

## *Coprinus arenicolens* ('arenacolens') Cleland, a morphological revision of its retrieved type

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Agaricales

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**Abstract:** *Coprinus arenacolens* was published in 1933 without a type collection being indicated, and since then it was seemingly never further revised. Research among some backlog boxes of fungi in the vaults of the State Herbarium of South Australia allowed the discovery of a collection numbered AD4050 and named '*Coprinus* sp.' with the handwritten name '*arenacolens*' added at a later date ['NN 3 June 1999']. The notes on the packet suggested that the specimen data and Cleland's notes matched those for *C. arenacolens*, and that this was actually the missing type. An examination of the spores and of the state of the material allows us to confidently assign this species to *Coprinus* s. str.

## INTRODUCTION

In describing the new species *Coprinus arenacolens*, Cleland (1933) only wrote "In arena pura. S.A. - Davenport Creek (E.P.)" for the typification, with no actual collection number mentioned.

Grgurinovich (1997) reported that "Cleland's only collection of this species could not be located at AD" and consequently she treated the name as a doubtful species.

Fortunately, our recent renewed attempt at finding it in AD came out successful and a packet was found among some backlog boxes of fungi whose notes matched those for *C. arenacolens*.

We tried to determine if the dried material, which possesses a woody fibrous stipe, actually bore any trace of deliquescence in order to resolve any doubt that it might belong to other similar genera, e.g. *Montagnea* Fr. This examination effectively showed that the specimens did appear to have suffered some deliquescence in parts of caps that remained and that this did not appear to be solely damage to specimens upon drying (i.e. crumbling of dried material). Also we are confident in Cleland's (1934) judgment when he confirmed this taxon as a *Coprinus*, a few pages before describing the genus *Montagnites* Fr. (illegitimate, nomen superfluum for *Montagnea*).

Much harder was the micro anatomical revision which consisted of us only observing the parameters of the spores (colour, shape, dimension and germ pore). Unfortunately pileipellis structure and hymenial cells were unable to be viewed in several attempts; this may be partly due to age of material, but also partial deliquescence of original samples collected.

As the material is almost a century old we have made no attempt at sequencing it for the time being. The sample may in future be part of a funded AD herbarium sequencing project on all Cleland's type materials.

Following the rules of the ICN (Art. 60.10) the specific epithet is to be correctly spelled as *arenicolens* (T. Voto, pers. com.)

## MATERIALS AND METHODS

Hand-cut sections of dried material were either mounted in 3% aqueous solution of KOH or distilled water or Melzer's reagent. Measurements were made at ×400 or ×1000 within NIS Elements on a Nikon Eclipse 80i microscope. Spore dimensions are given as length range × width range, mean ± standard deviation. The length:width ratio (Q) of individual spores is presented as the range of Q values and the Qmean. Pictures of spores by T. Lebel. Colour of spores was defined following Kornerup & Wanscher (1978).

## TAXONOMY - TYPE REVISION

Voto P, Lebel T (2022). *Coprinus arenicolens* ('arenacolens') Cleland, a morphological revision of its retrieved type.

*Coprinus arenicolens* ('arenacolens') Cleland

Transactions and Proceedings of the Royal Society of South Australia 57:194 (1933)

Collection examined: AD4050, *Coprinus* sp. *arenacolens*; in pure sand; Davenport Creek, Eyre Peninsula &7:EP; 20/8/28; Coll. J.B. Cleland.

