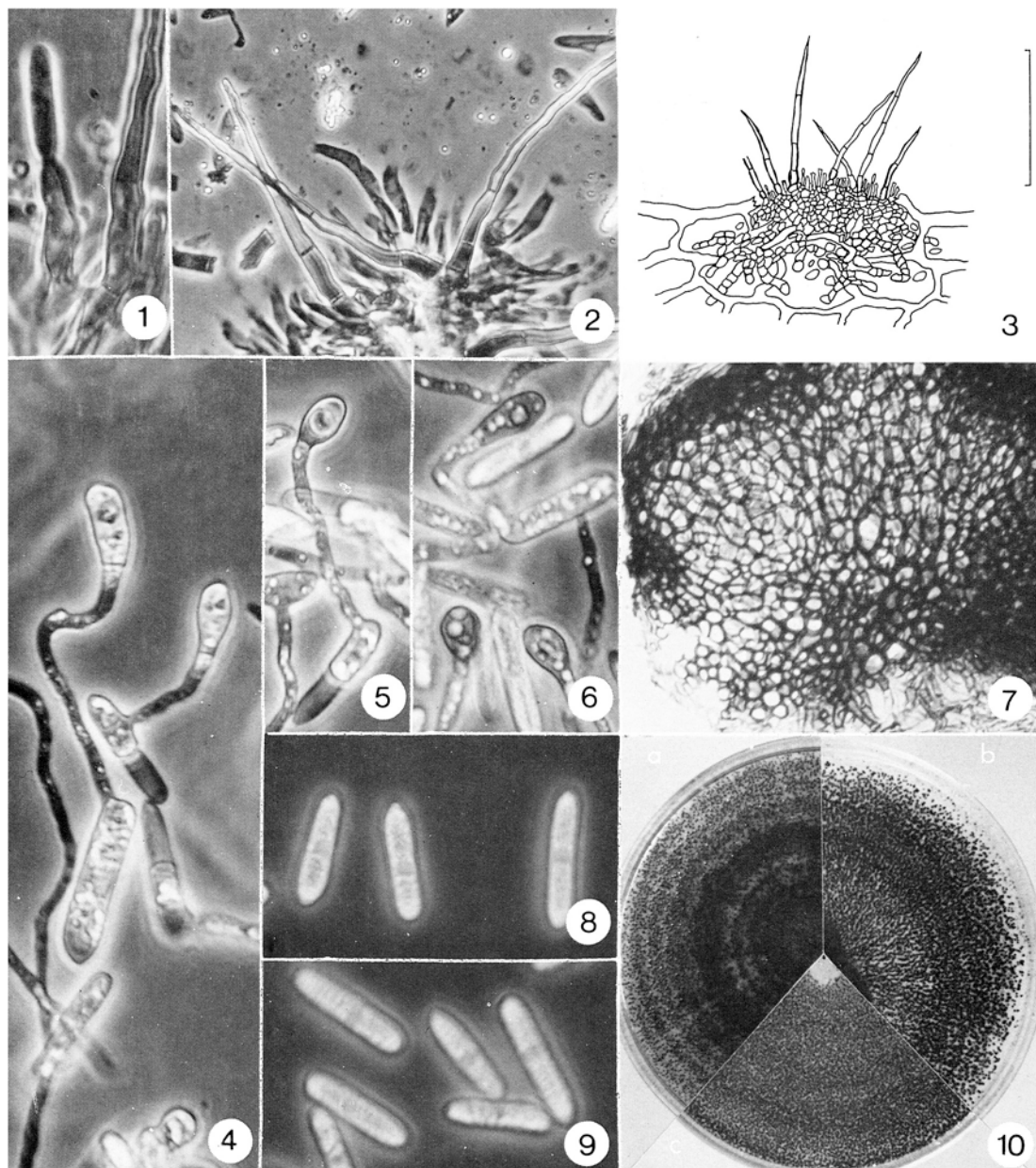


# COLLETOTRICHUM COCCODES



1, Conidiophore with attached conidium beside base of seta ( $\times 1000$ ); 2, part of acervulus with setae ( $\times 500$ ); 3, acervulus on host; 4, 5, 6, appressoria produced by germinated conidia in aqueous hanging-drop slide culture, 5 days,  $15^{\circ}\text{C}$  ( $\times 1000$ ); 7, section of sclerotial cells ( $\times 300$ ); 8, 9, conidia ( $\times 1000$ ); 10, Petri-plate cultures, 20 days, room temp. (a) 1.25% malt (b) potato dextrose agar (c) 2% oatmeal ( $\times 2/3$ ). Photographs from DAOM 145740. Fig. 3 from DAOM 2334.

