# MASSARIA INQUINANS

1, Branch surface with accumulated ascospores around beaks barely erumpent through bark (× 2.4); 2, wood with bark and ascocarps removed, showing black stromatic lines on wood (× 3); 3, ascocarps in bark (× 20); 4, beak with hyaline periphyses (× 250); 5, wall (× 500); 6, ascospore with sheath (× 1000); 7, ascus and pseudoparaphyses (× 500). Figs. 1, 2, DAOM 136609; 3-7, DAOM 143579.

**Massaria inquinans** ([Tode] Fries) De Notaris, G. Bot. Ital. 1: 333. 1844.
≡*Sphaeria inquinans* [Tode] Fries, Syst. Mycol. 2: 486. 1823.
=*Massaria vomitoria* Berk. & Curt., Grevillea 4(32): 155. 1876.

ASCOCARPS scattered, immersed in the wood under the bark, with a black stromatic line beyond the perithecium and running between fruit bodies in the wood, globose, 800-1300μ diam.; beak terete, erumpent, 200-300μ diam., 300-400μ long, lined with hyaline, septate periphyses 60-80 × 5-7μ; wall 27-50μ thick, consisting of 6-10 layers of dark brown, long, rectangular cells 9-16 × 3-5μ. ASCI numerous in a broad hymenium, bitunicate, cylindrical, 260-340(-380) × 38-55(-60)μ, 8-spored, interspersed with mucilage-coated pseudoparaphyses which are 1.0-1.5μ diam. and septate at 20-30μ intervals.

ASCOSPORES usually arranged in two rows, broadly cylindrical, tapering to each end, straight to inequilateral, terete, (64-)78-95(-105) × 18-24μ, olive-brown from pigment in the wall, smooth, 3-septate, constricted near mid-septum; cell contents often angular; two central cells short, nearly isodiametric; end cells long; septa thin, not conspicuous; gelatinous sheath hyaline, 10-30μ wide; numerous spores often accumulating on the bark around the beak; germination from two central cells by lateral brown hyphae 4-6μ diam.

SUBSTRATE: on dead branches of *Acer platanoides* L., *A. saccharum* Marsh., and *A. spicatum* Lam.

DISTRIBUTION: Quebec, Ontario.

COLLECTIONS: **Que.**: Abbotsford, IV.1932, DAOM 3090 (A.S. Hill); Cantley, V.1972, DAOM 138726 (J. Ginns); Kingsmere, VII.1933, DAOM 150507 (J.W. Groves); North Onslow, VI.1961, DAOM 82745 (G.D. Darker); Ste Cécile de Masham, X.1960, DAOM 71353 (G.D.D.). **Ont.**: Bolton, XI.1965, DAOM 136609 (D. Malloch); Christie Lake, IV.1973, DAOM 143579 (R.A. Shoemaker); Lake Opinicon, VI.1965, DAOM 109991 (R.A.S. and G. Morgan-Jones); Lake Temagami, VI.1929, DAOM 85770 (G.E. Thompson) and VII.1932, DAOM 85774 (J.W.G.); Lynden, XII.1932, DAOM 85773 and V.1933, DAOM 85772 (R.F. Cain); Muskoka, IX.1965, DAOM 136656 (D.M.); New Durham, IV.1933, DAOM 85771, 14745 (R.F.C.); Ottawa: X.1896, DAOM 36898, 36901, 36909, 36910 (John Macoun); IX.1897, DAOM 36899, 36902, 36903 (J.M.); VI.1941, DAOM 7858 (I.L. Conners and D.C. McIntosh); Palgrave, IX.1966, DAOM 136651 (D.M.); Port Rowan, V.1963, DAOM 115090 (R.F.C.); South March, VI.1941, DAOM 7206 (I.L.C. and D.C.M.) and IX.1960, DAOM 92672 (G.D.D.); Sheridan, V.1940, DAOM 5967 (W. Fowler).

NOTES: This species of *Massaria* is apparently restricted to *Acer* and is represented in DAOM by 30 Canadian collections from Quebec and Ontario. Magasi (Forest Fungi of the Maritime Provinces. 1975) listed records on *Acer saccharum* and *A. spicatum* in Nova Scotia. A number of U.S. and European collections are also represented in DAOM.

Generally considered a moderate pathogen, *M. inquinans* was reported in U.S.S.R. (Rev. Appl. Mycol. 38. 1959), in association with *Verticillium dahliae*, to be causing widespread destruction (60-80%) of large tracts of *Acer saccharum*, though later investigations indicated the predominant causal agent was *Verticillium*.

*Massaria inquinans* is similar to *M. conspurcata* (Wallr.) Sacc. which is separated by the distinctly narrower ascospores (12-14(-18)μ) and different hosts (*Prunus* and other Rosaceae).

One prominent characteristic of *M. inquinans* is its prolific exudation of spores, usually encrusting the host bark with a blackish overlay. A well-established, mature infection on a higher branch can virtually "paint" lower uninfected branches with this lavish discharge of spores. An example of this is DAOM 71353 where the specimen consists of uninfected needles of *Abies balsamea* L. coated with spores that germinated on the needles but the hyphae did not penetrate. It is easy to envisage this inoculum originating from a heavily infected overhanging branch of *Acer*.

Munk (Dansk Botanisk Arkiv.: 17, 1957) illustrated *M. inquinans* with a prominent ring-like projection or thickening at the middle septum of the ascospore. This feature was not observed in any specimens studied, but an impression of it can be visualized from refraction by the thick-walled central septum.

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