

# CERCOSPORA SPECIES RECORDED FROM SOUTHERN AFRICA.

By Charles Chupp and Ethel M. Doidge.

Published records of the genus *Cercospora* in Southern Africa consist of a small number of descriptions of species on indigenous plants and scattered references, in lists of plant diseases, to species on plants in cultivation. Judging from specimens in the Cryptogamic Herbarium, Pretoria, the latter have not always been identified correctly. In the following pages 25 species on cultivated plants are listed; these are mostly cosmopolitan, or at least occur commonly in tropical and subtropical countries; several are recorded for the first time from Southern Africa.

No systematic collections have been made of fungi causing leaf spots on indigenous plants. Seven species of *Cercospora* were described by Kalchbrenner, Cooke and Winter from material collected by MacOwan and Medley Wood; in later years, H. and P. Sydow described 10 species and *Cercospora Oliniae* was described by Verwoerd and Dippenaar. A considerable quantity of material in the Pretoria Herbarium had not been studied; unfortunately much of this is in poor condition and could not be identified, but an examination of leaves with lesions on which acervuli of *Cercospora* have developed has revealed a number of unrecorded species. It has been deemed advisable, therefore, to bring together all records of *Cercospora* spp. known to occur in Southern Africa.

In the following pages 75 species are listed; 25 occur on cultivated plants and the remainder on plants indigenous to South Africa; of the latter 18 were previously recorded from South Africa, 21 are species known in other parts of the world and 10 are described as new. The species are arranged in alphabetical order.

## ***Cercospora Apii* Fresen.**

Beiträge z. Mykol. 3 (1863), p. 91, Taf. XI, Figs. 46-54.

on *Apium graveolens* Linn. var. *dulce* D.C., Cedara, Natal, 2099.

## ***Cercospora arachidicola* Hori.**

Ann. Rept. Nishigara Agric. Exp. Sta., Tokyo (1917), p. 26.

on *Arachis hypogaea* Linn., Gwebi and Salisbury, *Eyles* 4987, 5001 (Rh. 481, 836, 2122); Bindura, *Hopkins* (Rh. 1619); Marandellas, *Hopkins* (Rh. 1474).

## ***Cercospora Argyrolobii* Chupp et Doidge nov. spec.**

Maculae amphigenae, per folium irregulariter dispersae, irregulares vel angulatae, sordide brunneae, minutae v. effusae, haud acutae definitae. Caespituli amphigeni, plerumque epiphylli, minuti, laxe dispersi, atro-olivacei, in tomento denso folii absconditi. Hypostroma nullum v. minutum, sub epidermide innatum, irregulariter rotundatum, usque 40  $\mu$  diam., subhyalinum, contextu molliusculo indistincte parenchymatico. Conidiophora per stomata folii emergentia, haud vel plus minus fasciculata, pallide v. modice brunnea, ad apicem pallidiora, crassitudine irregularia, distincte creboque septata, saepe ad septa constricta, varie curvata v. tortuosa, raro geniculata, ramosa, 20-100  $\mu$  longa, 4-6.5  $\mu$  crassa, cicatrice conidii minuta ad apicem obtuse rotundatum v. conicum praedita. Conidia pallide v. modice olivaceo-brunnea, obelavata v. obelavato-cylindracea, breviora interdum cylindracea, recta v. leniter curvata, distincte 3-13-septata, interdum ad septa constricta, basi subtruncata vel ad basim obconice truncatam sensim attenuata, apice plerumque obtusa, 15-110  $\mu$  longa, 4-6.5  $\mu$  crassa.

Hab. in foliis *Argyrolobii Wilmsii* Harms, Nelspruit, leg. L. C. C. Liebenberg, 26075.

**Cercospora Bauhiniae** H. and P. Syd.

Ann. Myc. 12 (1914), p. 202.

*Cercospora latimaculans* Wakefield, Kew Bull. 1918, p. 210.

on *Bauhinia Galpini* N.E. Br., leaves, Tzaneen, *Liebenberg*, 32734; Nelspruit, *Liebenberg*, 26075; Schagen. *Liebenberg*, 32879.

**Cercospora beticola** Sacc.

Nuovo Giorn. Bot. Ital. 8 (1876), p. 189.

*Cercospora flagelliformis* Ell. et Halsted, N. Jersey Ann. Rept. for 1890 (1891), p. 355.

*Cercospora Spinaciae* Oud., Nederl. Kruidk. Arch. III, 2 (1900), 314.

*Cercosporina spinacicola* Sacc., Nuov. Giorn. Bot. Ital. N.S. 22 (1915), 73.

on *Beta vulgaris* L., leaves, Pretoria, 661, and *Naudé*, 27574; Pyramids, *Bottomley*, 30933; Potchefstroom, 23494; Schagen. *Liebenberg*, 26180; Kentani, *Pegler* 2389, 9429; Natal, without locality, 1078; Cedara, *Staples*, 15430; Maritzburg, *Erxleben*, 17006, 17008; Thornville Junction, *Slatter*, 23180; Bloemfontein, *Verwoerd*; Stellenbosch, *van der Byl* 1159; Stellenbosch, Kuilsrivier, Wynberg, Dieprivier, Paarl and Wellington, *Verwoerd*; Avondale (Rh. 711); Salisbury (Rh. 1742).

*Beta vulgaris* L. var. *Cicla* L., Pretoria, *Wager*, 23218 and *Naudé*, 27574.

**Cercospora Byliana** H. Syd.

Ann. Myc. 22 (1924) 433.

on *Allamanda cathartica* L., leaves, Tzaneen, *van der Byl* 1508, Co-type, 34277.

**Cercospora caffra** H. et P. Sydow.

Ann. Myc. 12 (1914), 267.

on *Sclerocarya caffra* Sond., leaves, Nelspruit, *Hall*, 6618, Co-type; Schagen, *Liebenberg*, 26353.

