Cercospora species and similar fungi occurring in South Africa

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An examination of cercosporoid fungi lodged at the National Collection of Fungi revealed seven new species, one new variety, and four species that had to be allocated to other genera. Two species of Stigmina, S. curvispora and S. rhois are newly described from Rhus pyrioides and Rhus discolor, respectively, while Stigmina protearum var. protearum and var. leucodendri have been transferred to Cercostigmina, and an additional variety, var. hakeae, has been described from Hakea saligna. Cercospora kiggelariae and Cercospora psychotriicola are transferred to Pseudocercospora, and Maytenus heterophylla noted as a new host record for Stigmina celastri. Mycosphaerella maesa and its anamorph Steenella maesa, are newly described from Maesa lanceolata, while other new species include Distocercospora africana on Dioscorea sylvestica, Cercospora pseudokalanchoes on Kalanchoe rotundifolia, Mycovellosiella dombeya on Dombeya burgessiae and Pseudocercospora chyticola on Chytia cf. affinis.

Keywords: Cercospora, Distocercospora, Mycosphaerella, Mycovellosiella, Pseudocercospora, Steenella, Stigmina, systematics, taxonomy.

Cercosporoid fungi are generally associated with leaf spot diseases of a wide range of host plants covering cereals, vegetables, grasses, ornamentals and trees (Hsieh & Goh, 1990). However, several species have also been found to be beneficial, acting as potential biocontrol agents of weeds (Conway, 1976; Morris, 1989). To date, South African records of these fungi have been poorly studied. Before 1948, seven species in this group were described by Kalchbrenner, Cooke & Winter, while H. & P. Sydow described an additional 10 species, and Verwoerd & Dippenaar one (Chupp & Doidge, 1948). The most significant local contribution at this stage was that of Chupp & Doidge (1948), who listed 75 species of which 21 were new records for the country and 10 were new to science. Since then, there have been several new descriptions or reallocations of species collected in South Africa (Braun & Crous, 1992; Crous & al., 1989; Crous & Wingfield,
Following the major contribution by Chupp & Doidge (1948) towards the systematics of South African cercosporoid fungi, there have been no further attempts to revise systematically other cercosporoid material filed at the National Collection of Fungi, Pretoria (PREM). Additional research by Deighton (1967, 1971, 1973, 1974, 1976, 1979, 1982, 1987), Pons & Sutton (1988) and Braun (1988a, 1988b, 1989, 1990, 1994) concluded that the generic concept of *Cercospora* adopted by Chupp (1954) was too wide, and that it could safely be redefined and the genus split into several additional genera to provide a better workable system. Generic separations were based upon several criteria including ontogeny, pigmentation, ornamentation and thickening of conidia, conidiophores and conidiomata. Since these changes, however, there has been no attempt to revise systematically local records. The present study, therefore, represents the first in a series aimed at revising and updating local records of these important plant pathogenic fungi.

*Cercospora pseudokalanchoës* P. W. Crous & U. Braun sp. nov.


Leaf spots amphigenous, subcircular, brown, distinct, 4–10 mm diam. – Mycelium brown, internal, stroma absent or not well developed when present. – Caespituli amphigenous, brown, centered over stroma, 25–60 μm wide, 110–200 μm high. – Conidiophores fasciculate, brown, becoming olivaceous at apices, simple, straight cylindrical or slightly geniculate, with a rounded apex, 1–9-septate, 48–180 x 4–6 μm. – Conidiogenous cells brown, straight cylindrical or geniculate, with thickened scars, 20–50 x 4–5 μm. – Conidia solitary, hyaline, 55–140 x 4.5–6 μm, smooth, acicular, 5–15-septate, with obtusely rounded apices, and rounded or subtruncate bases with thickened and darkened hila (Fig. 1).

Cercospora pseudokalanchoes can easily be distinguished from C. kalanchoes Boedijn, also occurring on this host, by its longer conidiophores and shorter, wider conidia.

Cercostigmina protearum (Cooke) U. Braun & P. W. Crous comb. nov.
= Cercospora protearum Cooke, Grevillea 12: 39 (1883).

