

Glen's Notes on Storing Pupae

In the beginning I pinned all the pupa, but found that to be time consuming and often difficult, especially when there wasn't any silk on the cremaster.

Around 2006 I came across the idea of using a hot glue gun for sticking the pupa. At first I wasn't sure if it would burn the pupa or damage it in some way. So a number of experiments were made putting hot glue directly onto the pupa..even to the point of covering the entire top crown of the pupa with glue to see the results. All of these pupa survived and emerged properly.

Since then I have modified how I hang pupa several times but have always been sticking them using a hot glue gun. My current method seems to be the most efficient and works well for our production levels, which is about 120 pupa per day, comprised of over 30 different tropical species that we raise at the Conservatory. With this method I haven't encountered any problems gluing any of these species, even *Greta oto*, which is just a tiny pupa smaller than 1 centimeter.

Methodology:

I have a board set up with a series of small nails placed along each side about 30 cm apart and spaced about 5 cm between rows. Then stretch a piece of string between each set of nails, (just make a loop on one end of the string and then cut to length and make another loop. Do this for each row of nails on the board. With a little practice, this is pretty fast, and now you are ready to glue pupa onto the strings. (See photos)

Start with the first string and touch the glue gun to the string leaving just a point of glue, then continue to do the same thing about 3 cm apart across the string. These hot glue points will stay sticky for about a thirty seconds, so if you work fast several points can be made a once. Then quickly take a pupa and stick it to a glue point and repeat for each glue point, continue alternating placing glue points on the strings and then sticking pupae to the points. In short order, all the strings on the board are loaded with pupa.

The final step is to hang the strings in a pupario, (a large box for protecting the pupa until they emerge, it has a cork like material glued onto the back side, see photo). Each string, loaded with pupas, is then pinned to the cork backing so the pupas don't touch the material. Also notice that the backing board is angled from top to bottom so that when pupas emerge meconium doesn't drip on pupa below it, and the butterflies can hang freely when emerging.

Attached are some photos of our jig for gluing, the strings loaded with pupa, and another photo of one of our puparios. Actually, we have several puparios because we separate some species for the main group, but this one is in our Reception Center on the table where we also demonstrate the butterfly life cycle.

I dreamed this one up and made it (the table also)... I'm pretty handy with wood working. And thanks Judi for informing me about the "cool glue" gun, I will get one of these asap because we do burn fingers from time to time.

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