



1, Twig of *Amelanchier alnifolia* Nutt. with black hypophyllous subcilia (scale = 10 mm); 2, enlarged area of a leaf showing crowded black ascostromata (ca $\times 6$); 3, vertical section through ascostroma (scale = 100μ); 4, conidiophores, conidia, asci, pseudoparaphyses and ascospores (scales = 10μ). 1, 2, DAOM 130405; 3, 15492; 4, conidia and conidiophores from 130405, asci from 15492, ascospores from 35749.

Apiosporina collinsii (Schw.) v. Höhnelt, Sitzungsber. K. Akad. Wiss. Wien. Math.-nat. Kl. 119: 439. 1910.

≡ *Sphaeria collinsii* Schweinitz, Trans. Amer. Phil. Soc., n.s., 4: 211. 1832.

≡ *Dimerosporium collinsii* (Schw.) Thümen, Mycotheca Univ. n. 849. 1877.

= *Parodioidia amelanchieris* Batista, Farr & Lima as "*amelanchiera*", Saccardo 1: 9. 1960.

ASCOSTROMATA black, on black hypophyllous subiculum, numerous, gregarious, globose or turbinate with a narrow tapering base of stromatic cells, 115-250 μ diam., apex of ascostroma collapsing when dry. Ostiole irregular in outline, lysigenous formed. In vertical section, the ascostroma wall ca 15 μ thick, consisting of 3-5 outer cell layers of blackish angular cells and 2-3 inner layers of lightly pigmented to hyaline, tangentially flattened cells; the outer ascostroma wall thinner in the region of the lysigenous pore. **PSEUDOPARAPHYSES** hyaline, septate, anastomosing and occasionally branching, persisting in the mature ascostroma. **ASCI** bitunicate, clavate to short cylindrical, 40-70 \times 9-13 μ . **ASCOSPORES** pale green to yellow brown, obovoid or fusoid, 12-15 \times 4-6 μ , apex obtusely rounded, base acute or pointed, 1-septate near base, upper cell wider and about four times the length of the lower cell.

SUBICULUM thick, black; mycelium consisting mainly of dark brown superficial hyphae with some hypostromatic mycelium present in host cells.

CONIDIOPHORES (*Cladosporium* sp.) borne on superficial hyphae in subiculum, brown, erect, simple or occasionally branched, up to 225 μ long and about 4 μ wide, more or less cylindrical, septate; the upper one or two cells 17-40 \times 5-6 μ , conidiogenous, distally 1- to 4-denticulate, bearing short simple or branched chains of conidia. **CONIDIA** are ellipsoidal, 8-18 \times 5-8 μ , denticulate at one or both ends, occasionally 2- to 3-denticulate at distal end, olive-brown, 1-celled. The lower conidia in the chain are larger and darker, the distal ones being progressively smaller and paler.

HOSTS: *Amelanchier alnifolia* Nutt., *A. canadensis* (L.) Medic., *A. cusickii* Fern., *A. florida* Lindl.

DISTRIBUTION: Collections in DAOM from Nova Scotia, New Brunswick, Prince Edward Island, Quebec, Ontario, Manitoba, Saskatchewan, Alberta, British Columbia.

COLLECTIONS (selected): on *Amelanchier alnifolia*: Ont., Clearwater Bay, 23 Aug. 1944, DAOM 15492 (W.L. Gordon); Man., Winnipeg, 15 May 1921, 35749 (I.L. Connors), Brereton Lake, Whiteshell For. Res., 31 Aug. 1947, 23235 (C.G. Riley); Sask., Beaver Creek, 5 Aug. 1938, 6044 (J.E. Bier and R.C. Russell); Alta., Kananaskis For. Exp. Station, 18 Aug. 1969, 130405 (J.A. Parmelee); B.C., 1 mile W of Boulder Creek, between Dawson Creek and Pine Pass, 14 July 1960, 145200 (I. Kukkonen and J.A. Calder). On *Amelanchier canadensis*: N.B., Joe's Point, St. Andrews, 28 Aug. 1934, 2065 (I. Mounce); Ont., Dorset, 13 Aug. 1941, 7304 (Forest Insect Survey, No. 4390).

NOTES: *A. collinsii* is a member of the family Venturiaceae (Pleosporales) (E. Müller and J.A. von Arx, Beitr. Krypt. Fl. Schweiz, 11: 465. 1962). For a more complete synonymy see M.E. Barr (Can. J. Bot. 46: 799-864. 1968). Development of the ascostroma on living leaves was studied by G.B. Sartoris and C.H. Kauffman (Mich. Acad. Sci., Papers, 5: 149-162. 1925) and later reinvestigated by L.L. Kennedy and A.W. Stewart (Can. J. Bot. 45: 1597-1604. 1967) who confirmed that ascostroma centrum development is pleosporaceous. *A. collinsii* causes a mild witches'-broom disease of *Amelanchier* spp. as well as conspicuous black subicula on the lower surfaces of the leaves (I.L. Connors, Annotated index of plant diseases in Canada, Res. Branch Publ. 1251, Can. Dept. Agric., Ottawa, 1967). Conidium formation begins early in the growing season on the newly infected leaves, while ascostromata develop somewhat later in the summer and produce mature ascospores the following spring.

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