

## Notes on some Indian Cercosporae. IV.

By H. C. Govindu & M. J. Thirumalachar (Bangalore, India).  
With plate VI.—IX.

Since the publication of the previous parts (Sydowia 1953), further collections of *Cercospora* species made in different places in India have been studied and some of the interesting ones are being reported here. The types of the new species have been deposited in Herb. Crypt. Ind. Orient, New Delhi, Herb. C. M. I., Kew, England and in the Mycological division, U. S. D. A., Beltsville, Maryland, U. S. A.

### 1. *Cercospora acanthacearum* sp. nov.

Leaf spots circular to irregular, 2 to 4 mm. in diameter, with greyish-white centre and surrounded by a pinkish or light-brown border. Fruiting mostly epiphyllous. Stroma of few brown cells, 15—30  $\mu$  in diameter; conidiophores pale brown, unbranched and unseptate, straight or undulate, geniculate, blunt at apex, 14—28.5  $\Rightarrow$  2.8—4.2  $\mu$ . Conidia hyaline, straight to curved, obconically truncate at base, acute at tip, 1—6-septate, 14—35.5  $\Rightarrow$  2—3  $\mu$ ; On leaves of *Justicia betonica*, Nandi Hills, Mysore, 31-1-1953, leg. H. C. Govindu. (Figs. 1, 2).

Maculae circulares vel irregulares, 2—4 mm. diam., in centro griseo-albae, roseo-marginatae. caespituli plerumque epiphylli; hypostroma e paucis cellulis compositum, 15—30  $\mu$  diam. Conidiophora pallide brunnea, continua, simplicia, recta vel undulata, geniculata, antice obtusa, 14—28.5  $\Rightarrow$  2.8—4.2  $\mu$ . Conidia hyalina, recta vel curvata, 1—6 septata, inferne truncata, superne acuta, 14—35.5  $\Rightarrow$  2—3  $\mu$ .

The species differs from *C. consociata* Wint. described on species of *Justicia* in having smaller conidia (39—120  $\Rightarrow$  3.5—4.5  $\mu$  in *C. consociata* as compared with 14—35.5  $\Rightarrow$  2—3  $\mu$  of *C. acanthacearum*) as well as from other species described on members of the *Acanthaceae*.

The species also differs from *C. justiciae* Tai, *C. justiciaecola* Tai, *C. rhinacanti* Höhnelt described on species of *Justicia* in having very small conidia. Further, the conidiophores are unseptate in *C. acanthacearum* whereas in the other species mentioned above, they are distinctly septate. Previously *C. barlericola* Payak & Thirumalachar has been reported on *Barleria cristata* a member of the *Acanthaceae* in India.

2. *Cercospora californiensis* Chupp in Monograph of the fungus genus *Cercospora*, Ithaca, New York, p. 411, 1953.

Leaf spots circular to subcircular, olivaceous brown to tan with light yellow margin. Fruiting epiphyllous, stroma of brown cells, 15—20  $\mu$  in diameter. Conidiophores subhyaline to brown, unbranched, 1—8 distinctly septate, geniculate, hyaline and subacute at tip, 33—150  $\Rightarrow$  2.5—5  $\mu$ . Conidia hyaline, straight or slightly curved, acicular, attenuated and pointed at tip, 50—150  $\Rightarrow$  2.8—4.2  $\mu$ .

Hab. on leaves of *Nymphaea* sp. Lalbagh, Bangalore, 12-2-1953, leg. H. C. Govind u. (Figs. 3 & 4).

The species *C. californiensis* was differentiated by Chupp (loc. cit.) from the usually known *C. nymphaeacea* Cooke & Ellis on the basis of differences in the morphology of conidia and conidiophores. The occurrence of distinct septa and the long conidiophores in the species studied by us indicates that it is *C. californiensis*. It may however be mentioned that the range of length of conidia and conidiophores are slightly longer than those given by Chupp.

3. *Cercospora volkameriae* Speg. Revista del Museo de la Plata **15**: 47, 1908.

Leaf spots subcircular to polygonal, with greyish-white centre and dark-brown margin. Fruiting epiphyllous, with stroma of few brown cells 15—25  $\mu$  in diameter. Conidiophores dark-brown to olivaceous, very rarely branching, but mostly unbranched, hyaline at tip, 1—10 septate, strongly geniculate, 33—167  $\Rightarrow$  4—5.5  $\mu$ . Conidia hyaline, 1—20-septate, obconical to obclavate, acute at tip, 50—120  $\Rightarrow$  2.8—4  $\mu$ .

Hab. On leaves of *Clerodendron* sp., Nandi Hills, Mysore, 31-1-1953, leg. H. C. Govind u. (Figs. 5 & 6).

*Cercospora volkameriae* has previously been reported only from the type locality in Sao Paulo, Brazil. The presence of hyaline conidia developing on long conidiophores distinguishes it from the other species of *Cercospora* described on *Clerodendron*.

4. *Cercospora celosiae* Syd. Ann. Mycol. **27**: 430—431, 1929.

On leaves of *Celosia argentea*, Savandurga, Mysore, 8-3-1953, leg. H. C. Govind u. (Figs. 7 & 8).

5. *Cercospora chrysanthemi* Heald & Wolf. Mycologia **3**: 15, 1911.

