Mycological Notes 5: Cheimonophyllum sensu Segedin

Jerry Cooper, June 2012

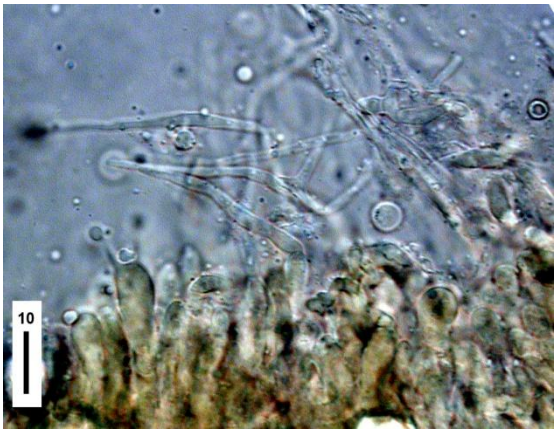
In a 1994 paper Barbara Segedin discussed *Cheimonophyllum candidissimum* and *Cheimonophyllum roseum* sp. nov. in New Zealand. The genus is associated with small *Crepidotus*/*Panellus*-like species, without a stem and associated with various substrates.

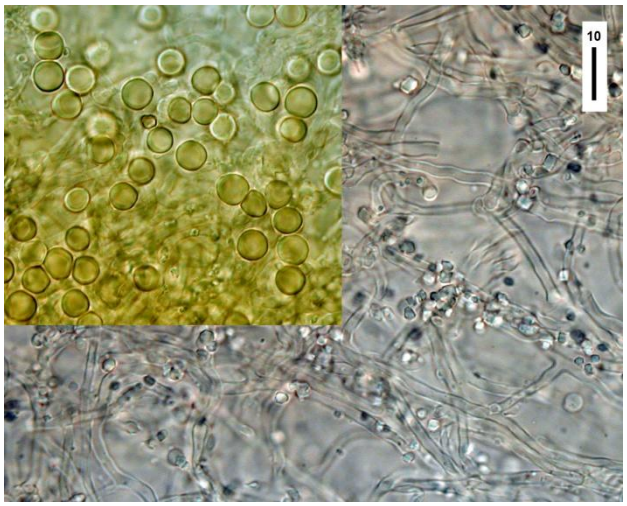
From reading the paper it seems Segedin took her concept of *C. candissimum* primarily from Dennis (1964). There are discrepancies between both Dennis' and Segedin's descriptions with respect to many more recent descriptions. They both describe a white fungus with distinctly pip-shaped spores, 4-5 x 3.5-4 um for Dennis and 5.2 x 4.8 for Segedin, and in both cases without filamentous cheilocystidia. *C. candidssimum* is more frequently descibed with near globose spores and filamentous cystidia. I have two collections which conform to Segedin's concept, except they have larger spores. I have eight collections which conform exactly to the more recent descriptions from the northern hemisphere. In addition, another *Cheimonophyllum*-like fungus and *Cheimonophyllum roseum* were recently sequenced providing surprising insights into their true affiliations.

Cheimonophyllum candidissimum

C. *candidissimum* is a widely distributed fungus reported from Europe, Russia, North and South America and Australia in addition to Segedin's description of New Zealand material. The spores are reported to be 6.2 x 5.8, Q=1.07 (ranging 5.7–7.0 x 5.1–6.3 µm, Q = 1.00–1.14) (Delivoria, 2008).