Conidia 2–6-septate, 50–80 x 5–9 μm.

Material examined. – R.S.A.: Leucospermum conocarpum, St. James, 22 Dec. 1912, PREM 5570 (isotype?), Mac Owen 1456, Herb. K (holotype); on Leucospermum sp., PREM 3929.

Cercostigmina protearum var. leucadendri (Cooke) U. Braun & P. W. Crous comb. nov.
= Cercospora protearum var. leucadendri Cooke, Grevillea 12: 39 (1883).

Conidia 1–3-septate, 25–50 x 5–7 μm.


Cercostigmina protearum var. hakeae U. Braun & P. W. Crous var. nov.

A varietate typica differt conidiis 2–9-septatis, 40–90 x 4–5 μm.

Lesions amphigenous, grey-brown, causing tip die-back of leaves. – Mycelium internal, stroma present, large, consisting of 4–9 layers of brown pseudoparenchymatous cells, 50–200 μm wide, 20–40 μm high. – Conidiomata amphigenous, sporodochial, grey-brown, 70–260 μm wide, 25–35 μm high. – Conidiophores in dense fascicles, arising from stromata, olivaceous brown, smooth to finely roughened, simple or branched at base, 1–2-septate, straight, 15–35 x 5–7 μm. – Conidiogenous cells olivaceous brown, smooth to very finely roughened, straight or rarely once geniculate, cylindrical to ampulliform, tapering to a rounded or truncate apex; monoblastic to polyblastic, proliferation 1–3 times percurrent, rarely sympodial, 7–20 x 4–7 μm; conidial scars unthickened, inconspicuous. – Conidia solitary, olivaceous brown, smooth to very finely roughened, cylindrical, straight or gently curved, apex obtusely...
Fig. 1. – *Cercospora pseudokalanchoës*. Stroma giving rise to light brown, fasciculate conidiophores and conidiogenous cells with thickened scars, forming hyaline conidia with darkened hila (PREM 51121, holotype; bar = 10 μm).

rounded, base truncate, sometimes with minute marginal frill, 2–9-septate, 40–90 x 4–5 μm (Fig. 2).


The present species was treated by Chupp (1954) under *Cercospora*. Ellis (1976) placed it in *Stigmina*. Braun (1994) separated *Pseudocercospora*-like *Stigmina* species and referred them to the new genus *Cercostigmina*. *C. protearum* is a typical *Cercostigmina*. 207
**Distocercospora africana** P. W. Crous & U. Braun sp. nov.

Maculae amphigenae, suborbitulares vel angulares-irregulares, per venas limitatae, brunneae, ca. 8–20 mm latae. Mycelium immersum; hyphae subhyalinae vel olivaceae, septatae, ramosae, ca. 1–2.5 μm latae; stromata bene evoluta, pseudoparenchymatica, modice brunnea, ca. 15–50 × 10–40 μm, substomatalia vel leniter erumpentia, stoma rumpentia. Caespituli hypophylli, modice brunnei, 40–80 x 30–40 μm. Conidiophora paуча vel saepe dense fasciculata, 15–80 x 3–10 μm, recta, subcylindrica vel modice geniculata-sinuosa, simplicia, interdum ramosa, olivacea vel brunnea, laevia, continua vel 1–2(-3)-septata. Cellulae conidioigenae in conidiophoribus incorporatae, terminaliae, sympodiales; cicatrices conidiales leniter incassatae, fuscae. Conidia solitaria, acicularia vel anguste obclavata (-subcylindrica), 30–110 x 3–5 μm, recta vel curvata, laevia, subhyalina vel olivacea, 1–5(–6) distoseptata, apice obtusa vel subacuta, basi in hilum attenuata, truncata, leniter incassata, fusca.