Leaf spots circular to irregular, often coalescing with each other to form dark brown patches. Fruiting chiefly hypophyllous, Conidiophores pale to dark-brown developing from a poorly developed stroma of few brown cells, dark brown, slightly swollen at the base, straight, unbranched, 1—4-septate, geniculate, 60—150  $\Rightarrow$  3—5  $\mu$ . Conidia hyaline, acicular with truncate base, straight or curved, 1—20 septate, 33—130  $\Rightarrow$  3—4.2  $\mu$ .



Hab. On leaves of *Centrantherum anthelminticum*, Bannerghatta, Bangalore, 10-1-1953, leg. H. C. Govindu (Figs. 9-10).

There is no previous record of *Cercospora* species on this host. The fungus is referred to *C. chrysanthemi* on account of the close similarity of spore measurements. There is one characteristic difference however, that the conidiophores in *C. chrysanthemi* have been reported to show branching, a character not present in the material under study.

6. *Cercospora bertrandii* Chupp. l. c. p. 110.

Leaf spots circular to sub-circular, centre greyish-white surrounded by a pinkish border. Fruiting amphigenous, stroma composed of few brown cells. Conidiophores pale brown to sub-hyaline, unbranched, unseptate, geniculate, broad and stumpy, base slightly bulbous, tip blunt,  $14-42 \approx 3-5 \mu$ . Conidia hyaline, straight or curved, obclavate, broad at base and tapering towards the apex,  $1-10$ -septate,  $14-57 \approx 2.8-4.2 \mu$ .

Hab. On leaves of *Chenopodium ambrosioides*, Yadur, Bangalore, 8-6-1952, leg. H. C. Govindu.

*Cercospora bertrandii* was described by Chupp on *Spinacia oleracea* from Quebec and has so far been recorded only from type locality. The present collection is on *Chenopodium ambrosioides* and the fungus is referred to *C. bertrandii* on account of close spore measurements. In the description, Chupp states that the conidiophores are hardly septate and mostly unbranched, but his illustration indicates branching and septation. *C. beticola* Sacc. on *Chenopodium* also is known to occur on several other hosts including *Spinacia oleracea*. The conidia and conidiophores of *C. beticola* are however much larger than those of *C. bertrandii* and the two species are easily distinguishable.

7. *Cercospora unamunoi* Castellani. Riv. Agric. Subtrop. Trop. 42: 20, 1948.

Leaf spots circular to subcircular, greyish-white to greyish-black, 3 to 5 mm. in diameter. Fruiting chiefly hypophyllous, stroma not well developed, composed of few dark cells. Conidiophores medium brown to sub-hyaline emerging through the stoma, unbranched, septate at base, tortuous and geniculate, tip blunt,  $14-29 \approx 2.8-5 \mu$ . Conidia subhyaline, straight to slightly curved, tip obtuse, rounded at base,  $1-4$ -septate,  $14-38 \approx 4.2-5.7 \mu$ .

Hab. On leaves of *Capsicum frutescens* L., Kallar, Madras, 25. 1. 1953, leg. H. C. Govindu. (Figs. 13 & 14). The range of measurements for the conidiophores and conidia given for *C. unamunoi* by Chupp are slightly larger than those found in our collections.

8. *Cercospora caricis* Oudem. Nederl. Kruidk. Archief. II. 6: 59, 1892.

Spots linear to irregular, brown to dark tan, forming long brown patches, extending to nearly upper one-third portion of leaf. Stromata well developed, medium brown, 15–50  $\mu$  in diameter. Conidiophores light brown, laterally coalescent at the base and diverging from the stroma, tubular, unbranched, unseptate, geniculate at tip, 14–38  $\Rightarrow$  2.8–4.2  $\mu$ . Conidia hyaline, obclavate, broad and truncate at base, tapering towards the apex, 1–12-septate, 28–72  $\Rightarrow$  2.8–4.2  $\mu$ .

Hab. On leaves of *Eleocharis fistulosa*, Bannerghatta, Bangalore, 14-1-1953, leg. H. C. Govind u. (Figs. 15 and 16).

The types of symptoms produced and morphological characters of the fungus shows that it is identical with *C. caricis*, except that the conidiophores are slightly narrow in our material (2.8–4.2  $\mu$  as compared with 4–6  $\mu$ ). The species is distinct from *C. eleocharidis* Davis described only from Wisconsin. Previously *C. caricis* is reported only on species of *Carex*.

9. *Cercospora solanacea* Sacc. & Berl. in Atti del R. Inst. Ven. di Sci Lett. ed Arti VI. 3: 721, 1885.

Infection spots subcircular, limited by veins, 5 to 8 mm. in diameter, centre greyish-white to light olivaceous brown. Fruiting chiefly epiphyllous, stromata medium brown, subglobose, 30–40  $\mu$  in diameter. Conidiophores medium light brown to subhyaline, irregular in length, 1–3-septate at base, unbranched, not geniculate, blunt at apex, 21–71  $\Rightarrow$  2.8–4.2  $\mu$ . Conidia subhyaline, curved or straight, cylindrical, base conical, apex blunt, indistinctly 1–8-septate, 21–86  $\Rightarrow$  2.8–4.2  $\mu$ .

Hab. On leaves of *Solanum verbascifolium* Logan., Kallar, Madras, 21-1-1953, leg. H. C. Govind u. (Figs. 17 & 18).

10. *Cercospora cassiae-montanae* sp. nov.