**Cercospora canescens** Ell. et Mart.

American Naturalist 16 (1882), 1001.

on *Dolichos biflorus* L., leaves, Salisbury (Rh. 2143).

*Dolichos* sp., Nelspruit, *Liebenberg*, 26070.

*Phaseolus vulgaris* L., Salisbury, *Eyles* 4999 (Rh. 1798, 1987).

Rhodesian records fide Hopkins in Proc. Rhod. Sc. Ass. 35 (1938), 122. The numbers in parentheses, with the letters Rh., are those of the Mycological Herbarium of the Department of Agriculture, Salisbury, Southern Rhodesia.

**Cercospora Caryae** Chupp et Doidge nov. spec.

Maculae amphigenae, per folium plus minus dense dispersae, irregulares, primitus minutae, 0.5-2 mm. diam., mox confluentes, plus minus effusae et saepe magnam folii partem occupantes, sordide brunneae, in epiphyllis tandem centro albicantes, saepe venulis foliis imitatae. Caespituli epiphylli, minuti, densi, laxe v. densiuscule dispersi, vix perpicuis, atro-olivacei. Hypostroma innato-erumpens, obscure v. olivaceo-brunneum, irregulariter rotundatum, 15-60  $\mu$  diam., laxe e cellulis rotundato-angulosis plerumque sat distinctis, 4-5  $\mu$  diam., metientibus compositum. Conidiophora dense caespitosa, simplicia,

haud geniculata, subrecta, 15-80  $\mu$  longa, 1-4-septata, saepe ad septa constricta, basi pallide brunnea, 4-6  $\mu$  lata, interdum usque 8  $\mu$ , apice obtuse rotundata pallidiora v. subhyalina. Conidia hyalina v. subhyalina, acicularia v. obelavata, recta v. lenissime curvata, pluriseptata, 20-75  $\mu$  longa, basi truncata v. subtruncata, 2.5-4  $\mu$  crassa, sursum ad apicem subacutum sensim attenuata.

Hab. in foliis *Caryae Peran* Aschers, et Graebn., Alkmaar, 25441 Type; Plaston, leg. Wager, 28264.

**Cercospora Cassinopsidis** Wint.

Hedwigia 24 (1885), 34.

on *Cassinopsis capensis* Sond., Somerset West, *MacOwan*.

Type specimen not seen.

**Cercospora circumscissa** Sacc.

Fungi veneti novi vel critici, Ser. V. in Nuovo Giorn. Bot. Ital. VIII (1876), 189;

Fung. Ital. autographice delineati, Fig. 659 (1881).

on *Prunus avium* L., leaves, Kingwilliamstown, *Dreyer*, 1187.

**Cercospora Clerodendri** Miyake.

Bot. Mag. Tokyo 27 (1913) 53, Tab. i, Figs. 20-21.

on *Clerodendron myricoides* R. Br. var. *cuneatum*, Nelspruit, *Liebenberg*, 26012.

The type of this species was not obtainable, so that the diagnosis is not absolutely certain; the fungus is distinct from *C. Bakeri* Syd. and from *C. Kashotoensis* Yam.

**Cercospora Cluytiae** Kalchbr. et Cooke.

Grevillea 9 (1880), 24.

on *Cluytia pulchella* L., leaves, Somerset East, *MacOwan* 1352, Kew, Type.

**Cercospora coffeicola** Berk. et Cooke.

Grevillea 9 (1881), 99.

*Cercospora Coffeae* Zimm., Ber. Land. u. Forstwirtsch. in Deutsch-Ostafrika (1904) 35.

*Cercospora Herrerana* Farneti, Atti Ist. Bot. di Pavia 9 (1904), 13.

on *Coffea* sp., leaves, Nelspruit, *Liebenberg*, 26022; Concession (Rh. 907); Umtali (Rh. 912, 2735, 2946).

**Cercospora columnaris** Ell. et Everh.

Proc. Acad. Nat. Sci. Phil. (1894), Pt. III, p. 380.

*Isariopsis griseola* Sacc., *Michelia* 1 (1878), 273.

*Cercospora Stuhlmanni* P. Henn., Engl. Bot. Jahrb. 28 (1904), 40.

on *Phaseolus vulgaris* L., Pretoria, *Doidge*, 11387; Barberton, *Watts*, 15; Winkle Spruit, *Doidge*, 2504; Southern Rhodesia, *Hopkins*.

**Cercospora Commelynae** Kalchbr. et Cooke.

Grevillea 9 (1880) 24.

on *Commelina benghalensis* Linn., Somerset East, *MacOwan* 1346, Kew, Type.

*Commelina* sp., Stella Bush, Durban, *Marriott*, 32777.

**Cercospora Corchori** Sawada.

Agric. Exp. Sta., Formosa 1 (Special Bull. 19) (1919) 37, 667.

on *Corchorus tridens* Linn., Nelspruit, *Liebenberg*, 26001, 26309.

*Cercospora Corchori* has hyaline, acicular conidia. In the other species of *Cercospora* on this host genus conidia are coloured, not acicular.

**Cercospora cruenta** Sacc.

Michelia 2 (1880), 149.

on *Phaseolus vulgaris* Linn., Cedara, *Staples*, 15428; Potchefstroom, 23497; Southern Rhodesia, *Hopkins*.