Leaf spots amphigenous, discrete, subcircular to angular-irregular, confined by veins, brown, ca. 8–20 mm diam. – Mycelium internal, hyphae subhyaline to olivaceous, septate, branched, ca. 1–2.5 μm diam., forming well developed stromata, consisting of medium brown, pseudoparenchymatal cells, ca. 15–50 μm wide and 10–40 μm high, origin substomatal, but often somewhat erumpent, large stromata widening and rupturing the stomata. – Caespituli hypophyllous, medium brown, 40–80 × 30–40 μm. – Conidiophores fasciculate, arising from stromata, through stomata, fascicles small and loose or dense, conidiophores 15–80 x 3–10 μm, straight and subcylindric to moderately geniculate-sinuous, simple,
occasionally branched, olivaceous to brown, smooth, shorter ones continuous, longer ones 1–2(–3)-septate. - Conidiogenous cells integrated, terminal, proliferation sympodial, with somewhat thickened and darkened conidial scars. - Conidia solitary, acicular, narrowly obclavate (-subcylindric), 30–110 x 3–5 μm, straight to curved, smooth, subhyaline to olivaceous, 1–5(–6)-distoseptate, apex obtuse to subacute, base obconically truncate, with slightly thickened and darkened hila (Fig. 3).


This species is characterized by its distoseptate conidia. Therefore, it must be placed in the recently introduced genus
**Distocercospora** N. Pons & B. Sutton (1988). It is close to *D. pachyderma* (Syd. & P. Syd). N. Pons & B. Sutton, the type species. This species is a common, widespread pathogen of various *Dioscorea* species, but differs from the present species by much longer, frequently branched conidiophores and verruculose conidia with thicker walls.

**Mycosphaerella maesae** P. W. Crous & U. Braun sp. nov.

Maculae plerumque hypophyllae, irregularae, diffusae, medio-brunneae, 6–15 mm diam. Ascarpēi amphigeni, plerumque hypophylli, nigri, aequaliter dispersi, immersi, 70–80 μm lati, 70–90 μm alti, ostiolis papillatis, 5–13 μm diam.; parietes medio-brunnei constiti sunt ex 3–4 stratis cellularum textura anguli. Asci a paraphysati, fasciculati, bitunicati, subsessiles, cylindrici, recti vel incurvi, 30–45 x 6–8 μm. Ascosporae bi vel irregulariter dispositae, oblique, imbricatae, hyalinae, guttulatae, tenuitunicatae, latissimae in media parte cellularum apicalium, attenuatae prominentius ad extremum alterum, non colligatae ad septum medium, 7–9 x 2–3.5 μm.

Leaf spots predominantly hypophyllous, irregular, diffuse, medium brown, 6–15 mm diam. - Ascarps amphigenous, predominantly hypophyllous, black, evenly dispersed, immersed, 70–80 μm wide, 70–90 μm high, ostiole papillate, 5–13 μm diam.; walls medium brown, consisting of 3–4 cell layers of textura angularis. - Asci a paraphysate, fasciculate, bitunicate, subsessile, cylindrical, straight or incurved, 8-spored, 30–45 x 6–8 μm. - Ascospores bi- to multiseriate, oblique, overlapping, hyaline, guttulate, thin-walled, widest in mid section of apical cells, tapering more prominently to one end than the other, not constricted at the median septum, 7–9 x 2–3.5 μm (Fig. 4).


A species of *Stenella* was found to occur on lesions in association with ascomata of *Mycosphaerella maesae*, with conidiogenous cells frequently developing from hyphae originating from old pseudothecia.

