, four-, six- or eight-spored, 70–80 \times 19–20 μ . Spores brown, oblong, sometimes subfusoid, typically obtuse at both ends, constricted near the middle, 5–6-septate, often with longitudinal or oblique septa, distichous, sometimes tristichous, about 21–24 \times 8.5–9.5 μ . Paraphyses hyaline, often granulose, elongated-clavate, 9.5 μ broad at the apex, equalling the asci.

The description quoted above is that of McAlpine; this specimen agrees with it very well, and is the only South African specimen of *Capnodium* in the National Herbarium on which perithecia have been developed.

120. *Trichothyrium elegans*, n. sp.

On mycelium of (?) *Asterina* sp. on *Cunonia capensis*, Montagu Pass Road, George District, 9.5.23, Doidge [17129]; Storms River, Humansdorp District, 15.5.23, Doidge [17186]; Deepwalls, Knysna District, 13.5.23, Doidge [17220].

Epiphyllous, parasitic on the mycelium of (?) *Asterina* sp. or (?) *Clypeolella* sp., which is so heavily parasitized that no thyriothecia are formed, and consequently cannot be determined accurately; mycelium not forming a continuous pellicle, but closely investing the hyphae of the host, formed of delicate, pale fuscous hyphae about $3\ \mu$ thick, branching and anastomosing to form an open network between the hyphae of the host; hyphopodia none; perithecia radiate in structure, orbicular, $160\text{--}170\ \mu$ diameter, flat, shield-shaped, with a round central ostiole $15\text{--}25\ \mu$ diameter, radiating hyphae $2.5\text{--}3\ \mu$ thick; asci ovate-oblong or oblong, sessile, rounded and somewhat thickened at the apex, paraphysate, $57\text{--}65 \times 16\text{--}17.5\ \mu$; spores distichous or tristichous, clavate, 1-septate, not or very slightly constricted, hyaline, $20\text{--}23 \times 6.5\text{--}8\ \mu$; upper cell shorter, broader, and more broadly rounded than the lower, which tapers toward the lower end.

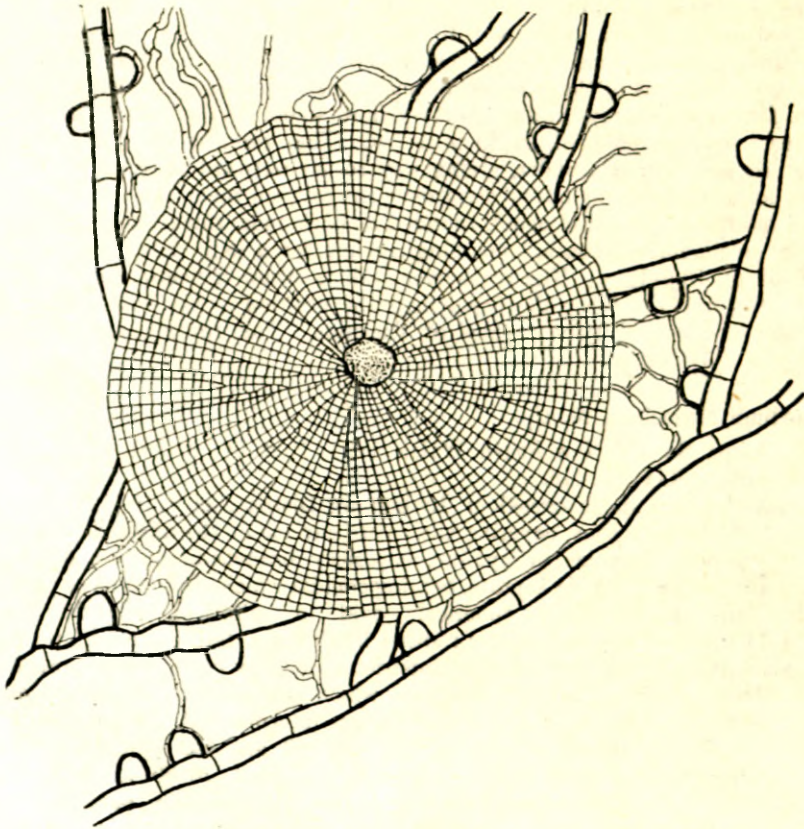


Fig. 7.

Trichothyrium elegans.*Trichothyrium elegans*, Doidge, n. sp.

