

## Some Members of the Sphaeropsidales from South Africa

by

Karel Cejp\*

### ABSTRACT

Seventeen isolates of Sphaeropsidaceous fungi from South Africa are described. Of these, nine are described as new species: *Phyllosticta cussoniae*, *P. vangueriae*, *Ascochyta grewiae*, *Septoria combretiana*, *S. cuculeae*, *S. lanneae*, *S. setariae*, *S. transvaalana* and *S. tripteridis*.

Recently I received several specimens of Sphaeropsidales (Phyllostictales) from the National Herbarium (PRE) (Mycological Herbarium), Pretoria, for determination and revision. Some important works in this field are those by Kalchbrenner & Cooke (1880), Van der Byl (1922), Verwoerd & Du Plessis (1931), Nel (1942) and Doidge (1950).

Several of the species received were found to be unknown and are here described as new.

#### ***Phyllosticta cussoniae* Cejp, sp. nov.**

Maculae orbiculares, 0.5-1 cm in diam., amphigenae, cum rubro limbo, albescentes, praesertim in siccitate, paucae. *Pycnidia* dispersa, primum submersa, 80 — 90  $\mu$  in diam. *Conidia* maiore parte breviter ellipsoidea, aut globosa aut irregulariter ellipsoidea, cum numerus oleosis guttulis minoribus, cum 2 — 3 maioribusque, in utraque parte rotundata aequali, recta, aut ad unam partem inflexa, 4.2-5.6 x 7-12.5 (14)  $\mu$ , infirme claro viridia.

Spots rounded, 0.5-1 cm. in diam., amphigenous, with red border, whitish, especially when dry, sparse on the leaves. *Pycnidia* scattered, at first immersed, black, 80-90  $\mu$  in diam. *Conidia* mostly short and ellipsoidal, with numerous smaller guttulae, and with 2-3 larger ones, regularly rounded at both ends, straight or curved at one side, 4.2-5.6 x 7-12.5 (14)  $\mu$ , weakly pale green.

PRE 32821 (Holotype): On leaves of *Cussonia umbellifera* Sond., Schagen, Nelspruit district, Transvaal, 25. XII. 1933, leg. L. C. C. Liebenberg 3063; isotype in herb. Dr. K. Cejp, Praha.

---

\* Department of Mycology and Plant Pathology, Charles University, Praha 2, Benátska 2, Czechoslovakia.

**Phyllosticta vangueriae** *Cejp*, sp. nov.

Maculae irregulares aut fere rotundatae, amphigenae, usque 1 cm in diam., clare cremaceo-flavescentes, in extremitate magis obscurae. *Pycnidia* obscuro-brunnea in ostiolo magis fusca, 15-20  $\mu$  in diam., punctiformia, copiosa, 80-90  $\mu$  in diam. *Conidia* breviter cylindrica, recta, raro inflecta, cum 1 — 2 oleosis guttuli raro eguttulata, in utraque parte rotundata, 2.5-3 x 7-8  $\mu$ , claro viridia.

Spots irregular or almost rounded, amphigenous, up to 1 cm in diam., light pale yellow, the periphery being darker. *Pycnidia* brown, darker at the ostiole which is 15-20  $\mu$  in diameter, punctiform, numerous, 80-90  $\mu$  in diam. *Conidia* short cylindrical, straight, seldom curved, with 1-2 guttulae, seldom without, rounded at both ends, 2.5-3 x 7-8  $\mu$ , pale green.

PRE 32874 (Holotype): On the leaves of *Vangueria infausta* Burch., Schagen, Nelspruit district, Transvaal, July 1936, leg. L. C. C. Liebenberg 3544; isotype in herb. Dr. K. Cejp, Praha. PRE 26044: Near falls at Nelspruit, Transvaal, leg. L. C. C. Liebenberg, 1931, (with *Septoria* sp., conidia 2.5 x 44.5 — 60  $\mu$ ).

**Phyllosticta crastophila** *Saccardo*, *Michelia* 1:153 (1889); *Sylloge Fung.* 3:61 (1884).

Spots indistinct, mainly oblong, about 2 x 3 mm in diam., rarely confluent and irregular, dirty ochraceous, the edge having a broad darker border. *Pycnidia* restricted into small mounds, rounded, lentiform, erumpent, black or almost black. *Conidia* oblong-cylindrical, straight, rounded at both ends, with 1 or 2 guttules and several dispersed guttulae, 3.5-4(5) x 5.5-8  $\mu$ , very pale green.

