The Cooloola Foray took place in the Lake Cooroibah section of the Great Sandy NP on the 28th Feb. 11 people took part, (8 QMS members, and 3 others) and we managed to cover about 500m along the fire track in the area we usually survey each year.
The weather had been very wet until ~1wk before and there had been showers in the week preceding.
The vegetation was lush, in contrast to…

…The appearance of 12 months ago, when we forayed just after a controlled burn in the area.

This time we found 27 species of which about 16 were new to our list for the park. We managed to make collections of 13 species, with spore prints in 11.
If there were more people able to take home and describe, get spore prints and dry specimens we could probably have collected twice that number.
The following pictures are some of the ones that we did collect and two that we failed to collect, because I couldn't handle them all. (Nigel was very disappointed!)

A is for
Amanita

We'll start with the A's.
Cooloola is a very rich area for *Amanitas*. We find them in every month that we do surveys. They are not always the same species, they are all along the track, and appear to be mycorrhizal with the *Allocasuarina littoralis*, *Eucalyptus racemosa, and Corymbia intermedia (*among other possible trees*).*This year they proved to be particularly difficult to key out and, in the end, I had to call all of them "*Amanita* species", though obviously from their macroscopic appearance and spore shape and size, they were different species.

The first one had a shiny grey-brown cap with scattered small patches of velar remnants on the cap, which had an entire margin (not pellucid-striate). It had a small ring and slightly bulbous vase, but no volva. The spores were amyloid and quite elongate.

This was the second species, which had a darker grey cap with radial striations on the outer third, an ephemeral ring and a slightly bulbous base, with no obvious volva (possible ring of sac). Its spores were much more subglobose to broadly ellipsoid.

The next one was all white, with an obvious white spore print on the sand where a cap had been knocked off. It was small and chunky with a bulbous base, no volva, but there was an ephemeral ring.

It had white velar patches on the cap.
Although this narrow-stemmed one was growing with it, I wonder if in fact it was a different species.
Again this one had markedly elongate spores. Another *Amanita* sp..

The Australian “Blusher”

Cooloola: Feb 2015 Approx. 120mm diameter

After the small sized ones we had found, this one was enormous, being well over 100mm diameter.

It is the same species that we found last year as babies, with the reddish shaggy stem, large white membraneous annulus (which you can’t see here, but it is red underneath), a metallic grey cap with large red or white warty velar remains on the surface.

Two specimens were found last year. They were very young, but the distinctive metallic grey cap with numerous reddish buff scales, the red streaking on the very solid and bulbous stem and the red underside to the annulus, and red staining when bruised made the identification clear.

It is the same as one we found at Chermside Hills back in 2009 ...

...and Susan found at Burbank in Feb 2014. It is variable in size, but very distinctive. It has now been found in Feb., April and May, and it deserves to have its own name.

I've called it the Australian Blusher, after the exotic *Amanita rubescens,* which only occurs in Austraila with chestnuts and other exotic trees. *A. rubescens* possesses a haemolytic toxin and its Australian relative may well too.

Lastly in the A's we found quite a collection of this little grey funnel-shaped fungus growing in caespitose clumps on old charcoal and partially buried roots. It had a white spore print, with smooth ellipsoid spores.

Using FunKey to key this one out, it comes out as an *Arrhenia* species. I don't know much about them, except they are saprophytic, usually growing on wood, and only one species has been formally described in Australia.

Quite close to the *Arrhenia* we found this yellow one which was also funnel shaped, with fairly close, decurrent gills, growing in the sand, gregarious, but not caespitose. As it says this one dropped a pale pink spore print.

I had thought is was a *Lichenomphalia*, but against that was the closeness of the gills, and the pink spore print.

Lichenomphalias are lichenised basidiomycetes, so actually grow with algae, although they may not be obvious.

(Pat has told me that some *Omphalinas* may have pink spore prints. So we are not sure.)

