

# Lichens of Aisen, Southern Chile

## Líquenes de Aisén, sur de Chile

WANDA QUILHOT, MAURICIO CUELLAR, RODRIGO DÍAZ, FRANCISCO RIQUELME & CECILIA RUBIO

Herbario de Líquenes UV, Departamento de Química y Recursos Naturales, Facultad de Farmacia, Universidad de Valparaíso, Casilla 5001, Valparaíso, Chile.

wanda.quilhot@uv.cl

### ABSTRACT

The lichen mycobiota of Aisen (southern Chile) comprises 319 taxa in 87 genera. All of the species of *Menegazzia* and *Protousnea*, previously recorded in Chile, are present in this region. The diversity of biomes, from temperate rainforests –particularly in oceanic zones– to steppe areas, offers an enormous number of macro and microhabitats favorable for lichens. The highest lichen diversity, 56 %, was recorded in an undisturbed locality in Laguna San Rafael National Park. Lichen species diversity is higher in oceanic temperate rainforests than in steppe areas, where the majority of Antarctic lichens (23 %) are registered. Levels of endemism are rather high (26 %) and are due mainly to species of the genera *Protousnea*, *Pseudocyphellaria*, *Menegazzia*, *Cladonia*, *Sticta*, *Nephroma*. Other biogeographical elements in the region's lichen mycobiota are: cosmopolitan (16 %), austral (16 %) and bipolar (13 %). Lichen diversity in Aisen represents about 20 % of the known lichen mycobiota of Chile.

**KEYWORDS:** Lichen diversity, endemism, steppe areas, biogeography.

### RESUMEN

La micobiota líquénica de la Región de Aisén incluye 319 especies en 87 géneros; el número total de especies de los géneros *Menegazzia* y *Protousnea* registrados en Chile se encuentran en esta región. La diversidad de biomas, desde bosques templado-lluviosos, particularmente en zonas oceánicas, a áreas estepáricas, ofrece una variedad de macro y microhabitats favorables para los líquenes. La mayor diversidad líquénica (56 %) se registró en un área silvestre no intervenida en el Parque Nacional Laguna San Rafael. La diversidad específica es más elevada en bosques templado-lluviosos que en zonas estepáricas, en estas últimas se registró la mayoría de los líquenes antárticos (23.0 %). El endemismo es más bien elevado (26.0 %); numerosas especies de los géneros *Protousnea*, *Pseudocyphellaria*, *Menegazzia*, *Cladonia*, *Sticta*, *Nephroma* son endémicas del sur de América del Sur. Las especies cosmopolitas (16 %), australes (16 %) y bipolares (13 %) son los elementos biogeográficos más representativos. La diversidad líquénica de Aisen corresponde al 20 % de la flora líquénica de Chile.

**PALABRAS CLAVE:** Diversidad líquénica, endemismo, áreas estepáricas, biogeografía.

### INTRODUCTION

Aisen, XI Region, is located in the south of Chile (44°15' and 51°15'S, 71°45'W). Due to its complexity of topography and climate (Daniels & Veblen 2000, Kitzberger & Veblen 2000) the region is characterized by several biomes with a considerable number of macro and microhabitats available for colonization by lichens. Climate ranges from oceanic to arid steppe favouring the development of lichens in terms of both diversity and biomass. Aisen is one of the least known regions in Chile due to the difficulties in exploring some of its distant places.

Major contributions to present knowledge of lichens in

Aisen were made by Galloway (1992a, 1992b, 1994, 1996, 2002), Galloway & Jørgensen (1995), Bjerke (2001, 2005), Bjerke & Elvebakk (2001), Bjerke *et al.* (2003a), Wedin (1995, 2002), Jørgensen & Wedin (1999), Stenroos (1995), Elvebakk (2007), Elvebakk & Moberg (2002), Elvebakk & Bjerke (2005), Elvebakk *et al.* (2007, 2010), Krog (1976) and Quilhot *et al.* (2002a,b).

The lichen mycobiota of Aisen is of particular importance because it occupies a transitional position between Antarctica and Magellanic tundra, to the south, and the wetter Valdivian rainforest of the north.

Here we report data from on-going studies that contribute to better understand of the lichen flora of Aisen,

through a more accurate assessment of distributional data and biogeographical affinities.

### METHODS

Compilation of the lichen mycobiota from Aisen follows the methods outlined: published lichen records from Aisen; fieldwork funded by the Dirección de Investigación of Universidad de Valparaíso, project Darwin's Initiative for the Survival of the Species (1997), funded by the United Kingdom; project Biodiversidad de Aisen (2000-2004), funded by the European Community. Fieldwork and logistical support was provided by CONAF XI Región and Raleigh International from the United Kingdom.

Identification of the species was undertaken in collaboration with lichenologists David Galloway from Landcare Research Ltd., New Zealand; Jarle Werner Bjerke and Arve Elvebakk, from the University of Trømsø, Norway, and Bernard Goffinet from the University of Alberta, Canada.

The species are arranged alphabetically and include data on lichen habitat, records in Aisen, known distribution in Chile and world distribution. The list of taxa includes all lichen material determined at species level. Nomenclature follows Galloway & Quilhot (1998), and more recent taxonomic treatments. Lichen material collected and analyzed is housed in the Herbario de Líquenes (UV), Universidad de Valparaíso.

### STUDY SITES

Liquen inventories were conducted in the following sites (Fig. 1).

- Queulat National Park (44°28'S, 72°32'W); and adjacent localities: Las Juntas, Puyuhuapi and Río Cisnes.
- Cerro Castillo National Reserve (45°41'S, 72°15'W), Villa Cerro Castillo, Coyhaique (45°32' S; 72°41' W), Río Simpson National Reserve, Puerto Aisen, lago Riesco and Villa Mañihuales 100 km N of Coyhaique.
- Jeinimeni National Reserve (46°50'S, 72°00' W), at altitudes between 500 and 1200 m and adjacent localities: Chile Chico, Fachinal on the riverside to Lago General Carrera, Puerto Bertrand, Valle Exploradores 35 km from Puerto Tranquilo and Bahía Murta (46°27'S; 73°14'W).
- Lago Cochrane National Reserve: Tamango (47°30' S, 72°30' W) at altitude between 180 and 1400 m, and adjacent localities: San Lorenzo and Vagabundo.
- Laguna San Rafael National Park: Puntilla Los Cisnes (46°40' S; 73°51' W).
- Caleta Tortel (47°41' S, 73°00' W) and adjacent localities: on the road to Puerto Yungay, Fiordo Michel, 20 km S on the road to Villa O'Higgins.
- Katalalixar National Reserve (47°28' S, 72°57' W). Lichens in this site were collected by Dr. Jorge Cuvertino.

The Darwin Project focussed intensive collecting in Laguna San Rafael, in Puntilla Los Cisnes (Quilhot *et al.* 2002 a,b,c), while the Project Biodiversidad de Aisen provided the opportunity to study lichens of previously unexplored areas as National Reserves Lago Cochrane (Tamango) and Jeinimeni.

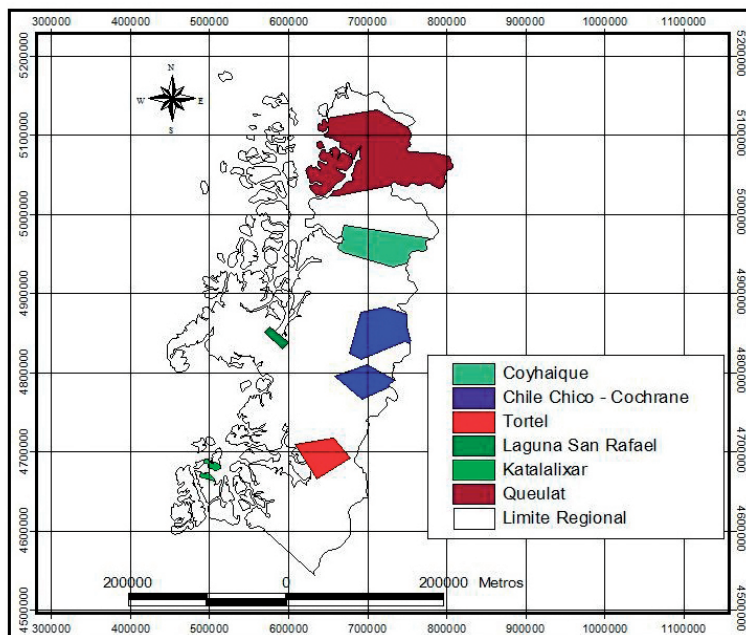


FIGURE 1. Distribution of the collecting sites in Aisen Region. UTM coordinates.

FIGURA 1. Distribución de los sitios de recolección en la región de Aisen. Coordenadas UTM.

## RESULTS AND DISCUSSION

A total of 321 taxa of lichens are here recorded in Aisen. All the species recorded to Chile belonging to genera *Menegazzia* and *Protousnea* are present in Aisen. Similarly, the majority known species of *Bunodophoron*, *Cladonia*, *Leptogium*, *Placopsis*, *Pseudocyphellaria* and *Sticta* were registered for the region. Follicolous lichens, such as *Fellhanera dominicana*, *Calopladia fusca*, *Coccocarpia dominguenensis*, *C. erythruxoylii*, *C. palmicola*, *Mazosia phyllosema* and *Tapellaria epiphylla* were also found in this region. The lichens recorded in Aisen represent about 20 % of the total lichen mycobiota known from Chile.

Lichen diversity is higher in temperate rainforests as is observed by the number of species recorded in Laguna San Rafael, Valle Exploradores or in Queulat National Park.

The highest diversity per locality was observed in Puntilla Los Cisnes, a small area located at sea level in the vicinity of the glacier in Laguna San Rafael, 178 taxa are recorded, representing about 56 % of the total lichen diversity of Aisen. The lichen mycobiota has strong affinities with those of Valdivian rainforest and is exceptionally rich in lichens; examples: the total number of the species of the genera *Menegazzia* and continental species of *Sticta* are present in this area, while *Pseudocyphellaria* is represented with 42 species (out of 54 known to Chile).

On the other hand, the biomass of *Coccotrema coccophorus* growing on *Embothrium coccineum* J.R. Forst. et G. Forst. is really quite exceptional. Origin and maintenance of this high local species diversity may be explained as a result of high rainfall and frequent cloudy days, a climate regime particularly suitable for the growth of lichens (Galloway 1992a). Also, the strong fires that occurred in the middle of the last century did not affect the vicinity of the glacier where Puntilla Los Cisnes is located and, finally, because the intensity of lichen collecting and inventories in the area. It is also worth to mention that Laguna San Rafael is one of the few localities in coastal ecosystems in Aisen where the original lichen diversity can still be seen; obviously lichen colonization is new in areas affected by fires.

Lichen diversity is lower in steppe and semi-steppe areas than it is in more humid rainforests; the number of the species recorded represents about 47 % of the lichen flora in Aisen. In Tamango, located in a semi-steppe area, and where lichen collecting was conducted at altitudes between 180 and 1400 m, 187 taxa were recorded. *Protousnea*, a lichen genus known only from Chile and Argentina (Krog 1976, Calvelo *et al.* 2003, 2005), is dominant in these biomes. All of the species in the genus are found in steppe areas at elevation from 250 m to 1400 m. A very high biomass was seen in Tamango, particularly of *P. malacea*, and *P. dusenii* in Jeinimeni. Species of this genus are completely absent from coastal ecosystems in Aisen.

Climate and other environmental features of steppe areas seem to be ideal for the growth and development of species other than *Protousnea*, e.g. with *Menegazzia*: *M. globulifera* is most frequent in relatively dry and open forests dominated by *Nothofagus pumilio* (Poepp. et Endl.) Krasser, at an elevation of 700-1200 m, in Jeinimeni; *M. chrysogaster* and *M. kawesqarica* are currently found on more shaded habitats in Tamango.

The alpine lichen flora of steppe areas has a significant number of Antarctic species. 76 taxa (about 23 %) were recorded at an elevation of 300 to 1400 m. *Lecanora*, *Parmelia*, *Rhizoplaca*, *Peltigera*, *Physconia*, *Rhizocarpon*, *Toninia*, *Umbilicaria*, *Usnea*, are some of the Antarctic genera recorded in Aisen. It is proposed that this observed lichen disjunction is because the exceptional dispersal capabilities in very similar habitats ecologically (Högberg *et al.* 2002); an additional explanation is that ecologically similar areas that are now widely separated from each other are often remnants of formerly coherent vegetation belts (Printzen *et al.* 2003). Many of the Antarctic lichens found in Aisen were recorded in alpine zones in North and Central Chile (Quilhot *et al.* 2007). For example, *Physconia muscigena*, *Rhizoplaca melanophthalma*, *Toninia bullata* were recorded in the Altiplano, between Putre and Chucuyo at an altitude of 3500-4500 m (Galloway 1998); while *Rhizoplaca aspidophora*, *Umbilicaria decussata* in Portillo at 2500-2800 m, and *R. aspidophora*, *R. melanophthalma* and *Toninia bullata* in Laguna del Maule at 2700 m elevation. Ecological conditions in these sites are very similar to steppe areas in Aisen.

The lichen mycobiota of the Juan Fernández Archipiélago is well represented in Aisen, particularly in temperate rainforests, representing 18 % of the total lichen flora of Aisen. *Pseudocyphellaria dissimilis*, endemic to Juan Fernández (Galloway 1992b), was collected in Katalalixar and on the road between Cochrane and Villa O'Higgins.

From a biogeographical perspective, lichens of Aisen are of considerable interest in the lichenic flora of Chile. Endemism is on the order of 26 %; the genus *Protousnea*, numerous species of *Pseudocyphellaria*, *Menegazzia*, *Sticta*, *Nephroma*, *Cladonia*, *Placopsis* are endemic to southern South America; *Rhizoplaca aspidophora*, considered as an endemic element in Antarctica (Øvstedal & Lewis Smith 2001), was recorded in Jeinimeni and Tamango at 850 and 1100 m, respectively. Bipolar elements, 13 %, are characteristics of the steppe area in alpine habitats. Austral elements, about 16%, are present in rainforests. Cosmopolitan elements represent 16 %. Other biogeographical elements are not included because of their low numbers in Aisen.

In conclusion, the lichen mycobiota of Aisen recorded below is still incompletely known, because of inaccessibility, complex topography and extent of the region. One of the keys to increasing knowledge of lichen diversity is to conduct intensive collections in each locality, as has been

shown for Laguna San Rafael, Tamango and Jeinimeni. In addition, over the last few years, Aisen has been transformed in a wide private area, imposing restrictions to the access, including temperate rainforests. Thus our knowledge of lichen diversity in Aisen must remain incomplete.

RECORDED TAXA

***Alectoria ochroleuca*** (Hoffm.) A. Massal.

HABITAT ECOLOGY: on bark of large trees particularly in alpine habitats from sea level to 1100 m. RECORDS IN AISEN: Tamango and Laguna San Rafael. DISTRIBUTION IN CHILE: Llanquihue to Isla Navarino. GLOBAL DISTRIBUTION: circumpolar. (Brodo & Hawksworth 1977; Redón 1974; Redón & Quilhot 1977).

***Amandinea punctata*** (Hoffm.) Coppins & Scheid.

HABITAT ECOLOGY: on rocks in open sites. RECORDS IN AISEN: Laguna Tamanguito (Tamango) 1100 m altitude. DISTRIBUTION IN CHILE: Copiapó to Magallanes and Antarctic Territory. GLOBAL DISTRIBUTION: bipolar. (Øvstedal & Lewis Smith 2001; Scheidegger 1993).

***Anzia fromontana*** R. Sant.

HABITAT ECOLOGY: on bark of large trees in humid forests; from sea level to 1100 m altitude. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Llanquihue to Magallanes. GLOBAL DISTRIBUTION: known in South America and Africa. (Adler & Calvelo 1996a; Redón 1974).

***Bacidina pallidocarnea*** (Müll. Arg.) Vězda

HABITAT ECOLOGY: on living leaves of trees and shrubs in Valdivian rainforest. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Valdivia to Aisen. GLOBAL DISTRIBUTION: pantropical. (Lucking *et al.* 2003).

***Bryoria chalybeiformis*** (L.) Brodo & Hawksw.

HABITAT ECOLOGY: on rocks in steppe areas, usually montane to alpine, rare in maritime regions. RECORDS IN AISEN: Jeinimeni, Tamango and San Lorenzo. DISTRIBUTION IN CHILE: Aisen to Isla Navarino and Antarctic Territory. GLOBAL DISTRIBUTION: bipolar. (Øvstedal & Lewis Smith 2001; Redón 1985; Ryan 2002a).

***Bunodophoron australe*** (Laurer) A. Massal.

HABITAT ECOLOGY: a common and widespread species in cool temperate rainforests. RECORDS IN AISEN: Lago Las Torres, Puerto Aisen, Valle Exploradores, Laguna San Rafael and Katalalixar. DISTRIBUTION IN CHILE: Valdivia to Magallanes. GLOBAL DISTRIBUTION: the species is known from Argentina, Chile, New Zealand, Tasmania, New Caledonia and Hawaii. (Elix & McCarthy 1998; Wedin 1995).

***Bunodophoron dodgei*** (Ohlsson) Wedin

HABITAT ECOLOGY: on trunks in large trees in cool temperate rainforests. RECORDS IN AISEN: Lago Las Torres, Puerto Aisen, Lago Riesco, Laguna San Rafael, on the road side to Puerto Yungay. DISTRIBUTION IN CHILE: Malleco Province to Magallanes. GLOBAL DISTRIBUTION: endemic to southern South America. (Wedin 1995).

***Bunodophoron imshaugii*** (Ohlsson) Wedin

HABITAT ECOLOGY: on trunks in large trees in cool temperate rainforests. RECORDS IN AISEN: Valle Exploradores, Laguna San Rafael, Puerto Ballena and Katalalixar. DISTRIBUTION IN CHILE: Nahuelbuta National Park to Magallanes. GLOBAL DISTRIBUTION: the species is widespread in the Southern Hemisphere, and is known from Chile, New Caledonia, New Zealand and Tasmania. (Elix & McCarthy 1998; Wedin 1995).

***Bunodophoron insigne*** (Laurer) Wedin

HABITAT ECOLOGY: on trunks in large trees in Valdivian rainforest. RECORDS IN AISEN: Lago Las Torres, Puerto Aisen, Laguna San Rafael, on the road to Puerto Yungay and Katalalixar. DISTRIBUTION IN CHILE: from Nahuelbuta National Park to Magallanes. GLOBAL DISTRIBUTION: the species is known from Argentina, Chile, New Zealand, South Australia, and the Solomon Islands. (Elix & McCarthy 1998; Wedin 1995).

***Bunodophoron patagonicum*** (C.W. Dodge) Wedin

HABITAT ECOLOGY: on trunks in large trees in Valdivian rainforest. RECORDS IN AISEN: Puerto Aisen, Lago Riesco, and on the road to Puerto Portales. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, and from Malleco Province to Magallanes. GLOBAL DISTRIBUTION: austral. (Wedin 1995).

***Bunodophoron ramuliferum*** (I.M. Lamb) Wedin

HABITAT ECOLOGY: on trunks in large trees in cool temperate rainforests. RECORDS IN AISEN: Puerto Aisen and Laguna San Rafael. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, and from Malleco Province to Magallanes. GLOBAL DISTRIBUTION: the species is very widespread, occurring in southernmost South America, Argentina, Chile, New Zealand, Australia and New Caledonia. (Elix & McCarthy 1998; Wedin 1995).

***Bunodophoron scrobiculatum*** (C. Bab.) Wedin

HABITAT ECOLOGY: on trunks in large trees in Valdivian rainforest. RECORDS IN AISEN: Puerto Aisen. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, and from Malleco Province to Magallanes. GLOBAL DISTRIBUTION: the species is widely distributed in the Southern Hemisphere, occurring in the southern South America, New Zealand and Tasmania.



(Wedin 1995).

***Bunodophoron tibellii*** (Wedin) Wedin

HABITAT ECOLOGY: on trunks in large trees in Valdivian rainforest. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Aisen. GLOBAL DISTRIBUTION: Australia, New Zealand and Chile. (Wedin 1995, Wedin pers. comm.).

***Bunodophoron whakapapaense*** (Wedin) Wedin

HABITAT ECOLOGY: an epiphyte on mature trunks of *Nothofagus dombeyi* (Mirb.) Oerst. and other tree species in Valdivian rainforest. RECORDS IN AISEN: Lago Las Torres, Puerto Aisen, Laguna Los Palos and Lago Riesco. DISTRIBUTION IN CHILE: Aisen. GLOBAL DISTRIBUTION: austral. (Wedin 1995).

***Caloplaca regalis*** (Vain.) Zahlbr.

HABITAT ECOLOGY: on rocks in open sites. RECORDS IN AISEN: Tamango. DISTRIBUTION IN CHILE: Aisen to Magallanes and Antarctic Territory. GLOBAL DISTRIBUTION: the species is known from southern South America and Antarctica. (Øvstedal & Lewis Smith 2001).

***Caloplaca sublobulata*** (Nyl.) Zahlbr.

HABITAT ECOLOGY: on rocks in open sites. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Aisen to Isla Navarino and Antarctic Territory. GLOBAL DISTRIBUTION: austral. (Galloway 2007; Øvstedal & Lewis Smith 2001; Redón & Quilhot 1977).

***Caloplacidia fusca*** (Müll. Arg.) Vězda

HABITAT ECOLOGY: on leaves on trees and shrubs. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Aisen to Magallanes. GLOBAL DISTRIBUTION: pantropical. (Lücking 1992).

***Calycidium polycarpum*** (Colenso) Wedin

HABITAT ECOLOGY: an epiphyte of trees and shrubs, sometimes over mosses, in temperate rainforests, from sea level to 935 m elevation. RECORDS IN AISEN: 13 km N of Puerto Aisen. DISTRIBUTION IN CHILE: Choshuenco (X Región) to Aisen. GLOBAL DISTRIBUTION: the species is known from Argentina, Chile, New Zealand and Tasmania. (Wedin 2002).

***Cetraria aculeata*** (Schreb.) Fr.

HABITAT ECOLOGY: on rocks and mosses in steppe areas. RECORDS IN AISEN: Tamango (1000 m elevation) and Tortel. DISTRIBUTION IN CHILE: Llanquihue to Isla Navarino and Antarctic Territory. GLOBAL DISTRIBUTION: bipolar-alpine. (Øvstedal & Lewis Smith 2001; Redón & Quilhot 1977).