Leaf spots circular to irregular, greyish-white to light brown in centre, surrounded by a dark brown margin. Fruiting body amphigenous; stroma well developed, medium-brown, 30–50  $\mu$  in diameter. Conidiophores olivaceous brown, unbranched, unseptate, geniculate, 14–36  $\Rightarrow$  2.8–4.2  $\mu$ . Conidia subhyaline, straight or curved, obconical, broad at base and blunt at apex, 14–21  $\Rightarrow$  3.8–5  $\mu$ .

Hab. On leaves of *Cassia montana*, Savandurga, Mysore, 8-3-1953, leg. H. C. Govind u. (Figs. 21 & 22).

Maculae circulares vel irregulares, in centro griseo-albae, margine brunneae. Caespituli plerumque amphigeni; hypostromata bene evoluta, 30–50  $\mu$  diam. Conidiophora olivacea, continua, simplicia, geniculata, 14–36  $\Rightarrow$  2.8–4.2  $\mu$ . Conidia subhyalina, recta vel curvata, septata, basi obconica, apice obtusa, 14–21  $\Rightarrow$  3.8–5  $\mu$ .



Comparative account with other species of *Cercospora* with coloured conidia on species of *Cassia* indicates that the present species differs in having shorter conidiophores and conidia than other species described.

11. *Cercospora ugandensis* Hansford. Proc. Linn. Soc. Lond. **3**: 59, 1943.

Infection spots linear to irregular, inciting the drying up of the apex of leaf blade. Fruiting chiefly epiphyllous, stroma well developed, olivaceous-brown, compact, 30—70  $\mu$  in diameter. Conidiophores light brown to medium brown, tortuous to straight, unbranched, 1—2-septate at base, geniculate at tip, tip hyaline and blunt, 28.5—57  $\Rightarrow$  3—5  $\mu$ . Conidia hyaline, straight, obclavate to cylindrical, 14—71  $\Rightarrow$  2—3  $\mu$ .

Hab. On leaves of *Mariscus* sp., Kallar, Madras, 25-1-1953, leg. H. C. G o v i n d u. (Fig. 19—20).

The species studied by us differs slightly from the species described by Hansford from Uganda in having slightly narrower conidia and conidiophores.

12. *Cercospora eupatoricola* sp. nov.

Infection spots circular to irregular, 0.5 to 1 mm. in diameter, dark brown. Fruiting amphigenous, stroma composed of dark brown cells, 20—30  $\mu$  in diameter. Conidiophores light-brown to subhyaline, irregularly geniculate, 1—4-septate, branching, often taper into tubular tips, 21.5—71  $\Rightarrow$  2.8—4.5  $\mu$ . Conidia subhyaline to olivaceous brown, straight or curved, obclavate to cylindrical, tip subacute, 28.5—50  $\Rightarrow$  2.8—4.2  $\mu$ .

Hab. On leaves of *Eupatorium rheveesi*, Sibpur, Calcutta, 1-1-1952, leg. H. C. G o v i n d u (Figs. 25 & 26).

Maculae circulares vel irregulares, fusco-brunneae. Caespituli plerumque amphigeni. Hypostromata 20—30  $\mu$  diam. e cellulis fusco-brunneis composita. Conidiophora pallide luteo-brunnea, irregulariter geniculata, 1—4-septata, ramosa, 21.5—71  $\Rightarrow$  2.8—4.5  $\mu$ . Conidia subhyalina vel pallide olivacea, recta vel curvata, obclavata vel cylindrica, apice subacuta, 28.5—50  $\Rightarrow$  2.8—4.2  $\mu$ .

Several *Cercospora* species are reported on *Eupatorium* which show subhyaline to pale olivaceous conidia. Among these, *C. perfoliata* which has similar spore measurements as the species studied by us has conidiophores developing from creeping hyphae and does not possess the fasciculate conidiophores developing from stroma as in the species under study. *C. ageratoides* Ell. & Ev. has also branched septate conidiophores, but these are longer (40—150  $\mu$ ) and broader 4.5—5  $\mu$  than in *C. eupatoricola*.

13. *Cercospora diffusa* Ell. & Ev. Journ. Myc. 4: 3, 1888.

On leaves of *Lycopersicum esculentum*, Savandurga, Mysore, 10-2-1953, leg. H. C. Govindu. The fungus becomes completely overgrown by the sooty patches of *Cladosporium* species, which produces 2-3-celled spores (Figs. 23-24).

14. *Cercospora cardiospermi* Petch. Ann. Roy. Bot. Gard. Peradeniya, 6: 250, 1917.

On leaves of *Cardiospermum helicacabum*, Bannerghatta, Bangalore, 10-11-1948, leg. M. J. Thirumalachar, Kallar, Madras, 26-1-1953, leg. H. C. Govindu. (Figs. 27-28).

15. *Cercospora cipadessae* sp. nov.

Producing large sooty patches on leaves, 2-3 cm in diameter on lower surface. Fruiting bodies chiefly amphigenous stromata of dark brown compactly grouped cells in the substomal space, 30-50  $\mu$  in diam. Conidiophores light olivaceous brown, occasionally branched, 2-5-septate, undulating, blunt at apex, geniculate, 21.5-50  $\Rightarrow$  4.2-5.7  $\mu$ . Conidia subhyaline, pale olivaceous, narrowly obclavate to acicular, 1-10-septate base obconically truncate, tip acute, 28.5-90  $\Rightarrow$  2.4-4.2  $\mu$ .