**Cercospora Curtisiae** Chupp et Doidge nov. spec.

Maculae amphigenae, distinctissimae, irregulariter sparsae, suborbiculares v. irregulares, saepe angulatae, 2-4 mm. diam., obscure castaneo- v. purpureo-brunneae, saepe venulis folii limitatae, nonnunquam zonula rufo-brunnea circumdatae. Caespituli semper hypophylli. Conidiophora interdum dense fasciculata, in hypostromate rotundato obscure brunneo v. fere atro, 20-60  $\mu$  diam., indistincte parenchymatico orta, plerumque solitaria in hyphis ramosis procumbentibus oriunda, subhyalina v. pallide olivacea, continua, 15-70  $\mu$  longa, 2.5-4  $\mu$  crassa, raro septata v. geniculata, apice obtuse rotundata, haud attenuata, cicatricibus apicalibus conidiorum minutis. Conidia subhyalina v. pallide olivacea, obclavato-cylindracea, recta v. leniter curvata, obscure pluriseptata, basi obconice truncata, apice conica v. obtusa, 20-75  $\mu$  longa, 2.5-4  $\mu$  crassa.

Hab. in foliis *Curtisiae fagineae* Ait., Knysna, leg. Reinecke, 32C77.

**Cercospora delicatissima** Kalchbr. et Cooke.

Grevillea 9 (1880), 24.

*Asteroma pullum* Kalchbr. in von Thümen, Flora 59 (1875), 380.

on *Priva Meyeri* Jaub. et Spach. (= *Priva dentata* Juss.) Boschberg, *MacOwan 1109*, 22013, Kew.

The spores of this species are hyaline, as shown by the type at Kew and the co-type at Berlin and Pretoria; it must therefore be transferred to the genus *Cercospora* as ***Cercospora delicatissima*** (Kalchbr. et Cooke) Chupp nov. comb.

**Cercospora Demetrianana** Wint.

Hedwigia 23 (1884) 170.

on *Crotalaria intermedia* Kl., Nelspruit, *Liebenberg*, 25970.

*Crotalaria juncea* Linn., Nelspruit, *Liebenberg*, 26676.

**Cercospora Dissotidis** Chupp et Doidge nov. spec.

Caespituli semper hypophylli, sine maculis sed decolorationes griseolas v. brunneolas indeterminatas interdum efficientes, plerumque dense aggregati et græges irregulariter angulatos, 2-10 mm. longos formantes, olivacei v. olivaceo-brunnei, inter pilos stellatos folii absconditi. Hypostroma nullum. Conidiophora plerumque haud fasciculata, solitaria, in hyphis ramosis, procumbentibus oriunda, 10-70  $\mu$  longa, crassitudine irregularia, 4-6  $\mu$  crassa, pallide olivacea v. fuliginea, parce septata, raro geniculata, apice obtuse rotundata, cicatrice unica conidii apicali parvula praedita. Conidia pallide v. pallidissime fuliginea, cylindracea, recta v. leniter curvata, 1-5-plerumque 3-septata, basi sensim obconice attenuata, apice obtusa, 20-55  $\mu$  longa, 4.5-6  $\mu$  crassa.

Hab. in foliis *Dissotidis incanae* Triana, Tweedie, Natal, leg. A. O. D. Mogg, 11651.

**Cercospora Dovyalidis** Chupp et Doidge nov. spec.

Maculae amphigenae, distinctissimae, irregulariter sparsae, primitus orbiculares v. ellipticae, dein interdum irregulares, 5–12 mm. diam., subacute definitae, distincte zonatae, zonulis irregulariter concentricis brunneo-griseis usque atro-brunneis, in hypophyllo haud raro linea elevata limitatis. Caespituli amphigeni, densi v. densissimi, in hypophyllo magis evoluti, per maculas irregulariter dispersi. Hypostroma in et sub epidermide innatum, breviter cylindraceum, 15–60  $\mu$  diam., erumpens, parenchymatice e cellulis angulatis, 2·5–5  $\mu$  crassis. 5–7·5  $\mu$  longis, pallide olivaceo-brunneis compositum. Conidia in cellulis superioribus hypostromatum leniter elongatis, 12–15  $\mu$  vel usque 30  $\mu$  longis, basi pallide olivaceo-brunneis ca. 4  $\mu$  crassis, sursum leniter attenuatis et pallidioribus, simplicibus, rectis, haud septatis, cicatricibus indistinctis oriunda. Conidia subhyalina v. pallide olivacea, filiformi-cylindracea, recta, curvata v. undulata, mox non, mox apicem conice acutum versus lenissime attenuata, pluriseptata, haud constricta, ad basim truncatam v. subtruncatam non v. sensim obconice attenuata, 35–95  $\mu$  longa, 2·5–4  $\mu$  crassa.

Hab. in foliis *Dovyalidis Zeyheri* Warb., prope Pretoria, leg. Doidge, 7398.

**Cercospora egenula** (H. Syd.) Chupp et Doidge nov. comb.

*Cercoseptoria egenula* H. Sydow, Ann. Myc. 33 (1935), 235.

on *Solanum panduraeforme* E. Mey., Nelspruit, *Liebenberg*, 25999, Co-type.

The genus *Cercoseptoria* is based on "dense fascicles of very short conidiophores" or almost sessile conidia. The length of the conidiophore is such a relative thing that fully half of the proposed species might be doubtful. Consequently all *Cercoseptoria* species with coloured conidiophores are considered by the senior author (C. Chupp) as being *Cercospora* spp.

**Cercospora Faureae** Chupp et Doidge nov. spec.

Maculae suborbiculares, 2–8 mm. diam., fusco-cinerascentes, linea purpurea usque brunnea cinctae, nonnunquam zonatae. Caespituli epiphylli, minuti, atri, perspicui, oculo nudo visibiles. Stromata prominentia, globulosa, atra, 50–200  $\mu$  diam. Conidiophora densissime fasciculata medie usque obscure olivaceo-brunnea, colore aequalia, crassitudine irregularia, parce septata, simplicia, haud geniculata, varie curvata v. flexa, apice obtuse rotundata, 10–45  $\mu$  longa 3·5–5  $\mu$  crassa. Conidia pallidissime olivacea, cylindracea, recta v. subrecta, 3–5-septata, basi obconice truncata, apice obtusa, 20–50  $\mu$  longa, 3–5  $\mu$  crassa.