***Chrysothrix pavonii*** (Fr.) J.R. Laundon

HABITAT ECOLOGY: on tree trunks, on rocks and rotten wood in open sites. RECORDS IN AISEN: Coyhaique Alto and Laguna Verde (Jeinimeni). DISTRIBUTION IN CHILE: Punta Patache (Iquique) to Magallanes. GLOBAL DISTRIBUTION: cosmopolitan. (Laundon 1981; Muñoz-Schick 2001).

***Cladia aggregata*** (Sw.) Nyl.

HABITAT ECOLOGY: terricolous in a variety of habitats from moist *Nothofagus* forests to bogs, heaths and grassland at all altitudes. RECORDS IN AISEN: Tamango, Laguna San Rafael and Katalalixar. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, and from Ñuble Province to Tierra del Fuego and Antarctic Territory. GLOBAL DISTRIBUTION: paleotropical. (Øvstedal & Lewis Smith 2001; Stenroos 1995).

***Cladia schizopora*** (Nyl.) Nyl.

HABITAT ECOLOGY: on rotten trunks and stumps in forests and open sites. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Valdivia to Aisen. GLOBAL DISTRIBUTION: austral. (Stenroos 1995).

***Cladonia arbuscula*** (Wallr.) Flot.

HABITAT ECOLOGY: on soil in open sites, sometimes in *Nothofagus* forests. RECORDS IN AISEN: Puerto Aisen. DISTRIBUTION IN CHILE: Malleco Province to Tierra del Fuego and Antarctic Territory. GLOBAL DISTRIBUTION: bipolar. (Øvstedal & Lewis Smith 2001; Stenroos 1995).

***Cladonia bacilliformis*** (Nyl.) Glück

HABITAT ECOLOGY: on rotten wood, rare in *Nothofagus antarctica* (G. Forst) Oerst. and *N. pumilio* forests. RECORDS IN AISEN: Coyhaique. Distribution en Chile: Aisen to Tierra del Fuego and Antarctic Territory. GLOBAL DISTRIBUTION: bipolar. (Øvstedal & Lewis Smith 2001; Stenroos 1995).

***Cladonia bellidiflora*** (Ach.) Schaer.

HABITAT ECOLOGY: in bogs and peaty spots in *Nothofagus* forests, more frequent at higher elevations. RECORDS IN AISEN: Puerto Aisen. DISTRIBUTION IN CHILE: Aisen to Tierra del Fuego and Antarctic Territory. GLOBAL DISTRIBUTION: bipolar. (Øvstedal & Lewis Smith 2001; Stenroos 1995).

***Cladonia borealis*** S. Stenroos

HABITAT ECOLOGY: in forest margins, bogs, sandy beaches, rocks outcrops. RECORDS IN AISEN: Coyhaique. DISTRIBUTION IN CHILE: Osorno to Tierra del Fuego and Antarctic Territory. GLOBAL DISTRIBUTION: bipolar. (Øvstedal & Lewis Smith 2001; Stenroos 1995).

***Cladonia cariosa*** (Ach.) Spreng.

HABITAT ECOLOGY: on bare, sandy soil on banks, heath scrub on calcareous cliffs. RECORDS IN AISEN: Coyhaique, Tamango and Tortel. DISTRIBUTION IN CHILE: Palena to Tierra del Fuego. GLOBAL DISTRIBUTION: bipolar. (Stenroos 1995).

***Cladonia carneola*** (Fr.) Fr.

HABITAT ECOLOGY: on rotten wood and humous soil, mainly in *Nothofagus* forests, rarely in open scrub, cushion heaths, steppe and bogs. RECORDS IN AISEN: Coyhaique and Tamango. DISTRIBUTION IN CHILE: from Osorno to Tierra del Fuego and Antarctic Territory. GLOBAL DISTRIBUTION: bipolar. (Øvstedal & Lewis Smith 2001; Stenroos 1995).

***Cladonia chlorophaea*** (Flörke ex Sommerf.) Spreng.

HABITAT ECOLOGY: on soil and rotten wood in drier habitats like steppe, sandy road side and scrub; also in open forests habitats. RECORDS IN AISEN: Coyhaique, Tamango, Laguna San Rafael and Tortel. DISTRIBUTION IN CHILE: Limarí, Juan Fernández Archipiélago; and from Valparaíso to Magallanes and Antarctic Territory. GLOBAL DISTRIBUTION: cosmopolitan. (Øvstedal & Lewis Smith 2001; Stenroos 1995).

***Cladonia confragosa*** S. Stenroos

HABITAT ECOLOGY: primarily on soil, also found on rotten wood in temperate rainforests. RECORDS IN AISEN: Carretera Austral between Cochrane and Villa O'Higgins. DISTRIBUTION IN CHILE: Curicó to Tierra del Fuego. GLOBAL DISTRIBUTION: endemic to southern South America. (Ahti 2000; UACH-UDEC 2007, 2008).

***Cladonia corniculata*** Ahti & Kashiw.

HABITAT ECOLOGY: in open habitats like woodland, scrub, trailsides, forest margins and heaths, occasionally in *Nothofagus* forests. RECORDS IN AISEN: Coyhaique. DISTRIBUTION IN CHILE: Valparaíso to Tierra del Fuego. GLOBAL DISTRIBUTION: austral. (Stenroos 1995).

***Cladonia didyma*** (Fée) Vain.

HABITAT ECOLOGY: on rotten wood in forests and roadside scrub. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Limarí, Juan Fernández Archipiélago; and from Malleco Province to Magallanes. GLOBAL DISTRIBUTION: pantropical. (Stenroos 1995).

***Cladonia farinacea*** Vain.

HABITAT ECOLOGY: on soil in *Nothofagus* forests, more rarely in open habitats and roadside scrub. RECORDS IN AISEN: Puerto Aisen and Laguna San Rafael. DISTRIBUTION IN CHILE: Limarí to Tierra del Fuego and Antarctic Territory. GLOBAL DISTRIBUTION: bipolar.

(Øvstedal & Lewis Smith 2001; Stenroos 1995).

***Cladonia fimbriata*** (L.) Fr.

HABITAT ECOLOGY: on rotten wood and soil in a wide variety of habitats, from oceanic forests to steppes. RECORDS IN AISEN: Coyhaique and Laguna San Rafael. DISTRIBUTION IN CHILE: Limarí to Magallanes and Antarctic Territory. GLOBAL DISTRIBUTION: bipolar. (Øvstedal & Lewis Smith 2001; Stenroos 1995).

***Cladonia furcata*** (Huds.) Schrad.

HABITAT ECOLOGY: on soil and rotten wood in open habitats. RECORDS IN AISEN: Tamango and Laguna San Rafael. DISTRIBUTION IN CHILE: Valparaíso to Magallanes. GLOBAL DISTRIBUTION: cosmopolitan. (Stenroos 1995).

***Cladonia gracilis*** (L.) Willd. spp. *elongata* (Wulf.) Vain.

HABITAT ECOLOGY: on soil, plant debris and peats; common in open habitats, particularly in bogs. RECORDS IN AISEN: Tamango, Laguna San Rafael and Tortel. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, and from Osorno to Tierra del Fuego and Antarctic Territory. GLOBAL DISTRIBUTION: bipolar. (Øvstedal & Lewis Smith 2001; Stenroos 1995).

***Cladonia gracilis*** (L.) Willd. spp. *gracilis* (L.) Willd.

HABITAT ECOLOGY: on soil and rocks in open habitats like heaths, felmarks and bogs. RECORDS IN AISEN: Puerto Aisen and on the roadside to Puerto Yungay. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, and from Valdivia to Tierra del Fuego and Antarctic Territory. GLOBAL DISTRIBUTION: bipolar. (Øvstedal & Lewis Smith 2001; Stenroos 1995).

***Cladonia gracilis*** (L.) Willd. spp. *valdiviensis* Ahti

HABITAT ECOLOGY: on soil, sometimes on lava, in roadside scrub and in oceanic Vadivian rainforest. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, and from Ñuble Province to Magallanes. GLOBAL DISTRIBUTION: endemic to southern South America. (Galloway 1992a; Stenroos 1995).

***Cladonia granulosa*** (Vain.) Ahti

HABITAT ECOLOGY: on soil and rotten wood in open rainforests, roadside scrub and rocky slopes. RECORDS IN AISEN: Coyhaique. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, and from Cautín Province to Aisen. GLOBAL DISTRIBUTION: the species is known in South America. (Stenroos 1995).

***Cladonia laevigata*** Vain.

HABITAT ECOLOGY: on soil on peatlands and heaths, oceanic. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN

CHILE: Osorno to Tierra del Fuego and Antarctic Territory. GLOBAL DISTRIBUTION: the species is known in southern South America and Tristán de Cunha. (Øvstedal & Lewis Smith 2001; Stenroos 1995).

***Cladonia lepidophora*** Ahti & Kashiw.

HABITAT ECOLOGY: on soil and rocks, also found on stumps and roadside scrub. RECORDS IN AISEN: Tamango and Laguna San Rafael. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, and from Bio-Bio Province to Magallanes and Antarctic Territory. GLOBAL DISTRIBUTION: southern South America and Antarctic Territory. (Øvstedal & Lewis Smith 2001; Stenroos 1995).

***Cladonia macilenta*** Hoffm.

HABITAT ECOLOGY: on rotten trunks and stumps, also on soil, in *Nothofagus* forests, in open woodlands, roadside scrub and steppe. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Limarí, Juan Fernández Archipiélago, Malleco Province to Tierra del Fuego. GLOBAL DISTRIBUTION: cosmopolitan. (Stenroos 1995).

***Cladonia mitis*** Sandst.

HABITAT ECOLOGY: on soil in open habitats like *Sphagnum* bogs and cushion heaths. RECORDS IN AISEN: Puerto Aisen. DISTRIBUTION IN CHILE: Arauco Province to Isla Navarino and Antarctic Territory. GLOBAL DISTRIBUTION: bipolar. (Øvstedal & Lewis Smith 2001, Redón & Quilhot 1977; Stenroos 1995).

***Cladonia norvegica*** Tønsberg & Holien

HABITAT ECOLOGY: on rotten logs and stumps, in humid *Nothofagus* forests. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Aisen to Magallanes. GLOBAL DISTRIBUTION: bipolar. (Stenroos 1995).

***Cladonia ochrochlora*** Flörke

HABITAT ECOLOGY: on rotten trunks and stumps, rarely on soil. RECORDS IN AISEN: Puerto Aisen and Laguna San Rafael. DISTRIBUTION IN CHILE: Limarí, Concepción to Tierra del Fuego. GLOBAL DISTRIBUTION: cosmopolitan. (Stenroos 1995).

***Cladonia phyllophora*** Hoffm.

HABITAT ECOLOGY: on soil in open sites, on rock outcrops and steppe margins. RECORDS IN AISEN: Carretera Austral between Cochrane and Villa O'Higgins. DISTRIBUTION IN CHILE: Aisen to Magallanes and Antarctic Territory. GLOBAL DISTRIBUTION: bipolar. (Øvstedal & Lewis Smith 2001; Stenroos 1995; UACH-UDEC 2007, 2008).

***Cladonia pocillum*** (Ach.) Grognot

HABITAT ECOLOGY: on soil and rock outcrops, on rotten wood in open habitats like steppe and trail sides. RECORDS IN AISEN: Coyhaique. DISTRIBUTION IN CHILE: Valparaíso, Valdivia to Tierra del Fuego and Antarctic Territory. GLOBAL DISTRIBUTION: cosmopolitan. (Øvstedal & Lewis Smith 2001; Stenroos 1995).

***Cladonia pycnoclada*** (Pers.) Nyl.

HABITAT ECOLOGY: on soil on peatlands and in rainforests, oceanic. RECORDS IN AISEN: Jeinimeni, Tamango, Laguna San Rafael and Tortel. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, and from Curicó to Tierra del Fuego and Antarctic Territory. GLOBAL DISTRIBUTION: the species is known in southern South America and Tristán de Cunha. (Øvstedal & Lewis Smith 2001; Stenroos 1995).

***Cladonia pyxidata*** (L.) Hoffm.

HABITAT ECOLOGY: on rocks and acidic soil in exposed habitats. RECORDS IN AISEN: Tamango, Tortel and Laguna San Rafael. DISTRIBUTION IN CHILE: Cautín Province to Tierra del Fuego and Antarctic Territory. GLOBAL DISTRIBUTION: cosmopolitan. (Øvstedal & Lewis Smith 2001; Stenroos 1995).

***Cladonia rangiferina*** (L.) F.H. Wigg.

HABITAT ECOLOGY: on soil in open habitats, in forest margins and steppe. RECORDS IN AISEN: Tamango and Tortel. DISTRIBUTION IN CHILE: Temuco to Tierra del Fuego and Antarctic Territory. GLOBAL DISTRIBUTION: bipolar. (Øvstedal & Lewis Smith 2001; Stenroos 1995).

***Cladonia robinsii*** A. Evans

HABITAT ECOLOGY: on bare soil on dry slopes and in *Nothofagus* forests. RECORDS IN AISEN: Carretera Austral between Cochrane and Villa O'Higgins. DISTRIBUTION IN CHILE: Valparaíso, Aisen. GLOBAL DISTRIBUTION: North and South America. (Stenroos 1995; UACH-UDEC 2007, 2008).

***Cladonia sarmentosa*** (Hook. f. & Taylor) C.W. Dodge

HABITAT ECOLOGY: on soil and rotten wood in open habitats, rarely in *Nothofagus* forests. RECORDS IN AISEN: Puerto Aisen and Laguna San Rafael. DISTRIBUTION IN CHILE: Valdivia to Magallanes and Antarctic Territory. GLOBAL DISTRIBUTION: austral. (Øvstedal & Lewis Smith 2001; Stenroos 1995).

***Cladonia scabriuscula*** (Delise) Leight.

HABITAT ECOLOGY: on soil in open habitats and in *Nothofagus* forests. RECORDS IN AISEN: Coyhaique and Laguna San Rafael. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, and from Limarí to Tierra del Fuego and Antarctic Territory. GLOBAL DISTRIBUTION: cosmopolitan.

(Øvstedal & Lewis Smith 2001; Stenroos 1995).

***Cladonia squamosa*** (Scop.) Hoffm.

HABITAT ECOLOGY: on soil and rotten wood in open and moist habitats, also in steppe, roadside scrub and open *Nothofagus* forests. RECORDS IN AISEN: Valle Exploradores and Laguna San Rafael. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, and from Concepción to Tierra del Fuego and Antarctic Territory. GLOBAL DISTRIBUTION: cosmopolitan. (Øvstedal & Lewis Smith 2001; Stenroos 1995).

***Cladonia subchordalis*** A. Evans

HABITAT ECOLOGY: on soil and stumps, in open rocky slopes, roadside and rainforests. RECORDS IN AISEN: Coyhaique. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, and from Ñuble Province to Magallanes and Antarctic Territory. GLOBAL DISTRIBUTION: southern South America. (Øvstedal & Lewis Smith 2001; Stenroos 1995).

***Cladonia subsquamosa*** Kremp.

HABITAT ECOLOGY: on soil and rotten wood in rainforests, forest margins and roadside scrub. RECORDS IN AISEN: Tamango and Laguna San Rafael. DISTRIBUTION IN CHILE: Valdivia to Magallanes. GLOBAL DISTRIBUTION: pantropical. (Stenroos 1995).

***Cladonia subsubulata*** Nyl.

HABITAT ECOLOGY: on soil in open sites. RECORDS IN AISEN: Laguna San Rafael and on the road to Puerto Yungay. DISTRIBUTION IN CHILE: Osorno to Tierra del Fuego and Antarctic Territory. GLOBAL DISTRIBUTION: austral. (Øvstedal & Lewis Smith 2001; Stenroos 1995).

***Cladonia symphyrcarpia*** (Flörke) Fr.

HABITAT ECOLOGY: on peat, bogs, cushion heaths. RECORDS IN AISEN: Coyhaique and Laguna San Rafael. DISTRIBUTION IN CHILE: Aisen to Magallanes. GLOBAL DISTRIBUTION: austral. (Stenroos 1995).

***Cladonia tessellata*** Ahti & Kashiw.

HABITAT ECOLOGY: on sandy soil in open habitats. RECORDS IN AISEN: Coyhaique. DISTRIBUTION IN CHILE: Juan Fernández Archipelago, and from Valdivia to Magallanes. GLOBAL DISTRIBUTION: endemic to southern South America. (Stenroos 1995).

***Cladonia ustulata*** (Hook f. & Taylor) Leight.

HABITAT ECOLOGY: on rotten wood, on mossy soil; most common in *Nothofagus* forests in open habitats. RECORDS IN AISEN: Coyhaique, Lago General Carrera and on the road to Puerto Yungay. DISTRIBUTION IN CHILE: Cautín Province to Tierra del Fuego and Antarctic Territory. GLOBAL DISTRIBUTION: austral. (Øvstedal & Lewis Smith 2001; Stenroos 1995).

***Coccocarpia dominguensis*** Vain.

HABITAT ECOLOGY: on living leaves of trees and shrubs in rainforests. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Valdivia to Magallanes. GLOBAL DISTRIBUTION: pantropical. (Arvidsson 1983; Galloway 1992a; Lücking *et al.* 2003).

***Coccocarpia erythroxyli*** (Spreng.) Swinscow & Krog

HABITAT ECOLOGY: an epiphyte on trees and shrubs, also on living leaves and rocks. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Valdivia to Aisen. GLOBAL DISTRIBUTION: pantropical. (Lücking *et al.* 2003).

***Coccocarpia palmicola*** (Spreng.) Arv. & D.J. Galloway

HABITAT ECOLOGY: on tree trunks, rarely on living leaves in rainforests. RECORDS IN AISEN: Valle Exploradores and Laguna San Rafael. DISTRIBUTION IN CHILE: Valdivia to Magallanes. GLOBAL DISTRIBUTION: tropical-subtropical. (Arvidsson 1992).

***Coccotrema coccophorum*** (Mont.) I. Schmitt, Messuti & Lumbsch

HABITAT ECOLOGY: an epiphyte of trees and shrubs in Valdivian rainforests, from sea level to 600 m altitude. RECORDS IN AISEN: Queulat, Isla Magdalena, Tamango, Laguna San Rafael, Valle Exploradores, on the roadside to Puerto Yungay and Katalalixar. DISTRIBUTION IN CHILE: Valdivia to Magallanes. GLOBAL DISTRIBUTION: apparently endemic to southern South America. (Galloway 1992a; Galloway & Watson-Gandy 1992; Schmitt *et al.* 2001).

***Coccotrema cucurbitula*** (Mont.) Müll. Arg.

HABITAT ECOLOGY: on trunks and twigs, rarely on rocks, in rainy zones. RECORDS IN AISEN: Queulat, Jeinimeni and Laguna San Rafael. DISTRIBUTION IN CHILE: Malalcahuello to Isla Navarino and Antarctic Territory. GLOBAL DISTRIBUTION: austral. (Messuti 1996; Øvstedal & Lewis Smith 2001; Redón & Quilhot 1977).

***Coccotrema porinopsis*** (Nyl.) Imsh. ex Yoshim.

HABITAT ECOLOGY: an epiphyte on trees and shrubs in Valdivian rainforest. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Llanquihue to Aisen. GLOBAL DISTRIBUTION: tropical. (Messuti 1996).

***Coelopogon epiphorellus*** Brusse & Kärnefelt

HABITAT ECOLOGY: principally in *Nothofagus* forests, also on rocks; frequent in steppe and alpine areas. RECORDS IN AISEN: Queulat, Jeinimeni, Tamango and Tortel. DISTRIBUTION IN CHILE: La Campana National Park, Talca to Isla Navarino and Antarctic



Territory. GLOBAL DISTRIBUTION: South American-African. (Brusse & Kärnefelt 1991; Øvstedal & Lewis Smith 2001; Redón & Quilhot 1977; Redón & Walkowiak 1978).

***Coenogonium luteum*** (Dicks.) Kalb & Lücking

HABITAT ECOLOGY: on bark of tree trunks and on living leaves in humid and shaded sites. RECORDS IN AISEN: Carretera Austral between Cochrane and Villa O'Higgins. DISTRIBUTION IN CHILE: Federico Albert National Reserve, Malalcahuello to Aisen. GLOBAL DISTRIBUTION: the species is found world-wide, foliicolous specimens have been reported from tropical regions. (Lücking & Kalb 2000; UACH-UDEC 2007, 2008).

***Collema glaucophthalmum*** Nyl.

HABITAT ECOLOGY: an epiphyte of trees and shrubs in very humid habitats. RECORDS IN AISEN: Queulat and Valle Exploradores. DISTRIBUTION IN CHILE: Talca to Aisen. GLOBAL DISTRIBUTION: pantropical. (Filson 1992).

***Degelia duplomarginata*** (P. James & Henssen) Arv. & D.J. Galloway

HABITAT ECOLOGY: an epiphyte of trees and shrubs in humid forests. RECORDS IN AISEN: Queulat, Valle Exploradores, Laguna San Rafael and on the roadside to Puerto Yungay. DISTRIBUTION IN CHILE: Enco (X Región) to Magallanes. GLOBAL DISTRIBUTION: known from southern South American, Tasmania, Australia, New Zealand and Hawaii. (Arvidsson & Galloway 1981).

***Degelia flabellata*** P.M. Jørg. & P. James

HABITAT ECOLOGY: an epiphyte of trees and shrubs, also on rocks in rainforests. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: the species is known only in Aisen. GLOBAL DISTRIBUTION: known in the Southern Hemisphere, in Western Australia and Chile. (Jørgensen & Galloway 1992)

***Degelia gayana*** (Mont.) Arv. & D.J. Galloway

HABITAT ECOLOGY: an epiphyte of trees and shrubs in rainforests moderately shaded. RECORDS IN AISEN: Queulat, Valle Exploradores, Laguna San Rafael and Tortel. DISTRIBUTION IN CHILE: Enco (X Región) to Aisen. GLOBAL DISTRIBUTION: paleo-austral. (Arvidsson & Galloway 1981; Jørgensen & Galloway 1992).

***Degeliella versicolor*** (Müll. Arg.) P.M. Jørg.

HABITAT ECOLOGY: an epiphyte of trees and shrubs in shaded forests. RECORDS IN AISEN: Laguna San Rafael and Valle Exploradores. DISTRIBUTION IN CHILE: Los Queñes (VII Región) to Tierra del Fuego. GLOBAL DISTRIBUTION: austral. (Galloway & James 1985; Jørgensen 2004).

