

New and interesting lichenized and lichenicolous fungi from the Canary Island La Palma

P.P.G. van den Boom*

Abstract

A study of lichens and lichenicolous fungi from the Canary Islands, in particular La Palma, is presented. Fifty taxa are mentioned for La Palma, including 11 records new for Macaronesia, 4 new for the Canary Islands and 47 new for the island. Saxicolous, corticolous as well as foliicolous species are recorded. Notes are given on ecology and sometimes on morphology and chemistry.

Key words: Lichenized ascomycetes, biodiversity, new records, mycoflora of Macaronesia,

Introduction

La Palma is the most north western Canary Island. It lies in the mid-Atlantic, between 17.7° - 18.0° W longitudinal and between 28.2° - 28.5° N latitudinal. It is dominated by the volcano Caldera la Taburiente, of which the highest peak is Roque de los Muchachos with an altitude of 2430 m. This island has an area of 728 km². The mean annual temperature varies from 19° to 23.5 °C. These differences are most pronounced on the E side of the Island.

La Palma is the island with the best preserved Laurisilva forests, an unique ecosystem occurring throughout Macaronesia. They are situated at the NE side of the island. The annual rainfall varies here between 700 and 1000 mm, depending on the altitude. In contrast, coastal areas such as Tazacorte (W side) or Mazo-aeropuerto (E side), the annual rainfall is rather low, between 250 and 300 mm.

Specimens for this study were collected in coastal areas, Laurisilva forests (Los Tilos and Cubo de la Galga) and centrally up to altitudes of 1000 m. For an indication of these collecting sites see Fig. 1.

During a one week fieldtrip to La Palma by the author in 1999 altogether more than 700 collections of lichens and lichenicolous fungi were made. As result of this trip, some species have been described already; *Buellia laurocanariensis* GIRALT, ETAYO & VAN DEN BOOM, *Cercidospora rinodinae* ETAYO & VAN DEN BOOM, *Gyalecta canariensis* VAN DEN BOOM & VĚZDA, and *Trichonectria pertusariae* ETAYO & VAN DEN BOOM. One specimen was published as new to Africa in ROUX & SÉRUSIAUX (2004), *Strigula decipiens* (MALME) P.M. MCCARTHY. This paper deals with further interesting specimens. One record from La Palma from the extensive collections of Mr Maarten BRAND made in 1986 is also included. Recently, several papers have been published about lichenized and lichenicolous fungi of La Palma: ETAYO (1996b, 2000), ETAYO & BURGAZ (1997), ETAYO & BERGER (1999).

* P.P.G. van den Boom, Arafura 16, NL-5691JA, Son, The Netherlands. – pvdboom@zonnet.nl

Material & methods

Seven hundred specimens of lichens and lichenicolous fungi were investigated with a light-microscope or binocular microscope. Several of these specimens were also studied by TLC according ORANGE & al. (2001). Some specialists have checked selected specimens (see acknowledgement). Currently ca. 270 species are recognized and the most interesting of them are documented in this paper. One asterisk means the first record for La Palma; two asterisks, new record for Canary Islands and three asterisks, first record for Macaronesia. For comparison the following checklists are consulted; HERNÁNDEZ-PADRÓN (2001) and HAFELLNER (2002, 2005).

Voucher specimens were placed in B and LG and in the private herbarium of P. van den Boom and M. Brand.

Annotated species list

* *Agonimia opuntiella* (Buschardt & Poelt) Vězda

Already published for Lanzarote by BARRENO & RICO (1985).

The two specimens are very small, but several squamules with the characteristic hairs are present. Cumbre Nueva, W side of tunnel along road to El Paso, orchard, on mature *Castanea* trees, 1000 m, 4 May 1999, hb. P. v.d. Boom 22332, 22336.

** *Arthonia pruinata* (PERS.) STEUD. ex A.L.SM.

In Macaronesia this species was only known from the Azores (APTROOT 1989). Although this species is widespread and sometimes common in western Europe, it has not been mentioned from Canary Islands before.

