Valsalnicola oxystoma
Fungal Planet 128 – 20 December 2012

Valsalnicola D.M. Walker & Rossman, gen. nov.

Etymology. Named for its valsa-like appearance and occurrence on species of Alnus.

Causing linear cankers and lesions. Ectostromata well-developed, brown to black, thick disc from which perithecial necks emerge. Ascomata perithecial, immersed beneath ectostroma, aggregated in groups of 13–23, converging into 5–20 necks. Ascii fusiform, with indistinct apical ring. Ascospores allantoid with rounded ends, 1-septate, hyaline.

Type species. Valsalnicola oxystoma. MycoBank MB801277.

Valsalnicola oxystoma (Rehm) D.M. Walker & Rossman, comb. nov.


Twig lesions in surface view (511–)591–890 (893) µm diam (mean = 654, S.D. 122, n = 13). Ectostroma well-developed, brown to black, thick disc from which perithecial necks emerge. Ascomatal cavity (690–)765–909 (950) µm high (1610–)1710–2346 (3947) µm diam (mean = 816 × 2198, S.D. 109, 703, n1 = 5, n2 = 9). Ascomata perithecial, immersed beneath ectostroma, causing host tissue to swell and rupture, perithecia converging into 5–20 necks, emerging through surface ectostromatous disc, perithecia grouped 13–23. Ascomata glossy black, subglobule to globule (240–266–296–320) µm diam (253–260–335–337) µm diam (mean = 282 × 294, S.D. 25, 36, n1 = 7, n2 = 13); necks central, straight to curved, length (426–)428–550 (563) µm (mean = 476, S.D. 54, n = 9). Ascii fusiform, (38–)39–48 (49) × (8–)9–12 (13) µm (mean = 44 × 11, S.D. 4, 1.2, n1 = 17, n2 = 18), apex broadly rounded, with indistinct apical ring, stipe acute, rounded, or tapering to a point, ascospores arranged irregularly multiserial.

Ascosporae allantoid with rounded ends, mostly curved, rarely straight, (9–)10–11–(12) × 2–3 µm (mean = 11 × 2, S.D. 0.9, 0.5, n = 30), 1-septate, median, slightly constricted or not at septum, each cell with several small guttules, hyaline. Cultures slow-growing, 3–6 mm in 10 d on potato-dextrose agar, mycelium low, pale brown to greyish brown, reverse dark brown.

In culture on synthetic nutrient-poor agar — Dimorphic, forming a synanamorph. Conidialmata pyxidial, exuding masses of brown conidia. Conidiophores reduced to conidigenous cells, or one supporting cell, proliferating percurrently. Conidia cylindrical, brown, finely verruculose, apex obtuse, base truncate, 3–5–euseptate, 15–23 × 4–5 µm. Conidia of synanamorph intermingled in same conidioma, but conidigenous cells proliferating percurrently or synodiamically; conidia hyaline to subhyaline, narrowly obclavate, apex subobtuse, base truncate, straight to curved, 25–80 × 2.5–3 µm, up to 11-septate. Synanamorph also developing in aerial mycelium (on PNA); conidiophores subcylindrical, straight to curved, 0–2–septate, hyaline to subhyaline, 8–15 × 2–3 µm, proliferating synodiamically at apex. Conidiotheces solitary or fasciculate or on a reduced stroma.

Colour illustrations. Italy, Trentino, Val Sadole, showing trees of Alnus viridis with green alder decline (Giorgio Maresi). a. Rehm: Ascomyceten 280, scale bar = 500 µm. b–d. BPI 884137, scale bars of perithecia = 100 µm, scale bar of ascus = 10 µm. e. Rehm: Ascomyceten 280, scale bar = 10 µm.

Typus. AUSTRIA, Tyrol, Längenfeld, on dead branch of Alnus viridis, c. 3 500 ft., Aug. 1874, coll. Rehm. This type specimen was issued as Lectotype by BPI 884138. Two additional specimens examined: BPI 738235 and NY, MycoBank MB801277.


Habitat — Alnus viridis ssp. viridis, causing a twig colonization and canker disease involved in green alder decline (Pi- setta et al. 2012); also known from Alnus glutinosa, A. incana, A. incana var. tenuifolia, A. rubra, A. viridis ssp. fruticosa and A. viridis ssp. maximowiczii.

Distribution — Asia: Japan (Kobayashi 2007); Europe: Aus- tria, Belgium, Italy, Sweden, also United Kingdom (Cannon et al. 1985); North America: Canada (Ontario); USA: Alaska.

Notes — Valsalnicola is based on a species that was de- scribed in the genus Valsa. Although it resembles Valsa in having allantoid ascospores, the ascospores of Valsalnicola are 1-septate while the majority of species of Valsa and closely related Leucostoma and Valsella have aseptate ascospores. However, one species of Valsa, V. melanodiscus, also has 1-septate ascospores, occurs on Alnus spp., and produces linear cankers on the host. A distinguishing feature of Valsalnicola is the lack of a black line surrounding stromata in the asco- matal cavity, which is characteristic of Valsa melanodiscus. In addition, the growth rate of cultures of Valsalnicola oxystoma is considerably slower than species of Valsa. Molecular se- quence data place this new genus within the Gnomoniaceae or Melanconidaceae complex. Allantoid, 1-septate ascospores have not previously been reported in the Gnomoniaceae or Melanconidaceae. ITS sequences of specimens from Alaska and Italy are identical. The basionym has been cited as Rehm: Ascomyceten 270 (1875) in ‘Indice Fungorum’ reflecting an error in Saccardo (1882) but the correct number is Rehm: Asco- myceten 280, which does not include a description.