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中国地衣1新记录属——珐氏衣属及其新记录种

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摘　要：在对中国网衣类地衣进行研究时，发现1个中国新记录属——珐氏衣属及其新记录种——微型珐氏衣。该研究利用形态学和化学的手段，对微型珐氏衣的分类学特征进行了详细描述，并提供了相关照片。

关键词：地衣型真菌；新疆；分类学

中图分类号：Q949.34　　**文献标志码**：A

Farnoldia Hertel —— a New Record Genus for China with Description of New Record Species

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Abstract: During our research on the lecideoid taxa of lichens in China, the genus *Farnoldia* and the species *Farnoldia micropsis* are reported as new to China. The detailed taxonomic descriptions with photos are provided for them.

Key words: lichenized fungi; Xinjiang; taxonomy

The genus *Farnoldia* Hertel was segregated from the genus *Melanolecia* Hertel in 1983[1]. Previously only six species have been reported from Europe, North and South America, and Antarctica[2-3]. And has not been found in China. The family Lecideaceae Chevall. contains about 23 genera and 220 species, and 53 taxa of 11 genera in Lecideaceae have been reported in China[4-7]. During our research on the lichens of Lecideaceae in Xinjiang, the genus *Farnoldia* and the species *Farnoldia micropsis* are reported as new to China.

1　Materials and methods

The examined specimens are preserved in SDNU (the Lichen Section of Plant Herbarium, Shandong Normal University). Their morphological and anatomical characters were examined under a stereo-microscope (Olympus SZ) and a polarizing microscope (Olympus CX21). Color reactions (spot tests) were made using standard methods. The chemical constituents were identified using thin layer chromatography (TLC)[8]. Photos were taken under Olympus SZX16 and BX61 with DP72.

2　Results and discussion

***Farnoldia* Hertel** Mitt. bot. StSamml., Münch. 19: 442 (1983)

Type species: *Farnoldia jurana* (Schaerer) Hertel

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Thallus crustose, on or in rocks; upper surface white, sooty white, or yellow-brown; isidia and soredia absent; medulla I^+ blue. Apothecia adnate or between the areolae; margin present and even; disk black or sometimes pruinose; exciple carbonaceous; hypothecium hyaline or blackish brown; paraphyses coherent, branching and anastomosing; asci with an I^+ dark blue central cylinder in an otherwise I^+ pale blue tholus; spores simple, ellipsoid, with gelatinous halo, middle-sized, 10—33 μm long. Conidia bacilliform, (5—13)×1 μm.

Algae: *Pseudotrebouxia*.

Habitat: On calcium-bearing rocks.

Notes: This genus is similar in its characters to *Porpidia* but differs in the entirely dark exciple in which hyphe are not distinguishable but which is continuous with the dark hypothecium. It is also similar to *Clauzeada*. However, *Clauzeada* has a I^- medulla, brown to dark brown exciple. Comparison of characters of *Farnoldia* and similar genera are shown in Table 1. A key to *Farnoldia* and related genera is also provided.

Farnoldia micropsis (A. Massal.) Hertel, Mitt. bot. StSamml., München. 19: 443 (1983)(Fig. 1, A,B)

Thallus crustose, thin to moderately thick, to 1.5 mm thick, white, sooty white, sometimes stained from substratum, areolate from smooth to bullate in thick material; no hypothallus.

Apothecia to 1.2 mm broad, adnate or between the areolae, black, with prominent margin; exciple black, 40—60 μm wide; hypothecium pare ochre, sometimes contains green; epihymenium green-black to brown-black, occasionally with light dead overlayer; hymenium (80—120) μm; subhymenium 30—60 μm, pale; paraphyses 2 μm,

Table 1　Comparison of characters of *Farnoldia* and similar genera

	Farnoldia	*Clauzadea*	*Porpidia*
Thallus	Crustose, on or in rocks, upper surface white, sooty white, or yellow-brown	Generally immersed; when superficial grey or brown, granular or eareolate	On rocks, gray, white, or orange, sometimes endolithic and thus indistinct
Medulla	I+ blue	I—	I+ blue or I—
Apothecia	Adnate or between the areolae, with a black or bluish pruinose disc, never becoming brownish when wet	Red-brown to black, becoming brownish when wet, sessile or immersed in rock and sometimes leaving pits, naked or ± pruinose[9]	Immersed or sessile, disc black or dark brown, sometimes pruinose
Exciple	Thick and carbonaceous throughout, clearly separated from the paler hypothecium[4]	Brown to dark brown throughout	Usually dark brown (rarely green) peripherally and gray, yellowish brown to dark brown internally[10]
Paraphyses	Coherent, branching, anastomosing, slender, and not moniliform	Branching and occasionally anastomosing, scarcely or markedly swollen and pigmented at the apices	Branching and anastomosing, upper cells more or less moniliform
Hypothecium	Hypothecium hyaline or blackish brown	± colourless to red-brown or orange-brown, paler than exciple	Olivaceous brown to dark brown or brownish black below, concolorous with exciple[4]
Conidia	Bacilliform	Bacilliform	Bacilliform
Ecology	On calcareous rocks	On calcareous rocks	On calcareous rocks

