MYCOTAXON

Volume 109, pp. 161–164 *July–September 2009*

A survey of the corticioid fungi from the Biosphere Reserve of Las Batuecas-Sierra de Francia (Spain)

Sergio Pérez Gorjón[1], Nils Hallenberg[2] & Annarosa Bernicchia[3]

[1]*spgorjon@usal.es* [2]*nils.hallenberg@dpes.gu.se* [3]*annarosa.bernicchia@unibo.it*

[1]*Departamento de Botánica & Centro Hispano-Luso de Investigaciones Agrarias Universidad de Salamanca, Ldo. Méndez Nieto s/n, 37007 Salamanca Spain*

[2]*Department of Plant and Environmental Sciences, Box 461, S-405 30 University of Gothenburg, Gothenburg Sweden*

[3]*Dipartimento di Scienze e Tecnologie Agroambientali, Patologia Vegetale Università degli Studi di Bologna, Via Fanin 42, 40127 Bologna Italy*

Abstract — 140 species belonging to 55 genera of corticioid fungi are reported from the Biosphere Reserve of Las Batuecas-Sierra de Francia in central-western Spain. *Amyloathelia amylacea, Phlebia* cf. *lacteola, Sistotrema alboluteum, S. porulosum, S. subtrigonospermum,* and *Vuilleminia alni* are new records for the Iberian Peninsula. The presence of *Hjortstamia crassa* recently re-collected in Europe after one century is remarkable. A complete checklist of fungi, descriptions, and line drawings for the Iberian novelties are available on http://www.mycotaxon.com/resources/weblist.html.

Key words — *Aphyllophorales*, chorology, Mediterranean

Introduction

The Natural Park of "Las Batuecas-Sierra de Francia", declared a Biosphere Reserve in 2006, is situated in the south of Salamanca province in the central-western part of the Iberian Peninsula (40°26'–40°35' N, 5°57'–6 15' W) and covers an area of 320 km^2. The reserve has a typically humid, Mediterranean climate and the main forest formations are: deciduous forests of *Quercus ilex* subsp. *ballota* (Desf.) Samp., *Q. suber* L., *Q. faginea* Lam., *Q. pyrenaica* Willd., *Q. robur* L., *Castanea sativa* Mill., *Arbutus unedo* L., and *Eucalyptus camaldulensis* Dehnh.; coniferous forests of *Pinus pinaster* Aiton, *P. sylvestris* L., and *Juniperus oxycedrus* L.; and riparian formations of *Alnus glutinosa* (L.) Gaertn., *Salix* spp. and *Populus* spp. Despite being declared a Biosphere Reserve (mainly based on the interesting Mediterranean vegetation, animal communities and socio-cultural patrimony) only a few fungal studies have been undertaken in the

area (Daniëls & Gorjón 2009, Gorjón & Bernicchia 2009, Gorjón et al. 2007). Present survey constitutes the first long-term, systematized study of corticioid species.

Materials and methods

During 2002–07 fungi were collected on different kinds of substrate in the area studied. Samples were examined following classical methods. Sections were mounted in KOH (5%), cotton blue and/or Melzer's reagent and studied using a Leica DMRD microscope; line drawings were made from images acquired with a Leica DC100 camera and Leica QWin image system. Specimens are kept in SALA, some duplicates also in HUBO and GU. Nomenclature mainly follows CBS (2009).

Results

In this survey 140 species belonging to 55 genera of corticioid wood-inhabiting fungi were identified. Species of *Hyphodontia*, *Tomentella*, *Botryobasidium*, *Phanerochaete*, and *Hyphoderma* were dominant. The annotated species checklist posted on the internet provides additional taxonomical, ecological and chorological comments for all species.

Amyloathelia amylacea (Bourdot & Galzin) Hjortstam & Ryvarden, *Phlebia* cf. *lacteola* (Bourdot) M.P. Christ., *Sistotrema alboluteum* (Bourdot & Galzin) Bondartsev & Singer, *S. porulosum* Hallenb., *S. subtrigonospermum* D.P. Rogers (see also Gorjón & Hallenberg 2008), and *Vuilleminia alni* Boidin et al. are new records for the Iberian Peninsula.

Rare or infrequent species in the Iberian Peninsula are *Aleurodiscus aurantius* (Pers.) J. Schröt., *Botryobasidium asperulum* (D.P. Rogers) Boidin, *Bulbillomyces farinosus* (Bres.) Jülich, *Ceraceomyces sulphurinus* (P. Karst.) J. Erikss. & Ryvarden, *Dacryobolus sudans* (Alb. & Schwein.) Fr., *Hjortstamia crassa* (Lév.) Boidin & Gilles, *Hyphodontia cineracea* (Bourdot & Galzin) J. Erikss. & Hjortstam, *H. rimosissima* (Peck) Gilb., *Phanerochaete avellanea* (Bres.) J. Erikss. & Hjortstam, *Phlebia ochraceofulva* (Bourdot & Galzin) Donk, *P. subochracea* (Alb. & Schwein.) J. Erikss. & Ryvarden, *Stereum illudens* Berk., *S. reflexulum* D.A. Reid, *Tomentella botryoides* (Schwein.) Bourdot & Galzin, *Tubulicrinis borealis* J. Erikss., and *Vuilleminia cystidiata* Parmasto.