***Cheimonophyllum candidissimum* sensu stricto from New Zealand**

	
Fruitbodies, scale = 2mm	basidia and filamentous cheilocystidia

	Globose spores (6um) and cap hyphae with crystals

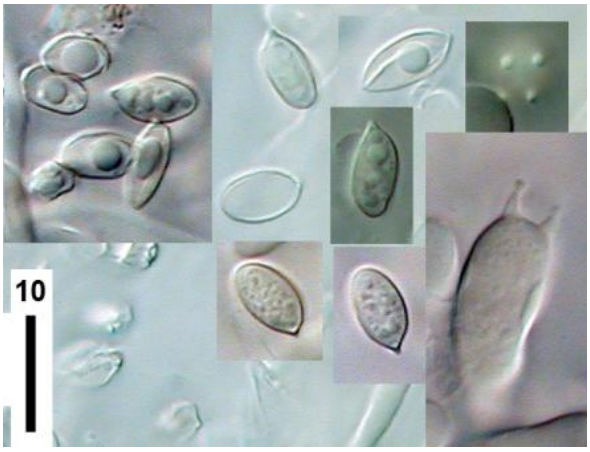
I have 8 collections of this fungus and it is always associated with wood. I believe this is the real *C. candidissimum* (PDD 87241, PDD 87262, PDD 87319= ICMP16969, PDD 87409, PDD 95707, PDD 95711, PDD 95800, JAC 12319)