W of Barlevento, La Tosca, N slope with volcanic rocks and *Dracaena draco*, on *Prunus* branches in neglected garden, 500 m, 6 May 1999, hb. P. v.d. Boom 22561.

* *Byssoloma croceum* SÉRUS. & PUNTILLO

Already published for Gomera and Tenerife by SÉRUSIAUX (1998).

WSW of Los Sauces, Los Tilos, Laurisilva, narrow cleft, open place with low outcrop, on *Myrica faya*, 700 m, 3 May 1999, hb. P. v.d. Boom 22206, 22208. Det. E. Sérusiaux.

*** *Caloplaca cerinella* (NYL.) FLAGEY

The apothecia in this specimen contain 16 spores per ascus and it was found growing on twigs of *Prunus*, along a roadside. Accompanying species are *Lecanora* sp. and *Rinodina* sp. Several apothecia are infected by *Muellerella* sp. This *Caloplaca* species is widely distributed throughout Europe.

Near Puntagorda, along road from El Castillo to Los Codesas, 920 m, 2 May 1999, hb. P. v.d. Boom 22102.

* *Caloplaca pellodella* (NYL.) HASSE

Recorded previously for Tenerife only by HERNÁNDEZ-PADRÓN (2001).

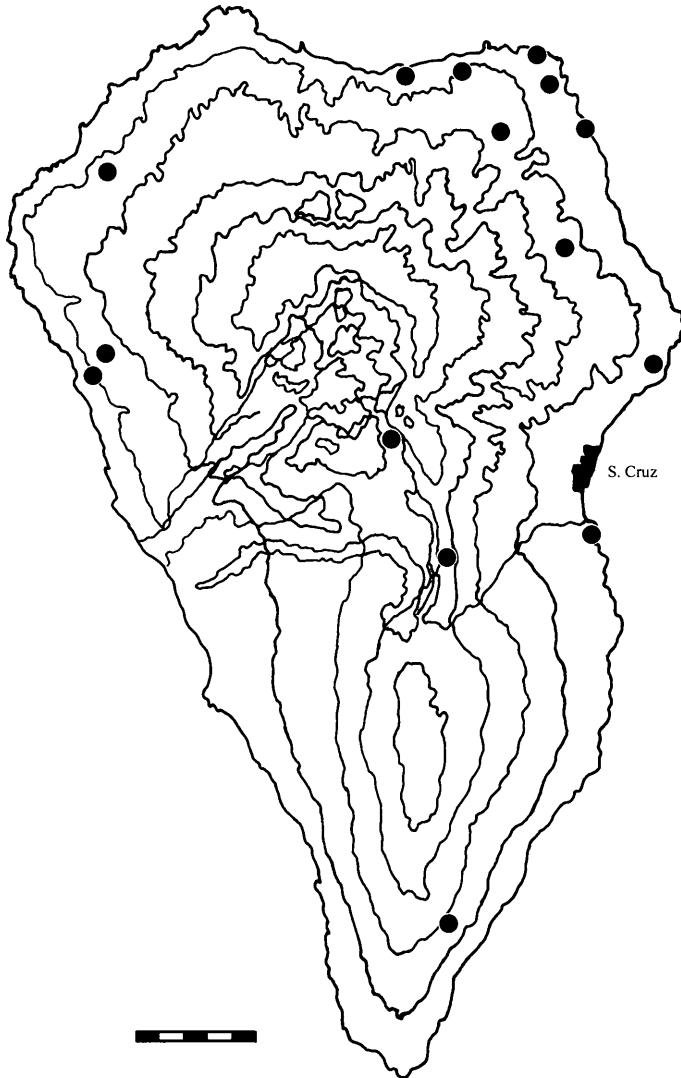


Fig. 1: Collecting sites on the island La Palma, presented in this study.

WSW of Tijarafe, small road to Cayado Nuevo, N facing rocks in cleft, on gently sloping volcanic rock, lichenicolous on *Aspicilia* sp., 300 m, 2 May 1999, hb. P. v.d. Boom 22140.