Some species seem to have a mainly Mediterranean distribution, such as *Byssomerulius hirtellus* (Burt) Parmasto, *Peniophora meridionalis* Boidin, *Phanerochaete martelliana* (Bres.) J. Erikss. & Ryvarden, *Scytinostroma aluta* Lanq., and *Stereum reflexulum*. Substrates that are particularly species-rich are *Quercus pyrenaica* (54 species), *Pinus pinaster* (40), *Arbutus unedo* (37), *Pinus sylvestris* (34), and *Quercus ilex* (33).

Discussion

The Iberian Peninsula has been very well investigated, however six species are considered new records. *Amyloathelia amylacea* is a rare species in southern Europe but cosmopolitan and widely distributed in the northern hemisphere; in the studied area it is quite frequent on still-attached, dead branches of juniper. The specimen identified as *Phlebia* cf. *lacteola* belongs to us to the *Phlebia lilascens* (Bourd.) J. Erikss. & Hjortstam complex. *Phlebia lilascens* differs mainly by colour but the colour is often dependent on the kind of substrate it is growing on. Moreover, within *P. lilascens* there are cryptic species with a very big overlap in morphology. Because of its whitish fruitbody and different spore size we prefer to continue to keep this specimen as *Phlebia* cf. *lacteola*, and wait for further accumulation of specimens. *Vuilleminia alni* seems to be a species closely related or identical to *Vuilleminia comedens* (Nees) Maire. This species differs slightly from *V. comedens* in colour and spore size and cultural studies by Boidin et al. (1994) show incompatibility between *V. alni* and *V. comedens*, but initial molecular studies (Ghobad-Nejhad & Hallenberg, unpublished) do not provide clear evidence for keeping the two species separate.

Hjortstamia crassa was also recently collected in the north of the Iberian Peninsula by Salcedo & Olariaga (2008) and has now also been found in the studied area. It is a very interesting record because in Europe it was previously known from the only Polish collection (Bresadola 1903) and it has probably become extinct in this collecting site (Snowarski 2006).

Acknowledgements

We would like to thank Gitta Langer (Göttingen, Germany) and Peter Roberts (Kew, United Kingdom) for critically reviewing the manuscript and to the editors of Mycotaxon for corrections and improvements. The first author has been supported partially by a research grant co-financed by the European Social Fund and the Junta de Castilla y León (Spain) and by a brief research stay grant from the University of Salamanca; he expresses his gratitude to the GPCV of CIALE (University of Salamanca) for technical support, Francisco Javier Hernández (SALA curator), Prudencio García and Blanca M. Rojas for help in several field trips.

Literature cited

Boidin J, Lanquetin P, Gilles G. 1994. Contribution à la connaissance du genre *Vuilleminia* (*Basidiomycotina*). Bull. Soc. Mycol. Fr. 110 (2): 91–107.

Bresadola G. 1903. Fungi Polonici a el. Viro B. Eichler lecti. Ann. Mycol. 1(1–2): 65–131.

CBS. 2009. *Aphyllophorales* database. www.cbs.knaw.nl/databases/index.htm.

Daniëls PP, Gorjón SP. 2009. *Ramaria mediterranea* (*Gomphales, Basidiomycota*), segunda cita para la Península Ibérica. Bol. Soc. Micol. Madrid (in press)

Gorjón SP, Bernicchia A. 2009. *Antrodia sandaliae* (*Polyporales, Basidiomycota*), an interesting polypore collected in the Iberian Peninsula. Cryptog. Mycol. 30(1): 53–56.

Gorjón SP, García Jiménez P, Sánchez Sánchez J. 2007. Listado preliminar de *Ascomycota* presentes en el Parque Natural de "Las Batuecas Sierra de Francia" (Salamanca, España). Stud. Bot. 26: 125–129.

Gorjón SP, Hallenberg N. 2008. New records of *Sistotrema* species (*Basidiomycota*) from the Iberian Peninsula. Sydowia 60(2): 205–212.

Salcedo I, Olariaga I. 2008. *Phanerochaete crassa* (Lév.) Burds., nueva cita para la micoflora de la Península Ibérica. Revista Catalana Micol. 30: 93–99.

Snowarski M. 2006. Mushrooms and fungi of Poland. Polish red list of macro fungi. http://www.grzyby.pl/czerwona-lista-Aphyllophorales.htm