Hab. in foliis *Faureae speciosae*, Concession, S. Rhodesia, leg. J. C. Hopkins (Rh. 1620).

The prominent stromata and very dense fascicles resemble somewhat *Cercospora Protearum* Cooke, but in Cooke's species the conidia are medium dark olivaceous and measure 30–65  $\times$  6–8  $\mu$ . The two fungi differ also in other characteristics.

**Cercospora Fici** Heald et Wolf.

Mycologia 3 (1911), 16.

? *Cercospora Fici-Caricae* Sawada, Dept. Agr. Res. Inst. Formosa 11 (1922), 151.

*Cercospora ficicola* v. Bond-Mont., Acta Inst. Bot. Acad. Sci. URSS. II, 3 (1936), 755.

on *Ficus Sycomorus* L., Nelspruit, *Liebenberg*, 26345.

This collection has shorter conidia than the type, but in other respects resembles it.

**Cercospora fukushiana** (Matsuura) Yam.

Journ. Plant Protection 14 (1927), 699.

*Cercosporina fukushiana* Matsuura, Trans. Tattori Soc. Agr. Sci. Japan 1 (–1928), 83.

on *Impatiens balsamina* Linn., Salisbury, S. Rhodesia, *Hopkins* (Rh. 4472), 34273.

**Cercospora fusimaculans** Atk.

Journ. Elisha Mitchell Sc. Soc. 8, Pt. 2 (1892), 18.

*Cercospora Panici* Davis, Trans. Wisc. Acad. Sci. 19 (1919), Pt. 2, p. 714.

? *Cercospora Panici-miliacei* Sawada, Descriptive catalogue Formosan Fungi V, Dept. Agr. Res. Inst., Formosa, Rept. 51 (1931), 131.

on *Brachiaria serrata* Stapf, Kaalfontein, *Pole Evans*, 10081.

**Cercospora grandissima** Rang.

Bol. Agric., Sao Paulo (1915), 322.

on *Dahlia pinnata* Cav., Salisbury, S. Rhodesia, *Hopkins*, (Rh. 507) 34259.

**Cercospora guliana** Sacc.

Ann. Myc. 11 (1913), 565.

*Cercospora Amygdali* Riza, Bull. Soc. Myc. Fr. 36 (1920) 191.

on *Prunus communis* Fritsch, Klerksdorp, 779; without locality, *Thomsen*, 1177; Louwsreek, *Bradbury*, 24891; Kirkwood, *Knights-Rayson*, 26634.

**Cercospora Haemanthi** Kalchbr.

Grevillea 9 (1880), 24.

on *Haemanthus magnificus* Herb., Pretoria, *Pole Evans*, 1203; Garstfontein, Pretoria district, *Doidge*, 1378; Buffelspoort, Marikana, *Doidge*, 28615.

*Haemanthus natalensis* Pappe, Maritzburg, *Doidge*, 867.

*Haemanthus puniceus* Linn., Boschberg, *MacOwan 1020*, Type (Herb. S. Afr. Mus. 35105); Natal, *Medley Wood*; Kentani, *Pegler 2406, 2398, 9772, 9738*.

**Cercospora Halleriae** Chupp et Doidge nov. spec.

Maculae per folium irregulariter dispersae, plerumque irregulares et plus minus angulatae, 2-5 mm. diam., venulis folii limitatae, in epiphylo acute definitae, obscure rufo- v. purpureo-brunneae, in hypophyllo indistinctae, v. plus minus brunneolae. Caespituli hypophylli, minuti, vix perspicui. Conidiophora ca. 2-15 fasciculatim ad basim sub-stromaticae conjuncta, per stomata emergentia, pallide v. pallidissime olivaceo-brunnea plerumque simplicia, raro ramosa, parce septata, recta v. plus minus tortuosa, haud geniculata, apice conica, cicatrice conidii apicali minuta praedita, 10-35  $\mu$  longa, 2-4  $\mu$  crassa. Conidia obclavata, subhyalina, recta v. leniter curvata, obscure septata, basi rotundata v. obconice truncata, apice conice acuta, 15-70  $\mu$  longa, 1.5-3  $\mu$  crassa.

Hab. in foliis *Halleriae lucidae* Linn., Barberton, leg. P. A. van der Byl, 7377.

**Cercospora heteromalla** H. Syd.

Ann. Myc. 22 (1924), 433.

on *Rubus rosaefolius* Sm., Woodbush, *van der Byl 1533*, Co-type.

**Cercospora insulana** (Sacc.) Chupp nov. comb.

*Cercosporina insulana* Sacc. Nuovo Giorn. Bot. Ital. N.S. 22 (1915), 74.

*Cercospora Staticis* Lobik, Bolezni Rast. (Morbi Plantarum) 17 (1928), 195.

on *Limonium sinuatum* Mill., Pretoria, *Wager*, 21247.

**Cercospora Jussieuae** Atk.

Journ. Elisha Mitch. Sc. Soc. 8, Pt. 2 (1892) 18.

*Cercospora Jussieuae-repentis* Sawada, Descriptive Catalogue of the Formosan Fungi IV, Dept. Agr. Res. Inst. Formosa, Rept. 35 (1988), 108.

on *Jussiaea suffruticosa* L. var. *angustifolia* Lam., Nelspruit, *Liebenberg*, 26315.

**Cercospora Kiggelariae** H. Syd.

Ann. Myc. 22 (1924) 434.

on *Kiggelaria africana* Linn., Stellenbosch, *Brain* (van der Byl 1449) co-type; Stellenbosch, *Verwoerd* (van der Byl 2677); Schagen, *Liebenberg*, 26315.

