

***Polycauliona maheui*,
the basionym of *Rhizoplaca maheui* comb. nov.**

ANTONIO GÓMEZ BOLEA^{1*} & MERCEDES BARBERO CASTRO¹

* agomez@ub.edu

¹ *Departament de Biologia Vegetal (Botànica), Facultat de Biologia
Universitat de Barcelona Av. Diagonal 645, Barcelona 08028 Spain*

Abstract – The new combination and lectotypification of *Rhizoplaca maheui* is introduced for *Polycauliona maheui*. In addition, *Rhizoplaca bullata* is declared to be conspecific with *Rhizoplaca maheui* and is a heterotypic synonym of this last species.

Key words – lichens, *Lecanoraceae*, silicolous

Introduction

Auguste-Marie Hue published, in “Notes relatives à la cryptogamie de l’Espagne. Les Lichens du Montserrat” (Maheu 1909), the diagnosis of a new species: *Polycauliona maheui*. Jacques Maheu signed the drawings included in the protologue (FIG 1A). The collector was Maurice Gillet, 1900, and the locality given is “Mines de Pont en Roya et Montserrat, Espagne” (FIG 1B).

Polycauliona maheui appears in Index Fungorum (2009) as basionym of *Caloplaca maheui*, and in Llimona & Hladun (2001: 456) under Nomina Inquirenda, with references for Spain cited by Maheu (1909) and Esteve (1932). Olivier (1921) also cited this species from Montserrat.

Follmann & Crespo (1976) published *Omphalodina bullata* as a new species and Leuckert & Poelt (1977) proposed a new combination as *Rhizoplaca bullata*. The diagnoses and type material of the two species show clearly that *Omphalodina bullata* and *Polycauliona maheui* are conspecific.

Material and methods

The morphology of the lichen specimens was examined using an Olympus SZ60 stereo microscope. Paraphyses, asci, ascospores and conidia were examined using a Zeiss Axioscope microscope. Chemical constituents were identified by thin-layer chromatography (Elix & Ernst–Russell 1993).

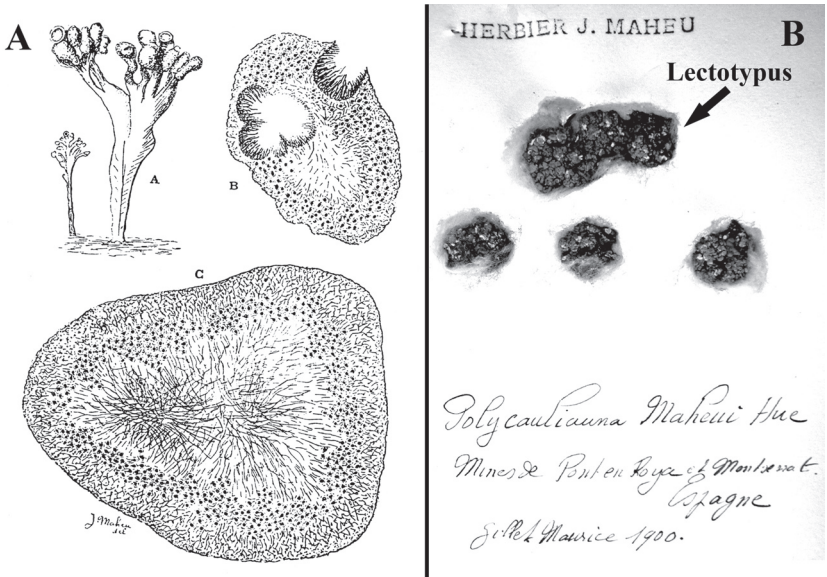


FIG 1. A. Drawings by J. Maheu accompanying the protologue.
B. Arrow indicates selected Lectotypus of *Rhizoplaca maheui* from the Herbarium Maheu (PC).

Taxonomy

We propose the new combination, *Rhizoplaca maheui*, lectotypified by material from Herbarium Maheu (PC).

