

Killing, Preserving and Curating Lepidoptera

Adults- Lepidoptera have scales that are important for identification. Therefore, we want to keep these scales intact. To facilitate this, it is best to give adult Lepidoptera specimens a pinch to the thorax to keep their legs and wings from moving. Then place them with wings folded over the back into a glassine envelope (available in lab) and write ALL data on the envelope. Note that on small specimens it may be difficult to pinch the thorax, especially when just starting out, and so it is a good idea to have one clean kill jar with ethyl acetate for killing small leps. You do not want to put them in with other insects as this will remove scales. Also, you must keep this separate kill jar fully charged to keep the small leps from struggling for too long and losing excessive amounts of scales.

There are several ways to kill the adult you put into an envelope. You can simply let them die and dry out, you can put them in the freezer in a small airtight container (probably best if you are going to spread them within 36 hours), or you can place them into a large kill jar, envelope and all. I prefer the freezer technique for things I plan to spread the next day as it retains moisture and no relaxing chamber step is required. You can simply take the insect out of the freezer, let it thaw out for 1/2 hr. or until thawed and then spread it. Make sure the insect was in the freezer for 24 hours. Note that if the container was not airtight or you let it sit too long, the specimen will be brittle. You will find this out when you go to spread it. If it is too brittle, you must do a relaxing step.

Sometimes it is not practical to spread a freshly killed butterfly/moth or you did not have access to a freezer and so drying is the only option. If this is the case make sure you completely dry the specimen and keep it safe from molds and pests (in a cool dry airtight container). Then, when you are ready to spread it, you must put the envelope with the butterfly in a relaxing chamber. A relaxing chamber is an airtight tupperware container with several layers of wet paper towels. You put the envelope in between layers of paper towels so that the butterfly absorbs the moisture. Very damp towels work best. You do not want standing moisture in the container. This relaxing step usually only takes 24 hours, unless the chamber is too dry or the bug is large. Large bugs can go a bit longer in the chamber. When it has been 24 hours, remove the bug and gently squeeze the thorax. If it feels “soft” and the wings move slightly when you squeeze it is probably ready. Begin the spreading procedure. However, if the wings feel too brittle at any time then put the insect back into the relaxing chamber. Note that some very well-dried bugs will never feel extremely malleable and you may have to force it a bit. The best thing to do to get experience, if possible, is to start out spreading freshly killed insects, then practice with frozen material and then with dried. **A spreading demonstration will be done in lab.**

Larvae- Lepidopteran larvae should be collected and kept alive. The best, cheapest and safest way to preserve lepidopteran larvae is to drop them into water that has just boiled. Pour boiling water into a coffee mug and then place the larva in the cup. This kills microorganisms that might cause the specimen to rot from the inside out and also keeps the specimen from curling and thereby hiding important proleg characters. After soaking in the just boiled water for several minutes, the larva can be placed in 70% ethanol for storage with the appropriate data labels in the vial.