

Lepidoptera Adult Identification Workshop

Dissection technique for moths from sticky traps

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Materials

Brushes (two, synthetic, No. 0, 00)	Glycerin
Forceps (two pair, Dumont #5)	Stains (optional)
Syracuse watch glasses	Potassium hydroxide (KOH, 10%, or pellets)
Petri dishes (glass)	Histoclear (citrus oil)
Genitalia vials	Ethanol (95%, optional)
Dry bath heat block (optional)	Soapy water solution
Slide making materials (optional)	Dissecting microscope

General technique

1. Create temporary labels to track specimen throughout process
2. Cut piece of sticky trap containing specimen or remove abdomen from specimen
3. Immerse sticky trap piece or abdomen in citrus oil until specimen is free of PIB
4. Place abdomen in 10% KOH:
 - a. For 12-24 hours at room temperature or
 - b. For 45 minutes-2 hours at 50° C (in dry bath)
5. Clean abdomen in water:
 - a. Clean in Syracuse watch glass
 - b. Use a drop of soapy water to break surface tension
 - c. Remove scales, fat, and other debris using brushes and forceps
 - d. Change water/watch glasses as necessary
6. Dissect specimen:
 - a. Males
 - i. Remove genital capsule by brushing or with forceps
 - ii. Clean debris from genital capsule and remaining debris from pelt
 - iii. Additional dissection will be taxon dependent
 - b. Females
 - i. Separate female genitalia from pelt
 - ii. Carefully pull bursae copulatrix from pelt
 - iii. Clean debris from genital capsule and pelt
 - iv. Additional dissection will be taxon dependent

7. Stain specimen (optional):
 - a. Common stains: mercurochrome, chlorazol black, eosin (Y or B), etc.
 - b. Staining times and procedures depend on particular stain
 - c. Do not stain too heavily; light or no stain is better than too much stain
8. Mount/store specimen:
 - a. Genitalia vial
 - i. Place genitalia in vial filled with glycerin
 - ii. Pin vial below specimen with appropriate labels
 - b. Microscope slide
 - i. Dehydrate specimen in appropriate position with 95% ethanol
 - ii. Follow mounting procedures in Robinson (1976)
 - iii. Label slide with appropriate information

References

Clarke, J. F. G. 1941. The preparation of slides of the genitalia of Lepidoptera. *Bulletin of the Brooklyn Entomological Society*, 36:149-161.

Miller, R. S., S. Passoa, R. D. Waltz & V. Mastro. 1993. Insect removal from stick traps using a citrus oil solvent. *Entomological News*. 104(4): 209-213.

Robinson, G. S. 1976. The preparation of slides of Lepidoptera genitalia with special reference to the Microlepidoptera. *Entomologist's Gazette*. 27:127-132.

Winter, W. D. 2000. Basic techniques for observing and studying moths and butterflies. *Memoirs of the Lepidopterists' Society*, No. 5:1-444.

Equipment suppliers

www.bioquip.com (slide making materials, forceps, vials, chemicals)

www.carolinabiological.com (slide making materials, chemicals, glassware, stains)

www.finescience.com (forceps and microdissection tools)

http://nationaldiagnostics.com/product_info.php/cPath/24_41/products_id/177 (Histoclear)