***Dictyonema glabratum*** (Spreng.) D. Hawksw.

HABITAT ECOLOGY: on mosses, soil, trees and shrubs in rainforests, also in steppe areas. RECORDS IN AISEN: Queulat, Vagabundo, Valle Exploradores, Laguna San Rafael, on the roadside to Puerto Yungay and Tortel. DISTRIBUTION IN CHILE: Putre, Cerro Moreno (Antofagasta), Juan Fernández Archipiélago, and from Talca to Magallanes. GLOBAL DISTRIBUTION: pantropical. (Parmasto 1978).

***Erioderma leylandii*** (Taylor) Müll. Arg.

HABITAT ECOLOGY: an epiphyte of shrubs, rarely on tree trunks, in rainforests. RECORDS IN AISEN: Queulat, Vagabundo, Valle Exploradores, Laguna San Rafael and on the roadside to Puerto Yungay. DISTRIBUTION IN CHILE: Enco (X Región) to Magallanes. GLOBAL DISTRIBUTION: pantropical. (Galloway 1992a; Jørgensen & Galloway 1992).

***Erioderma solediatum*** D.J. Galloway & P.M. Jørg.

HABITAT ECOLOGY: an epiphyte of shrubs in very humid forests. RECORDS IN AISEN: Queulat, Laguna San Rafael, on the roadside to Puerto Yungay and Tortel. DISTRIBUTION IN CHILE: Enco (X Región) to Magallanes. GLOBAL DISTRIBUTION: paleotropical. (Jørgensen & Galloway 1992).

***Everniastrum sorocheilum*** (Vain.) Hale ex Sipman

HABITAT ECOLOGY: an epiphyte of trees and shrubs in open sites. RECORDS IN AISEN: Queulat, Tamango and Laguna San Rafael. DISTRIBUTION IN CHILE: Valparaíso to Curicó, Temuco to Magallanes. GLOBAL DISTRIBUTION: austral-pantropical. (Adler & Calvelo 2002; Sipman 1986).

***Fellhanera dominicana*** (Vain.) Vězda

HABITAT ECOLOGY: on living leaves of shrubs in Valdivian rainforest. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Valdivia to Aisen. GLOBAL DISTRIBUTION: mainly tropical America. (Lücking 1992).

***Flavoparmelia caperata*** (L.) Hale

HABITAT ECOLOGY: epiphyte on trees and shrubs in open sites. RECORDS IN AISEN: Valle Exploradores, and 10 km S of Tortel. DISTRIBUTION IN CHILE: Zapahuira and Putre (3350 m elevation) to Isla Navarino. GLOBAL DISTRIBUTION: North and South America, Europe, Asia, Africa. (Galloway 1998; Nash III & Elix 2002a; Redón & Quilhot 1977).

***Flavoparmelia gerlachei*** (Zahlbr.) Hale

HABITAT ECOLOGY: an epiphyte in *Nothofagus* forests in steppe areas. RECORDS IN AISEN: Tamango. DISTRIBUTION IN CHILE: Aisen to Magallanes and Antarctic Territory. GLOBAL DISTRIBUTION: southern South America and Antarctica.

(Øvstedal & Lewis Smith 2001).

***Flavoparmelia soledians*** (Nyl.) Hale

HABITAT ECOLOGY: an epiphyte of forest trees, also on rocks from rainforests to arid habitats. RECORDS IN AISEN: on the roadside to Puerto Yungay. DISTRIBUTION IN CHILE: Santiago, Concepción, Aisen and Magallanes. GLOBAL DISTRIBUTION: sub-cosmopolitan.

(Bjerke & Elvebakk 1999).

***Fuscopannaria minor*** (Darb.) P.M. Jørg.

HABITAT ECOLOGY: on bark trees. RECORDS IN AISEN: Carretera Austral between Cochrane and Villa O'Higgins. GLOBAL DISTRIBUTION: austral.

(Jørgensen 1999; UACH-UDEC 2007, 2008).

***Fuscopannaria subimixta*** (C. Knight) P.M. Jørg.

HABITAT ECOLOGY: on the ground and on bark trees. RECORDS IN AISEN: Carretera Austral between Cochrane to Villa O'Higgins. GLOBAL DISTRIBUTION: austral.

(Jørgensen 1999; UACH-UDEC 2007, 2008).

***Gowardia nigricans*** (Ach.) P. Halonen, L. Myllys, S. Velmala & H. Hyvärinen

HABITAT ECOLOGY: an epiphyte of large trees, in habitats of high humidity; from sea level to 1100 m elevation. RECORDS IN AISEN: Tamango and Tortel. DISTRIBUTION IN CHILE: Valdivia to Isla Navarino. GLOBAL DISTRIBUTION: circumpolar.

(Brodo & Hawksworth 1977; Halonen *et al.* 2009; Redón & Quilhot 1977).

***Hypogymnia antarctica*** (Bitter) C.W. Dodge

HABITAT ECOLOGY: an epiphyte of *Nothofagus pumilio*. RECORDS IN AISEN: Tamango (800-1000 m altitude). DISTRIBUTION IN CHILE: Llanquihue to Isla Navarino and Antarctic Territory. GLOBAL DISTRIBUTION: cosmopolitan.

(Øvstedal & Lewis Smith 2001; Redón 1985; Redón & Quilhot 1977).

***Hypogymnia bitteri*** (Lynge) Ahti

HABITAT ECOLOGY: an epiphyte of *Nothofagus* in montane and subalpine forests. RECORDS IN AISEN: Jeinimeni and Tamango. DISTRIBUTION IN CHILE: Llanquihue to Magallanes. GLOBAL DISTRIBUTION: circumpolar, boreal, and montane.

(McCune 2002; Redón 1974).

***Hypogymnia lugubris*** (Pers.) Krog

HABITAT ECOLOGY: an epiphyte on tree trunks, on rock and soil in subalpine and alpine zones. RECORDS IN AISEN: Jeinimeni and Tamango (700-1100 m altitude). DISTRIBUTION IN CHILE: Llanquihue to Isla Navarino and Antarctic Territory. GLOBAL DISTRIBUTION: bipolar.

(Øvstedal & Lewis Smith 2001; Redón 1974; Redón & Quilhot 1977).

***Hypogymnia mundata*** (Nyl.) Rassad.

HABITAT ECOLOGY: an epiphyte on tree trunks in shady sites. RECORDS IN AISEN: Jeinimeni and Tamango. DISTRIBUTION IN CHILE: Malleco Province to Magallanes. GLOBAL DISTRIBUTION: austral.

(Elix 1992).

***Hypogymnia pulchrilobata*** (Bitter) Elix

HABITAT ECOLOGY: an epiphyte on tree trunks in shady sites. RECORDS IN AISEN: Tamango. DISTRIBUTION IN CHILE: Valdivia to Magallanes. GLOBAL DISTRIBUTION: austral.

(Elix 1992).

***Hypogymnia subphysodes*** (Kremp.) Filson var. *subphysodes* (Kremp.) Filson

HABITAT ECOLOGY: on dead wood, bark, twigs and rocks in humid and temperate rainforests. RECORDS IN AISEN: Queulat, Coyhaique Alto, Jeinimeni, Tamango, Valle Exploradores, Laguna San Rafael, Vagabundo, on the roadside to Puerto Yungay and Katalalixar. DISTRIBUTION IN CHILE: Fray Jorge National Park, Talca to Magallanes. GLOBAL DISTRIBUTION: austral.

(Elix 1992).

***Hypogymnia turgidula*** (Bitter) Elix

HABITAT ECOLOGY: an epiphyte of trunks and twigs in *Nothofagus* forests. RECORDS IN AISEN: Tamango and on the roadside to Puerto Yungay. DISTRIBUTION IN CHILE: Malleco Province to Magallanes. GLOBAL DISTRIBUTION: austral.

(Elix 1992).

***Hypotrachyna brevirhiza*** (Kurok.) Hale

HABITAT ECOLOGY: an epiphyte of trees and shrubs in humid forests, occasionally on rocks in montane to subalpine forests. RECORDS IN AISEN: Jeinimeni, Tamango, Vagabundo and Laguna San Rafael. DISTRIBUTION IN CHILE: Isla Mocha to Magallanes. GLOBAL DISTRIBUTION: pantropical and extending to temperate areas of Argentina and Chile.

(Nash III *et al.* 2002; Quilhot *et al.* 2010).

***Hypotrachyna flavovirens*** (Kurok.) Hale

HABITAT ECOLOGY: an epiphyte on trunks of *Nothofagus pumilio* and other forestry species in humid forests. RECORDS IN AISEN: Tamango. DISTRIBUTION IN CHILE: Valdivia to Isla Navarino. GLOBAL DISTRIBUTION: endemic to southern South America.

(Hale 1975; Redón & Quilhot 1977).

***Hypotrachyna laevigata*** (Sm.) Hale

HABITAT ECOLOGY: an epiphyte of trees and shrubs in open sites. RECORDS IN AISEN: Tamango, Vagabundo and Laguna San Rafael. DISTRIBUTION IN CHILE: Talca to Magallanes. GLOBAL DISTRIBUTION: cosmopolitan.

(Hale 1974, Nash III *et al.* 2002).

***Hypotrachyna livida*** (Taylor) Hale

HABITAT ECOLOGY: an epiphyte of trees in humid forests; rarely on acidic rocks. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Valdivia to Magallanes. GLOBAL DISTRIBUTION: neotropical. (Hale 1974; Nash III *et al.* 2002).

***Hypotrachyna oostingii*** (Dey) Hale

HABITAT ECOLOGY: an epiphyte of trees and shrubs in open sites. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Valdivia to Magallanes. GLOBAL DISTRIBUTION: bipolar. (Hale 1974, 1975).

***Hypotrachyna physcioides*** (Nyl.) Hale

HABITAT ECOLOGY: on rocks, soil and bark in rainforests in open sites. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Valdivia to Magallanes. GLOBAL DISTRIBUTION: through-out the neotropics, including the Caribbean, also in the SE of Asia. (Hale 1975; Nash III *et al.* 2002).

***Hypotrachyna rachista*** (Hale) Hale

HABITAT ECOLOGY: an epiphyte on trees and shrubs. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Valdivia to Magallanes. GLOBAL DISTRIBUTION: neotropical. (Hale 1974, 1975).

***Hypotrachyna rockii*** (Zahlbr.) Hale

HABITAT ECOLOGY: usually on bark in montane forests. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Valdivia to Magallanes. GLOBAL DISTRIBUTION: neotropics and East Africa (Hale 1974; Nash III *et al.* 2002).

***Hypotrachyna sinuosa*** (Sm.) Hale

HABITAT ECOLOGY: an epiphyte of trees and shrubs in open sites. RECORDS IN AISEN: Tamango, Jeinimeni, Valle Exploradores, Laguna San Rafael and Tortel. DISTRIBUTION IN CHILE: Rancagua to Magallanes. GLOBAL DISTRIBUTION: cosmopolitan. (Elix 1994; Hale 1974).

***Jackelixia ligulata*** (Körb.) S.Y. Kondr., Fedorenko, S. Stenroos, Kärnefelt & Thell

HABITAT ECOLOGY: on rocks in open sites. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Valdivia to Magallanes. GLOBAL DISTRIBUTION: australasian. (Fedorenko *et al.* 2009; Galloway 1985, 1992a).

***Lecanora argentata*** (Ach.) Degel.

HABITAT ECOLOGY: a corticolous species of exposed habitats. RECORDS IN AISEN: Carretera Austral from Cochrane to Villa O'Higgins. DISTRIBUTION IN CHILE: Valdivia to Magallanes.

GLOBAL DISTRIBUTION: cosmopolitan. (Lumbsh & Elix 2004; UACH-UDEC 2007, 2008).

***Lecanora dispersa*** (Pers.) Sommerf.

HABITAT ECOLOGY: on rocks and mosses. RECORDS IN AISEN: Tamango. DISTRIBUTION IN CHILE: Valparaíso, Santiago, Talca, and from Valdivia to Magallanes. GLOBAL DISTRIBUTION: cosmopolitan. (Galloway 1985).

***Lecanora epibryon*** (Ach.) Ach. ssp. ***broccha*** (Nyl.) Lumbsch

HABITAT ECOLOGY: on soil, mosses and rocks in open sites. RECORDS IN AISEN: Tamango. DISTRIBUTION IN CHILE: Trapa-Trapa (Alto Bio-Bio, VIII Región) to Aisen and Antarctic Territory. GLOBAL DISTRIBUTION: bipolar. (Lumbsch & Elix 2004; Øvstedal & Lewis Smith 2001).

***Lecidea atrobrunnea*** (Lam. & D.C.) Schaer.

HABITAT ECOLOGY: on rocks and amongst mosses in steppe areas. RECORDS IN AISEN: Tamango. DISTRIBUTION IN CHILE: Santiago to Colchagua Province, Aisen to Magallanes and Antarctic Territory. GLOBAL DISTRIBUTION: bipolar. (Hertel 2007; Øvstedal & Lewis Smith 2001; Rambold 1989).

***Lecidea fuscoatrula*** Nyl.

HABITAT ECOLOGY: on rocks in open sites. RECORDS IN AISEN: Tamango. DISTRIBUTION IN CHILE: Valparaíso to Magallanes. GLOBAL DISTRIBUTION: the species is known in South Africa and Australasia. (Hertel 1997, 2001).

***Leifidium tenerum*** (Laurer) Wedin

HABITAT ECOLOGY: an epiphyte of trees, also on rocks in humid forests from sea level to 600 m altitude. RECORDS IN AISEN: Queulat, Isla Magdalena, Puerto Aisen, Lago Riesco, Valle Exploradores, Laguna San Rafael, Vagabundo, on the road to Puerto Yungay, Tortel and Katalalixar. DISTRIBUTION IN CHILE: Valdivia to Magallanes. GLOBAL DISTRIBUTION: austral. (Wedin 1995).

***Leioderma pycnophorum*** Nyl.

HABITAT ECOLOGY: an epiphyte of shrubs and trees in rainforests. RECORDS IN AISEN: Queulat, Isla Magdalena, Valle Exploradores, Laguna San Rafael, Puerto Yungay and Katalalixar. DISTRIBUTION IN CHILE: Valdivia to Magallanes. GLOBAL DISTRIBUTION: austral. (Galloway & Jørgensen 1987).

***Lepraria neglecta*** (Nyl.) Erichsen

HABITAT ECOLOGY: on rocks and amongst mosses. RECORDS IN AISEN: Tamango. DISTRIBUTION IN CHILE: Juan Fernández

Archipiélago, and from Aisen to Magallanes and Antarctic Territory. GLOBAL DISTRIBUTION: bipolar. (Kümmerling *et al.* 1993; Øvstedal & Lewis Smith 2001).

***Leptogium australe*** (Hook. f. & Taylor) Müll. Arg.  
HABITAT ECOLOGY: among mosses at sea level and above tree line, also on sand, rarely on coastal shrubs. RECORDS IN AISEN: Queulat and Laguna San Rafael. DISTRIBUTION IN CHILE: Isla Mocha to Magallanes. GLOBAL DISTRIBUTION: apparently endemic to southern South America. (Galloway & Jørgensen 1995; Quilhot *et al.* 2010).

***Leptogium azureum*** (Sw. ex Ach.) Mont.  
HABITAT ECOLOGY: an epiphyte of trees and shrubs, also on rocks in shaded, humid situations in rainforests. RECORDS IN AISEN: Queulat, Valle Exploradores and Laguna San Rafael. DISTRIBUTION IN CHILE: Cerro Moreno (Antofagasta); Fray Jorge National Park, Juan Fernández Archipiélago, La Campana National Park, and from Isla Mocha to Aisen. GLOBAL DISTRIBUTION: cosmopolitan. (Galloway & Jørgensen 1995; Quilhot *et al.* 2010; Redón & Walkowiak 1978).

***Leptogium brebissonii*** Mont.  
HABITAT ECOLOGY: among mosses, short grass and low vegetation in deep shade. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Isla Mocha to Aisen. GLOBAL DISTRIBUTION: bipolar. (Galloway & Jørgensen 1995; Quilhot *et al.* 2010).

***Leptogium britannicum*** P.M. Jørg. & P. James  
HABITAT ECOLOGY: amongst short grass and low vegetation, on soil, between exposed coastal rocks. RECORDS IN AISEN: Valle Exploradores and Laguna San Rafael. DISTRIBUTION IN CHILE: Isla Mocha and Aisen. GLOBAL DISTRIBUTION: bipolar. (Galloway & Jørgensen 1995; Quilhot *et al.* 2010).

***Leptogium cochleatum*** (Dicks.) P.M. Jørg. & P. James  
HABITAT ECOLOGY: on soil, among mosses in shaded, humid situations. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Isla Mocha to Aisen. GLOBAL DISTRIBUTION: widespread in the tropics and warm temperate regions. (Galloway & Jørgensen 1995; Quilhot *et al.* 2010).

***Leptogium coralloideum*** (Meyen & Flot.) Vain.  
HABITAT ECOLOGY: an epiphyte both in open forests and especially on riverine trees and shrubs. RECORDS IN AISEN: Carretera Austral 10 km N of Murta, Valle Exploradores and Laguna San Rafael. DISTRIBUTION IN CHILE: Isla Mocha to Aisen. GLOBAL DISTRIBUTION: tropical to warm-temperate distribution. (Galloway & Jørgensen 1995; Quilhot *et al.* 2010).

***Leptogium cyanescens*** (Rabenh.) Körber  
HABITAT ECOLOGY: in humid, deeply shaded habitats in *Nothofagus* forests, also among mosses. RECORDS IN AISEN: Queulat, Tamango and Laguna San Rafael. DISTRIBUTION IN CHILE: Valdivia to Aisen. GLOBAL DISTRIBUTION: rather cosmopolitan in temperate and subtropical regions. (Galloway & Jørgensen 1995).

***Leptogium decipiens*** P.M. Jørg.  
HABITAT ECOLOGY: an epiphyte of trees in humid rainforests, on roadside trees and shrubs in shade, also on rocks. RECORDS IN AISEN: Queulat and Laguna San Rafael. DISTRIBUTION IN CHILE: Isla Mocha, and from Puyehue to Magallanes. GLOBAL DISTRIBUTION: endemic to southern South America. (Galloway & Jørgensen 1995; Quilhot *et al.* 2010).

***Leptogium juressianum*** C. Tav.  
HABITAT ECOLOGY: an epiphyte of twigs and shrubs both in shaded, humid rainforests. RECORDS IN AISEN: Queulat, Río Pangal, Puerto Aisen, Valle Exploradores and Laguna San Rafael. DISTRIBUTION IN CHILE: Puyehue to Aisen. GLOBAL DISTRIBUTION: the species is known from Occidental Europe, East Africa and northern Andes. (Galloway & Jørgensen 1995).

***Leptogium laceroides*** de Lesd.  
HABITAT ECOLOGY: an epiphyte of shrubs and trees both in shaded, humid rainforests. RECORDS IN AISEN: Tamango and Laguna San Rafael. DISTRIBUTION IN CHILE: Conguillio National Park to Aisen. GLOBAL DISTRIBUTION: the species is known from Mexico, Tristán de Cunha, East Africa and New Zealand. (Galloway & Jørgensen 1995).

***Leptogium menziesii*** (Ach.) Mont.  
HABITAT ECOLOGY: amongst mosses on trees and shrubs in rather open situations. RECORDS IN AISEN: Valle Exploradores and Laguna San Rafael. DISTRIBUTION IN CHILE: La Campana National Park, and from Isla Mocha to Isla Navarino. GLOBAL DISTRIBUTION: austral. (Galloway 1992a; Galloway & Jørgensen 1995; Quilhot *et al.* 2010; Redón & Quilhot 1977; Redón & Walkowiak 1978).

***Leptogium malmei*** P.M. Jørg.  
HABITAT ECOLOGY: an epiphyte of trees and shrubs in densely shaded, humid rainforests. RECORDS IN AISEN: Queulat, Río Aisen and Valle Exploradores. DISTRIBUTION IN CHILE: known only in Aisen. GLOBAL DISTRIBUTION: austral. (Galloway & Jørgensen 1995).

***Leptogium phyllocarpum*** (Pers.) Mont.  
HABITAT ECOLOGY: an epiphyte of trees and shrubs. RECORDS IN AISEN: Río Pangal (10 m NE of Puerto Aisen). DISTRIBUTION



IN CHILE: Puerto Montt to Aisen. GLOBAL DISTRIBUTION: a widespread tropical-subtropical species. (Galloway & Jørgensen 1995).

***Leptogium valdivianum*** M. Lindstr.

HABITAT ECOLOGY: on trees and shrubs in humid rainforests or closed to forests margins. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Valdivia to Magallanes. GLOBAL DISTRIBUTION: probably endemic to southern South America. (Galloway & Jørgensen 1995).

***Mastodia tesellata*** (Hoof. f. & Harv.) Hoof. f. & Harv.

HABITAT ECOLOGY: on coastal rocks. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Aisen to Magallanes and Antarctic Territory. GLOBAL DISTRIBUTION: circum-pacific. (Galloway 1992a, 2007; Øvstedal & Lewis Smith 2001).

***Mazosia phyllosema*** (Nyl.) Zahlbr.

HABITAT ECOLOGY: on living leaves in humid forests. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Valdivia to Aisen. GLOBAL DISTRIBUTION: pantropical. (Galloway 2007; Lücking 1992).

***Melanelia subglabra*** (Räsänen) Essl.

HABITAT ECOLOGY: and epiphyte of trees, particularly in *Nothofagus* forests. RECORDS IN AISEN: Jeinimeni, Tamango and Laguna San Rafael. DISTRIBUTION IN CHILE: Antuco (VIII Región) to Aisen. GLOBAL DISTRIBUTION: a southamerican and australasian species. (Adler & Calvelo 2002; Galloway 2007).

***Melanohalea ushuaiensis*** (Zahlbr.) Essl.

HABITAT ECOLOGY: an epiphyte in *Nothofagus* forests in steparic and alpine areas. RECORDS IN AISEN: Jeinimeni and Tamango. DISTRIBUTION IN CHILE: Termas de Chillán (VIII Región) to Isla Navarino and Antarctic Territory. GLOBAL DISTRIBUTION: southern South America and Antarctica. (Blanco *et al.* 2004; Øvstedal & Lewis Smith 2001; Redón & Quilhot 1977).

***Menegazzia chrysogaster*** Bjerke & Elvebakk

HABITAT ECOLOGY: an epiphyte of trees and shrubs in low to medium light situations in *Nothofagus* forests, about 150 m to 1400 m altitude. It is the only species of the genus in South America having a yellow medulla. RECORDS IN AISEN: Jeinimeni, Tamango and Laguna San Rafael. DISTRIBUTION IN CHILE: Termas de Chillan (VIII Región) to Magallanes. GLOBAL DISTRIBUTION: endemic to southern South America. (Bjerke & Elvebakk 2001; Bjerke *et al.* 2003a).

