

Rinodina pyrina (Physciaceae, Ascomycota) new to Chile

Rinodina pyrina (Physciaceae, Ascomycota) nueva especie para Chile

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RESUMEN

Rinodina pyrina (Ach.) Arnold es citada por primera vez para la micobiota liquenizada chilena. El material fue recolectado en el sector El Panul, en la precordillera de la ciudad de Santiago, Chile. La morfología, anatomía y química fueron revisadas y se entrega una descripción del material encontrado, su hábitat y distribución.

During a survey of the epiphyte lichens on *Quillaja saponaria* Molina in the surroundings of Santiago de Chile several specimens of *Rinodina pyrina* (Ach.) Arnold were found. This species is not listed in the checklist of lichens of Chile (Galloway & Quilhot 1998) nor in any recent publication. The material was collected in El Panul Park, a private area with public access situated in the Cordillera Province, Metropolitan Region, between 32°55' - 33°01' S and 71°09' - 71°01' W, with altitudes ranging from 400 to 2,220 m. It is one of the remaining areas in the proximity of Santiago de Chile that still presents sclerophyllous forest, and endemic vegetation formation, now replaced mainly by exotic plantations in Central Chile (Torres-Mura *et al.* 2008, Moreira-Muñoz 2011). There is no previous record of the lichen biota neither of the park nor in the surrounding areas. The aim of this work is to report the new record to the Chilean continental lichen biota and to present a description of the species, providing information on its possible distribution and habitat in Chile.

Morphological and anatomical observations were undertaken using light microscopy. Apothecial hand-cut sections were studied in water and 10% KOH (K). Amyloid reactions in the hymenium, along with ascus observations, were tested with Lugol's iodine after a treatment with 10% KOH (K/I). Hymenia, ascospore and paraphyses were measured in 10% KOH. The material was observed under an Olympus SZ61 stereomicroscope coupled with a Lumenera Infinity 2 digital camera, and an Olympus CH (up to ×1000) microscope. Secondary chemistry was studied using spot test and by means of TLC following Orange *et al.* (2001). The material collected is kept in the Botanical Collection Federico Johow of the Universidad Metropolitana de Ciencias de la Educación, Santiago de

Chile, with duplicates in the Botanical Collection of the Botany Department, Universidad de Concepción (CONC).

Rinodina pyrina (Ach.) Arnold, Flora 64: 196. 1881.

Basionym: *Lichen pyrinus* Ach., Lich. Suec. Prod.: 52. 1799 [1798].

Lecanorapyrina (Ach.) Röhl., Deutschl. Fl., Abth. 2 (Frankfurt) 3: 72, 1813. *Rinodina maculiformis* (Hepp) Arnold, Flora 64: 196, 1881. Type: *Sine loco*, "Habitat in cortice ramorum *Pyri communis* & *Mali*" (BM-ACH lectotype, Ropin & Mayrhofer, Herzogia 9: 815, 1993 - not seen).

Thallus thin, up to 0.5 cm in diameter, discontinuous or effuse to rather thick and areolate, rarely rimose-areolate, sometimes forming small verrucae, especially at margins where it can be very dispersed and diffuse, pale whitish-grey to grey, rarely dark grey to brownish, epiphytic, without prothallus or vegetative propagules.

Apothecia 0.1-0.5 mm diam., scattered, numerous, subimmersed at first becoming lecanorine and sessile and broadly attached at maturity, disc plane, occasionally convex, brown to black, matt, somewhat scabrid, often confluent forming masses of 2-7 apothecia. Thalline margin concolorous with thallus, well-developed, thin, entire, persistent, sometimes crenulated, 40-90 µm thick, usually with an epinecral layer of 2-10 µm thick. Proper margin hyaline, 5-20 µm wide. Epithymenium brown to dark-brown, K(-), 4-8 µm thick. Hymenium hyaline, 50-70 µm tall. Paraphyses 1.5-2 µm thick in the base, apices to ca. 4 µm in diameter, 1-2 times branched. Hypothecium hyaline, 40-60 µm thick. Asci *Lecanora*-type, clavate, 30-55 × 11-16 µm, hyaline, 8-spored. Ascospores *Physconia*-type, spore ontogeny type A (*sensu* Mayrhofer & Moberg 2002),

immature spores elongated and somewhat curved, with faint median thickenings visible when fresh, walls thin, without distinct apical thickenings, pale- to dark-brown, smooth-walled, (10-)12-14(-16) × 5-7(-8) μm, spore lumina with oil droplets in fresh specimens. Pycnidia immersed, hyaline, sometimes as a darkened spot in the upper surface of the areoles. Conidia hyaline, bacillar, 4-6 × 1-1.5 μm (Fig. 1).

