PERSOONIA
Published by the Rijksherbarium, Leiden
Volume 7, Part 2, pp. 213–216 (1973)

DONKIOPORIA KOTL. & POUZ., A NEW GENUS FOR PORIA MEGALOPORA (PERS.) COOKE

F. KOTLABA and Z. POUZAR

Botanical Institute of the Czechoslovak Academy of Sciences
Průhonice near Prague, Czechoslovakia

A new genus of resupinate polypores, *Donkioporia* Kotl. & Pouz., is proposed for the fungus chiefly known under the name of *Poria megalopora* (Pers.) Cooke. Since the oldest name of the species appears to be *Boletus expansus* Desm., the new combination *Donkioporia expansa* (Desm.) Kotl. & Pouz., is proposed. The genus is characterized microscopically by a trimitic hyphal system possessing both thin- and thick-walled generative hyphae with clamp-connections. The internal layer of the walls of some of the thick-walled generative hyphae gives an amyloid reaction.

Poria megalopora (Pers.) Cooke, a resupinate polypore, has also been reported in mycological literature under various other names, such as *Boletus expansus* Desm., *Polyporus expansus* (Desm.) Desm., *Phellinus cryptarum* (Bull. ex Fr.) P. Karst. sensu Cartwr. & Findl., *Fomitiporia ohiensis* Murrill, etc. This interesting polypore, which clearly prefers worked oak timbers, is a well-known inhabitant of structural members in houses, as well as in outside wooden structures such as bridges, fences etc.

This fungus presents a taxonomic problem as regards its position in the natural system for this group of fungi. The genus *Poria* sensu lato is an artificial aggregate of unrelated species and there have been several attempts to reassess it in more natural genera. Nevertheless, even in the more natural genera no position for *Poria megalopora* can be found. Some attempts have been made by several authors to insert this species into the group of perennial xanthochroic polypores. In this connection mention should be made of Murrill (1907), who erected a new genus for this and similar polypores, describing the species under discussion anew as *Fomitiporia ohiensis* Murrill. *Fomitiporia*, which embraces various resupinate xanthochroic polypores, is now usually referred, together with the pileate species, to *Phellinus* Quél. Heim (1942) transferred *Poria megalopora* to this genus, making the new combination *Phellinus megaloporus* (Pers.) Heim; this recombination was also made by Bondarcev (1953), who does not appear to have been aware of Heim's earlier binomial. However, as correctly noted by Jahn (1967: 103), this polypore does not belong in *Phellinus* Quél. because of the presence of clamp-connections. Jahn (l.c.) left this species in the artificial genus *Poria* s.l., leaving its correct position for future study.

Another attempt to place this species was made by Domanski & Orlicz (1967) who transferred it to the genus *Fomes* (Fr.) Fr. em. Teix. However, we are unable

to substantiate this transfer because the species of this genus are characterized by having thick-walled spores, whereas the spores of *Poria megalopora* (= *P. expansa*) are thin-walled. Another distinguishing character is the generative hyphae which are all thin-walled in the species of *Fomes* but are both thin- and thick-walled in the species under discussion.

For this reason, we now return to the problem of the generic position of *Poria megalopora* (= *P. expansa*). As our search for a suitable genus proved unsuccessful, we propose to establish a new genus, taking the liberty to name it in honour of the late Dr. M. A. Donk, who has contributed very considerably to the knowledge of polypores, and particularly to the present species.

Donkioporia Kotl. & Pouz., *gen. nov.*

Carposomata resupinata, perennia, hymenophoro poroideo instructa, tramate tenui, obscure brunnea, cum strato nigro inter carpophoro et substrato seu inter contextu novo et carpophoro vetusto. Systemate hypharum trimitico: hyphis generativis copiosis, ramificatis, tum tenuiter tunicatis, hyalinis, fibulatis, inamyloideis acyanophilisque, tum crasse tunicatis, brunneis usque obscure brunneis, fibulatis, cum lamina pariete interiori saepe amyloidea; hyphis sceleticis haud ramificatis absque fibulis, moderatim crasse tunicatis, flavoferrugineis; hyphis ligativis abundante ramificatis, tenuiter tunicatis, hyalinis, haud septatis absque fibulis, saepe modo dichotomico ramificatis. Basidia clavata, tetrasterigmatica. Sporae breviter ellipsoideae, haud truncatae, tenuiter tunicatae, laeves, hyalinae, inamyloideae, indextrinoideae et acyanophilae.

