

Improved Adhesive Method for Microscopic Examination of Fungi in Culture

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A new method for the examination of molds that involves the use of a device that dispenses a thin layer of a transparent adhesive material over the surface of a coverslip is described. The advantages of this method over previous methods used for the microscopic examination of molds are delineated.

The identification of molds is mainly done by recognizing the diagnostic morphological features of genera and species by macroscopic and microscopic examination, although physiologic features play an important role as complementary tools.

The classical method used for microscopically examining cultures is a lactophenol cotton blue slide mount of a sample of a culture teased apart with needles (3). This technique has the disadvantage of disrupting the relationship of conidiophores to their conidia and thus requires expert interpretation. A technique developed more recently consists of the use of a strip of transparent adhesive tape pressed gently onto the surface of a culture and placement of the tape on a drop of lactophenol cotton blue mounting medium on a slide (2). This method reduces the morphological disruption of the mold, but it also presents some problems. First, handling of the adhesive tape with the fingers involves the risk of a laboratory-acquired infection. Second, the adhesive tape method is difficult to perform with fungal colonies growing in

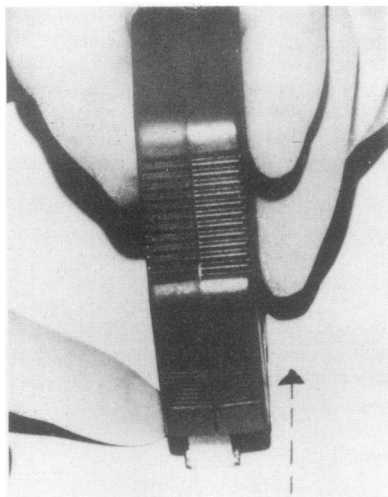


FIG. 1. Pelikan Roll-Fix (Pelikan AG).

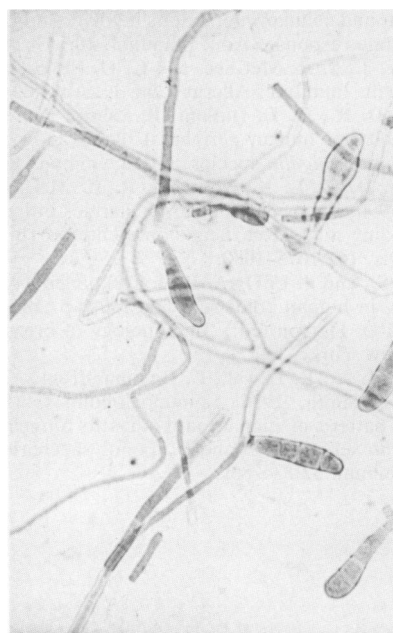


FIG. 2. Photomicrograph of the macroconidia of *Epidermophyton floccosum* obtained by the Pelikan Roll-Fix method. Magnification, $\times 400$.

media in a narrow-mouth tube. Third, the slides cannot be kept because it is impossible to seal them with nail polish. The best technique for the examination of molds is the slide culture mount (2), but it is cumbersome to perform and poorly suited for making rapid identifications, although it has unquestionable advantages. Recent modifications of the slide culture mount (1) make it much less complicated to perform.

For these reasons, we developed a modification of the adhesive tape technique which facilitates and improves the microscopic examination of mold cultures.

The procedure involves the use of a device (Pelikan Roll-Fix; Pelikan AG, Hannover, Federal Republic of Germany) (Fig. 1) that dispenses a thin layer of transparent adhesive material over the surface of a clean coverslip. By using a forceps, the coverslip is touched gently on the surface of a mold colony and is then placed on a slide with a

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drop of mountant such as lactophenol cotton blue. It is then ready for examination under the microscope.

If routine culture methods use media in tubes, the coverslip can be cut (for example, with a tungsten scriber point) to an appropriate size so that they can be passed through the mouth of the tube.

Figure 2 shows an example of a photomicrograph obtained by this method.

The slide preparations can be sealed with nail polish to make semipermanent mounts, allowing them to be kept for teaching purposes or to study fungi in different growth stages. In addition, no contaminations in cultures have been detected by the use of this method during more than a year. However, as with adhesive tape, it is of limited value in the study of fungal isolates with a smooth or a waxy surface.

In conclusion, this new technique offers several advantages over previous methods. It prevents the risk of laboratory-acquired infections because it is easily performed with forceps. Fungal colonies growing on media in narrow-mouth tubes can be handled properly by this method. The slide

preparations obtained are as clear as those made on adhesive tape, and they can be sealed with nail polish to make semipermanent preparations.

For these reasons, we believe that the new procedure provides a good alternative to the adhesive tape technique for the microscopic study of molds.

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