***Menegazzia cincinnata*** (Ach.) Bitter

HABITAT ECOLOGY: an epiphyte of trees in open sites. RECORDS IN AISEN: Queulat, Jeinimeni, Tamango, Valle Exploradores,

Laguna San Rafael, on the roadside to Puerto Yungay and Tortel. DISTRIBUTION IN CHILE: Termas de Chillán (VIII Región) to Isla Navarino. GLOBAL DISTRIBUTION: endemic to southern South America. (Bjerke 2005, Redón & Quilhot 1977).

***Menegazzia dispora*** (Nyl. ex Cromb.) R. Sant.

HABITAT ECOLOGY: an epiphyte of trees and shrubs. It is the most common species of *Menegazzia* in Valdivian and North Patagonian rainforests. RECORDS IN AISEN: Queulat and Laguna San Rafael. DISTRIBUTION IN CHILE: Cautín Province to Tierra del Fuego. GLOBAL DISTRIBUTION: austral. (Bjerke 2005).

***Menegazzia fumarprotocetrarica*** Calvelo & Adler

HABITAT ECOLOGY: an epiphyte of trees and shrubs in fairly open forests. RECORDS IN AISEN: Queulat, Jeinimeni, Tamango, Valle Exploradores and Laguna San Rafael. DISTRIBUTION IN CHILE: Isla Mocha to Magallanes. GLOBAL DISTRIBUTION: endemic to southern South America. (Adler & Calvelo 1996b; Bjerke *et al.* 2003a; Quilhot *et al.* 2010).

***Menegazzia globulifera*** R. Sant.

HABITAT ECOLOGY: An epiphyte of trees and shrubs in light exposed relatively dry vegetation; it is also saxicolous, with altitudinal range from ca. 500 to 1800 m. RECORDS IN AISEN: Queulat, Jeinimeni, Tamango, Valle Exploradores, Laguna San Rafael, on the roadside to Puerto Yungay and Tortel. DISTRIBUTION IN CHILE: Termas de Chillán (VIII Región) to Isla Navarino. GLOBAL DISTRIBUTION: austral. (Bjerke *et al.* 2003a; Quilhot *et al.* 2010; Redón & Quilhot 1977).

***Menegazzia hollermayeri*** (Räsänen) R. Sant.

HABITAT ECOLOGY: an epiphyte of trees and shrubs in open sites. RECORDS IN AISEN: Queulat, Jeinimeni, Tamango, Katalalixar, Vagabundo, Valle Exploradores, Laguna San Rafael, on the roadside to Puerto Yungay and Tortel. DISTRIBUTION IN CHILE: Malcalahuello to Aisen. GLOBAL DISTRIBUTION: endemic to southern South America. (Bjerke 2005).

***Menegazzia kawesqarica*** Bjerke & Elvebakk

HABITAT ECOLOGY: an epiphyte of large trees in forests from 800 to 1400 m altitude, rarely at sea level, with fairly high direct solar radiation; it is also common on shaded rock outcrops. RECORDS IN AISEN: Jeinimeni, Tamango and Laguna San Rafael. DISTRIBUTION IN CHILE: Nahuelbuta National Park to Magallanes. GLOBAL DISTRIBUTION: endemic to southern South America. (Bjerke & Elvebakk 2001; Bjerke *et al.* 2003a).

***Menegazzia megalospora*** (Räsänen) R. Sant.

HABITAT ECOLOGY: an epiphyte of trees in humid forests. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Valdivia to Magallanes. GLOBAL DISTRIBUTION: endemic to southernmost South America. (Bjerke 2005).

***Menegazzia neozelandica*** (Zahlbr.) P. James

HABITAT ECOLOGY: an epiphyte of trees and shrubs, also on mosses in Valdivian rainforests. RECORDS IN AISEN: Villa Ortega-Puyuhuapi, Lago Riesco, Laguna San Rafael, Vagabundo, and on the roadside to Puerto Yungay. DISTRIBUTION IN CHILE: Fray Jorge National Park, Juan Fernández Archipiélago, and from Nahuelbuta National Park to Magallanes. GLOBAL DISTRIBUTION: austral. (Bjerke *et al.* 2003a).

***Menegazzia norsorediata*** Adler & Calvelo

HABITAT ECOLOGY: an epiphyte of trees and shrubs in both Valdivian rainforest and high altitude mixed deciduous-coniferous forest, in microhabitats with variable light conditions. RECORDS IN AISEN: Queulat and Laguna San Rafael. DISTRIBUTION IN CHILE: Nahuelbuta National Park to Magallanes. GLOBAL DISTRIBUTION: austral. (Adler & Calvelo 1996b; Bjerke *et al.* 2003a).

***Menegazzia opuntioides*** (Müll. Arg.) R. Sant.

HABITAT ECOLOGY: an epiphyte of trees and shrubs in Valdivian and Patagonian rainforests from sea level to 1400 m altitude. RECORDS IN AISEN: Río Cisnes, Lago Riesco, Vagabundo, Valle Exploradores and Laguna San Rafael. DISTRIBUTION IN CHILE: Choshuenco (X Región) to Magallanes. GLOBAL DISTRIBUTION: endemic to southernmost South America. (Bjerke *et al.* 2003a).

***Menegazzia sanguinascens*** (Räsänen) R. Sant.

HABITAT ECOLOGY: an epiphyte of trees in moderately to high humidity, with an altitudinal range from 100 m to 1400 m. RECORDS IN AISEN: Queulat, Jeinimeni, Tamango, Laguna San Rafael, Katalalixar, on the roadside to Puerto Yungay and Valle Exploradores. DISTRIBUTION IN CHILE: Nahuelbuta National Park to Isla Navarino. GLOBAL DISTRIBUTION: austral. (Bjerke *et al.* 2003a; Redón & Quilhot 1977).

***Menegazzia subpertusa*** P. James & D.J. Galloway

HABITAT ECOLOGY: an epiphyte of trees and shrubs in rather sunny and dry microhabitats surrounded by well developed forests. RECORDS IN AISEN: on the road Villa Ortega-Puyuhuapi, Lago Riesco and Laguna San Rafael. DISTRIBUTION IN CHILE: Termas de Chillán (VIII Región) to Magallanes. GLOBAL DISTRIBUTION: austral. (Bjerke *et al.* 2003a; Galloway 1983).

***Menegazzia tenuis*** R. Sant.

HABITAT ECOLOGY: in deep shaded habitats of high humidity, among mosses and tree bark. RECORDS IN AISEN: Laguna San Rafael and on the roadside to Puerto Yungay. DISTRIBUTION IN CHILE: Melipeuco and Icalma (IX Región) to Magallanes. GLOBAL DISTRIBUTION: endemic to southern South America. (Bjerke *et al.* 2003a).

***Menegazzia valdiviensis*** (Räsänen) R. Sant.

HABITAT ECOLOGY: an epiphyte on trees and shrubs, often in understory vegetation, avoiding the most low-light habitats. RECORDS IN AISEN: Queulat, Valle Exploradores, Laguna San Rafael and on the roadside to Puerto Yungay. DISTRIBUTION IN CHILE: Nahuelbuta National Park to Magallanes. GLOBAL DISTRIBUTION: endemic to southern South America. (Bjerke *et al.* 2003a).

***Menegazzia violascens*** (Räsänen) Bjerke

HABITAT ECOLOGY: an epiphyte on trees and shrubs in Valdivian rainforest. RECORDS IN AISEN: Queulat, Valle Exploradores, and Laguna San Rafael. DISTRIBUTION IN CHILE: Nahuelbuta National Park to Isla Navarino. GLOBAL DISTRIBUTION: endemic to southern South America. (Bjerke 2005).

***Menegazzia wandae*** Bjerke

HABITAT ECOLOGY: an epiphyte in Valdivian rainforests in moderate to dense shade. Distribution in Aisen: Río Cisnes, Lago Riesco and Laguna San Rafael. DISTRIBUTION IN CHILE: Isla Mocha to Aisen. GLOBAL DISTRIBUTION: endemic to southern South America. (Bjerke 2001; Bjerke *et al.* 2003a; Quilhot *et al.* 2010).

***Menegazzia wilsonii*** (Vain. ex Räsänen) Bjerke

HABITAT ECOLOGY: an epiphyte of trees and shrubs, on mosses in shady and more light-open rainforests. RECORDS IN AISEN: Queulat, Lago Riesco, Carretera Austral 5 km S of Murta, Vagabundo, Valle Exploradores, Laguna San Rafael, on the roadside to Puerto Yungay and Tortel. DISTRIBUTION IN CHILE: Termas de Chillán (VIII Región) to Tierra del Fuego. GLOBAL DISTRIBUTION: endemic to southern South America. (Bjerke 2005).

***Metus efflorescens*** D.J. Galloway & P. James

HABITAT ECOLOGY: on living and dead trees, also on rocks in open sites. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: from Conguillio National Park to Magallanes. GLOBAL DISTRIBUTION: endemic to southern South America. (Galloway 1992a; Galloway & James 1987; Messuti *et al.* 2007).

***Metus pileatus*** (Mont.) D.J. Galloway & P. James

HABITAT ECOLOGY: on bark or decorticated wood, usually over

mosses and hepatics in moist, shaded sites with moderate to high rainfall. RECORDS IN AISEN: Puerto Aisen. DISTRIBUTION IN CHILE: from Conguillio National Park to Magallanes. GLOBAL DISTRIBUTION: endemic to southern South America. (Galloway & James 1987; Stenroos 1995).

***Nephroma analogicum*** Nyl.

HABITAT ECOLOGY: an epiphyte of trees and shrubs in moist sites and in high-light situations. RECORDS IN AISEN: Península de Taitao. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, and from Conguillio National Park to Tierra del Fuego. GLOBAL DISTRIBUTION: endemic to southern South America.

(White & James 1988).

***Nephroma antarcticum*** (Jaq.) Nyl. var. ***antarcticum***

HABITAT ECOLOGY: an epiphyte of trees and shrubs, also on rocks in a wide range of light situations. RECORDS IN AISEN: Queulat, Isla Magdalena, Jeinimeni, Tamango, Vagabundo, Valle Exploradores, Laguna San Rafael, Tortel, Katalalixar. DISTRIBUTION IN CHILE: Fray Jorge National Park, Juan Fernández Archipiélago, and from Talca to Isla Navarino. GLOBAL DISTRIBUTION: endemic to southern South America. (Galloway 1992a; Redón & Quilhot 1977; White & James 1988).

***Nephroma antarcticum*** var. ***lobuligerum*** Müll. Arg.

HABITAT ECOLOGY: an epiphyte of trees and shrubs in humid forests in a wide range of light situation. RECORDS IN AISEN: Cochrane. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, from Malleco Province to Magallanes. GLOBAL DISTRIBUTION: endemic to southern South America.

(White & James 1988).

***Nephroma australe*** A. Rich.

HABITAT ECOLOGY: an epiphyte of trees and shrubs, rarely saxicolous, amongst mosses. RECORDS IN AISEN: Puerto Aisen and Vagabundo. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, and from Llanquihue to Magallanes. GLOBAL DISTRIBUTION: austral.

(White & James 1988).

***Nephroma cellulosum*** (Ach.) Ach.

HABITAT ECOLOGY: an epiphyte of trees and shrubs in humid sites. RECORDS IN AISEN: Queulat, Jeinimeni, Tamango, Valle Exploradores, Laguna San Rafael, Tortel and Katalalixar. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, and from Concepción to Isla Navarino. GLOBAL DISTRIBUTION: austral.

(Galloway 1992a; White & James 1988).

***Nephroma cellulosum*** var. ***isidioferum*** J. Murray

HABITAT ECOLOGY: an epiphyte of trees and shrubs in humid and shady sites. RECORDS IN AISEN: Queulat and Laguna

San Rafael. DISTRIBUTION IN CHILE: Malalcahuello to Aisen. GLOBAL DISTRIBUTION: austral. (White & James 1988).

***Nephroma chubutense*** I.M. Lamb

HABITAT ECOLOGY: an epiphyte on trees, also on fallen trunks restricted to very humid habitats. RECORDS IN AISEN: Tamango. DISTRIBUTION IN CHILE: from Conguillio National Park to Aisen. GLOBAL DISTRIBUTION: endemic to southern South America.

(White & James 1988).

***Nephroma kuehnemannii*** I.M. Lamb

HABITAT ECOLOGY: an epiphyte on trees and shrubs confined to the Valdivian and Patagonian rainforests. RECORDS IN AISEN: Vagabundo. DISTRIBUTION IN CHILE: from Conguillio National Park to Aisen. GLOBAL DISTRIBUTION: endemic to southern South America.

(White & James 1988).

***Nephroma microphyllum*** Henssen

HABITAT ECOLOGY: an epiphyte of trees and shrubs in open, humid and shady sites. RECORDS IN AISEN: Queulat, Puerto Aisen and Vagabundo. DISTRIBUTION IN CHILE: Temuco to Aisen. GLOBAL DISTRIBUTION: endemic to southern South America.

(White & James 1988).

***Nephroma parile*** (Ach.) Ach.

HABITAT ECOLOGY: An epiphyte of tree trunks in *Nothofagus* forests. RECORDS IN AISEN: Jeinimeni and Tamango. DISTRIBUTION IN CHILE: Conguillio National Park to Aisen. GLOBAL DISTRIBUTION: cosmopolitan.

(James & White 1987; White & James 1988).

***Nephroma plumbeum*** (Mont.) Mont. var. ***plumbeum***

HABITAT ECOLOGY: an epiphyte on trees and shrubs in Valdivian rainforest. RECORDS IN AISEN: Puerto Aisen and Laguna San Rafael. DISTRIBUTION IN CHILE: Juan Fernandez Archipelago, La Campana National Park, from Enco (X Región) to Aisen. GLOBAL DISTRIBUTION: austral.

(White & James 1988).

***Nephroma plumbeum*** (Mont.) Mont. var. ***isidiatum*** (J. Murray) F.J. White & P. James

HABITAT ECOLOGY: an epiphyte on trees and shrubs in Valdivian rainforest. RECORDS IN AISEN: Puerto Aisen. DISTRIBUTION IN CHILE: Chiloé to Aisen. GLOBAL DISTRIBUTION: austral.

(White & James 1988).

***Nephroma pseudoparile*** (Räsänen) Zahlbr.

HABITAT ECOLOGY: an epiphyte on trees and shrubs often in open forests, also close to rivers and streams in rather arid zones. RECORDS IN AISEN: Coyhaique Bajo, Baquedano, Río

Simpson, Tamango. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, from Los Vilos to Valparaíso, and from Ñuble to Magallanes. GLOBAL DISTRIBUTION: endemic to southern South America. (White & James 1988).

***Nephroma skottsbergii*** F.J. White & P. James  
HABITAT ECOLOGY: an epiphyte of trees and shrubs in humid habitats. RECORDS IN AISEN: Queulat and Laguna San Rafael. DISTRIBUTION IN CHILE: Conguillio National Park to Aisen. GLOBAL DISTRIBUTION: endemic to southern South America. (White & James 1988).

***Normandina pulchella*** (Borrer) Nyl.  
HABITAT ECOLOGY: on bark of trees and shrubs, also on living leaves in high humidity and shade situations. RECORDS IN AISEN: Valle Exploradores and Laguna San Rafael. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, and from Isla Mocha to Magallanes. GLOBAL DISTRIBUTION: cosmopolitan. (Galloway 1985; Quilhot *et al.* 2010).

***Ochrolechia pallescens*** (L.) A. Massal.  
HABITAT ECOLOGY: an epiphyte on tree trunks in open sites. RECORDS IN AISEN: Jeinimeni and Tamango. DISTRIBUTION IN CHILE: Talca to Isla Navarino. GLOBAL DISTRIBUTION: cosmopolitan. (Galloway 1985; Redón & Quilhot 1977).

***Pannaria calophylla*** (Müll. Arg.) Passo & Calvelo  
HABITAT ECOLOGY: an epiphyte of trees and shrubs, also on leaves in habitats with high humidity. RECORDS IN AISEN: Queulat and Laguna San Rafael. DISTRIBUTION IN CHILE: from Valdivia to Aisen. GLOBAL DISTRIBUTION: austral. (Galloway 1992a; Passo & Calvelo 2006).

***Pannaria conoplea*** (Ach.) Bory  
HABITAT ECOLOGY: on the bark of tree trunks, also on mosses in open sites. RECORDS IN AISEN: Puerto Aisen, Jeinimeni and Tamango. DISTRIBUTION IN CHILE: Antuco to Aisen. GLOBAL DISTRIBUTION: pantemperate. (Galloway *et al.* 2006).

***Pannaria farinosa*** Elvebakk & J. Fritt Rasm.  
HABITAT ECOLOGY: an epiphyte of trees and shrubs, also on mosses and rocks, in both humid areas along the coast and in the easternmost deciduous *Nothofagus* forests. RECORDS IN AISEN: Queulat, Valle, Exploradores and Laguna San Rafael. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, Fray Jorge National Park, and from Talca to Isla Navarino. GLOBAL DISTRIBUTION: panaustral. (Elvebakk *et al.* 2007).

***Pannaria hispidula*** (Nyl.) Hue  
HABITAT ECOLOGY: on trunks in *Nothofagus* forests in sites

with high humidity. RECORDS IN AISEN: Laguna San Rafael and Katalalixar. DISTRIBUTION IN CHILE: Valdivia to Isla Navarino. GLOBAL DISTRIBUTION: cosmopolitan. (Jørgensen 2006; Passo *et al.* 2008).

***Pannaria implexa*** (Stirt.) Passo, Calvelo & S. Stenroos  
HABITAT ECOLOGY: an epiphyte of trees and shrubs, rocks, soil, amongst mosses in sites with high humidity. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, and from Villarrica to Magallanes. GLOBAL DISTRIBUTION: austral. (Passo *et al.* 2008).

***Pannaria isabellina*** (Vain.) Elvebakk & Bjerke  
HABITAT ECOLOGY: on light-exposed twigs in forest margins, also on basal trunks. RECORDS IN AISEN: Río Aisen, Puerto Aisen and Valle Exploradores. DISTRIBUTION IN CHILE: Isla Mocha, and from Riñihue (X Región) to Magallanes. GLOBAL DISTRIBUTION: endemic to southern South America. (Elvebakk & Bjerke 2005; Quilhot *et al.* 2010).

***Pannaria microphyllizans*** (Nyl.) P.M. Jørg.  
HABITAT ECOLOGY: an epiphyte of trees, also on rotten wood in habitats with high humidity. RECORDS IN AISEN: Queulat and Laguna San Rafael. DISTRIBUTION IN CHILE: Huerquehue National Park to Aisen. GLOBAL DISTRIBUTION: australasian. (Galloway 1992a; Passo *et al.* 2008).

***Pannaria pallida*** (Nyl.) Hue  
HABITAT ECOLOGY: an epiphyte of trees and shrubs in moderate light situations. RECORDS IN AISEN: Queulat, Laguna San Rafael and Carretera Austral 55 km S of Cochrane. DISTRIBUTION IN CHILE: Talca to Isla Navarino. GLOBAL DISTRIBUTION: austral. (Jørgensen 2006).

***Pannaria sphinctrina*** (Mont.) Tuck.  
HABITAT ECOLOGY: an epiphyte on trees and shrubs, also on mosses, in habitats with high humidity. RECORDS IN AISEN: Queulat, Puerto Aisen, Valle Exploradores and Laguna San Rafael. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, and from Valdivia to Tierra del Fuego. GLOBAL DISTRIBUTION: cosmopolitan. (Elvebakk 2007; Galloway 1992a).

***Pannaria tavaresii*** P.M. Jørg.  
HABITAT ECOLOGY: an epiphyte on trees, also on mosses and rocks in open sites. RECORDS IN AISEN: Jeinimeni (1100 m altitude). DISTRIBUTION IN CHILE: from Laguna de la Laja National Park to Aisen. GLOBAL DISTRIBUTION: the species has a warm temperate, subtropical distribution. (Galloway *et al.* 2006).



***Pannoparmelia angustata*** (Pers.) Zahlbr.

HABITAT ECOLOGY: an epiphyte on trees and shrubs in open sites, from sea level to 1000 m altitude. RECORDS IN AISEN: Queulat, Tamango, Valle Exploradores, Laguna San Rafael and on the roadside to Puerto Yungay. DISTRIBUTION IN CHILE: Bio-Bio Province to Magallanes. GLOBAL DISTRIBUTION: australasian.

(Galloway 1985, 1992a).

***Parasiphula complanata*** (Hook. f. & Taylor) Kantvilas & Grube

HABITAT ECOLOGY: on tree bark, also on soil in rainforests. RECORDS IN AISEN: Katalalixar. DISTRIBUTION IN CHILE: Valdivia to Magallanes. GLOBAL DISTRIBUTION: austral. (Grube & Kantvilas 2006; Kantvilas 1986; Kantvilas & Elix 2002).

***Parmelia cunninghamii*** Cromb.

HABITAT ECOLOGY: an epiphyte of trees and shrubs in localities of high humidity. RECORDS IN AISEN: Jeinimeni, Tamango, Lago Riesco, Laguna San Rafael and on the roadside to Puerto Yungay. DISTRIBUTION IN CHILE: Ñuble Province to Magallanes and Antarctic Territory. GLOBAL DISTRIBUTION: austral.

(Galloway 1985, 1992a).

***Parmelia protosulcata*** Hale

HABITAT ECOLOGY: an epiphyte of trees and shrubs in open sites, from sea level to 1100 m altitude. RECORDS IN AISEN: Jeinimeni, Tamango, Laguna San Rafael and on the roadside to Puerto Yungay. DISTRIBUTION IN CHILE: Termas de Chillán (VIII Región) to Magallanes. GLOBAL DISTRIBUTION: austral. (Adler & Calvelo 2002; Galloway 1985).

***Parmelia saxatilis*** (L.) Ach.

HABITAT ECOLOGY: on rocks, rarely on tree trunks; frequent in steppe areas. RECORDS IN AISEN: Jeinimeni, Tamango and Laguna San Rafael. DISTRIBUTION IN CHILE: La Campana National Park, and from Malleco Province to Isla Navarino and Antarctic Territory. GLOBAL DISTRIBUTION: cosmopolitan.

(Øvstedal & Lewis Smith 2001; Redón & Quilhot 1977; Redón & Walkowiak 1978).

***Parmelia sulcata*** Taylor

HABITAT ECOLOGY: an epiphyte of trees and shrubs from coastal to steppe areas.