PRE 32080: On the leaves of *Setaria* sp., from Rietondale Grass Station, Pretoria, Transvaal, March 1940, leg. L. C. C. Liebenberg 3639.

**Phyllosticta richardiae** *Halstet*, New Jersey Agric. Exp. Sta. 1893.

Large spots scattered all over the upper surface of the leaves, 2-4 cm in diam., dark brown, irregular. Margin narrow having a dark brown border. *Pycnidia* numerous on the upper surface of the spots, being densely packed in some areas, leaving bare patches in other areas, globose, lentiform, epiphilous, dark brown, (80)90-130(140)  $\mu$  in diam. *Conidia* elongate-cylindrical, rounded at both ends, one end attenuated, with (1)2 large guttulae, also with minute guttulae, 2.5-3(3.5) x 5.5-7(8.5)  $\mu$ , pale green.

PRE 41655. On the leaves of *Zantedeschia* sp., locality not stated, 1956, leg. V. A. Wager. *Septoria callae* (Lasch) Saccardo (*Sylloge Fung.* 3:569, 1884, nomen, *Bull. Soc. Mycol. de France* 5:122, 1889, and *Sylloge Fung.* 10:382, 1892), is described on this host genus, but is distinguished by the small spots on the leaves, and especially by having somewhat curved stick-shaped conidia. It is known in Europe in parc Riga (Estonia, SSSR — Aksel, 1956).

**Ascochyta grewiae** *Cejp*, sp. nov.

Maculae in foliis copiosa, clara ferrugineae, fere subrubrae, plerumque rotundatae, raro confluentes et irregulares, saepissime 0.5 cm in diam., acute textura incolumni divisae. *Pycnidia* pauca, brunnea, punctiformia, 80-90  $\mu$  in diam. *Conidia* cum duobus cellulis, plerumque inferior cellula parva, raro unicellularia, cum 2 oleosis guttulis et aliquot minoribus guttulis, saepe inflectis ellipsoideis, in parte superiori cum extremitate rotundata (2)2.8-3.5 x (5.6) 8.4-11.2  $\mu$ , infirme claro viridia.

Spots abundant, light ferruginous, almost sub-reddish, regularly rounded, rarely confluent and irregular, often 0.5 cm in diam., sharply divided from the healthy texture of the leaf, sometimes covering a greater area of the upper surface of the leaves. *Pycnidia* few, dark brown, punctiform, 80-90  $\mu$  in diam. *Conidia* two-celled, the lower cell being usually smaller, seldom unicellular, with 2 guttulae and several smaller ones, often curved, ellipsoidal, with rounded tips, (2)2.8-3.5 x (5.6)8.4-11.2  $\mu$ , very pale green.

PRE 25967 (Holotype): On the leaves of *Grewia monticola* Sond., Nelspruit, Transvaal, 28. VIII. 1931, leg. L. C. C. Liebenberg 2773; isotype in herb. Dr. K. Cejp, Praha.

**Ascochyta chenopodii** Rostrup, Botan. Tidskrift 26:311 (1905).

*Diplodina chenopodii* Karsten, Hedwigia 24 : 73 (1885).

*Ascochyta atriplicis* (Vestergr.) Diedicke, Ann. Mycol. 2 : 180 (1904).

Spots round or irregular, 1 cm in diam., light ochraceous, whitish in the centre with a broad dark border. *Pycnidia* on the upper surface of the spots, sometimes also on the lower surface, globose, umbrous, becoming black, 120-150  $\mu$  in diam. *Conidia* sub-cylindrical, straight or sometimes curved, rounded at both ends, often irregular, with 2-3 large guttulae, also many minute ones, constricted, and narrowed, 2-4 x 14-22.5  $\mu$ , pale brown to yellowish green.

PRE 43127: On leaves of *Chenopodium murale* L., in Addo National Park, Alexandria district, C.P., July, 1962, leg. L. C. C. Liebenberg 6251.

**Septoria combretiana** Cejp, sp. nov.

Maculae amphigenae, rotundatae, 0.3-0.5 cm in diam., clare brunneae ferruginaeque, saepe in medio magis obscurae. *Pycnidia* fusce ferruginea, in textura macularum submersa, paulum ad summum emergentia, 70-90  $\mu$  in diam. *Conidia* bacillaeformia, magis aut infirme adunca, cum 3-5 septa, saepe cum magnis 3-5 oleosis guttulis, 3-3.5(4) x 25-65  $\mu$ , infirme clare viridia.