**Stenella maesae** P. W. Crous & U. Braun sp. nov.

Maculae saepe hypophyllae, irregularae, diffusae, modice brunneae, 6–15 mm diam. Mycelium primarium immersum; hyphae olivaceae, ramosae, septatae, 1.5–2 μm latae; mycelium secundarium superficiale; hyphae olivaceae, ramosae, septatae, 1.5–3 μm latae, leniter verruculosae. Coloniae amphigenae, saepe hypophyllae. Conidiophora ex hyphis mycelialibus secundariis terminaliter et
Fig. 4. – *Mycosphaerella maesae* and its anamorph, *Stenella maesae*. A, Asci and ascospores; B, conidiogenous cells with thickened, pigmented scars, arising from verruculose hyphae, giving rise to chains of conidia with thickened hila (PREM 51114b, holotype; bar = 10 μm).
lateraliter producta, olivacea, laevis vel leniter verruculosa, recta vel leniter geniculata, 7-15 x 2-4 μm; cicatrices conidiales conspiciue, incrassatae, fuscae. Conidia solitaria, catenata vel ramicatenata, pallide olivacea, laevia, acicularia vel cylindrica-obclavata, hila incrassata, fusca, 1-15-septata, recta vel curvata, apice obtusa, basi in hilum attenuata, truncata, 20-220 x 2-2.5 μm.

Leaf spots as for M. maesa. – Mycelium internal, secondary mycelium external, olivaceous, branched, septate, 1.5-3 μm wide, minutely verrucose. – Colonies amphiogenous, preponderantly hypophyllous, external hyphae associated with stomata. – Conidiophores reduced to conidiogenous cells. – Conidiogenous cells integrated, borne terminally or as mere short lateral projections on the external hyphae, or germinating mature conidia, olivaceous, smooth to finely roughened, straight or slightly geniculate, 7-15 x 2-4 μm; conidial scars conspicuous, thickened and darkened. – Conidia occurring singly or in simple or branched chains of up to three levels per chain, pale olivaceous, smooth, acicular to cylindrical at the upper, larger end of the range, obclavate at the lower end of the range, hila thickened and darkened, 1-15-septate, straight or curved, with obtuse apices and long obconically truncate bases, 20-220 x 2-2.5 μm (Fig. 4).


As far as we could establish no species of Mycosphaerella and only one species of Stenella, namely S. embeliae A. N. Rai & Kamal, is known from the Myrsinaceae (Rai & Kamal, 1989). The latter is easily distinguished from S. maesa by having unbranched chains of dark olivaceous, verruculose conidia, 14-145 x 3.5-7 μm, being much wider than those of S. maesa.

Mycovellosiella dombeya P. W. Crous & U. Braun sp. nov.

Maculae amphiogenous, suborbiculares vel leniter angulares-irregulares, 4-20 mm diam., bruneae. Mycelium primarium immersum; hyphae hyalinae, septatae, leniter ramosae, ca. 1-3 μm latae; mycelium secundarium superficiale, ex hyphis deorsum fere incoloribus, sursum pallide olivaceis, parce ramosis, septatis, 1-5 μm latis, laevis, assurgentibus, saepe funicularibus vel piloso foliorum scendentibus, compositum. Conidiophora (vel cellulae conidiogenae) lateralia vel terminalia, subcylindrica vel leniter geniculata-sinuosa, simplicia, 5-35 x 2-6 μm, subhyalina vel pallide olivacea, 0-2-septata, laevia; cicatrices conidiales incrassatae, fuscae. Conidia solitaria, acicularia, 30-180 x 4-6 μm, 1-10-septata, hyalina, leavia, apice obtusa vel subacuta, basi in hilum attenuata, truncata, incrassata, fusca.

Leaf spots amphiogenous, subcircular to somewhat angular-irregular, 4-20 mm diam., brown, margin indefinite. – Primary
mycelium internal, hyaline, septate, sparsely branched, smooth, 1–3 μm wide; secondary mycelium external, creeping, assurgent, especially climbing leaf hairs, often closely appressed, forming ropes, hyaline or subhyaline, becoming pale olivaceous when they bear conidiophores, 1–5 μm wide, sparsely branched, smooth. – Conidiophores reduced to conidiogenous cells or one or two supporting cells. – Conidiogenous cells lateral and terminal, subcylindric to somewhat geniculate-sinuous, simple, 5–35 x 2–8 μm,
subhyaline to pale olivaceous, 0–2-septate, smooth, conidial scars thickened and darkened. — Conidia solitary, acicular, 30–180 x 4–6 μm, 1–10-septate, hyaline, smooth, apex obtuse to subacute, base obconically truncate, hila thickened and darkened (Fig. 5).