RECORDS IN AISEN: Jeinimeni, Tamango and Laguna San Rafael. DISTRIBUTION IN CHILE: Valparaíso to Isla Navarino and Antarctic Territory. GLOBAL DISTRIBUTION: cosmopolitan.

(Øvstedal & Lewis Smith 2001; Redón & Quilhot 1977).

***Parmeliella nigrocincta*** (Mont.) Müll. Arg.

HABITAT ECOLOGY: an epiphyte of trees and shrubs in

rainforests. RECORDS IN AISEN: Valle Exploradores and Laguna San Rafael. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, and from Malleco Province to Magallanes. GLOBAL DISTRIBUTION: austral.

(Galloway 1985).

***Parmeliopsis hyperopta*** (Ach.) Vain.

HABITAT ECOLOGY: an epiphyte of trees and shrubs in open and moist forests. RECORDS IN AISEN: Tamango. DISTRIBUTION IN CHILE: Rancagua to Magallanes. GLOBAL DISTRIBUTION: circumpolar.

(Ryan 2002b).

***Parmotrema perlatum*** (Huds.) M. Choisy

HABITAT ECOLOGY: an epiphyte on trees in open areas, occasionally on rocks. RECORDS IN AISEN: Tortel and Katalalixar. DISTRIBUTION IN CHILE: Chillán to Magallanes. GLOBAL DISTRIBUTION: widespread in temperate regions of the Northern and Southern Hemispheres.

(Nash III & Elix 2002b; Villagra *et al.* 2009).

***Peltigera canina*** (L.) Willd.

HABITAT ECOLOGY: on soil and amongst mosses in localities with high humidity. RECORDS IN AISEN: Queulat, Isla Magdalena, on the roadside to Puerto Yungay and Katalalixar. DISTRIBUTION IN CHILE: La Campana National Park to Magallanes. GLOBAL DISTRIBUTION: circumpolar.

(Goward *et al.* 1995; Martínez *et al.* 2003; Redón & Walkowiak 1978).

***Peltigera collina*** (Ach.) Schrad.

HABITAT ECOLOGY: on soil and amongst mosses in steppe areas. RECORDS IN AISEN: Jeinimeni and Tamango. DISTRIBUTION IN CHILE: Cautín Province to Magallanes. GLOBAL DISTRIBUTION: circumpolar.

(Goward *et al.* 1995; Martínez *et al.* 2003).

***Peltigera didactyla*** (With.) J.R. Laundon

HABITAT ECOLOGY: on soil, mosses and rotten wood in open sites. RECORDS IN AISEN: Valle Exploradores and Laguna San Rafael. DISTRIBUTION IN CHILE: Zapahuiria-Putre (3400 m altitude), La Campana National Park, and from Los Queñes (VII Región) to Aisen and Antarctic Territory. GLOBAL DISTRIBUTION: cosmopolitan.

(Martínez *et al.* 2003; Redón & Walkowiak 1978).

***Peltigera frigida*** R. Sant.

HABITAT ECOLOGY: on soil in rainforests. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Valdivia to Magallanes. GLOBAL DISTRIBUTION: the species is known in Tristán de Cuhna and southern Chile

(Martínez *et al.* 2003).

***Peltigera lepidophora*** (Vain.) Bitter

HABITAT ECOLOGY: on soil, amongst mosses and rotten wood in steppe areas. RECORDS IN AISEN: Jeinimeni and Tamango. DISTRIBUTION IN CHILE: Malleco Province to Magallanes. GLOBAL DISTRIBUTION: circumpolar. (Goward *et al.* 1995; Martínez *et al.* 2003).

***Peltigera membranacea*** (Ach.) Nyl.

HABITAT ECOLOGY: on soil and amongst mosses RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Aisen. GLOBAL DISTRIBUTION: cosmopolitan. (Galloway 1992a; Goward *et al.* 1995).

***Peltigera neckeri*** Hepp ex Müll. Arg.

HABITAT ECOLOGY: on soil and mosses. RECORDS IN AISEN: Carretera Austral between Cochrane and Villa O'Higgins. DISTRIBUTION IN CHILE: from Valdivia to Aisen and Antarctic Territory. GLOBAL DISTRIBUTION: bipolar (Øvstedal & Lewis Smith 2001; UACH-UDEC 2007, 2008).

***Peltigera polydacton*** (Neck.) Hoffm.

HABITAT ECOLOGY: on soil and mosses. RECORDS IN AISEN: Laguna San Rafael and on the roadside to Puerto Yungay. DISTRIBUTION IN CHILE: La Campana National Park, and from Aisen to Isla Navarino. GLOBAL DISTRIBUTION: cosmopolitan. (Martínez *et al.* 2003; Redón & Quilhot 1977; Redón & Walkowiak 1978).

***Peltigera praetextata*** (Flörke ex Sommerf.) Zopf

HABITAT ECOLOGY: on soil and mosses in habitats with high humidity. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Aisen. GLOBAL DISTRIBUTION: cosmopolitan. (Galloway 1992a; Martínez *et al.* 2003).

***Peltigera pulverulenta*** (Taylor) Nyl.

HABITAT ECOLOGY: on soil and amongst mosses in localities with high humidity. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Valdivia to Magallanes. GLOBAL DISTRIBUTION: known in North and South America. (Martínez *et al.* 2003).

***Peltigera rufescens*** (Weiss) Humb.

HABITAT ECOLOGY: on soil and amongst mosses. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Valdivia to Magallanes and Antarctic Territory. GLOBAL DISTRIBUTION: cosmopolitan. (Galloway 1992a; Martínez *et al.* 2003; Øvstedal & Lewis Smith 2001).

***Peltigera scabrosa*** Th. Fr.

HABITAT ECOLOGY: on soil. RECORDS IN AISEN: Jeinimeni, Tamango, Laguna San Rafael and the road to Puerto Yungay. DISTRIBUTION IN CHILE: Valdivia to Magallanes. GLOBAL

DISTRIBUTION: pantropical. (Galloway 1992a; Martínez *et al.* 2003).

***Peltigera ulcerata*** Müll. Arg.

HABITAT ECOLOGY: on soil and rotten wood in steppe areas. RECORDS IN AISEN: Tamango. DISTRIBUTION IN CHILE: the species has been registered only in Aisen. GLOBAL DISTRIBUTION: cosmopolitan. (Martínez *et al.* 2003).

***Pertusaria dactylina*** (Ach.) Nyl.

HABITAT ECOLOGY: on the base of trunks in shrubs, on soil and mosses in steppe areas. RECORDS IN AISEN: Carretera Austral between Cochrane and Villa O'Higgins. DISTRIBUTION IN CHILE: Chillán, and from Aisen to Magallanes. GLOBAL DISTRIBUTION: bipolar. (Galloway 1985; UACH-UDEC 2007, 2008).

***Pertusaria velata*** (Turner) Nyl.

HABITAT ECOLOGY: on bark of *Nothofagus* species, occasionally on rocks. RECORDS IN AISEN: Tamango and Tortel. DISTRIBUTION IN CHILE: Juan Fernandez Archipelago, Santiago and Rancagua, and from Cauquenes to Magallanes. GLOBAL DISTRIBUTION: cosmopolitan. (Messuti 2005).

***Phaeographis patagonica*** Zahlbr.

HABITAT ECOLOGY: on living bark of *Nothofagus* species in Valdivian rainforest. RECORDS IN AISEN: Valle Exploradores. DISTRIBUTION IN CHILE: Aisen and Magallanes. GLOBAL DISTRIBUTION: endemic to southern South America. (Messuti & Codesal 2009).

***Phaeorrhiza nimbose*** (Fr.) Mayrhofer & Poelt

HABITAT ECOLOGY: on living trunks and in rock outcrops in temperate steppe areas. RECORDS IN AISEN: Dos Lagunas (Coyhaique) and Tamango. DISTRIBUTION IN CHILE: Aisen to Magallanes and Antarctic Territory. GLOBAL DISTRIBUTION: bipolar. (Elvebakk & Moberg 2002; Øvstedal & Lewis Smith 2001).

***Phlyctis chilensis*** D.J. Galloway & Guzmán

HABITAT ECOLOGY: on tree trunks in shady and moist habitats. RECORDS IN AISEN: Isla Magdalena, Dos Lagunas (Coyhaique), Jeinimeni, Valle Exploradores and Laguna San Rafael. DISTRIBUTION IN CHILE: Los Queñes (VII Región) to Magallanes. GLOBAL DISTRIBUTION: endemic to southern South America. (Galloway & Guzmán Grimaldi 1988).

***Physcia adscendens*** (Fr.) H. Oliver

HABITAT ECOLOGY: an epiphyte on trunks and twigs of *Nothofagus*, also on rocks. RECORDS IN AISEN: Laguna San

Rafael. DISTRIBUTION IN CHILE: Valdivia to Magallanes. GLOBAL DISTRIBUTION: anfi-tropical. (Elvebakk & Moberg 2002).

***Physcia caesia*** (Hoffm.) Fűrnr.

HABITAT ECOLOGY: on rocks in steppe areas, from 800 m to 1400 m altitude. RECORDS IN AISEN: Jeinimeni and Tamango. DISTRIBUTION IN CHILE: Putre, Portillo, San José de Maipo, Laguna del Maule, from Llanquihue to Isla Navarino and Antarctic Territory. GLOBAL DISTRIBUTION: cosmopolitan. (Elvebakk & Moberg 2002; Øvstedal & Lewis Smith 2001; Redón & Quilhot 1977).

***Physconia muscigena*** (Ach.) Poelt

HABITAT ECOLOGY: on soil and mosses in steppe areas. RECORDS IN AISEN: Tamango (1100 m altitude). DISTRIBUTION IN CHILE: Putre, Portillo, and from Llanquihue to Isla Navarino and Antarctic Territory. GLOBAL DISTRIBUTION: bipolar. (Elvebakk & Moberg 2002; Galloway 1998; Øvstedal & Lewis Smith 2001).

***Physconia perisidiosa*** (Erichs.) Moberg

HABITAT ECOLOGY: on rocky slopes and walls, also on old living or fallen *Nothofagus antarctica*. RECORDS IN AISEN: Estancia Ñirehuao and Tamango. DISTRIBUTION IN CHILE: Aisen to Magallanes. GLOBAL DISTRIBUTION: cosmopolitan. (Elvebakk & Moberg 2002).

***Placopsis baculigera*** I.M. Lamb

HABITAT ECOLOGY: on coastal rocks, rock faces along roadsides. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Aisen to Magallanes. GLOBAL DISTRIBUTION: endemic to southern South America. (Galloway 1992a, 2002, 2010).

***Placopsis cribellans*** (Nyl.) Räsänen

HABITAT ECOLOGY: on rocks faces along roadsides. RECORDS IN AISEN: Tamango. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, and from Valdivia to Tierra del Fuego. GLOBAL DISTRIBUTION: cosmopolitan. (Galloway 1992a, 2002, 2007, 2010).

***Placopsis fuscidula*** I.M. Lamb ex Räsänen

HABITAT ECOLOGY: from coastal rocks to alpine zones. RECORDS IN AISEN: Tamango. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, and from Volcán Antuco (VIII Región) to Isla Desolación (XII Región). GLOBAL DISTRIBUTION: the species is known from Tristán de Cunha and Venezuela. (Galloway 2002, 2007, 2010).

***Placopsis lambii*** Hertel & V. Wirth

HABITAT ECOLOGY: on acid rocks in open humid situations. RECORDS IN AISEN: Tamango. DISTRIBUTION IN CHILE: Valdivia to Tierra del Fuego. GLOBAL DISTRIBUTION: cosmopolitan.

(Galloway 2002, 2007).

***Placopsis parellina*** (Nyl.) I.M. Lamb

HABITAT ECOLOGY: on rocks from rather dry, disturbed habitats. RECORDS IN AISEN: Tamango. DISTRIBUTION IN CHILE: Juan Fernández Archipelago and from Quillón (VIII Región) to Aisen. GLOBAL DISTRIBUTION: endemic to southern South America. (Galloway 2002, 2010).

***Placopsis perrugosa*** (Nyl.) Nyl.

HABITAT ECOLOGY: on gravelly soils and rocks. RECORDS IN AISEN: Tamango and Laguna San Rafael. DISTRIBUTION IN CHILE: Antuco to Aisen and Antarctic Territory. GLOBAL DISTRIBUTION: austral, reaching as far north as Papua, New Guinea and New Ireland. (Galloway 2002, 2007, 2010; Øvstedal & Lewis Smith 2001).

***Placopsis pycnotheca*** I.M. Lamb

HABITAT ECOLOGY: on gravelly soils and lava in recently deglaciated, riverine and volcanic environments. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Juan Fernández Archipelago and from Laguna de la Laja National Park to Magallanes. GLOBAL DISTRIBUTION: the species is known in southern South America from Chile (to VII to XII Regions) and Argentina. (Galloway 1992a, 2002, 2010).

***Placopsis stenophylla*** (Hue) I.M. Lamb

HABITAT ECOLOGY: on small stones and pebbles and on old moraine surfaces, also coastal rocks. RECORDS IN AISEN: Laguna San Rafael and Fiordo Témpano. DISTRIBUTION IN CHILE: Lago Riñihue (Valdivia) to Magallanes. GLOBAL DISTRIBUTION: austral. (Galloway 2002, 2007).

***Placopsis subcribellans*** (I.M. Lamb) D.J. Galloway

HABITAT ECOLOGY: on rocks and in coastal forests on hard, water worn, smooth rocks in heavily glaciated, high rainfall areas. RECORDS IN AISEN: Isla Magdalena. DISTRIBUTION IN CHILE: Aisen to Magallanes. GLOBAL DISTRIBUTION: austral. (Galloway 2002, 2007, 2010).

***Placopsis tuberculifera*** (I.M. Lamb) Follmann

HABITAT ECOLOGY: on sandy soil from sea level to 1800 m on both volcanic ash and on glacial moraines in alpine zones. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Volcán Osorno to Magallanes. GLOBAL DISTRIBUTION: endemic to southern South America. (Galloway 2002).

***Platismatia glauca*** (L.) W.L. Culb. & C.F. Culb.

HABITAT ECOLOGY: an epiphyte of trees and shrubs from sea

level to 1100 m. RECORDS IN AISEN: Jeininemi, Tamango, Tortel. DISTRIBUTION IN CHILE: La Campana National Park, and from Talca to Isla Navarino and Antarctic Territory. GLOBAL DISTRIBUTION: cosmopolitan. (Culberson & Culberson 1968; Øvstedal & Lewis Smith 2001; Redón & Quilhot 1977).

***Polychidium contortum*** Henssen

HABITAT ECOLOGY: an epiphyte of trees and shrubs. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: the species has been registered only in Aisen. GLOBAL DISTRIBUTION: tropical. (Galloway 1985, 1992a).

***Protousnea alectoroides*** (Mont.) Krog

HABITAT ECOLOGY: an epiphyte on bark of trees and shrubs in forest margins; from sea level to 1300. RECORDS IN AISEN: Jeininemi. DISTRIBUTION IN CHILE: Nahuelbuta National Park to Aisen. GLOBAL DISTRIBUTION: endemic to southern South América. (Calvelo *et al.* 2005; Krog 1976).

***Protousnea dusenii*** (D.R.) Krog

HABITAT ECOLOGY: an epiphyte on tree trunks, rarely on shrubs and rocks; from sea level to 1300 m, particularly in steppe areas. RECORDS IN AISEN: Carretera Austral near Cochrane and Jeininemi. DISTRIBUTION IN CHILE: Aisen to Isla Navarino. GLOBAL DISTRIBUTION: endemic to southern South America. (Calvelo *et al.* 2005; Krog 1976).

***Protousnea magellanica*** (Mont.) Krog

HABITAT ECOLOGY: an epiphyte on tree trunks and shrubs; from sea level more than 1300 m. Together with *P. malacea* appears to be the commonest species in the genus. RECORDS IN AISEN: Carretera Austral between Balmaceda and Villa Cerro Castillo, Estancia Coyhaique, Estancia Ñirehuao, Coyhaique Alto, Mañihuales, Jeininemi, Tamango and Puerto Bertrand. DISTRIBUTION IN CHILE: Talca to Isla Navarino. GLOBAL DISTRIBUTION: endemic to southern South America (Calvelo *et al.* 2005; Krog 1976; Redón & Quilhot 1977).

***Protousnea malacea*** (Stirt.) Krog

HABITAT ECOLOGY: an epiphyte on tree trunks and shrubs; from sea level more than 1300 m. Together with *P. magellanica* it appears to be the commonest species in the genus. RECORDS IN AISEN: Carretera Austral between Balmaceda and Villa Cerro Castillo, Mañihuales, Estancia Ñirehuao, Estancia Coyhaique, Puerto Aisen, Río Simpson, Lago Riesco, Jeininemi, Tamango, Chile Chico and Puerto Bertrand. DISTRIBUTION IN CHILE: Talca to Isla Navarino. GLOBAL DISTRIBUTION: endemic to southern South America. (Calvelo *et al.* 2005; Krog 1976; Redón & Quilhot 1977).

***Protousnea poeppigii*** (Nees & Flot.) Krog

HABITAT ECOLOGY: an epiphyte on tree trunks and shrubs, from sea level more than 1300m. RECORDS IN AISEN: Jeininemi, Carretera Austral between Cochrane and Tortel. DISTRIBUTION IN CHILE: Antuco to Magallanes. GLOBAL DISTRIBUTION: endemic to southern South America. (Calvelo *et al.* 2005; Krog 1976).

***Protousnea teretiuscula*** Krog

HABITAT ECOLOGY: an epiphyte on tree trunks and shrubs; from sea level to 1300 m. RECORDS IN AISEN: Jeininemi, Tamango. DISTRIBUTION IN CHILE: Nahuelbuta National Park to Aisen. GLOBAL DISTRIBUTION: endemic to southern South America. (Calvelo *et al.* 2005; Krog 1976).

***Pseudocyphellaria bartlettii*** D.J. Galloway

HABITAT ECOLOGY: an epiphyte on tree trunks and shrubs in Valdivian rainforest. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Fray Jorge National Park to Tierra del Fuego. GLOBAL DISTRIBUTION: paleotropical; the species is known from Chile and Argentina, Ecuador, New Zealand and eastern Australia. (Galloway 1992 a,b).

***Pseudocyphellaria berberina*** (G. Forst.) D.J. Galloway & P. James

HABITAT ECOLOGY: an epiphyte on tree trunks and shrubs, on the ground and mosses; in very humid situations; from sea level to 1500 m. Distribution in Aisen: Queulat, Isla Magdalena, Valle Exploradores, Laguna San Rafael, on the road to Puerto Yungay, Tortel and Katalalixar. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, and from Isla Mocha to Tierra del Fuego. GLOBAL DISTRIBUTION: endemic to southern South America. (Galloway 1992 a,b; Quilhot *et al.* 2010).

***Pseudocyphellaria coerulescens*** (Mont.) H. Magn.

HABITAT ECOLOGY: an epiphyte on tree trunks and shrubs in rainforests. RECORDS IN AISEN: Queulat, Laguna San Rafael, Valle Exploradores and Katalalixar. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, and from Isla Mocha to Tierra del Fuego. GLOBAL DISTRIBUTION: endemic to southern South America. (Galloway 1992 a,b; Quilhot *et al.* 2010).

***Pseudocyphellaria compar*** (Nyl.) H. Magn.

HABITAT ECOLOGY: an epiphyte on tree trunks and shrubs in Valdivian rainforest and in steppe areas. RECORDS IN AISEN: Jeininemi, Tamango, Valle Exploradores and Laguna San Rafael. DISTRIBUTION IN CHILE: Isla Mocha to Tierra del Fuego. GLOBAL DISTRIBUTION: endemic to southern South America. (Galloway 1992a,b; Quilhot *et al.* 2010).



***Pseudocyphellaria coriifolia*** (Müll. Arg.) Malme  
HABITAT ECOLOGY: an epiphyte on tree trunks and shrubs in open forests in moderate to high light situations, from areas of high rainfall to dry grassland habitats. RECORDS IN AISEN: Isla Magdalena, Jeinimeni, Tamango, Valle Exploradores and Laguna San Rafael. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, and from Chillán to Isla Navarino. GLOBAL DISTRIBUTION: endemic to southern South America. (Galloway 1992 a,b; Redón & Quilhot 1977).

***Pseudocyphellaria crocata*** (L.) Vain.  
HABITAT ECOLOGY: an epiphyte of trees and shrubs, on soil and rocks, in a wide variety of habitats from sea level to 1500 m. RECORDS IN AISEN: Queulat, Isla Magdalena, Jeinimeni, Tamango, Estancia Ñirehuao, Valle Exploradores, Laguna San Rafael, Vagabundo and Tortel. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, Fray Jorge National Park, and from Talca to Isla Navarino. GLOBAL DISTRIBUTION: cosmopolitan. (Galloway 1992a,b; Redón & Quilhot 1977).

***Pseudocyphellaria dasyphyllidia*** Bjerke  
HABITAT ECOLOGY: an epiphyte of trees and shrubs in a wide variety of habitats, from 900 to 1400 m altitude. RECORDS IN AISEN: Tamango. DISTRIBUTION IN CHILE: Cauquenes to Magallanes. GLOBAL DISTRIBUTION: endemic to southern South America. (Bjerke *et al.* 2003b).

***Pseudocyphellaria dissimilis*** (Nyl.) D.J. Galloway & P. James  
HABITAT ECOLOGY: an epiphyte on tree trunks, in low light habitats. RECORDS IN AISEN: between Cochrane and Villa O'Higgins and Katalalixar. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago and Aisen. GLOBAL DISTRIBUTION: paleotropical. (Galloway 1992a,b; UACH-UDEC 2007, 2008).

***Pseudocyphellaria divulsa*** (Taylor) Imshaug  
HABITAT ECOLOGY: an epiphyte of trees and shrubs in dense forests, on mossy scrub and on coastal rocks in humid habitats. RECORDS IN AISEN: Queulat, Isla Magdalena, Tamango, Valle Exploradores, Laguna San Rafael, Vagabundo, Tortel and Katalalixar. DISTRIBUTION IN CHILE: Malleco Province to Magallanes. GLOBAL DISTRIBUTION: endemic to southern South America. (Galloway 1992 a,b).

***Pseudocyphellaria dubia*** Du Reitz  
HABITAT ECOLOGY: an epiphyte of trees, among mosses and rocks, in deep shade habitats of high humidity. RECORDS IN AISEN: Jeinimeni, Tamango, Valle Exploradores and Laguna San Rafael. DISTRIBUTION IN CHILE: Malleco Province to Isla Navarino. GLOBAL DISTRIBUTION: endemic to southern South

America. (Galloway 1992 a,b; Redón & Quilhot 1977).