On leaves of *Cipadessa baccifera* (Meliaceae), Nandi Hills, Mysore, 1-3-1953 (type), leg. H. C. Govindu. (Figs. 43-44).

Maculae fuliginosae, 2-3 cm diam.; caespituli amphigeni; hypostromate brunneo, pseudoparenchymatico, stomatibus innato, 30-50  $\mu$  diam.; conidiophora pallide olivaceo-brunnea, interdum ramosa, 2-5-septata, undulata, antice obtusa, geniculata, 21.5-50  $\Rightarrow$  4.2-5.7  $\mu$ . Conidia subhyalina, pallide olivacea, anguste obclavata vel acicularia, 1-10-septata, postice truncata antice acuta, 28.5-90  $\Rightarrow$  2.4-4.2  $\mu$ .

16. *Cercospora celastricola* sp. nov.

Leaf spots angular to circular, greyish-white to black in centre, surrounded by reddish border, often coalescing to form large patches. Fruiting amphigenous, stroma 30-90  $\mu$  in diameter. Conidiophores medium brown to dark brown, hyaline at the tip, 1-6-septate, rarely subgeniculate, 50-200  $\Rightarrow$  2.4-4.2  $\mu$ . Conidia hyaline, straight or bent, cylindrical to obclavate, base truncate, tip acute, 1-12-septate, 83-116  $\Rightarrow$  2.4-4.2  $\mu$ .

Hab. On leaves of *Celastrus paniculata*, Savandurga, Mysore, 10-2-1953, leg. H. C. Govindu. (Figs. 45 & 46).

Maculae circulares vel angulares, centro griseo-albae et zona rubra cinctae. Caespituli amphigeni, hypostroma 30-90  $\mu$  diam. Conidiophora pallide fusca, in apice dilutiora, 1-6-septata, raro geniculata, 50-200  $\Rightarrow$  2.4-4.2  $\mu$ . Conidia hyalina, recta vel curvata, obclavata vel cylindrica, ad basim truncata, ad apicem acuta, 1-12-septata, 83-116  $\Rightarrow$  2.4-4.2  $\mu$ .



*Cercospora melanochaeta* Ell. & Evr. reported on species of *Celastrus* in U.S.A. and South Africa is a different fungus with subhyaline conidia and shorter conidiophores. Two other species reported on *Evonymus* sp. are also different, and Chupp who examined these consider them as species of *Ramularia* and not *Cercospora*.

17. *Cercospora ficici* Heald & Wolf. Mycologia **3**: 16, 1911.

Spots circular to irregular, dark olivaceous brown in the centre and surrounded by pinkish margin, infection spots often coalescing to form large patches. Fruiting amphigenous, stroma well developed, yellowish brown to olivaceous, 25—75  $\mu$  in diameter, fascicles dense and compact. Conidiophores radially disposed, medium brown, undulating 1—3-septate, unbranched, blunt at apex, subgeniculate, 28.5—86  $\Rightarrow$  2.8—4.2  $\mu$ . Conidia pale olivaceous to light brown, narrowly obclavate, straight or curved, tip subacute, 33—133  $\Rightarrow$  2.8—4.2  $\mu$ .

Hab. On leaves of *Ficus* sp. Sibpur, Calcutta, 1-1-1952, leg. H. C. Govindu, (Figs. 31 & 32).

18. *Cercospora sorghi* Ellis & Evr. var. **Cymbopogonis** var. nov.

Syn.: *C. sorghi* Ellis & Evr. Jour. Mycol. **3**: 15, 1887.

Leaf spots linear to irregular, medium brown to olivaceous, coalescing with each other to form long stripes often extending over the entire leaf surface. Fruiting chiefly epiphyllous, stroma of few brown cells. Conidiophores olivaceous to deep brown, unbranched and unseptate, tubular, geniculate at tip, undulating, 28.5—71  $\Rightarrow$  2.4—4.2  $\mu$ . Conidia hyaline, obclavate to cylindric, broad at base and acute at tip, 1—10-septate, 21—50  $\Rightarrow$  2—3.5  $\mu$ .

Hab. On leaves of *Cymbopogon caesium* Stapf. Hebbal, Bangalore, 10-2-1953, leg. H. C. Govindu. (Figs. 33 & 34).

The fungus while closely resembling *C. sorghi* in the spore measurements, differs from it in having unseptate conidiophores and poorly developed stroma of few brown cells. It is therefore presented as a new variety. Previously *C. sorghi* has been reported by Chupp and Doidge (Bothalia 4: 892—893, 1948) on *Cymbopogon atronardus* from South Africa.

19. ***Cercospora hardwarensis*** Narasimhan sp. nov.

Spots linear to irregular, brown, coalescing with one another to form brown patches. Fruiting chiefly amphigenous; stroma of dark brown cells; 10—20  $\mu$  in diameter. Conidiophores light-brown, divergent, unbranched, 1—4-septate, 21.5—57  $\Rightarrow$  2.8—4.2  $\mu$ ; Conidia subhyaline to pale olivaceous; straight or curved, obclavate-cylindric, 1—5-septate, obconical at base, obtuse or subacute at apex, 21.5—43  $\Rightarrow$  2.8—5.2  $\mu$ .

