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*Dedicated with pleasure to Professor Krystyna Czyżewska  
not only for her significant contribution to the knowledge  
and conservation of Polish lichens,  
but also for her activities in cooperation networks  
of Central European lichenologists*

## Some lichens from the vicinity of Ribeiro Frio (Madeira, Macaronesia)

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A list of 49 lichens recently collected in the vicinity of Ribeiro Frio in Madeira is given. The species *Ramalina nodosa* and *Peltigera neckeri* are probably new to the island. Collections of *Cladonia stereoclada*, *Hypogymnia madeirensis*, *Megalospora maderensis*, *Peltigera degenii* and *Phlyctis agelaea* are interesting as well.

**Key words:** lichenized fungi, Madeira, Portugal

### INTRODUCTION

Madeira is a Portuguese island in the Atlantic ocean, 900 km SW of Portugal and 660 km NNW of the Canary Islands (Fig. 1). In winter 2002 and 2003 I had an opportunity to study lichens at some localities during my short holidays in Madeira (Pišút 2004). In 2008 and 2009 I visited the island again and studied the lichens of the laurel forests near the habitation of Ribeiro Frio situated below Poiso, a mountain transition in the northern part of the island on the road between Funchal and Santana. In 2008 I studied the lichens along the levada between Ribeiro Frio and Portello (1), in 2009 on the levada between Ribeiro Frio and Balcões (2) and in the laurel forest above the habitation (3). The material is preserved in my herbarium and in lichen collections of the Institute of Botany, Slovak Academy of Sciences, Bratislava (SAV).

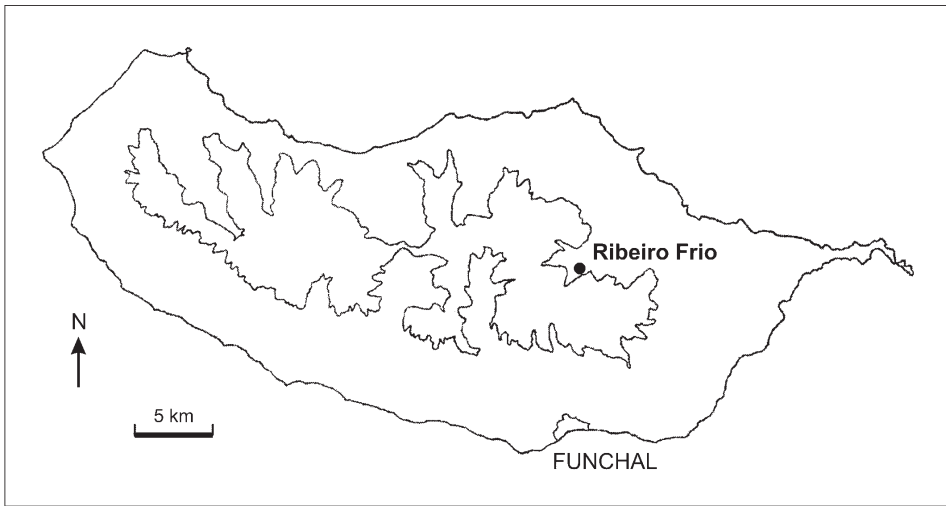


Fig. 1. Sketch map of Madeira. Areas above 1000 m altitude within the internal line. Adapted from Arvidsson and Wall (1985).

## RESULTS AND DISCUSSION

Data on 49 lichen species are presented. The species *Ramalina nodosa* and *Peltigera neckeri* are probably new to the island; other findings, e.g., *Cladonia stereoclada*, *Hypogymnia madeirensis* and *Megalospora maderensis*, are also interesting.

*Byssoloma leucoblepharum* (Nyl.) Vain. – on leaves of *Laurus azorica* above Ribeiro Frio, alt. ca 920 m (3).

*B. subdiscordans* (Nyl.) P. Jameson – on leaves of *Laurus azorica* 2 km east of Ribeiro Frio, alt. ca 830 m (1); on leaves of *Laurus azorica* and *Ilex canariensis* above Ribeiro Frio, alt. ca 900 m (3).

*Cetrelia olivetorum* (Nyl.) W. L. Culb. & Ch. F. Culb. – on tree bark (*Lauraceae*) ca 1 km east of Ribeiro Frio, alt. 850 m (1).

