Mycological Notes 36

New Zealand Clitocybaceae

Jerry Cooper, 18th Dec. 2016

The genera I include here are often considered within the Tricholomataceae sensu lato. However, there is a monophyletic and supported clade which contains *Clitocybe* (type *Clitocybe nebularis*), *Lepista* (type *Lepista panaeolus*), *Collybia* (type *Collybia tuberosa*) and *Singerocybe* (Type *Singerocybe viscida* [not sequenced]). I am using the convenient family name Clitocybaceae for this clade, although the name is not validly published (and neither is Collybiaceae).

There are probably many more *Clitocybe*-like species in NZ than are listed here. A number of the species like *Clitocybe nebularis* are found in other parts of the world and within New Zealand have been found deep in native bush, and yet most records are relatively recent. It is hard to decide if these are indigenous fungi, previously unrecognised, or introduced fungi that have spread rapidly. I think the latter is more likely, and a number of *Clitocybe* and *Lepista* species have been rapid invaders.

Singerocybe clitocyboides was only recently moved from *Clitocybe* on the basis of phylogenetic data. It is present in both Australia and New Zealand. After a few encounters it is easy to recognise, even without seeing the micro-vesicles in the cap tissue.

Singerocybe is distinguished clearly in phylogenetic studies. The same is not true for *Clitocybe* and *Lepista* where current data suggest they are close and perhaps both should be called *Clitocybe*. However, I am not aware of a definitive study to address the issue, or the placement of the related genus *Collybia*.

Lepista luscina is the name I am using for the *L. panaeolus* complex. The caps are grey to pinkish. They often have 'water drop spots' on the cap, but not always according to sequenced material, and the odour is not typically earthy/fragrant like *L. nuda*. It is most probably an introduction into NZ. The species has been confused with *L. irina* but that has a strong perfume odour. *Rhodocybe pallidogriseus* can look somewhat similar bur has clearly angular (entolomatoid) spores, not verrucose.

Greta Stevenson named *L. antipoda* and *L. muritai.* They were transferred to *Rhodocybe* by Horak, but Bandoni maintained them in *Lepista*. After examining the types and recent collections I agree with Bandoni that these species have spore ornamentation and cyanophilous reaction typical of *Lepista* and not *Rhodocybe* (despite clamps not observed in the type of *L. antipoda*). Sequence data for collections identified using morphology are also within the *L. panaeolus* complex. Currently I am treating these all as a single morphologically variable species *L. luscina*.

Lepista fibrosissima is easy to recognise but with a very odd distribution. Specimens are known from a few NZ locations, usually modified habitats, and apart from those collections it is known from MacQuarrie Island and Patagonia!

Clitocybe species are often easy to recognise because of generally white fruitbodies and decurrent gills, but that character is not obvious in many NZ species. Many fungi are difficult to identify from macro-characters alone but much easier using micro-characters. Unfortunately *Clitocybe* species generally have few good macro or micro-characters and so identification can be very difficult.

Clitocybe nebularis is recognisable because of its size, formation of fairy rings and appears to be quite common in native bush. A number of the recent records were originally misidentified as *Leucopaxillus* (now *Aspropaxillus*) *giganteus* but that is absent.

Clitocybe paraditopa is a sweet smelling *Clitocybe* common in urban lawns in New Zealand. I originally assumed was the northern hemisphere *Clitocybe fragrans* but sequence data does not support that and I am inclined to think this is Cleland's Australian species introduced into NZ.

Clitocybe rivulosa has turned up just once, from Eastwoodhill Arboretum, which has very many introduced fungi with the exotic trees. *C. rivulosa* has high concentrations of muscarin and is very toxic. Eastwoodhill seems to specialise in toxic fungi because is the autumn it is also covered in *Amanita phalloides*.

C. brunneocaperata is a species I described and it originally intrigued me because I couldn't place it in a genus. It has the look of a *Tephrocybe* but without siderophilous granules in the basidia characteristic of the Lyophyllaceae. It seems to be quite common in many habitats.

