

Lichens new to the Azores collected on Terceira

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Abstract: APTROOT, A., SCHUMM, F. & GABRIEL, R. 2009. Lichens new to the Azores collected on Terceira. – *Herzogia* 22: 147–152.

Forty-six lichen species and one variety are reported for the first time from the Azores. All were collected during a one-week field course on Terceira and include the first record of *Biatora britannica* outside Britain, and a record of *Xanthoria weberi* bridging the gap between the disjunct areas it has been reported from, viz. America and northern Europe. *Xanthoria weberi* is a new combination.

Zusammenfassung: APTROOT, A., SCHUMM, F. & GABRIEL, R. 2009. Flechten neu für die Azoren, gesammelt auf Terceira. – *Herzogia* 22: 147–152.

Sechszundvierzig Flechtenarten und eine Varietät werden erstmalig von den Azoren gemeldet. Alle wurden während eines einwöchigen Geländekurses auf Terceira gesammelt und beinhalten den ersten Fund von *Biatora britannica* außerhalb der Britischen Inseln. Ein Fund von *Xanthoria weberi* schließt die Verbreitungslücke zwischen den disjunkten Arealen, aus denen die Art bisher bekannt war: Amerika und Nordeuropa. *Xanthoria weberi* ist eine Neukombination.

Key words: *Biatora britannica*, *Xanthoria weberi*.

Introduction

The lichen flora of the Azores is the most exotic in Europe, with several tropical species found nowhere else in Europe. Lichens are conspicuous in most habitats, but have so far received little attention, mostly by visitors on holiday from the continent.

Since a few years, lichen research has started on the islands itself, mainly at the University on Terceira. An updated checklist has been produced by us, with full references (<http://www.azoresbiportal.angra.uac.pt/pesquisa.php?sstr=1&lang=pt>). A one-week lichen course with excursions was organised by the authors in July 2008 and attended by students and staff members of the university. SCHUMM (2008) was used as a course book.

During this week, a total of 47 taxa were collected that were not previously reported from the Azores. Many of these are locally common, and a large proportion of the new species could be identified with some certainty already in the field. The purpose of this paper is to publish these reports, and indicate the world distribution of the species in question. All specimens were collected by A. Aptroot and are preserved in herbarium ABL. Full descriptions and illustrations of these and other species will be included in a future addition to SCHUMM (2008).

New reports

Acarospora veronensis A.Massal.

São Bartolomeu, near bridge, 38°40.4'N/27°17.5'W, 125 m alt., 13 July 2008, no. 68278, on lava.

A common, nearly cosmopolitan species.

Aspicilia caesiocinerea (Nyl. ex Malbr.) Arnold

São Bartolomeu, near bridge, 38°40.4'N/27°17.5'W, 125 m alt., 13 July 2008, no. 68232, on lava.

A common, nearly cosmopolitan species.

Aspicilia cinerea (L.) Körb.

São Bartolomeu, near bridge, 38°40.4'N/27°17.5'W, 125 m alt., 13 July 2008, no. 68285, on lava.

A common, nearly cosmopolitan species.

Bacidia delicata (Larbal. ex Leight.) Coppins

São Bartolomeu, near bridge, 38°40.4'N/27°17.5'W, 125 m alt., 13 July 2008, no. 68228, on bark of *Populus alba*.

A common, nearly cosmopolitan species.

Bacidia trachona (Ach.) Lettau

São Bartolomeu, near bridge, 38°40.4'N/27°17.5'W, 125 m alt., 13 July 2008, no. 68267, on lava.

A rarely reported species mainly known from Europe.

Biatora britannica Printzen, Lumbsch & Orange

Lagoa das Patas, 38°43.1'N/27°17.2'W, 500 m alt., 16 July 2008, no. 68398, on bark of *Platanus*.

This is the first record of this species from outside Britain. It is beautifully fertile as well as sorediate and its identification has been confirmed by B. Coppins.

Buellia ocellata (Flot.) Körb.

São Bartolomeu, near bridge, 38°40.4'N/27°17.5'W, 125 m alt., 13 July 2008, no. 68256, on lava.

A common, northern temperate species.

Caloplaca arenaria (Pers.) Müll.Arg.

São Bartolomeu, near bridge, 38°40.4'N/27°17.5'W, 125 m alt., 13 July 2008, no. 68272, on lava;

Angra, Monte Brasil, fortress, 38°39.1'N/27°13.4'W, 50 m alt., 17 July 2008, no. 68433, on lava.