Epiphyllum, in mycelio (?) *Asterinae* sp. parasiticum; mycelio hyphas *Asterinae* arcte circumscendente sed haud pelliculam continuum efformante, ex hyphis obscure fuscis, $3\ \mu$ latis, ramosis et anastomosantibus composito; hyphopodiis nullis; perithecia radiatim oriunda, orbicularia, $160\text{--}170\ \mu$ diametro, brunnea, dimidiato-scutata, centro ostiolo rotundo, $15\text{--}25\ \mu$ lato praedita, radiatim ex hyphis $2.5\text{--}3\ \mu$ latis composita; asci ovato-oblongi v. oblongi, sessiles, apice rotundati et leniter incrassati, non paraphysati, $57\text{--}65 \times 16\text{--}17.5\ \mu$;

sporae distichae v. tristichae, clavatae, 1-septatae, haud v. vix constrictae, hyalinae, $20-23 \times 6.5-8 \mu$, cellula superiore brevior v. latior.

Hab. in foliis *Cunoniae capensis*, Montagu Pass Road, George District, 9.5.23, leg. Doidge [17129].

121. *Trichothyrium robustum*, n. sp.

Parasitic on mycelium of *Meliola comata* on *Pyrenacantha scandens*, Deepwalls, Knysna District, 13.5.23, Doidge [17208A].

Mycelium pale fuscous, ribbon-like, forming a continuous pellicle, completely clothing the hyphae and hyphopodia of the *Meliola*, and extending for a short distance on either side; ribbon-like thallus following the course of the hyphae of the host and branching where its hyphae branch, somewhat lobed at the margin, the lobes corresponding in position with the hyphopodia, 40-70 μ wide, formed of hyphae 2-3 μ thick, which are prosenchymatous in appearance, running longitudinally in the centre, and spreading out fan-wise near the margin at an angle of about forty-five degrees. Perithecia very numerous,

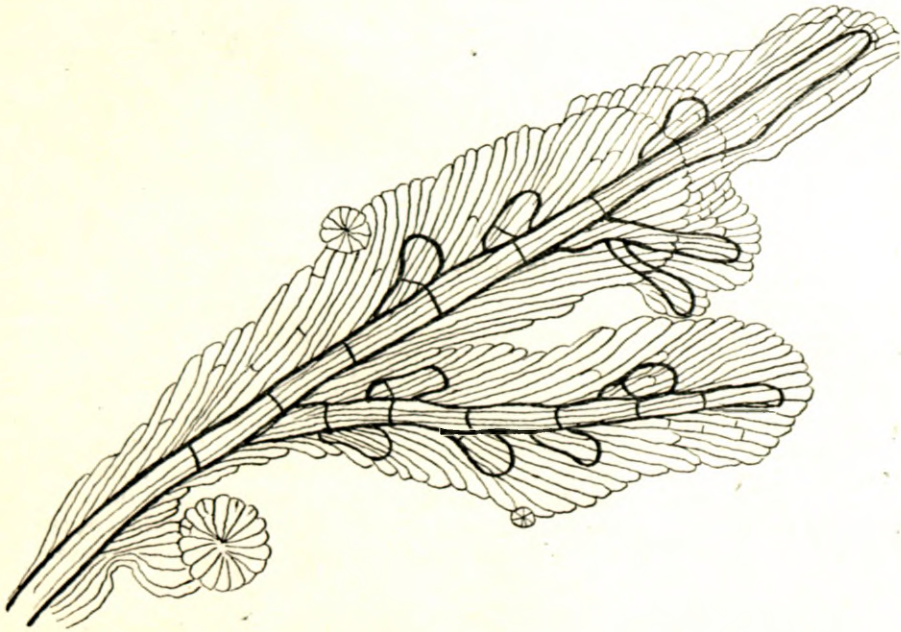


Fig. 8.

Trichothyrium robustum.

gregarious, flattened, round, produced on the edges of the ribbon-like thallus, 120-160 μ diameter, with a round, central pore, 13-17 μ diameter, formed of radiating hyphae about 3 μ thick, cells almost cubical; asci numerous, fasciculate, clavate or elliptic, sessile, eight-spored, $30-40 \times 13-16.6 \mu$, paraphysate; paraphyses not very numerous, hyaline, filiform; spores distichous, hyaline, 1-septate, clavate, slightly constricted at septum, $16-17 \times 5-6.5 \mu$; upper cell shorter and broader, broadly rounded or somewhat acute at the apex; lower cell tapering to the base.