* *Caloplaca conversa* (KREMPPELH.) JATTA S.L.

Only known from Tenerife (HERNÁNDEZ-PADRÓN 2001). The characters of this specimen agree well with the description in Clauzade & Roux (1985), However that description is based on a species sensu lato and includes several close related species.

WSW of Tijarafe, small road to Cayado Nuevo, on N facing rocks in cleft, 300 m, 2 May 1999, hb. P. v.d. Boom 22157.

* *Caloplaca flavescens* (HUDS.) J.R.LAUNDON

Previously only recorded for Tenerife and Lanzarote (HERNÁNDEZ-PADRÓN 2001).

W of Barlovento, La Tosca, N slope with volcanic rocks and mature *Dracaena draco*, on E exposed wall, 500m, 6 May 1999, hb. P. v.d. Boom 22553. Conf. E. Gaya.

*** *Caloplaca flavocitrina* (NYL.) A.E.WADE

This species occurs on calcareous as well as siliceous rocks and is very common in SW Europe on artificial substrata (mortar, concrete, walls etc.) (VAN DEN BOOM & al. 1998).

W of Barlovento, La Tosca, N sloping volcanic rock along path, 500 m, 6 May 1999, hb. P. v.d. Boom 22558.

*** *Caloplaca obscurella* (KÖRB.) TH.FR.

Although this species is rather common, for example in western Europe from Norway (SANTESSON & al. 2004) to the most southwestern part of Portugal (LLIMONA & HLADUN 2001), it has never been reported from Macaronesia. It is probably an overlooked species. The specimens are fertile.

E of Puntagorda, W slope along road, on *Prunus*, 900 m, 2 May 1999, hb. P. v.d.Boom 22126; Cumbre Nueva, W side of tunnel, on mature *Castanea*, 1000 m. 4 May 1999, hb. P. v.d. Boom 22333.

** *Catillaria atomarioides* (MÜLL.ARG.) KILIAS

This easily overlooked species is widely distributed in Europe. Regarding Macaronesia, it is only known from Madeira (KALB & HAFELLNER 1992).

Caldera de Taburiente, near El Paso on steep N-facing volcanic rock, 1300 m, 4 May 1999, hb. P. v.d. Boom 22401.

* *Chrysothrix xanthina* (VAIN.) KALB

Already published for Tenerife by KALB (2001).

3 km NNE of Fuencaliente, Pino de la Virgin, path to Zona recreativa de los Roques, open place in a *Pinus* forest, on *Pinus canariensis*, 1100 m, 1 May 1999, hb. P. v.d. Boom 22078. Conf. E. Sérusiaux.

* *Cladonia iberica* BURGAZ & AHTI

Previously only recorded from Gomera (ETAYO & BURGAZ 1997). Atranorin and fatty acid are found by TLC.

Near Fuencaliente, Pino de la Virgin, SE slope in *Pinus* forest, on volcanic outcrop, 900 m, 1 May 1999, hb. P.v.d. Boom 21987. NE of Puntagorda, El Castillo, Bco. de Briestas, cleft, among N facing outcrops along path, 880 m, 2 May 1999, hb. P. v.d. Boom 22095, LG. Conf. E. Sérusiaux.

* *Collempsidium halodytes* (NYL.) GRUBE & B.D.RYAN s.l.

C. halodytes is the second species of the genus which has already been recorded from the Canary Islands (HERNÁNDEZ-PADRÓN (2001), from Hierro and Tenerife as *Pyrenocollema halodytes* (NYL.) R. C. HARRIS. This species, which usually occurs in maritime areas, especially in the littoral zone, is recorded here from a humid area in the Laurisilva forest. The perithecia are 0.2- 0.3(-0.35) mm wide, the ascospores (18-22 x 5-6 µm) are clavate and contain two cells, unequal in size, the branched anastomosed pseudoparaphyses are also present. These characteristics fit well with the description in COPPINS (1992).

4 km WSW of Los Sauces, Los Tilos, Laurisilva, narrow cleft with path along N facing rock sheer between mirador and the bridge, on vertical shaded outcrop, 750 m, 3 May 1999, hb. P. v.d. Boom 22238.