*Cladonia rangiformis* Hoffm. – among mosses on basaltic rocks, ca 2 km eastwards, alt. 830 m, and near Ribeiro Frio, alt. 880 m, 2008 (1); *C. stereoclada* des Abb. – on mossy basaltic rocks ca 1 km, alt. ca 850 m, and on earth ca 2 km, alt. ca 830 m, east of Ribeiro Frio (1); on mossy basaltic rocks above Ribeiro Frio, alt. ca 900 and 920 m (3), sparse. This Macaronesian endemic species was described by des Abbayes (1946) from the Faial island in the Archipelago of the Azores. He characterized it as follows: “Cette intéressante espèce est incontestament voisine de *Cl. furcata*, notamment par ses réactions et ses conidanges. Mais elle en est distincte par ses podétions beaucoup plus ténus, semi-pellucides, et surtout par sa couche chondroïde formant un axe plein, et lorsque elle est creuse, toujours très épaisse par suite de l’exigüité de la cavité centrale”. *C. stereoclada* was recorded in Madeira by Tavares (1952) for the first time (4 localities on mossy earth at alt. 828–1000 m) and in the Canaries by Østhagen and Krog (1976).

- Degelia plumbea* (Lightf.) P. M. Jørg. & P. James – on humid basaltic rocks and on tree bark (*Lauraceae*) 2 km east of Ribeiro Frio, alt. 830 m (1).
- Fellhanera bouteillei* (Desm.) Vězda – on leaves of *Laurus azorica* 2 km eastwards, alt. ca 830 m (1), and above Ribeiro Frio, alt. ca 920 m (3).
- Heterodermia leucomelos* (L.) Poelt – on branches and the bark of various laurels and on mossy basaltic rocks, alt. 850-880 m (1), on the bark of various *Lauraceae*, alt. 900 m; abundant (3).
- Hypogymnia madeirensis* (Tav.) Hawk. – on dry branches of a deciduous tree (*Lauraceae*) ca 2 km east of Ribeiro Frio, alt. ca 830 m (1). My specimen lacks soredia, contains a few stalked apothecia and its medulla is PD–. *H. madeirensis* shows some superficial similarity to *H. tavaresii*, but the latter is larger and its medulla reacts PD+ bright yellow (Hawksworth 1973). Tavares (1952) recorded this species (as *Parmelia madeirensis*) from its locus classicus (“Inter Queimadas et Calderario Verde, ad ramos *Ericae* circ. 900 m s. m. 9–VIII–1951”).
- Hypotrachyna endochlora* (Leight.) Hale – on *Ocotea foetens* bark ca 1 km east of Ribeiro Frio, alt. ca 850 m (1). From Madeira for the first time recorded by Arvidsson and Wall (1985) in Ribeiro Frio; *H. laevigata* (Sm.) Hale – on mossy basaltic rocks ca 2 km east of Ribeiro Frio, alt ca 830 m (1). From Madeira for the first time recorded as *Parmelia laevigata* by Alstrup (1991) in Ribeiro Frio; *H. pulvinata* (Fée) Hale – among mosses on basaltic rocks 2 km, alt. ca 830 m and 1 km, alt. ca 850 m, east of Ribeiro Frio (1). Probably already recorded by Tavares (1964, as *H. taylorensis*). *H. pulvinata* is absent in Madeira in Hafellner’s checklist (1995), but it occurs there according to Schumm (2008). The only difference between *H. pulvinata* and *H. taylorensis* is the upper surface of older specimens of the latter with occasional irregular white abraded areas. They are probably symptoms of altering according to Schumm (l.c.). REMARK. If both species are identical, the binom *Parmelia pulvinata* Fée 1824 has priority against *Parmelia taylorensis* M. E. Mitsch. 1961; *H. rockii* (Zahlbr.) Hale – on the bark of *Laurus azorica*, 2 km east of Ribeiro Frio, alt. ca 830 m (1). For the first time recorded from Madeira in the laurel forest (several collections) by Arvidsson and Wall (1985).
- Leptogium brebissonii* Mont. – on mossy basaltic rock above Ribeiro Frio, alt. ca 900 m (3); *L. cochleatum* (Dick.) P. M. Jørg. & P. James – on mossy basaltic rocks and on the bark of *Laurus azorica* 2 km east of Ribeiro Frio, alt. 830 m (1); on cedar bark near Ribeiro Frio, alt. 880 m (1); on mossy basalt rock above Ribeiro Frio, alt. ca 900 m (3); *L. cyanescens* (Rabh.) Körb. – on cedar bark near Ribeiro Frio, alt. ca 880 m (1).
- Lobaria immixta* Vain. – on branches of *Ocotea foetens* 2 km east of Ribeiro Frio alt. ca 830 m (1); on branches of *Ocotea foetens* and *Laurus azorica* above Ribeiro Frio, alt. ca 900 m (3); *L. sublaevis* (Nyl.) Tav. – on the bark of a deciduous tree (*Lauraceae*) 2 km east of Ribeiro Frio, alt. 830 m (1); on fallen tree branches (*Lauraceae*) between Ribeiro Frio and Balcões, alt. 850 m (2); on the bark of *Laurus azorica* above Ribeiro Frio, alt. ca 900 m (3).
- Megalospora maderensis* (Krempelh.) Sipman – on the bark of *Ocotea foetens* ca 1 km east of Ribeiro Frio, alt. ca 850 m (1).
- This rare endemic species in Madeira is characterized with by bacillar spores, the presence of clearly thickened edges around the spore septa and the presence of