Trichothyrium robustum, Doidge, n. sp.

Mycelium fuscum, mycellio hyphas *Meliolae* parasiticum vittis alternatim ramosis, 40-70 μ latis lobatis, lobis apice rotundatis, pinnatim ex hyphis, 2-3 μ latis prosenchymaticis; perithecia ad marginem thalli numerosa, gregarie rotundata-depressa,

120–160 μ diametro, ostiolo rotundo, 13–17 μ dato praedita; asci numerosi, fasciculati clavati v. elliptici, sessiles, octospori, paraphysati, 30–40 \times 13–16.6 μ ; paraphysibus parum numerosis hyalinis, filiformibus; sporae distichae, hyalinae, 1-septatae, clavatae, leniter constrictae, 16–17 \times 5–6.5 μ , cellula superiore latiore et brevior.

Hab. in foliis *Pyrenacanthae scandentis*, Deepwalls, Knysna District, 13.5.23, leg. Doidge [17208A].

Trichothyrium dubiosum affinis.

Actinopeltella, Doidge, nov. gen.

Omnia ut in *Actinopeltis* sed sporae hyalinae 1-septatae.

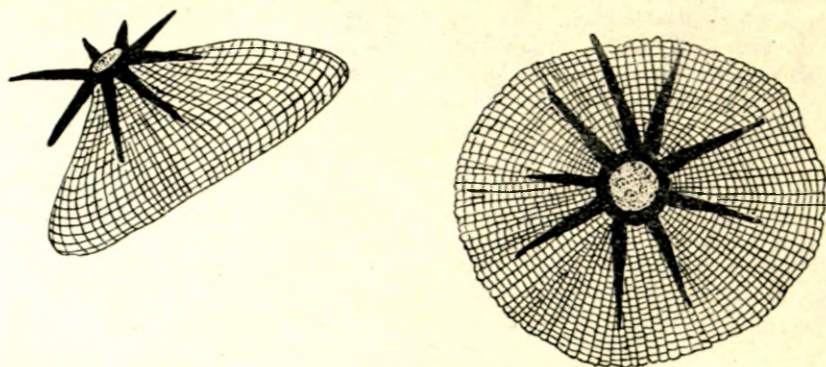


Fig. 9.

Actinopeltella nitida.

122. **Actinopeltella nitida**, n. sp.

Parasitic on the mycelium of *Asterina Streptocarpi* on leaves of *Streptocarpus Rexii*, Deepwalls, Knysna District, 13.5.23, Doidge [17225].

Subiculum absent; perithecia scattered, fuscous, brown, lenticular-turbinate, 100–120 μ diameter, about 50 μ high, composed of radiating hyphae 2.5–3 μ thick, ostiole irregularly round, 16–20 μ diameter, surrounded by a single crown of 6–10 stout, dark-brown setae, spreading horizontally, up to 40 μ long, 3.5–4 μ thick at base, apex acute; asci aparaphysate, delicate, narrow-obelavate, sessile, not thickened round the apex, eight-spored, 40–50 \times 10–13.5 μ ; spores distichous, hyaline, ellipsoid or subclavate, two-celled, not constricted, rounded at the ends, 10–13 \times 3–4.5 μ , cells subequal, or upper cell slightly broader.

Actinopeltella nitida, Doidge, n. sp.

Subiculum nullum; perithecia sparsa, fusco-brunnea, rotundato depressa, 100–120 μ diametro, radiatim ex hyphis, 2.5–3 μ crassis contexta, ostiolo rotundo 16–20 μ diametro praedita, setis brunneis 6–10, usque 40 μ longis, acutis coronata; asci aparaphysati, anguste obelavati, octospori, 40–50 \times 10–13.5 μ ; sporae distichae, hyalinae, ellipsoideae v. subclavatae, 10–13 \times 3–4.5 μ , cellulis aequalibus v. supero paullo latiore.

Hab. in foliis *Streptocarpi Rexii*, Deepwalls, Knysna District, 13.5.23, leg. Doidge [17225].

123. **Tripospora tripos** (Cke.), Lind.

Engl. and Prantl., Die Nat. Pflanzenfamilien, 1, p. 413, 1897.