**Cercospora Leoni** Savul et Rayss.

Revue Path. Veg. and Entom. Agric. 22 (1935) 222.

on *Vitis vinifera* Linn. (sultana) Upington, *Hugo*, 33155; Marchand, Kakamas, *Valentin*, 33898; Upington, *du Plessis* (Stell. 1045, 1046).

Mr. E. W. Mason of the Imperial Mycological Institute examined No. 33155 and wrote: "I think that No. 33155 can be included in this species (*Cercospora Leoni*). The diagnosis gives the spores as 0-, then 1-2-, rarely 3-septate,  $18-40 \times 6.5-7 \mu$ . The South African material is usually 1-septate, rarely 2-septate,  $14-25 \times 5.5-8 \mu$ . *Cercospora* now includes species with free conidiophores, sporodochia, synnemata like this specimen, and acervuli. I think it is best to conform to this current opinion."

Five species of *Cercospora* have been described on *Vitis vinifera* which are identical or nearly related:—

*Cercospora vitiphylla* (Speschnew) Barbarine (reference not found).

*Cercospora Roesleri* (Cattan.) Saccardo, *Michelia* 2 (1880), 128.

*Cercospora Leoni* Savul et Rayss, l.c.

*Cercospora coryneoides* Savul et Rayss, l.c.

*Cercospora Fuckelii* Jacz (citation not known).

All of these resemble closely the fungus named *Septosporium heterosporum* by Ellis and Galloway. They also resemble species of *Coryneum*; Speschnew (Fungi Transcapici et Turkestani) named his fungus *Coryneum vitiphyllum*. If this fungus on *Vitis vinifera* is to be regarded as a *Cercospora*, it could well be *Cercospora Leoni*, but the senior author (Ch. Chupp) is inclined to consider some other genus than *Cercospora* and would be willing to leave it under the name proposed by Ellis and Galloway.

**Cercospora Leonotidis** Cooke.

Grevillea 8 (1879), 72.

on *Leonotis leonitis* R. Br., Inanda, *Medley Wood* 5.

The portion of the collection *Medley Wood* 5 in the Pretoria Herbarium, No. 10175, is *Puccinia Leucadis* on *Leucas martinicensis*; it would appear that a mixed collection has been distributed under this number.

**Cercospora Liebenbergii** H. Syd.

Ann. Myc. 33 (1935) 235.

on *Rauwolfia caffra* Sond., Schagen, *Liebenberg*, 26177 Co-type, 30964.

**Cercospora malayensis** Stev. et Solh.

Mycologia 23 (1931), 394.

on *Hibiscus cannabinus* Linn., Schagen, *Liebenberg*, 26312; Nelspruit, *Liebenberg*, 26674; Salisbury, S. Rhodesia, *Hopkins* (Rh. 1233); Sinoia, *Hopkins* (Rh. 548); Shamva, *Hopkins* (Rh. 1252).

No. 26312 resembles the type more closely than does 26674, which has shorter, slightly narrower conidiophores and conidia than the type, but it may be a less mature specimen.

**Cercospora melaena** H. Syd.

Ann. Myc. 22 (1924), 434.

on *Flemingia Grahamiana* W. and A., Woodbush, *van der Byl* 1522, Co-type, and *Doidge*, 32911.

**Cercospora melanochaeta** Ell. et Everh.

Proc. Acad. Nat. Sci. Phil. (1894), 380.

on *Gymnosporia buxifolia* Szysz., Verulam, *van der Byl*, 6946; Kentani, *Pegler* 2405, 9771; Schagen, *Liebenberg*, 26350; Escombe, *Hean*, 33214.

**Cercospora Momordicae** McRae.

Ann. Crypt. Exot. 2 (1929), 267.

*Cercospora Chardoniana* Chupp, Monographs Univ. Porto Rico 2 (1934), 245.

*Cercospora Momordicae* Mendoza, Philippine Journ. Sci. 75 (1941), 173.

on *Momordica foetida* Schum. and Thom., Kentani, *Pegler* 2453, 11679.

**Cercospora Musae** Zimmermann.

Centralbl. f. Bakt. II, 8 (1902), 219.

*Cercospora Musae* Masee, Kew Bull. (1914), 159.

on *Musa* sp., Gondola, Moçambique (Rh. 5766), 34275.

**Cercospora myrticola** Speg.

Ann. Soc. Cientif. Argent. 17 (1884), 167.

*Cercospora Myrti* Eriks., Bidr. till. Käned. Odl. Växt. Szukdomar. Stockholm (1885), 79. [See also Trans. Brit. Myc. Soc. 6 (1919), 157.]

on *Myrtus communis* Linn., Blauwvlei, Wellington, *Doidge*, 2066; Hopefield *van der Byl* 1327.

**Cercospora Nicotianae** Ell. et Everh.

Proc. Acad. Nat. Sci. Phil. (1893), 170.

on *Nicotiana Tabacum* Linn., Swaziland, *Gray*, 894; Zomba, Nyasaland, det. Mason; Salisbury, Southern Rhodesia, *Hopkins* (Rh. 532, 1801, 1803, 3786); Eldorado, *Hopkins* (Rh. 1767); Trelawney, *Hopkins* (Rh. 3304).

**Cercospora oblecta** H. Syd.

Ann. Myc. 33 (1935), 235.

on *Annona senegalensis* Pers., Nelspruit, *Liebenberg*, 26403, Co-type.



**Cercospora occidentalis** Cooke.

Hedwigia 17 (1878), 39.

*Cercospora personata* (B. and C.) Ellis var. *occidentalis* Berk. et Cooke, Grevillea 3 (1874), 106.

*Cercospora Paulensis* P. Henn., Hedwigia 48 (1908), 18.

*Cercospora somalensis* Curszi, Bol. R. Staz. Patol. Veget. n.s. 12 (1932), 158.

*Cercosporina occidentalis* (Cooke) Sacc. Syll. Fung. 25 (1931), 1906.