Spots amphigenous, round, 0.3-0.5 cm in diam., light ferruginous brown, the centre often darker. *Pycnidia* dark ferruginous, round, immersed, scattered, few over the surface, erumpent, 70-90  $\mu$  in diam. *Conidia* bacillar, curved, or only slightly curved with 3-5 septa, often 3-5 large guttulae, 3-3.5(4) x 25-65  $\mu$ , of a very pale green colour.

PRE 33266 (Holotype): On the leaves of *Combretum erythrophyllum* (Burch.) Sond. (= *Combretum glomeruliflorum* var. *riparium* Sond.), Pelindaba, Pretoria district, Transvaal, 30.V.1944, leg. E. M. Doidge & A. M. Bottomley; isotype in herb. Dr. K. Cejp, Praha.

**Septoria eucleae** Cejp, sp. nov.

Maculae minutae, vix 2 mm in diam., irregulares, raro subrotundatae, subnigrescentes, aut obscuro-brunneae, perspicuae supra parte, densae. *Pycnidia* nigra, punctiformia, parva, 70-80  $\mu$  in diam. *Conidia* bacillaeformia, saepe torquentia aut inflectentia, cum numerosis septis, saepissime cum 4-5, sine oleosis guttulis, (2.5) 3-3.5 x (31)40-50(60)  $\mu$ , pallide viridia.

Spots minute, scarcely 2 mm in diam., irregular, seldom sub-circular, almost black, or dark brown, distinct only on the upper surface, dense. *Pycnidia* black, punctiform, small, 70-80  $\mu$  in diam. *Conidia* bacillar, frequently curved or slightly curved, with many septa, or with just 4-5 septa, no guttulae present, (2.5)3-3.5 x (31)40-50(60)  $\mu$ , pale green.

PRE 32812 (Holotype). On the leaves of *Euclea crispa* (Thunb.) Guerke var. *crispa* (= *Euclea lanceolata* E. Mey. ex A.D.C.), Waterkloof Ridge, Pretoria, Transvaal, 22.X.1928, collector unknown; isotype in herb. Dr. K. Cejp, Praha. This species is easy to recognise by the spots.

***Septoria lanneae* Cejp, sp. nov.**

Maculae fere rotundatae aut paulum irregulares, e textura folii erumpentes cca 0.5 cm in diam., amphigenae, obscure brunneae, sine limbo, acute dividuae a textura salva aut cum lato obscuriore limbo. *Pycnidia* nigra, globosa, parva, 70  $\mu$  in diam. *Conidia* bacillaeformia, aliqua dissimilia crassa, recta, aut saepe distorta, cum 3-4 septis et densis magnis oleosis guttulis, 3-4.5 x 30-33.5  $\mu$ , claro infirme viridia.

Spots almost round or very slightly irregular, about 0.5 cm in diam. dark brown, amphigenous, without a border, distinct from the healthy texture of the leaf, or if separate, with a wide dark border. *Pycnidia* black, round and small, 70  $\mu$  in diam. *Conidia* bacillar, some unequally thick, straight or often twisted, with 3-4 septa and large dense guttulae, 3-4.5 x 30-33.5  $\mu$ , very pale green in colour.

PRE 32815 (Holotype): On the leaves of *Lannea edulis* (Sond.) Engl. (= *Odina edulis* Sond.), Suidwalliskraal, Lydenburg district, Transvaal, 8.I.1935, leg. L. C. C. Liebenberg 3367; isotype in Herb. Dr. K. Cejp, Praha.

***Septoria setariae* Cejp, sp. nov.**

Maculae parviorae, longae, 1-2 mm in diam., ambiguo brunneae, obscuro brunneo limbo praetextae, dein medio albescente. *Pycnidia* pauca, rotundata, lentiformia, nigra, 80-90  $\mu$  in diam. *Conidia* bacillaeformia, recta aut subinflecta, quondam usque adunca, cum 3-5 indistinctis septis, sine oleosis guttulis, 2.5-3 x (28)60-80  $\mu$ , leviter viridia.

Spots smaller, 1-2 mm in diam., brownish, surrounded by a darker border, becoming whitish in colour in the centre. *Pycnidia* few in number, round, lentiform, black 80-90  $\mu$  in diam. *Conidia* bacillar, straight or moderately curved, with 3-5 indistinct septa, without guttulae, 2.5-3 x (28) 60-80  $\mu$ , pale green.