Now we come to the B's.
There were plenty of boletes around and most of them were small.
This one had a dry felty red cap with bright yellow pores, and a dusty reddish stem.
When we cut it , it turned faintly blue,(esp. in the pores) which lasted for a short time.
The spore print was olive green, and the spores were smooth, elongate with 2 or 3 oil dots.
This fits well with the *Boletus* sp. no. 16 described in ASF, though that states that there is no blueing on bruising.

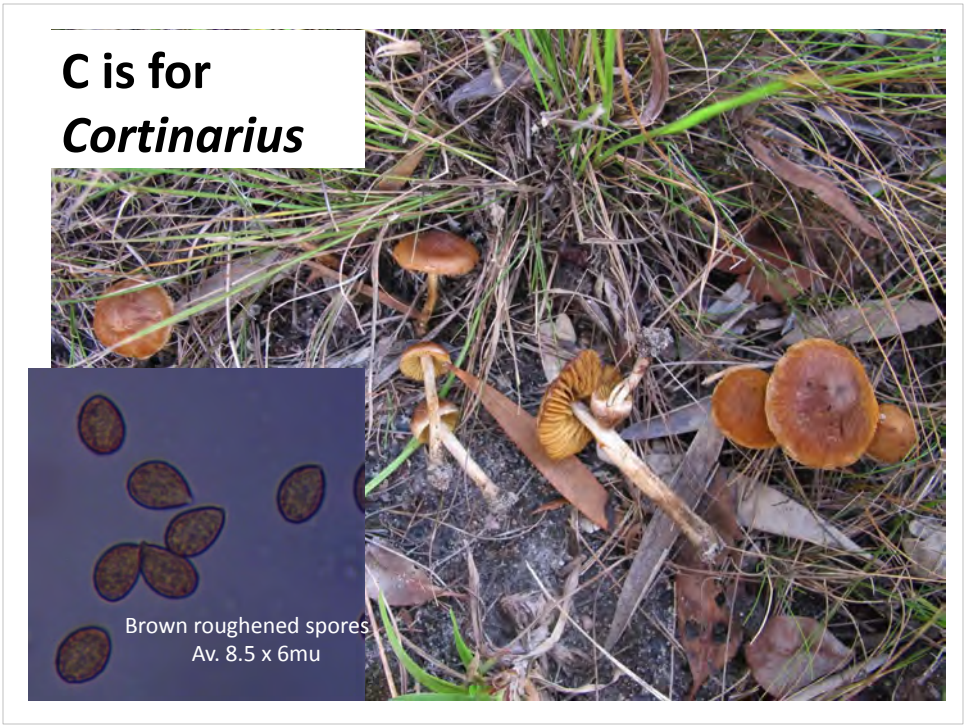
We then found another one of similar size, i.e. ~30mm diameter, this one with a slightly sticky cap, orange, and orange pores and slightly paler stem. Its spore print was brown and the spores were elongate, smooth. According to Nigel, it is another *Boletus sp.*

Then we found this rather stouter specimen, brown smooth cap, off white pores, no change in colour on cutting.
Unfortunately only a few fusiform spores were dropped.
Nigel thinks this is a *Gyroporus aff. castaneus.*

Towards the end of the foray we came upon this yellow one with a smooth, sticky cap, whitish pink pores, a somewhat shaggy stem with a hint of an annulus.

Close by were an orange one of similar dimensions and description and also a red one, which showed more of a reticulate pattern on the stem.

The slightly tacky cap surface, the whitish-pink pores, and the somewhat reticulate stem pattern suggested these were *Austroboletus.* I was puzzled, however, as the only *Austroboletus* I was familiar with was *A. lacunosus*, which has a brownish cap, and a strongly reticulate stem. (As we had gathered more specimens than I could process, we did not collect this one, much to Nigel's disappointment.) It appears to be *Austroboletus mutabilis,* a species only described in 2006 from north Qld so far, and this would represent a very big extension to the range of the species.It starts red and then changes to yellow as it matures.



