PERSPECTIVES IN
Biodiversity
VOLUME 4 / ISSUE 1 / 2026

Published ahead of issue
Received: 10 September 2025
Accepted: 10 November 2025
Published: October 2026

Pyrenula wongii, a new multiseptate species of *Pyrenula* (Pyrenulaceae, lichenised Ascomycota) from Malaysia

André Aptroot

https://doi.org/10.55457/pibdiv.004102

Pyrenula wongii, a new multiseptate species of *Pyrenula* (Pyrenulaceae, lichenised Ascomycota) from Malaysia by André Aptroot is licensed under a Creative Commons Attribution-NonCommercial 4.0 International Licence.

This publication may be cited as:
Aptroot, A. (2026). *Pyrenula wongii*, a new multiseptate species of *Pyrenula* (Pyrenulaceae, lichenised Ascomycota) from Malaysia. *Perspectives in Biodiversity*, 4(1): 9–12.

Contact:
www.unitec.ac.nz/epress
ePress
Manukau Institute of Technology and Unitec
Private Bag 92025, Victoria Street West
Tāmaki Makaurau Auckland 1142
Aotearoa New Zealand

ISSN 3021–114X

Pyrenula wongii, a new multiseptate species of *Pyrenula* (Pyrenulaceae, lichenised Ascomycota) from Malaysia

André Aptroot

Laboratório de Botânica / Liquenologia, Instituto de Biociências, Bairro Universitário, Campo Grande, Mato Grosso do Sul, Brazil

Correspondence: andreaptroot@gmail.com
Senior Editor: Professor Peter J. de Lange
Article type: Short communication

Abstract

The corticolous lichen *Pyrenula wongii* is described as a species new to science from Malaysia, characterised by a thallus with pseudocyphellae and 7-septate ascospores of 54–70 × 17–20 µm.

Keywords

Pyrenula, Pyrenulaceae, lichenised Ascomycota, Malaysia

Introduction

The genus *Pyrenula* Ach. contains c. 250 species, almost all lichenised with trentepohlioid algae and almost all strictly corticolous. It is the main genus in the family Pyrenulaceae, and the few other currently accepted genera mostly seem to phylogenetically be in groups of this family (Weerakoon et al. 2012; Gueidan et al. 2016). Thus, the accepted genera in the family are currently partly paraphyletic (especially *Pyrenula*), and one (*Lithothelium* Müll.Arg.) has been shown to be polyphyletic, a matter that remains to be resolved. The group is most diverse in the lowland tropics, notably in Brazil (Oliveira Junior et al. 2021). The most recent keys to species are Aptroot (2022) and Schumm and Aptroot (2022). Most species have 3-septate ascospores, but there are a few dozen with transversely multiseptated ascospores and several dozen species with submuriform or muriform ascospores. The present undescribed species was among a set of unidentified Pyrenulaceae sent on loan for identification in 2024 by Dr Brodo from the Canadian Museum of Nature lichen collection (CANL). They were mainly North American specimens, but also included some that were tropical.

Material and Methods

The specimen was observed with an Olympus SZX7 microscope with an attached Nikon Coolpix 995 camera. Handmade sections of ascomata and thallus were studied in water solution containing 5% KOH and/or Lugol's reagent (1% I2/KI) after pre-treatment with KOH. Microscopic observations were made using an Olympus BX50 with Nomarski differential interference contrast and an attached Nikon Coolpix 995 camera.

Taxonomy

Pyrenula wongii Aptroot sp. nov. (Figures 1 and 2)
Mycobank accession number: 861299
Holotype: Malaysia, Selangor, Sungai Buloh, Rubber Research Institute of Malaysia (RRIM) Research Station, on bark of *Hevea*. *P.Y. Wong & H. Tan 1571B*, 3 January 1974 (CANL 105707, holotype).
Diagnosis: Corticolous *Pyrenula* with thallus with pseudocyphellae and 7-septate ascospores of 54–70 × 17–20 µm.
Description: *Thallus* corticolous, corticate, olivaceous brown, with pseudocyphellae. *Photobiont* trentepohlioid. *Ascomata* single or occasionally two confluent, conical, black, 1–1.5 mm diam. *Ostiole* punctiform, apical, pale brown. *Hamathecium* densely inspersed. *Ascospores* dark brown, 8 per ascus, consistently 7-septate, 54–70 × 17–20 µm, tips rounded, central septum extra-wide, lumina angular, outer lumina almost flush with the wall. *Chemistry* no substances detected.
Etymology: Named after the collector, a lichenologist Pak Yau Wong (6 August 1939–10 April 2022) who trained under Dr Irwin Brodo and was for many years the curator of the lichen collection CANL. He collected this undescribed species in his home country.
Ecology and distribution: On *Hevea* Aubl. bark in lowland rubber plantation on the outskirts of what is now Kuala Lumpur in Malaysia.