*** *Dactylospora parellaria* (NYL.) ARNOLD

This lichenicolous fungus was previously known from central Europe and southern Portugal (VAN DEN BOOM & ETAYO 2000).

Puntagorda, E of El Castillo, Bco. De Briestas, cleft with N exposed rock, on volcanic rock, on *Ochrolechia parella*, 880 m, 2 May 1999, hb. P.v.d. Boom 22394; Caldera de Taburiente, Cumbrecita, NW slope in open *Pinus* forest, on N facing volcanic rock, on *Ochrolechia parella*, 1000 m, 4 May 1999, hb. P. v.d. Boom 22394.

* *Diploschistes caesioplumbeus* (NYL.) VAIN.

Already published for Tenerife by BREUSS (1988).

3.5 km NNE of Santa Cruz, Tenagua, road to P.S. Lucia, coastal area with NE exposed volcanic outcrops in Kleinio-Euphorbietum, 280 m, 5 May 1999, hb. P. v.d. Boom 22490.

* *Diploschistes euganeus* (A.MASSAL.) J.STEINER

This cosmopolitan species has a subatlantic distribution in Europe. Several localities in Spain are known (LLIMONA & HLADUN 2001). Recently recognized by HERNÁNDEZ-PADRÓN & al. (2003).

N of Tijarafe, near El Pinillo, path in cleft, N exposed sloping outcrops, on gently sloping volcanic rock, 700 m, 2 May 1999, hb. P. v.d. Boom 22131.

* *Endocarpon loscosii* MÜLL.ARG.

This species is widely distributed in the Northern Hemisphere, known from central to southern Europe, and also known from western USA and Mexico.

Near Barlovente, La Tosca, among N sloping volcanic rock along path, 500 m, 6 May 1999, hb. P. v.d. Boom 22557, B. Det. O. Breuss.

Farnoldia aff. *jurana* (SCHAER.) HERTEL

Usually *F. jurana* is found on hard limestone, often in *Gyalectetum jenensis* associations (HAWKSWORTH 1992). However the situation at the Canary Islands is very unusual,

because many calcicole lichen species were found on volcanic rock (HAFELLNER 1995, 1999). These specimens has the characteristic halonate ascospores, somewhat smaller (10-16 x 5-6 μm) than in *F. jurana*, the areolate thallus is I negative and the shiny black apothecia are still black in water. Most probably it is an undescribed taxon and more material is needed for further study.

WSW of Los Sauces, Los Tilos, Laurisilva, narrow cleft, on N facing outcrop, 700 m, 3 May 1999, hb. P. v.d. Boom 22199, 22215.

* *Halecania viridescens* COPPINS & P.JAMES

Recently recorded from Gran Canaria by TØNSBERG (2002). This species is common in several places in western Europe, including south-western Portugal (many unpublished records in hb v.d. Boom). Argopsin was found by TLC.

Near Fuencaliente, Pino de la Virgin, SE slope in *Pinus* forest, on *Pinus* branches, 900 m, 1 May 1999, hb. P. v.d. Boom 21999. Conf. E. Sérusiaux.

* *Helocarpon lesdainii* (ZAHLEBR.) BREUSS

= *Helocarpon corticolum* BREUSS

Already published for Tenerife by BREUSS (1990) and known from only two localities on *Laurus azorica*. Recorded from Gomera by ETAYO (1998). However, ETAYO (1998) made a remark that this species occurs in La Palma, without giving a locality or any other information.

WSW of Los Sauces, Los Tilos, Laurisilva, narrow cleft with path over Bco. del Aqua, mixed trees nearby bridge, on mature *Persea indica* tree, 800 m, 3 May 1999, hb. P. v.d. Boom 22261, LG.

** *Herteliana taylorii* (SALWEY) P.JAMES

According to HAWKSWORTH (1992), this species is known in Macaronesia from the Azores and Madeira. In continental Europe it is recently published from Portugal (VAN DEN BOOM 2005).

