In praise of sticky tape

Tony Leech*

The use of transparent adhesive tape to transfer delicate fungal structures onto a microscope slide is well known to some professionals but seems relatively little appreciated by amateurs. Try placing a sample of mould from the skin of an orange onto a slide using the tip of a needle and the tangled mass looks nothing like the textbook image of a *Penicillium* species, but use sticky tape and you realise why the genus is so-named (*penicillus* is Latin for paint brush).

The technique

When I asked a tutor at a BMS workshop to demonstrate the technique, he looked puzzled saying that you simply pressed the tape onto the fungus and looked at it under the microscope. It really is as quick and simple as that.

Pull out a length of ordinary transparent adhesive tape, taking care not to touch the sticky side (or you will soon learn to recognise human epidermal cells). Press this side against the fungus and then, sticky side down, onto a very small droplet of water or other mountant on the slide. Smooth the tape down with a finger and observe in the usual way but without a coverslip. Surprisingly, oil immersion can be used with little loss of quality (see Fig. 2a). Trial and error will establish the pressure needed to get a suitable quantity of fungal material transferred to the tape. Some sources advocate viewing the preparation sticky side up with mountant and a coverslip but I have found this unnecessary and more cumbersome.

Applications

One of the most useful applications of this technique is for a preliminary look at microfungi on plants and their remains. A quick dab (preferably under a stereo microscope) will often reveal whether potentially identifiable material is present and on many occasions will enable a determination to be made. Spores and protruding cystidia can often be collected in a similar way from resupinate fungi.

The two widespread species of *Ganoderma* (*G. adspersum* and *G. applanatum*) can be difficult to distinguish in the field but are readily separated by the size of their spores. Removal of the bracket, or part of it, for later examination is not always easy or desirable but the spores often accumulate in abundance on the upper surface or on objects immediately below. Pieces of adhesive tape stuck to strips of plastic can be carried to collect the spores. Strips cut from plastic milk bottles work well as their slightly rough surface prevents the tape from sticking too firmly. Data can be written on a label on the back of the strip.
I have also used tape stuck to plastic strips to receive spores through the post to support identi-

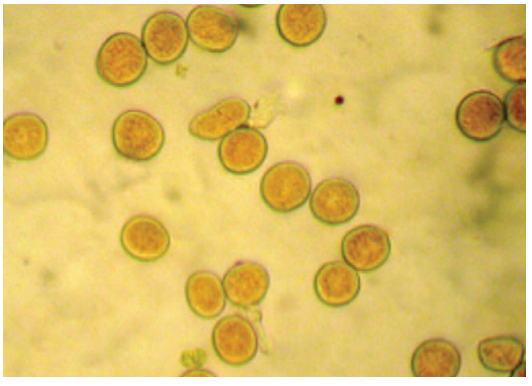

Fig. 1a. Aeciospores of *Melampsora populnea* on Dog's Mercury, *Mercurialis perennis*; as viewed at x400 under tape. Photograph © Tony Leech.

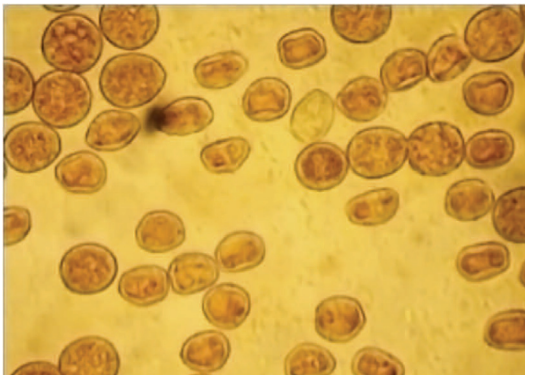

Fig. 1b. The same spores as viewed at x400 under a glass coverslip. Photograph © Tony Leech.

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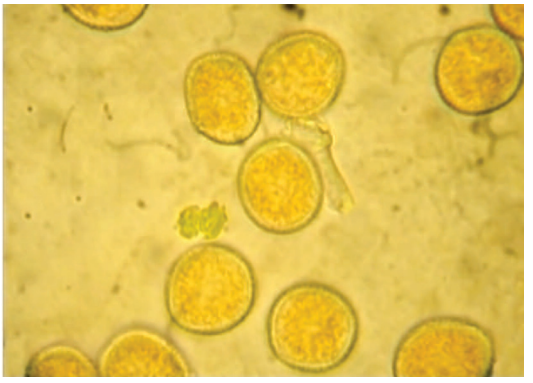

Fig. 2a. Aeciospores of *Melampsora populnea* on Dog's Mercury, *Mercurialis perennis*; as viewed at x1000 (oil) under tape. Photograph © Tony Leech.

