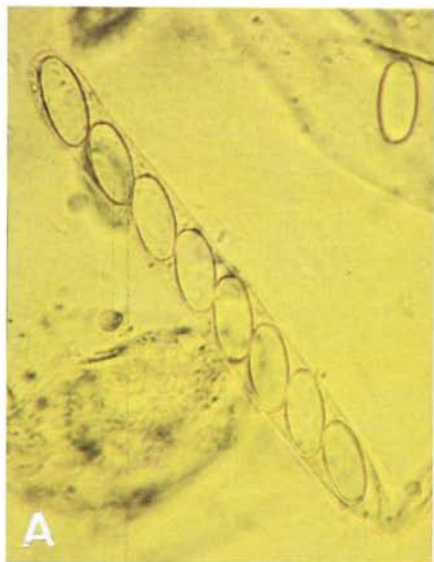


PHOTOGRAPHING FUNGI — 7

GORDON DICKSON

PHOTOMICROGRAPHY



These photomicrographs were all taken with simple equipment.

(A) *Peziza* sp., asci with spores, x200; (B) same

spores, x1000; (C) *Trichoglossum hirsutum*, spores, x400; (D) *Geoglossum* sp., paraphyses, x400. Magnification are those of the originals.

Until recently taking photographs through the microscope system could be a difficult procedure. With the advent of 'through the lens' (TTL) metering it has become extremely simple. Simple, that is, for the mycologist who usually wishes to photograph static objects. It is still difficult for the biologist wishing to photograph moving organisms.

The two problems have been to judge the exposure and to eliminate vibration. The TTL meter takes care of the former and long exposures take care of the latter. All the major makes of camera now sell microscope adaptors consisting of a clamp, which embraces the microscope at the point the eyepiece is inserted, and extending through a short tube to an adaptor which fits to the camera *in place of the lens*. It makes life easier but it is far from essential to have a 'trinocular head'. This is not for people with three eyes but consists of a binocular eyepiece for the viewer and a third (upright) tube on which the camera is fitted. It is totally unnecessary for the occasional attempt and does not make for better pictures. The eyepiece may be left in place or a special photographic eyepiece may be obtained, or the eyepiece may be left out altogether. The difference will be in the magnification. For even greater magnification extension tubes may be fitted between the microscope collar and the camera, but do not forget that any magnification added after the objective is 'empty magnification' and when carried too far then resolution is lost.

When the shutter of a single lens reflex camera is fired the mirror flips up and the shutter travels across and is then brought to a sudden stop. All this produces considerable vibration lasting about a 60th sec at each end of the exposure. It does not matter at all for a very fast exposure which can be over almost before it all starts, but for exposures in the range of one 60th to one 15th of a second it can be

disastrous. Fortunately for the microscopist it is possible to reduce the illumination so as to extend the exposure to one second or more. Then it matters not at all that the camera and microscope were shaken for the first and last 60th of a second — the fifty-eight 60ths in between are responsible for the image on the film. It should scarcely be necessary to point out that it does not help to clump around the room during the exposure! Obviously a fast film is quite unnecessary and can even be a disadvantage.

All the camera exposure meters are programmed to reproduce correctly a grey tone of 18% reflectivity, that is the colour of 'Kodak Grey Card'. Now the view down the microscope is almost invariably a lot brighter than this so the picture will be disappointingly dark. Most cameras have an override which fools the meter by altering the film speed setting. This is usually in the region of the film speed dial and should be set to give **extra** exposure usually to the extent of a third to half a stop here means that it increases the duration of the exposure (with no camera lens in place one cannot very well change the aperture).

Focussing is the most difficult part. It is done by looking into the camera viewfinder and increasing the light. Even if the subject is in focus when looking directly at the image before directing it to the camera it will not be in focus on the film. A good deal of practice is needed and, if the camera has interchangeable viewing screens, it is well worth getting the clear screen with crossed lines to replace the usual screen; the microprism focussing device is useless.

Correction

Do Fungi occur in the Sea?

The Mycologist 2: 151 (1988). Table 2. The fourth list of species should be headed *Cosmopolitan*.