**Macroscopical characters**

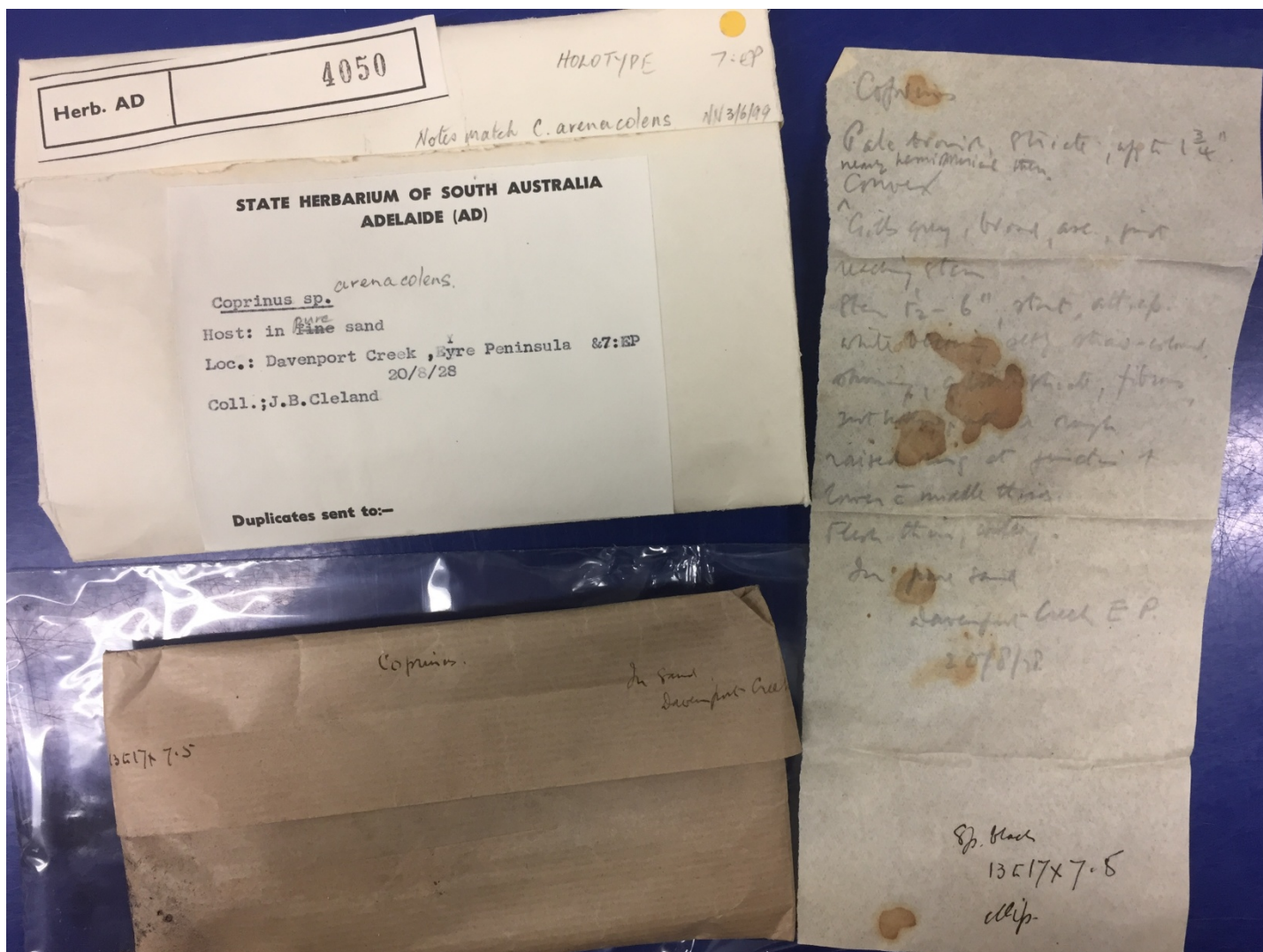
Pilei degraded as a seeming consequence of deliquescence, only blackened portions remained around the disc. Gills partially preserved under the pileus portions, not singularly separated from each other, charcoal-black. Stems sufficiently well preserved, woody fibrous, charcoal-black, longitudinally split at the base where evident sandy grains are present and adhering.

**Microscopical characters**

Spores: (48 measures) (10.0) 12.4 – 15.6 (17.0) × (6.0) 6.8 – 8.15 (8.7) μm, on average 14.24 × 7.43 μm, Q = (1.28) 1.73 – 2.17 (2.37), on average 1.93; in front view elliptic to oblong-cylindrical or irregularly to narrowly oboval, base obtuse to rounded, not truncate, In side view narrowly subamygdaliform to more or less adaxially flattened; thick-walled, greyish rose (11B5) to greyish red (11C6) or pink (12A5) in water, greyish brown (10D3) to almost greyish red (11D4) in KOH, greyish red (11C5) to greyish ruby (12C-D6-7) in Melzer's reagent; germ pore (1.0) 1.7-2.3 μm broad, truncate, central, not eccentric.