***Pseudocyphellaria encoensis*** R. Sant.  
HABITAT ECOLOGY: an epiphyte of trees and shrubs in dense forests, in humid habitats. RECORDS IN AISEN: Queulat, Isla Magdalena, Valle Exploradores, Laguna San Rafael, Tortel and Katalalixar. DISTRIBUTION IN CHILE: Enco (X Región) to Magallanes. GLOBAL DISTRIBUTION: paleotropical. (Galloway 1992 a,b).

***Pseudocyphellaria endochrysa*** (Delise) Vain.  
HABITAT ECOLOGY: on soil and moss-turf and in the lower parts of mossy tree trunks, from 900 to 1100 m altitude in steppe areas. RECORDS IN AISEN: Laguna Tamanguito (Tamango). DISTRIBUTION IN CHILE: Aisen to Isla Navarino. GLOBAL DISTRIBUTION: endemic to southern South America. (Galloway 1992 b; Redón & Quilhot 1977).

***Pseudocyphellaria exanthematica*** I.M. Lamb  
HABITAT ECOLOGY: an epiphyte of forest trees in Valdivian rainforest, also on soil. RECORDS IN AISEN: Queulat and Laguna San Rafael. DISTRIBUTION IN CHILE: Isla Mocha to Aisen. GLOBAL DISTRIBUTION: endemic to southern South America. (Galloway 1992a,b; Quilhot *et al.* 2010).

***Pseudocyphellaria faveolata*** (Delise) Malme  
HABITAT ECOLOGY: an epiphyte of forest trees in habitats in fairly open conditions with relatively high light intensity; from sea level to 1500 m. RECORDS IN AISEN: Queulat, Isla Magdalena, Valle Exploradores and Laguna San Rafael. DISTRIBUTION IN CHILE: Nahuelbuta National Park to Tierra del Fuego. GLOBAL DISTRIBUTION: pan-austral; also known in subantarctic islands, New Zealand and Tasmania. (Galloway 1992a,b).

***Pseudocyphellaria flavicans*** (Hook. & Taylor) Vain.  
HABITAT ECOLOGY: an epiphyte of forest trees in open and high-light habitats, from sea level to 1500 m. RECORDS IN AISEN: Queulat, Isla Magdalena, Valle Exploradores and Laguna San Rafael. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, and from Isla Mocha to Tierra del Fuego. GLOBAL DISTRIBUTION: endemic to southern South America. (Galloway 1992 b; Quilhot *et al.* 2010).

***Pseudocyphellaria freycinetii*** (Delise) Malme  
HABITAT ECOLOGY: a terricolous or muscicolous species found in subalpine habitats in steppe areas, from 600 to 1200 m altitude. RECORDS IN AISEN: Coyhaique, Cerros Divisaderos, Laguna Tamanguito (Tamango), Lago Presidente Ríos and Península de Taitao. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, and from Puyehue to Isla Navarino. GLOBAL DISTRIBUTION: endemic to southern South America.

(Galloway 1992 a,b; Redón & Quilhot 1977).

***Pseudocypbellaria gilva*** (Ach.) Malme

HABITAT ECOLOGY: on coastal rocks, on living and dead wood of trees and shrubs in open forest areas. RECORDS IN AISEN: Tamango and Laguna San Rafael. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, and from Constitución to Magallanes. GLOBAL DISTRIBUTION: paleotropical.

(Galloway 1992 b).

***Pseudocypbellaria glabra*** (Hook. f. & Taylor) C.W. Dodge

HABITAT ECOLOGY: on rocks, living and dead vegetation at sea level; lowland forests, scrub and moorland or grassland associations, to subalpine and high alpine scrub. RECORDS IN AISEN: Queulat, Valle Exploradores, Laguna San Rafael, Vagabundo and Katalalixar. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, Isla Mocha to Tierra del Fuego. GLOBAL DISTRIBUTION: panaustral.

(Galloway 1992 a,b; Quilhot *et al.* 2010).

***Pseudocypbellaria granulata*** (C. Bab.) Malme

HABITAT ECOLOGY: an epiphyte of forest trees in fairly open conditions with relatively high light intensity; from sea level to 1300 m. RECORDS IN AISEN: Tamango and Valle Exploradores. DISTRIBUTION IN CHILE: Nahuelbuta National Park to Isla Navarino.

GLOBAL DISTRIBUTION: austral.

(Galloway 1992 a,b; Redón & Quilhot 1977).

***Pseudocypbellaria guillemini*** (Mont.) D.J. Galloway

HABITAT ECOLOGY: an epiphyte of trees and shrubs in rainforests in rather low light situations. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, Conguillio National Park to Magallanes. GLOBAL DISTRIBUTION: endemic to southern South America.

(Galloway 1992 b).

***Pseudocypbellaria hillii*** (C.W. Dodge) D.J. Galloway

HABITAT ECOLOGY: an epiphyte of trees and shrubs particularly in forest margin, on soil or among mosses, on open grassland. RECORDS IN AISEN: Tamango. DISTRIBUTION IN CHILE: Aisen to Magallanes. GLOBAL DISTRIBUTION: endemic to southern South America.

(Galloway 1992b).

***Pseudocypbellaria hirsuta*** (Mont.) Malme

HABITAT ECOLOGY: an epiphyte of trees and shrubs particularly in forest margin, on soil and rocks in a wide range of humidity, from sea level to 1500 m. RECORDS IN AISEN: Queula, Jeinimeni, Tamango, Valle Exploradores, Laguna San Rafael and on the road to Puerto Yungay. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, and from Constitución to Tierra del Fuego. GLOBAL DISTRIBUTION: endemic to southern South America.

(Galloway 1992b).

***Pseudocypbellaria intricata*** (Delise) Vain.

HABITAT ECOLOGY: an epiphyte of trees and shrubs in humid rainforests in moderate to dense shade. RECORDS IN AISEN: Queulat, Isla Magdalena, Valle Exploradores, Laguna San Rafael, Vagabundo, Tortel and Katalalixar. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, Fray Jorge National Park to Tierra del Fuego. GLOBAL DISTRIBUTION: cosmopolitan.

(Galloway 1992 a,b).

***Pseudocypbellaria lechleri*** (Müll. Arg.) Du Rietz

HABITAT ECOLOGY: an epiphyte of trees and shrubs, on the ground among mosses, in alpine and subalpine habitats. RECORDS IN AISEN: Tamango (1000 m altitude). DISTRIBUTION IN CHILE: Conguillio National Park to Tierra del Fuego. GLOBAL DISTRIBUTION: endemic to southern South America.

(Galloway 1992b; Redón & Quilhot 1977).

***Pseudocypbellaria mallota*** (Tuck.) H. Magn.

HABITAT ECOLOGY: an epiphyte of trees and shrubs in Valdivian rainforest and steppe areas, on rocks and stumps in open forests or on deforested slopes, in humid and moderate light situations. RECORDS IN AISEN: Jeinimeni, Tamango, Valle Exploradores and Laguna San Rafael. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, Fray Jorge National Park, and from Valdivia to Magallanes. GLOBAL DISTRIBUTION: endemic to southern South America

(Galloway 1992a,b).

***Pseudocypbellaria malmeana*** D.J. Galloway

HABITAT ECOLOGY: an epiphyte of trees and shrubs in Valdivian rainforest, on rocks and stumps in open forests or on deforested slopes in humid and shaded habitats. RECORDS IN AISEN: Queulat, Carretera Austral south of Cochrane. DISTRIBUTION IN CHILE: Isla Mocha to Aisen. GLOBAL DISTRIBUTION: endemic to southern South America.

(Galloway 1992a,b; Quilhot *et al.* 2010).

***Pseudocypbellaria meyenii*** (Trevis.) D.J. Galloway

HABITAT ECOLOGY: an epiphyte of trees and shrubs in lowland to montane Valdivian rainforest, having an altitudinal range from sea level to 800 m. RECORDS IN AISEN: Valle Exploradores and Laguna San Rafael. DISTRIBUTION IN CHILE: Isla Mocha to Aisen. GLOBAL DISTRIBUTION: endemic to southern South America.

(Galloway 1992 a,b; Quilhot *et al.* 2010).

***Pseudocypbellaria neglecta*** (Müll. Arg.) H. Magn.

HABITAT ECOLOGY: an epiphyte of trees and shrubs, on rocks in dryish habitats with a high light intensity. RECORDS IN AISEN: Jeinimeni, Coyhaique Bajo, Estancia Ñirehuao and Río Simpson. DISTRIBUTION IN CHILE: la Campana National

Park to Tierra del Fuego. GLOBAL DISTRIBUTION: austral. (Galloway 1992b).

***Pseudocyphellaria nitida*** (Taylor) Malme

HABITAT ECOLOGY: an epiphyte of trees and shrubs in Valdivian rainforest in moderate to high-light habitats of high rainfall, with an altitudinal range from sea level to 1600 m. RECORDS IN AISEN: Queulat, Río Cisnes, Valle Exploradores, Laguna San Rafael, Tortel and Katalalixar. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, and from Nahuelbuta National Park to Magallanes. GLOBAL DISTRIBUTION: endemic to southern South America. (Galloway 1992b).

***Pseudocyphellaria norvegica*** (Gyeln.) P. James

HABITAT ECOLOGY: an epiphyte of trees and shrubs in humid habitats. RECORDS IN AISEN: Tamango and Laguna San Rafael. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, and from Isla Mocha to Aisen. GLOBAL DISTRIBUTION: cosmopolitan. (Galloway 1992a,b; Quilhot *et al.* 2010).

***Pseudocyphellaria nudata*** (Zahlbr.) D.J. Galloway

HABITAT ECOLOGY: an epiphyte of trees and shrubs in forested areas, mainly in rather drier and moderate to high light situations. RECORDS IN AISEN: Tamango, Valle Exploradores and Laguna San Rafael. DISTRIBUTION IN CHILE: Chillán to Aisen. GLOBAL DISTRIBUTION: endemic to southern South America. (Galloway 1992b).

***Pseudocyphellaria obvoluta*** (Ach.) Malme

HABITAT ECOLOGY: an epiphyte of trees and shrubs, also on rocks in lowland and subalpine forests in areas of high rainfall; from sea level to 1500 m. RECORDS IN AISEN: Puerto Bertrand and Vagabundo. DISTRIBUTION IN CHILE: Nahuelbuta National Park to Isla Navarino. GLOBAL DISTRIBUTION: endemic to southern South America. (Galloway 1992 b; Redón & Quilhot 1977).

***Pseudocyphellaria pilosella*** Malme

HABITAT ECOLOGY: an epiphyte of trees and shrubs in moist humid, rather low-light habitats. RECORDS IN AISEN: Queulat, Tamango, Valle Exploradores, Laguna San Rafael and Lago Presidente Ríos. DISTRIBUTION IN CHILE: Chillán to Aisen. GLOBAL DISTRIBUTION: endemic to southern South America. (Galloway 1992 a,b).

***Pseudocyphellaria piloselloides*** (Räsänen) H. Magn.

HABITAT ECOLOGY: an epiphyte of trees and shrubs in open forests. RECORDS IN AISEN: Queulat, Valle Exploradores and Laguna San Rafael. DISTRIBUTION IN CHILE: Conguillio National Park to Tierra del Fuego. GLOBAL DISTRIBUTION: endemic to southern South America.

(Galloway 1992 a,b).

***Pseudocyphellaria pluvialis*** R. Sant.

HABITAT ECOLOGY: an epiphyte of trees and shrubs in very humid, often deeply shaded situations. RECORDS IN AISEN: Valle Exploradores and Laguna San Rafael. DISTRIBUTION IN CHILE: Isla Mocha to Aisen. GLOBAL DISTRIBUTION: endemic to southern South America. (Galloway 1992 a,b; Quilhot *et al.* 2010).

***Pseudocyphellaria redonii*** D.J. Galloway

HABITAT ECOLOGY: an epiphyte of trees and shrubs, rarely on rocks; in shaded, humid habitats from sea level to 1000 m. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Cautín Province to Magallanes. GLOBAL DISTRIBUTION: endemic to southern South America. (Galloway 1992a, b).

***Pseudocyphellaria santessonii*** D.J. Galloway

HABITAT ECOLOGY: an epiphyte of trees and shrubs in mixed humid rainforest, in habitats of moderate light. RECORDS IN AISEN: Península de Taitao and Lago Presidente Ríos. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, and from Isla Mocha to Magallanes. GLOBAL DISTRIBUTION: endemic to southern South America. (Galloway 1992a,b; Quilhot *et al.* 2010).

***Pseudocyphellaria scabrosa*** R. Sant.

HABITAT ECOLOGY: an epiphyte of trees and shrubs in rainforests in low-light intensities, from sea level to 1500 m. RECORDS IN AISEN: Queulat, Valle Exploradores, Laguna San Rafael, Vagabundo. DISTRIBUTION IN CHILE: Isla Mocha to Isla Navarino. GLOBAL DISTRIBUTION: endemic to southern South America. (Galloway 1992a,b; Quilhot *et al.* 2010; Redón & Quilhot 1977).

***Pseudocyphellaria subrubella*** Räsänen

HABITAT ECOLOGY: an epiphyte of trees and shrubs in conditions of moderate light between altitudes 500-1600 m. RECORDS IN AISEN: Puerto Bertrand. DISTRIBUTION IN CHILE: Llanquihue to Aisen. GLOBAL DISTRIBUTION: endemic to southern South America. (Galloway 1992a,b).

***Pseudocyphellaria vaccina*** (Mont.) Malme

HABITAT ECOLOGY: an epiphyte of trees and shrubs, in open forests near the margins and at treeline. RECORDS IN AISEN: Laguna San Rafael and Vagabundo. DISTRIBUTION IN CHILE: Isla Mocha to Tierra del Fuego. GLOBAL DISTRIBUTION: endemic to southern South America. (Galloway 1992b; Quilhot *et al.* 2010).

***Pseudocyphellaria valdiviana*** (Nyl.) Follmann

HABITAT ECOLOGY: an epiphyte of trees and shrubs in Valdivian rainforest, among ferns and mosses in fairly open conditions. RECORDS IN AISEN: Laguna San Rafael and Vagabundo. DISTRIBUTION IN CHILE: Temuco to Aisen. GLOBAL DISTRIBUTION: endemic to southern South America. (Galloway 1992a,b).

***Pseudocyphellaria wandae*** D.J. Galloway

HABITAT ECOLOGY: an epiphyte of trees and shrubs in humid, high rainfall habitats in moderate shade from 100 to 1000 m altitude. RECORDS IN AISEN: Isla Magdalena. DISTRIBUTION IN CHILE: Constitución to Aisen. GLOBAL DISTRIBUTION: endemic to southern South America. (Galloway 1992b).

***Psoroma cinnamomeum*** Malme

HABITAT ECOLOGY: on soil and mosses in habitats with high humidity. RECORDS IN AISEN: Tamango and Laguna San Rafael. DISTRIBUTION IN CHILE: Aisen to Tierra del Fuego and Antarctic Territory. GLOBAL DISTRIBUTION: the species is known in southern South America and Antarctica. (Galloway 1992a; Henssen & Renner 1981; Øvstedal & Lewis Smith 2001).

***Psoroma echinaceum*** P.M. Jørg. & Wedin

HABITAT ECOLOGY: an epiphyte of tree trunks in habitats with high humidity. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: the species is known only in Aisen and southern Argentina. GLOBAL DISTRIBUTION: endemic to southern South America. (Jørgensen & Wedin 1999).

***Psoroma fruticosum*** P. James & Henssen

HABITAT ECOLOGY: an epiphyte on twigs and small branches of trees and shrubs, also on soil in humid and shaded habitats. RECORDS IN AISEN: Queulat and Tamango. DISTRIBUTION IN CHILE: Conguillio National Park to Magallanes and Antarctic Territory. GLOBAL DISTRIBUTION: known from South America, Subantarctic Islands, New Zealand and South Africa. (Jørgensen & Galloway 1992; Øvstedal & Lewis Smith 2001).

***Psoroma hypnorum*** (Vahl) S.F.Gray

HABITAT ECOLOGY: an epiphyte of trees and shrubs, on soil and mosses in steppe areas. RECORDS IN AISEN: Jeinimeni and Tamango. DISTRIBUTION IN CHILE: from Isla Mocha to Magallanes and Antarctic Territory. GLOBAL DISTRIBUTION: bipolar. (Øvstedal & Lewis Smith 2001; Quilhot *et al.* 2010).

***Psoroma palaceum*** (Fr.) Timbal & Tønsberg

HABITAT ECOLOGY: on mosses and rotten wood in humid and shaded habitats in steppe areas. RECORDS IN AISEN: Jeinimeni (950 m altitude). DISTRIBUTION IN CHILE: Aisen and

Magallanes. GLOBAL DISTRIBUTION: bipolar. (Timdal & Tønsberg 2006).

***Psoroma tenue*** Henssen

HABITAT ECOLOGY: on mosses, rocks and soil. RECORDS IN AISEN: Jeinimeni and Tamango. DISTRIBUTION IN CHILE: Aisen to Isla Navarino and Antarctic Territory. GLOBAL DISTRIBUTION: the species is known in southernmost South America and in Antarctica. (Henssen & Renner 1981; Øvstedal & Lewis Smith 2001).

***Psorophorus pholidotus*** (Mont.) Elvebakk

HABITAT ECOLOGY: an epiphyte on trees and shrubs in humid and shaded habitats. RECORDS IN AISEN: Queulat and Tortel. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, and from Conguillio National Park to Magallanes. GLOBAL DISTRIBUTION: austral. (Elvebakk *et al.* 2010).

***Punctelia borneri*** (Sm.) Krog

HABITAT ECOLOGY: on the bark of trees and shrubs in rather shaded habitats. RECORDS IN AISEN: Carretera Austral between Cochrane and Villa O'Higgins. DISTRIBUTION IN CHILE: Isla Mocha, and from Valdivia to Magallanes. GLOBAL DISTRIBUTION: cosmopolitan. (Galloway 1985, UACH-UDEC 2007, 2008)

***Rhizocarpon geographicum*** (L.) DC.

HABITAT ECOLOGY: on rocks in open sites. RECORDS IN AISEN: Jeinimeni and Tamango. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, and from Portillo to Isla Navarino and Antarctic Territory. GLOBAL DISTRIBUTION: cosmopolitan. (Øvstedal & Lewis Smith 2001, Redón & Quilhot 1977).

***Rhizocarpon grande*** (Flörke) Arnold

HABITAT ECOLOGY: on rocks in open sites. RECORDS IN AISEN: Jeinimeni, Tamango. DISTRIBUTION IN CHILE: Aisen to Magallanes and Antarctic Territory. GLOBAL DISTRIBUTION: bipolar. (Galloway 2007; Øvstedal & Lewis Smith 2001).

***Rhizoplaca aspidophora*** (Vain.) Redón

HABITAT ECOLOGY: on rocks in open sites. RECORDS IN AISEN: Jeinimeni and Tamango (800-1000 m). DISTRIBUTION IN CHILE: Chucuyo (northern Altiplano, 4500 m), Portillo (2600 m), San José de Maipo (900-2400 m), Laguna del Maule (2540 m), and from Aisen to Magallanes and Antarctic Territory. GLOBAL DISTRIBUTION: southern South America and Antarctica. (Øvstedal & Lewis Smith 2001; Quilhot *et al.* 2007).

***Rhizoplaca chrysoleuca*** (Sm.) Zopf

HABITAT ECOLOGY: on rocks, also on soil in open sites in



alpine zones. RECORDS IN AISEN: Jeinimeni (900 m altitude). DISTRIBUTION IN CHILE: Chucuyo (northern Altiplano, 4500 m) to Trapa-Trapa (VIII Región) and Aisen. GLOBAL DISTRIBUTION: circumarctic, circumboreal to warm-temperate.

(Quilhot *et al.* 2007; Ryan 2002c).

***Rhizoplaca melanophthalma*** (Ramond) Leuckert & Poelt  
HABITAT ECOLOGY: on rocks in alpine areas, usually in open sites. RECORDS IN AISEN: Jeinimeni and Tamango (800-1200 m altitude). DISTRIBUTION IN CHILE: Putre to Chungará (Altiplano, 3500 to 4600 m), Portillo (2680 m), La Campana National Park (1910 m), San José de Maipo (900-2400 m), Laguna del Maule (2540 m), from Aisen to Magallanes and Antarctic Territory. GLOBAL DISTRIBUTION: bipolar, circumboreal, extending to the tropics in alpine areas (Øvstedal & Lewis Smith 2001; Quilhot *et al.* 2007; Redón & Walkowiak 1978; Ryan 2002c).

***Rimelia reticulata*** (Taylor) Hale & A. Flechter  
HABITAT ECOLOGY: an epiphyte of trees occurring in a wide variety of habitats, also on rocks in exposed situations. RECORDS IN AISEN: Tamango. DISTRIBUTION IN CHILE: Talca to Aisen. GLOBAL DISTRIBUTION: cosmopolitan, widespread throughout the tropics and temperate areas. (Louwhoff & Elix 2002; Nash III & Elix 2002c).

***Rinodina olivaceobrunnea*** C.W. Dodge & G.E. Baker  
HABITAT ECOLOGY: on rocks in open sites. RECORDS IN AISEN: Tamango. DISTRIBUTION IN CHILE: from Aisen to Magallanes and Antarctic Territory. GLOBAL DISTRIBUTION: bipolar. (Jacobsen & Kappen 1989; Øvstedal & Lewis Smith 2001).

***Rusavskia elegans*** (Link) S.Y. Kondr. & Kärnefelt  
HABITAT ECOLOGY: on rocks in open sites. RECORDS IN AISEN: Jeinimeni. DISTRIBUTION IN CHILE: Putre, Juan Fernández Archipiélago, La Campana National Park, from Laguna de la Laja National Park to Isla Navarino and Antarctic Territory. GLOBAL DISTRIBUTION: bipolar. (Fedorenko *et al.* 2009; Øvstedal & Lewis Smith 2001; Redón & Quilhot 1977; Redón & Walkowiak 1978).

***Sphaerophorus globosus*** (Huds.) Vain.  
HABITAT ECOLOGY: on soil, among mosses in open sites. RECORDS IN AISEN: Tamango and Laguna San Rafael. DISTRIBUTION IN CHILE: from Llanquihue to Isla Navarino and Antarctic Territory. GLOBAL DISTRIBUTION: bipolar. (Galloway 1992a; Øvstedal & Lewis Smith 2001; Redón & Quilhot 1977; Wedin 1995).

