

## Echinothecium

After Keissler, and Alstrup & Cole

**1. Setae absent. Ascomata completely free. Mycelium free, with few anastomoses. Ascospores 27-32(-37) x 7-9 um, becoming dark brown. On Alectoria. British Columbia. .... E. aerophilum**

**1. Setae present. Ascomata adnate, immersed. Mycelium superficial, with numerous anastomoses. Ascospores 8-9.5 x 4-4.5 um, hyaline, becoming pale brown with age. On Parmeliaceous and Lecanoraceous lichens. Arizona, British Columbia. .... E. reticulatum**

### **E. aerophilum Alstrup & M. Cole**

Mycelial strands of single hyphae, frequently branched and rarely anastomosing, loosely interwoven around host thallus with few connections to host, tips often vertically oriented, dark brown, minutely rugulose, 8-10 um thick, individual cells 12-15 um long. Ascomata wall of roundish, smooth-walled cells 8-12 um diam. Hamathecium not seen. Asci broadly ellipsoid, with thickened wall apically, 4-spored, I- (Lugol), ripe asci not measured. Ascospores ellipsoid, 1-septate, constricted at septum, ends rounded, smooth-walled, hyaline at first, later grayish as semi-mature and dark brown as ripe, 27-32(-37) x 7-9 um.

### **E. reticulatum Zopf**

Mycelium forming black network (distinctly visible with lens) of thick-walled torulose hyphae spreading over surface of the host lichen. Ascocarps superficial, black, globose or depressed-globose, very small (40-80 um), scattered, with hairlike brown projections, ostiole simple. Exciple pseudoparenchymatous. Asci ovoid or ovoid-swollen, with thick and short "foot", tips somewhat thickened. Paraphyses absent. Spores 8 per ascus, irregularly arranged, long-ovoid, rounded ends, hyaline, 8-9.5 x 4-4.5 um, 1-septate, one cell somewhat narrower.

Alstrup, V. and M. S. Cole. 1998. Lichenicolous fungi of British Columbia. The Bryologist 101: 221-229.

## Endococcus

After Hawksworth, 1983

**1. Spores thin-walled**, narrow, 13-21 x 5-8  $\mu\text{m}$ . On Dimelaena oreina and Rhizocarpon geographicum. Arizona, N. Carolina, Virginia. .... E. perpusillus Nyl.

**1. Spores thick-walled**. .... 2

**2. Ascospores (7-)9-10(-12) x 4-6(-7)  $\mu\text{m}$** , thick-walled. Perithecia mainly immersed. Usually on Porpidia, or Tephromela armeniaca, also Carbonea and Physcia. Widespread. Alaska, Colorado, Texas, Arizona; Greenland. .... E. propinquus (Körber) D. Hawksw.

**2. Ascospores 12-16(-20) x (4-)6-7(-9)  $\mu\text{m}$** , thick-walled, broadly ellipsoid with the ends broadly rounded, or ("E. stigma") with one or both ends strongly attenuated. On various crustose lichens (e.g., Acarospora, Porpidia, Aspicilia, Rhizocarpon). British Columbia; New England; Oregon; Colorado; Greenland. .... E. rugulosus Nyl. (syn. E. stigma)

### E. rugulosus

Perithecia crowded, elevated, spherical to slightly cone-shaped, 0.1-0.3 mm wide; hymenium 0.3% I+ red, without paraphyses; spores 8 per ascus, 12-18 x 6-12  $\mu\text{m}$ , brown, one-septate, only slightly constricted at the thick cell wall, rugulose, with rounded ends.

**Epicladonia**

On Cladonia. British Columbia. .... E. simplex D. Hawksw.

## Epilichen

**1. On Baeomyces.** Thallus citrine to yellowish green, absent at first. Hymenium 70-100 um tall. Ascospores (9-)11-17 x 6-10 um. .... E. scabrosus

**1. On thallus and ascocarps of Lecidea tessellata.** Apothecia typically with distinct margin and plane disk. Asci Rhizocarpon-type or Lecidea-type. Nova Scotia, Colorado, Utah, Arizona, Mexico. .... E. stellatus Triebel

### **Everniicola**

After Hawksworth, 1983, and others

Conidia 7-10(-11.5) x 1.5-2 um, variously curved or bent ( $\pm$  L-shaped), forming pale brownish necrotic patches on thallus of Evernia or Nephroma arcticum. ..... E. flexispora (D. Hawksw.)