*Cladosporium personatum* Berk. et Curt. var. *Cassiae* Thüm., Myc. Univ. No. 1964.

*Ramularia cassiaeicola* Heald et Wolf, U.S. Dept. Agric. Bur. Plant Ind., Bull. 226 (1912), 101.

on *Cassia delagoënsis* Harv., Nelspruit, *Liebenberg*, 26033; Schagen, *Liebenberg*, 26352, 32881.

**Cercospora Oliniae** Verw. et Dipp.

South Afric. Journ. Sci. 27 (1930), 326.

on *Olinia cymosa* Thunb., Stellenbosch, *Dippenaar* (van der Byl 2583), Co-type.

**Cercospora omphacodes** Ell. et Holw.

Journ. Myc. 1 (1885), 5.

*Cercospora Phlogina* Peck, New York State Mus. Bull. 150 (1911), 24.

on *Phlox Drummondi* Hk., Cramond, *Hill*, 6836.

**Cercospora Pachycarpi** Chupp et Doidge nov. spec.

Maculae amphigenae satis perspicuae, sordide brunneae, angulatae, primitus oblongae, 6–12 × 2·5–3 mm., venulis folii limitatae, deinde plus minus confluentes, irregulares et saepe magnam folii partem occupantes. Caespituli amphigeni, plerumque epiphylli, laxe dispersi, obscure olivacei, minuti. Hypostroma minutum vel usque 60  $\mu$  diam., in parte basali subepidermali e cellulis laxe parenchymaticis rotundato-angulatis, 5–7·5  $\mu$  diam., compositum; cellulae in superiore parte cylindricae per stoma emergentes, valde elongatae, pallidiores, ca. 2·5  $\mu$  crassae, in conidiophora transeuntes. Conidiophora plus minus dense fasciculata, crassitudine irregularia, interdum clavata, pellucide olivaceo-brunnea, ad apicem haud pallidiora, recta v. tortuosa, parce sed distincte septata, raro geniculata, 10–35  $\mu$  longa, 5–7·5  $\mu$  crassa, cicatricibus conidiorum apicalibus v. subapicalibus, unicis v. pluribus in quoque conidiophoro praedita. Conidia pallide olivacea, obclavata, recta v. leniter curvata, obscure pluriseptata, basi obconice truncata, apice subobtusata, 40–130  $\mu$  longa, 4·5–6  $\mu$  crassa.

Hab. in foliis *Pachycarpi Schinziani* N.E. Br., Wonderboom prope Pretoria, leg. F. A. van der Byl, 2208.

**Cercospora Pareirae** Speg.

Ann. Mus. Nac. Buenos Aires 20 (1910), 440.

on *Cissampelos mucronata* A. Rich., Schagen, *Liebenberg*, 26314.

**Cercospora Persicariae** Yam.

Journ. Trop. Agric. Formosa 6 (1934), 605.

?on *Polygonum tomentosum* Willd., Nels Rivier nr. Nelspruit, *Liebenberg*, 26011.

This may be an undescribed species, but as the material is in poor condition and few spores present, it is impossible to be certain.

**Cercospora personata** (Berk. et Curt.) Ellis.

Journ. Myc. 1 (1885), 63.

on *Arachis hypogaea* Linn., Skinner's Court, 993, 1287; Hartebeestpoort Expt. Sta., *Sellschop*, 32136, 32137; Crecy, *Sellschop*, 30649; Nelspruit, *Liebenberg*, 26675; Immerpan, *Steen*, 25364; Barberton, *Parsons*, 25363; Northern Flats, *Dros*, 25924; Cedara, *Staples*, 17060; Maritzburg, *Erzleben*, 15447; Sao Paulo, Moçambique, *Howard*, 978.

**Cercospora phaeocarpa** Mitter.

Ann. Myc. 35 (1937), 239.

on *Bauhinia Thonningii* Schum., Concession, *Hopkins* (Rh. 1621), 34265.

This collection exactly resembles the type, which is on leaves of *Bauhinia* sp., Majhgawan, India. It has been agreed by the senior author (Ch. Chupp) and by Mr. E. W. Mason of the Imperial Mycological Institute, Kew, that all species with thick-walled conidia, especially if they are dark-coloured and closely septate, should be classed as *Helminthosporium*. *Cercospora phaeocarpa* should therefore be transferred to the genus *Helminthosporium*; it is quite distinct from *C. Bauhiniae*.

**Cercospora Pouzolziae** H. Syd.

Ann. Myc. 33 (1935), 236.

on *Pouzolzia hypoleuca* Wedd., Nelspruit, *Liebenberg*, 26013, Co-type.

**Cercospora pretoriensis** Chupp et Doidge nov. spec.

Maculae amphigenae, irregulariter sparsae, suborbiculares, 2-6 mm. diam. saepe 2 vel 3 juxtapositae et plus minus confluentes, in epiphyllis distinctissimae centro pallide brunneae v. sordide griseae, zonula plus minus lata rubra v. rufo-brunnea circumdatae, in hypophyllo minus perspicuae zonula pallidiore. Caespituli epiphylli, per maculam dense v. irregulariter dispersi, punctiformes, non vel vix confluentes, atro-olivacei, singuli subinde tantum hypophylli. Hypostroma innatum, olivaceo-brunneum, irregulariter rotundatum, 15-60  $\mu$  diam., plus minus erumpens, contactu molliusculo, indistincte parenchymatico, e cellulis angulato-rotundatis ca. 4-5  $\mu$  diam. metientibus compositum. Conidiophora dense caespitosa, in fasciculis olivaceo-brunnea, singula pallide fuliginea, simplicia, septata, cylindracea, apicem obtuse rotundatum versus attenuata et pallidiora, plus minus curvata v. tortuosa, raro abrupte geniculata, 10-100  $\mu$  longa, 3-5  $\mu$  crassa. Conidia hyalina, anguste cylindracea v. subacicularia, recta v. leniter curvata, interdum subfalcata, pluriseptata, 30-90  $\mu$  longa, basi subtruncata, 2-4  $\mu$  lata, sursum haud vel sensim attenuata, apice subobtusata.