C. 'Hagley' may be an introduction and may therefore have a name somewhere else. Indeed that name may be *C. metachroa* but I really cannot decide if it is that species on the basis of morphology. However, a specimen of another species (which doesn't look convincingly like *C. metachroa*) has a sequence identical to the only current GenBank deposit under the name *C. metachroa*. There are also near identical sequences under the names *C. amarescens* and *C. metachroides*. All these species are recognised as being closely related, but from the morphology of my collection (currently as *C. metachroa* cf.). I'm confused about the correct name to apply. *C. 'Klondyke'* is difficult to distinguish from *C. wellingtonensis* but I will take the varying cap pigment as indicative for this species. It is also very similar to *C. metachroa* cf. The last three species in the key need more work to clearly differentiate them.

1	Spores verrucose, cyanophilous. Some species with violaceous colours. Odour often earthy/fragrant. Spore print pinkish.	3 Lepista
1'	Spores smooth. Without violaceous colours. Odour various or absent. Spore print usually white but sometimes creamy/pink.	2
2	Pileipellis with large spherical vesicles. Cap centrally depressed pinkish, waxy/soapy texture.	Singerocybe clitocyboides
2'	Pileipellis without large spherical vesicles	5 Clitocybe
3	Gills violaceous	4

3’	Gills grey or pale pinkish. Cap often with slightly darker spots	L. luscina
4’	Cap dark brown, shaggy	L. fibrosissima
4	Cap paler brown, smooth.	L. nuda
5	Odour fragrant, sweet perfume-like. In lawns. Brown, hygrophanous.	C. paraditopa
5	In lawns or bush/forest litter. Odour sometimes distinct but not sweet/perfume-like	6
6	Stem often > 13mm diam. Odour weak, Lepista-like, Spore print ochraceous. Often forming large fairy rings, especially around podocarps	C. nebularis
6	Stem thinner. Spore print white.	7
7	Odour chemical (like malathion). In rough grass. Cap aeriferous (fine pruinosity and cap edge appearing paler), hygrophanous.	C. rivulosa
7	Smell weak, at most mealy. Cap not aeriferous. In litter or on wood.	8
8	Cap dark brown, wrinkled	C. brunneocaperata
8	Cap not wrinkled	9
9	Cap grey/brown	10
9	Cap cream to orange/tan, centrally depressed	11
10	Dark grey/brown and drying grey. Cap often striate at margin (potentially C. metachroa sensu stricto)	C. ‘Hagley Park’
10	Pale grey and drying cream. Cap never striate at margin (C. metachroa/amarescens/metachroides sensu GenBank/Italy)	C. metachroa cf.
11	Cap uniform in colour, cream to creamy yellow, native forests. Stem eccentric. See also Rhizocybe albida and Ossicaulis ‘Price Valley’	C. ‘Klondyke’
11	Cap centrally darker in colour, often with flesh tones, native and modified habitats	C. wellingtonensis

Singerocybe clitocyboides PDD 87789=JAC 10553

Lepista luscina PDD 80943=JAC 9513

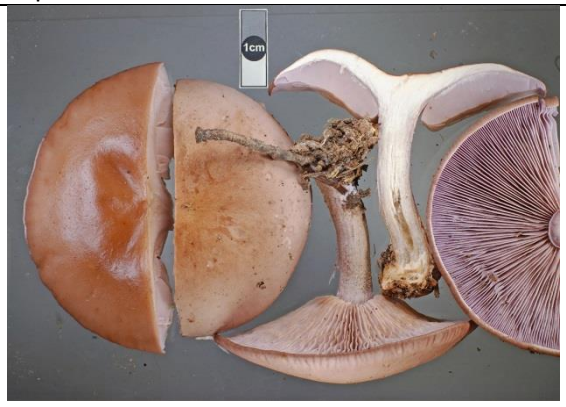
Lepista luscina PDD 87006=JAC 9897

Lepista antipoda PDD 87547=JAC 10694

Lepista muritai PDD 87669=JAC 10476

Lepista muritai PDD 95806=JAC11393

Lepista fibrosissima PDD 87212=JAC10126



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Clitocybe paraditopa PDD 87709= JAC10444

Clitocybe paraditopa PDD 86972=JAC9863

Clitocybe nebularis PDD 105707=JAC13456

Clitocybe rivulosa PDD 97090=JAC12993

Clitocybe brunneocaperata PDD 96472=JAC12375

Clitocybe sp. 'Hagley' PDD 95867=JAC11468

	
Clitocybe metachroa cf. PDD 105567=JAC13314	Clitocybe sp. 'Klondyke' PDD 106358=JAC14197
	