On leaves of *Tephrosia purpurea*, Hardwar, U. P., 15-12-1952, leg. M. J. Narasimhan (Type). (Figs. 41-42).

Maculae lineares, vel irregulares, brunneae, interdum confluentes; caespituli amphigeni. Hypostroma 10-20  $\mu$  diam. e cellulis brunneis compositum. Conidiophora pallide brunnea, divergentia, simplicia, 1-4-septata, 21.5-57  $\Rightarrow$  2.8-4.2  $\mu$ ; conidia subhyalina, pallide olivacea, recta vel curvata, obclavata vel cylindracea, 1-5-septata, postice obconica antice obtusa vel subacuta, 21.5-43  $\Rightarrow$  2.8-5.2  $\mu$ .

*Cercospora hardwarensis* differs from *C. tephrosiae* Atk. reported from Alabama, U.S.A. on *Tephrosia hispida* in having smaller conidia and conidiophores. The conidia in the latter are 70-130  $\Rightarrow$  4-4.5  $\mu$ ; and the conidiophores 50-100  $\Rightarrow$  4.5-5  $\mu$ .

20. *Cercospora haematoxylonis* Chupp. l. c., p. 309-310.

Leaf spots circular to irregular, yellowish-brown, surrounded by pinkish border, 2-5 mm. in diameter; hypostroma 20-30  $\mu$  in diam. conidiophores are light brown, undulate, unseptate, blunt at apex, 14-38  $\Rightarrow$  1.4-2.8  $\mu$ . Conidia hyaline, acicular, obconical at base, acute at tip, 1-8-septate, 21.5-60  $\Rightarrow$  2.4-4.2  $\mu$ .

On leaves of *Haematoxylon compacheanum*, Sibpur, Calcutta, 9-1-1952, leg. H. C. Govindu.

The fungus was described by Chupp in 1953 on the basis of collection made by Martyn in Jamaica, and was known to occur only in the type locality. The writers had independently proposed the new species *C. haematoxylonis* for the fungus with identical characters collected on the same host in India.

21. *Cercospora anisomelicola* Sawada, Formosa (Taiwan) Agr. Res. Inst. Rept. 86: 166, 1943.

Producing sooty patches on leaves, 3 to 5 mm. in diameter with yellowish angular areas. Hypostroma of few cells in substomal space. Conidiophores divergent, pale olivaceous to deep olivaceous brown in colour, tortuous, unbranched, 1-5-septate, rarely geniculate, 22-57  $\Rightarrow$  3-5  $\mu$ . Conidia subhyaline to pale olivaceous, obclavate to acicular, base obconically truncate, acute at tip, 1-10-septate, straight or curved, 36-65  $\Rightarrow$  3-4.5  $\mu$ .

Hab. On leaves of *Anisomeles malabarica* (Labiatae), Bannerghatta, Bangalore, 10-1-1953, leg. H. C. Govindu. (Figs. 39 & 40).

The fungus is referred to *C. anisomelicola* Sawada redescribed by Chupp on the basis of study of type material. *C. anisomelicola* in Formosa occurs on *Anisomeles indica* and possesses same type of conidiophores and conidia as in the fungus under study.



22. *Cercospora puderi* Ben Davis. Mycologia **30**: 291, 1938.

Infection spots circular to irregular, 2 to 5 mm. in diameter, dark olivaceous to medium brown in the centre with pink border. Fruiting epiphyllous, stroma dark brown, 20—30  $\mu$  in diameter. Conidiophores light to medium brown, unbranched, unseptate, slightly bulbous at base, blunt at apex, short and stumpy, 14—21.5  $\Rightarrow$  1.4—2.8  $\mu$ . Conidia subhyaline to hyaline, straight or bent, obclavate-cylindric to acicular, 1—7-septate, obconic at base, subacute at tip, 14—50  $\Rightarrow$  1.5—3  $\mu$ .

Hab. On leaves of *Rosa* sp., Patna, Bihar, 1-11-1952, leg. M. J. Thirumalachar. (Figs. 37 & 38).

The short conidiophores developing from the stroma, bearing the subhyaline to hyaline conidia indicates that the fungus under study is *C. puderi*, and different from *C. hyalina* and *C. rosicola*. The fungus has previously been reported only from North and South America.

23. *Cercospora grewicola* sp. nov.

Producing large sooty patches on the leaves, 2 to 3 cms. in diameter, fruiting amphigenous, hypostroma none. Conidiophores arising singly, or in groups, fuliginous, septate, branched occasionally, geniculate, 21.5—71  $\Rightarrow$  2.4—4.2  $\mu$ . Conidia subhyaline to pale olivaceous, obclavate or cylindric, 1—10-septate, obconical at base and acute at tip, 30—100  $\Rightarrow$  2—3.5  $\mu$ .

Hab. On leaves of *Grewia* sp. (Tiliaceae), Kallar, Madras, 26-1-1953, leg. H. C. Govindu. (Figs. 29 & 30).

Maculae magnae, fuliginosae, 2—3 cm. diam. Caespituli amphigeni; hypostromata nulla. Conidiophora simplicia vel fasciculata, fuliginosa, septata, raro ramosa, geniculata, 21.5—71  $\Rightarrow$  2.4—4.2  $\mu$ . Conidia subhyalina vel pallide olivacea, obclavata vel cylindrica, 1—10-septata, inferne obconica, superne acuta, 30—100  $\Rightarrow$  2—3.5  $\mu$ .

