



1, Section through pseudothecium,  $\times 500$ ; 2, ascus and ascospores; 3,4, ascospores..2-4, scale =  $10\mu\text{m}$ . 1,4, from type (Rabenh. F. europ. 48). 2, DAOM 62921. 3, DAOM 172326.

**Venturia chlorospora** (Ces.) Karst., Mycol. Fenn. 2:189. 1873.

≡ *Sphaeria chlorospora* Ces., Flora 17:434. 1859; Bot. Zeit. 17:296. 1859; Rabenh., Fungi europ. 48. 1859.

≡ *Sphaerella chlorospora* (Ces.) Ces. et de Not., Comment. Soc. Crittog. Ital. 1(4):237. 1863.

≡ *Venturia chlorospora* (Ces.) Aderh., Hedwigia 36:82. 1897.

≡ *Endostigme chlorospora* (Ces.) H. Syd., Ann. Mycol. 21:173. 1923.

= *Venturia chlorospora* (Ces.) Karst. var. *canescens* Karst., Mycol. Fenn. 2:190. 1873.

PSEUDOTHECIA subepidermal, erumpent, hypophyllous or epiphyllous or amphigenous, scattered

to grouped, globose to somewhat conical, 76-130 $\mu\text{m}$  high  $\times$  71-137 $\mu\text{m}$  wide, dark brown, setose; ostiole papillate, 10-20 $\mu\text{m}$  across. Pseudothecium wall thin, 10-12(-15) $\mu\text{m}$  thick, consisting of 2-3 layers of light to medium brown angular cells up to 12  $\times$  7.5 $\mu\text{m}$ , wall darker at top and up to 20 $\mu\text{m}$  thick. SETAE present on upper half, particularly around ostiole, straight or curved, dark brown to black-brown, acutely pointed, occasionally septate, up to 75 $\mu\text{m}$  long, 6-7.5 $\mu\text{m}$  wide near base; bulbous base up to 12.5 $\mu\text{m}$  wide. PSEUDOPARAPHYSES hyaline, filiform, 2-3 $\mu\text{m}$  wide, septate at intervals of 10-12 $\mu\text{m}$ , persisting at the top of the centrum. ASCI bitunicate, 8-spored, cylindrical, short stalked, often widest at the middle or below, 45-81  $\times$  13-15.5 $\mu\text{m}$ . ASCOSPORES pale green when young, greenish yellow to olivaceous brown at maturity, oblong, 12-16  $\times$  5-8 $\mu\text{m}$ , equilateral, ends rounded, 1-septate between the middle and the upper third, only slightly constricted at the septum; upper cell shorter and sometimes broader; wall smooth or finely echinulate at maturity; biseriate in the ascus.

**SUBSTRATE:** Overwintered leaves of *Salix* spp.

**DISTRIBUTION:** Newfoundland, Quebec, British Columbia.

**COLLECTIONS:** Nfld., Labrador, Red Bay, 23 June 1954, DAOM 62921 and 74273b (R.T. Wilce). Que., top of Mt. Albert, 8 July 1957, DAOM 74277 (H.E. and M.E. Bigelow). B.C., Queen Charlotte Is., Graham I., Tlell, 17 June 1979, DAOM 172326 (K.N. Egger).

**NOTES:** Ascospores from the type collection of *V. chlorospora* (Rabenh., F. europ. 48, in DAOM, from Vercelli, Italy, collected by V. Cesati, April 1858, on *Salix* leaves) are oblong and have bluntly rounded ends with a septum at or just above the middle. Nüesch's description and illustrations (Phytopath. Zeit. 39:342. 1960) match the type very closely. Sivanesan (The taxonomy and pathology of *Venturia* species. Biblioth. Mycol. 59: 54. 1977) has also illustrated very similar ascospores for *V. chlorospora*, although he emphasized that the position of the septum is "... in or near the upper third ...". My examination of the type collection did not reveal any ascospores with the septum at or near the upper third although one Canadian collection (DAOM 62921) does possess some ascospores with an elevated septum. Barr's concept of *V. chlorospora* (Can. J. Bot. 46: 812. 1968) included fusiform ascospores and ascospores with pointed ends. Several DAOM collections (62924, 62925, 62926) identified by Barr as *V. chlorospora* have somewhat fusiform ascospores up to 19 $\mu\text{m}$  long which do not match the type of *V. chlorospora*. These ascospores suggest immature *V. subcutanea* although they also resemble *Venturia helvetica* Nüesch, a species described from *Salix helvetica* Vill. from Switzerland.

The anamorph of *V. chlorospora* has not been found in nature although Nüesch (op. cit.) observed and described a *Fusicladium* anamorph from cultures derived from ascospores. Sivanesan (op. cit.) considered the anamorph to belong in the genus *Cladosporium*. He described the conidiogenous cells as polyblastic-sympodial and the conidia as ellipsoidal to cylindrical, 1-septate, occurring in simple chains, truncate at either end and measuring 20-25  $\times$  5-8 $\mu\text{m}$ .

Other species of *Venturia* occurring on *Salix* in Canada are *Venturia minuta* Barr (Fungi Canadenses No. 223) and *Venturia subcutanea* Dearn. (Fungi Canadenses No. 224). The ascospores of *V. minuta* are shorter and narrower (10-11.5  $\times$  3-4.5 $\mu\text{m}$ ) than those of *V. chlorospora* while the coarsely ornamented ascospores of *V. subcutanea* are longer but with the same width range (16.5-19  $\times$  6-7.5 $\mu\text{m}$ ).

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