PRE 25866 (Holotype): On the leaves of *Setaria chevalieri* Stapf ex Stapf & C. E. Hubb, Soutpansberg, N. Transvaal, 12.I.1931, leg. P. Watson; isotype Dr. K. Cejp, Praha.

***Septoria transvaaliana* Cejp, sp. nov.**

Maculae copiosae in foliis, nigro-brunneae, cum angusto fere nigro limbo, amphigenae, fere rotundatae aut irregulares, cca 2-3 mm in diam. *Pycnidia* parva, 70-80  $\mu$  in diam., nigra pauca. *Conidia* extende cylindriformia, nonnulla clava, raro directa, saepissime detorta, cum 2-3 septis atque aliquot oleosis guttulis, (2)3-3.5 x (24)39-70  $\mu$ , claro viridia.

Spots numerous on the leaves, dark brown, with a narrow black margin, almost round or irregular, about 2-3 mm in diam. *Pycnidia* small, 70-80  $\mu$  in diam., black, few in number. *Conidia* elongated cylindriform, often club-shaped, seldom straight, more frequently twisted, with 2-3 septa and several guttulae, (2)3-3.5 x (24)39-70  $\mu$ , pale green.

PRE 32895 (Holotype): On the leaves of *Hypoestes verticillaris* R.Br., Wolwekloof, Garstfontein, Pretoria, Transvaal, 22.II.1929, leg. A. M. Bottomley; isotype in herb. Dr. K. Cejp, Praha.

**Septoria tripteridis** *Cejp*, sp. nov.

Maculae irregulares, plerumque in margine folii, minus in medio, dein moderate oblongatae, 0.5-0.8 mm in diam., amphigenae, brunneo-canuae, siccitate albescentes, in margine macularum cum lato brunneo-purpureo limbo praetexae. *Pycnidia* nigra, densae, copiosae, in superiore parte folii, punctiformia, 80-90  $\mu$  in diam. *Conidia* oblonga cylindriformia, fere claviformia, directa, saepius moderate detortae, cum 3-6 oleosis guttulis et sine septis, dissimiliter crassa, 2.5-3(3.5) x 55-70  $\mu$ , claro infirme viridia.

Spots irregular, usually on the edges of the leaves rather than in the middle, moderately oblong, 0.5-0.8 mm in diam., amphigenous, brownish-grey in colour, becoming whitish when dry, broad brownish-purple border. *Pycnidia* black, copious, dense on the upper surface of the leaves, punctiform, 80-90  $\mu$  in diam. *Conidia* oblong cylindrical, straight, often moderately twisted, with 3-6 guttulae, without septa, unequally thickened 2.5-3(3.5) x 55-70  $\mu$ , of a very pale green colour.

PRE 41849 (Holotype): On the leaves of *Tripteris* sp. (Asteraceae), Fauresmith Municipal commonage, Orange Free State, April 1939, leg. L. C. C. Liebenberg; isotype in Herb. Dr. K. Cejp, Praha.

**Septoria anaxea** *Saccardo*, *Michelia* 1 : 189 (1879); *Sylloge Fung.* 3:549 (1884).

Spots irregular, copious on the leaves, regularly on the upper surface, at first ochraceous, becoming ferruginous-brown, with yellowish border, 1-2 cm in diam. *Pycnidia* punctiform or lentiform, 70-100  $\mu$  in diam., with large ostiole. *Conidia* bacillar, straight or slightly curved, rounded at both ends, with numerous guttulae, with 3-5 indistinct septa, 2-2.5(3) x 28-75  $\mu$ , very pale olive green.

PRE 32878: On the leaves of *Senecio isatioides* DC., Baviaanspoort, Pretoria district, Transvaal, 13.III.1935, leg. L. C. C. Liebenberg 3436.

**Septoria callistephi** *Gloyer*, *Phytopathology* 11:50-51 (1921).

Spots amphigenous, rounded becoming irregular, brown, with a broad reddish-brown border, 3-5 mm in diam., copious, especially on the lower leaves. *Pycnidia* blackish-ferruginous, copious, occasionally dense, punctiform or lentiform, 120-140  $\mu$  in diam. *Conidia* thread-shaped, somewhat thicker, straight or moderately curved, with 2-3 indistinct septa, 2-2.5(3) x 11-17  $\mu$ , pale green.

PRE 41664: On the leaves of Chinese daisies, *Callistephus chinensis* Nees, Pinetown, Natal, Dec. 1956, leg. V. A. Wager, 100.