The fungus under study has some resemblance with *C. grewiae* Srivastava & Mehta described on the same host genus from India (Indian Phytopath. **4**: 67, 1951) in inciting sooty patches on leaves etc. But the conidia of *C. grewiae* are shorter and very much broader as in *Helminthosporium* (28—52  $\Rightarrow$  4—8  $\mu$  as against 30—100  $\Rightarrow$  2—3.5  $\mu$  in *C. grewicola*) and is therefore a separate species.

In conclusion, the writers wish to acknowledge their grateful thanks to Dr. Franz Petrak for kindly helping in translating the descriptions of new species into latin.

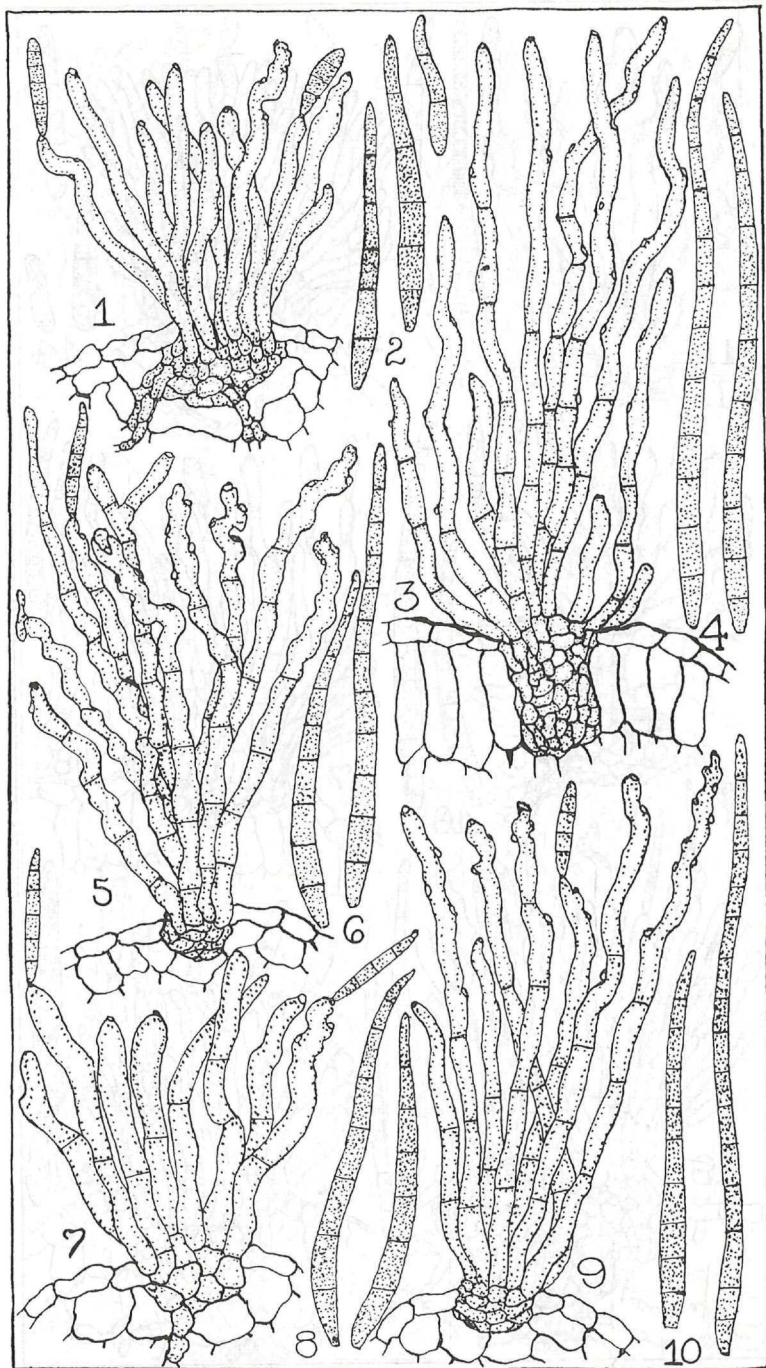
**Explanation of plate VI—IX.**

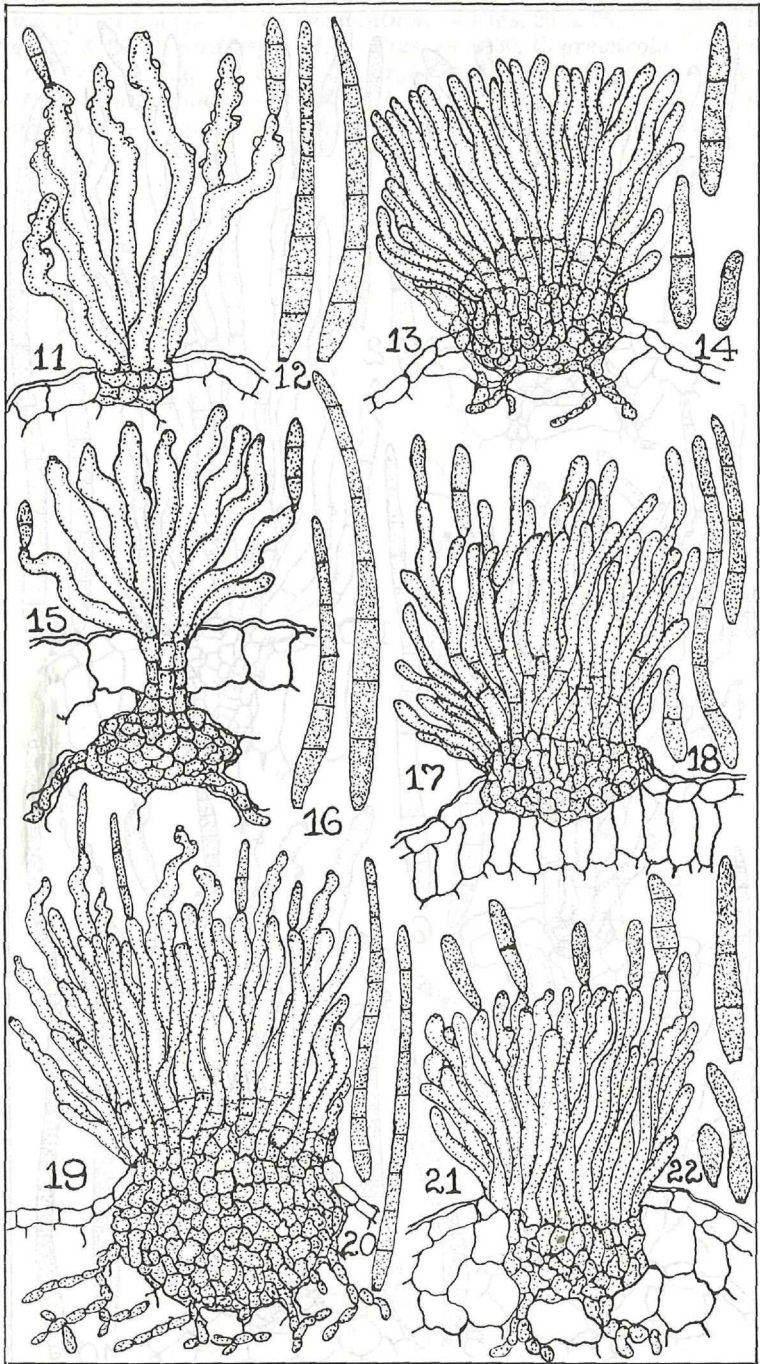
(Magnification of sori about  $\times$  500 and spores about  $\times$  750.)