WSW of Los Sauces, Los Tilos, Laurisilva forest, narrow cleft, open place with low outcrop, 700 m, 3 May 1999, hb. P. v.d. Boom 22216.

Ionaspis aff. *lavata* H.MAGN.

This specimen is similar in habitus with *I. lavata*, a North America species. The epihyemenium is gelatinous in the upper part and just below it is yellowish brown to moderately brown N- and K-. All thallus spot-tests were negative. This identification is somewhat uncertain because no modern revision of the genus exists for Europe or Africa.

Specimens from *Ionaspis* or the related genus *Hymenelia* have never been recorded from the Canary Islands so far. According to COPPINS & DOBSON (1992), the genus *Ionaspis* is doubtfully distinct from *Hymenelia*.

W of Barlovento, Los Tosca, N slope with volcanic rocks and *Dracaena draco* with *Prunus* in a neglected garden, on a shaded wall, 500 m, 6 May 1999, hb. P. v.d. Boom 22551.

* *Lecania cyrtella* (ACH.) TH.FR.

Recorded already from Tenerife (HERNÁNDEZ-PADRÓN 2001). This specimen was found on small branches of an unidentified shrub. This material is very inconspicuous especially by the very pale colored apothecia.

WSW of Los Sauces, Los Tilos, Laurisilva, narrow cleft, open place with low outcrop, 700 m, 3 May 1999, hb. P. v.d. Boom 22197.

*** *Lecania inundata* (HEPP ex KÖRB.) M.MAYRHOFER

Only a few saxicolous species of the genus *Lecania* are mentioned from Madeira or the Canary Islands. *Lecania rabenhorstii* and *L. spadicea* are already recorded from La Palma (HERNÁNDEZ-PADRÓN 2001). *Lecania hutchinsiae* is mentioned from La Palma by BERGER & ETAYO (1998) for the first time as a bryophilous species. *Lecania hutchinsiae* has also been found by the author, but it was saxicolous in several localities. Regarding the record of *L. inundata*, there has been collected a small specimen.

3.5 km S of Santa Cruz, Los Cancajos, Punta de la Caleta Grande, coastal area with E exposed volcanic outcrops in Kleinio-Euphorbietum, 5 m, 30 April 1999, hb. P. v.d. Boom 21970.

* *Lecanora argentata* (ACH.) MALME

Although this species is very common in many areas of Europe, it has only been mentioned from La Gomera as new to Macaronesia recently by ETAYO (1998).

W of Barlovento, Los Tosca, N slope with volcanic rocks and *Dracaena draco* with *Prunus* in a neglected garden, on *Prunus*, 500 m, 6 May 1999, hb. P. v.d. Boom 22542. Conf. H.T. Lumbsch.

* *Lecanora meridionalis* H.MAGN.

Previously it was mentioned from Tenerife only (HERNÁNDEZ-PADRÓN 2001).

N of Santa Cruz, Bco. la Galga, Cubo de la Galga, Laurisilva forest in cleft with volcanic outcrops, on an unidentified small tree, 550 m, 5 May 1999, hb. P. v.d. Boom 22463.

*** *Lempholemma botryosum* (A.MASSAL.) ZAHLBR.

The collected material is rather small and inconspicuous but it is characterized by its small umbilicate cushions of up to 1.2 mm diam.

Caldera de Taburiente, NNE of El Paso, Cumbrecita, rocky NW slope in open *Pinus* forest, on N facing rock, 1000 m, 4 May 1999, hb. P. v.d. Boom 22386. Conf. P.M. Jørgensen.

*** *Leptogium subaridum* P.M.JØRG. & GOWARD

Initially this species was known only from western North America where it occurs on soil and rocks (JØRGENSEN & NASH 2004). Additional records from Europe and Africa

are published in ARAGÓN & al. (2004). According to Prof. P.M. Jørgensen (pers. comm.), this specimen is identical with material identified as *L. subaridum* by ARAGÓN & al. (2004). However, all the specimens recorded from Europe and Africa were corticolous, and consequently all these recent records may represent an undescribed taxon. The European and African material needs further study (pers. comm. P. M. Jørgensen).