***Cheimonophyllum aff. candidissimum* sensu Segedin**

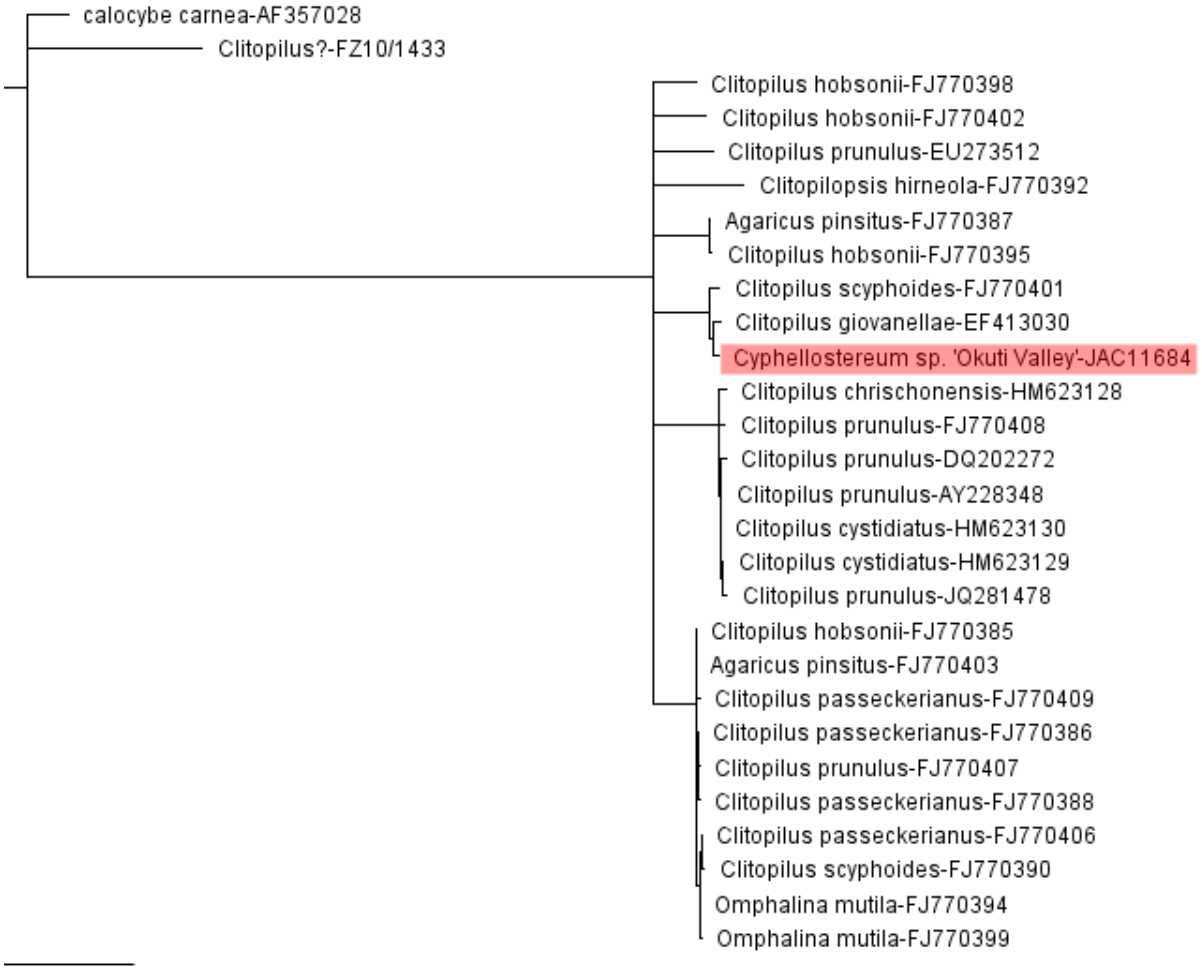
	
	spores 8.4 x 5.6um

I have 2 collections of this fungus and it is again associated with wood. It agrees with Segedin's concept except for the larger spores. It is probably related to Segedin's species but distinct. I'm not convinced either it or Segedin's species belong in the genus *Cheimonophyllum* (PDD 96475, PDD 87678).

C.f. Cheimonophyllum 'Okuti Valley'

	
scale = 1mm	spores (10 x 4um) and basidia

I have 5 collections of this fungus and it seems to have the odd preference for growing on rocks which are always covered in a layer of algae. It is clearly not a *Cheimonophyllum* (PDD 87290, PDD 87321= ICMP16972, PDD 87367, PDD 95725, PDD 96106). For a while I thought it might be a gilled version of *Cyphellostereum* but then got a sequence …

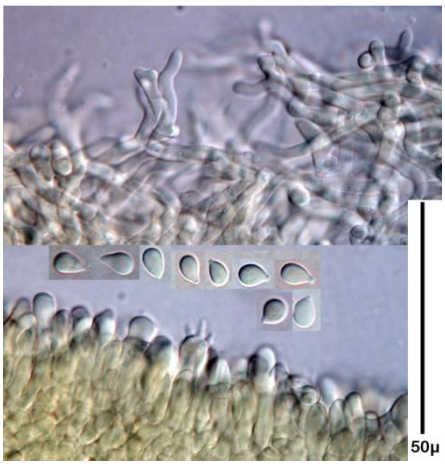


The sequence places this squarely within *Clitopilus*. The genus is normally associated with pink gills and spores with longitudinal ridges (in the older narrow sense of *Clitopilus*). There are a number of small crepidotoid species in the group including some from New Zealand which remain poorly known (Horak, 2008), but none with white gills and hyaline unornamented spores. In fact if you closely at the image above you will see the thin-walled spores seem to collapse along longitudinal creases so I guess there was a clue in the morphology.