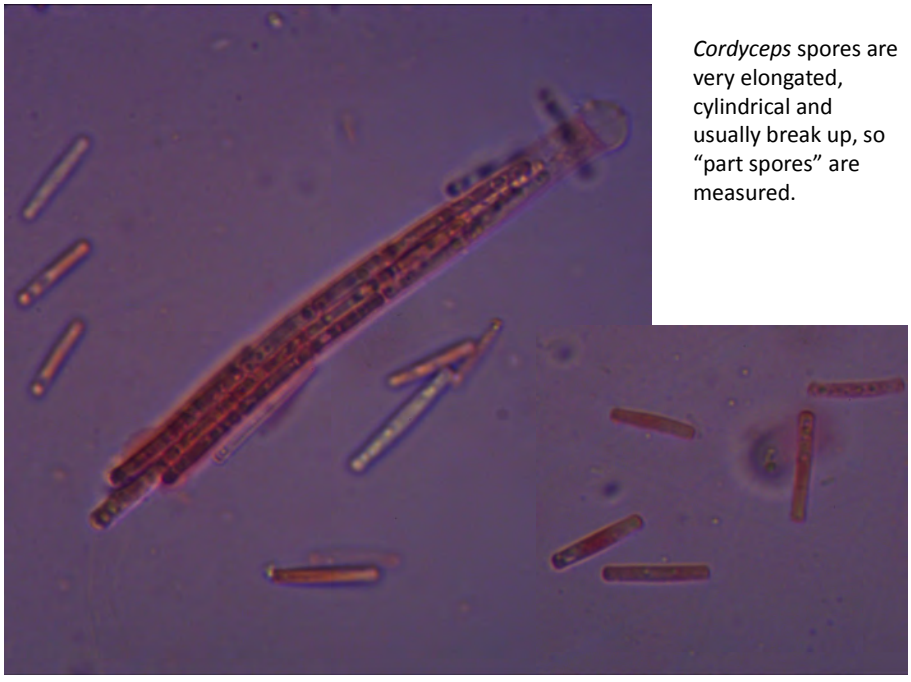
Moving on to C.
Of course, we found some *Cortinarius*. This one was a brown one and although it clearly had a cortina (web-like veil) under the cap of the young ones, it was impossible to key it to species.
We did see another one with lilac tinted gills and that may be one we've seen before.
The spores of *Cortinarius* are brown and rather roughened or warty.

For me, the most exciting find of the day was this little one. Michael, who knows his wallum plants, spotted this one and realised that it was not a flower or bud of any wallum plant. It was just emerging from the soil like this and when we pulled it, up came the club shaped fruitbody and mummified insect case below.

and
Cordyceps

Cordyceps menesteridis

The fruitbody consisted of a dusty pinkish stem and club-shaped head which was covered in blood red spots which are the ostioles of the perithecia where the spores of an ascomycete are produced.
There are over 400 Cordyceps species in the world and they are parasites of ants, moth and beetle larva etc. They are not common in Australia – or at least we don't find them often as they may be quite small, though some are large.
The spores enter the larva through its skin and then they begin to grow through the tissues of the animal until it is completely replaced by fungal tissue, and dies. The fungus then throws up a fruit body usually from the head region of the insect. I talked with an entomologist friend who thought this was probably the larva of a scarab beetle. (It has since been identified as a cicada nymph.)



Cordyceps spores are very elongated, cylindrical and usually break up, so "part spores" are measured.

The spores of *Cordyceps* are quite peculiar, in that they are extremely long, cylindrical and tend to break up into segments, which are called "part spores". They are long and narrow and are produced in asci (sacs), not on the end of a basidium.

Lastly, we found this specimen which had the look and texture of a *Russula.* It didn't oblige with a spore print, so I only found about 3 spores, which had amyloid warty projections on them. The gills were widely spaced with very short lamellulae between. I asked Patrick about this one, but he says it is new to him.

So there you are - another great foray with some identifications and, as usual, more new species than repeats (even after 5 years). As well – a lot of questions which remain to be answered.


Gretchen, Bob and Lisa

The troops were getting a bit tired and hot by midday.