Cumbre Nueva, W side of tunnel, *Castanea sativa* orchard with mature trees, on *C. sativa*, 1000 m, 4 May 1999, hb. P. v.d. Boom 22359. Det. P.M. Jørgensen.

* *Lichinella stipatula* NYL.

Previously reported from Tenerife and Lanzarote (HERNÁNDEZ-PADRÓN 2001).

WSW of Tijarafe, small road to Cayado Nuevo, open field with volcanic outcrops, on gently sloping rock, 300 m, 2 May 1999, hb. P. v.d. Boom 22158.

* *Megalaria grossa* (PERS. ex NYL.) HAFELLNER

This specimen has the characteristic relative large ascospores of ca. 19 x 16 µm; however, the apothecia are pale brown, so the specimen is not typical of *M. grossa*. Reported from Gomera and Tenerife (HERNÁNDEZ PADRÓN 2001).

Road Puntallana-Pico Nieves, Moraditas, open *Myrica-Erica-Persea-Pinus* forest, on *Persea indica*, 1160 m, 10 April 1986, hb. M. Brand 13619. Conf. E. Serusiaux.

* *Micarea synotheoides* (NYL.) COPPINS

Already recorded from Tenerife by TOPHAM & WALKER (1982) and from GOMERA by ETAYO (1998).

S of Los Sauces, Los Tilos, narrow cleft with path, alongside a N facing rock sheer, in Laurisilva, on *Myrica faya*, 750 m, 3 May 1999, hb. P. v.d. Boom 22243. Det. B.J. Coppins.

* *Parmeliella testacea* P.M.JØRG.

In JØRGENSEN (1978), this species is mentioned from Gomera and Tenerife.

NNE of Puntagorda, road to Los Codesas, roadside *Prunus*, 920 m, 2 May 1999, hb. P.v.d. Boom 22098; Cumbre Nueva, W side of tunnel, *Castanea sativa* orchard with mature trees, on trunk of *C. sativa*, 1000 m, 4 May 1999, hb. P. v.d. Boom 22364; Caldera de Taburiente, Cumbrecita, NW slope in open *Pinus* forest, on N facing volcanic rock, 1000 m, 4 May 1999, hb. P. v.d. Boom 22385. Conf. P.M. Jørgensen.

* *Phaeophyscia hirsuta* (MERESCHK.) ESSL.

= *P. cernohorskyi* (NÁDV.) ESSL.

This species is already published for Tenerife by BREUSS (1988); KALB & HAFELLNER (1992) recorded this for Madeira.

NNE of Sante Cruz, Tenagua, NE exposed rocky slope in Kleinio-Euphorbietum, on N facing volcanic rock, in crevices, 280 m, 5 May 1999, hb. P. v.d. Boom 22498; W of

Barlevento, Gallegos, on steep S facing volcanic rock, 280 m, 6 May 1999, hb. P. v.d. Boom 22567.

* *Physcia tribacea* (ACH.) NYL.

Only reported from Tenerife before by HERNANDEZ-PADRÓN (2001).

Caldera de Taburiente, NNE of El Paso, Cumbrecita, rocky NW slope in open *Pinus* forest, on N facing volcanic rock, 1000 m, 4 May 1999, hb. P. v.d. Boom 22367.

* *Placopyrenium bucekii* (NÁDV. & SERVIT) BREUSS

This species is already published for Tenerife by BREUSS (1988).

3.5 km NNE of Santa Cruz, Tenagua, road to P.S. Lucia, coastal area with NW exposed volcanic outcrops in Kleinio-Euphorbietum, 280 m, 5 May 1999, hb. P.v.d. Boom 22507. Det. O. Breuss.

*** *Placynthiella dasaea* (STIRT.) TØNSBERG

This species is much overlooked, and it is most probably more common than *P. icmalea* s. str., for which it often has been mistaken. In VAN DEN BOOM (2005), it is reported as new to Portugal and in fact as new to Iberian Peninsula, but there are a lot of additional specimens (unpublished) in the herbarium of the author for southwestern Europe.