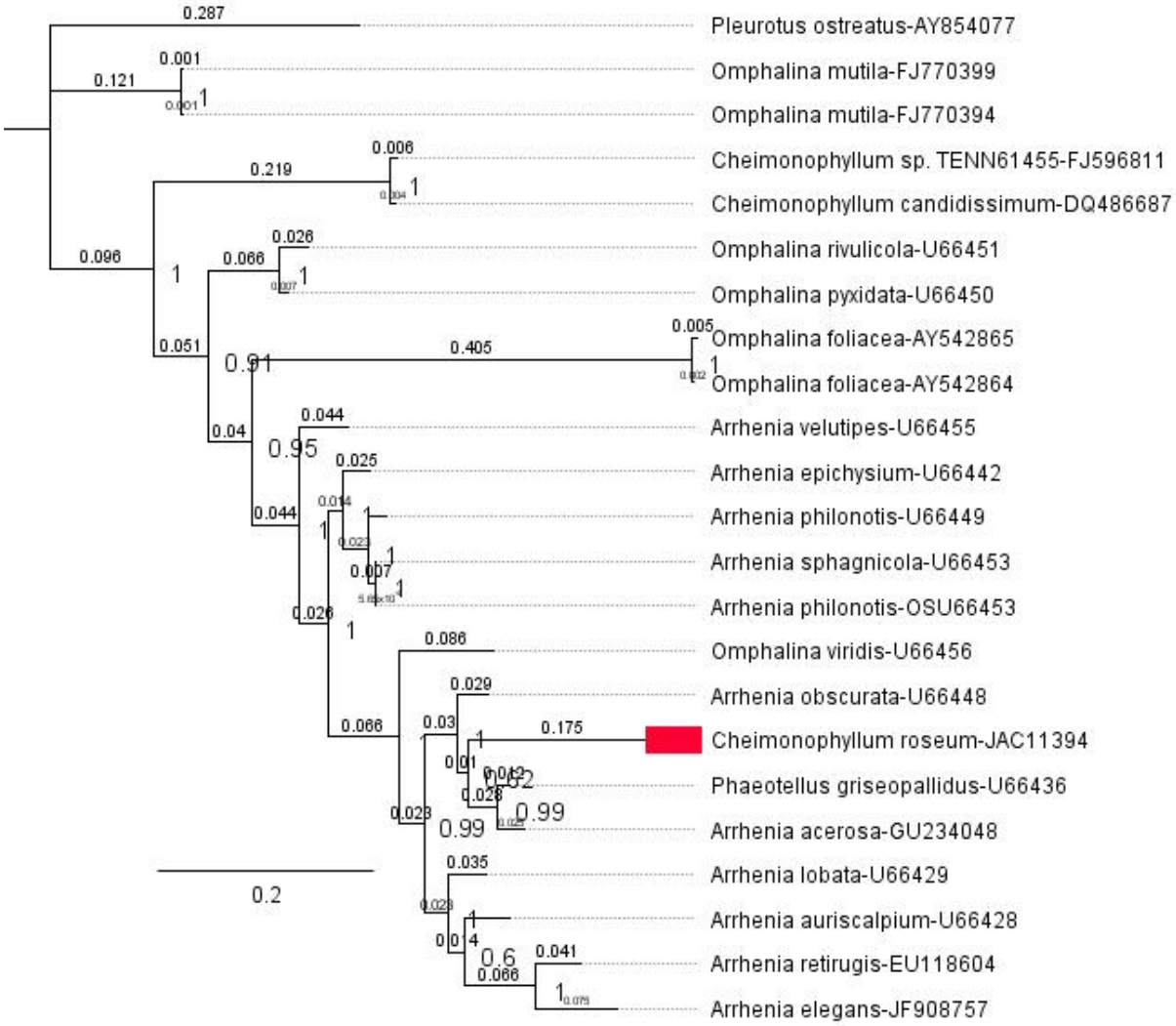
Its close partners in the tree are *Clitopilus scyphoides* and *C. giovanaellae.* This group of *Clitopilus* is in the section Omphalodei (Moreno et al, 2007) which lacks pigments and spore ornamentation. However, these two species are Omphalina-like fungi with a central stem and umbilicate cap so the placement of our fungus is somewhat surprising. I believe there is the possibility these fungi are closely associated with algae and or mosses, although it should be noted I had no problem isolating a culture.

Cheimenophyllum roseum

This is a very distinctive pink coloured species described Segedin which also does not possess globose spores or filamentous cheilocystidia. A collection of this turned up on the 2010 Oxford foray (PDD 95827).

	
	Cap hyphae and spores (7 x 4.4um)

This was also sequenced to see what story it told …



So this is also not a *Cheimenophyllum* but is better placed in the genus *Arrhenia*. It is a very untypical *Arrhenia*. That genus is characterised by fold-like gills, which *C. roseum* does not posess, and they are consistently bryophilous, which was not noted for *C. roseum*. See Lawrey et al (2009) for a further discussion of this group and related basidiolichens now placed in the Hygrophoraceae.

References

Segedin, B.; Studies in the Agaricales of New Zealand : new records and new species of the genera Cheimonophyllum, Mniopetalum, and Anthracophyllum (Tricholomataceae, Collybieae).New Zealand Journal of Botany, 1994, v32, pp61-72

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