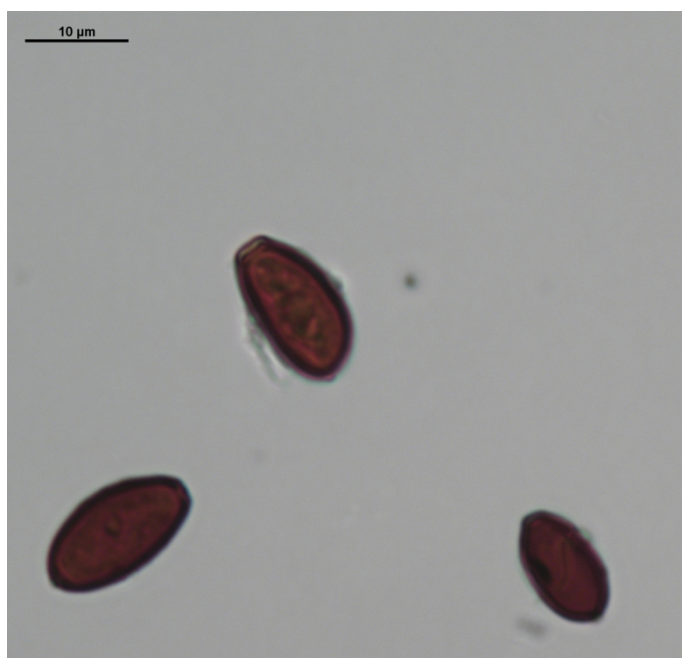
All other characters unobservable.

Cleland handwritten notes with collection: pileus pale brownish, striate, up to 13/4 inch, nearly hemispherical then convex. Gills grey, broad, asc, just reaching stem. Stem 1 1/2 - 6 inches, stout, attached centrally, white becoming soft straw colour, shiny and a little striate fibrous, not hollow, with a rough raised ring at junction with cap and in lower to middle third. Flesh thin, watery. In pure sand.

