

Notes on some Indian Cercosporae — XI.

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With plates I—III.

Since the publication of the previous part (*Sydowia* 16: 1963) on the Cercosporae of India, further collections of *Cercospora* species were made from different localities. In the present paper, taxonomic account of eighteen species of *Cercospora*, seventeen of which are collected from Mysore State and one from Andhra State is given.

The authors are grateful to Prof. Dr. Franz Petrak for kindly giving us the latin diagnosis of the new species.

1. *Cercospora glauca* Sydow. Ann. Mycol. 27: 432. 1939.

Leaf spots circular to polygonal, greyish-white, distinct and usually surrounded by a dark brown border. Fruiting amphigenous, stroma well developed, compact and composed of brown cells; conidiophores medium to olivaceous-brown arising in dense fascicles 20—40, unbranched, sometimes subgeniculate and subhyaline at tip, rarely septate especially near the base, 12,4—70,8 × 3,1—4,9 μ ; conidia subhyaline to pale-brown, subcylindrical, curved, obtuncate at base, rounded at apex, 1—8 septate, 20,2—80,4 × 2,5—4,4 μ .

Hab. On leaves of *Albizzia lebbek* Benth. Hebbal, Bangalore.

January 25. 1962. leg. H. R. Reddy. MYSP Herb. No. 659 (Fig. 1).

The species referred to here as *C. glauca* closely resembles the description of the type described by Sydow on *Albizzia kalkora* Prain, reported from China. Except for slight differences especially in the measurements of conidiophores (5—15 μ as against 12,4—70,8 μ in our material) and other similar minor characters. The present one is a new record for India and also is a new distribution for the fungus.

2. *Cercospora occimicola* Petrak & Ciferri Ann. Mycol. 30: 324, 1932.

Hab: On leaves of *Ocimum americanum* Linn., Hebbal. Bangalore, December 5, 1961, MYSP Herb. No. 269 and October 5, 1962 MYSP Herb. No. 510, leg. H. C. Govindu (Fig. 2).

This fungus has not been previously reported on *Ocimum americanum*. There are only few minor differences with the type in the measurements and septation of conidiophores (20—75 μ and multi-

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septate as against 10—25 μ and non-septate or very rarely 1-septate in our material).

3. *Cercospora perfoliata* Ell. & Ev. Jour. Mycol. 5: 71. 1889.

Hab: On leaves of *Ageratum conyzoides* Linn., Hebbal, Bangalore December 5. 1961, leg. H. C. Govindu and M. H. Delvi, MYSP. Herb. No. 321; December 15. 1961, leg. NVR. Urs & L. E. Murthy, MYSP Herb. No. 322 (Fig. 3).

4. *Cercospora burserae* Govindu & Thirum. sp. nov.

Leaf spots mostly circular, small, 2—3 mm. in diam., dark-brown to greyish-brown; fruiting amphigenous; stromata dark brown to almost black, subglobular. 15—35 μ in diam.; conidiophores medium to olivaceous-brown, in mass dark-brown arising in fascicles, 10—40 or even more, short, thick, stumpy, unbranched, very rarely 1—2, septate, rarely sub-genuculate especially near the tip, 15,4—45,8 \times 3,5—5,5 μ ; conidia subhyaline to very pale olivaceous-brown, obclavate to obcylinderic, straight or curved base obtruncate, tip subacute, 1—19-septate, septa indistinct, 10—50,5 \times 2,5—4,0 μ .

Maculae plerumque orbiculares, minutae, 2—3 mm diam., obscure brunneae vel grisco-brunneae; caespituli amphigeni; hypostroma obscure brunneum vel fere nigrescens, subglobosum, 15—35 μ diam.; conidiophora olivaceo-brunnea, in cumulo obscure brunnea, 10—40 vel etiam complura dense fasciculata, crassiuscula, continua, raro 1—2-septata, recta vel apicem versus subgeniculata, 15,4—45,8 \times 3,5—5,5 μ ; conidia subhyalina vel pallidissime ochraceo-brunnea, obclavata, recta vel curvula, postice plus minusve truncata, apicem versus paulatim attenuata et acuminata, indistincte 1—19-septata, 10—50,5 \times 2,5—4,0 μ .

Hab: On leaves of *Bursera delpechianum* Poise., Kodimanchena-halli Farm, Devanahalli, Bangalore District (Mysore State), October 25. 1963, leg. N. V. R. Urs. MYSP Herb. No. 705 (Fig. 4).

