

PIETRO VOTO, KARL SOOP

*PSEUDOBAEOSPOR*A ACICULIFERA, A NEW SPECIES FROM NEW ZEALAND**Abstract**

A new species of *Pseudobaeospora* collected in New Zealand is described; it is characterized, among other parameters, by the presence of pleurocystidioid elements, a micro morphological feature never known before to this genus. Descriptions and photos of macro- and microscopic features are presented.

Riassunto

Viene documentata una nuova specie di *Pseudobaeospora* raccolta in Nuova Zelanda caratterizzata, tra l'altro, dalla presenza di cellule pleurocistidioidi, un elemento microanatomico finora sconosciuto per questo genere. L'articolo è corredato con descrizioni e immagini dei caratteri macro e microscopici.

Key words: *Basidiomycota*, *Pseudobaeospora aciculifera*, New Zealand.

Introduction

The Genus *Pseudobaeospora* has remained very poorly known till a few years ago and the first well-founded knowledge of its characteristics, delimitation, and systematic was acquired only with the modern works by Bas (2002, 2003). Since then, general attention for the genus has increased, various findings and descriptions of new species have been published, and a new systematic was proposed by Voro (2009, 2015). Yet, while the morphological circumscription of this genus can be said to be well understood by now, the new frontier of molecular description is still almost unapplied. For this reason a worldwide project of DNA sequencing is projected by Voto, which will probably take some time before completion. In the meantime new and interesting collections are being received and described, like the one from New Zealand presented in this paper. We thank Mike Wallace who let us study a collection of his own.

Taxonomy

Pseudobaeospora aciculifera Voto & Soop, spec. nov. [MB 824564] - Holotype: New Zealand, Auckland, Albany, Northwood Reserve, 17.V.2013, terrestrial in a forest of *Kunzea* sp. (*Myrtaceae*), gregarious, K. Soop (PDD 103697). Isotype at K. Soop personal herb. (KS-AA41) and at MCVI (29419).

Etymology: from Latin *acicula* = little needle. The epithet refers to the needle-shaped pleurocystidia.

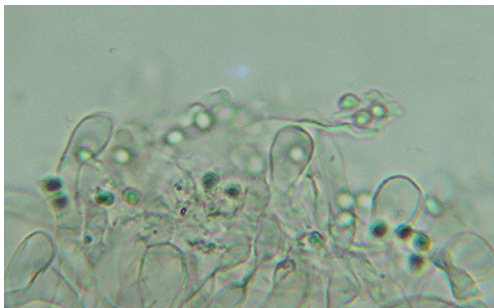
Pileus 6-15.5 mm broad, convex, sometimes flexuous and somewhat uplifted when old, brownish pink with paler, greyish-pinkish, non-striate, margin, dry, finely tomentose to granulose. **Lamellae** rather crowded ($L \pm 25-27$, $l = 3$), nearly free, slightly ventricose towards margin, pinkish red-brown with a paler edge, purplish brown on exsiccata, purplish- to salmon-pink when rehydrated with water. **Stipe** 20-40 × 1-4 mm, cylindrical, often sinuate, stiff, brownish pink, all over whitish pruinose to minutely granulose, base almost naked to slightly fibrillose or strigose. **Odour** indistinct.

Spores (3.1)3.5-4.1(4.5) × (2.7)2.8-3.3(3.5) μm, $Q = (1.11)1.17-1.33(1.36)$, on average from 2 independent series of measurement 3.83-3.88 × 3.05-3.20 μm, $Q = 1.21-1.25$, in front view broadly ellipsoid, in side view somewhat adaxially flattened, generally with a large guttula; sometimes

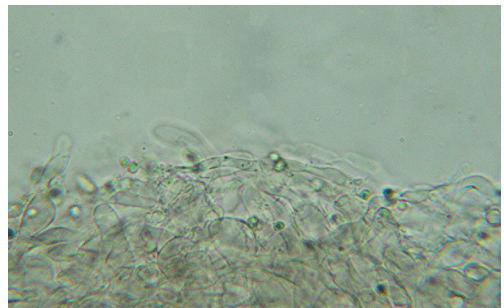


01. *Pseudobaespora aciculifera* (Holotype KS-AA41). Macroscopic habit.

