Opening Earwig Wings for Dry Mounting

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Fig. 1: The dry-mounted earwig, with wings spread, in a display box.

Some time ago Peter Sunderland showed me a slide from Ernie Ives of a whole mount of an earwig.

I thought it was a great mount, then I realised he had mounted it 'upside down'. I thought he must have done that because it made opening the wings easier, but it was so the mouth parts could be seen. As I collect beetles and other insects to dry mount and display I thought I must have a go at that.

This is the result of that journey so far, using a mineral display box to contain the mount.

Equipment

- Half microscope slides. For each half slide cut two pieces 10mm wide (henceforth called 'bits')
- Several finely drawn capillary tubes for manipulating legs and wings
- Two pairs of fine point tweezers that meet at the tips

- One each sable brush 3/0 Rosemary series 96 and 99 and one No.1 series 96.
- Blue tack
- Gum Arabic
- Two weights for 'bits'. I use strips of lead folded in three about 10mm wide x 20mm long when folded.
- Methylated spirits
- Iso Propyl Alcohol (IPA)
- De-ionised water
- Killing bottle (Ethyl Acetate) (See Annex to this article)
- Small glass Petri dish with lid

Fig. 2: Cut slides coated with Gum Arabic

Preparation

Paint one side of half slide and four 'bits' with Gum Arabic using the No. 1 brush, and leave to dry (make and drink a cup of tea) or leave until next day (Figure 2). Further information on Gum Arabic is given in the Annex to this article.

DO NOT USE PRESERVED EARWIGS, YOU WILL NOT SUCCEED.

Collect some adult earwigs of both sexes, making sure they have their full complement of appendages. Antennae are especially vulnerable. Juveniles do not have all the segments; antennae grow every time they moult (four times). Front legs are sometimes missing.

Take the half slide and give it another coat of Gum Arabic with the No. 1 brush, then place it under a stereo microscope. I fix mine with two small pieces of blue tack on diagonal corners. Place the earwig in the centre and arrange the legs and antennae. Give a second coat of gum to the 'bits' with the 3/0 brush No 96 , place the 'bits' on top of the arranged legs, gum side down, and place a weight on each 'bit' cover with Petri dish and leave until set. Best left overnight for first time. Figures 3 and 4.

Remove the blue tack and turn the half slide 90 degrees so the head is to your left (maybe to the right if you are left handed), then fix it in position with blue tack (Figure 5).

With fine tweezers lift the right wing case, move it forward and tuck it under

Fig. 3: Fresh earwig, legs arranged and 'bits', placed on the legs

Fig. 4: Weights placed on the glass "bits" of Fig. 3

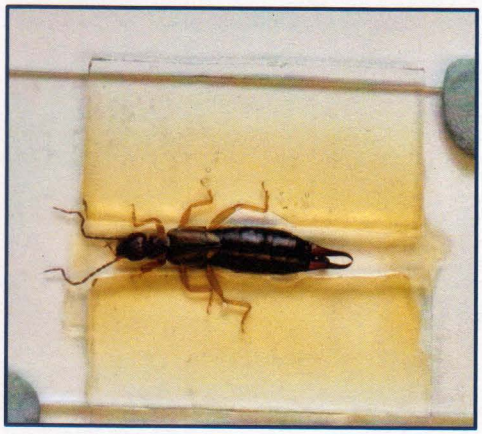

Fig. 5: Earwig in position for wing opening

the 'bit' holding the legs, do the same for the left wing case.

Here comes the tricky bit. With the 3/0 No. 96 brush wet the 'bit', place the brush on a brush rest near at hand along with some water in a watch glass.

Take a glass seeker in each hand and with the right seeker lift the wing from the rear, moving it towards the wet slide. The wing should look a bit like an inverted v, ^. Try and hold it there and with the right seeker try and find the 'end' of the wing. It should look like an N as you open it. When you get to this stage the wing must be on the wet slide and can be manoeuvred with the wet 3/0 No 96 brush. Try not to push or poke the wing, as you will most likely put a hole in it. Rather, lay the brush flat and draw the wing out flat; for stubborn parts use more water. Patting the wet wing to get it flat is better than pushing.

Sometimes the rear edge of the wing curls under. This is difficult to put right; try and flood it with water and with the brush in your left hand draw the wing forward.

Sometimes the whole wing wants to go upside down, if this happens try and let it fold up again so you can start again! The problem is the more you 'mess about' with wings the worse it will become.

When you have completed both wings transfer the slide to the small Petri dish.

Making a dry mount

Gently cover the earwig in the Petri dish with methylated spirits, cover with the lid and leave for several hours. This hardens the wing joints and reduces the risk of the wings curling up when the glue is dissolved away.

Next decant the meths, cover with water and leave for several hours to dissolve the gum. When you can see that the gum is dissolved, gently move the 'bits' holding the legs to one side. When the earwig is floating free remove the slide and 'bits', decant the water and replace with more water. After a couple of hours decant the water, add IPA, cover and leave for several hours, decant, add more IPA and cover.

Cut a piece of card to a suitable size to fit your chosen display box and place it in the Petri dish, suck up the IPA with a pipette, guiding the earwig over the card with the No 96 brush. Gently remove the card, with the earwig on it, and leave for the alcohol to evaporate. When that is done gently lift the abdomen of the earwig and place a small blob of gum underneath it to secure it on the card. Put the card in a display box and fix a label with details of the subject on it underneath the box. Job Done!

An Earwig Trap

My latest trap is made from a length of 2½ inch rainwater pipe about 12 inches long and a piece of stout corrugated cardboard.

With one skin peeled off the cardboard, so you have one skin and the corrugations,

roll this up loosely and put it inside the pipe. Place the pipe on the ground, if possible with one end close to the trunk of a tree (earwigs climb). Check this daily in spring and summer for earwigs or other creatures.

It can also be used in winter, placed in leaf litter, to catch springtails and plenty of other species.

Pitfall traps catch too many slugs, but do catch other beetles as well. I bait mine with dried fish food flakes.

Useful Resources

Display boxes can be obtained from the Little Gem Rock Shop

https://tinyurl.com/earwigdisplay

Paint brushes

Visit www.rosemaryandco.com

Insect Histology

1. Practical Laboratory Techniques.

The above article can be accessed via:

https://preview.tinyurl.com/pdfsu-article

Note that although this site claims to be free to use, a credit card number is requested to verify country of origin. PMS can take no responsibility for any unexpected outcomes! **Ed.**

2. Advances in insect preparation: bleaching, clearing and relaxing ants.

https://tinyurl.com/antclearing

3. The Biology of the European Earwig *Forficula auricularia*. With reference to its predatory activities on the damson hop aphid. (PhD thesis of John Howard Buxton)

https://spiral.imperial.ac.uk/handle/10044/1/8523

Neither of these last two links requires any membership to use.

Annex: Further Information

Killing Jar

My jar is a mustard pot with some tissue in the bottom, followed with a milk bottle top with holes drilled in it. This is to stop insects getting wet from the ethyl acetate.

Ethyl acetate may be obtained from Watkins and Doncaster.

www.watdon.co.uk

Gum Arabic

I could not find a recipe for gum arabic , so I made a solution by volume 30% Pale Gum Arabic and 70% de-ionised water, allowing it to soak for a day. I then heated it slowly, stirring until dissolved, then strained through kitchen towel.

Pale Gum Arabic is available from eBay and is used in Asian food.