usnic acid (Sipman 1983). It occurs at elevations from 850 to 1000 m on bark and rock (Tavares 1952, as *Bomblyospora amplificans* var. *maderensis*).

***Nephroma foliolatum*** P. James & F. J. White – on fallen branches of a deciduous tree (*Lauraceae*), alt. ca 850 m (2); among mosses on the bark of *Laurus azorica* above Ribeiro Frio, alt. ca 900 m (3). According to James and White (1987), *Nephroma foliolatum* is confined to the laurel forest of Madeira. It is also known from a single unlocalized gathering collection from the Canary Islands; *N. laevigatum* Ach. – on a wooden fence near Ribeiro Frio, alt. ca 880 m (3).

***Normandina pulchella*** (Borrer) Nyl. – on the thallus of *Degelia plumbea* growing on tree bark (*Lauraceae*) above Ribeiro Frio, alt. ca 900 m (3); as a facultative lichen growing on lichens.

***Ochrolechia pallescens*** (L.) A. Massal. – on fallen branches of deciduous trees (*Lauraceae*) ca 2 km east of Ribeiro Frio, alt. 830 m, and near Ribeiro Frio, alt. 880 m (1).

***Pannaria rubiginosa*** (Ach.) Bory – among mosses on the bark of *Laurus azorica*, alt. ca 850 m (2); on the bark of *Ocotea foetens* above Ribeiro Frio, alt. ca 900 m (3).

***Parmelia saxatilis*** (L.) Ach. – on mossy basaltic rock above Ribeiro Frio, alt. ca 900 m (3).

***Parmotrema arnoldii*** (Du Rietz) Hale – on tree bark (*Lauraceae*), ca 2 km east of Ribeiro Frio, alt. 830 m (1); ***P. perlatum*** (Huds.) M. Choisy – on branches of a deciduous tree (*Lauraceae*) near Ribeiro Frio, alt. 880 m, (1); on mossy basaltic rock above Ribeiro Frio, alt. ca 900 m (3); ***P. robustum*** (Degel.) Hale – on tree bark (*Lauraceae*), ca 1 km east of Ribeiro Frio, alt. ca 850 m (1).

***Peltigera degenii*** Gyeln. – among mosses on basaltic rock 1 km east of Ribeiro Frio, alt. 850 m (1). In Madeira so far recorded only on mossy stones along the road in Cruzinhas, at alt. ca 550 m (Alstrup 1991); ***P. membranacea*** (Ach.) Nyl. – on mosses on basaltic rock above Ribeiro Frio, alt. ca 900 m (3); ***P. neckeri*** Hepp ex Müll. Arg. – on mossy basaltic rocks near Ribeiro Frio, alt. 880 m (1).

***Pertusaria leucostoma*** (Bernh.) A. Massal. – on fallen branches of a deciduous tree (*Lauraceae*), ca 1 km east of Ribeiro Frio, alt. ca 850 m (1); ***P. ophthalmiza*** (Nyl.) Nyl. – on branches of *Laurus azorica*, 2 km east of Ribeiro Frio, alt. ca 830 m (1); on the bark of *Ocotea foetens* between Ribeiro Frio and Balcões, alt. ca 850 m (2). From the second site probably already recorded by Tavares (1952) on introduced *Platanus* (as *P. multipuncta*).

***Phlyctis agelaea*** (Ach.) Flot. – on dry braches of *Ocotea foetens* ca 2 km east from Ribeiro Frio, alt. ca 830 m (1).

