

コウヤクタケ型きのかDendrothele arachisporaの日本における最初の報告

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First record of the corticioid fungus *Dendrothele arachispora* (Agaricomycetes) in Japan*

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Abstract

Dendrothele arachispora (Corticiales, Basidiomycota) was originally described in New Zealand, but we are reporting it for the first time in Japan. This species is characterized by a resupinate yellowish pale basidioma, peanut-shaped basidiospores, and the presence of dendrohyphidia. This paper provides macro- and micro-morphological descriptions, illustrations and remarks based on the Japanese specimen found.

Key words: Corticiaceae, arachiform basidiospores, morphology, new distribution.

The genus *Dendrothele* Höhn. & Litsch. (Corticaceae, Basidiomycota) originally proposed by Höhnel and Litschauer (1907) to describe *D. griseocana* (Bres.) Bourdot & Galzin (synonym: *D. papillosa* Höhn. & Litsch.). This genus is characterized by orbicular, discoid, corticioid, crustose basidiomata, numerous dendrohyphidia, clavate to cylindrical, broad, slightly constricted basidia with 2–4 sterigmata, and weakly amyloid or non-amyloid, smooth or warty basidiospores. *Dendrothele* species are widely distributed in temperate to tropical regions and grow on the bark of living trees, decaying trunks, or branches of coniferous and deciduous trees. Currently, 63 species are listed as members of this genus in the Index Fungorum (<http://www.indexfungorum.org/names/Names.asp>, 1 Aug. 2018) as members of this genus. Only three Japanese species have been reported: *D. acerina* (Pers.) P.A. Lemke, *D. bispora* Burds. & Nakasone, and *D. strumosa* (Fr.) P.

A. Lemke (Ito, 1929; Ito, 1955; Maekawa, 1994, 1998; Katamoto 2010).

In our field surveys, a fungus belonging to the genus *Dendrothele* was collected from a decaying branch of a *Pieris japonica* (Thunb.) D. Don ex G. Don that was planted in the campus of Tottori University, Tottori City (Fig. 1). It is morphologically well delimited when compared against *Dendrothele* species previously reported in Japan. Thus, in the present study, we carried out identification of this fungus based on its morphological characteristics.

Material and Methods

The specimen was deposited in the herbarium of the Tottori Mycological Institute (TMI). The macro-morphology of basidioma was observed on the dry specimen. Microscopic observations were made using a Nikon Ni-U microscope (Tokyo, Japan) equipped

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Fig. 1. Host tree, of *Dendrothele arachispora*, *Pieris japonica*.

with differential interference contrast optics, a drawing tube, digital camera-head Ds-Fi3 and microscope camera control unit DS-L4. Basidioma sections and basidiospores were mounted in Melzer's reagent, 3% potassium hydroxide (KOH) solution, and distilled water. Additionally, abbreviations in the text are defined as follows. Q: length/width ratio of spores; Q_a : average Q; L_a : average spore length; and W_a : average spore width.

Description

Dendrothele arachispora Nakasone & Burds., New Zeal. J. Bot. **49**: 113, 2011. Figs. 1-3.

Basidioma (Fig. 2) resupinate, soft hymenial surface smooth, slightly pruinose, with small cracks at thickened area, pale luteous with a tinge of pale pinkish-gray color; margin distinct, adnate, whitish-pale color (more so than that of thickened area) Hyphal system monomitic; hyphae (Fig. 3A) thin-walled, width up to 2 μ m with clamps Dendrohyphidia (Fig. 3B) irregularly short branched, slightly thin-

walled, length up to 36 μ m width 1.8–4.2 μ m. Basidia (Fig. 3C) clavate to slightly cylindrical, slightly constricted, 32–52 \times 12–15.6 μ m, thin-walled, hyaline, with 4sterigmata, clamped at the base. Basidiospores (Fig. 3D) peanut-shaped, distinctly constricted at the center, 10.8–19 \times 6–9 μ m, Q=1.63–2.33 (20 basidiospores per specimen $L_a = 15.8$, $W_a = 7.7$, $Q_a = 2.07$).

Specimen examined: TMI 26380, on a dead branch of *Pieris japonica*, Tottori University campus Koyama, Tottori City, Tottori Pref., Japan, collected by S. Ushijima, June 16, 2010.

