



## CHAPTER 7

### FAMILY BRIGANTIAEACEAE

#### Characteristics of the Family Brigantiaeaceae

Thallus: corticolous, whitish grey to pale grey-green, smooth to verrucose, continuous; epruina; Soralia and Isidia absent; Prothallus not visible; Photobiont chlorococcoid; **Apothecia**: common, dispersed to crowded and irregular in shape, sessile; disc plane, vivid orange and prominent at margin; often with yellow-orange pruina; with biatorine (proper exciple); Parathecium: weakly differentiated, composed of thin walled; Epihymenium: yellow-orange to orange-brown; Hymenium: hyaline; Subhymenium: indistinct; Hypothecium hyaline to pale brown; Paraphyses: anastomosing or branched, apical not conspicuously swollen; Asci: broadly clavate, *Brigantiaea*-type; **Ascospores**: 8 per ascus, hyaline, narrowly ellipsoid to ellipsoid, muriform,  $(64.5)66.7-84.4-104.6(138.4) \times (21.5)23.2-30.8-38.4(40.4) \mu\text{m}$ ; **Pycnidia** and **Conidia** not observed.

#### Description of the Genus *Brigantiaea*

*Brigantiaea* Trevis., Riv. Period. Lav. Accad. Sci. Lett. Arti Padova 249 (1853) (Elix, 2009, p. 602).

Thallus: corticolous, whitish grey to pale grey-green, smooth to verrucose, continuous, 159.5-249.7 mm thick; ep pruina; Soralia and Isidia absent; Prothallus not visible; Photobiont chlorococcoid; **Apothecia**: common, dispersed to crowded and irregular in shape, sessile; disc plane, vivid orange and prominent at margin; often with yellow-orange pruina, 0.2-1.5 mm diam.; with biatorine (proper exciple); Parathecium: weakly differentiated, composed of thin walled; Epihymenium: yellow-orange to orange-brown, 10.0-15.0  $\mu\text{m}$  thick; Hymenium: hyaline, 120.0-150.0  $\mu\text{m}$  high; Subhymenium: indistinct; Hypothecium hyaline to pale brown, 70.5-80.5  $\mu\text{m}$  high; Paraphyses: anastomosing or branched, apical not conspicuously swollen, 32.5-108.9  $\mu\text{m}$  high; Asci: broadly clavate, *Brigantiaea*-type, 30.0-50.0  $\mu\text{m}$  high; **Ascospores**: 8 per ascus, hyaline, narrowly ellipsoid to ellipsoid, muriform, (64.5)66.7-84.4-104.6(138.4)  $\times$  (21.5)23.2-30.8-38.4(40.4)  $\mu\text{m}$ ; **Pycnidia** and **Conidia** not observed.

### *Description of the Species*

*Brigantiaea leucoxantha* (Spreng.) R. Sant. & Hafellner, in J. Hafellner & A. Bellemère, *Nova Hedwigia* 35(2 & 3): 246 (1982) [1981] (Elix, 2009, p. 603).

*Lecidea leucoxantha* Spreng.,: 46 (1820)

(see Figure 17)

Thallus: corticolous, whitish grey to pale grey-green, smooth to verrucose, continuous, 159.5-249.7 mm thick; ep pruina; Soralia and Isidia

absent; Prothallus not visible; Photobiont chlorococcoid; **Apothecia**: common, dispersed to crowded and irregular in shape, sessile; disc plane, vivid orange and prominent at margin; often with yellow-orange pruina, 0.2-1.5 mm diam.; with biatorine (proper exciple); Parathecium: weakly differentiated, composed of thin walled; Epihymenium: yellow-orange to orange-brown, 10.0-15.0  $\mu\text{m}$  thick; Hymenium: hyaline, 120.0-150.0  $\mu\text{m}$  high; Subhymenium: indistinct; Hypothecium hyaline to pale brown, 70.5-80.5  $\mu\text{m}$  high; Paraphyses: anastomosing or branched, apical not conspicuously swollen, 32.5-108.9  $\mu\text{m}$  high; Asci: broadly clavate, *Brigantiaea*-type, 30.0-50.0  $\mu\text{m}$  high; **Ascospores**: 8 per ascus, hyaline, narrowly ellipsoid to ellipsoid, muriform,  $(64.5)66.7-84.4-104.6(138.4) \times (21.5)23.2-30.8-38.4(40.4) \mu\text{m}$ ; **Pycnidia** and **Conidia** not observed.