***Rhizoplaca maheui* (Hue) Gómez-Bolea & M. Barbero, comb. nov.** FIGS 1–3

MYCOBANK MB 513097

- = *Polyscaulium maheui* Hue, in Maheu, Bulletin de la Société Botanique de France 56: 390. 1909 (basonym). **Lectotypus (hic designatus):** Espagne: Mines de Pont en Roya et Montserrat, 1900, leg. Maurice Gillet, Herbarium Maheu PC.
- = *Caloplaca maheui* (Hue) Zahlbr., Cat. Lich. Univ. 7: 274. 1931.
- = *Omphalodina bullata* Follmann & A. Crespo, Philippia 3(1): 24. 1976. **ISOTYPUS:** Spain: Zentralspanien, Prov. Toledo: koloniebildend an halbschattigen, luftfeuchten, teils überhängenden, verhältnismäßig glatten Silikatfelsen im *Leprarion chlorinae* Smarda et Hadac, 800 m, N, pH 6,5, Felstürme in der Sierra de Altamira unweit Puerto de San Vicente. Leg. et det. G. Follmann et A. Crespo, 1975 (BCC-Lich. 1200).
- = *Rhizoplaca bullata* (Follmann & A. Crespo) Leuckert & Poelt, Bibliotheca Lichenologica 9: 233. 1977.

Description of the lectotype

FIGS 2, 3

THALLUS fruticose, pulvinate, ochre-yellowish-green colour when stored for long time in the herbarium, in some zones with crystalline grains giving it a

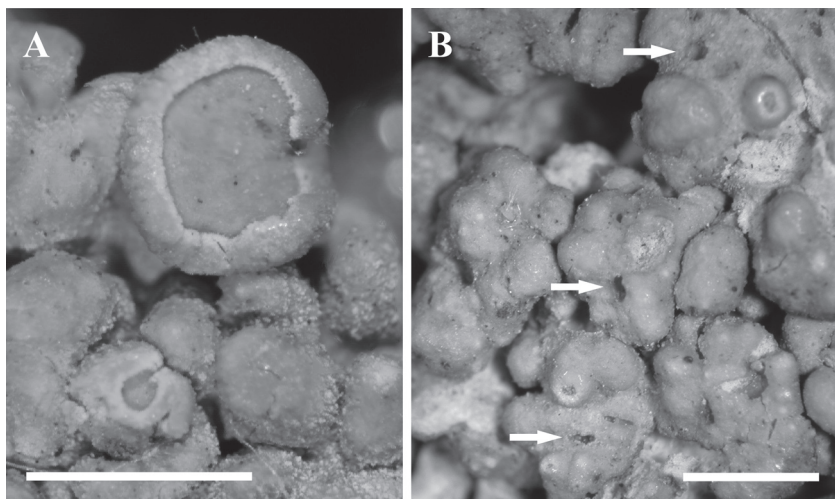


FIG 2. *Rhizoplaca maheui* (lectotypus, Herb. Maheu, PC).
A. Detail of apothecium. B. Detail showing pycnidia (arrows).
Scale bar: A = 1.5 mm; B = 1 mm.

white pruinose aspect, 10–15 mm diam. and 6 mm tall. Basal part of blackish-brown colour, laciniae up to 3.5 mm wide, with bullate tips c. 7.5 mm diam. APOTHECIA lecanorine, up to 1.6 mm diam., with a distinct thalline margin 0.1–0.2 mm wide, with an urceolate then flat to $\pm$ undulating and ochre-yellowish-green disc, concolorous with thalline margin, in some cases with the same crystalline grains as the thallus. HYMENIUM colourless to pale brown, 62–70 μ m high, I+ blue. EPIHYMENIUM brown, containing abundant minute crystals that dissolve in K, 7–10 μ m thick. HYPOTHECIUM pale brown, containing abundant minute crystals that dissolve in K, c. 25 μ m thick. PARAPHYSES conglutinated, branched, septate, occasionally anastomosing, 2.3–2.5 μ m wide, with apical cells not or slightly capitate (3.2 μ m). Asci clavate, 8-spored, 50–55 $\times$ 16 μ m, of *Lecanora*-type (Purvis et al. 1992: 661). ASCOSPORES colourless, simple, ellipsoidal, 8–14 $\times$ 4–6 μ m.