**Colletotrichum coccodes** (Wallr.) Hughes, Can. J. Bot. 36: 754. 1958.

≡ *Chaetomium coccodes* Wallr., Flora Crypt. German. 2: 265. 1833.

= *Vermicularia atramentaria* Berk. & Br., Ann. Mag. Nat. Hist. II, 5: 378. 1850.

≡ *Colletotrichum atramentarium* (Berk. & Br.) Taubenh., N.Y. Bot. Garden Mem. 6: 554. 1916.

ACERVULI found scattered or in groups on stems and roots, globose to ovoid, reaching 250-350 $\mu$  diameter; acervular cells intra- and sub-epidermal, the host epidermal cells being disrupted. SETAE, 40-140 $\mu$  long (120 $\mu$  av.), arise from some superficial acervular cells, septate, an enlarged brown basal cell, 4.5-5.5  $\times$  9-12.5 $\mu$ , with progressively longer cells narrowing toward the pale brown tip, 1.5-2.5  $\times$  22-30 $\mu$ . SCLEROTIA setose, arising mingled with acervuli. CONIDIOPHORES phialidic, 30-45  $\times$  6-7 $\mu$ , unicellular, cylindrical, hyaline. CONIDIA cylindrical with rounded ends often showing conspicuous papillate basal scars, aseptate, hyaline, with small guttulae frequently oriented toward the ends, leaving a false impression of a median septum at lower magnifications, (15-)16-24(-27)  $\times$  (2.5-)3-4.5(-5.5) $\mu$ .

COLONIES on potato dextrose agar have scanty white aerial mycelium usually with a profusion of evenly distributed sclerotia; smooth and greyish when young, quickly becoming black and producing setae. Acervuli develop in conjunction with sclerotia or from separate aggregates of setose mycelium; single phialides often found on mycelium. Conidiophores occasionally septate and branched. Spore masses typically small, colourless to orange, with conidia commonly shorter in proportion to their width than on host. Reverse of colonies grey, darkening with age due to formation of appressoria. APPRESSORIA develop readily in slide cultures, ellipsoidal to ovoid, frequently irregularly lobed, amber, (5-)6.5-11.5(-14)  $\times$  (3.5-)4-8(-10.5) $\mu$ , borne on hyaline, thin-walled supporting hyphae, variable in shape.

SUBSTRATE: On stems and roots of *Capsicum* L., *Cucurbita* L., *Lycopersicum esculentum* Mill., *Solanum tuberosum* L.

DISTRIBUTION: New Brunswick, Quebec, Saskatchewan.

COLLECTIONS: N.B., St. André, IV.1973, DAOM 145740 (C.H. Lawrence). Que., Macdonald College, III.1967, 115698 (W.E. Sackston), IV. 1969, 127878 (R. Cauchon). Sask., Unity, VIII.1934, 2334 (R.L. Mead); Indian Head, VIII.1942, 12167 (B.J. Sallans & R.J. Ledingham); Saskatoon, IX.1962, 89781 (R.J.L.).

NOTES: This is a widely distributed fungus reported in Africa, Asia, Australasia, Europe, and North, South, and Central America. In Canada, Connors (Annotated index of plant diseases in Canada. Res. Branch Publ. 1251. Canada Dept. Agric., Ottawa, 1967) lists numerous collections across Canada excluding B.C., Nfld. and the Territories. Shaw (Host Fungus Index for the Pacific Northwest, Wash. Agr. Expt. Stn., Bull. 766, Pullman, Wash., 1973) cites B.C. records as well.

An unspecialized pathogen, it infects a wide range of host families. *Colletotrichum coccodes* is most common in Canada as black dot of potato and tomato or anthracnose of fruits of tomato, chilli (*Capsicum*) and squash. It is the prevalent cause of a cortical brown rot of stems and roots of potato, tomato and chilli. Transmission of these diseases is through soil, hyphae growing primarily through decaying roots and other organic matter with very little growth through soil alone. Living roots are infected when they contact the contaminated organic material. Sclerotia overwinter on detritus, in spring maturing to acervuli. Commonly regarded as a minor pathogen or secondary invader, the fungus may seriously affect yield where intensive cropping without rotation occurs (as in some greenhouses).

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