***Stereocaulon alpinum*** Laurer  
HABITAT ECOLOGY: on rocks and mosses in open sites. RECORDS IN AISEN: Tamango (900-1100 m). DISTRIBUTION IN CHILE: from Cautín Province to Isla Navarino and Antarctic

Territory. GLOBAL DISTRIBUTION: bipolar. (Lamb 1977; Øvstedal & Lewis Smith 2001; Redón & Quilhot 1977)

***Stereocaulon corticatulum*** Nyl.  
HABITAT ECOLOGY: on mosses and rocks in open sites. RECORDS IN AISEN: Tamango. DISTRIBUTION IN CHILE: Cerro Moreno (Antofagasta), and from Laguna de la Laja National Park to Magallanes. GLOBAL DISTRIBUTION: austral. (Follmann 1967; Lamb 1977; Redón 1974).

***Stereocaulon glabrum*** (Müll. Arg.) Vain.  
HABITAT ECOLOGY: on rocks, often amongst mosses. RECORDS IN AISEN: Tamango. DISTRIBUTION IN CHILE: Nahuelbuta National Park to Magallanes and Antarctic Territory. GLOBAL DISTRIBUTION: southernmost South America, Tristán de Cunha and Antarctica. (Lamb 1977; Øvstedal & Lewis Smith 2001).

***Stereocaulon implexum*** Th. Fr.  
HABITAT ECOLOGY: on rocks and soil in open sites. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Laguna de la Laja National Park to Magallanes. GLOBAL DISTRIBUTION: austral. (Lamb 1977).

***Stereocaulon ramulosum*** (Sw.) Räsusch.  
HABITAT ECOLOGY: on soil, rocks and mosses. RECORDS IN AISEN: Carretera Austral, Queulat, Isla Magdalena, Jeinimeni, Tamango, Valle Exploradores, Laguna San Rafael and Tortel. DISTRIBUTION IN CHILE: Talca to Magallanes and Antarctic Territory. GLOBAL DISTRIBUTION: cosmopolitan. (Galloway 1985; Øvstedal & Lewis Smith 2001).

***Stereocaulon tomentosum*** Fr.  
HABITAT ECOLOGY: on rocks. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: from Valdivia to Magallanes. GLOBAL DISTRIBUTION: circumpolar. (Goward & Ahti 1992).

***Stereocaulon vesuvianum*** Pers.  
HABITAT ECOLOGY: on rocks and soil. RECORDS IN AISEN: Tamango. DISTRIBUTION IN CHILE: Antuco to Magallanes and Antarctic Territory. GLOBAL DISTRIBUTION: cosmopolitan. (Galloway 1985; Øvstedal & Lewis Smith 2001).

***Sticta ainoae*** D.J. Galloway & J. Pickering  
HABITAT ECOLOGY: an epiphyte of forest trees and shrubs in humid, rather shaded habitats in Valdivian rainforest, also amongst mosses. RECORDS IN AISEN: Queulat, Isla Magdalena, Rio Cisnes, Valle Exploradores and Laguna San Rafael. DISTRIBUTION IN CHILE: Isla Mocha to Aisen. GLOBAL DISTRIBUTION: endemic to southern South America. (Galloway 1992a; 1994; Quilhot *et al.* 2010).

***Sticta caulescens*** De Not.

HABITAT ECOLOGY: an epiphyte of rainforest trees and shrubs, also on soil in very humid and often deeply shaded habitats. RECORDS IN AISEN: Isla Magdalena, Vagabundo, Valle Exploradores, Laguna San Rafael, on the roadside to Puerto Yungay and Katalalixar. DISTRIBUTION IN CHILE: Isla Mocha to Magallanes. GLOBAL DISTRIBUTION: endemic to southern South America. (Galloway 1994; Quilhot *et al.* 2010).

***Sticta fuliginosa*** (Hoffm.) Ach.

HABITAT ECOLOGY: an epiphyte of bark and twigs of trees and shrubs in rather drier habitats. RECORDS IN AISEN: Carretera Austral between Chaitén and Lago Yelcho, Queulat, Jeinimeni, Tamango, Laguna San Rafael, Valle Exploradores and Tortel. DISTRIBUTION IN CHILE: Putre, and from Fray Jorge National Park to Magallanes. GLOBAL DISTRIBUTION: cosmopolitan. (Herrera pers. comm.; Galloway 1992a, 1994).

***Sticta gaudichaldia*** Delise

HABITAT ECOLOGY: on soil and sandy soils, amongst mosses in rainforests. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Puyehue to Tierra del Fuego. GLOBAL DISTRIBUTION: endemic to southern South America. (Galloway 1992a, 1994).

***Sticta hypochra*** Vain.

HABITAT ECOLOGY: an epiphyte of trees and shrubs in rainforests, on stones and amongst mosses and rotten wood. RECORDS IN AISEN: Jeinimeni, Tamango and Laguna San Rafael, Tortel and Katalalixar. DISTRIBUTION IN CHILE: from Conguillio National Park to Isla Navarino. GLOBAL DISTRIBUTION: endemic to southern South America. (Galloway 1994; Redón & Quilhot 1977).

***Sticta limbata*** (Sm.) Ach.

HABITAT ECOLOGY: an epiphyte on twigs in understory vegetation in Valdivian rainforest. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Isla Mocha to Tierra del Fuego. GLOBAL DISTRIBUTION: cosmopolitan. (Galloway 1992a, 1994).

***Sticta longipes*** (Müll. Arg.) Malme

HABITAT ECOLOGY: an epiphyte in Valdivian rainforests in low-light situations and high humidity. RECORDS IN AISEN: Queulat and Laguna San Rafael. DISTRIBUTION IN CHILE: Isla Mocha to Aisen. GLOBAL DISTRIBUTION: endemic to southern South America. (Galloway 1994; Quilhot *et al.* 2010).

***Sticta santessonii*** D.J. Galloway

HABITAT ECOLOGY: a primarily terricolous species in low heathland vegetation, among mosses in situations of high

humidity. RECORDS IN AISEN: Queulat and Laguna San Rafael. DISTRIBUTION IN CHILE: Conguillio National Park to Magallanes. GLOBAL DISTRIBUTION: endemic to southern South America. (Galloway 1994).

***Sticta sublimbata*** (J. Steiner) Swinscow & Krog

HABITAT ECOLOGY: from bark of forest trees in open to moderately shaded habitats. RECORDS IN AISEN: Carretera Austral near Chaitén, Puerto Aisen and Laguna San Rafael. DISTRIBUTION IN CHILE: Isla Mocha, and from Puyehue to Aisen. GLOBAL DISTRIBUTION: paleotropical. (Galloway 1992a, 1994; Quilhot *et al.* 2010).

***Sticta weigeli*** (Ach.) Vain.

HABITAT ECOLOGY: on tree trunks and shrubs, on soil in fairly open habitats in areas of high humidity; from sea level up to 1500 m. RECORDS IN AISEN: Queulat and Laguna San Rafael. DISTRIBUTION IN CHILE: Fray Jorge National Park, and from Conguillio National Park to Isla Navarino. GLOBAL DISTRIBUTION: paleotropical. (Galloway 1992a, 1994, 2006; Redón & Quilhot 1977).

***Tapellaria epiphylla*** (Müll. Arg.) R. Sant.

HABITAT ECOLOGY: on tree bark and living leaves, in rainforests. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: from Valdivia to Magallanes. GLOBAL DISTRIBUTION: pantropical (Lücking *et al.* 2003).

***Tephromela atra*** (Huds.) Hafellner

HABITAT ECOLOGY: On tree bark and rocks. RECORDS IN AISEN: Jeinimeni and Tamango. DISTRIBUTION IN CHILE: Zapahuiria (3200 m), Juan Fernández Archipiélago, and from Valparaíso to Isla Navarino and Antarctic Territory. GLOBAL DISTRIBUTION: cosmopolitan (Galloway 1998; Øvstedal & Lewis Smith 2001; Redón & Quilhot 1977).

***Thamnotia vermicularis*** (Sw.) Ach. ex Schaer.

HABITAT ECOLOGY: on soil and mosses. RECORDS IN AISEN: Tamango and Tortel. DISTRIBUTION IN CHILE: Valdivia to Isla Navarino. GLOBAL DISTRIBUTION: bipolar. (Galloway 1985, 2007; Redón & Quilhot 1977).

***Thelotrema lepadinum*** (Ach.) Ach.

HABITAT ECOLOGY: an epiphyte of trees and shrubs. RECORDS IN AISEN: Valle Exploradores and Laguna San Rafael. DISTRIBUTION IN CHILE: Coquimbo, Juan Fernández Archipiélago, and from Concepción to Magallanes. GLOBAL DISTRIBUTION: cosmopolitan. (Galloway 1985).

***Toninia bullata*** (Meyen & Flot) Zahlbr.

HABITAT ECOLOGY: On rocks in open sites. RECORDS IN AISEN: Tamango and Jeinimeni (800 to 1100 m). DISTRIBUTION IN CHILE: Putre (3350 m), and from Laguna del Maule (2500 m) to Aisen. GLOBAL DISTRIBUTION: austral. (Galloway 1985, 1998).

***Toninia sedifolia*** (Scop.) Timdal

HABITAT ECOLOGY: on soil and rocks in alpine zones. RECORDS IN AISEN: Tamango. DISTRIBUTION IN CHILE: Laguna del Maule, from Aisen to Magallanes. GLOBAL DISTRIBUTION: cosmopolitan. (Timdal 2002).

***Tukermannopsis chlorophylla*** (Willd.) Hale

HABITAT ECOLOGY: an epiphyte in living trunks in rather drier habitats. RECORDS IN AISEN: Jeinimeni, Tamango and Vagabundo. DISTRIBUTION IN CHILE: La Campana National Park to Magallanes. GLOBAL DISTRIBUTION: bipolar. (Kärnefelt *et al.* 1992).

***Umbilicaria antarctica*** Frey & I.M. Lamb

HABITAT ECOLOGY: on rocks in alpine areas. RECORDS IN AISEN: Jeinimeni and Tamango (1100 m elevation). DISTRIBUTION IN CHILE: Aisen, Magallanes and Antarctic Territory. GLOBAL DISTRIBUTION: east of Spain, South America, Antarctica. (Øvstedal & Lewis Smith 2001).

***Umbilicaria cylindrica*** (L.) Del.

HABITAT ECOLOGY: on rocks in steppe areas. RECORDS IN AISEN: Jeinimeni and Tamango. DISTRIBUTION IN CHILE: from Llanquihue to Magallanes. GLOBAL DISTRIBUTION: cosmopolitan. (Galloway 1985, 2007).

***Umbilicaria decussata*** (Vill.) Zahlbr.

HABITAT ECOLOGY: on rocks in steppe areas. RECORDS IN AISEN: Jeinimeni. DISTRIBUTION IN CHILE: Portillo, Laguna del Maule, and from Llanquihue to Magallanes and Antarctic Territory. GLOBAL DISTRIBUTION: cosmopolitan. (Galloway 2007; Øvstedal & Lewis Smith 2001; Sancho *et al.* 1992).

***Umbilicaria nylanderiana*** (Zahlbr.) H. Magn.

HABITAT ECOLOGY: on rocks in steppe areas. RECORDS IN AISEN: Chile Chico and Fachinal. DISTRIBUTION IN CHILE: from Osorno to Magallanes and Antarctic Territory. GLOBAL DISTRIBUTION: bipolar. (Galloway 2007; Øvstedal & Lewis Smith 2001; Sancho *et al.* 1992).

***Umbilicaria polyrrhiza*** (L.) Fr.

HABITAT ECOLOGY: on rocks in open sites in steppe areas. RECORDS IN AISEN: Chile Chico and Carretera Austral between

Cochrane and Villa O'Higgins. DISTRIBUTION IN CHILE: Laguna del Maule to Magallanes. GLOBAL DISTRIBUTION: cosmopolitan. (Crespo & Sancho 1978; UACH-UDEC 2007, 2008).

***Usnea acromelana*** Stirt.

HABITAT ECOLOGY: on rocks and soil in open sites. RECORDS IN AISEN: Jeinimeni and Tamango. DISTRIBUTION IN CHILE: Llanquihue to Isla Navarino and Antarctic Territory. GLOBAL DISTRIBUTION: austral. (Øvstedal & Lewis Smith 2001; Wirtz 2006; Wirtz *et al.* 2008).

***Usnea aurantiaco-atra*** (Jacq.) Bory

HABITAT ECOLOGY: on rocks in open sites. RECORDS IN AISEN: Tamango. DISTRIBUTION IN CHILE: Llanquihue to Isla Navarino and Antarctic Territory. GLOBAL DISTRIBUTION: southernmost South America and Antarctica. (Øvstedal & Lewis Smith 2001; Redón 1974; Redón & Quilhot 1977; Wirtz 2006; Wirtz *et al.* 2008).

***Usnea cornuta*** Körb.

HABITAT ECOLOGY: on wood, bark and rocks, usually in well open situations. RECORDS IN AISEN: on the road side between Cochrane and Villa O'Higgins. DISTRIBUTION IN CHILE: Aisen. GLOBAL DISTRIBUTION: cosmopolitan. (Fos & Clerc 2000; UACH-UDEC 2007, 2008).

***Usnea trachycarpa*** (Stirt.) Müll. Arg.

HABITAT ECOLOGY: on rocks in open sites. RECORDS IN AISEN: Tamango. DISTRIBUTION IN CHILE: Llanquihue to Isla Navarino and Antarctic Territory. GLOBAL DISTRIBUTION: endemic to southern South America. (Øvstedal & Lewis Smith 2001; Redón 1974; Redón & Quilhot 1977; Wirtz 2006; Wirtz *et al.* 2008).

***Verrucarua maura*** Wahlenb.

HABITAT ECOLOGY: on coastal rocks. RECORDS IN AISEN: Laguna San Rafael. DISTRIBUTION IN CHILE: Llanquihue to Isla Navarino and Antarctic Territory. GLOBAL DISTRIBUTION: cosmopolitan. (Galloway 1922a; Øvstedal & Lewis Smith 2001; Redón & Quilhot 1977).

***Xanthoparmelia ulcerosa*** (Zahlbr.) Hale

HABITAT ECOLOGY: on rocks in open sites. RECORDS IN AISEN: Estancia Ñirehuao, Coyhaique. DISTRIBUTION IN CHILE: Valparaíso and Santiago, from Aisen to Magallanes. GLOBAL DISTRIBUTION: the species is apparently restringed to South America. (Nash III *et al.* 1995).

***Xanthoparoma contextum*** (Stirt.) Elvebakk

HABITAT ECOLOGY: an epiphyte of trees and shrubs, also on mosses in habitats of high humidity. RECORDS IN AISEN:

Queulat, Puerto Cisnes, Puerto Aisen, Valle Exploradores and Carretera Austral 38 km north of Bahía Murta. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago, and from Malleco Province to Magallanes. GLOBAL DISTRIBUTION: austral. (Elvebakk *et al.* 2010).

***Xanthopora soccatum*** (R. Br. ex Cromb.) Elvebakk  
HABITAT ECOLOGY: on twigs of shrubs and trees, also on mosses. RECORDS IN AISEN: Puerto Aisen, Lago Las Torres and Laguna San Rafael. DISTRIBUTION IN CHILE: Juan Fernández Archipiélago and from Villarrica to Aisen. GLOBAL DISTRIBUTION: australasian. (Elvebakk *et al.* 2010).

***Xanthoria candelaria*** (L.) Th. Fr.  
HABITAT ECOLOGY: on rocks in open sites. RECORDS IN AISEN: Jeinimeni, Tamango and Laguna San Rafael. DISTRIBUTION IN CHILE: Llanquihue to Isla Navarino and Antarctic Territory. GLOBAL DISTRIBUTION: bipolar. (Øvstedal & Lewis Smith 2001; Redón & Quilhot 1977).

#### ACKNOWLEDGEMENTS

We are greatly indebted to D.J. Galloway, J.W. Bjerke, Arve Elvebakk and B. Goffinet for their inestimable collaboration in the identification of the species; to Daniela Castro, Coordinator of the project Biodiversidad de Aisen; to Sergio Herrera, Coordinator of Darwin Project; to CONAF XI Region, especially to Dennis Aldridge and the guardparks Hernán Velázquez, Tomás Ormeño, Javier Subiabre and Benjamín Molina; to Raleigh International and Venturers for field assistance; to Fernanda Cavieres, from the Universidad de Valparaíso, for reviewing the manuscript. We are sincerely grateful to the Dirección de Investigación of the Universidad de Valparaíso for several grants to investigate lichens in Aisen.

#### REFERENCES

ADLER, M. & S. CALVELO. 1996a. Noteworthy reports on *Anzia* (lichenized Ascomycotina) from Southern South America. *Mycotaxon* 58: 147-156.  
ADLER, M. & S. CALVELO. 1996b. Two new species of the genus *Menegazzia* (Parmeliaceae sensu lato, lichenized Ascomycota) from southern South America. *Mycotaxon* 59: 367-372.  
ADLER, M. & S. CALVELO. 2002. Parmeliaceae species (lichenized Ascomycetes) from Tierra del Fuego (southern South America) and their world distribution patterns. In: A. Thell & T. Feuerer (eds.), Biodiversity and Ecology Proceedings of the Fourth Meeting of Latin American Lichenologists. GLAL-4. Mitteilungen aus dem Institut für Allgemeine Botanik, Hamburg 30-32: 9-24.  
AHTI, T. 2000. Cladoniaceae. *Flora Neotropica Monograph* 78: 1-

363. *New York Bot. Garden, New York.*  
ARVIDSSON, L. 1983. A monograph of the lichen genus *Coccocarpiaria*. *Opera Botanica* 67: 1-96.  
ARVIDSSON, L. 1992. Coccocarpiaceae. *Flora of Australia* 54: 152-159.  
ARVIDSSON, L. & D.J. GALLOWAY. 1981. *Degelia*, a new lichen genus in the Pannariaceae. *Lichenologist* 13: 27-50.  
BJERKE, J.W. 2001. A new sorediate species of *Menegazzia* (Parmeliaceae, lichenized Ascomycota) from Chile. *Lichenologist* 33: 117-120.  
BJERKE, J.W. 2005. Synopsis of the lichen genus *Menegazzia* (Parmeliaceae, Ascomycota) in South America. *Mycotaxon* 81: 423-454.  
BJERKE, J.W. & A. ELVEBAKK. 1999. *Flavoparmelia soredians*, a common but previously overlooked lichen species in southernmost Chile. *Anales Instituto Patagonia, Serie Ciencias Naturales (Chile)* 27: 17-23.  
BJERKE, J.W. & A. ELVEBAKK. 2001. The sorediate species of the genus *Menegazzia* (Parmeliaceae, lichenized Ascomycotina) in southernmost South America. *Mycotaxon* 78: 363-392.  
BJERKE, J.W., A. ELVEBAKK & W. QUILHOT. 2003a. Distribution and habitat ecology of the sorediate species of *Menegazzia* (Parmeliaceae, lichenized Ascomycota) in Chile. *Revista Chilena de Historia Natural* 76: 79-98.  
BJERKE, J.W., D.J. GALLOWAY, A. ELVEBAKK & W. QUILHOT. 2003b. *Pseudocyphellaria dasyphyllidia* – a new phylloidiate species from Chile (Lobariaceae, lichenized Ascomycota). *Cryptogamie Mycologie* 24: 59-66.  
BLANCO, O., A. CRESPO, P.K. DIVAKAR, T.L. ESSLINGER, D.L. HAWKSWORTH & H.T. LUMBSCH. 2004. *Melanelixia* and *Melanohalea*, two new genera segregated from *Melanelia* (Parmeliaceae) based on molecular and morphological data. *Mycological Research* 108: 873-884.  
BRODO, I.M. & D.L. HAWKSWORTH. 1977. *Alectoria* and allied genera in North America. *Opera Botanica* 42: 1-164.  
BRUSSE, E.A. & I. KÄRNEFELT. 1991. The new Southern Hemisphere genus *Coelopogon* (Lecanorales, Ascomycotina) with a new species from South Africa. *Mycotaxon* 42: 35-41.  
CALVELO, S., E. STOCKER-WÖRGÖTTER, S. LIBERATORE & J.A. ELIX. 2003. *Protousnea fibrillatae* sp. nov. (Parmeliaceae, lichenized Ascomycota) from Argentina, Southern South America. *Mycotaxon* 80: 277-287.  
CALVELO, S., E. STOCKER-WÖRGÖTTER, S. LIBERATORE & J.A. ELIX. 2005. *Protousnea* (Parmeliaceae, Ascomycota) a genus endemic to southern South America. *Bryologist* 108: 1-15.  
CRESPO, A. & L.G. SANCHO. 1978. Umbilicariaceae (Lichenes) de la Sierra de Guadarrama (España). *Anales Instituto Botánica Cavanilles* 85: 79-101.  
CULBERSON, W.L. & C.F. CULBERSON. 1968. The lichen genera *Cetrelia* and *Platismatia* (Parmeliaceae). *Contribution to the U.S. National Herbarium* 34: 449-558.  
DANIELS, L.D. & T.T. VELEN. 2000. ENSO effects on temperature and precipitation of the Patagonian-Andean region: implications for biogeography. *Physical Geography* 21: 223-252.  
ELIX, J.A. 1992. *Hypogymnia*. *Flora of Australia* 54: 201-213.  
ELIX, J.A. 1994. *Hypotrachyna*. *Flora of Australia* 55: 49-59.  
ELIX, J.A. & P.M. MCCARTHY. 1998. Catalogue of the lichens of the smaller Pacific Islands. *Bibliotheca Lichenologica* 70; pp. 1-361. J. Cramer, Berlin, Stuttgart.