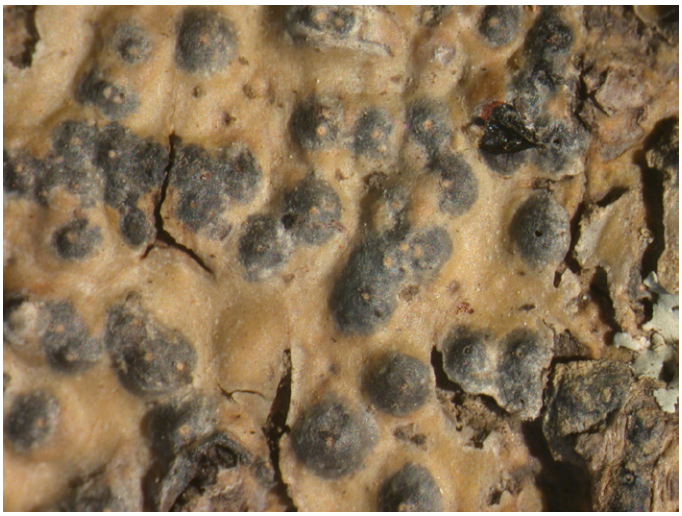


Figure 1. Holotype of *Pyrenula wongii*, thallus with ascomata; pictured specimen 15 mm wide. Photo: André Aptroot.

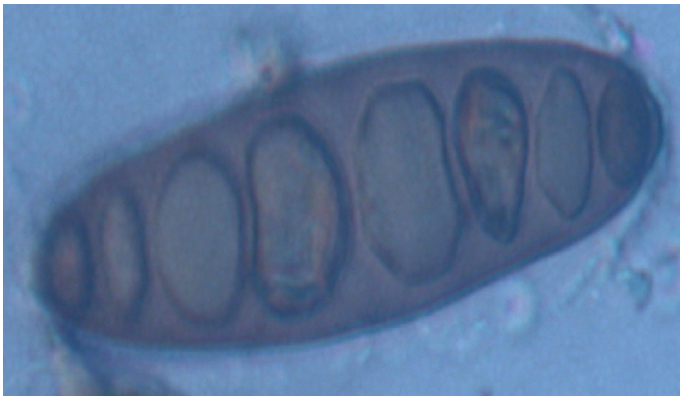


Figure 2. Ascospore from holotype of *Pyrenula wongii*, pictured specimen 75 µm wide. Photo: André Aptroot.

Discussion

This is one of the few *Pyrenula* species with consistently 7-septate ascospores; most *Pyrenula* species with 7-septate ascospores also have ascospores with more septa, sometimes even lateral septa. The few species known with consistently 7-septate ascospores have much smaller or slenderer ascospores. *Pyrenula montagnei* Müll.Arg. comes closest, but has pointed ascospores half the size of those of the new species and lacks the much-thickened central septum. This species would key out as follows in the world key by Aptroot (2022): key B, couplet 58 or at couplet 64: ascospores 54–70 µm long, not apiculate. Since the publication of the world keys, three additional *Pyrenula* species with transversely multiseptated ascospores have come to light, all from Aotearoa / New Zealand (Marshall et al. 2025). They differ from the present

species, e.g., in the absence of pseudocyphellae, which indicates that they are not closely related, because the deepest phylogenetic split within the genus is correlated with the presence or absence of pseudocyphellae (and some corroborating characters, such as the tendency of ascomata to immerse in the thallus); see Weerakoon et al. 2012 and Gueidan et al. 2016.

Data Accessibility Statement

No additional database.

Acknowledgements

My colleague Irwin Brodo is warmly thanked for sending me a loan of unidentified *Pyrenula* specimens in CANL, which included this new species.

References

Aptroot, A. (2022). World key to the species of Pyrenulaceae and Trypetheliaceae. *Archive for Lichenology*, 29: 1–90. https://d-nb.info/1253929890/34

Gueidan, C., Aptroot, A., Cáceres, M. E. d. S. (2016). Molecular phylogeny of the tropical family Pyrenulaceae: Contribution from dried specimens and FTA card samples. *Mycological Progress*, 15(7): 1–21. https://doi.org/10.1007/s11557-015-1154-8

Marshall, A. J., de Lange, P. J., Blanchon, D. J., Aptroot, A. (2025). Four new species of Aotearoa / New Zealand *Pyrenula* (Pyrenulaceae) segregated from *P. moniliformis*. *Ukrainian Botanical Journal*, 82(5): 435–452. https://doi.org/10.15407/ukrbotj82.05.435

Oliveira Junior, I., Aptroot, A., Cáceres, M. E. S. (2021). Lichens from Monte Pascoal, Bahia, Brazil, with some new pyrenocarpous species and a key to the *Pyrenula* species from Brazil. *The Bryologist*, 124(4): 552–568. https://www.jstor.org/stable/27103014

Schumm, F., Aptroot, A. (2022). *Atlas of Pyrenulaceae and Trypetheliaceae*, four volumes. Norderstedt: Books on Demand. 2101 pp.

Weerakoon, G., Aptroot, A., Lumbsch, H. T., Wolseley, P. A., Wijeyaratne, S. C., Gueidan, C. (2012). New molecular data on Pyrenulaceae from Sri Lanka reveal two well-supported groups within this family. *Lichenologist*, 44(5): 639–647. https://doi.org/10.1017/S0024282912000333