Key to *Farnoldia* and related genera

This is a preliminary key to the genera of Lecideaceae s. lat. that appear closely related to *Farnoldia*.

1　Growing on acidic rock (exceptionally on calciferous siliceous rock) …… *Porpidia p. p.*

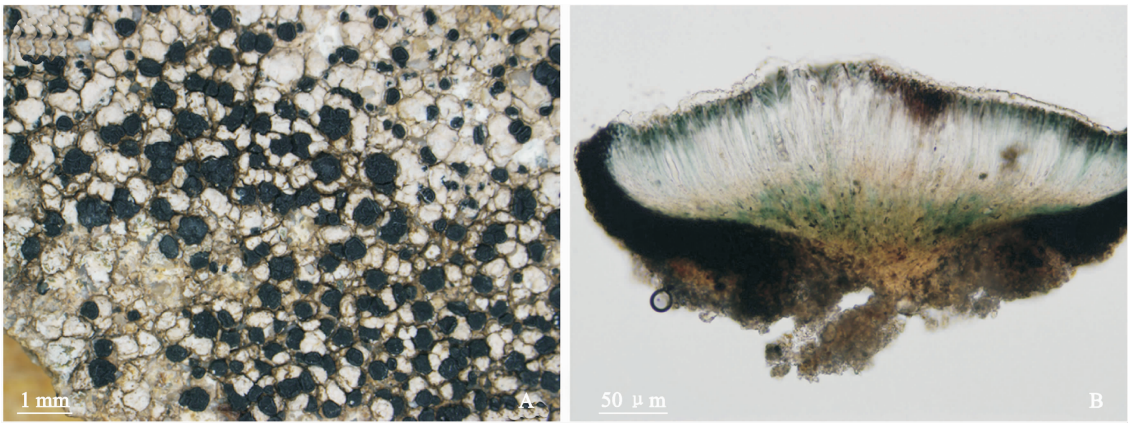
　Growing on limestone (and other rock types very rich in $CaCO_3$) …… 2

2(1)　Exciple thick and carbonaceous throughout, clearly separated from the paler hypothecium. Hypothecium hyaline or blackish brown. Apothecia sessile with a black or bluish pruinose disc, never becoming brownish when wet …… *Farnoldia*

　Excipulum not carbonaceous throughout …… 3

3(2)　Hypothecium concolorous with exciple; brown and or olivaceous pigments present internally. High montane to alpine regions …… *Porpidia p. p.*

　Hypothecium hyaline or paler than exciple; only brown, K^- pigments present internally. In lowland to high montane regions …… *Clauzadea*



A. Thallus; B. Section of apothecia

Fig. 1 Morphological and anatomical structures of *Farnoldia micropsis* (20140906 SDNU)

tips to 3.5 μm, anastomosing; asci clavate; spores ellipsoid or asymmetric, thin-walled, halonate when young, (15—27)× (7—16) μm.

Chemistry: Medulla I^+, K^-, C^-, KC^-. Chemical constituent: none.

Notes: *Farnoldia micropsis* is similar to *F. similigena* in having a white, thick and bullate thallus. However, *F. similigena* has a smaller apothecia (to 0.7 mm broad), a thiner ascospores [(10—22)×(4—7) μm], and a lower hymenium (60—80 μm). This species grows on calcium-bearing rocks. It is a circumpolar arctic and alpine species. It is known in Colorado, Montana, Utah, Alberta, and Oregon[10]. It is also found in eastern Greenland, Sweden and Slovenia.

Specimens examined: Prov. Xinjiang, Huocheng, Daxigou, alt. 1 843 m, on rocks, 12 Jul. 2014, Panmeng Wang 20140906; Yili, Qapqal Forest Farm, alt. 2 376 m, on rock, 11 Jun. 2014, Panmeng Wang 20140071B, 20140072A, 20140034, 20140059.

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