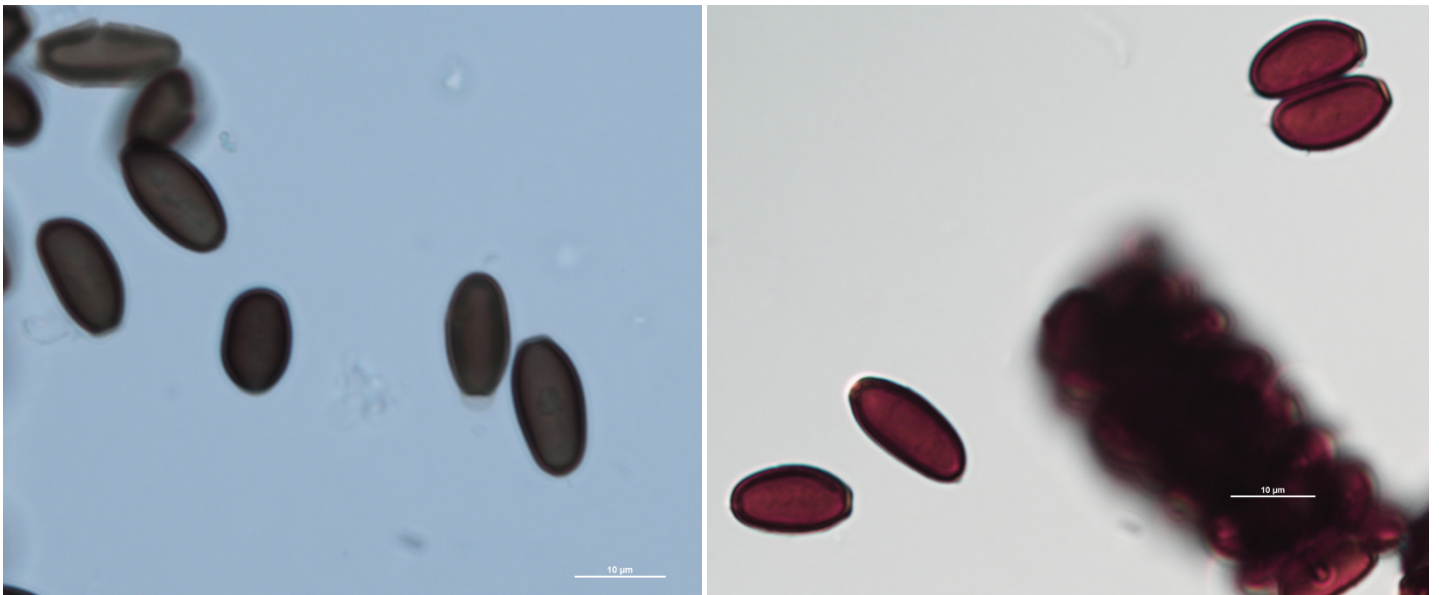




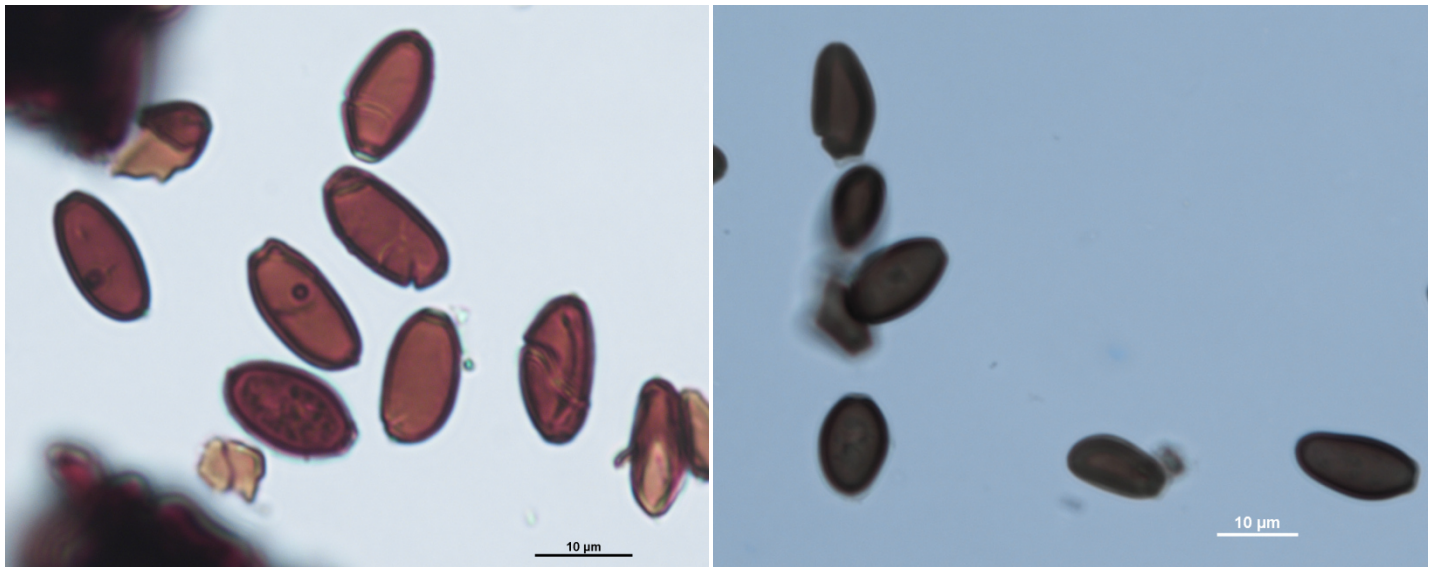
Dried material of the type