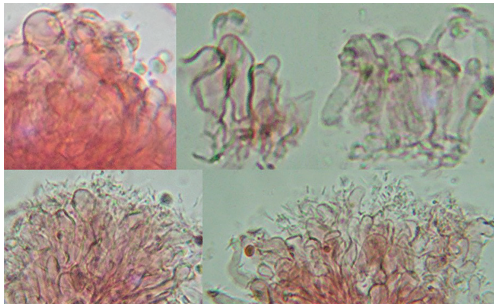
Photo by Karl Soop



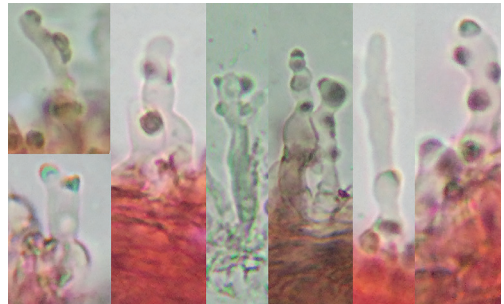
02. *P. aciculifera*. Pileipellis at center of pileus in KOH.
Photo by Pietro Voto



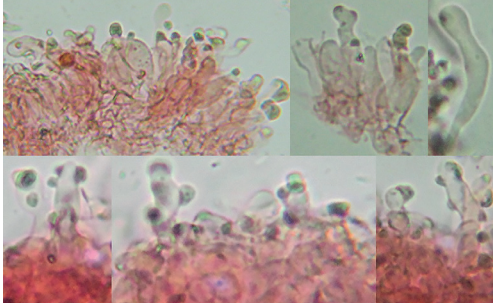
03. *P. aciculifera*. Pileipellis at mid pileus, with a thin suprapellis, in KOH.
Photo by Pietro Voto



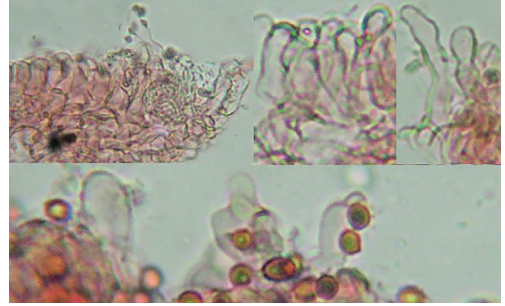
04. *P. aciculifera*. Cells of gill edge: cheilocystidia and paracystidia.
Photo by Pietro Voto



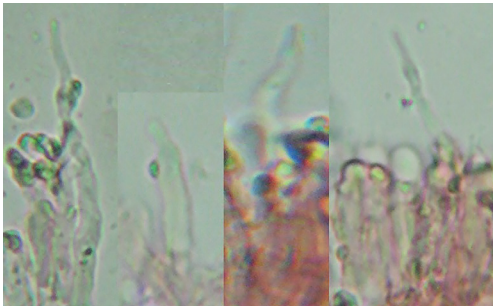
05. *P. aciculifera*. Cells of gill edge: cheilocystidia and paracystidia.
Photo by Pietro Voto



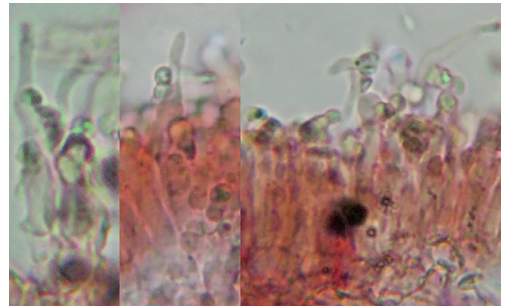
06. *P. aciculifera*. Cells of gill edge: cheilocystidia and paracystidia. Photo by Pietro Voto



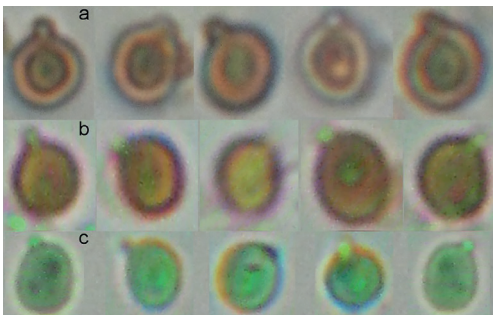
07. *P. aciculifera*. Cells of gill edge: cheilocystidia and paracystidia. Photo by Pietro Voto