A common, northern temperate species.

Caloplaca arnoldii (Wedd.) Zahlbr. ex Ginzb.

Coast S of Santa Barbara, 38°40.7'N/27°19.9'W, 35 m alt., 13 July 2008, no. 68308, on lava.

A common, northern temperate species.

Caloplaca ceracea J.R.Laundon

Coast S of Santa Barbara, 38°40.7'N/27°19.9'W, 35 m alt., 13 July 2008, no. 68305, on lava.

A common, northern temperate species.

Caloplaca chlorina (Flot.) H.Olivier

Coast S of Santa Barbara, 38°40.7'N/27°19.9'W, 35 m alt., 13 July 2008, no. 68297, on wood of fence.

A common, northern temperate species.

Caloplaca dichroa Arup

Angra, Monte Brasil, fortress, 38°39.1'N/27°13.4'W, 50 m alt., 17 July 2008, no. 68444, on lava.

A rarely reported species so far known from western Europe.

Caloplaca erythrocarpa (Pers.) Zwackh

Angra, Monte Brasil, fortress, 38°39.1'N/27°13.4'W, 50 m alt., 17 July 2008, no. 68432, on lava.

A common, northern temperate species.

Caloplaca inconnexa (Nyl.) Zahlbr.

Angra, Monte Brasil, fortress, 38°39.1'N/27°13.4'W, 50 m alt., 17 July 2008, no. 68420, on concrete.

A common, northern temperate species.

Caloplaca limonia Nimis & Poelt

Angra, Monte Brasil, fortress, 38°39.1'N/27°13.4'W, 50 m alt., 17 July 2008, no. 68419, on concrete.

A rarely reported species known from southern Europe.

Caloplaca obscurella (Lahm ex Körb.) Th.Fr.

São Bartolomeu, near bridge, 38°40.4'N/27°17.5'W, 125 m alt., 13 July 2008, no. 68231, on lava (!).

A common, northern temperate species. Its occurrence on rock is unusual, but is known from the British Isles (B. Coppins, pers. comm.).

Candelariella vitellina var. ***flavovirella*** (Nyl.) A.Henderson

Coast S of Santa Barbara, 38°40.7'N/27°19.9'W, 35 m alt., 13 July 2008, no. 68317, on lava.

A common, northern temperate variety of this cosmopolitan species.

Coenogonium tavaresianum (Vězda) Lücking, Aptroot & Sipman

Angra, Monte Brasil, fortress, 38°39.1'N/27°13.4'W, 50 m alt., 17 July 2008, no. 68419, on bark of *Tamarix*.

A rarely reported species known from south-western Europe.

Collemopsidium sublitorale (Leight.) Grube & B.D.Ryan

Coast S of Santa Barbara, 38°40.7'N/27°19.9'W, 35 m alt., 13 July 2008, no. 68332, on littoral lava.

A common, nearly cosmopolitan species.

Fellhanera inexpectata Sérus.

Lagoa das Patas, 38°43.1'N/27°17.2'W, 500 m alt., 16 July 2008, no. 68396, on living leaves of *Camellia*.

A recently described, rarely reported species previously only known from the Canary Islands.

Fissurina quadrispora Kalb

Terra Brava, 38°44.3'N/27°11.9'W, 650 m alt., 15 July 2008, no. 68369, on bark of *Vaccinium*.

A recently described, rarely reported species previously only known from Madeira. This species was identified by B. Coppins.

Lecanographa subgrumulosa (Egea, Torrente & Manrique) Egea & Torrente

São Bartolomeu, near bridge, 38°40.4'N/27°17.5'W, 125 m alt., 13 July 2008, no. 68236, on lava.

A southwest European species, also known from the Canary Islands. Our material differs from the description in EGEA & TORRENTE (1994) by the presences of some ascospores with additional (up to 7) septa.

Lecanora barkmaniana Aptroot & Herk

Cinco Ribeiras, near church, 38°41.0'N/27°19.0'W, 130 m alt., 13 July 2008, no. 68208, on bark of *Morus*.

A recently described species previously known only from western and southern Europe.

Lecanora fugiens Nyl.

Coast S of Santa Barbara, 38°40.7'N/27°19.9'W, 35 m alt., 13 July 2008, no. 68301, on lava; also observed on other localities, e.g. near Angra, coast near Hotel Terceira Mar.

A rarely reported species previously known only from western Europe.

Lecanora piniperda Körb.

