

Introduction

Brunel Microscopes sells two types of Aqueous Mountants – Aqueous Mountant and Glycerine Jelly. As the names imply, these allow for making slides for specimens in water. Their main advantage is not having to dehydrate specimens in alcohol. A disadvantage is that such preparations may dry, crack or crystallize. However, if a round coverglass is used a mount may be made permanent by using a waterproof ‘ringing cement’ and a ‘ringing table’. This short note deals with Aqueous Mountant.

Aqueous Mountant

A medium brown viscous liquid supplied in 15mL jars. Brunel Microscopes recommends one of two procedures depending on the size of the specimen. All specimens are mounted from water.

Larger specimens are first immersed in a drop of Aqueous Mountant so that when they are transferred to a fresh drop of mountant on a slide they do not introduce an excessive amount of water.

Currently I am preparing slide mounts of micro-moth genitalia for photography. These specimens are small and can go directly from water to the mountant.

Technique

The abdomen is removed from a dry moth, placed in a small vial and flooded with 5% Potassium Hydroxide (KOH). Vials can be kept overnight, 8-12 hours, at room temperature or heated to about 60 C for 10-30 minutes depending on the size of the abdomen. The abdomen is then washed in water and the genitalia dissected out. Further gentle washing and teasing in water removes extraneous tissue. I place the clean genitalia in pure liquid glycerin for about 24 hrs. which acts as a clearing-agent and then rinse off the glycerin with water before mounting in Aqueous Mountant.

Males

Male genitalia somewhat resemble a ball (3-dimensional) (Fig. 1) and occupy the extreme tip of the male abdomen. Standard practice is to show the genitalia flat, 2-dimensions rather than 3 (Fig. 2).

