



## Three new species of crustose Physciaceae from Guatemala, with notes on some additional species

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### Abstract

Three crustose species of Physciaceae from Guatemala are reported as new to science, the saxicolous *Buellia rugosissima* and *Dimelaena subsquamulosa* and the corticolous *Sculptolumina conradiae*. Detailed descriptions of these species are presented together with notes on their chemistry, distribution, ecology and taxonomy. Additional information is given for a further ten species of Physciaceae, nine of which are new records for the country.

**Key words:** biodiversity, Central America, lichenized Ascomycota, Neotropics, taxonomy

### Introduction

In a previous report on lichens from Guatemala (van den Boom *et al.* 2007), 184 taxa were recorded. The specimens were collected during a field trip through this country in 2004. However, species belonging to the crustose Physciaceae were not included but are treated in the present contribution. In recent time the descriptions of many new species as well as new keys have been published for the genus *Buellia* s. l. (Marbach 2000). This publication has greatly facilitated the study of the Neotropical representatives of this group. Only one of the species collected in the present work had been recorded previously for Guatemala, namely *Amandinea diorista* (Nyl.) Marbach var. *diorista* (Marbach 2000). Other *Buellia* s. l. species reported for Guatemala in Marbach (2000) included *Amandinea submontana* Marbach, *A. xylographella* (Nyl.) Marbach, *Baculifera entochlora* (J. Steiner) Marbach, *B. longispora* Marbach, *B. micromera* (Vain.) Marbach, *B. orosa* Marbach & Kalb, *Cratiria obscurior* (Stirt.) Marbach, *C. rutilans* Marbach & Kalb, *Gassicurtia catasema* (Tuck.) Marbach, *G. coccinea* Fée, *Hafellia pruinosa* Marbach & Kalb, *Orcularia insperata* (Nyl.) Kalb & Giralt (as *Amandinea insperata* (Nyl.) H. Mayrhofer & Ropin) and *Sculptolumina serotina* (Malme) Marbach.

The collections studied are from central and southern Guatemala, mainly from elevations between 870 and 3150 m. One coastal locality in the area of Monterrico (Pacific Ocean) was also studied (Fig. 1). Two saxicolous species, *Buellia rugosissima* and *Dimelaena subsquamulosa*, and the corticolous, *Sculptolumina conradiae*, are described as new, and nine additional taxa are reported from Guatemala for the first time (marked in the text with an asterisk).

### Material and Methods

The study is based on corticolous and saxicolous material. The collections were examined by standard techniques using stereoscopic and compounds microscopes. Only free ascospores lying outside the asci were measured.

places, on *Alnus*, 2700 m, 14° 48.2' N, 91° 38.8' W, 22 July 2004, P. & B. van den Boom 32838 (hb v.d. Boom); (A) S of Quezaltenango, S of Llano del Pinal, N slope of volcano Santa Maria, path among small agriculture fields with small forests, shrubs, trees and outcrops along path, on *Baccharis vaccinioides*, 2700 m, 14° 46.6' N, 91° 33.3' W, 23 July 2004, P. & B. van den Boom 32975 (hb. v.d. Boom).

**\**Rinodina griseosoralifera*** Coppins (1989: 169).

Characterized by a thallus composed of discrete whitish areoles which become soresiate and react K<sup>+</sup> yellow (atranorin) and the large *Pachysporaria*-type ascospores up to 29.0 × 14.0 μm. The species was previously known from Europe [Norway, British Isles, Austria (Mayrhofer & Moberg 2002) and the Iberian Peninsula (Giralt 2010)] and along the west coast of North America from Alaska to California (Sheard 2010). As with *R. flavosoralifera*, the present specimens possess well-developed apothecia and ascospores.

**Material examined:**—GUATEMALA. (A) Quezaltenango: S of Quezaltenango, S of Llano del Pinal, N slope of volcano Santa Maria, path among small agriculture fields with small forests, shrubs, trees and outcrops along path, on *Sambucus*, 2700 m, 14° 46.6' N, 91° 33.3' W, 23 July 2004, P. & B. van den Boom 32965, 32970 (hb. v.d. Boom).

**\**Rinodina maculans*** Müll. Arg. (1889: 66).

Characterized by the lack of secondary substances and the narrow *Pachysporaria*-type ascospores (up to 20.0 × 8.0 μm) developing with type B ontogeny. A corticolous species widely distributed in Central and South America (Sheard 2010, Malme 1902: sub *R. intrusa* (Nyl.) Malme) and also present in China (Aptroot *et al.* 2007: sub *R. neglecta* Aptroot) and the eastern coastal plains of North America (Sheard 2010).

**Material examined:**—GUATEMALA. (B) Guatemala ciudad: garden around University San Carlos, scattered mixed trees, on *Jacaranda mimositifolia*, 1730 m, 14° 37.2' N, 91° 33.3' W, 27 July 2004, P. & B. van den Boom 33150 (hb. v.d. Boom).

**\**Sculptolumina japonica*** (Tuck.) Marbach (2000: 297).

Characterized by the brownish, inconspicuous to leprose-granulose thallus containing orange pigments which react K<sup>+</sup> purple (anthraquinones), the lecideine apothecia, the brown hypothecium, the interspersed hymenium and the large, microrugulate *Mischoblastia*-type ascospores (up to 30.0 × 13.0 μm). Another interesting distinguishing feature of this species are the large filiform conidia (up to 30 μm), first described in Giralt *et al.* (2009) and observed for the second time in the specimen cited below. A corticolous/lignicolous species whose distribution extends from the tropics and subtropics north to the Macaronesian region and to the Eurosiberian region under oceanic influence (Giralt *et al.* op. cit.). Reported once from North America (North Carolina, Sheard *et al.* 2008).

**Material examined:**—GUATEMALA. (D) Coban: E of Coban, San Pedro Carcha, Balneario Las Islas, hill along and above cascades, *Acer*, *Pinus* and *Quercus* trees and some outcrops, 1325 m, 15° 28.0' N, 90° 18.5' W, 31 July 2004, P. & B. van den Boom 33263 (hb. v.d. Boom).

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