Fitzpatrick, Monograph of the Coryneliaceae, Mycologia, 12, pp. 232–233, figs. 22–25, 44, 45, 1920.

Syn. *Corynelia tripos* (Cke.), Grevillea, VIII, p. 34, 1879; *Tripospora Cookei* (Cke.), Sacc. in Berl. et Vogl. Additamenta Syll. Fung., p. 194, 1886.

On *Podocarpus elongata*, Hk., Somerset East, Cape Province, leg. MacOwan, Rabh. Wint. Fung. Europaei 3150 [3490]; Pirie Forest, Kingwilliamstown, 10.1.14, District Forest Officer [7355]; near Uitenhage, June, 1915, Paterson [9047]; Kingwilliamstown, 19.6.14, District Forest Officer [7816]; Van Stadens Pass, Cape Province, 13.11.17, Doidge [10867]; Maritzburg, 1.2.21, Sim [14274].

Stromata bearing a compact cluster of perithecia, $0.5-1.5 \times 0.5$ mm., not irregularly scattered, arranged definitely in rows and becoming confluent; these rows reaching sometimes a length of 10 mm., but usually shorter, several rows frequently formed on the surface of one leaf; perithecia occurring on the stroma in a compact cluster of 2-16 (usually 4-8), and on isolated stromata radiating towards all sides, so oriented when the stromata form a row that they point to the left and right, the appearance of the fungus thus becoming regular. Young perithecium definitely flask-shaped, with a roughened, spherical to ovoid, ascigerous basal portion and a long cylindrical, glabrous, shiny neck, which is rounded at the tip and blunt. The neck of the perithecium in early stages provided with a canal and marked at the apex with a minute umbilicus, but closed; in later stages the apex of the beak flattened to form a slightly convex disk, the diameter of which equals that of the ascus-bearing portion of the perithecium; this disk becoming fimbriate-lacerate, and assuming a reddish-brown, fuzzy appearance, finally definitely dehiscent, the margin recurving, exposing the lighter-coloured inner wall of the neck of the perithecium, and resulting in the formation of a broad, funnel-shaped cavity, the centre of which is usually filled with a black mass of spores. Immature asci, $30-35 \times 40-60 \mu$; long-stalked, eight-spored, ovate evanescent. Ascospores very characteristic, unicellular, star-shaped, consisting of four (rarely five) conical, sharp-pointed projections, radiating from a rounded central portion, hyaline, when young becoming dark-brown, at maturity opaque and nearly black, thick-walled, $22-34 \mu$ diameter (measured from tip to tip of adjacent projections).

124. *Corynelia fructicola* (Pat.), v. Höhn.

Sitzber, Kais. Akad. Wiss. Wien., 120, p. 450, 1911.

Fitzpatrick, Monograph of the Coryneliaceae, Mycologia, 12, pp. 240-241, figs. 20, 21, 1920.

Syn. *Corynelia carpophila*, Syd., Engl. Bot. Jahrb., 45, p. 264, 1920.

On fruit of *Myrsine melanophleas*, Woodbush, Zoutpansberg District, 5.8.11, Doidge [1736]; Kentani, Cape Province, 5.10.12, May, 1913, and 3.6.14, Pegler [5617, 6621, and 7795]; Tugela Valley, near Mont aux Sources, Natal, 15.5.20, Doidge [14121]; Duncairn, near Maritzburg, 13.7.21, Doidge [14865]; Greytown, Natal, 16.2.22, Doidge [15410].

Stromata fructicolous, pulvinate, black; usually rounded, often laterally confluent to form an extensive effuse, black crust, which partially or completely envelops the fruit; individual stromata 1 mm. or less in diameter, covered by a crowded cluster of perithecia, frequently showing many stages of development on a single stroma; perithecium resembling closely that of *Tripospora tripos*, definitely flask-shaped, with a spherical to ovoid, ascigerous, basal portion, and a long, narrow-cylindrical neck, rounded and blunt at the apex. The neck of the perithecium provided with a canal and in early stages marked at the apex with a minute umbilicus, but closed: in later stages the apex broadened to form a wide, slightly convex disk, the diameter of which equals or exceeds that of the basal ascigerous portion: this disk becoming fimbriate-lacerate, and assuming a reddish-brown, fuzzy appearance, finally dehiscent, the margin recurving, forming a funnel-shaped opening, and exposing the lighter-coloured inner wall. Asci ovate to clavate, long-stalked, thin-walled, evanescent, eight-spored, paraphysate, $11-14 \times 20-25 \mu$. Ascospores when young hyaline, smooth, and by mutual pressure polyhedral; at maturity spherical, brown, thick-walled, echinulate, unicellular, $6.5-10.5 \mu$ in diameter. Pycnidia seated on the stroma among the perithecia more or less globose, black; pycnosporos hyaline, elongated to allantoid, $4-6 \times 1 \mu$.