CHEMISTRY. No secondary compounds found. All spot test negative.

HABITAT AND DISTRIBUTION. This corticolous species is very common and locally abundant in the studied area, on smooth bark of *Quillaja saponaria* and *Lithrea caustica* (Molina) Hook. & Arn., particularly in young trees and twigs. Sometimes part of the thallus may grow directly on wood. Common accompanying species are *Caloplaca clandestina* Zahlbr., *Candelaria concolor* (Dicks.) Arnold, *Chrysothrix granulosa* G. Thor, *Chrysothrix pavonii* (Fr.) J.R. Laundon, *Josefpoeltia soresdiosa* S.Y. Kondr. & Kärnefelt, *Lepraria incana* (L.) Ach., *Physcia adscendens* H. Olivier, *Ramalina chilena* (Nyl.) Kashiw., *Pyrenula nitida* (Weigel) Ach., *Teloschistes chrysophthalmus* (L.) Norman ex Tuck., *Xanthomendoza mendozae* (Räsänen) S.Y. Kondr. & Kärnefelt, *Xanthoria adscendens* S.Y. Kondr. and *Xanthoria candelaria* (L.) Th. Fr.

In Chile, *Rinodina pyrina* is known from the surroundings

of Santiago de Chile, on the foothills of the Andes Cordillera in the sclerophyllous forest and it could potentially be present at the whole extent of this type of vegetation formation. The species is well known from temperate to boreal regions in the Northern Hemisphere, particularly in Europe (Ropin & Mayrhofer 1993, Mayrhofer & Moberg 2002), near Asia: Armenia (Harutyunyan & Mayrhofer 2009, Harutyunyan *et al.* 2011), Cyprus, Syria and Turkey (Giralt & Mayrhofer 1995), Central Asia: Tajikistan (Kudratov & Mayrhofer 2002), Northern Africa (Magnusson 1947) and North America (Sheard 2004, 2010). It is also known from New Zealand (Wirth 1997; Mayrhofer *et al.* 2007), mainland Australia (Mayrhofer *et al.* 1999) and Tasmania (Kantvilas 1994, Mayrhofer *et al.* 1999) in the Southern Hemisphere.

NOTES. *Rinodina pyrina* is characterized by its thin to evanescent grey to dark grey thallus, the abundant and crowded apothecia, and the small *Physconia*-type spores with almost excluded wall thickenings at the apices and reduced median thickenings. The species has been possibly overlooked in the continental Chilean territory given its small size and the inconspicuous crustose thallus and might be widespread in the central part of the country. It mainly occurs very abundantly on a variety of exotic trees and shrubs in Australia and New Zealand (Kantvilas 1994, Mayrhofer *et al.* 1999, 2007).