Bursera delpechianum a native of Mexico is cultivated in Mysore for its oil, which is used in perfumery. Burseraceae is a new host family for *Cercospora*.

5. *Cercospora althaeina* Sacc. Michelia 1: 269. 1878.

Hab. On leaves of *Althaea rosea* Linn. Bangalore. October 28, 1962, leg. H. C. Govindu, MYSP Herb. No. 521 (Fig. 5).

Cercospora althaeina previously has been reported on *Kydia* sp., from India. *A. rosea*, is cultivated as an ornamental plant in gardens.

6. *Cercospora hyalina* Muller & Chupp. Arquiv. Inst. Biol. Veg.

R. de Janeiro 1: 217, 1935.

Hab. On leaves of *Rosa* sp. (Cultivated rose), "Ramakrishnalaya" Visweswerapuram, Bangalore, December 6, 1962, leg. H. C. Govindu, MYSP Herb. No. 512 (Fig. 6).

7. *Cercospora grandisaima* Rangel Bol. Agric. Sao Paulo. XVI.

A. 4: 322, 1915.

Hab. On leaves of *Dahlia variabilis* Deaf. (Cultivated), "Rama-krishnalaya" Visweswarapuram, Bangalore, October 5, 1962. Leg. H. C. Govindu, MYSP. Herb. No. 499 (Fig. 7).

The conidiophores in the material studied are usually in dense fascicles of more than 10 in number, they are not uniform in width and the base is often bulbose.

8. *Cercospora cynoglossi* Van Hook Proc. Indiana Acad. Sci. 38, 131, 1929.

Hab. On leaves of *Cynoglossum furcatum* Wall., Botanical Gardens, Central College, Bangalore, December 4, 1962, leg. H. C. Govindu, MYSP Herb. No. 515 (fig. 8).

This fungus has previously been reported on *Cynoglossum officinale* Linn., from Indiana, U.S.A., and the present report is the first record of the species in India, and further, *C. furcatum* is a new host record.

9. *Cercospora ipomoeae* Winter Hedwigia 26; 34. 1887.

Hab. On leaves of *Ipomoea pescaprae* (Linn.) Sweet., Agricultural College, Bapatla (Andra Pradesh). March 20, 1962, leg. H. C. Govindu, MYSP Herb. No. 463 (Fig. 9).

The present report of this fungus on *I. pescaprae* is a new host record for India.

10. *Cercospora bombacicola* Munjal. Lall & Chona Indian Phytopath. 13: 144, 1960.

Hab: On leaves of *Salmalia (Bombax) malabarica* (DC.) Schott. & Endl. C.S.I.R. Forest Nursery, Sagar, Shimoga District (Mysore State), January 22, 1963, leg. H. C. Govindu and S. C. Basappa, MYSP Herb. No. 538 (Fig. 10).

11. *Cercospora mitteriana* Sydow. Ann. Mycol. 35: 240, 1937.