Figs. 1 & 2. *Cercospora acanthacearum*. — Figs 3 & 4. *C. californiensis*. — Figs. 5 & 6. *C. volkameriae*. — Figs. 7 & 8. *C. celosiae*. — Figs. 9 & 10. *C. chrysanthemi*. — Figs. 11 & 12. *C. bertrandii*. — Figs. 13 & 14. *C. unamunoi*.

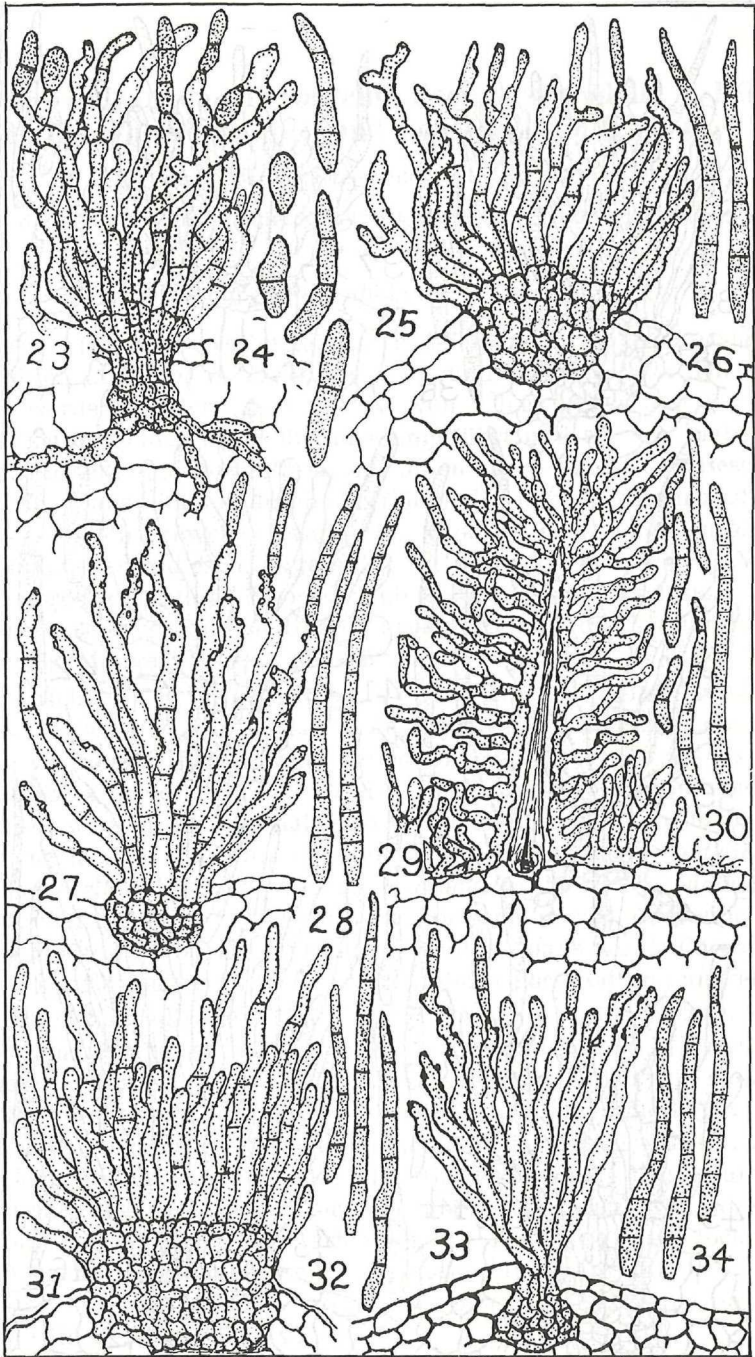
Figs. 15 & 16. *C. caricis*. — Figs. 17 & 18. *C. solanacea*. — Figs. 19 & 20. *C. ugandensis*. — Figs. 21 & 22. *C. cassiae-montanae*. — Figs. 23 & 24. *Cladosporium* sp. on *Lycopersicum esculentum*. — Figs. 25 & 26. *C. eupatoricola*. — Figs. 27 & 28. *C. cardiospermi*. — Figs. 29 & 30. *C. grewicola*. — Figs. 31 & 32. *C. ficti*. — Figs. 33 & 34. *C. sorghi* var. *cymbopogonis*. — Figs. 35 & 36. *C. haematoxylonis*. — Figs. 37 & 38. *C. puderi*. — Figs. 39 & 40. *C. anisomelicola*. — Figs. 41 & 42. *C. hardwarensis*. — Figs. 43 & 44. *C. cipadessae*. — Figs. 45 & 46. *C. celastricola*.