This species is a typical Mycovellosiella with assurgent secondary hyphae, climbing leaf hairs and forming ropes. The acicular, hyaline Cercospora-like conidia are, however, unusual. In this respect, M. dombevae is close to M. abscondita Deighton (1974).

Pseudocercospora cluticiola P. W. Crous & U. Braun sp. nov.


Leaf spots amphigenous, discrete, subcircular, brown, 1–3 mm diam. — Mycelium internal, forming intraepidermal stromata, olivaceous brown. — Caespituli epiphylli, 40–65 μm wide and 15–20 μm high, pale olivaceous. — Conidiophores fasciculate, simple, 5–25 x 3–4.5 μm, 1–2-septate, pale olivaceous, paler towards the apex, straight, subcylindric to geniculate-sinuous, smooth. — Conidiogenous cells integrated, 10–20 x 3–4 μm, faintly olivaceous, monoblastic, polyblastic, occasionally with 1–2 percurrent proliferations; conidial scars inconspicuous, unthickened. — Conidia solitary, cylindrical to obclavate, mildly to prominently curved, 65–110 x 3.5–4 μm, 8–15-septate, pale olivaceous, apex obtuse, base truncate (Fig. 6).


Pseudocercospora cluticiola can be distinguished from P. cluytiae (Kalchbr. & Cooke) Deighton by its clearly defined dark brown lesions, epiphyllous conidiomata, as well as its longer, 8–15-septate, curved conidia, which are often aggregated in white cirri.
Fig. 6. - *Pseudocercospora cluiticola*. Stroma giving rise to fasciculate conidiophores and conidiogenous cells with 1-2 percurrent proliferations and olivaceous conidia (PREM 32896, holotype; bar = 10 μm).

*Pseudocercospora kiggelariae* (Syd.) P. W. Crous & U. Braun comb. nov.


Leaf spots epiphyllous, discrete, subcircular to irregular, dark brown, becoming light brown to greyish white towards the centre, 2–10 mm diam., frequently becoming confluent and larger, with narrow, dark brown margins. - *Mycelium* internal, forming well developed intraepidermal stromata, ca. 25–50 μm diam., dark brown. - *Caespituli* epiphyllous, punctiform, dark brown, 50–115 μm wide and 60–80 μm high. - *Conidiophores* arising from stromata, in dense fascicles, subcylindric, ampulliform to slightly geniculate-sinuous, 5–35 x 2.5–6 μm, light brown to olivaceous brown, 0–1-septate. - *Conidiogenous cells* monoblastic to polyblastic, sympodial, rarely with 1–3 percurrent
Fig. 7. — *Pseudocercospora kiggelariae*. Conidiophores arising from an intraepidermal stroma, giving rise to faintly roughened, olivaceous conidia (PREM 51111; bar = 10 μm).

proliferations; conidial scars unthickened, inconspicuous. — *Conidia* solitary, obclavate-subcylindrical, often curved, 15–75 x 3–6 µm, olivaceous to pale brownish, 1–7-septate, smooth to faintly rough, apex obtuse, base subtruncate, unthickened (Fig. 7).


*Pseudocercospora kiggelariae* occurs quite commonly on leaves of *Kiggelaria africana* which is indigenous to the Stellenbosch area. Because of its olivaceous conidiophores, conidia and inconspicuous, unthickened points of attachment to the conidiogenous cells, *Cercospora kiggelariae* is transferred to *Pseudocercospora*.

*Pseudocercospora psychotriicola* (Chupp & Doidge) P. W. Crous & U. Braun comb. nov.

= *Cercospora psychotriicola* Chupp & Doidge, Bothalia 4: 891 (1948) (as *psychotriaecola*).
Leaf spots amphigenous, discrete, circular to irregular, dark brown, 5–30 mm diam. – Mycelium internal, stromata well developed. – Cae spitu li predominantly hypophyllous, dark brown, 30–80 μm wide, 40–70 μm high. – Conidiophores olivaceous-brown, smooth, straight to slightly geniculate-sinuous, 0–5-septate, 5–75 x 4–6 μm. – Conidiogenous cells olivaceous, integrated, polyblastic, sympodial, occasionally with 1–3 percurrent proliferations, 10–25 x 3–5 μm; conidial scars unthickened, inconspicuous. – Conidia solitary, olivaceous, smooth to finely roughened, cylindrical to narrowly obclavate, straight to curved, with an obtuse apex and obconically truncate unthickened base, indistinctly 2–10-septate, 35–110 x 3–4 μm (Fig. 8).