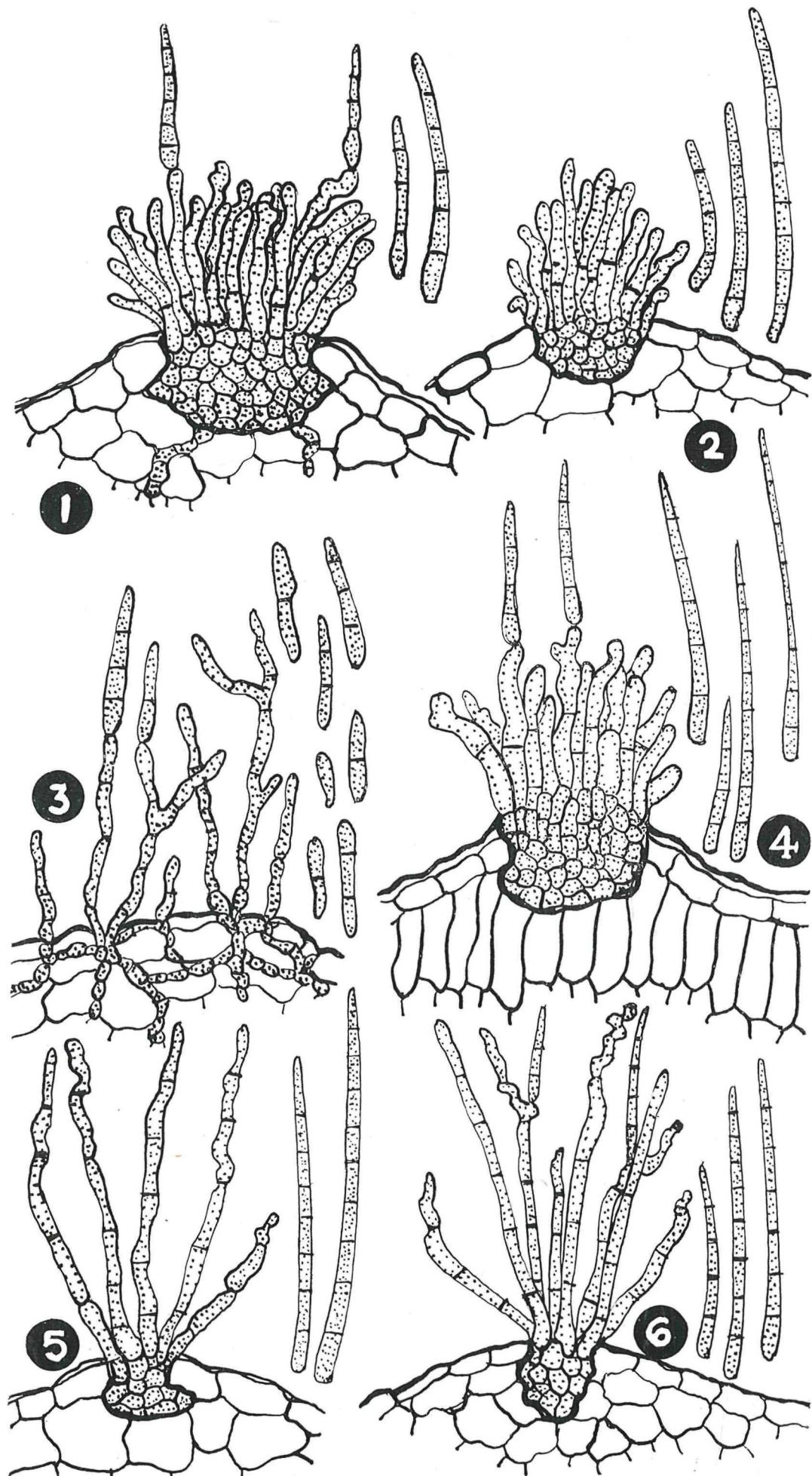
Hab. On leaves of *Dodonaea viscosa* Linn., Hoskote, Bangalore District (Mysore State), March 13, 1963, leg. S. S. Gowda and R. C. Y. Aiah, MYSP. Herb. No. 571 (Fig. 11).