PYCNIDIA immersed, urceolate, concolorous with the thallus; ostiolum 80–160 μ m diam. CONIDIA filiform, 21–27 $\times$ 0.8 μ m.

CHEMISTRY. Cortex K–, KC+ yellowish, P–; medulla K $\pm$ red brown, KC–, P+ red; containing usnic and fumarprotocetraric acids (major), protocetraric and confumarprotocetraric acids (minor).

SPECIMENS EXAMINED: *Polycauliona maheui*: Maurice Gillet collection, Herbarium Maheu, PC.

Omphalodina bullata: Isotypus BCC–Lich. 1200.

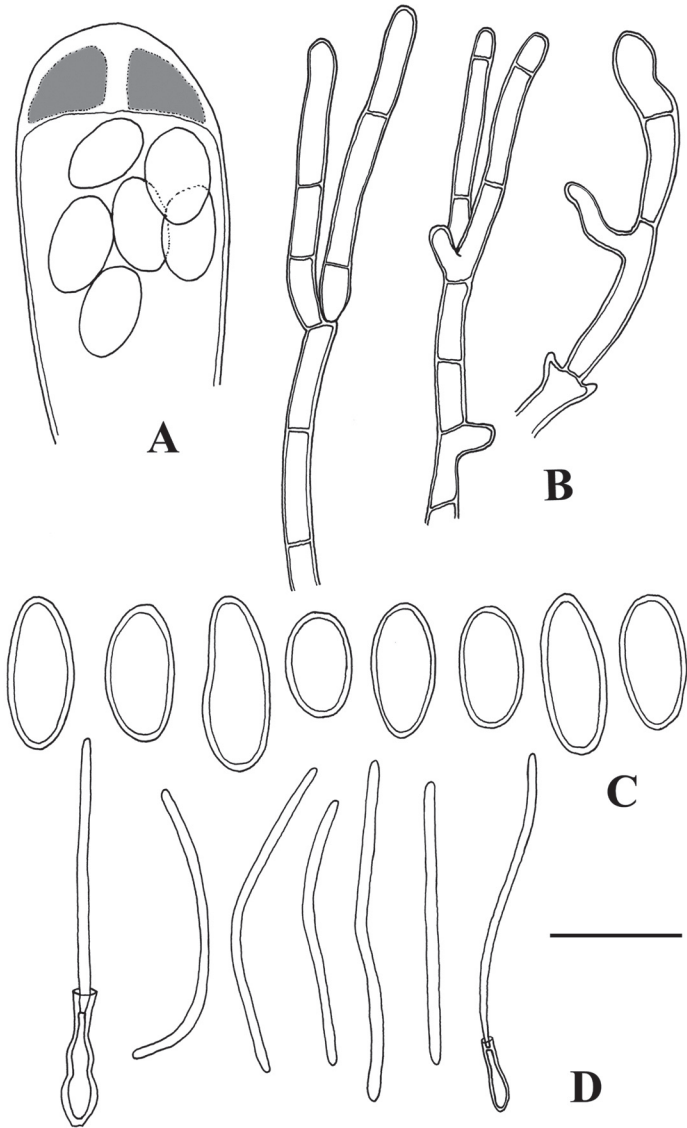


FIG. 3. *Rhizoplaca maheui* (lectotypus, Herb. Maheu, PC).
A. Ascus structure (in I, after pre-treatment with KOH). B. Paraphyses.
C. Ascospores. D. Conidia and conidiogenous cells.
Scale bar = 10 μ m.

TABLE 1. Type material of *Polycauliona maheui*. Discordance between Maheu's description and our observations.

	MAHEU 1909	CURRENT OBSERVATIONS
THALLUS	5–12 mm high	≤ 6 mm high
APOTHECIA	1–5 mm diam.	0.6–1.6 mm diam.
PARAPHYSES	3–4 µm diam.	Conglutinated, branched, septate, occasionally anastomosing, 2.3–2.5 µm diam.
ASCI	50 × 12.5 µm	50–55 × 16 µm
ASCOSPORES	8–11 × 44.5 µm	8–14 × 4–6 µm
PYCNIDIA	Ostium 120–180 µm diam.	Ostium 80–160 µm diam.
CONIDIA	20–28 × 0.5–0.6 µm	21–27 × 0.8 µm

COMMENTS: Our description shows certain discordances with the protologue (Maheu 1909), which are summarized in TABLE 1. The differences between our observations of the isotypus of *Omphalodina bullata* (BCC-Lich. 1200) and Follmann & Crespo's description (Follmann & Crespo 1976) are summarized in TABLE 2.