Remarks: *Dendrothele arachispora* was originally described by Nakasone and Burdsall (2011) in New Zealand's Northern Island. The specimens were found on *Myrsine salicina* Heward (Ericales, Myrsinaceae) and *Myoporum laetum* G. Forst. (Lamiales, Scrophulariaceae), which are plants endemic to New Zealand; since then, it had been found only in this country. Thus, this is the first record of *D. arachispora* outside New Zealand. *Dendrothele arachispora* is characterized by small, discrete basidiomata and



Fig. 2. Basidioma of *Dendrothele arachispora*. Scale bar: 2 mm.

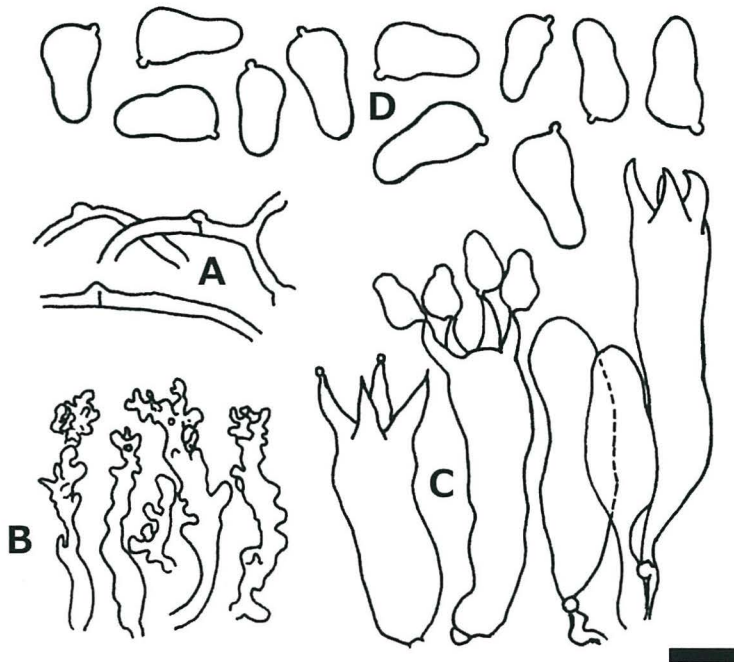


Fig. 3. Micro-morphological characteristics of *Dendrothele arachispora*. A: Tramal hyphae. B: Dendrohyphidia. C: Basidia. D: Basidiospores. Scale bar: 10 μ m.

suburniform to peanut-shaped basidiospores measuring (14-) 16-18 × (6.5-) 7.5-8.5 (-9.5) μm (Nakasone and Burdsall, 2011). These characteristics are well represented in the Japanese collection (TMI 26380), and therefore, it was identified as *D. arachispora*. Notably, in the genus *Dendrothele*, *D. pitrae* Gresl. & Rajchenberg from Argentina (Greslebin and Rajchenberg, 1998) also produces arachiform basidiospores; however, they measure (11) 12-15 (-16) × 5-5.5 (-6) μm (Greslebin and Rajchenberg, 1998), and consequently they are significantly smaller than those of *D. arachispora*. In Japan, *D. arachispora* has been collected from *Pieris japonica* (Ericales, Ericaceae), which is native to Japan, Taiwan and some parts of Eastern China. Further studies are necessary to elucidate the host plants and distribution area of *D. arachispora* in Japan.

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摘 要

コウヤクタケ型きのこ *Dendrothele arachispora* の日本における最初の報告

牛島秀爾・前川二郎

近年、鳥取大学農学部に植栽されているアセビ (*Pieris japonica*) の枯枝上において、コウヤクタケ型のきのこを採集した。顕微鏡形態を調査したところ、コウヤクタケ目、コウヤクタケ科、ヒビコウヤクタケ属 (*Dendrothele* 属) に所属する一種と判明した。本属は樹枝状糸状体を持つ背着生の子実体を形成し、これまでに 63 種が知られているが、本邦からの報告は 3 種にとどまっている。日本産標本の担子胞子は楕円形で中央がくびれる落花生形 [大きさ 10.8-19 × 6-9 μm] であり、本属既知種においてこのような形態の担子胞子を形成する種としてアルゼンチン原産の *D. pitrae* とニュージーランド原産の *D. arachispora* の 2 種が認められる。前者の担子胞子は日本産標本よりも小型 [(11) 12-15 (-16) × 5-5.5 (-6) μm] であることによって明らかに異なった。一方、後者は担子胞子 [(14-) 16-18 × (6.5-) 7.5-8.5 (-9.5) μm] を含む形態的特長が日本産標本と良く一致したことから、*D. arachispora* と同定した。本種はニュージーランド以外からは初めての報告である。