Hab. in foliis *Gomphrenae decumbentis* Jacq. var. *genuinae* Stuchlik, Arcadia, Pretoria, 6593 Type et 775; Skinner's Court, Pretoria, 1937; Donkerpoort, Pretoria district, leg. Doidge et Bottomley, 32789; Schagen, leg. *Liebenberg*, 26316.

**Cercospora Protearum** Cooke.

*Grevillea* 12 (1883), 39.

*Cercospora Protearum* var. *Leucospermi* Cooke, l.c.

*Cercospora Protearum* var. *Leucadendri* Cooke, l.c.

on *Leucospermum conocarpum* R. Br., Hottentot's Holland, *MacOwan* 1456 (Ranenh, Fung. Eur. 3589) 3929, Kew; St. James, *Pole Evans*, 5570; Stellenbosch. *Duthie* (van der Byl 62).

*Leucadendron argenteum* R. Br., Table Mt., Cape, *MacOwan* 1457, Kew; Kirstenbosch, *Pearson*, 8354.

**Cercospora psychotriacola** Chupp et Doidge nov. spec.

Maculae utrinque perspicuae, sparsae, plerumque foliorum marginibus occupantes, suborbiculares v. irregulares, saepe venulis folii limitatae et tunc angulosae, 3–8 mm. diam., castaneo-brunneae, interdum zonula plus minus lata pallide viridula circumdatae. Caespituli hypophylli, grisei v. olivacei, per totam maculam densiuscule dispersi. Hypostroma infra stomata subepidermide innatum, irregulariter rotundatum, 55–85  $\mu$  diam., erumpens, in parte basali parenchymatice e cellulis opace brunneis indistinctis composita, cellulae in superiore parte olivaceae, elongatae, 2.5–4  $\mu$  crassae, in conidiophora transeuntes. Conidiophora dense stipata, divergentia, dilute olivacea, apicem versus pallidiora, crassitudine aliquanto irregularia, parce septata, haud geniculata, simplicia, recta v. curvata, apice obtuse rotundata, 5–45  $\mu$  longa, 2–4  $\mu$  crassa. Conidia subhyalina v. dilute olivacea, anguste obclavata, apicem versus leniter attenuata, obscure pluriseptata, recta v. curvata, basi obconice-truncata, apice subacuta, 40–120  $\mu$  longa, 2–4  $\mu$  crassa.

Hab. in foliis *Psychotriae capensis* Vatke, in sylvis Mambatini prope Nelspruit, leg. A. O. D. Mogg, 32773.

**Cercospora punctiformis** Sacc. et Roum.

Rev. Myc. 3 (1881), 39.

*Cercospora Vincetoxicici* Ell et Everh., Journ. Myc. 8 (1902), 73.

on *Cynanchum natalitium* Schlecht., Isipingo, *Doidge*, 6642.

This specimen resembles the original in every particular, except that the conidia are longer, 30–100  $\times$  3–4  $\mu$ , as compared with 20–55  $\times$  3–4  $\mu$ .

**Cercospora Resedae** Fuck.

Symb. Myc. (1869), 353.

on *Reseda odorata* Linn., Kentani, *Pegler* 2390, 9428, Kew ; Barberton, 439 ; Hopefield, *van der Byl* 1272.

**Cercospora Rhoicissi** H. et P. Sydow.

Ann. Myc. 10 (1912), 444.

on *Rhoicissus erythrodes* (Fres.) Planch., Barberton, *Lounsbury*, 1275, Co-type.

**Cercospora riachueli** Speg.

An. Soc. Cientif. Argent. 9 (1880), 38.

on *Cissus* sp., Schagen, *Liebenberg*, 26178.

This is like the type, except that the conidia are longer and do not average as wide. It is not like *Cercospora Cissi-japonicae* Hori, which has wider conidia and much longer conidiophores.

**Cercospora richardiaecola** Atk.

Journ. Elisha Mitchell Sc. Soc. 8, Pt. 2 (1892), 19.

on *Zantedeschia aethiopica* (L.) Spreng., Pretoria, *Bottomley*, 14269 ; Salisbury, S. Rhodesia (Rh. 1214).

*Zantedeschia angustiloba* (Schott.) Engl., Pretoria, *Bottomley*, 14271.

*Zantedeschia Rehmanni* Engl., Pretoria, *Bottomley*, 14270.

*Zantedeschia* sp., Maritzburg, *Schmutz*, 31198.

**Cercospora ricinella** Sacc. et Berk.

Atti R. Ist. Veneto Sci., Lett. ed Arti, 6 ser., III (1885), 711.  
on *Ricinus communis* Linn., Nelspruit, *Liebenberg*, 26010.

**Cercospora rubro-tincta** Ell. et Everh.

Journ. Myc. 3 (1887), 20.  
*Cercospora consobrina* Ell. et Everh., Journ. Myc. 3 (1887), 19.  
on *Prunus persica* Sieb. et Zucc., Potchefstroom, 23496.

**Cercospora scitula** H. Syd.

Ann. Myc. 33 (1935), 236.  
on *Annona senegalensis* Fers., Nelspruit, *Liebenberg*, 26027.

**Cercospora Sesami** Zimm.

Ber. Land.—u. Forstwirtschaft. Deutsch-Ostafrik. (1904), 28.  
on *Ceratothera triloba* E. Mey., Schagen, *Liebenberg*, 26179.  
*Pretea zanguibarica* J. Gay, Nelspruit, *Liebenberg*, 26048.

