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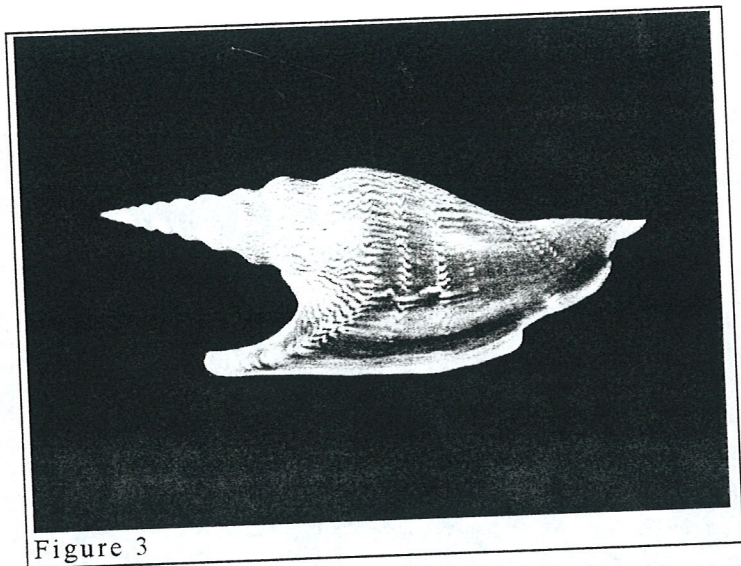


Figure 3

There was one positive outcome to this story. When the shell was smashed open it was found to contain foraminiferal sand which provided us with further information on the shell's origins and gave the Hunterian Museum one of the earliest collected samples of marine sediment.

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A Mycoherbarium for Hampshire

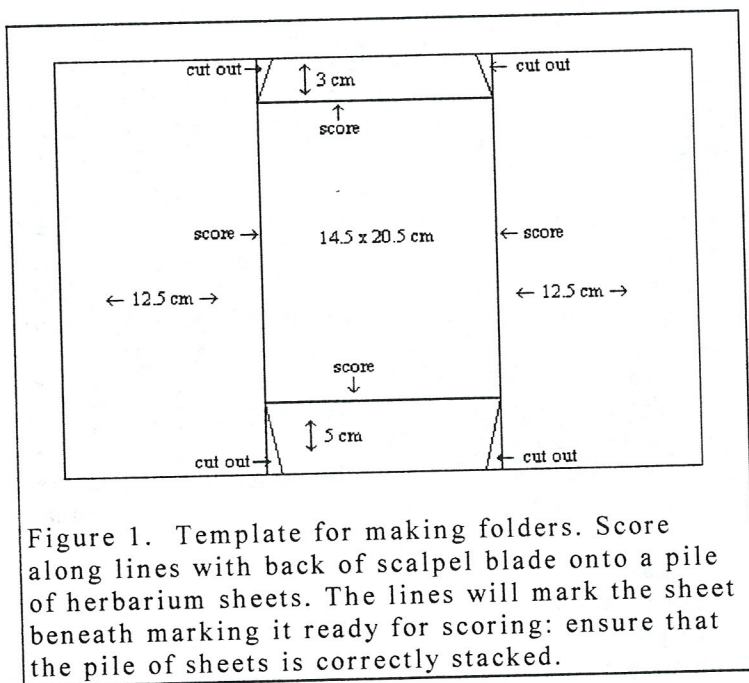
The preservation of fungi for a scientific collection has always been desirable but problematic: specimens lose their shape and colour during controlled air drying and many become exceedingly fragile. Basidia and cystidia (the morphologically-important spore bearing and sterile cells lining the gill septa) become shrivelled, at least the spores are stable although a high-powered microscope is

needed to see them at all. Even storing whole sporocarps of basidiomycete fungi (mushrooms) is fraught with dangers of RH fluctuation which in excess of 55% causes shrivelling and distortion to the specimens which, themselves, take on a spongy consistency. Dried fungi are also palatable to insects, especially the beetle *Cis bilamellatus* whose larvae have been found to survive the freeze-drying process!