TABLE 2. Isotypic material of *Omphalodina bullata*. Discordance between Follmann & Crespo's description and our observations.

	FOLLMANN & CRESPO 1976	CURRENT OBSERVATIONS
LACINIAE	1–2 mm wide	≤ 3.5 mm wide
APOTHECIA	2–4(–5) mm diam.	≤ 2.75 mm diam.
PARAPHYSES	Simple, aseptate, apical cells non-capitate	Branched, septate, 2.2–2.5 µm wide, apical cells sometimes slightly capitate, ≤ 3.2 µm
ASCOSPORES	Subglobose to ellipsoidal, 7–10 µm diam.	Ellipsoidal 10–12 × 5–6 µm
CONIDIA	4–6 × 1 µm	21–27(–30) × 0.8 µm
CHEMISTRY	Usnic, fumarprotocetraric, & protocetraric acids	Major — usnic & fumarprotocetraric acids Minor — protocetraric & confumarprotocetraric acids

The lectotype label data present a problem, because two localities are indicated on the label: “Mines de Pont en Roya” and “Montserrat” but only one country (Spain) (FIG 1B). We do not know any location in Spain with the name “Mines de Pont en Roya”, but it is possible that the author refers to a locality in France across the river Roya in the Mercantour massif on the Maritime Alps. Regarding the reference “Montserrat”, and after a number of visits to this well-known Catalan mountain, we have not been able to find this species again. As we could not locate Esteve's herbarium, we cannot confirm Esteve's citation of (1932) of Montserrat.

Acknowledgements

We thank the Curator of PC for the loan of a specimen and Javier Etayo and Claude Roux for presubmission reviews. The authors also acknowledge financial support from the projects B0S2001-0869-C04-02 (Spanish Government) and 2000SGR00036 (Catalan Government).

Literature cited

- Elix JA, Ernst-Russell KD. 1993. A catalogue of standardized thin layer chromatographic data and biosynthetic relationships for lichen substances. 2 ed. Canberra: Australian National University, p. 1–163.
- Esteve A. 1932. Contribución al estudio de la flora liquenológica de la comarca del Bages. Tesis Doctoral, Universidad de Barcelona, Manresa.
- Follmann G, Crespo A. 1976. Beobachtungen zum Vorkommen spanischer Flechten. V. Eine neue Schildflechte aus dem Verwandtschaftskreis von *Omphalodina rubina* (Vill.) Choisy. *Philippia* 3(1): 24–29.
- Index Fungorum. 2009. www.indexfungorum.org
- Leuckert Ch, Poelt J. 1977. *Rhizoplaca* Zopf. In Poelt J, Vězda A. Bestimmungsschlüssel europäischer Flechten. Ergänzungsheft I. *Bibliotheca Lichenologica* 9: 233–235.
- Llimona X, Hladun NL. 2001. Checklist of the lichens and lichenicolous fungi of the Iberian Peninsula and Balearic Islands. *Bocconea* 14: 1–581.
- Maheu MJ. 1909. Notes relatives à la cryptogamie de l'Espagne. Les Lichens du Montserrat. *Bulletin de la Société Botanique de France* 56: 334–343, 389–397.
- Olivier H. 1921. *Prodromus lichenum europeorum fruticulosi et foliacei*. – Adjunctis tabulis analyticis specierum, cum omnium varietatum, formarumque descriptione. *Memorias de la Real Academia de Ciencias y Artes de Barcelona*. Ser. 3 vol. XVI. Núm. 14: 440–529.
- Purvis OW, Coppins BJ, Hawksworth DL, James PW, Moore DM (eds). 1992. *The Lichen Flora of Great Britain and Ireland*. Natural History Museum Publications, London.
- Zahlbruckner A. 1931. *Catalogus Lichenum Universalis*, vol. VII: 1–784. Borntraeger, Leipzig.