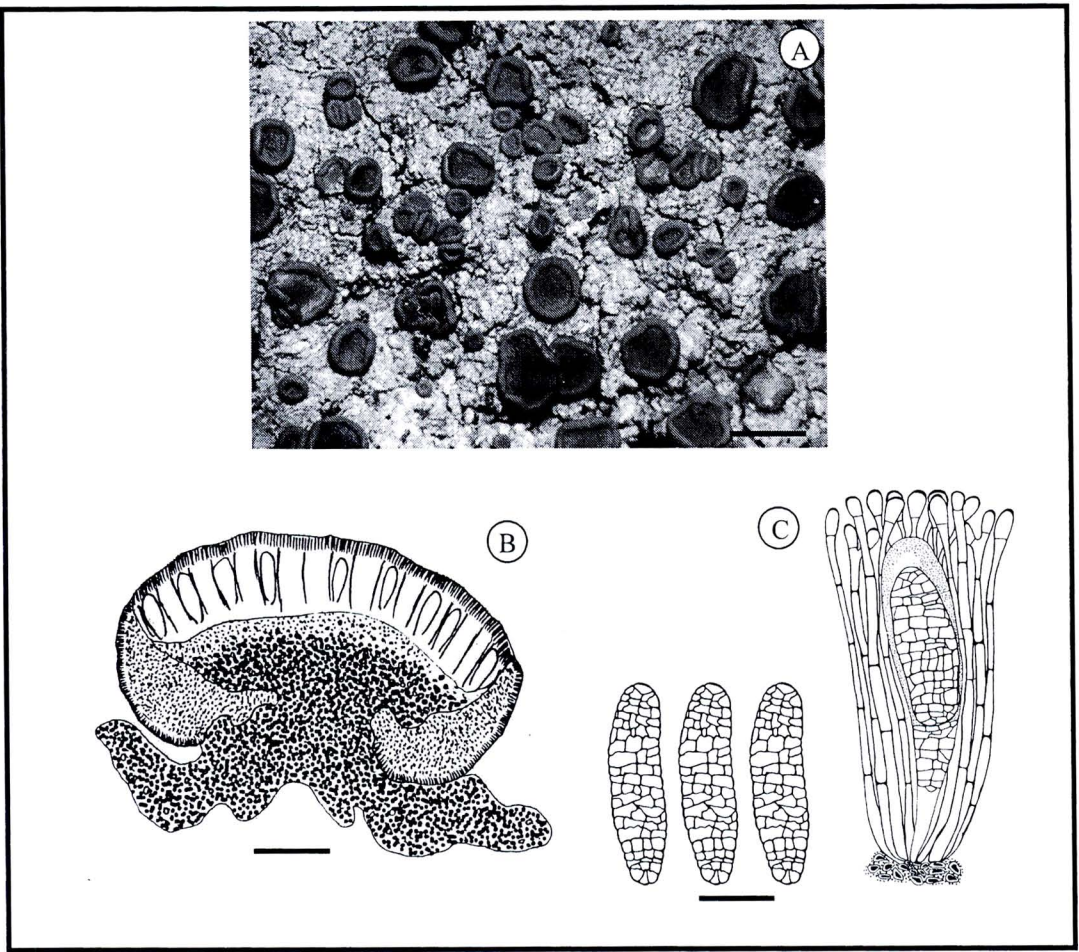
Chemistry: thallus P-, K+ yellow, C-, KC-; containing atranorin and unknown anthraquinone.

Habitats: occurring on bark in lower montane rainforests and tropical rainforests at 700-923 m.

Distribution: North, Central and South America, pantropical-subtropical species in Africa, Thailand, Christmas Island, and Papua New Guinea.

Specimens examined: Phu Luang Wildlife Sanctuary, Loei Province. Head Quarter of Phuluang Wildlife Sanctuary, on trunk of an unidentified tree, 20 May 2009, Sanya Meesim and Kawinnat Buaruang—MSPL049, MSPL062, MSPL089, MSPL090, VC045, VC046, VC047 & VC842 (RAMK); *ibid.*, Nam Chan Forest Ranger Station, on trunk of an unidentified





**Figure 17** *Brigantiaea leucoxantha* (Spreng.) R. Sant. & Hafellner

*Note.* A = Apothecia biatorine, sessile, yellow-orange [MSPL049(RAMK)]  
(scale = 1.42 mm)

B = Illustration of vertical section of apothecia [MSPL049(RAMK)]  
(scale = 19.7  $\mu$ m)

C = Illustration of ascus with paraphyses and ascospores [MSPL049  
(RAMK)] (scale = 9.54  $\mu$ m)

tree, 28 July 2009, Varaporn Sriprang—VC894(RAMK); *ibid.*, Phuluang  
Wildlife Research Station, on trunk of an unidentified tree, 12 November  
2008, Varaporn Sriprang—VC048, VC643, VC644, VC661 & VC690

(RAMK).

Observation: *Brigantiaea leucoxantha* is characterized by vivid orange apothecia and thallus containing atranorin and unknown anthraquinone, apothecia with parietin.