



LEOTIA LUBRICA (ASCOMYCOTA, LEOTIACEAE) FOUND IN PATAGONIA, ARGENTINA

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Abstract. Lorenzo, L. E. & M. I. Messuti. 2013. *Leotia lubrica* (Ascomycota, Leotiaceae) found in Patagonia, Argentina. *Darwiniana*, nueva serie 1(2): 237-240.

Leotia lubrica (Ascomycota, Leotiomycetes, Leotiales, Leotiaceae) was recorded for the first time from Argentina in Lago Puelo National Park, Chubut Province. It has been previously cited in the native forest of Chile, Los Lagos Region in southern South America. The species is distributed in temperate regions around the world. A description and photographs of the species are included.

Keywords. Argentina; new record; Patagonian mycobiota, pileate Ascomycota.

Resumen. Lorenzo, L. E. & M. I. Messuti. *Leotia lubrica* (Ascomycota, Leotiaceae) hallada en la Patagonia, Argentina. *Darwiniana*, nueva serie 1(2): 237-240.

Leotia lubrica (Ascomycota, Leotiomycetes, Leotiales, Leotiaceae) se registra por primera vez para la Argentina en el Parque Nacional Lago Puelo, Chubut. La especie había sido previamente citada en los bosques nativos de Chile en la Región de los Lagos, en el sur de Sudamérica. La especie se distribuye en regiones templadas alrededor del mundo. Se incluye una descripción y fotografías de la especie.

Palabras clave. Argentina; Ascomycota pileado; micobiota patagónica; nueva cita.

INTRODUCTION

The genus *Leotia* Pers. is placed in the family Leotiaceae (Korf & Lizoñ, 2001) which includes discomycetes with pileate ascomata, with the external layer of the ectal excipulum and a medullary layer immersed in abundant gel, and inoperculate asci.

This genus encloses only few species: *L. atra* Weinm., *L. chlorocephala* Schwein. *L. infundibuliformis* (Schaeff.) Fr., *L. lubrica* (Scop.) Pers., *L.*

nana (With.) Fr. Most of them are widely distributed especially in temperate regions (Akata & Kaya, 2010; Kirk et al., 2008). Particularly, the genus *Leotia* has not been cited before for Argentina. Nevertheless, *Pezoloma* Clem., another member of the Leotiaceae, was cited scarcely in our country from Neuquén, Río Negro, and Tierra del Fuego e Islas del Atlántico Sur Provinces (Gamundi et al., 2004).

Within the framework of the study of diversity of the lichenized and non lichenized fungi in Pa-

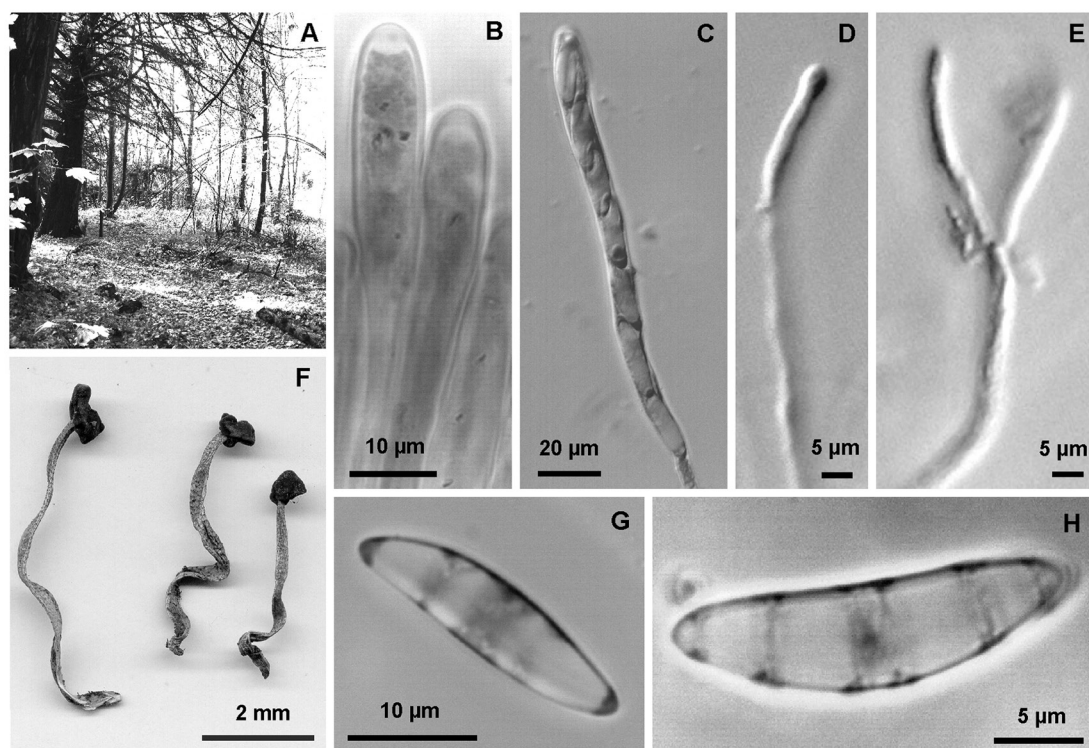


Fig. 1. *Leotia lubrica*. **A**, habitat. **B**, inmature asci. **C**, ascus with uniseriate ascospores. **D**, paraphysis simple, capitate. **E**, paraphysis forked. **F**, dried ascomata (herbarium specimens). **G**, inmature guttulate ascospore. **H**, mature ascospore. From *Lorenzo s.n.* (BCRU 4979).

tagonia, the species *Leotia lubrica* (Scop.) Pers., was recorded for the first time in Argentina in Lago Puelo National Park, Chubut Province.