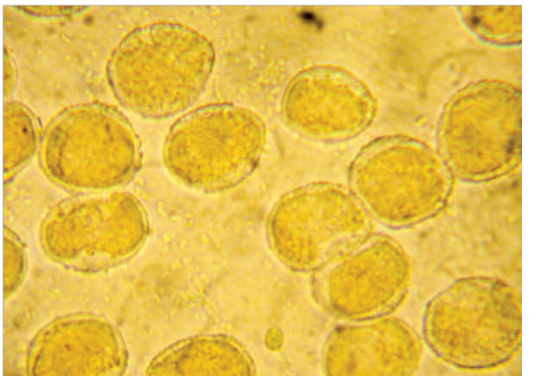

Fig. 2b. the same spores as viewed at x1000 (oil) under a glass coverslip. Photograph © Tony Leech.

fications requested; no one lacks plastic containers and sticky tape!

Note

To prevent air being trapped round conidia of fluffy moulds, place a drop of methylated spirit (95% ethanol) on to the material stuck to the tape and wait until it has almost evaporated before mounting as described. Very helpful advice on studying and identifying moulds is found on the New Brunswick Museum web pages at: http://website.nbm-mnb.ca/mycologywebpages/Moulds/Moulds.html

Acknowledgment

I am grateful to Mark Joy for discussions about this technique.

Editor's note

Intrigued by this technique I thought it might prove useful for the genus *Russula* where one has to examine the pileocystidia or fuchsinophile hyphae which protrude from the cap cuticle. This normally involves peeling as thin a fragment of cuticle as possible and then treating with a stain: an often very tricky procedure. What if you simply applied the sticky tape to the cap surface, would it then pull off the cystidia or fuchsinophile hyphae for easy examination?

After a couple of tries I managed to get the image shown in Fig. 3, using cresyl blue as the stain. The trickiest thing was getting the right amount of fluid under the tape when placing on the glass slide. Too much and it sloshed around unevenly; much better to use as little as possible. I will continue to experiment and encourage others to do the same and send us the results.

Although it might never replace a carefully prepared traditional slide mount with glass cover slip it is certainly useful where a quick check needs to be made and in some ways makes for a clearer image without the usual distraction of the background cuticular hyphae.

Geoffrey Kibby

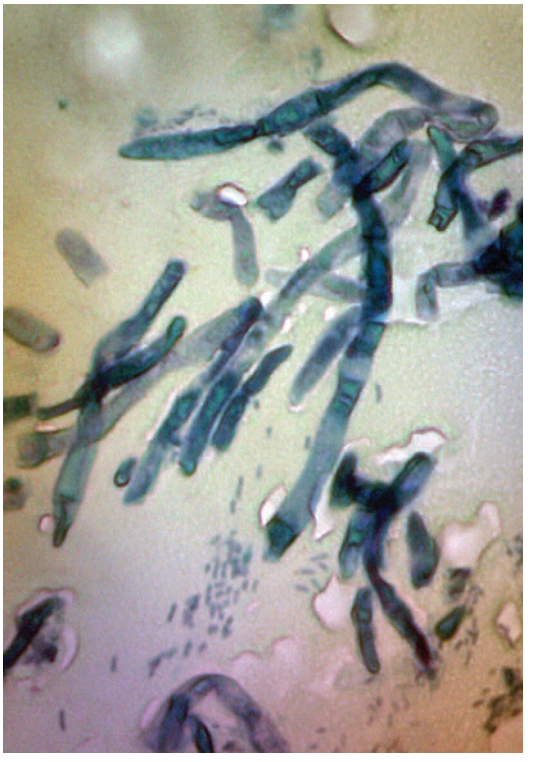

Fig. 3. Pileocystidia of *Russula melliolens* viewed at x400 under sticky tape and using cresyl blue mountant. Photograph © Geoffrey Kibby.