**Septoria gerberae** *Sydow*, *Ann. Mycol.* 10:43 (1912).

Spots regular, circular, 3-6 mm in diam., or irregular and confluent, amphigenous, dark brown, with a darker brown border. *Pycnidia* brownish, often scattered, occasionally in small groups. *Conidia* bacillar, sometimes slightly curved, straight, with 2-3 indistinct septa, 2-2.5(3) x 14-22.5  $\mu$ , very pale green in colour.

PRE 32656: On the leaves of *Gerbera jamesonii* H. Bol. ex Hook f., Botanical Research Institute Garden, Pretoria, Transvaal, 5.XII.1939, leg. A. M. Bottomley. This species is distributed throughout South Africa: it is also known from Europe where the host is cultivated (Cejp & Jechová, 1967; Cejp & Deighton, 1969).

This species differs from *Phyllosticta gerbericola* (Ch.) Batista, which is found in Brazil, India and Czechoslovakia (Cejp, 1965, 1966).

**Septoria rhamni-cathartica** Ces. var. *rhamni-saxatilis* Saccardo, Mycotheca Veneta, No. 546; Sylloge Fung. 3:482 (1884).

Spots amphigenous, ferruginous-brown, without border, fading when dry, round, small, 0.5 cm in diam., sometimes smaller, abundant on the leaves. *Pycnidia* on the upper surface of the leaves only, punctiform, 80-90  $\mu$  in diam. *Conidia* bacillar, cylindrical, elongated, straight or strongly curved, club-shaped, septa not usually present, but when present from 3-5, frequently with large guttulae, 2.5-3(3.5) x 30-70  $\mu$ , light green to hyaline.

PRE 41640: On the leaves of *Phyllogeiton zeyheri* (Sond.) Suesseng. (= *Rhamnus zeyheri* Sond.), roadside, near Bulge River, Waterberg district, Transvaal, 22.VI.1955, leg. L. C. C. Liebenberg.

**Septoria rhoina** Berk. & Curtis, North American Fungi, No. 434.

Spots amphigenous, round, 2-3 mm in diam., dense on the leaves, whitish with black borders, especially when dry, brownish on the lower surfaces of the leaves. *Pycnidia* 4-5 in the centre of the spots, black, punctiform, with a broad ostiole, 80-100  $\mu$  in diam. *Conidia* elongated, vermiform, straight or twisted, some broader than others, some only thread-like, either without septa, or with 4-5 septa, 2.8-4(5.5) x 50-85  $\mu$ , very pale green to hyaline.

PRE 32728: On the leaves of *Rhus* sp., Schagen, Nelspruit district, Transvaal, June 1939, leg. L. C. C. Liebenberg 3575.

*Phyllosticta rhoina* Kalchr. & Cooke is found on *Rhus viminalis* Vahl, but differs from *Septoria rhoina* in the size of the conidia.

#### REFERENCES

- AKSEL, M. J., 1956. Genus *Phyllosticta* in Estonia. *Acta Inst. Bot. V. L. Komarovii. Acad. Sc. USSR* 11:75-174.
- CEJP, K., 1965. The occurrence of some *Phyllosticta* on ornamental plants. I. *Preslia* 37:330-352.
- CEJP, K., 1966. The occurrence of some *Phyllosticta* on ornamental plants and shrubs. II. *Ceská Mykol.* 20:205-214.
- CEJP, K. & JECHOVÁ, V., 1967. Beitrag zur Kenntnis einiger tschechoslowakischen Arten der Gattung *Septoria* Fries. *Acta Musei Nationalis Pragae* 23, B: 101-123.
- CEJP, K. & DEIGHTON, C. F., 1969. Microfungi III. Some african species and redispositions of some Hyphomycetes, mainly African. *Mycol. Pap.* 117: 1-131.
- DOIDGE, E. M., 1950. The South African fungi and lichens, *Bothalia* 5:1-1094.
- KALCHBRENNER, K. & COOKE, M. C., 1880. South African Fungi. *Grevillea* 9:17-34.
- NEL, G. C., 1942. Genera et species fungorum ex herb. P. A. van der Byl, Stellenbosch. *Ann. Univ. Stellenbosch*, Jg. 20, No. 2:1-110.
- VAN DER BYL, P. A., 1922. Fungi of Stellenbosch District and immediate vicinity. *Trans. Roy. Soc. S. Afr.* 10: 281-288.
- VERWOERD, L. & DU PLESSIS, S. J., 1931. Descriptions of some new species of South African fungi and of species not previously recorded in South Africa. III. *S. Afr. J. Sci.* 28: 290-297.