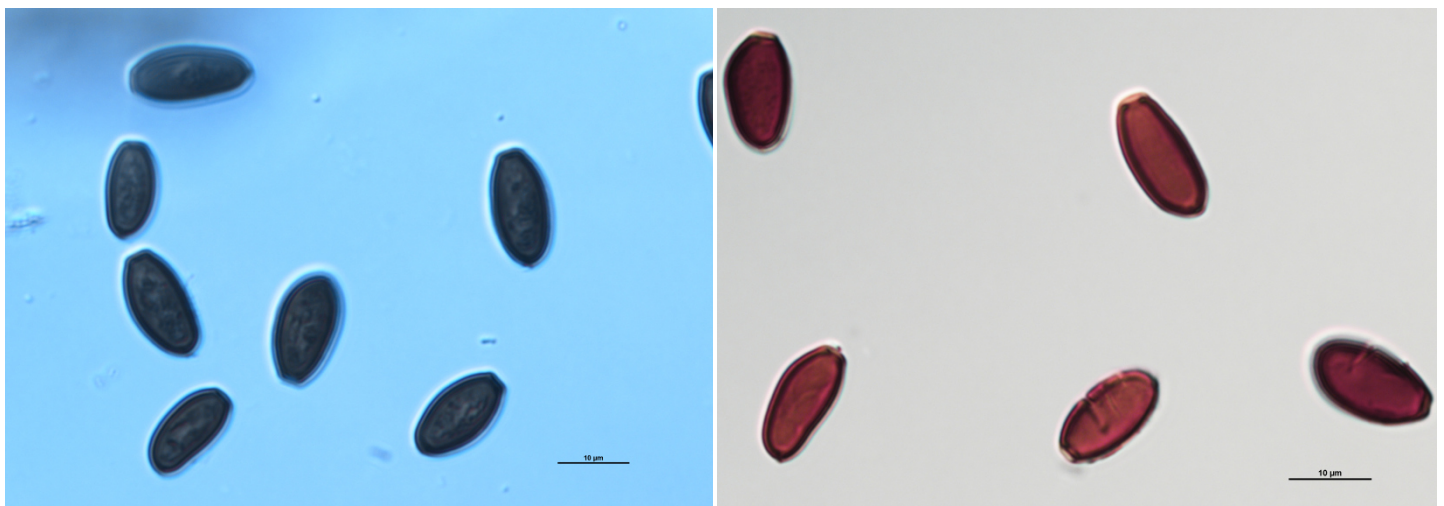
Spores in water



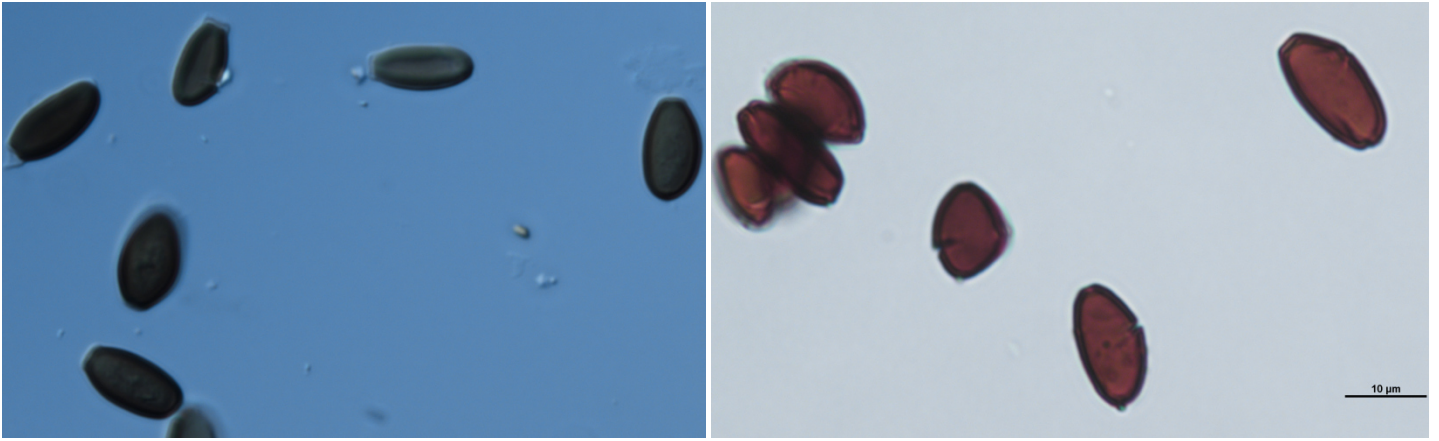
Spores in KOH (left), Melzer's reagent (right)