S of Serra da Santa Barbara, near reservoir, 38°43.1'N/27°18.7'W, 700 m alt., 13 July 2008, no. 68354, on wood.

A common, northern temperate species.

Lecanora poliophaea (Wahlenb.) Ach.

Coast S of Santa Barbara, 38°40.7'N/27°19.9'W, 35 m alt., 13 July 2008, no. 68318, on lava; Baia da Salga, 38°38.7'N/27°04.8'W, 25 m alt., 11 July 2008, no. 68215, on lava.

A rarely reported species only known from western Europe.

Lecidella meiococca (Nyl.) Leuckert & Hertel

Ponta das Cavalas, 38°38.8'N/27°04.7'W, 30 m alt., 11 July 2008, no. 68203, on lava; Baia da Salga, 38°38.7'N/27°04.8'W, 25 m alt., 11 July 2008, no. 68217, on lava.

A rarely reported species only known from western Europe.

Llimonaea soreliata van den Boom, M.A.Brand & Elix

São Bartolomeu, near bridge, 38°40.4'N/27°17.5'W, 125 m alt., 13 July 2008, no. 68249, on lava; also observed on other localities, e.g. near Angra, coast near Hotel Terceira Mar.

A recently described species only known from western and southern Europe.

***Micarea denigrata* (Fr.) Hedl.**

S of Serra da Santa Barbara, near reservoir, 38°43.1'N/27°18.7'W, 700 m alt., 13 July 2008, no. 68352, on wood; Serra do Cume, 38°42.4'N/27°06.5'W, 550 m alt., 11 July 2008, no. 68197, on wood of fence.

A common, nearly cosmopolitan species.

***Opegrapha saxigena* Taylor**

S of Serra da Santa Barbara, near reservoir, 38°43.1'N/27°18.7'W, 700 m alt., 13 July 2008, no. 68349, on lava.

A common, northern temperate species.

***Opegrapha sorediifera* P.James**

Angra, Monte Brasil, fortress, 38°39.1'N/27°13.4'W, 50 m alt., 17 July 2008, no. 68445, on lava.

A rather rarely reported species previously known only from western Europe.

***Opegrapha subelevata* Nyl.**

São Bartolomeu, near bridge, 38°40.4'N/27°17.5'W, 125 m alt., 13 July 2008, no. 68251, on lava.

A rather rarely reported species previously known only from southern Europe.

***Phaeophyscia chloantha* (Ach.) Moberg**

São Bartolomeu, near bridge, 38°40.4'N/27°17.5'W, 125 m alt., 13 July 2008, no. 68246, on lava.

A rather rare, northern temperate species.

***Phaeophyscia kairamoi* (Vain.) Moberg**

Angra, Monte Brasil, fortress, 38°39.1'N/27°13.4'W, 50 m alt., 17 July 2008, no. 68423, on lava.

A rather rare, northern temperate species.

***Porina fortunata* P.M.McCarthy & Etayo**

São Bartolomeu, near bridge, 38°40.4'N/27°17.5'W, 125 m alt., 13 July 2008, no. 68287, on lava.

A recently described, rarely reported species previously known only from the Canary Isles.

***Psilolechia clavulifera* (Nyl.) Coppins**

Lagoa das Patas, 38°43.1'N/27°17.2'W, 500 m alt., 16 July 2008, no. 68403, on soil of road bank.

A rather common, northern temperate species also reported from Tasmania. This species was identified by B. Coppins.

***Rhizocarpon polycarpum* (Hepp) Th.Fr.**

S of Serra da Santa Barbara, near reservoir, 38°43.1'N/27°18.7'W, 700 m alt., 13 July 2008, no. 68347, on lava.

A common, northern temperate species. It grows here together with several other *Rhizocarpon* species.

***Rinodina algarviensis* Giralt, M.Barbero & van den Boom**

Serra do Cume, 38°42.4'N/27°06.5'W, 550 m alt., 11 July 2008, no. 68195, on lava; observed on other localities, e.g. near Angra, coast near Hotel Terceira Mar.

A recently described, rarely reported species previously known only from Portugal. The cited specimen is the only fertile one; the species seems to be quite common on Terceira in the sterile state.

***Rinodina beccariana* var. *lavicola* (M.Steiner) Matzer & H.Mayrhofer**

São Bartolomeu, near bridge, 38°40.4'N/27°17.5'W, 125 m alt., 13 July 2008, no. 68269, on lava.

A southwest European species, the variety especially known from the Canary Islands.