08. *P. aciculifera*. Pleurocystidia. Photo by Pietro Voto



09. *P. aciculifera*. Pleurocystidia. Photo by Pietro Voto



10. *P. aciculifera*. Mature spores. a) in Melzer's reagent; b) in Congo red; c) in KOH Photo by Pietro Voto

immature spores agglutinate in groups of two to four, with large apiculus, at first thin-walled and non-amyloid, when mature becoming thick-walled, congophilous (orangish to reddish with a dull green guttula), dextrinoid (yellowish to reddish), in 5% KOH pale to hyaline greenish with brighter green guttula. **Basidia** 19.5-28 × 4.5-5.7(5.8) μm, sterigmata 2.5-5 μm long, 4-spored; congophilous sclerified basidia rare. On the hymenium two types of sterile cells are present: a) **basidioloid**, more or less cylindrical to irregular at apex, same dimension as basidia, rarely longer, numerous, b) **pleurocystidioid**, needle-shaped, subacute

at apex, straight to flexuous, 25-45 μm long, 2-3 μm broad at base, thin-walled, opaque, mainly present towards the gill edge; incrusting, greenish in 5% KOH, patches sometimes present on the basidioloid, rarely on the pleurocystidioid, cells. **Hymenophoral trama** irregular; subhymenium subcellular, pale pinkish discolouring to pale greenish in 5% KOH. **Lamellar edge** sterile, made up of two types of cells with intermediate forms: a) packed small **paracystidia**, 9-20 × (3)5-10 μm, cylindraceous, clavate, subglobose, fusoid or irregular, often thick-walled, sometimes covered at apex with minute incrustations; b) **cheilocystidia**, 25-30 × 4-10 μm, irregularly shaped (flexuous, nodulose, submoniliform) to more or less regularly clavate, sometimes thick-walled, often with incrusting, greenish in 5% KOH patches, absent towards pileus margin. **Pileipellis** made of two different strata: a) a **suprapellis** of a very thin,

easily disrupted and dislodged, cutis of parallel hyphae $\pm 10\text{-}70 \times 3\text{-}8 \mu\text{m}$ broad with elongated, regular to flexuous, tapering to subclavate at apex, up to $11 \mu\text{m}$ broad, free terminal elements, b) a **subpellis** of irregularly swollen to subelongate, repent to oblique in periphery, disorderly erect at centre, cells of $9\text{-}20 \mu\text{m}$ breadth and $Q = 1.5\text{-}3.5$, sparsely emerging through the medium of 1 to 2 intermediate septa with pileocystidioid terminal cells, in 5% KOH brownish-pinkish-lilaceous, discolouring in a minute to pale greyish pink to pale dull greyish lilac, finally hyaline pinkish-greenish; pigment intraparietal to weakly epiparietal, with walls up to $1 \mu\text{m}$ broad. **Caulocystidia** at apex of stipe in thick clusters, also isolate, small and packed like the paracystidia or cheilocystidioid, elongate and irregularly flexuous-moniliform-nodulose to more or less irregularly clavate-capitate, $35\text{-}92 \times 7\text{-}12 \mu\text{m}$; small to patched incrustations present like on lamellar edge cystidia. **Clamp connections** present everywhere.

Other collection examined: New Zealand, Auckland, Wellsford, in a broad leaf forest dominated by *Agathis australis* (D. Don) Loudon and *Dacrycarpus dacrydioides* (A. Rich.) de Laub., 25.IV.2017, M. Wallace.

Discussion

Pleurocystidia of any kind or shape have never been reported for this genus up to now; therefore when we discovered these peculiar, needle-shaped elements in the hymenium we soon realized its relevance. The differentiated two-layered pileipellis, typical of subsect. *Pseudobaeospora*, the abundance of clamps and the presence of elongate, encrusted cheilocystidia offer by themselves alone a strong distinguishing characterisation that only two other species share: *P. laguncularis* Bas and another new species from New Zealand whose formal introduction is still in progress. Additionally these two species differ in the lageniform shape of their cystidia, and the former in its cream to pale yellow-brown gills. In the online key by Voto (http://www.ameronlus.it/chiaavi_micologia.php) *P. aciculifera* would be readily located in subsect. *Pseudobaeospora* because of the presence of pleurocystidia but is placed beside those two taxa to emphasize the presence of incrustated cystidia.

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