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A Temporary Slide Mount Allowing Precise Manipulation of Small Structures

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With 1 figure

Detailed examination of small parts of animals usually requires mounting the part on a slide with a coverslip and observing it with compound microscopy. With the usual temporary mount technique which suggests supporting a large coverslip on bits of paper, sand, or glass shards, it is difficult or impossible to change the orientation of the structure after it has been mounted. Tapping the coverslip or moving it about on the slide can alter the orientation of the specimen (e. g. inverting it) but the results are often unpredictable and a precise change in orientation difficult to achieve. The following method allows the orientation of small anatomical structures under the coverslip to be changed precisely while under continuous observation.

First one cements stacks of varying numbers of 25 mm coverslips to the ends of a series of standard glass slides. A set of slides with stacks of one to ten coverslips provides a range of premade mounts whose stack height can be matched to the size of the structure to be examined (Fig. 1). A diamond point or commercial glass cutter is then used to slice additional coverslips in quarters or thirds to provide coverslips of the same length but much narrower than the width of the slide (Fig. 1).

To mount a specimen one estimates the size of the structure and selects a slide on which the stack height just exceeds the determined size. The structure is positioned in a drop of Hoyer's medium, water, or clove oil (HOYER's is usually best because it is viscous and has desirable optical qualities). Add a film of grease (petroleum jelly or stopcock grease) to the surface of the stack, and place the narrow coverslip on the grease so it contacts the mounting medium and can be moved about on the stack (Fig. 1).

The completed mount can now be placed on the microscope stage and the structure observed. The coverslip is narrower than the slide width so that considerable movement of the coverslip, and there-

fore rotation of the structure, will be possible. When the long narrow coverslip is moved about on the stack, the drop containing the structure will move with the coverslip and remain underneath it. Shear forces developed in the medium as the coverslip is moved rotate the structure evenly and thus to any orientation desired.

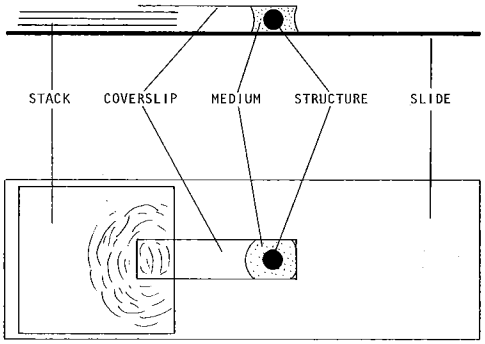

Fig. 1: Elevation and plan view of the completed temorary slide mount, with a stack of three coverslips.

This method has several advantages. The structure's orientation can be precisely and easily changed. The clearance between the structure and the coverslip is minimized, and thus the working distance of the objective can be used to maximum advantage. It is easier to reach the structure with needles, if desired, because the distance from the structure to the edge of the coverslip is less. It is also easy to add more medium if it should evaporate during a long observation period. Lastly, it is easier to disassemble the mount and to recover the structure because the surface area between the medium and glass is less.

The only drawback to the method I have encountered is that if the stack of cemented coverslips is not level but tips up on the inside edge, the droplet containing the structure will tend to slide towards the stack and adhere to its edge. This result can be prevented by including small pieces of glass under the outside edge of the stack when it is glued so that, if anything, it is tipped slightly down towards the rest of the slide.

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