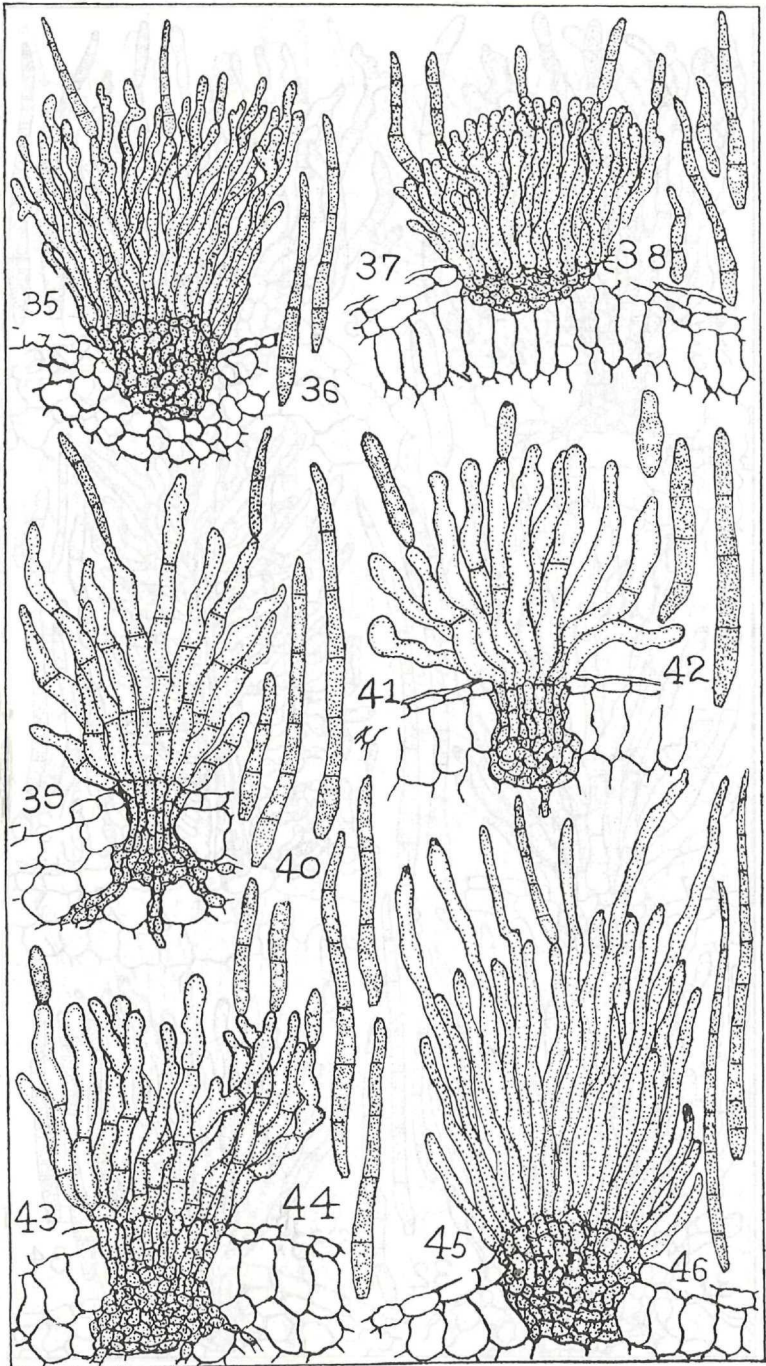














# ZOBODAT - [www.zobodat.at](http://www.zobodat.at)

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Sydowia](#)

Jahr/Year: 1954

Band/Volume: [8](#)

Autor(en)/Author(s): Govindu H. C., Thirumalachar M. J.

Artikel/Article: [Notes on some Indian Cercosporae. IV. 221-230](#)