Hampshire's mycota is exceedingly varied, already about 2,500 species have been recorded from the New Forest alone where varied habitats and mycorrhizal associations are as abundant as the gastronomes who delight in depriving the Forest of its edible species by overcollecting. However that's another matter. Over the past 3 years Simon Moore, with considerable help from local mycologists, has gradually amassed a collection, (with full data) of freeze-dried fungi amounting (presently) to about 200 species. These range from fly agarics to pin mould on bread. Although some of these may look very pretty in a woodland diorama or smartening up a taxidermy case they are of only slight scientific value. To widen use of the collection, central slices of the sporocarp of each species have been taken and mounted as a herbarium specimen considerably facilitating microscopic and internal examination of each species without the worry of a visitor damaging a rare specimen. Tiny specimens have been sliced and dry mounted on microslides.

Technique for herbarium mounting

Since palm folders are too expensive (£2 + VAT each), herbarium folders for each specimen were made from herbarium sheets (Fig. 1), so that a rectangle of paper, cut from another sheet (4 per sheet), could be mounted inside the folder. This would then allow each specimen to be removed and examined without endangering the fragile and sensitive slice.



Slices were cut using an 19th century curve-bladed bistoury since the blade is narrow and nearly 10cm long: a Swann-Morton no. 25 also does a good job. Slicing through the mid-line was generally easy but the umbos of some otherwise fragile sporocarps were hard as stone and required finishing with a heavier blade. Bracket fungi, even tougher, were cut with a fine toothed bandsaw. Inevitably there were slight casualties to the fungi which were repaired from the underside of the slice using HMG cement B72. Water soluble adhesive (such as PVA) must not be used since it will partly rehydrate the hygroscopic slice and cause it to shrivel. Slices were attached to the mounting card using botanical strapping tape (Figs 2 + 3). The strapping tape was centred with a band of adhesive paper tape so that the centre of each strap would remain non-adhesive. This prevented the moist gum from rehydrating the slice and enabled researchers to detach

the specimen if required. Tougher fungi (cf. *Collybia* spp) were found to be easier to slice while still fresh whereas delicate specimens (cf. *Mycena* spp.) were easier to slice after freeze-drying.

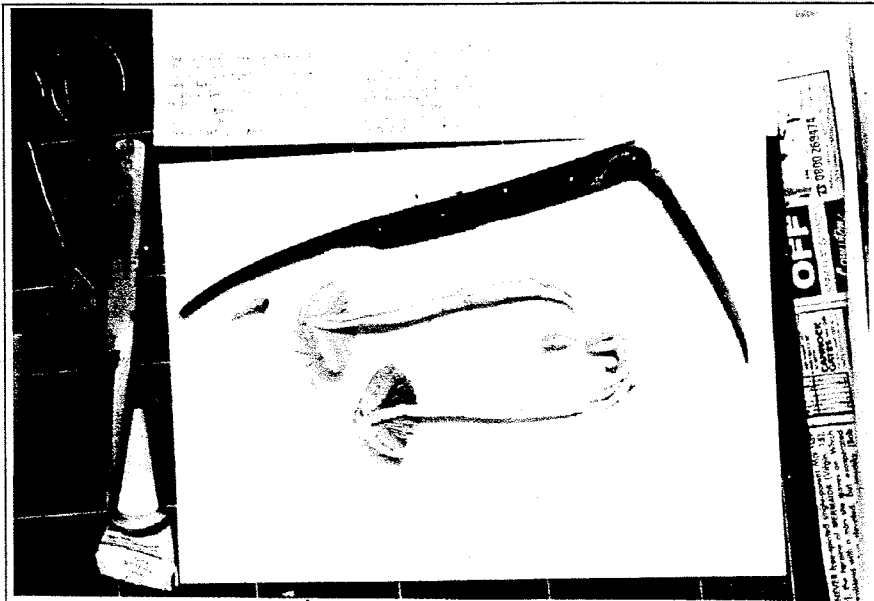


Figure 2 Folding two-bladed bistoury with freshly-sliced *Inocybe geophylla*. The toughness of the sporocarp has resulted in some damage, to be repaired with HMG cement.