TYPUS: *Poria expansa* (Desm.) H. Jahn.

Fruitbodies resupinate, perennial, with poroid hymenophore, thin or thick dark brown context, and a thin black layer (i.e. appearing in section as a black line) between the carpophore and the wood or between the new context and the old carpophore. Hyphal system trimitic: generative hyphae abundant, branched, with clamp connections, some thin-walled, hyaline, inamyloid and acyanophilous, others thick-walled, brown to dark brown, with the internal layer of the walls often amyloid; skeletal hyphae often with simple, secondary septa, slightly thick-walled, rusty yellow; ligative (binding) hyphae richly, often dichotomously, branched, thin to thick-walled, hyaline, not septate and clampless. Basidia clavate, tetrasterigmatic. Spores short-ellipsoid, not truncate, with thin, smooth, hyaline, inamyloid, indextrinoid, acyanophilous walls.

TYPE: *Poria expansa* (Desm.) H. Jahn.

At the present time, this genus contains only one species, which thus far is known in the mycological literature chiefly as *Poria megalopora* (Pers., 1825) Cooke, 1885. However, the oldest known name for this fungus is *Boletus expansus* Desm., 1823, as ascertained by Donk (1933) and confirmed by the study of the original material by Jahn (1967). Therefore, we propose the following new combination:—

Donkioporia expansa (Desm.) Kotl. & Pouz., *comb. nov.* Basionym: *Boletus expansus* Desmazières, Catalogue des plantes omises, pl. 18, 1823 (for other synomyms, see Jahn, 1967: 100).

SPECIMENS STUDIED:—

BELGIUM

Chateau de Bormenville (Condroz), on wood within house, 1. VII. 1962, V. Demoulin, det. H. Jahn (PR).

CZECHOSLOVAKIA

Prenčov (Central Slovakia), on rotten oak wood of bridge in front of the parsonage, VII. 1888, A. Kmeť (BRA); ibid., in the parish barn on dry wood of *Quercus*, IX. 1891, A. Kmet (BRA, 2×). — Babiná near Krupina (Central Slovakia), on fallen trunk of *Quercus cerris*, 7. VI. 1965, Z. Pouzar, det. F. Kotlaba & Z. Pouzar (herb. Kotlaba & Pouzar). — Praha near Lučenec (Southern Slovakia), on *Quercus* wood in cave, VI. 1954, A. Príhoda, det. Z. Pouzar & F. Kotlaba (PR 607, 130).

GERMANY

Remmighausen near Detmold (Westphalia), on an old oak pole (*Quercus*) taken from the framework of a house, 5. XII. 1966, H. Jahn (herb. Kotlaba & Pouzar); ibid., road to the cemetery on a fence post near meadow (oak wood from an old house), 29. XII. 1966 and 16.I.1967, H. Jahn (PR 654,346). – Mosel, castle Eltz near Moselkern (Rheinland), on a ceiling beam (probably *Quercus*) in an old half-ruined stable, 31.III.1967, M. A. & H. Jahn, det. H. Jahn (herb. Kotlaba & Pouzar).

ITALY

Vittorio (Treviso), on a pole of *Abies* ("ad asseres abietinos") IX.1900; D. Saccardo, Mycotheca italica, 606, *Poria ferruginosa* (PR 704, 485).