Cumbre Nueva, road to El Paso, orchard with mature *Castanea sativa* trees, on trunk of *C. sativa*, 1000 m, 4 May 1999, hb. P.v.d. Boom 22365.

** *Porpidia platycarpoides* (BAGL.) HERTEL

Already published for the Azores by PURVIS & al. (1994).

Near Fuencaliente, Pino de la Virgin, SE slope in *Pinus* forest, on volcanic outcrop, 900 m, 1 May 1999, hb. P.v.d. Boom 21991; WSW of Los Sauces, Los Tilos, Laurisilva forest, narrow cleft, on N facing rock sheer, 700 m, 3 May 1999, hb. P. v.d. Boom 22177.

*** *Protoparmelia hypotremella* VAN HERK, SPIER & V.WIRTH

This recently described species is rather common in the Netherlands. In APTROOT & al. (1997) this species is described from a rather small distribution area, but it appears to be widespread in Europe and also outside. Recently it is also reported from Switzerland (VAN DEN BOOM & CLERC 2000) and Belgium (DIEDERICH & SÉRUSIAUX 2000). In habitus it fit well with collections from NW Europe (hb. van den Boom); however, the color of this specimen has a more brownish tinge than usual. I also found pycnidia (dark brown ostiole and up to 0.1 mm diam.) with bacilliform conidia, 6 - 10 × 0.8 - 1 µm; previously these structures were not known. Lobaric acid was found by TLC. This is the first saxicolous record of this species.

NNE of Fuencaliente, Pino de la Virgin, to Zona recreative Fuente de los Roques, E exposed steep basalt rock-face, in *Pinus* forest, on vertical shaded rock, 1020m, 1 May 1999, hb. P. v.d. Boom 22054. Conf. H. Sipman.

*** *Ramonia subsphaeroides* (C.TAV.) VĚZDA

In COPPINS (1987), this species has been included in the key to European species of *Ramonia*, and it was reported only from Portugal.

According to the original description, this species has *Trentepohlia* as the photobiont. I have confirmed *Trentepohlia* algae in the specimen. This is the first report of the genus *Ramonia* in Macaronesia.

Cumbre Nueva, W side of tunnel, orchard with mature *Castanea sativa*, on *C. sativa*, 1000 m, 4 May 1999, hb. v.d. Boom 22366.

* *Rhizocarpon polycarpum* (HEPP) TH.FR.

Published by CHAMPION (1976) from Tenerife.

Near Fuencaliente, Pino de la Virgen, SE slope in *Pinus* forest, on E exposed, steep outcrop (basalt), 1020 m, 1 May 1999, hb. P.v.d. Boom 22046; *ibid.* on steep outcrop (basalt) along *Erica arborea*, 1100 m, 1 May 1999, hb. P v.d. Boom 22079.

* *Schismatomma albocinctum* (NYL.) ZAHLBR.

Already published for Hierro and Tenerife by TEHLER (1993).

W of Barlovente, La Tosca, N sloping with *Dracaena draco* and volcanic rock along path, on *Dracaena*, 500 m, 6 May 1999, hb. P. v.d. Boom 22534, 22535; *ibid.* on *Prunus*, hb. P. v.d. Boom, 22555, 22562.

* *Solenopsora vulturiensis* A.MASSAL.

CHAMPION (1976) and CHAMPION & SANCHEZ-PÍNTO (1978) listed this species for Tenerife.

Caldera de Taburiente, Cumbrecita, NW slope in open *Pinus* forest, on N facing volcanic rock, 1000 m, 4 May 1999, hb. P.v.d. Boom 22405.

* *Squamarina congregens* (MÜLL.ARG.) POELT

Previously published by FOLLMANN & HERNÁNDEZ-PADRÓN (1978) and known from Hierro, Gomera, Tenerife and Gran Canaria (HERNÁNDEZ-PADRÓN (2001).