MATERIALS AND METHODS

The examined material was collected during the field trip, alongside Población Reitman trail in the Botanical Garden of Lago Puelo National Park, Chubut Province (42° 11' S - 71° 42' W). In this area, the native vegetation was replaced by oaks, maples, and fruit trees among others because the place was formerly occupied by a farm. Nowadays the Botanical Garden is characterized by a mixed flora with exotic and native species.

Ascomata height, pileus broad, and stipe length were measured from dry specimens under dissect-

ing microscope. Morphological and anatomical features of fungal specimens were observed and measured in water under a bright-field microscope (BF) and differential interference contrast microscopy (DIC). Several reagents were used to observe specific microscopic structures: Melzer's reagent, 5 % potassium hydroxide (KOH), and lactophenol cotton blue (LCB) (Gams et al., 1980). Micrographs were obtained with USB 2.0 digital camera. The specimens examined are kept in BCRU Herbarium (Thiers, 2013). The authors and synonymy of the species are recorded in Index Fungorum (www.indexfungorum.org).

RESULTS

Leotia lubrica (Scop.) Pers., *Comm. fung. clav.* (Lipsiae): 31. 1797. *Helvella lubrica* Scop., *Fl.*

Carniol., Edn 2 (Wien) 2: 477. 1772. TYPE: "Loc. typ. ignota, ad terram interfoliis in silvis, aestate-autumno", date ?, col.? (?Herb. Persoon) (sensu Imai, 1941). Fig. 1.

Ascomata gregarious to subcespitosus, pileate estipitate, gelatinous, 38-50 mm; pileus convex, smooth, irregularly rounded or lobed, inrolled margin, viscid when moist, yellowish to yellow-green, olivaceous buff when dry, 7 mm diam., KOH + yellowish green in section; stipe central, cylindrical, concolorous with the pileus, yellowish when dry, covered distally with greenish granules, hollow when mature. Asci 8-spored, inoperculate, cylindrical, I-, 130-157 x 7-10 μm . Paraphyses simple to forked, septate, capitate, 2.4 μm diam. Ascospores 1-2 seriate, hyaline, asymmetrical, subfusiform with rounded ends, slightly curved, guttulate, 17-25 x 5-6.5 μm .

Iconography. Akata & Kaya, 2010: 2; Furci George-Nascimento, 2007: 61; Gamundí, 1979: 92.

Distribution and habitat. *Leotia lubrica* was previously recorded in southern South America from the native forest in Chile, in Los Lagos Region (Gamundí, 1979; Gamundí et al., 2004; Furci George-Nascimento, 2007). *Leotia lubrica* has been found in the phytogeographical area of Deciduous-Valdivian forest, Subantarctic Province (Cabrera, 1994) in Parque Nacional Lago Puelo, Chubut Province; growing gregariously on soil between plant debris. This record is the first report of the genus *Leotia* in Argentina. Fig. 2.

Observations. The species of *Leotia* have traditionally been defined by the fresh color of the ascomata. However, a molecular phylogenetic study revealed that color is a poor predictor of species affiliation, suggesting that further study is needed to find new and more predictive species limits (Zhong & Pfister, 2004). The morphology and anatomy of the material collected in Parque Nacional Lago Puelo agree with the description given by Gamundí (1979) of *Leotia lubrica* recorded in Osorno, Chile, in *Nothofagus obliqua* (Mirb.) Oerst. ("roble pellín") forest. Some authors (e.g. Leimona & Velasco, 1975; Gamundí, 1979) consider that the species has 1-cellular and guttulate ascospores.



Fig. 2. Distribution of *Leotia lubrica* in Patagonia, southern South America. **1**, Chile, Los Lagos Region. **2**, Argentina, Chubut Province, Parque Nacional Lago Puelo.

Nevertheless we agree with other authors (e.g. Dennis, 1981; Akata & Kaya, 2010) who showed that the ascospores are multiseptate, although the septa are difficult to observe due to the presence of guttules with the classic techniques of microscopy (Fig. 1H).

Persoon's collections are deposited in L Herbarium (Netherlands): five of them correspond to *L. lubrica*: L 0116427, L 0116428, L 0116430, L 0116429, L 0116431. None of these is the type specimen (Thijsse, Senior Collection Manager, pers. com.). More synonyms can be consulted in Index Fungorum (<http://www.indexfungorum.org/>) and Imai (1941).

Examined material

ARGENTINA. **Chubut.** Depto. Cushamen, Parque Nacional Lago Puelo, Jardín Botánico, on

soil among fallen leaves of *Acer pseudoplatanus* (maple), 3-V-2008, *Lorenzo s.n.* (BCRU 4979).

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