125. *Corynelia uberata*, Fr.

Ex Acharius Systema Mycologicum, 2, p. 535, 1822.

Fitzpatrick, Monograph of the Coryneliaceae, Mycologia, 12, pp. 247-251, figs. 13-18, 1920.

Syn. *Corynelia clavata* (L.), Sacc. in R. Pirotta, Osservazioni sopra alcuni funghi: Nuovo Giornale Botanico Italiano, 21, pp. 312-317, 1889.

On *Podocarpus latifolia*, Endl., Grahamstown, 13.7.1907, on fruit [493]; Natal, Medley Wood (Wood No. 3203) [11206]; Woodbush, Zoutpansberg District, 4.8.11, Doidge [1770]; St. James, Cape Province, 22.12.12, Pole Evans [5572]; Grahamstown, Burt-Davy [5580]; Kingwilliamstown, 19.6.14, Sun. [7815]; Keiskama Hoek, 26.3.15, District Forest Officer [8970]; Umtata, Cape Province, 13.5.16, Pegler [9739]; Deepwalls, Knysna District, 13.5.23, Doidge [17204].

On *Podocarpus elongata*, Hk., near Somerset East, MacOwan, Rabh. Wint. Fung. Eur. 3149 [3489]; Woodbush, Transvaal, March, 1910, Gray [885]; Berg River, near Wellington, Cape Province, 8.11.10, Doidge [1743]; Pirie Forest, Kingwilliamstown, 10.1.14, District Forest Officer [7354]; Kingwilliamstown, 7.2.14 (on fruits), District Forest Officer [8258]; Keiskama Hoek, 26.3.15, District Forest Officer [8971]; Keiskama Hoek, 30.5.15 (on fruits), Keet [14141]; Storms River, Humansdorp District, 15.5.23, Doidge [17165].

On *Podocarpus falcata*, Eshowe, Zululand, 30.1.12, Pole Evans [2027]; Kentani, Cape Province, July, 1913, Pegler [6900]; Ngome, Cape Province, 21.3.14, Foster [7410].

Stromata scattered, infrequently confluent, more or less definitely circular, 1-3 mm. in diameter, chiefly hypophyllous, but often amphigenous, caulicolous and fructicolous, not usually erumpent before the limitation of the perithecia, in section homogeneous and black or dark-brown, externally dull-black and minutely roughened, bearing finally a crowded cluster of 20-50 or more perithecia. Perithecia first making their appearance through the ruptured epidermis as hemispherical protuberances on the stroma, the ascigerous cavity being partially buried and pure white within. The young perithecium cartilaginous soon attaining a characteristically conical form, the apex smooth and shining, the base rough and dull, later protruding farther and developing a cylindrical neck, which becomes clavate by the pronounced enlargement of the tip. Perithecium at maturity approximately 1 mm. in length, brittle, somewhat dumb-bell shaped, usually bent in the narrow middle portion and appearing consequently inequilateral, this being especially pronounced in those individuals borne at the margin of the stroma. The swollen apex of the perithecium at maturity flattened and deeply cleft by one to several transversely running furrows, the resulting ridges usually breaking into scales, giving the apex of the perithecium a pronouncedly shaggy appearance, finally dehiscent along the line of the middle furrow by a wide and deep slit, the two lips pulling apart and usually recurving, thus exposing the ashy to brown inner wall. Asci ovate to clavate, long-stalked, thin-walled, evanescent, paraphysate, eight-spored, 20-26 \times 34-44 μ . Ascospores when young hyaline, smooth, and by mutual pressure polyhedral; at maturity spherical, brown, thick-walled, echinulate, unicellular, 9-14 μ (mostly 12 μ) in diameter. Pycnidia sometimes developed on the stroma; pycnosporos elongated, 5-7 \times 2 μ .