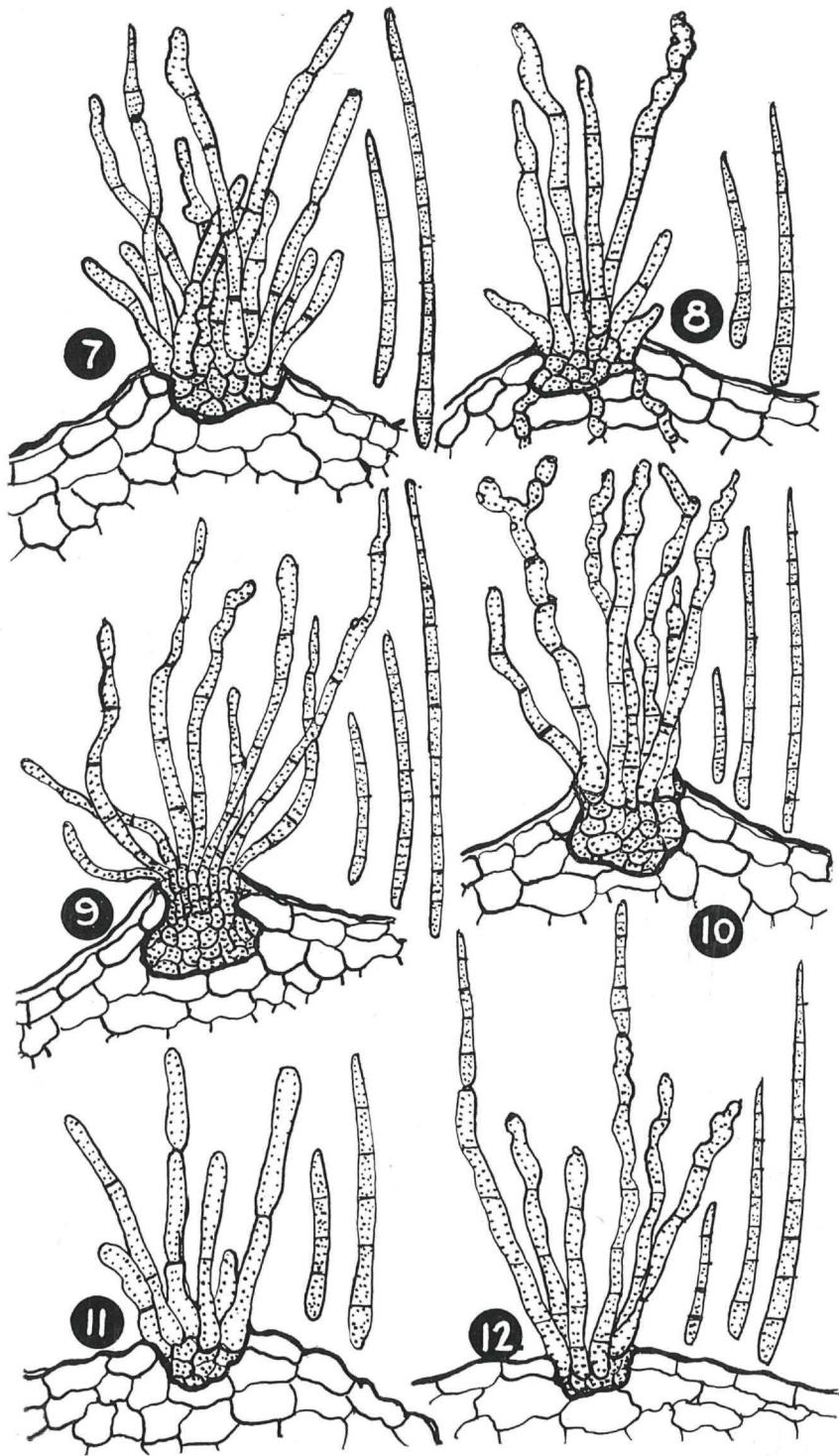
The type was described by Sydow from material collected from Jullundur and the present record is a new distribution for Mysore State. There are slight differences in the conidiophores (not septate and strongly attenuated as against 1–3-septate and rarely attenuated with a bulbous base in our material).

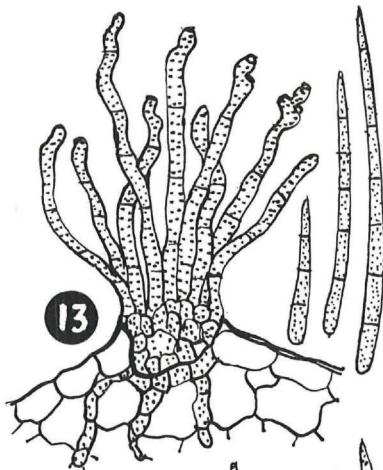
12. *Cercospora eclipticola* Chiddarwar Sydowia 13: 159, 1959.

Hab. On leaves of *Eclipta prostrata* (Linn.) Linn. Sunkarakoppa, Shimoga District (Mysore State), January 21, 1963, leg. H. C. Govindu and S. C. Basappa, MYSP Herb. No. 592 (Fig. 12).

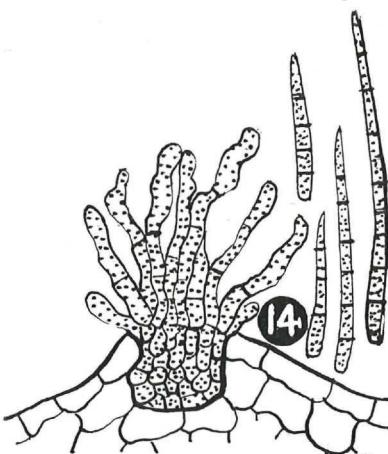
Cercospora eclipticola collected from Mysore, shows some minor differences with the type described by Chiddarwar. In the present material the conidiophores are much longer and subgeniculate especially near the tip; also the conidia are hyaline while in the type, they are described as subhyaline.