1 km N of Tijarafe, near El Pinilo, cleft with N exposed volcanic outcrops, 700 m, 2 May 1999, hb. P. v.d. Boom 22139; Caldera de Taburiente, NNE of El Paso, Cumbrecita, rocky NW slope in open *Pinus* forest, on N facing rock, 1000 m, 4 May 1999, hb. P. v.d. Boom 22389.

* *Staurolemma omphalarioides* (ANZI) P.M.JØRG. & HENSSEN

Reported as new to the Canary Islands by ALMBORN (1974), from Hierro.

3 km NNE of Puntagorda, road from El Castillo to Los Codesas, on roadside *Prunus* tree, 920 m, 2 May 1999, hb. P. v.d. Boom 22096.

* *Strigula taylorii* (CARROLL ex NYL.) R.C.HARRIS

As new for Macaronesia recorded from Gomera by ETAYO (1998). So this is the second record for Macaronesia.

3.5 km WSW of Los Sauces, Los Tilos, Laurisilva, narrow cleft with path along N facing rock sheer on *Ocotea*, 700 m, 3 May 1999, hb. P. v.d. Boom 22191.

Toninia aromatica (SM.) A.MASSAL.

This species has been found on a trunk of a mature *Castanea* tree, where it was growing abundantly. TIMDAL (1991) reported it as a terricolous, saxicolous, and corticolous species. However, from the many specimens mentioned, only two occurred on bark at the base of tree trunks. The specimens recorded here are from bark of a trunk, growing up to 1.5 m high. On La Palma it is a very common species, mostly growing on volcanic rock, seen by the author in most visited localities. It has been recorded from most Canary Islands (HERNÁNDEZ-PADRÓN 2001).

Selected specimens examined: E of Puntaghorda, main road between Las Tricia and Los Codesas on roadside *Prunus* tree, 900 m, 2 May 1999, hb. P. v.d. Boom 22118; Cumbre Nueva, W side of tunnel along road to El Paso, orchard, on mature *Castanea* trees, 1000 m, 4 May 1999, hb. P. v.d. Boom 22342. Det. E. Timdal.

* *Toninia plumbina* (ANZI) HAFELLNER & TIMDAL

Already published for Tenerife by TIMDAL (1991), on *Degelia plumbea* and from Gomera by ETAYO (1996a), on *Fuscopannaria mediterranea*.

Cumbre Nueva, W side of tunnel along road to El Paso, orchard, on mature *Castanea* trees, on *D. plumbea*, 1000 m, 4 May 1999, hb. P. v.d. Boom 22330.

* *Usnea flammea* STIRT.

According to HERNÁNDEZ-PADRÓN (2001) already known from Gomera, Hierro and Tenerife. By TLC stictic acid and related compounds were found.

NNE of Fuencaliente, Pino de la Virgin, path to Zona recreativa de los Roques, SE slope in *Pinus* forest with volcanic outcrops, on branch of *Pinus*, 1020 m, 1 May 1999, hb. P. v.d. Boom 22007.

*** *Usnea wasmuthii* RÄSÄNEN

Although this species is widely distributed in western Europe from Norway (SANTESSON & al. 2004) to southwestern Europe (LLIMONA & HLADUN 2001), it was not recorded previously from Macaronesia. The secondary products found by TLC in this specimen were usnic, barbatic and salazinic acids.

NNE of Fuencaliente, Pino de la Virgin, path to Zona recreativa de los Roques, SE slope in *Pinus* forest with volcanic outcrops, on branch of *Pinus*, 900 m, 1 May 1999, hb. P. v.d. Boom 22005.

* *Zamenhofia coralloidea* (P.James) Clauzade & Cl.Roux

Already published for Tenerife by TOPHAM & WALKER (1982) and for Gomera by ETAYO (1998).

WSW of Los Sauces, Los Tilos, Laurisilva forest, narrow cleft with path over Bco del Aqua, mixed trees nearby bridge, on mature *Erica arborea*, 800 m, 3 May 1999, hb. P. v.d. Boom 22253, 22299.

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