126. *Calonectria capensis*, n. sp.

Parasitic on *Irene Podocarpi* on leaves of *Podocarpus elongata*, Storms River, Humansdorp District, 15.5.23, Doidge [17167].

Mycelium arachnoid, closely investing the mycelium of the *Irene* and forming a network between the hyphae of the host, dirty-white or yellowish to reddish, 1-3 μ thick, creeping, densely and intricately branched and anastomosing, usually co-extensive with the *Irene* mycelium. Perithecia few, scattered, globose, 130-200 μ diameter, membrane golden-yellow, cells irregular-polygonal, 7-10 μ diameter. Perithecial setae rather numerous, similar in colour to perithecial membrane, erect or suberect, straight or curved, not tapering, apex blunt, septate, 100-130 μ long, 5-6 μ thick. Asci numerous, fasciculate, eight-spored, narrow-clavate or cylindrical, thin-walled, rounded at the apex, tapering to the base,

83–100 × 13–16 μ . Paraphyses numerous, filiform. Spores 5–6-septate when mature, hyaline, fusoid-clavate, straight or curved, occasionally subsigmoid, tapering more gradually to the lower end, both ends obtuse, not constricted at the septa, 50–54 × 6–6.5 μ .

Calonectria capensis, Doidge, n. sp.

Mycelium in mycelio *Irene Podocarp*i parasiticum, arachnoideum, ex hyphis pallide flavidulis v. rubris, 1–3 μ latis, ramosis compositum; perithecia pauca, sparsa, globosa, 130–200 μ diametro, flava, contextu parenchymatico e cellulis polygonis, 7–10 μ diametro, pilis rectis v. curvatis, obtusis, septatis, 100–130 μ longis, 5–6 μ latis; asci fasciculati, octospori, angusti-clavati v. cylindranei, apice rotundati, 83–100 × 13–16 μ , paraphysibus numerosis filiformis; sporae hyalinae, fusoidae-clavatae, rectae v. curvatae, utrinque attenuatae sed obtusae, haud constrictae, 50–54 × 6–6.5 μ .

Hab. in foliis *Podocarp*i *elongatae*, Storms River, Humansdorp District, 15.5.23, leg. Doidge [17167].

127. **Phragmosperma Marattiae** (P. Henn.), Th. et Syd.

Ann. Myc., XIV, pp. 450–451 (461).

Syn. *Micropeltis Marattiae*, P. Henn., Hedwigia, 34, 1895; Sacc., Syll. Fung., XI, p. 382.

On leaves of *Marattia frazinea*, Winters Kloof, Natal, 13.7.11, Doidge [1632].

This fungus is taken by Theissen and Sydow (loc. cit.) as the type species of the genus *Phragmosperma* of the group *eu-Montagnelleae*. The genus is characterized by single perithecia, which are half-immersed in the leaf-tissues, without a true stroma and without an ostiole, the upper wall eventually breaking down. Asci eight-spored, paraphysate; spores hyaline, with several transverse walls.

Phragmosperma Marattiae (P. Henn.), Th. et Syd., has single perithecia, which are closely crowded and rhomboid, forming groups up to 5 mm. diameter, which are interrupted by the nerves on which no perithecia are formed; perithecia, 130–140 μ diameter, the upper part breaking out to the leaf-surface, with a papilla but no ostiole, the upper wall eventually breaking down; the wall is brown and formed of small cells. Stroma wanting, but occasionally some contact hyphae may be detected between neighbouring perithecia. Asci clavate, rounded or thickened at the apex, sessile, eight-spored, paraphysate, 50–70 × 12–15 μ . Spores mostly parallel in a single bundle, straight or somewhat oblique, tapering slightly towards each end, at first with a single medial septum, later each cell becomes further septate, not constricted, hyaline, 30–38 × 3–4 μ .

128. **Phyllachora anthistiriicola**, Syd., n. sp.

