

## New records of Cercosporae from India

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Five interesting species of *Cercospora* described in the present paper were collected during periodic surveys made in 1970. Of these, *Cercospora duddiae* on *Allium porium*, *C. helianthicola* on *Helianthus cucumerifolius* and *C. justiciaecola* on *Justicia gendarussa* are new host records since in literature there is no report of Cercosporae on these host species either from this country or any other region of the world. *C. solidaginis* and *C. podophylli* are recorded from India for the first time. The specimens have been deposited in the herbarium of the Division of Plant Pathology, U. P. Institute of Agricultural Sciences, Kanpur, India.

1. *Cercospora duddiae* Welles; Phytopathology, 13: 362—365, 1923.

Young leaf spots circular to mostly oval or elongated, irregularly scattered at long distances, yellow later turning brownish on drying of leaves; fruiting amphigenous but abundant on lower surface; stromata lacking or of a few brown cells only; conidiophores emerging in dense groups of 5—18, base light brown and tips hyaline, straight or slightly curved with rare geniculations, visible scars at tips only, multiseptate,  $4-8 \times 60-176 \mu$  in size; conidia hyaline, acicular, straight or slightly curved, base broad and tip acute, septa indistinct,  $2.5-6 \times 68-250 \mu$  in size (Fig. 1 & 2).

On living leaves of *Allium porium* L. (Lilliaceae), Horticultural Garden, U. P. Institute of Agricultural Sciences, Kanpur, 6. 7. 1970, Udit Narain. Herb. No. C-14.

2. *Cercospora helianthicola* Chupp & Viégas; Bol. da Soc. Brasil. de Agron., 8: 29, 1945.

Leaf spots circular to irregularly large, sometimes coalescing, dark brown, fruiting on both surfaces of leaves; stromata lacking; conidiophores emerging in groups of 2—7, pale brown, simple, geniculate, multiseptate, tips narrow,  $3.5-5.5 \times 40-150 \mu$  in size; conidia hyaline, acicular, multiseptate (upto 15), straight or slightly curved, base truncate with acute tips, measuring  $2-5 \times 56-175 \mu$  in size (Fig. 3 & 4).

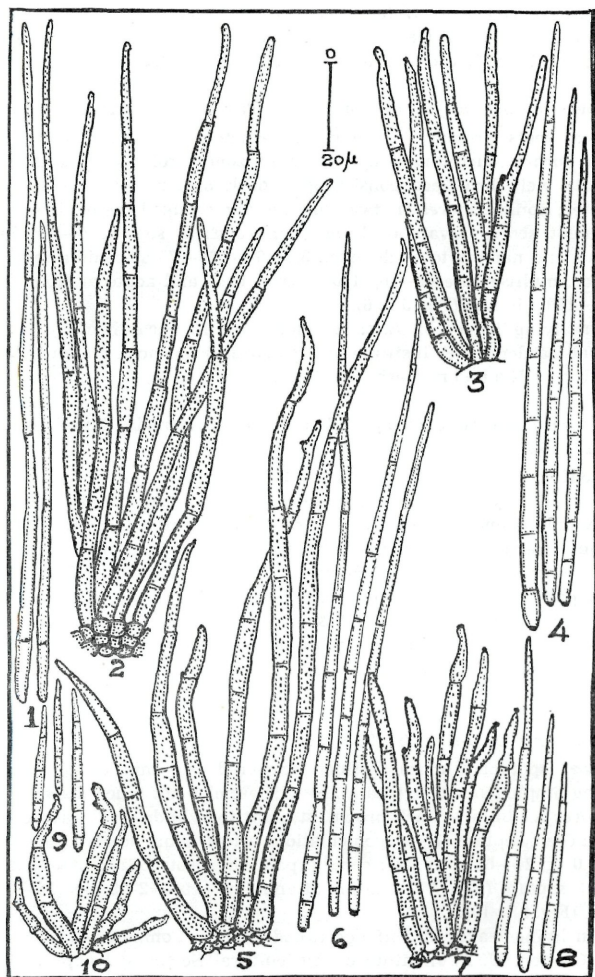


Fig. (1 & 2): *Cercospora duddae*. 1. Conidia, 2. Conidiophores; (3—4): *C. helianthicola*. 3. Conidiophores, 4. Conidia; (5—6): *C. justiciaecola*. 5. Conidiophores, 6. Conidia; (7—8): *C. podophylli*. 7. Conidiophores, 8. Conidia; (9—10): *C. solidaginis*. 9. Conidia, 10. Conidiophores.

On living leaves of *Helianthus cucumerifolius* Torr. & Gray (Compositae), Horticultural Garden, U. P. Institute of Agricultural Sciences, Kanpur, 2. 7. 1970, Udit Narain. Herb. No. C-15.

3. *Cercospora justiciaecola* Tai; Lloydia 11: 47, 1948.

Leaf spots circular, 2—4 mm. in diameter, ashy centre with dark brown border, surrounded by yellowish zone; fruiting amphigenous, stromata well developed consisting of dark brown cells, 10—30  $\mu$  in diameter; conidiophores in fascicles, loosely grouped, geniculate with prominent scars, olivaceous brown, unbranched, septate (3—8), base bulbous and narrow towards apex, 3.5—6  $\times$  60—75  $\mu$ ; conidia hyaline, acicular, multiseptate (4—10), truncate at base and acute at tip, 2.5—4  $\times$  55—180  $\mu$  in size (Fig. 5 & 6).

On living leaves of *Justicia gendarussa* L. (Acanthaceae), Horticultural Garden, U. P. Institute of Agricultural Sciences, Kanpur, 23. 8. 1970, Udit Narain. Herb. No. C-16.

4. *Cercospora podophylli* Tehon & Daniels; Mycologia 19: 128, 1927.

Leaf spots circular to irregular, 0.2—1 cm. in diameter, dark brown to black, slightly raised and surrounded by light brown border; fruiting mostly amphigenous, stroma absent or consisting of a few brown cells; conidiophores arising in dense fascicles, pale olivaceous brown, simple, 2—5 septate, irregularly geniculate, bluntly rounded tips, 2.8—4.5  $\times$  40—95  $\mu$ ; conidia hyaline, cylindrical to acicular, 3—7 septate, acute apex, 2.8—3.5  $\times$  35—80  $\mu$  in size (Fig. 7 & 8).

On living leaves of *Podophyllum emodi* Wall. (Berberideae), Yarikah, Tangmarg (Kashmir), 7. 8. 1970, H. K. Saksena. Herb. No. C-17.

5. *Cercospora solidaginis* Chupp & Greene; Wisc. Acad. Sci., Arts. & Letters, 36: 267, 1946.

Leaf spots not much distinct, scattered and minute, olivaceous, fruiting amphigenous; stromata absent; fascicles not much dense; conidiophores medium to dark brown, straight to cylindrical with acute tips, unbranched, septate (1—6), geniculations a few, spore scars not evident, 2.5—4.0  $\times$  24—68  $\mu$  in size; conidia pale olivaceous, straight to mildly curved, septate (upto 7), base broad and tips acute, 2—3.5  $\times$  26—36  $\mu$  in size (Fig. 9 & 10).

On living leaves of *Solidago canadensis* L. (Compositae), Horticultural Garden, U. P. Institute of Agricultural Sciences, Kanpur, 26. 7. 1970, Udit Narain. Herb. No. C-18.

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