



Type study of *Peniophora inflata* (Agaricomycetes), and the introduction of the term “subcystidium”

DARIUSZ KARASIŃSKI

Department of Mycology, W. Szafer Institute of Botany Polish Academy of Sciences, Lubicz 46, PL-31-512 Kraków, Poland, e-mail: d.karasinski@botany.pl

Abstract

The type specimen of the corticioid fungus *Peniophora inflata* was re-examined. The term “subcystidium” (plural: subcystidia) is introduced to define basally clamped and encrusted cystidia of subicular or rhizomorphic origin. *Peniophora inflata* is characterized by the presence of subcystidia and hymenial lamprocystidia, a smooth, resupinate basidioma, a monomitic hyphal system, small, clavate basidia, minute ellipsoidal basidiospores negative in Melzer’s reagent and Cotton Blue, thickening hymenium and the development of rhizomorphs. The morphological similarities of *Peniophora inflata* with some corticioid species are discussed. Recently the generic name *Sceptrulum* was erected for this species. Because the introduction of the latter name lacked any discussion and clarity, the aim of this study is to provide a detailed examination of *P. inflata*.

Keywords: Jamaica, *Sceptrulum*, subcystidium, taxonomy, wood-inhabiting fungi

Introduction

Peniophora Cooke (1879: 20) was the first corticioid genus described on the basis of a microscopic character (Parmasto 1986). It was initially introduced to accommodate *Corticium* Persoon (1794: 110) and *Stereum* Hill ex Persoon (1794: 110) species having lamprocystidia (metuloids) in the hymenium. The type of the genus is *Peniophora quercina* (Persoon 1801: 573) Cooke (1879: 20) (designated by Clements & Shear 1931, Donk 1957). Later, *Peniophora* became a catch-all genus to accommodate different fungi forming resupinate basidiomata with a smooth to tuberculate hymenophore producing various kinds of (usually) encrusted cystidia (e.g., Burt 1925, Rogers & Jackson 1943, Slysh 1960). This combination of characters is commonly observed in numerous species of corticioid fungi, and this is reflected in the number of species attributed to *Peniophora*. MycoBank (Crous *et al.* 2004) contains 516 epithets associated with this generic name. Presently about 80 species are accepted as members of the genus in its narrow modern sense which is fairly close to Cooke’s original concept (Andreasen & Hallenberg 2009, Yurchenko 2010). The remaining species described in or combined as *Peniophora* have been moved to other genera. However, there are still some species described in the genus *Peniophora*, which were not reassessed critically using the modern generic concept and remain poorly known. One of them is *Peniophora inflata* Burt (1925: 267) described on the basis of Murrill’s collection from Jamaica. The primary idea of this study was to re-examine the type material of *Peniophora inflata* in order to resolve its systematic placement. Unexpectedly, one month after registration of the new generic name in MycoBank (*Subcystidius* Karasiński, MB 807870, registered 3 Feb. 2014), and two weeks after submission of the manuscript to Phytotaxa (submitted: 14 Feb. 2014), a new genus *Sceptrulum* K.H. Larsson (2014: 1) typified by *Peniophora inflata* was effectively published in an unreviewed e-publication on Index Fungorum website without any discussion (Larsson 2014). Moreover, the type specimen of *Peniophora inflata* has not been informatively illustrated until now. Therefore, the aim of the present study is to provide a detailed description and illustration of this species. The further aim is to introduce a name for the special kind of cystidia that are formed in the subiculum and rhizomorphs of *Peniophora inflata*.

species, *Sceptrulum inflatum* lacks leptocystidia in the hymenium. The shape and size of the hymenial and subhymenial lamprocystidia of *Sceptrulum inflatum* are somewhat different to those of *Palifer seychellensis*. The latter has fusoid to cylindrical cystidia (“spindelig bis zylindrisch”), up to 23.5 µm long (Dämmrich & Rödel 2010) which contrasts with the subventricose or subcylindrical lamprocystidia that are distinctly swollen and somewhat stalked at the base and up to 32 µm long, of *Sceptrulum inflatum*. Morphological differences between both species are small, however, and could be considered as intraspecific variation or may be related to different developmental stages. The huge geographical distance between the type localities of *Sceptrulum inflatum* and *Palifer seychellensis* could support the hypothesis that both of them are distinct species. In the case if both species are conspecific *Sceptrulum inflatum* (= *Peniophora inflata* 1925) has priority over *Palifer seychellensis* which should be made synonymous.

Acknowledgements

The curator of FH is thanked for the loan and permission to make and reproduce the photographs of the type specimen of *Peniophora inflata* in the present publication. The paper greatly benefited from the constructive comments and suggestions of Marcin Piątek (Kraków) and anonymous reviewers. This work is partly supported by statutory funds of W. Szafer Institute of Botany, Polish Academy of Sciences, Kraków.