Pseudocercospora psychotriicola has olivaceous conidiophores
and conidia and unthickened scars on the conidiogenous cells,
characteristics typical of species of Pseudocercospora. In the original
description Chupp & Doidge (1948) state that conidia are indistinctly
multiseptate, narrowly obclavate, and 40-120 x 2-4 μm. An
examination of the type collection (PREM 32773) detected only small-
er 2-6-septate conidia up to 75 μm in length. A more recent collection
of the fungus (PREM 51119), however, contained indistinctly 2-10-
septate conidia up to 115 μm in length.

Of the other cercosporoid fungi described from Psychotria, the
name Cercospora psychotriicola Chupp & Viegas (1945) is a later
homonym of Cercospora psychotriicola Sawada (1944). However, these
two names represent two distinct fungi; that proposed by Viegas
(1945) is a non-fasciculate species whereas the present species has
well developed fascicles. C. psychotriicola Chupp & Viegas will,
therefore, be treated elsewhere.

An examination of Sawada's original collection of Cercospora
psychotriicola deposited at NTU-PPE found it to be devoid of fungal
material (Hsieh & Goh, 1990). P. psychotriicola closely fits C.
psychotriicola Sawada in symptom expression (lesion colour and size),
conidioma, conidiophore and conidium size, septation and pigmen-
tation. In the original description of C. psychotriicola (Sawada, 1944),
conidiophores and conidia are described as being subhyaline to pale
olivaceous, which corresponds with that of P. psychotriicola. How-
ever, the name C. psychotriicola was never validly published because of
the omission of a Latin diagnosis (Article 36.1 of the ICBN), and will,
therefore, not be considered further.


Leaf spots amphigenous, discrete, circular to irregular, dark
brown at margin, becoming lighter towards the centre, 2-15 mm diam.
- Mycelium mostly internal, stroma consisting of 3-5 layers of
dark brown pseudoparenchymatal cells, 30-70 μm wide, 30-50 μm
high. - Conidiomata amphigenous, predominantly hypo-
phyllous, fasciculate, situated over stomata, dark brown, 70-90 μm
wide, 50-80 μm high. - Conidiophores brown, verruculose,
straight or curved, 1-3-septate, 25-75 x 6-7 μm. - Conidio-
genous cells light brown, verruculose, straight, curved or once
genicate, tapering to a bluntly rounded or subtruncate apex with
1-5 irregular, percurrent proliferations, seldomly sympodial, 8-35 x
6-6.5 μm. - Conidia medium brown, verruculose, cylindrical to
acicular or obclavate at the extreme larger end of the range, 2-9-sep-
tate, with a rounded apex and subtruncate base at the smaller end of
Fig. 9. — *Stigmina celastri*. A, Conidiophores and conidiogenous cells with enteroblastic proliferations and verruculose conidia (PREM 51110); B, verruculose, medium brown conidia (PREM 51125; bar = 10 μm).

the range, and a narrowly obtuse apex and long obconically truncate base at the larger end of the range, 25–110 x 5–6.5 μm, marginal basal frill present (Fig. 9).