Stromata in folio decolorato evoluta, in utraque folii pagina, sed praecipue in superiore visibilia, irregulariter distributa, mox plus minus solitaria vel irregulariter aggregata, mox et saepissime dense aggregata et paginam folii superiorum fere crusta aterrima obtegentia, singula $\frac{1}{2}$ –1 mm. longa, confluyendo haud raro longiora, in epiphylo convexa, in hypophyllo plana et saepe tantum e stromate sterili contrapposito vel clypeo epidermali constantia; clypeo epiphylo aterrimo, 20–30 μ crasso; loculi pauci in singulo stromate, 200–350 μ lati, 175–200 μ alti, plerumque $\frac{2}{3}$ folii crassitudinis rarius totam crassitudinem occupantes; asci cylindranei, 70–80 × 12–16 μ , paraphysati, octospori; sporae 1–2-stichae, oblongae, plerumque obtusae, continuae, hyalinae, 11–16 × 7–9 μ ; conidia simul praesentia, filiformia, recta vel curvata, hyalina, 12–15 × $\frac{1}{2}$ μ .

Hab. in foliis *Anthistirieae imberbis*, Magaliesberg, Transvaal, 23.3.12, leg. Van der Bijl [2196].

129. **Phyllachora Chrysopogonis**, Syd., n. sp.

Stromata amphigena, per totum folium pallide decoloratum plus minus aequaliter dispersa, solitaria, vix confluentia, elliptica $\frac{1}{2}$ –1 mm. longa, convexula, 2–4 locularia, clypeo unilaterali aterrimo ca. 25 μ crasso; loculi appanati, 300–420 μ lati, 130–170 μ alti, $\frac{2}{3}$ folii

crassitudinis occupantes, parietibus brunneis, 15–20 μ crassis; asci cylindraceuti copiose paraphysati, 65–85 \times 10–14 μ , octospori; sporae plerumque monostichae, oblongae, utrinque obtusae, continuae, hyalinae, 12–15 \times 7–8 μ .

Hab. in foliis *Chrysopogonis monticola*, Armandsvlakte, Vryburg, 25.10.15, leg. Pole Evans [9302].

130. *Phyllachora Digitariae*, Syd., n. sp.

Stromata in utraque folii pagina indistincte decolorata conspicua, elliptica, $\frac{1}{2}$ –1 mm. longa, raro confluentia, leniter convexa, parum nitidula, clypeo epidermali amphigeno 20–30 μ crasso, 1–4 locularia; loculi totam folii crassitudinem occupantes, 150–200 μ lati, usque 175 μ alti, pariete 20–25 μ crasso; asci cylindraceuti, breviter stipitati, 50–65 \times 9–14 μ , copiose paraphysati; sporae monostichae vel in superiore asci parte distichae, late ellipsoideae usque subglobosae, continuae, hyalinae, 8–10 \times 7–8 μ .

Hab. in foliis *Digitariae Smutsii*, Irene, Transvaal, 1922, leg. S. Smuts [17017].

131. *Phyllachora Doidgeae*, Syd., n. sp.

Stromata amphigena, irregulariter dispersa, discreta, elliptica, $\frac{1}{2}$ –1 mm. longa, convexula, 1–4 locularia, clypeo epidermali 30–40 μ crasso aterrimo; loculi totam folii crassitudinem occupantes, 300–400 μ lati, 200–300 μ alti, parietibus 10–15 μ crassis; asci cylindraceuti, 80–100 \times 12–16 μ , copiose paraphysati; sporae monodistichae, oblongae, plerumque late rotundatae, continuae, hyalinae, 14–18 \times 8–10 μ ; loculi conidiiferi simul praesentes aequales, sed plerumque minores, 175–250 μ lati, 140–170 μ alti; conidia oblonga vel oblongo-fusoidea, utrinque obtusa vel leniter attenuata, continua, dilute fuscidula, 8–12 \times 2–3 μ , basidiis nullis.

Hab. in foliis *Andropogonis ceresiaeformis*, Durban, 7.7.11, leg. Doidge [1612]; Edendale, Natal, 26.12.11, leg. Doidge [1998].

132. *Phyllachora Leptocarydii*, Syd., n. sp.

Stromata plerumque in utraque folii pagina visibilia, per folii superficiem plus minus aequaliter distributa, $\frac{1}{3}$ – $\frac{2}{3}$ mm. longa, in epiphylo convexula in hypophylo plana et fere semper e stromate contrapposito sterili tantum constantia, pauci (1–3)-locularia, clypeo epiphylo aterrimo, 20–30 μ crasso; loculi, 100–140 μ lati, 90–120 μ alti; circiter $\frac{2}{3}$ – $\frac{3}{4}$ folii crassitudinem occupantes, pariete tenui, 10 μ crasso; asci cylindraceuti, 50–60 \times 7–11 μ , octospori, paraphysati; sporae monodistichae, ovatae vel ellipsoideo-ovatae, continuae, hyalinae, 7–10 \times 5–6 μ .