References

- Andreasen, M. & Hallenberg, N. (2009) A taxonomic survey of the *Peniophoraceae*. *Synopsis Fungorum* 26: 56–119.
- Burt, E.A. (1925) The *Thelephoraceae* of North America. XIV. *Peniophora*. *Annals of the Missouri Botanical Garden* 12: 213–357.
<http://dx.doi.org/10.2307/2394076>
- Cléménçon, H. (2012) *Cytology and Plectology of the Hymenomycetes*. 2nd revised edition. J. Cramer in der Gebr. Borntraeger Verlagsbuchhandlung, Stuttgart, 520 pp.
- Clements, F.E. & Shear C.L. (1931) *The Genera of Fungi*. The H.W. Wilson Company, New York, 496 pp.
- Cooke, M.C. (1879) On *Peniophora*. *Grevillea* 8: 17–21.
- Crous, P.W., Gams, W., Stalpers, J.A., Robert, V. & Stegehuis, G. (2004) MycoBank: an online initiative to launch mycology into the 21st century. *Studies in Mycology* 50: 19–22.
- Cunningham, G.H. (1955) Thelephoraceae of New Zealand. Part VI. The genus *Peniophora*. *Transactions and Proceedings of the Royal Society of New Zealand*. 83: 247–293.
- Cunningham, G.H. (1963) The Thelephoraceae of Australia and New Zealand. *New Zealand Department of Scientific and Industrial Research bulletin* 145: 1–359.
- Dämmrich, F. & Rödel, T. (2010) *Palifer seychellensis*, a new species from the tropics. *Zeitschrift für Mykologie* 76: 211–216.
- Donk, M.A. (1956) Notes on resupinate *Hymenomycetes* – III. *Fungus*. 26: 3–24.
- Donk, M.A. (1957) Notes on resupinate *Hymenomycetes* – IV. *Fungus* 27: 1–29.
- Eriksson, J. (1958) Studies in the Heterobasidiomycetes and Homobasidiomycetes – Aphyllophorales of Muddus National Park in North Sweden. *Symbolae Botanicae Upsalienses* 16: 1–172.
- Fries, E.M. (1818) *Observationes mycologicae* 2. Gerh. Bonnier, Copenhagen, 372 pp.
- Fries, E.M. (1828) *Elenchus Fungorum*. Ernestus Mauritius, Greifswald, 238 pp.
- Gorjón, S.P. (2012) Some species of *Hyphodontia* s.l. with encrusted cystidial elements. *Mycosphere* 3: 464–474.
<http://dx.doi.org/10.5943/mycosphere/3/4/10>
- Hjortstam, K. & Ryvarden, L. (1997) Corticioid species (Basidiomycotina, Aphyllophorales) from Colombia collected by Leif Ryvarden. *Mycotaxon* 64: 229–241.
- Hjortstam, K. & Ryvarden, L. (2002) Studies in tropical corticioid fungi (Basidiomycotina, Aphyllophorales) *Alutaceodontia*, *Botryodontia*, *Hyphodontia* s.s. and *Kneiffiella*. *Synopsis Fungorum* 15: 7–17.
- Hjortstam, K. & Ryvarden, L. (2007) The genus *Palifer*. *Synopsis Fungorum* 22: 7–10.
- Hjortstam, K. & Ryvarden, L. (2009) A checklist of names in *Hyphodontia* sensu stricto – sensu lato and *Schizopora* with new combinations in *Lagarobasidium*, *Lyomyces*, *Kneiffiella*, *Schizopora*, and *Xylodon*. *Synopsis Fungorum* 26: 33–55.
- Karsten, P.A. (1889) Kritisk öfversigt af Finlands Basidsvampar (Basidiomycetes; Gastero- & Hymenomycetes). *Bidrag till Kännedom av Finlands Natur och Folk*. 48: 1–470.
- Larsson K.-H. (2014) *Sceptrulum*. *Index Fungorum* 131: 1.

- Nikolajeva, T.L. (1970) New species of the Aphyllophorales fungi. *Mikologiya i Fitopatologiya* 4: 476–477.
- Parmasto, E. (1986) On the origin of the Hymenomycetes (What are corticioid fungi?). *Windahlia* 16: 3–19.
- Parmasto, E., Nilsson, H. & Larsson K.-H. (2004) Cortbase version 2. Extensive updates of a nomenclatural database for corticioid fungi (Hymenomycetes). *Phyloinformatics* 1: 5.
- Persoon, C.H. (1794) Neuer Versuch einer systematischen Eintheilung der Schwämme. *Neues Magazin für die Botanik* 1: 63–80.
- Persoon, C.H. (1801) *Synopsis methodica fungorum*, Göttingen, 706 pp.
<http://dx.doi.org/10.5962/bhl.title.5393>
- Rogers, D.P. & Jackson, H.S. (1943) Notes on the synonymy of some North American Thelephoraceae and other resupinates. *Farlowia* 1: 263–328.
- Slysh, A.R. (1960) The genus *Peniophora* in the New York State and adjacent regions. *Technical publication., State University College of Forestry* 83: 1–95.
- Stalpers, J.A. & Buchanan, P.K. (1991) Type studies of the species of *Pellicularia* and *Peniophora* described by G.H. Cunningham. *New Zealand Journal of Botany* 29: 331–340.
<http://dx.doi.org/10.1080/0028825x.1991.10416611>
- Yurchenko, E.O. (2010) *The genus Peniophora (Basidiomycota) of Eastern Europe*. Belorusskaya nauka, Minsk, 339 pp.