Specimen data was recorded on a labelling programme (Fig. 4) and printed onto adhesive labels for attachment to the outside of each folder. The accession number was recorded on the internal card with the specimen, and the scientific name of the specimen written on the outside of the folder so that it could be more easily read. Finally, each folder was placed in a 43 x 23cm standard size self sealing polybag and stored in a herbarium cabinet.

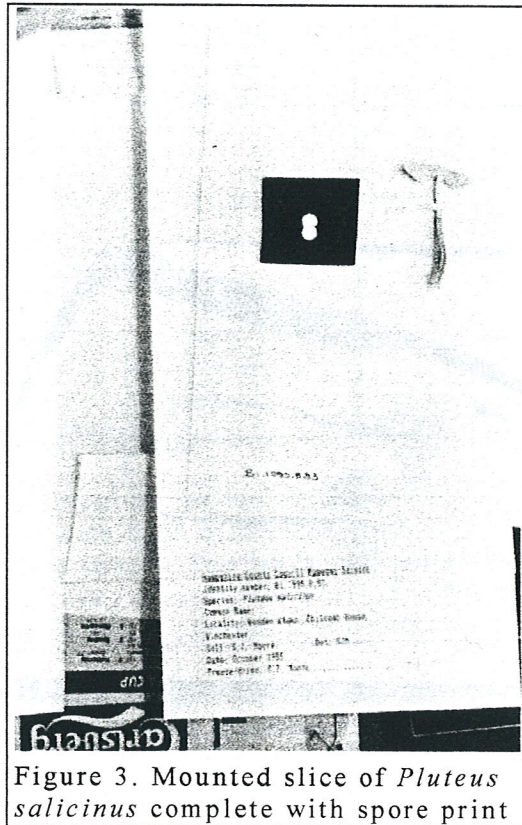


Figure 3. Mounted slice of *Pluteus salicinus* complete with spore print

Hampshire County Museums Service	Hampshire County Museums Service
Identity Number: Bi 1993.8.13.	Identity Number: Bi.1995.8.33.
Species: <i>Panellus stipticus</i>	Species: <i>Crepidotus variabilis</i>
Common Name:	Common Name:
Locality: On beech: Whitley Wood, New Forest	Locality: On birch: Whitley Wood, New Forest
Coll: A. Norris Det: A. Leonard	Coll: S.J. Moore Det: SJM
Date: 27.8.1993	Date: 21.9.1995.
Freeze-dried: S.J. Moore	Freeze-dried: S.J. Moore

Figure 4. Label Format

Step-by-step

1. Collect fungus with data (mycorrhizal association included).
2. Take median slice using bistoury or similar long-bladed scalpel.
3. Freeze, then freeze-dry slice (usually takes about 24-48 hours) until constant weight is achieved.
- 3a. Alternatively take slice (similarly) from freeze-dried whole fungus).
4. Cut mounting card (20.5cm x 11.5cm = 4 out of one herbarium sheet)
5. Make folder as per figure 1 and label exterior.
6. Mount slice onto card using straps of herbarium tape with middle blanked out - for thicker-stemmed slices mount a broader piece of paper tape onto the gummed side of the strapping tape.
7. Store in self-seal polybag and herbarium cabinet.
Maintain @ RH < 55%

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Paper, Glue and Print, a one-day conference at the Natural History Museum, London, 31st October, 1995

About 80 delegates gathered for this meeting at the Natural History Museum in South Kensington including 44 NHM staff and 14 from the Victoria and Albert