The present collections do not fully agree with Ellis' (1976) description of *S. celastri*. The variability of these collections is, however, not known. Therefore, we prefer to refer the present specimens tentatively to *S. celastri*. This species is an intermediate between *Cercostigmina* U. Braun and *Stigmina*. The irregular
annellations and verrucose conidiogenous cells suggest *Stigmina*. *S. celastrri* is known from two new collections on *Maytenus heterophylla*, which is a new host record. The specimen collected from the Transvaal (PREM 51110), has, on average, shorter conidia with less septa than that of the second sample collected from the Natal Province (PREM 51125). However, the leaf symptoms, mode of conidiogenesis and other characters correspond well with these two collections. It is clearly noticeable that conidia are darker and more verrucose when they are small, and become hyaline and finely roughened, rather than verrucose, with an increase in length. Likewise, conidial septation was also observed to increase. This variation is very prominent, and had both types of conidia not been present in the same conidioma, a case could surely be argued that this was in fact more than one species.

*Stigmina curvispora* P. W. Crous & U. Braun sp. nov.


Leaf spots amphigenous, discrete, subcircular to irregular, dark brown, 2–10 mm diam. – *Mycelium* internal, composed of smooth, dark brown hyphae, forming brown substomatal stromata, 60–80 μm wide, 10–20 μm high, composed of brown aggregated pseudoparenchymatal cells. – *Conidiomata* epiphyllous, sporodochial, brown, 70–90 μm wide, 30–50 μm high. – *Conidiophores* in dense fascicles arising from stromata, brown, verruculose, either reduced to the occasional supporting cell at one extreme, or elongated, 1–3-septate in the other, 10–60 x 4–6 μm. – *Conidiogenous cells* integrated, brown, doliiform to cylindrical, straight, occasionally geniculate, verruculose, producing conidia by enteroblastic percurrent proliferation and resulting in the formation of up to 4 transverse, verruculose, irregular annellations, 20–50 x 6–10 μm. – *Conidia* solitary, apical, pale brown, 85–180 x 5.5–12 μm, verruculose, (4–)7–9-septate, obclavate, strongly curved with a long, thin, truncate basal cell, occasionally with a minute marginal frill terminating in an obtuse apex (Fig. 10).

Because of its verrucose conidiophores and conidiogenous cells that proliferate enteropercurrently, this collection can be referred to Stigmina Sacc. It is distinct from all other species known to occur on this host (Ellis, 1976).

Stigmina rhois P. W. Crous & U. Braun sp. nov.

Maculae epiphyllae, orbiculares vel irregulares, atro-brunneae, 4–20 μm diam. Mycelium immersum; hyphae modice brunneae, ramosae, septatae; stromata bene evoluta, brunnea, substomatalia. Sporodochia epiphylla, atro-brunnea, 55–100 x 35–70 μm. Conidiophora dense fasciculata, 1–2-septata, brunnea, recta vel leniter
geniculata-sinuosa, verruculosa, 30-50 x 5-8 μm. – Cellulae conidiogenae integratae, 20-30 x 5-7 μm, bruneae, ampulliformiae vel cylindricae, verruculose, enteropercurrentes. Conidia solitaria, 45-130 x 6-8 μm, modice brunea, verruculosa, (7–)9(–10) septata, obclavata, recta vel leniter curvata, apice rotundata, basi truncata.

Leaf spots epiphyllous, associated with discrete, circular to irregular, dark brown lesions, 4–20 mm diam. – Mycelium internal, composed of medium brown, branched, septate hyphae, forming well developed, brown, substomatal stroma. – Conidiomata centered over stomata, epiphyllous, sporodochial, dark brown, 55–100 μm wide, 35–70 μm high. – Conidiophores densely fasciculate, 1–2-septate, brown, straight or slightly geniculate-sinuous, verruculose, 30–50 x 5–8 μm. – Conidiogenous cells integrated, brown, ampulliform to cylindric, verruculose, producing conidia by enteroblastic percurrent proliferation to form up to 5 transverse, verruculose, irregular annellations, 20–30 x 5–7 μm. – Conidia solitary, 45–130 x 6–8 μm, apical, medium brown, verruculose, (7–)9(–19)-septate, obclavate, straight or curved, apex obtuse, base truncate, occasionally with a minute marginal frill (Fig. 11).

Stigmina rhois differs from Stigmina pulviniformis (Syd.) S. Hughes, known from South Africa on Rhus tomentosa, by its much longer, multiseptate conidia (Ellis, 1976).

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References


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