Karstenia 34:1–3, 1994

Polyporus admirabilis (Polyporaceae), new to Europe

MARIA NUÑEZ

NUÑEZ, M. 1994: Polyporus admirabilis (Polyporaceae), new to Europe. — Karstenia 34: 1–3. ISSN 0453-3402

Polyporus admirabilis Peck, a North American species, has recently been found in Norway. The species is described, and the differences between it and other, similar species are discussed. *P. admirabilis* resembles large specimens of *P. varius*, but spores are smaller and the microstructure of the pilear surface is different. The Norwegian finds derive from trunks of living *Quercus petraea* and *Malus domestica*.

Key words: Aphyllophorales, Europe, *Polyporus*

Maria Nuñez, Department of Botany, Division of Biology, University of Oslo, Blindern P.O. Box 1045, N-0316 Oslo 3, Norway; present address: Avda. Betanzos 13, 2.3., 28029 Madrid, Spain

Introduction

Polyporus Fr. is a cosmopolitan genus with 16 species recorded for Europe (Nuñez & Ryvarden, in prep.). *P. admirabilis* was first described from Maine, USA, growing on *Malus* (Peck 1899). Basidiocarps formed imbricate tufts more than 30 cm in diameter, while individual pilei were 10–15 cm broad, with a white, pale yellow or cream upper surface. Dodge (1916) reported the presence of solitary basidiocarps of *P. admirabilis* causing heart-rot on the same living host. Moreover, he placed *P. underwoodii* Murrill, growing on *Carya*, *Fraxinus* and *Salix*, as a synonym of *P. admirabilis*, noting that the pilei, initially white, became discoloured and leathery with age. The synonymy of *P. underwoodii* with *P. admirabilis* has been confirmed by Overholts (1953) and Ryvarden (1985).

Gilbertson and Martin (1976) described *P. coronadensis* as a large, imbricate species with single pilei 10–34 cm wide, cream-coloured, darkening to pale brown and mottled with dark brown to black spots. The species, growing on living *Quercus hypoleucoides*, was said to be similar to *P. admirabilis* except for its huge imbricate pilei up to 46 cm across and the darker colour of the pilei.

Burdsall and Lombard (1989) described *P. lowei* as a species with imbricate basidiocarps growing on dead *Acer saccharum*. The species was said to differ from *P. coronadensis* in its host, and in microscopical characters such as width of vegetative hyphae and the presence of gloeopherous hyphae in young specimens.

In the mild January of 1993, a solitary polypore found on living *Quercus petraea* at Asker, Norway, was brought to the Department of Botany of the University of Oslo for identification. After macro- and microscopical studies, it was identified as *P. admirabilis*. Later on, an imbricate specimen of the same species collected on *Malus* was discovered in herb. O, where it had been labelled as *P. varius* Fr.

These two specimens constitute the first records of *P. admirabilis* in Europe.

Material and methods

The specimens examined are listed under the species description.

Basidiocarp tissues were torn apart under a WILD M3B dissecting microscope with the help of a needle and a razor blade. They were mounted in 5% KOH and observed at x400 and x1000 magnifications with a Zeiss microscope provided with phase contrast. Measurements were made in 5% KOH.

Macro- and microanatomical terms have been taken from Snell and Dick (1971). Skeleto-binding cells are as defined by Corner (1981), but they are called here skeleto-binding hyphae.

Herbarium abbreviations are taken from Holmgren et al. (1981).

Polyporus admirabilis Peck

Bull. Torrey Bot. Club 26: 69. 1899.

Polyporus underwoodii Murrill in Peck, New York State Mus. Bull. 105: 27. 1906.

Polyporus coronadensis Gilb. & K.J. Martin, Mycologia 68: 1117. 1976.

Polyporus lowei Burds. & Lombard, Mem. New York Bot. Garden 49: 147. 1989, non *P. lowei* (Pilát) J. Lowe, New York State Coll. For. Tech. Publ. 60: 78. 1942.