- ELVEBAKK, A. 2007. The panaustral lichen *Pannaria sphinctrina* (Mont.) Tuck. and the related new species *P. lobulifera* from New Caledonia. *Cryptogamie, Mycologie* 28: 225-235.
- ELVEBAKK, A. & J.W. BJERKE. 2005. *Pannaria isabellina* (Vain.) comb. nov., a remarkable lichen species from Chile. *Lichenologist* 37: 47-54.
- ELVEBAKK, A. & R. MOBERG. 2002. Foliose and placodioid species of the lichen family Physciaceae in southernmost Chile. *Lichenologist* 34: 311-320.
- ELVEBAKK, A., J. FRITT-RASMUSSEN & J.A. ELIX. 2007. The New Zealand lichen *Pannaria leproloma* (Nyl.) P.M. Jørg. and its panaustral relative *P. farinosa* nom. nov. *Lichenologist* 39: 349-359.
- ELVEBAKK, A., E.H. ROBERTSEN, CH.H. PARK & S.G. HONG. 2010. *Psorophorus* and *XanthopSOROMA*, two new genera for yellow-green, corticolous and squamulose lichen species, previously in *Psoroma*. *Lichenologist* 42: 563-585.
- FEDORENKO, N., S. STENROOS, A. THELL, T.I. KÄRNEFELT & S.Y. KODRATYUK. 2009. A phylogenetic analysis of xanthorioid lichens (Teloschistaceae, Ascomycota) based on ITS and mtSSU sequences. *Bibliotheca Lichenologica* 100: 49-94.
- FILSON, R.B. 1992. *Collema*. *Flora of Australia* 54: 161-173.
- FOLLMANN, G. 1967. Die Flechtenflora der nordchilenischen Nebelose Cerro Moreno. *Nova Hedwigia* 14: 215-281.
- FOS, S. & P. CLERC. 2000. The lichen genus *Usnea* on *Quercus suber* in Iberian cork-oak forests. *Lichenologist* 32: 67-88.
- GALLOWAY, D.J. 1983. New taxa in the New Zealand lichen flora. *New Zealand Journal of Botany* 21: 191-199.
- GALLOWAY, D.J. 1985. *Flora of New Zealand Lichens*. P.D. Hasselberg, Government Printer, Wellington, New Zealand. pp. 1-662.
- GALLOWAY, D.J. 1992a. Lichens of Laguna San Rafael, Parque Nacional "Laguna San Rafael", southern Chile, indicators of environmental change. *Global Geology and Biogeography Letters* 2: 37-45.
- GALLOWAY, D.J. 1992b. Studies in *Pseudocyphellaria* (lichens) III. The South American species. *Bibliotheca Lichenologica* 46: 1-275.
- GALLOWAY, D.J. 1994. Studies on the lichen genus *Sticta* (Schreber) Ach. I. Southern South American species. *Lichenologist* 26: 223-282.
- GALLOWAY, D.J. 1996. Los líquenes del bosque templado de Chile. In: J.J. Armesto, C. Villagrán, M.K. Arroyo (eds.). *Ecología de los bosques nativos de Chile*; pp. 101-112. Editorial Universitaria, Universidad de Chile.
- GALLOWAY, D.J. 1998. The lichens of Chile: present knowledge and future prospects. In: M.P. Marcelli & M.R.S. Seaward (eds.). *Lichenology in Latin America: history, current knowledge and applications*; pp. 87-100. CETEBS. Sao Paulo.
- GALLOWAY, D.J. 2002. Taxonomic notes on the lichen genus *Placopsis* (Argyriaceae, Ascomycotina) in southern South America with a key to species. In: A. Thell & T. Feuerer (eds.), *Biodiversity and Ecology. Proceedings of the fourth Meeting of Latin American Lichenologists*. GLAL-4. Mitteilungen aus dem Institut für Allgemeine Botanik, Hamburg 30-32: 79-107.
- GALLOWAY, D.J. 2006. Notes on the holotype of *Sticta damaecornis* β *wiegeli* Ach. (= *Sticta wiegeli*). *Lichenologist* 38: 89-92.
- GALLOWAY, D.J. 2007. *Flora of New Zealand Lichens*. Revised second edition including lichen-forming and lichenicolous fungi. Manaaki Whenua Press. Lincoln. Pp. 12261.
- GALLOWAY, D.J. 2010. Additions to the *Placopsis* mycobiota (Trapeliaceae, Ascomycota), of southern South America, with notes on new records (including *Aspiciliopsis macrophthalma*), and a revised key regional key to species. *Lichenologist* 42: 727-737.
- GALLOWAY, D.J. & G. GUZMÁN GRIMALDI. 1988. A new species of *Phlyctis* from Chile. *Lichenologist* 20: 393-397.
- GALLOWAY, D.J. & P.W. JAMES. 1985. The lichen genus *Psoromidium* Stirton. *Lichenologist* 17: 173-188.
- GALLOWAY, D.J. & P.W. JAMES. 1987. *Metus*, a new austral lichen genus and notes on an Australasian species of *Pycnothelia*. *Notes from the Royal Botanical Garden Edinburgh* 44: 561-570.
- GALLOWAY, D.J. & P.M. JØRGENSEN. 1987. Studies on the lichen family Pannariaceae. II. The genus *Leioderma* Nyl. *Lichenologist* 19: 345-400.
- GALLOWAY, D.J. & P.M. JØRGENSEN. 1995. The lichen genus *Leptogium* (Collembataceae) in southern Chile. In: F.J.A. Daniels, M. Schultz & J. Peine (eds.), *Flechten Follmann. Contributions to Lichenology in honour of Gerhard Follmann*; pp. 227-247. Geobotanical and Phytotaxonomical Study Group. Botanical Institut, University of Cologne, Cologne, Germany.
- GALLOWAY, D.J. & W. QUILHOT. 1999 [1998]. Checklist of Chilean lichen-forming and lichenicolous fungi. *Gayana Botanica* 55: 111-185.
- GALLOWAY, D.J. & L.A. WATSON-GANDY. 1992. *Lepolichen coccophorus* (Lichenized Ascomycotina, Coccotematraceae) in South America. *Bryologist* 95: 227-232.
- GALLOWAY, D.J., W. QUILHOT & P.M. JØRGENSEN. 2006. *Pannaria conoplea* and *P. tavaresii* (Ascomycota: Parmeliaceae) new to Chile. *Lichenologist* 38 83-87.
- GOWARD, T. & T. AHTI. 1992. Macrolichens and their zonal distribution in Wells Gray Provincial Park and its vicinity, British Columbia, Canadá. *Acta Botanica Fennica* 147: 1-60.
- GOWARD, T., B. GOFFINET & O. VITIKAINEN. 1995. Synopsis of the genus *Peltigera* (lichenized Ascomycetes) in British Columbia, with a key to the Northamerican species. *Canadian Journal of Botany* 73: 91-111.
- GRUBE, M & G. KANTIVILAS. 2006. *Siphula* represents a remarkable case of morphological convergence in sterile lichens. *Lichenologist* 38: 241-249.
- HALE, M.E. JR. 1974. Delimitation of the lichen genus *Hypotrachyna* (Vain.) Hale. *Phytologia* 28: 340-342.
- HALE, M.E. JR. 1975. A revision of the lichen genus *Hypotrachyna* (Parmeliaceae) in tropical America. *Smithsonian Contributions Botany* 25:1-73.
- HALONEN, P., L. MYLLYS, S. VELMALA & H. HYVÄRINEN. 2009. *Gowardia* (Parmeliaceae) – a new alectorioid lichen genus with two species. *Bryologist* 112: 138-146.
- HENSSEN, A. & B. RENNER. 1981. Studies on the genus *Psoroma*. 2. *Psoroma tenue* and *Psoroma cinnamomeum*. *Mycotaxon* 13: 433-440.

- HERTEL, H. 1997. On the genus *Lecidea* (Lecanorales) in Southern Chile and Argentina. In: L. Tibell. & I. Hedberg (eds.), Lichen Studies Dedicated to Rolf Santesson. Symbolae Botanicae Upsalienses, Acta Universitatis Upsaliensis 32: 95-111.
- HERTEL, H. 2001. Floristic and taxonomic notes on saxicolous lecideoid lichens. *Sendtnera* 7: 93-136.
- HERTEL, H. 2007. Notes on and records of Southern Hemisphere lecideoid lichens. In: I. Kärnefelt & A. Thell (eds.) Lichenological Contributions in Honour of David Galloway, *Bibliotheca Lichenologica* 95: 267-296. J. Cramer Berlin-Stuttgart.
- HÖGBERG, N., S. KROKEN, G. THOR & J.W TAYLOR. 2002. Reproductive mode and genetic variation suggest a North American origin of European *Letharia vulpina*. *Molecular Ecology* 11: 1191-1196.
- JACOBSEN, P. & L. KAPPEN. 1989. Notes on *Rinodina olivaceobrunnea* in the Antarctic. *Lichenologist* 21: 173-177.
- JAMES, P.W. & F.J. WHITE. 1987. Studies on the genus *Nephroma* I. The European Macaronesian species. *Lichenologist* 19: 215-268.
- JØRGENSEN, P.M. 1999. Studies in the lichen family Pannariaceae VIII. Seven new parmelielloid lichens from New Zealand. *New Zealand Journal of Botany* 37: 257-268.
- JØRGENSEN, P.M. 2004. Further contributions to the Pannariaceae (lichenized Ascomycetes) of the Southern Hemisphere. *Bibliotheca Lichenologica* 31: 341-347.
- JØRGENSEN, P.M. 2006. *Conspectus familiae Pannariaceae (Ascomycetes lichenosae)*. Revised version. Botanisk Institutt, Bergen University. Norway. Pp. 1-84.
- JØRGENSEN, P.M. & D.J. GALLOWAY. 1992. Pannariaceae. *Flora of Australia* 54: 246-293.
- JØRGENSEN, P.M. & M. WEDIN. 1999. On *Psoroma* species from the Southern Hemisphere with cephalodia producing vegetative dispersal units. *Lichenologist* 31: 341-347.
- KANTVILAS, G. 1986. Studies on the lichen genus *Siphula* in Tasmania I. *Siphula complanata* and its allies. *Herzogia* 15: 1-12.
- KANTVILAS, G. & J.A. ELIX. 2002. The taxonomy, chemistry and morphology of some South American species of *Siphula*. *Herzogia* 15: 1-12.
- KÄRNEFELT, I., J.E. MATTSSON & A. THELL. 1992. Evolution and phylogeny of cetraroid lichens. *Plant Systematics and Evolution* 183: 113-160.
- KITZBERGER, T. & T.T. VEBLEN. 2000. Effects of climatic variability on facilitation of tree establishment in northern Patagonia. *Ecology* 81: 1914-1924.
- KROG, H. 1976. *Lethariella* and *Protousnea*, two new lichen genera in Parmeliaceae. *Norwegian Journal of Botany* 23:83-106.
- KÜMMERLING, H., D. TRIEBEL & G. RAMBOLD 1993. *Lepraria neglecta* and its lichenicolous fungi. *Bibliotheca Lichenologica* 53: 147-160.
- LAMB, I.M. 1977. A conspectus of the lichen genus *Stereocaulon* (Schreb.) Hoffm. *Journal of the Hattori Botanical Laboratory* 44: 209-250.
- LAUNDON, J.R. 1981. The species of *Chrysothrix*. *Lichenologist* 13: 101-121.
- LOUWHOFF, S.H.J.J. & J.A. ELIX. 2002. The Parmeliaceae (lichenized Ascomycota) of New Caledonia. *Lichenologist* 34: 373-394.
- LÜCKING, R. 1992. Foliicolous lichens. A contribution to the knowledge of the lichen flora of Costa Rica, Central America. *Nova Hedwigia* 104: 1-179.
- LÜCKING, R. & K. KALB. 2000. Foliikole Flechten aus Brasilien (vornehmlich Amazonien), inklusive einer Checkliste und Bemerkungen zu *Coenogonium* und *Dimerella* (Gyalectaceae). *Botanische Jahrbücher* 122: 1-61.
- LÜCKING, R., V. WIRTH, L.I. FERRARO & M.S.C. CÁCERES. 2003. Foliicolous lichens from Valdivian temperate rainforest of Chile and Argentina: evidence of an austral element, with the description of seven new taxa. *Global Ecology and Biogeography* 12: 21-36.
- LUMBSH, H.T. & J.A. ELIX. 2004. *Lecanora*. *Flora of Australia* 56A:12-62.
- MACCUNE, B. 2002. *Hypogymnia*. In: T.H. Nash III, B.D. Ryan, C. Gries & F. Bungartz (eds.), Lichen Flora of the Sonoran Desert Region Vol. 1: 228-238. Lichens Unlimited, Arizona State University, Tempe, Arizona.
- MARTÍNEZ, I., A.R. BURGAS, O. VITIKAINEN & A. ESCUDERO. 2003. Distribution patterns in the genus *Peltigera* Willd. *Lichenologist* 35: 301-323.
- MESSUTI, M.I. 1996. Notes on the lichen genus *Coccotrema* in southern South America. *New Zealand Journal of Botany* 34: 57-64.
- MESSUTI, M.I. 2005. The genus *Pertusaria* (Pertusariaceae) in the Juan Fernandez Archipiélago. 2005. *Lichenologist* 37: 111-122.
- MESSUTI, M.I. & P.L. CODESAL. 2009. *Phaeographis patagonica* (Graphidaceae, Ascomycota), nueva cita para Argentina. *Gayana Botanica* 66: 301-303.
- MESSUTI, M.I., G. VOBIS & I.N. DE LA ROSA. 2007. First record of the lichen *Metus pileatus* in Argentina In: I. Kärnefelt & A. Thell (eds.) Lichenological Contributions in Honour of David Galloway, *Bibliotheca Lichenologica* 95: 471-477. J. Cramer Berlin–Stuttgart.
- MUÑOZ-SCHICK, M., R. PINTO, A. MEZA & A. MOREIRA-MUÑOZ. 2001. “Oasis de neblina” en los cerros costeros del sur de Iquique, Región de Tarapacá, Chile, durante el evento El Niño 1997-98. *Revista Chilena de Historia Natural* 74: 389-405.
- NASH III, T.H. & J.A. ELIX. 2002a. *Flavoparmelia*. In: T.H. Nash III, B.D. Ryan, C. Gries & F. Bungartz (eds.), Lichen Flora of the Sonoran Desert Region Vol. 1: 194-196. Lichens Unlimited, Arizona State University, Tempe, Arizona.
- NASH III, T.H. & J.A. ELIX. 2002b. *Parmotrema*. In: T.H. Nash III, B.D. Ryan, C. Gries & F. Bungartz (eds.), Lichen Flora of the Sonoran Desert Region Vol. 1: 316-339. Lichens Unlimited, Arizona State University, Tempe, Arizona.
- NASH III, T.H. & J.A. ELIX. 2002c. *Rimelia*. In: T.H. Nash III, B.D. Ryan, C. Gries & F. Bungartz (eds.), Lichen Flora of the Sonoran Desert Region Vol. 1: 449-451. Lichens Unlimited, Arizona State University, Tempe, Arizona.
- NASH III, T.H., GRIES, C. & J.A. ELIX. 1995. A revision of the lichen genus *Xanthoparmelia* in South America. *Biblioth. Lichenol.* 56: 1-157.
- NASH III, T.H., H.G.M. SIPMAN & J.A. ELIX. 2002. *Hypotrachyna*. In: T.H. Nash III, B.D. Ryan, C. Gries & F. Bungartz (eds.), Lichen Flora of the Sonoran Desert Region Vol. 1:238-251. Lichens Unlimited, Arizona State University, Tempe, Arizona.

- ØVSTEDAL, D.O. & R.I. LEWIS SMITH. 2001. Lichens of Antarctica and South Georgia. A Guide to their Identification and Ecology. Cambridge University Press.
- PARMASTO, E. 1978. The genus *Dictyonema* (Thelephorolichenes). *Nova Hedwigia* 29: 99-144.
- PASSO, A. & S. CALVELO. 2006. New reports and combinations in the family Pannariaceae (*Lecanorales*, lichenized Ascomycota). *Lichenologist* 38: 549-555.
- PASSO, A., S. STENROOS & S. CALVELO. 2008. *Jorgensenia*, a new genus to accommodate *Psoroma cephalodium* (lichenized Ascomycota). *Mycological Research* 112:1455-1474.
- PRINTZEN, C., S. EKMAN & T. TØNSBERG. 2003. Phylogeography of *Cavernularia hulthenii*: evidence of slow genetic drift in a widely disjunct lichen. *Molecular Ecology* 12: 1473-1486.
- QUILHOT, W., C. RUBIO & J.W. BJERKE. 2002a. El género *Menegazzia* (Parmeliaceae, Ascomycotina liquenizada) en Laguna San Rafael, sur de Chile. *Boletín Museo Nacional Historia Natural Chile* 51: 81-84.
- QUILHOT, W., C. RUBIO, M. BERNAL & M. WEDIN. 2002b. Estructura de comunidades líquénicas en troncos basales de *Embothrium coccineum* en Laguna San Rafael, sur de Chile. *Boletín Museo Nacional Historia Natural Chile* 51: 85-96.
- QUILHOT, W., C. RUBIO, E. FERNÁNDEZ & M.E. HIDALGO. 2002c. Efectos de la radiación UV-solar en la acumulación de 1'-cloropropanina en *Erioderma leylandii* (Pannariaceae, Ascomycotina liquenizado) en Laguna San Rafael, sur de Chile. *Boletín Museo Nacional Historia Natural Chile* 51: 75-80.
- QUILHOT W., C. RUBIO & M. CUELLAR. 2007. Comparative studies between the lichen flora from Chile and Antarctica. In: I. Kärnefelt & A. Thell (eds.), *Lichenological Contributions in Honour of David Galloway*. *Bibliotheca Lichenologica Band 95*, pp. 479-488.
- QUILHOT, W., M. CUELLAR, R. DÍAZ, F. RIQUELME & C. RUBIO. 2010. Estudio preliminar de la flora líquénica de Isla Mocha, sur de Chile. *Gayana Botanica* 67: 194-200.
- RAMBOLD, G. 1989. A monograph of the saxicolous lecideoid lichens of Australia (excl. Tasmania). *Bibliotheca Lichenologica* 34: 1-345.
- REDÓN, J. 1974. Observaciones sistemáticas y ecológicas en líquenes del Parque Nacional Vicente Pérez Rosales. *Anales del Museo de Historia Natural de Valparaíso* 7: 169-222.
- REDÓN, J. 1985. *Líquenes Antárticos*. Instituto Antártico Chileno, INACH, Santiago.
- REDÓN J & W. QUILHOT. 1977. Los líquenes de Isla Navarino. I. Estudio sistemático y ecológico preliminar. *Serie Científica Instituto Antártico Chileno* 5: 65-70.
- REDÓN J. & A. WALKOWIAK. 1978. Estudio preliminar de la flora líquénica del Parque Nacional "La Campana". I. Resultados sistemáticos. *Anales del Museo de Historia Natural de Valparaíso* 11: 19-36.
- RYAN, B.D. 2002a. *Bryoria*. In: T.H. Nash III, B.D. Ryan, C. Gries & F. Bungartz (eds.), *Lichen Flora of the Sonoran Desert Region Vol. 1*: 109-114. Lichens Unlimited, Arizona State University, Tempe, Arizona.
- RYAN, B.D. 2002b. *Parmeliopsis*. In T.H. Nash III, B.D. Ryan, C. Gries & F. Bungartz (eds.), *Lichen Flora of the Sonoran Desert Region Vol. 1*: 315-317. Lichens Unlimited, Arizona State University, Tempe, Arizona.
- RYAN, B.D. 2002c. *Rhizoplaca*. In: T.H. Nash III, B.D. Ryan, C. Gries & F. Bungartz (eds.), *Lichen Flora of the Sonoran Desert Region Vol. 1*: 442-448. Lichens Unlimited, Arizona State University, Tempe, Arizona.
- SANCHO, L.G., L. KAPPEN & B. SCHROETER. 1992. The lichen genus *Umbilicaria* on Livingston Island, South Shetland Islands, Antarctica. *Antarctic Science* 4: 189-196.
- SCHEIDEGGER, D. 1993. A revision of saxicolous species of the genus *Buellia* De Not. And formerly included genera in Europe. *Lichenologist* 25: 315-364.
- SCHMITT, I., M.I. MESSUTI, G.B. GEIGE & H.T. LUMBSCH. 2001. Molecular data support rejection of the generic concept in the Coccotremataceae (Ascomycota). *Lichenologist* 33: 315-321.
- SIPMAN, H.J.M. 1986. Notes on the lichen genus *Everniastrum* (Parmeliaceae). *Mycotaxon* 26: 235-251.
- STENROOS, S. 1995. Cladoniaceae (Lecanorales. Lichenized Ascomycotina) en la flora de Chile. *Gayana Botanica* 52: 89-131.
- TIMDAL, E. 2002. *Toninia*. In: T.H. Nash III, B.D. Ryan, C. Gries & F. Bungartz (eds.), *Lichen Flora of the Sonoran Desert Region Vol. 1*, pp. 488-502. Lichens Unlimited, Arizona State University, Tempe, Arizona.
- TIMDAL, E. & T. TØNSBERG. 2006. *Psoroma palaceum* comb. nov. The only hairy *Psoroma* in Northern Europa. *Graphis Scripta* 18: 54-57.
- UACH-UDEC. 2007. Determinación de las líneas de base de vegetación y flora terrestre para el Proyecto Hidroeléctrico Aysén. Informe de manejo forestal. UACH-Instituto de Botánica, Universidad de Concepción. 235 pp.
- UACH-UDEC. 2008. Determinación de las líneas de base de vegetación y flora terrestre para el Proyecto Hidroeléctrico Aysén. Informe Complementario. Instituto de Manejo Forestal UACH- Instituto de Botánica, Universidad de Concepción. 43 pp.
- VILLAGRA, J., D. MONTENEGRO, C. SAN MARTÍN, C. RAMÍREZ & I. ALVAREZ. 2009. Estudio de la flora líquénica de las turberas de la comuna de Tortel (Región de Aisen) Patagonia Chilena. *Anales del Instituto de la Patagonia, Universidad de Magallanes, Chile* 37: 53-62.
- WEDIN, M. 1995. The lichen family Sphaerophoraceae (Caliciales, Ascomycotina) in temperate areas of the Southern Hemisphere. *Symbolae Botanicae Upsalienses* 31: 1-102.
- WEDIN, M. 2002. The genus *Calycidium* Stirt. *Lichenologist* 34: 63-69.
- WHITE, F.J. & P.W. JAMES. 1988. Studies on the genus *Nephroma* II\*, the southern temperate species. *Lichenologist* 20: 103-166.
- WIRTZ, N. 2006. Phylogenie und phylogeographie antarktischer und bipolar flechten der Gattung *Usnea* and *Neuropogon*. Dissertation, University Duisburg-Essen, Germany.
- WIRTZ, N., C. PRINTZEN & H.T. LUMBSCH. 2008. The delimitation of Antarctic and bipolar species of neuropogonoid *Usnea* (Ascomycota, Lecanorales): a cohesion approach of species recognition for the *Usnea perpusilla* complex. *British Mycological Society* 112: 472-484.

Recibido: 21.06.11  
 Aceptado: 12.10.11