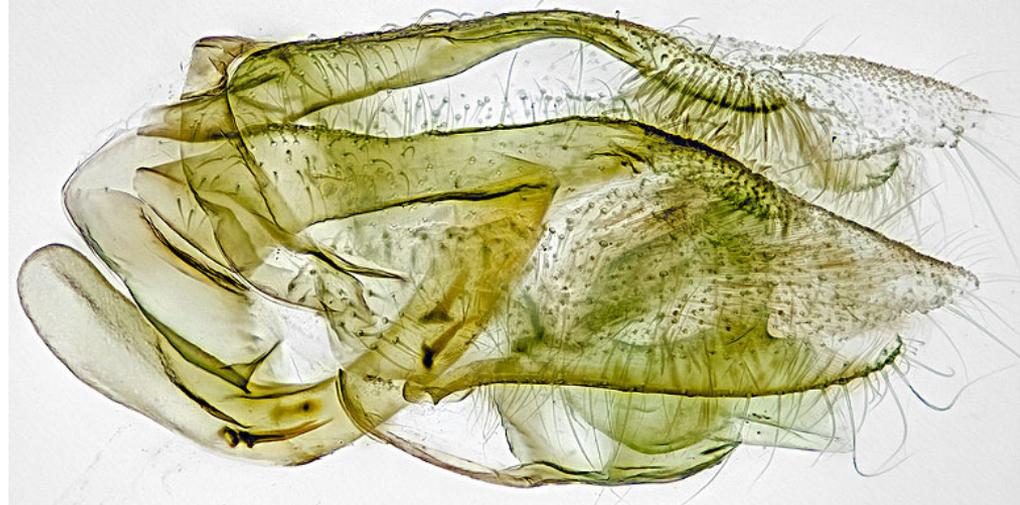


Fig. 1 . Genitalia capsule, male micro-moth

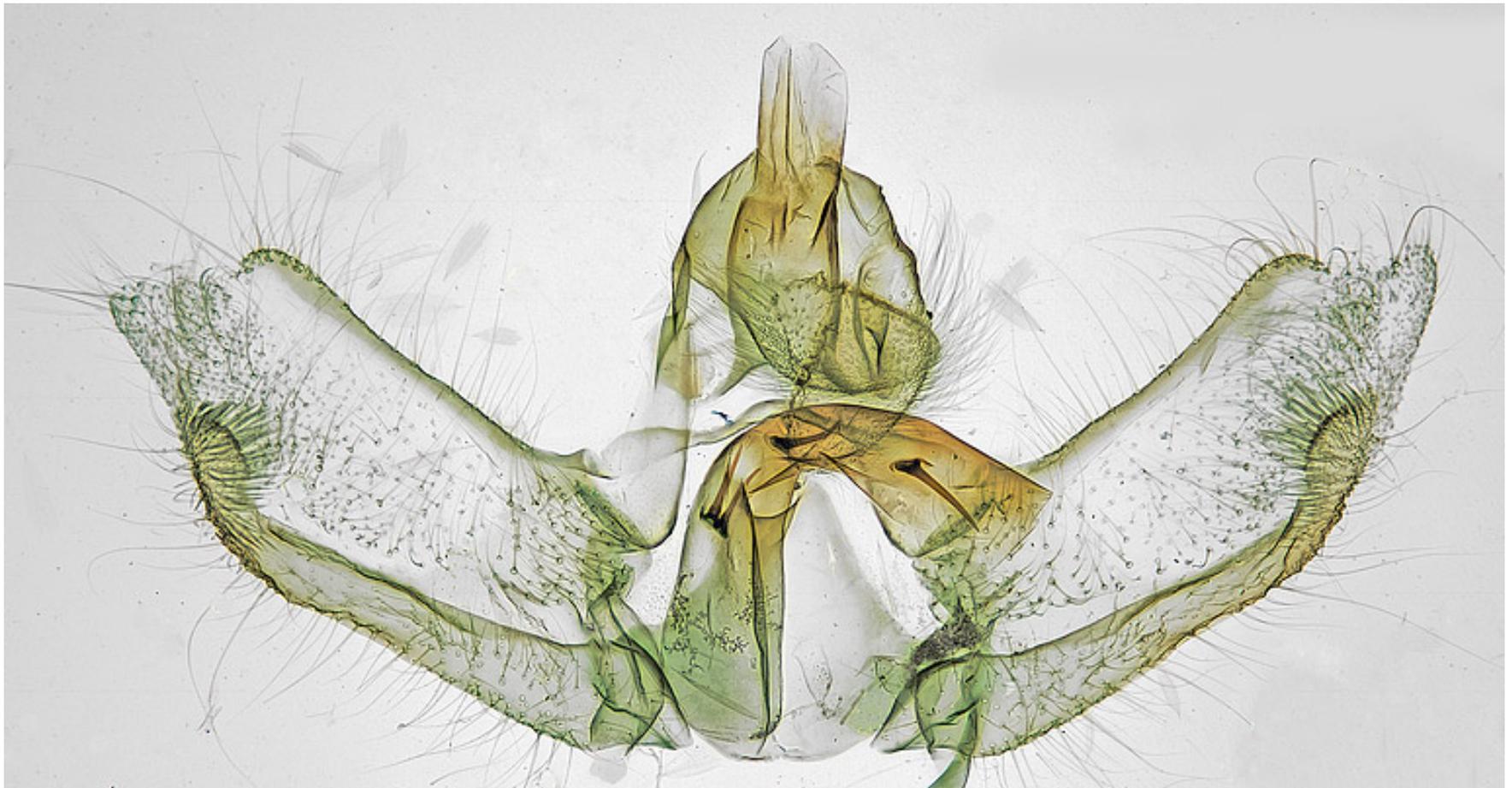


Fig. 2. Spread genitalia in Aqueous Mountant, same specimen as in Fig. 1.

The genitalia capsule resists being spread flat (as in Fig. 2). While the wide flat valvae can be spread flat quite easily with fine forceps or pins, they 'spring' right back to the closed position shown in Fig. 1 when released from pin pressure. Now, here's the beauty of the Aqueous Mountant. A drop of Aqueous Mountant on a slide (Fig. 3) can be spread into a 'smear' and allowed to dry for about 5-10 minutes until it becomes thicker and 'tackier'. The genitalia capsule can be placed in this smear and the valvae spread flat with pins. The 'tackiness' of the smear traps the valvae in the open position.

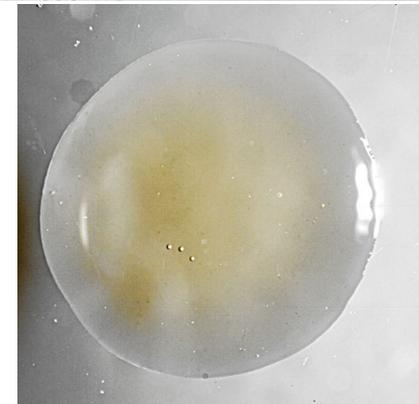


Fig. 3 Drop of Aqueous Mountant

The slide with its mounted flat genitalia is then left to dry. The top surface of the Aqueous Mountant is often flat enough such that the specimen can be photographed. Alternatively a fresh drop of Aqueous Mountant can be added on top of the specimen and a coverglass positioned. As long as the original mountant has dried to a hard plastic consistency (I have left my specimens up to 24 hrs before adding a coverglass) no distortion of the specimen will occur when a fresh drop of Aqueous Mountant and a coverglass is added. Because of the very thin layer of Aqueous Mountant the resulting slide mount is essentially clear.

Females

Female genitalia are far more delicate than males and normally don't need much manipulation. In some species part of the genitalia includes a long coiled tube and it is helpful for species identification purpose to uncoil this tube. As with the males, coiled tubes spring back to being coiled when uncoiled. Drying tacky Aqueous Mountant prevents total recoiling (Fig. 4).

This technique can also be used with Glycerin Jelly but as the jelly has to be heated to get it into a liquid state there is much less time to arrange a specimen before the jelly cools and becomes too stiff to work effectively.

Other techniques for making moth genitalia slides, for photographing the specimens, and for many images of UK moth genitalia can be found here:

www.mothdissection.co.uk/index.php

Images of North America micro-moth genitalia can be seen here:

www.pbase.com/tmurray74/moths_genitalia



Fig. 4. Female micro-moth genitalia in Aqueous Mountant

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