***Rinodina teichophila* (Nyl.) Arnold**

São Bartolomeu, near bridge, 38°40.4'N/27°17.5'W, 125 m alt., 13 July 2008, no. 68270, on lava.

A common, nearly cosmopolitan species.

***Roccella elisabethae* Tehler**

Angra, Monte Brasil, fortress, 38°39.1'N/27°13.4'W, 50 m alt., 17 July 2008, no. 68447, on lava.

A recently described, rarely reported species only known from Macaronesia, southern Europe and South Africa. It was described to accommodate the species usually called *Roccella arnoldii*. It grows here together with several other *Roccella* species.

***Schaereria fuscocinerea* (Nyl.) Clauzade & Cl.Roux**

São Bartolomeu, near bridge, 38°40.4'N/27°17.5'W, 125 m alt., 13 July 2008, no. 68276, on lava.

A common, nearly cosmopolitan species.

***Solenopsora vulturiensis* A.Massal.**

São Bartolomeu, near bridge, 38°40.4'N/27°17.5'W, 125 m alt., 13 July 2008, no. 68244, on lava; Angra, Monte Brasil, fortress, 38°39.1'N/27°13.4'W, 50 m alt., 17 July 2008, no. 68441, on lava; Angra, coast near Hotel Terceira Mar, 38°39.3'N/27°13.9'W, 30 m alt., 14 July 2008, no. 68365, on lava.

A rather common species otherwise only known from western and southern Europe and Macaronesia.

It grows here together with *Solenopsora holophaea*.

***Stereocaulon nanodes* Tuck.**

S of Serra da Santa Barbara, near reservoir, 38°43.1'N/27°18.7'W, 700 m alt., 13 July 2008, no. 68343, on lava; Serra da Santa Barbara, below summit, 38°43.6'N/27°19.3'W, 950 m alt., 16 July 2008, no. 68392, on lava.

A common, nearly cosmopolitan species. It grows here together with several other *Stereocaulon* species, some of which are endemic, others widespread.

***Tomasellia gelatinosa* (Chevall.) Zahlbr.**

Terra-Cha, University Campus, 38°40.4'N/27°15.0'W, 120 m alt., 17 July 2008, no. 68453, on bark of shrub.

A rather rare, northern temperate species.

***Verrucaria aquatilis* Mudd**

São Bartolomeu, near bridge, 38°40.4'N/27°17.5'W, 125 m alt., 13 July 2008, no. 68284, on lava.

Probably a nearly cosmopolitan species.

Xanthoria weberi* (S.Kondr. & Kärnefelt) Aptroot **comb. nov.*

Basionym: *Oxneria weberi* S.Kondr. & Kärnefelt, Ukrainian Botanical Journal 60: 126 (2003).

Other combination: *Xanthomendoza weberi* (S.Kondr. & Kärnefelt) L.Lindblom, Bryologist 109: 5 (2006).

Cinco Ribeiras, near church, 38°41.0'N/27°19.0'W, 130 m alt., 13 July 2008, no. 68207, on bark of *Morus*; Santa Barbara, 38°41.2'N/27°19.7'W, 35 m alt., 13 July 2008, no. 68209, on lava of wall.

One of the most interesting records. This species is so far known from two disjunct areas: America (from Canada to the southern states of the U.S.A., the Galápagos Islands and Colombia, see e.g. LINDBLOM 2006), and northern Europe (Norway and Sweden). The report from the Azores bridges this distributional gap. In the Azores, it was found both on rock and bark.

The new combination is essential, as the species was originally (although possibly by mistake) described in the genus *Oxneria*, which was therewith described and of which this is the type species. Although the invalid name *Xanthoria weberi* has been widely used, none of the mentionings of the combination *Xanthoria weberi* in the literature or on the internet are valid. It has subsequently only been formally transferred to *Xanthomendoza* (LINDBLOM 2006). See LINDBLOM (2006) for a discussion of the nomenclature of this species.

Acknowledgement

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References

- EGEA, J. M. & TORRENTE, P. 1994. El género de hongos liquenizados *Lecanactis* (Ascomycotina). – Bibliotheca Lichenologica **54**: 1–205.
- LINDBLOM, L. 2006. *Xanthomendoza galericulata*, a new sorediate lichen species, with notes on similar species in North America. – Bryologist **109**: 1–8.
- SCHUMM, F. 2008. Flechten Madeiras, der Kanaren und Azoren. – Wangen: the author.

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