Clitocybe wellingtonensis PDD 87783=JAC10546	Clitocybe wellingtonensis PDD 95908=JAC11513 (C. sp. 'Ohakune')

Phylogenetic Trees

ITS


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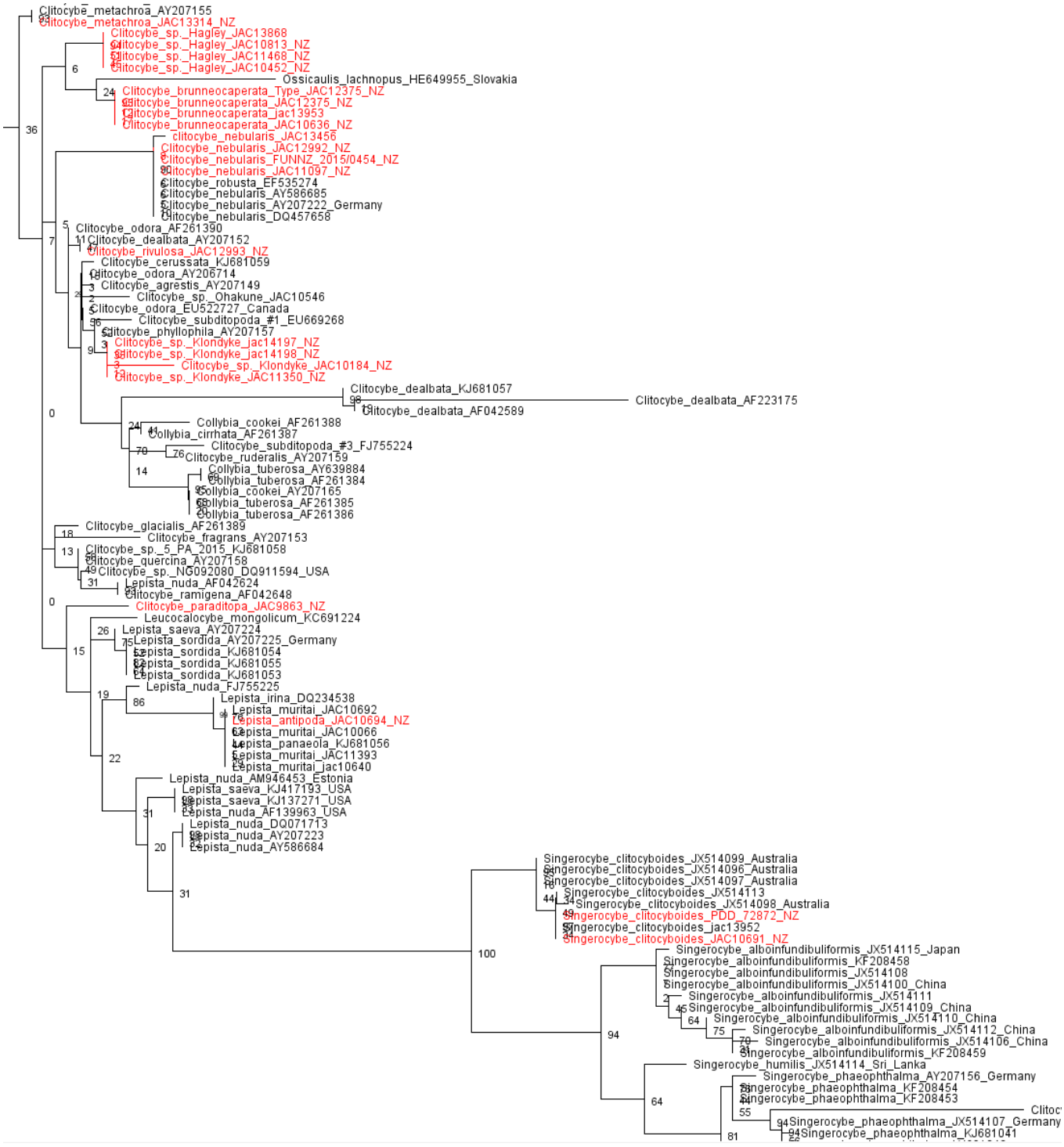
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