Hab. in foliis *Leptocarydii Vulpiastri*, Sydenham, Natal, 1914, leg. Franks [7814].

133. *Phyllachora Winkleri*, Syd.

Ann. Myc., X, 1912, p. 80; XIII, 1915, p. 456.

On leaves of *Paspalum scrobiculatum*, Quelimane, Mozambique, 1908, Howard [648].

Stromata convex, elliptic or oblong, often confluent, 1–3 mm. diameter, with a rough surface, lying between the vascular bundles and the upper layer of cells; the space between the bundles and the upper epidermis being filled with a perpendicular, prosenchymatous, palisade stroma, which distends the leaf to double its normal thickness. Loculi not numerous, fusing with the epidermal clypeus; in transverse section they are 340 μ in diameter and 180–200 μ high; in longitudinal leaf-sections they reach a length of 700 μ ; the wall of the loculus is sharply differentiated, brown, and in most cases formed of concentric layers of very small hyphae, 2 $\frac{1}{2}$ μ thick. Asci cylindrical, 80–120 \times 11–16 μ , briefly stipitate. Spores monostichous, broadly elliptic, one-celled, hyaline, 14–17 \times 12–19 μ . Paraphyses numerous, thread-like.

This species was originally described as occurring on *Paspalum scrobiculatum*, in German East Africa.

134. *Phyllachora sanguinolenta*, Theiss. et Syd., var. *microspora*.

Ann. Myc., XIII, 1915, p. 455.

On leaves of *Panicum minus*, Bloemfontein, April, 1917, Potts [11307].

Stromata thickly scattered on both leaf-surfaces, convex, somewhat shiny, elliptic, $\frac{1}{2}$ -1 mm. long. Epidermal clypeus $20\ \mu$ thick, on one or both sides of the leaf. Where the stroma is on only one side of the leaf, the loculi are elliptic, occupying two-thirds of the thickness of the leaf; they are numerous, and there is a stroma connecting the upper parts of the loculi. When two stromata occur on opposite leaf surfaces the loculi only reach to the middle of the leaf, and are more spherical, $240\ \mu$ diameter; the locular walls are thin and brown. Asci cylindrical, paraphysate, briefly stipitate, $60-70 \times 10-14\ \mu$. Spores obliquely monostichous, sometimes distichous, elliptic, hyaline, one-celled, $8 \times 5\ \mu$.

This is another tropical African species, originally collected on an undetermined grass in the Congo.

135. *Phyllachora Brachystegiae*, n. sp.

On leaves of *Brachystegia* sp., December, 1917, Salisbury, Rhodesia, Eyles [11680].

Stromata minute, epiphyllous, circular or broadly elliptic, black, convex, somewhat shiny, penetrating through the leaf and becoming visible on the lower surface. Each stroma has a single loculus, which is flattened-spherical, $350-370\ \mu$ diameter, $240-290\ \mu$ high, occupying the entire thickness of the leaf. Wall of the loculus light-brown, about $10\ \mu$ thick. Clypeus developed in both the upper and the lower epidermis, $400-500\ \mu$ in diameter. Asci paraphysate, cylindrical, eight-spored, $100-120 \times 13-16\ \mu$. Spores monostichous, occasionally subdistichous, one-celled, hyaline, ellipsoid, somewhat more rounded at one end than the other, $16.5-17 \times 6.5-7\ \mu$; conidia hyaline, filiform, curved, $16-20 \times 1\ \mu$.

Phyllachora Brachystegiae, Doidge, n. sp.

Stromata minuta, rotundata v. late elliptica, atra, convexa parum nitidula, in hypophyllo etiam perspicua; loculum tantum unicum, subglobosum, $350-370\ \mu$ latum, $240-290\ \mu$ altum, totem folii crassitudinem occupans, pariete tenue $10\ \mu$ crasso, clypeo epidermale amphigeno; asci paraphysati, cylindracei, octospori, $100-120 \times 13-16\ \mu$; sporae monostichae v. distichae, hyalinae, continuae, ellipticae, $16.5-17 \times 6.5-7\ \mu$; conidia hyalina, filiformia, curvata, $16-20 \times 1\ \mu$.