This fungus closely resembles the type, but cross inoculations should be made from *Sesamum* to *Ceratothera* and *Pretea*.

**Cercospora Solani-melongenae** Chupp.

*Cercospora Solani-melongenae* Hori nom. nud.

Maculae amphigenae, per folium irregulariter dispersae, subinde 2 vel 3 juxtapositae et plus minus confluentes, suborbiculares, rufo-brunneae, nonnunquam zonula indistincta obscuriori marginatae, centro demum arescentes. Caespituli amphigeni, laxe v. densiuscule dispersi, olivacei, minuti. Hypostroma in et sub epidermide innato-erumpens, irregulariter globosum, obscure brunneum, parenchymatice e cellulis roteundato-angulosis, ca. 3–5  $\mu$  diam. compositum. Conidiophora densissime, caespitosa, in fasciculo olivaceo-brunnea, singularia dilute olivacea, apicem versus pallidiora, crassitudine aequalia v. irregularia, continua v. parce septata, semper simplicia, haud geniculata, recta v. leniter curvata, apice obtusa v. conoidea, saepe brevissima, 5–30  $\mu$  longa, 3–5  $\mu$  crassa. Conidia subhyalina v. dilute olivacea, obclavato-cylindracea, recta v. lenissime curvata, 3–7-septata, basi subtruncata v. obconica, apice conica v. obtusa, 30–40  $\mu$  longa, 3–5  $\mu$  crassa.

Hab. in foliis *Solani melongenae*, Japan, leg. Hori.

*Cercospora Solani-melongenae* Hori is a nomen nudum, which was withdrawn by Hori in favour of *C. Melongenae* Welles. The particulars are given by Areta Ideta in the "Supplement to Handbook of the Plant Diseases of Japan II (1926), pp. 996–7." Welles' species has hyaline acicular conidia and in no way resembles Hori's collection, which was distributed to various herbaria. The above description is based on the portion of Hori's collection to be found at Washington, D.C. Hori's species is identical with the fungus collected on the Natal coast, which may now be named:—

**Cercospora Solani-melongenae** Chupp.

on *Solanum Melongena* L. var. *esculentum* Nees, Cavendish, Natal, *Wager*, 34107

**Cercospora Sorghi** Ell. et Everh.

Journ. Myc. 3 (1887), 15.  
on *Cymbopogon atronardus* Stapf, Nelspruit, *Liebenberg*, 26061.

*Cymbopogon excavatus* Stapf, Wolwekloof, *Bottomley*, 29953; Schagen, *Liebenberg*, 32910.

The South African fungus resembles the type fairly closely, but the conidiophores and conidia are slightly smaller than in many collections.

***Cercospora sphaeroidea* Speg.**

Anal. Soc. Cientif. Argentina 16 (1883), 169.

on *Cassia delagoensis* Harv., Umbelusi, Moçambique, *Howard*, 522.

***Cercospora Stizolobii* H. et P. Sydow.**

Ann. Myc. 11 (1913), 270.

*Cercospora Mucunae-ferrugineae* Yamamoto, Trans. Sapporo Nat. Hist. Soc. 13 (1934), 141.

on *Stizolobium Deeringianum* Bort., Salisbury, Hopkins (Rh. 5302), 33969.

***Cercospora transvaalensis* H. Syd.**

Ann. Myc. 33 (1935), 237.

on *Acalypha petiolaris* Hochst., Nelspruit, *Liebenberg*, 26002, Co-type.

***Cercospora Tremae* (Stev. et Solh.) Chupp nov. comb.**

*Ragnhildiana Tremae* Stev. et Solh., Mycologia 23 (1931), 405.

on *Trema guineensis* (Schum.) Ficalho, Durban, *Doidge*, 1671.

***Cercospora Violae* Sacc.**

Nuovo Giorn. Bot. Ital. 8 (1876), 187.

on *Viola odorata* Linn., Pretoria, *Faure*, 884, *Pole Evans*, 6678 and *Wager* 21580; Potchefstroom, 23495; Barberton, 440; Fort Hare, *Lyle*, 25422, Idutywa, *Imray*, 22343; Cramond, *Pole Evans*, 1497; Donnybrook, *Morgan*, 28610; Salisbury, *Eyles* 2098, 14015; Lourenço Marques, *Howard*, 951; Salisbury, *Hopkins* (Rh. 1314, 1602), *Kew*.

*Viola tricolor* Linn., Claremont, Cape, 741.

***Cercospora Vitis* (Lév.) Sacc.**

Fung. Ital. aut. del., tab. 671 (1881).

*Cercospora viticola* (Ces.) Sacc., Syll. Fung. 4 (1886), 458, and many other synonyms.

on *Vitis vinifera* Linn., Pretoria, *Bottomley*, 32636; Vaalwater, Waterberg, *Farrant*, 30765; Buffelspoort, *Bottomley*, 32701, Middelburg, Tvl., 612; Kingwilliamstown, *Mally*, 462, 1182, 1173; Verulam, *James*, 33299; Eshowe, *Pole Evans*, 2025; Ezulweni, Swaziland, *Douglas*, 26378; Modder River, *Dreyer*, 283; Kentani, *Pegler*, 9740; Gwelo (Rh. 2048); Salisbury (Rh. 1535, 1988, 1820).

***Cercospora Withaniae* Syd.**

Ann. Myc. 10 (1912), 444.

on *Withania somnifera* Dun., Bluff, Durban, *Doidge*, 1672, Co-type.

***Cercospora Zizyphi* Petch.**

Ann. Roy. Bot. Gard. Peradinya 4, Pt. 5 (1909), 306.

on *Zizyphus mucronata* Willd., Barclayvale, *Liebenberg*, 32880; Schagen, *Liebenberg*, 26347, 32876; Tzaneen, *Liebenberg*, 32726.

