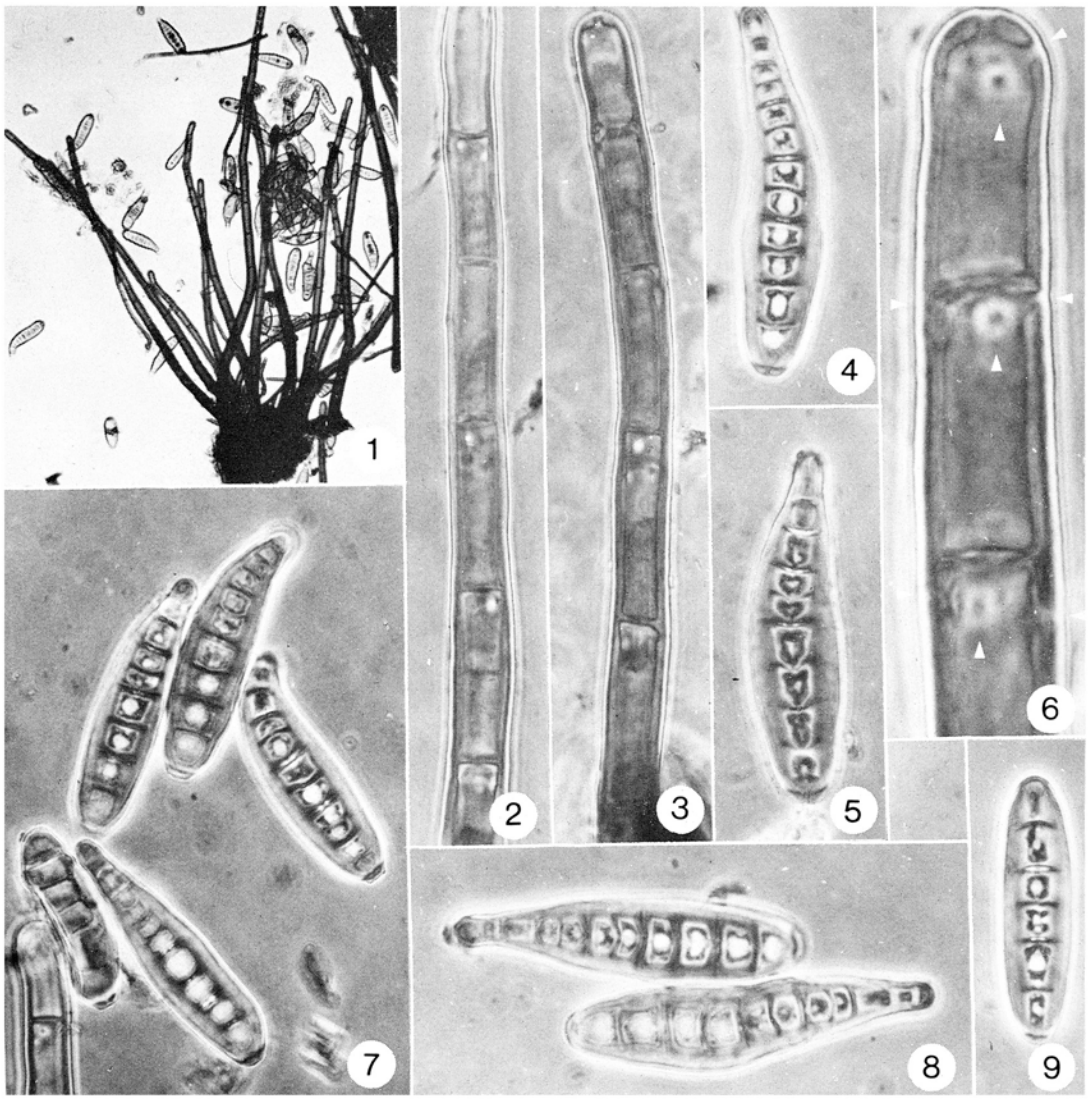
HELMINTHOSPORIUM VELUTINUM



1, Conidiophores arising from stroma, and conidia; 2, 3, distal part of conidiophores with apical and subseptal 'pores'; 4, 5, 7-9, conidia; 6, distal end of conidiophore with 'pores' (arrowheads). 1, × 100; 2-5, 7-9, × 640; 6, × 1600. 1, 2, 4, 6-9, from DAOM 56420; 3, from DAOM 64336; 5, from DAOM 64334.

Helminthosporium velutinum Link ex S.F. Gray. Link, Mag. Ges. naturf. Freunde, Berlin, 3: 10. 1809, as '*Helmisporium*'; S.F. Gray, Nat. Arr. Br. Plants, p. 557, 1821, as '*Helmisporium*'.