The genus *Donkioporia* does not seem to be closely related to any other resupinate polypores. However, we would like to place it in proximity to *Fomes* (Fr.) Fr. em. Teix. because of the trimitic hyphal system with clamped generative hyphae, the brownish trama, and the amyloid internal layer of certain generative hyphae confined chiefly to the encrusted layer of the carpophores. The amyloidity of the hyphae forming the encrusted layer is rather widely distributed among the fungi of the fomitoid group (excluding xanthochroic *Phellinus* species). Another interesting feature also connecting *Donkioporia expansa* with the species of *Fomes* is the rudimentarily developed granular core which, however, we have only seen in one specimen of *D. expansa*. In this instance we also found that the internal wall of the ligative hyphae in the granular core gave an amyloid reaction. However, this seems to be quite an accidental phenomenon because normally these ligative (binding) hyphae are consistently inamyloid.

Species of the genus *Fomes* differ from *Donkioporia expansa* by the absence of thick-walled generative hyphae, so characteristic of the latter. These hyphae are of special interest because, in cases when they are in or near the encrusted layer of the fungus, the internal layer of the hyphal walls is often amyloid. Thick-walled hyphae with an amyloid internal layer also occur in species of the genus *Fomes* (being confined exclusively to the encrusted layer of the pileus) but, contrary to those of *D. expansa*, they are not provided with clamp-connections.

Donkioporia expansa is macroscopically similar to some species of the genus *Gloeophyllum* (P. Karst.) P. Karst., especially to the resupinate form of *Gloeophyllum trabeum* (Pers. ex Fr.) Murrill = *Phaeocoriolellus trabeus* (Pers. ex Fr.) Kotl. & Pouz. Nevertheless, the members of this genus differ in at least two important characters: (i) absence of thick-walled hyphae provided with clamp-connections, and (ii) absence of amyloidity of the hyphal walls.

Whilst describing this new genus for *Poria expansa*, we would also like to discuss briefly the genus *Spongioides* Lázaro é Ibiza (1916), to which our attention was drawn by Dr. M. A. Donk (personal communication). According to his opinion, Lázaro's description possibly covers two polypores: one pileate and one resupinate. After studying Lázaro's generic description of *Spongioides*, we reached the conclusion that the major part of the description concerns a pileate fungus which may very well be either *Heterobasidion annosus* (Fr.) Bref. or, better, *Trametes serialis* (Fr.) Fr. = *Antrodia serialis* (Fr.) Donk, whilst a minor part could easily also cover *Poria megalopora* = *Donkioporia expansa*. For this reason, it is in our opinion impossible to use the generic name *Spongioides* Lázaro é Ibiza to accommodate *Poria megalopora*. We made an attempt to obtain for study Lázaro's original material of *Spongioides cryptarum* but Dr. F. Diego Calonge of Madrid kindly informed us that there are no specimens of this fungus in Lázaro's herbarium. In consequence, we recommend that *Spongioides* Lázaro é Ibiza be typified by the pileate part of the description, and placed in the synonymy of either *Heterobasidion* Bref. or *Trametes* Fr. (possibly *Antrodia* P. Karst.)

ACKNOWLEDGEMENTS.—We are deeply indebted to the late Dr. M. A. Donk for placing at our disposal his manuscript notes dealing with the nomenclature of this fungus, and to Dr. H. Jahn (Detmold) who kindly provided us with several fine, fertile specimens of *Poria expansa*. We also thank Mr. J. T. Palmer (Sutton Weaver) for improving the English text.

REFERENCES

BONDARCEV, A. S. (1953). Trutovyje griby jevropejskoj časti SSSR i Kavkaza.
DOMANSKI, S. & A. ORLICZ, (1967) *in* Acta mycol. **3**.
DONK, M. A. (1933). Revision niederl. Homobasidiomycetae-Aphyllophoraceae II.
HEIM, R. (1942) *in* Circul. Inst. Techn. Batim. Trav. publ. no. 1.
JAHN, H. (1967) *in* Westfäl. Pilzbr. **6**. "1966–67".
LÁZARO É IBIZA, B. (1916) *in* Revta R. Acad. Ci. exact. fis. nat. Madr. **14**.
MURRILL, W. A. (1907) *in* North American Flora **9**.