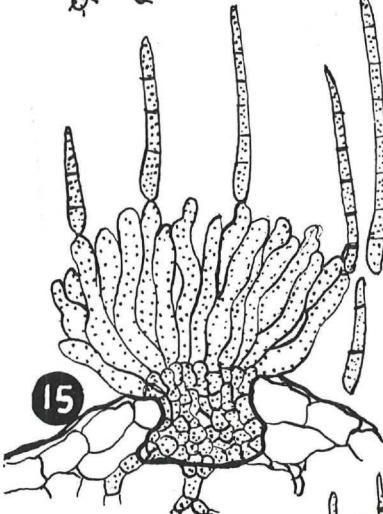




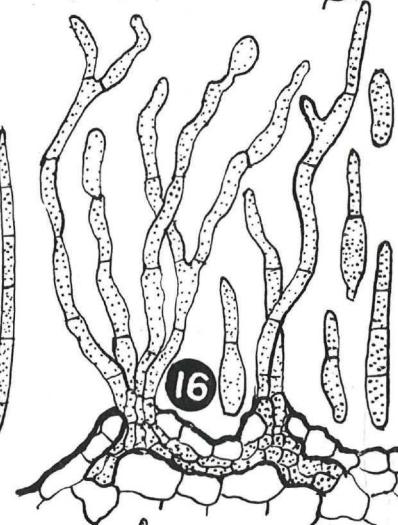
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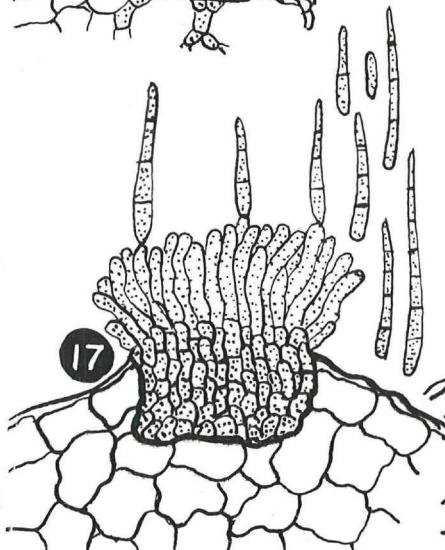
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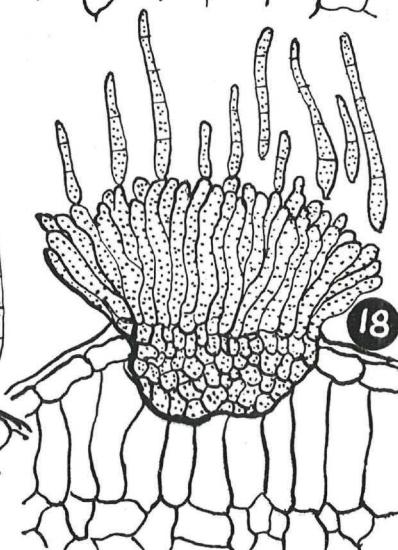
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13. *Cercospora crotalariae* Sacc. Ann. Roy. Bot. Gardens. Pera-deniya 3: 2, 1906.

Hab. On leaves of *Crotalaria striata* DC., Hebbal, Bangalore, January 1953, leg. H. C. Govindu, MYSP Herb. No. 400; January 1, 1962, leg. H. R. Reddy, MYSP Herb. No. 332, Area Research Station, Thirthahalli (Mysore State), April, 18, 1963, leg. S. C. Basappa, MYSP Herb. No. 624 (Fig. 13).

The first report of this fungus on *Crotalaria striata* was made from Ceylon and the present record is the first for India.

14. *Cercospora sonchi* var. *taraxaci* Govindu and Thirum. Var. nov. *C. sonchi* Chupp Cerco. Monogr. 159, 1953.

Leaf spots mostly circular, 1—5 mm in diam, greyish-white at centre and surrounded by dark brown border. Fruiting amphigenous, stroma of few brown cells, 15—20 μ in diam, conidiophores medium brown to olivaceous-brown, arising in fascicles of 6—14, 1—5 septate, unbranched, subgeniculate to geniculate, irregularly wavy, 30,4—70,8 \times 3,2—5,0 μ . Conidia hyaline, acicular, rarely obclavate, straight or curved, 1—14 septate, septa indistinct, subtruncate at base, tip acute often attenuated, 20—100 \times 2,0—3,5 μ .