COLONIES effuse, black, hairy to velutinous to tufted. MYCELIUM immersed, composed of branched, septate, subhyaline to brown hyphae 2-7.5μm wide. STROMATA partly superficial partly immersed, rudimentary and composed of about 15 brown to dark brown cells, or well developed and usually erumpent through periderm, up to 200μm wide but larger by confluence and composed of brown to dark brown pseudoparenchymatous cells up to 12μm wide. CONIDIOPHORES scattered or

crowded, arising singly or in small groups from the rudimentary stromata or in dense fascicles of up to about 100 from the larger stromata. They are simple, straight or flexuous, 145-1100μm long and 18-23.5μm wide above the basal cell which, in robust conidiophores, may be swollen up to 27μm wide: conidiophores are more or less cylindrical, tapering gradually toward the rounded apex which is 9-11.5μm wide. They are septate at 30-45μm intervals, dark brown to almost black and thick-walled (up to 5μm) at the base, brown and thinner-walled (about 1μm) toward the apex. Conspicuous 'pores' in the wall toward the distal end of the conidiophore indicate the position at which solitary, readily seceding conidia have developed. The apex of the conidiophore bears 1-3 such pores and 1-3 similar pores usually below the septa of a series of 3-9 cells below the apical one so that undisturbed conidiophores bear terminal conidia and solitary or verticils of conidia below the distal cell. CONIDIA obclavate, sometimes rostrate, straight or flexuous, smooth but occasionally wrinkled with age, subhyaline to brown, paler toward the apex and dark brown to black around the base which is rounded or sometimes slightly truncate. The lateral wall is up to 5.5μm wide in the broader part of the conidium but thinner toward the apex especially when long and tapered. They are 6-17-pseudoseptate with the lumina usually angular in outline and some septa have a conspicuous central dark lamella; longitudinal septa are rare. Conidia are variable in size, being 41-160 × 12.5-20μm, mostly 55-80 × 14-17μm: rostrate conidia are 3.8-6.3μm wide at their distal end.

SUBSTRATE: Dead wood and bark of *Acer macrophyllum*, *A. saccharum*, *Alnus rubra*, *Betula papyrifera*, *Cornus nuttallii*, *C. stolonifera*, *Corylus*, *Cytisus scoparius*, *Quercus macrocarpa*, *Rubus*, *Sambucus pubens*, *Spiraea douglasii*, *Ulmus*, and of unidentified hardwood trees.

DISTRIBUTION: Quebec, Ontario, Manitoba, British Columbia.

COLLECTIONS: **Que.**, Cantley, Gatineau Co., 1975, DAOM 151492 (J. Ginns). **Ont.**: Lake Temagami Forest Reserve, IX.1935, DAOM 4229 (J.W. Groves); Eels Lake, Haliburton District, IX.1953, DAOM 39491 (J. Newman); London, X.1903, DAOM 38123 (J. Dearness); N. end of Maitland St. [London], XI.1913, DAOM 170642 (J.D.; Herb. Dearness); E. Denfield Sta., Middlesex Co., IV.1892, DAOM 170643 (J.D.; Herb. Dearness); Edwards Bank, London Twp., Middlesex Co., X.1913, DAOM 170644 (J.D.; Herb. Dearness). **Man.** Manitoba Agric. College, Winnipeg, II.1928, DAOM 170641 (W.L. Gordon; Herb. Dearness). **B.C.**: South Burnaby, VIII.1957, DAOM 55964 (S.J. Hughes), 56416 (S.J.H.), 56420 (S.J.H.); Spanish Banks, Vancouver, IX.1959, DAOM 64334 (R.J. Bandoni); Cypress Creek, W. of West Vancouver, IV.1961, DAOM 88486 (R.J.B.); Mt. Seymour Park (900m), IX.1958, DAOM 60303 (R.J.B.); U.B.C. Endowment Lands, Vancouver, XII.1958, DAOM 60794 (R.J.B.), IX.1959, DAOM 64336 (R.J.B.); U.B.C. campus, Vancouver, VIII.1957, DAOM 56437 (S.J.H.); Long Bay, Gambier Is., VII.1960, DAOM 75509 (J. Reeve); Malahat, Vancouver Is., XI.1951, DAOM 59721 (W.A. Porter); Bamberton Park, Vancouver Is., X.1969, DAOM 133882 (M.C. Melburn).

NOTES: This species is the type of the name *Helminthosporium* Link ex Fries (nom. cons., Fries, Syst. Mycol. 1: xlvi.1821, as '*Helmisporium*'). Several synonyms of the species were listed by Hughes (Can. J. Bot. 36:775, 1958, as *Helmisporium ciliare* (Pers.) Hughes) and by Ellis (Mycol. Papers 82:14, 1961). The production of conidia at apparent pores in *Helminthosporium* and in some other genera was discussed by Hughes (Can. J. Bot. 31: 577-659, 1953). A large number of species described in this genus do not show the distinctive conidium production on determinate conidiophores as in the type species and have been relocated in other genera. *Helminthosporium* is currently being used in a restricted sense for only about a dozen species: Ellis (op. cit.) published illustrations and descriptions of ten species, including *H. solani* Durieu & Mont., the cause of 'silver scurf' of potato, which has most commonly been referred to as *Spondylocladium atrovirens* (Harz) Harz ex Sacc.

The collection listed above from Manitoba was recorded as '*H. macrocarpon* Grev. (or a variety)' by Bisby et al. (The Fungi of Manitoba, p. 127. Longman Green & Co. 1929): *H. macrocarpum* Grev. is now considered a synonym of *H. velutinum* (Ellis, op. cit.). It appears likely that *H. velutinum* is widespread in North America. Ellis (op. cit.) recorded the species from Georgia and Pennsylvania in U.S.A.

S.J. Hughes

National Mycological Herbarium, Biosystematics Research Institute
Research Branch, Agriculture Canada
Ottawa, Ontario K1A 0C6

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