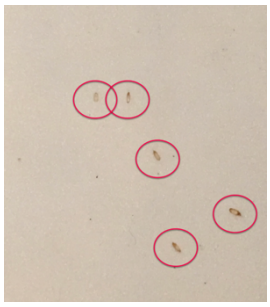
Peoria Academy of Science
Entomology Section

Fumigating your Insect Collection

Now that you have started a personal insect collection, you need to periodically fumigate it. Or not. If you choose the later route, make certain you check for carpet beetle damage often (especially during warmer months). Carpet beetles [COLEOPTERA: Dermestidae, often ***Anthrenus verbasci*** (Linnaeus, 1767)] can destroy an insect collection in a matter of weeks to months.

Examples of damage – by the time you see damage, it is already too late. This moth has been nearly hollowed out by dermestid beetles. The "frass" under the pinned specimen is the indicator. Note the quantity of frass (the arrow points to it). This is the excrement from the beetle larvae. You may also see exuviae (shed larval exoskeletons) on the bottom of your collection. I have highlighted these examples with circles. Damage is not reversible. The exuviae are only a couple mm in length and are easily overlooked.



If you see extensive evidence, the best approach is to immediately freeze your collection. Leave it in the freezer for a few days, then warm the collection, then refreeze and warm again. This cycle of freezing and warming often kills most life stages of carpet beetles.

Prevention – as the saying goes "an ounce of prevention is worth a pound of cure." In the past, entomologists used to rely on chemicals such as paradichlorobenzene or naphthalene (often found in moth balls). Both are known carcinogens and should be avoided these days. Of course, there is also Dimethyl Dichlorovinyl Phosphate (DDVP). Again, a likely carcinogen. Frankly, there is no good long term solution to prevention of carpet beetle damage to insect collections. Having tightly sealed cases helps, but is not a solution. As with all chemicals, follow the instructions closely and wear protective gear (such as disposable gloves). I use the latter because it is still readily available (for example, no pest strips). Of course, one must cut those strips into smaller pieces for use in a collection. One can also obtain more potent versions online. One source (not a recommendation, just an example - https://www.greatlakesipm.com/). I have used their HERCON VAPORTAPE II DDVP, 1IN x 4IN, 50/CS for my personal collection. Cost (early 2025) is $92 + shipping and tax. Another alternative (which I have not personally used is pheromone traps). https://veseris.com sells a set of 10 for roughly $150 plus tax and shipping. Make certain the lure traps are for carpet beetles. These could be placed near or inside sealed cabinets.