Hab: On leaves of *Taraxacum officinale* Weber, Botany Department, Central College, Bangalore, January 20, 1962, leg. H. C. Govindu, MYSP Herb. No. 488 (Fig. 14).

Maculae plerumque orbicularis, 1—5 mm diam., griseo-albidae in centro obscuriores et ad marginem linea obscure brunnea circumdatae; caespituli amphigeni; hypostroma minutum, e paucis cellulis brunneis compositum, 15—20 μ diam.; conidiophora brunnea vel olivacea, 6—14-fasciculata, 1—5-septata, non ramosa, subgeniculata vel geniculata, irregulariter undulata, 30,4—70,8 \times 3,2—5,0 μ ; conidia hyalina acicularia, raro obclavata, recta vel curvula, indistincte 1—14-septata, postice subtruncata, antice plus minusve attenuata et acuminata, 20—100 \times 2,0—3,5 μ .

Cercospora sonchi was first reported from India in 1956 from Bangalore (*Sydowia* 10: 261) on *Sonchus* sp. The present report on *Taraxacum officinale* commonly referred to as dandelion is a new host record for the species. The species referred to here as *C. sonchi* closely resembles the type described by Charles Chupp but differs from it in the size of conidiophores and conidia, which are much smaller in our material (Conidiophores 4—5,5 \times 30—120 μ as against 3,0—5 \times 30,4—70,8 μ ; conidia 2—3,5 \times 50—200 μ as against 2—3,5 \times 20—100 μ). Further the present report is on a new host genus *Taraxacum* (closely related to *Sonchus*) and therefore it is accommodated as a new variety *C. sonchi* var. *taraxaci*.

15. *Cercospora scopariae* Thirum. & Lacy *Sydowia* 5: 127, 1951.

Hab: On leaves of *Scoparia dulcis* Linn, Haralane, Koppa,

Chickamagalur District (Mysore State), January 23, 1963, leg. H. C. Govindu and S. C. Basappa, MYSP Herb. No. 544 (Fig. 15).

16. *Cercospora ferruginea* Fuckel In Fresenius Beiträge zur Mycologie, p. 93, 1863.

Hab. On leaves of *Artemisia vulgaris* Linn, Devangi, near Thirthahalli, Shimoga District (Mysore State), January 22, 1963, leg. H. C. Govindu & S. C. Basappa, MYSP. Herb. No. 539 (Fig. 16).

17. *Cercospora puderi* Ben Davis Mycologia 30: 29: 1938.

Hab: On leaves of *Rosa* sp., (Cultivated rose) "Ramakrishnalaya" Visweswarapuram, Bangalore, November 18, 1963, leg. H. C. Govindu MYSP Herb. No. 689, Sheshadripuram, Bangalore, August 16, 1961, leg. K. V. Ram, MYSP Herb. No. 209 (Fig. 17).

18. *Cercospora zizyphi* Petch Ann. Roy. Bot. Gard. Peradeniya, Part 5, 4: 306, 1909.

Hab. On leaves of *Zizyphus mauritiana* Lam. Hebbal. Bangalore, February 1, 1962. Leg. H. R. Reddy, MYSP. Herb. No. 460: Tarikere, Shimoga District (Mysore State). May 16, 1963, leg. H. C. Govindu, MYSP Herb. No. 606 (Fig. 18).

Explanation of Plates.

Fig. 1. *Cercospora glauca*. — Fig. 2. *C. ocimicola*. — Fig. 3. *C. perfoliata*. — Fig. 4. *C. burserae*. — Fig. 5. *C. althaeina*. — Fig. 6. *C. hyalina*. — Fig. 7. *C. grandissima*. — Fig. 8. *C. cynoglossi*. — Fig. 9. *C. ipomoeae*. — Fig. 10. *C. bombacicola*. — Fig. 11. *C. mitteriana*. — Fig. 12. *C. eclipticola*. — Fig. 13. *C. crotalariae*. — Fig. 14. *C. sonchi* var. *taraxaci*. — Fig. 15. *C. scopariae*. — Fig. 16. *C. ferruginea*. — Fig. 17. *C. puderi*. — Fig. 18. *C. zizyphi*. — Magnifications about $\times 750$.

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