

New Record of *Lecanora muralis* (Lichenized Fungus) in South Korea

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(Received May 18, 2007)

Lecanora muralis was found on the rock along coastal line during the field trip in Jeju island in 2006. Thallus crustose, placodioid, closely adnate, forming orbicular patches; upper surface grayish green, glossy; central lobes areolate, marginal parts plane, edges thin pruinose; lower surface ecorticate; apothecia sessile, lecanorine type, exciple dense and intact when young, and disc plane, but when mature, exciple lacinate, disc protrudent, yellowish brown to orange, 0.5-1.5 mm in diameter; ascospores ellipsoid, simple, colorless, $12.5\text{-}15.0 \times 5.0\text{-}7.5 \mu\text{m}$. Usnic acid and zeorin contained in thallus. This is the first record of this species in South Korea.

KEYWORDS: Crustose lichen, Korea, Lichen-forming fungi, New record, Usnic acid

The genus *Lecanora* Ach. belonging to Lecanoraceae, Lecanorales, Ascomycota, is extremely species-rich, comprising about 600 species (Lumbsch and Elix 2004). It is best defined by its crustose habit, *Lecanora*-type asci, and 1-celled spores, but most species have lecanorine apothecia with margins that rim the disks. There are some genera easily confused with *Lecanora*, such as *Rhizoplaca*, *Lecania*, *Protoparmelia*, *Rinodina*, and *Tephromela*, so, apothecia and spores must be examined under the microscope to distinguish them (Brodo *et al.*, 2001). There have been 12 species of *Lecanora* reported before in South Korea (Hur *et al.*, 2005), but *L. muralis* (Schreb.) Rabenh. was not included, which is reported in this paper.

Materials and Methods

The specimen examined for this study was deposited in the lichen herbarium of Korean Lichen Research Institute (KoLRI) in Suncheon National University, Korea. The description of phenotypic characters was based on the air-dried material. The gross morphology and anatomy were examined using the dissecting microscope (Nikon SMZ 1500) and compound microscope (Olympus BX 50). The lichen substances were detected by color reagents and thin-layer chromatography (Culberson, 1972; White and James, 1985).

Lecanora muralis (Schreb.) Rabenh., Deutschl. Krypt.-Fl. (Leipzig) 2: 42 (1845) *Yepsangjeupsijieu* Fig. 1A-1C

Morphology: Thallus crustose, placodioid, closely adnate, forming orbicular patches; upper surface grayish green,

glossy; central lobes areolate, marginal parts plane, edges thin pruinose; lower surface ecorticate; apothecia sessile, lecanorine type, exciple dense and intact when young, and

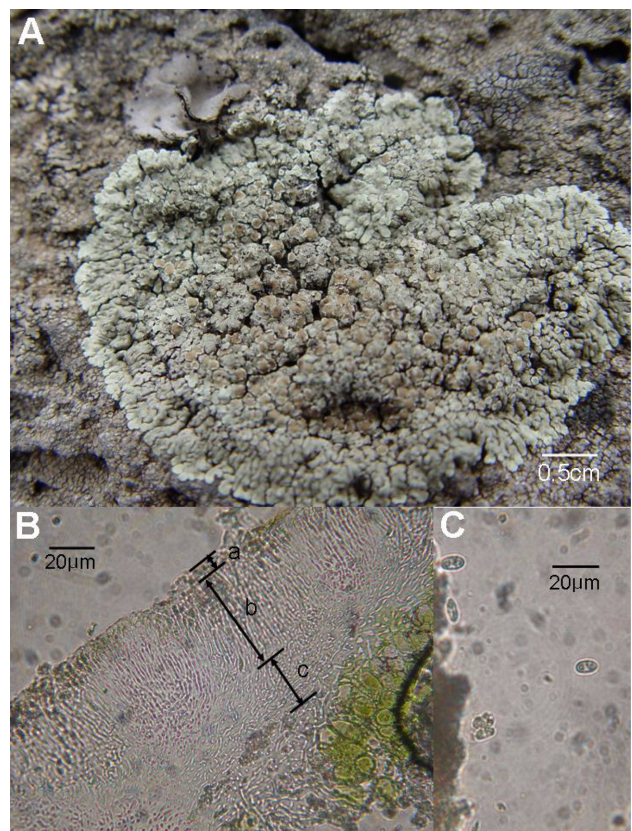


Fig. 1. *Lecanora muralis*. A. Habitat and upper surface of thallus; B. Anatomical structure of apothecium, a. epithecium, b. hymenium, c. hypothecium; C. Ellipsoid ascospores.

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disc plane, but when mature, exciple lacinate, disc protrudent, yellowish brown to orange, 0.5~1.5 mm in diameter; epithecium pale brown, c. 10 μm high; hymenium colorless, c. 50 μm high, ascospores ellipsoid, simple, colorless, 12.5~15.0 \times 5.0~7.5 μm ; hypothecium colorless, 37.5~50 μm high. Pycnidia not seen.

Chemistry: Cortex and medulla: K-, C-, P-; containing usnic acid and zeorin.

Habitat and ecology: This species is tightly appressed on rock along the sea coastal line of Jeju island, growing together with other lichens such as *Caloplaca* sp., and *Dermatocarpon miniatum*.

Distribution: This species is one of the most common and widespread species of *Lecanora*. It mostly occurs on rocks in Europe, Australia, North America, East Asia (China, Japan). This is the first record of *Lecanora muralis* in South Korea.

Specimens examined: Jeju island, Seogyupo, Pyoseon, N 33°22'20.5", E 126°52'42.4", alt. 1 m, on shore, larva rock, Jae-Seoun Hur 061006, October 17, 2006.

Remarks: Unlike Japanese materials (Kashiwadani, 1975), atranorin was not detected in Korean material. *L. muralis* in North American (Brodo *et al.*, 2001) and Australian materials (Lumbsch and Elix, 2004) was also reported to contain no atranorin. This species is easily recognized by its morphology (distinct squamulose thalli, lecanorine type and yellowish brown to orange apothecia, simple and colorless ascospores), substrate (on rock), and chemistry (usnic acid contained).

Acknowledgement

This work was supported by a grant from the Bio R&D Program (Grant M10508050002-06N0805-00212), and Korean Forest Service Program (KNA 2006) through Korea National Arboretum. The authors give their thankfulness to Dr. Lökös, the Hungarian Natural History Museum for kind comment on the manuscript. The first author also gives her thankfulness to Ms. Mei-Rong Ren for her kind help during TLC study.

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