For the first time recorded on flakes of *Eucalyptus* between Camacha and Carreiras by Arvidsson and Wall (1985).

***Porina leptosperma*** Müll. Arg. – on leaves (*Laurus azorica*), alt. ca 920 m (3).

According to Sérusiaux (1996), this otherwise pantropical species is common on the island.

***Pseudocyphellaria aurata*** (Ach.) Vain. – on the bark of a deciduous tree (*Lauraceae*) 2 km east of Ribeiro Frio, alt. 830 m (1); on the bark of *Ocotea foetens* above Ribeiro Frio, alt. ca 900 m (3); ***P. crocata*** (L.) Vain. – on dry branches of a deciduous shrub above Ribeiro Frio, alt. ca 900 m (3); ***P. intricata*** (Delise) Vain. – on the bark of *Laurus azorica* above Ribeiro Frio, alt. ca 900 m (3).

- Ramalina farinacea* (L.) Ach. – on fallen tree branches (*Lauraceae*), alt. ca 900 m (3); *R. nodosa* Krog & Østhaugen – on almost vertical basaltic slopes ca 2 km east of Ribeiro Frio, alt. ca 830 m (1). Probably new to Madeira, according to Krog and Østhaugen (1980) and Aptroot and Schumm (2008); until now known only from the Canary Islands (Fuerteventura, Tenerife and Gomera). *Ramalina nodosa* is characterised by delicate, thin (0.1–1mm), richly branched subterete to terete laciniae without soredia and pseudocyphellae, with numerous nodules; *R. subgeniculata* Nyl. – on fallen tree branches (*Lauraceae*), 1 km east of Ribeiro Frio, alt. 850 m (1); in the levada between Ribeiro Frio and Balcões, alt. 850 m (2) and above Ribeiro Frio, alt. ca 900 m (3).
- Rimelia reticulata* (Taylor) Hale & A. Fletscher – on a deciduous tree (*Lauraceae*) ca 1 km east of Ribeiro Frio alt. 850 m (1); on the bark of *Ocotea foetens* between Ribeiro Frio and Balcões alt. ca 850 m (2).
- Stereocaulon azureum* (Schaer.) Nyl. – on basaltic rocks 1 km eastwards, alt. 850 m (1) and above Ribeiro Frio, alt. ca 900 m (3).
- Sticta canariensis* Bory ex Del. – on tree branches (*Lauraceae*) 1 km east of Ribeiro Frio, alt. 850 m (1) and abundantly on mossy rocks above Ribeiro Frio, alt. ca 900 m (3).
- Tapellaria epiphylla* (Müll. Arg.) R. Sant. – very frequent, e.g., on leaves of *Laurus azorica* 2 km east of Ribeiro Frio, alt. ca 830 m (1); on leaves of *Ocotea foetens*, *Ilex canariensis*, *Ilex perado*, *Persea indica* and introduced *Taxus baccata* above Ribeiro Frio, alt. ca 900 m (3).
- Thelotrema lepadinum* (Ach.) Ach. – on the bark of *Ocotea foetens* between Ribeiro Frio and Balcões, alt. ca 850 m (2).
- Usnea articulata* Hoffm. – on fallen tree branches (*Lauraceae*) above Ribeiro Frio, alt. 900 m (3).
- Usnea rubicunda* Stirton – on fallen tree branches (*Lauraceae*) 2 km, 830 m and 1 km east of Ribeiro Frio, alt. ca 850 m (1); on fallen tree branches (*Lauraceae*) above Ribeiro Frio, alt. 900 m (3).
- Woessia apiahica* (Müll. Arg.) Sérus. – on tree leaves (*Lauraceae*) above Ribeiro Frio, alt. ca 900 m (3).
- In Madeira already mentioned by Santesson (1952) as *Bacidia apiahica*.

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O niektórych porostach poznanych w okolicach Ribeiro Frio  
(Madera, Makaronezja)

Streszczenie

Podano listę 49 gatunków porostów zebranych w latach 2008 i 2009 w okolicy siedziby Ribeiro Frio na wyspie Madera. Gatunki *Ramalina nodosa* i *Peltigera neckeri* są prawdopodobnie nowe dla tej wyspy; interesujące są również notowania gatunków *Cladonia stereoclada*, *Hypogymnia madeirensis*, *Megalospora maderensis*, *Peltigera degenii* i *Phlyctis agelaea*.