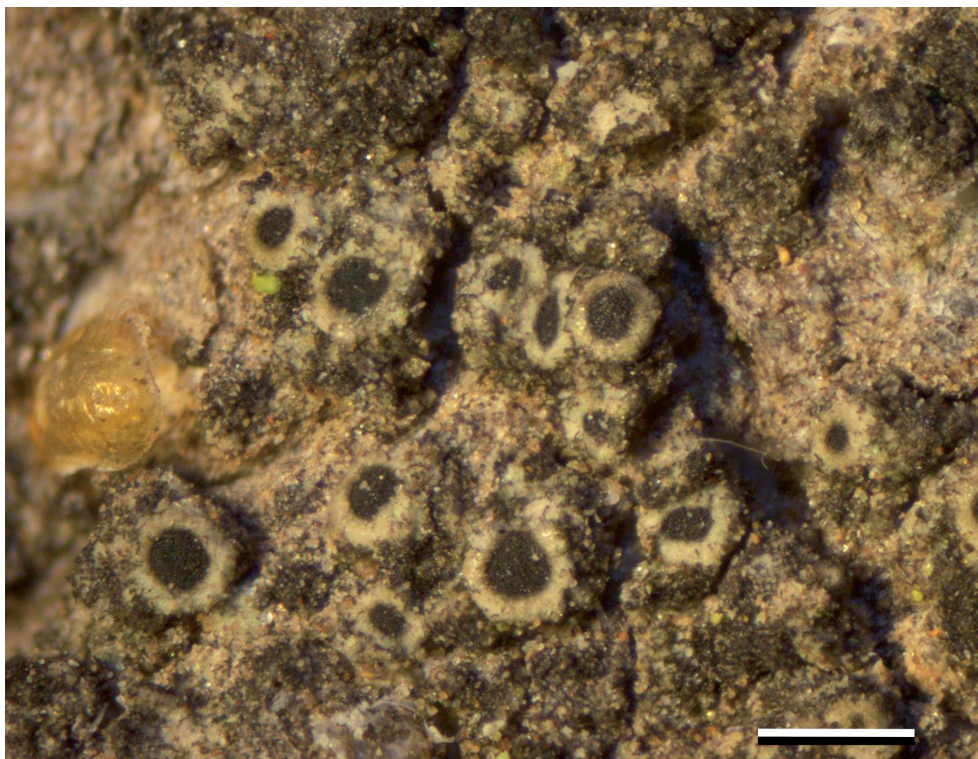


FIGURE 1. *Rinodina pyrina*, habit of the thallus, AI-EV 012 (CONC). Scale = 0.4 mm.

FIGURA 1. *Rinodina pyrina*, hábito del talo, AI-EV 012 (CONC). Escala = 0,4 mm.

SPECIMENS EXAMINED: CHILE, Región Metropolitana, Prov. Cordillera, Comuna de La Florida, Sector El Panul, sobre corteza de *Lithraea caustica*, 33°32'06.2"S, 70°31'38.9"W +/- 3 m, 911 msnm, 05-V-2012, Vargas, Ibaceta & Vergara, AI-EV 003, 004, 005 (UMCE, CONC); sobre corteza de *Quillaja saponaria*, 33°31'06.6"S, 70°31'39"W +/- 4 m, 902 msnm, 05-V-2012, Vargas, Ibaceta & Vergara, AI-EV 008 (UMCE, CONC); 33°32'05.7"S, 70°31'39"W +/- 3 m, 901 msnm, 05-V-2012, Vargas, Ibaceta & Vergara, AI-EV 009 (UMCE, CONC); 33°32'05.6"S, 70°31'39.7"W +/- 4 m, 925 msnm, 05-V-2012, Vargas, Ibaceta & Vergara, AI-EV 011 (UMCE, CONC); 33°32'06"S, 70°31'39.7"W +/- 4 m, 923 msnm, 05-V-2012, Vargas, Ibaceta & Vergara, AI-EV 012 (UMCE, CONC); 33°32'04.4"S, 70°31'41.6"W +/- 4 m, 913 msnm, 05-V-2012, Vargas, Ibaceta & Vergara, AI-EV 013 (UMCE, CONC); 33°32'04.1"S, 70°31'41.7"W +/- 4 m, 913 msnm, 05-V-2012, Vargas, Ibaceta & Vergara, AI-EV 014 (UMCE, CONC); 33°32'03.8"S, 70°31'41.9"W +/- 4 m, 912 msnm, 05-V-2012, Vargas, Ibaceta & Vergara, AI-EV 019 (UMCE, CONC); 33°32'03.3"S, 70°31'42.9"W +/- 4 m, 910 msnm, 05-V-2012, Vargas, Ibaceta & Vergara, AI-EV 024, 025, 027 (UMCE, CONC); 33°32'03.4"S, 70°31'43.3"W +/- 3 m, 909 msnm, 05-V-2012, Vargas, Ibaceta & Vergara, AI-EV 031 (UMCE, CONC).

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