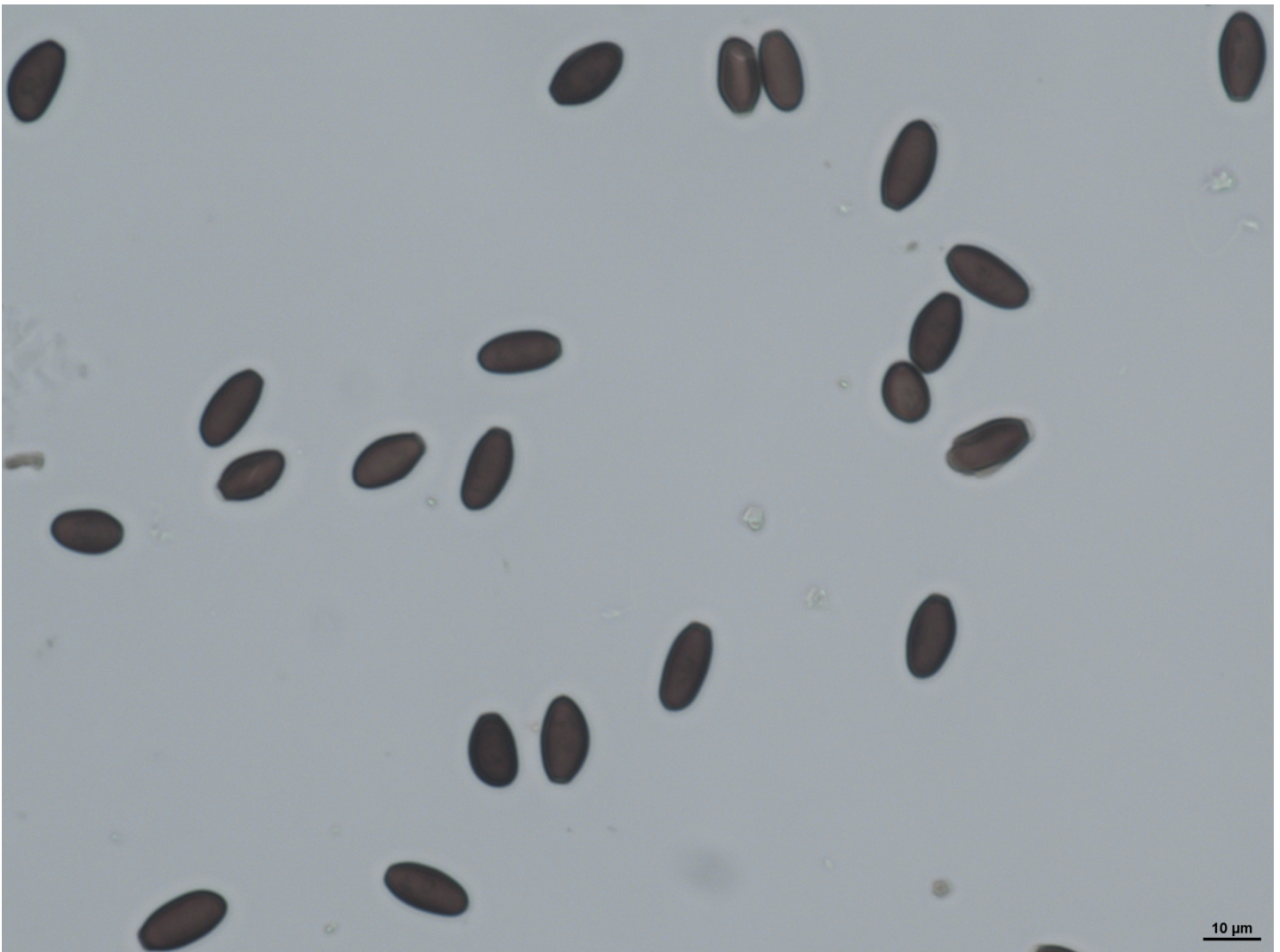
Spores in water (left), KOH (right)



Spores in KOH (left), Melzer's reagent (right)



Spores in KOH (left), water (right)



Spores in KOH

## NOTES

By the above revision of AD4050 we notice that this Cleland's *Coprinus* comes close to *C. comatus* (O.F. Müll.) Pers., for instance to *C. comatus* f. *sphaerocephalus* J.E. Lange (inval.) with its nearly hemispherical then convex pileus (see Voto's 2022 electronic key).

*C. comatus* has somewhat broader, elliptic to elliptic-oval spores in front view with an average Q in the range 1.35 – 1.75 (Noordeloos 2005, Europe; Grgurinovic 1997, Australia; Garrido 1988, Chile; Hopple 1994, USA). It is a common species, collected worldwide in lawns, possibly on nitrified or recently disturbed soil, but never reported on pure sand.

Until, and if ever, a phylogenetic characterization of this taxon will be available, we treat *C. arenicolens* as a good species.

## **ACKNOWLEDGEMENTS**

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