Basidiocarps. Annual, laterally stipitate or substipitate, solitary or imbricate. Single pilei infundibuliform to dimidiate, 6–43 cm wide, up to 4.5 cm thick, upper surface white when fresh, ochraceous in different tones when dry and old, glabrous and pelliculose, smooth to radially striate, sometimes mottled with dark spots. Pore surface white, drying ochraceous, tubes brittle when dry. Pores angular, 4–5 per mm, enlarging at maturity, decurrent on the stipe. Context white to cream, firm, up to 4 cm thick. Stipe up to 8 cm long and 3.5 cm thick, usually poorly developed, concolorous with the pileus and darkening to black at the base, glabrous to finely tomentose.

Hyphal system. Dimitic. Generative hyphae clamped, 2.5–4 µm wide, forming a cutis on the stipe and on the pilear surface. Gloeopherous hyphae present in the context of young specimens. Skeleto-binding hyphae hyaline, solid, 3–7(–10) µm in diam.

Basidia. Clavate, 4-sterigmate, 22–35 x 5–8 µm.

Basidiospores. Cylindrical, 6.5–7–9 x 2.5–3.5 µm.

Cultural characters. See Burdsall and Lombard (1989 as *P. loweii*).

Substrata. In Europe, on living wood of *Malus domestica* and *Quercus petraea*. In North America, on dead and living wood of *Acer, Betula, Carya, Fraxinus, Juglans, Malus, Pyrus, Quercus, Salix*, causing white rot.

Distribution. North America and Europe (Norway).

Specimens examined

Norway. Akers hus: Asker, Nesøya, on living *Quercus petraea*, I.1993 *Jørgensen* (O). Buskerud: Ringerike, Klekken, on living *Malus*, X.1960 *Eftestøl* (O).

USA. Arizona: Turkey Creek, Chiricahua Mts., Coronado Nat. Forest, Cochise County, on living *Quercus hypoleucoides*, VIII.1971, type of *P. coronadensis* AZ010680, *Martin* (ARIZ). Maine: Riverside, on wood of apple trees, VIII. and IX.1898, type of *P. admirabilis, Burt* (NYS). Maryland: as *P. pennsylvanicus*, BPI 11311 (O).

Discussion

P. admirabilis is recognized by its large and thick, creamy, laterally stipitate basidiocarps and medium-size spores (6.5–9 x 2.5–3.5 µm). Large specimens of *P. varius* Fr. (= *P. leptocephalus* (Jacq.:Fr.) Fr.) can be distinguished by their larger spore size (8.5–12 x 2.5–4 µm) and the presence of a palisade rather than a cutis in the pilear surface.

An examination of type materials of both species leads me to consider P. *coronadensis* a synonym of *P. admirabilis*. Except for its imbricate basidiocarps and the lack of gloeopherous hyphae, *P. coronadensis* coincides both macro- and microscopically with the *P. admirabilis* specimen found at Asker (coll. Britt Jørgensen).

P. lowei Burds. & Lombard is a later homonym of *P. lowei* (Pilát) J. Lowe (= *Oligoporus lowei* (Pilát) Gilb. & Ryvarden). The description given by Burdsall and Lombard (1989) coincides with that of *P. admirabilis*. The differences in hyphal width are not considered here as taxonomically significant at species level and, as already noted, gloeopherous hyphae were also found in the specimen from Asker.

P. chozeniae (Vassilkov) Parmasto has larger spores (10.55–11.70 x 4.31–4.38 µm, Parmasto 1975). According to the description, this taxon would seem to be a large specimen of *P. varius*.

The description of P. *subadmirabilis* Bondartsev, found at Slavjansk, Primorsk province (Russian Far East), implies *P. admirabilis*, although the author emphasizes some differences (Bondartsev 1962). I was unable to borrow the type from LE to verify its status.

Piptoporus quercinus (Fr.) Pilát, growing on living *Quercus*, could be mistaken macroscopically for *P. admirabilis*. There is no difference as to spore size. However, *P. quercinus* is trimitic with skeletal hyphae (Ryvarden 1978) and causes a brown rot.

Acknowledgements. Britt Jørgensen is thanked for placing her specimen at my disposal; Gro Gulden for arranging loans from O; and Jens Petersen and Leif Ryvarden for interesting discussion concerning the species.

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Received on 12 July 1993