Over two years ago, I began attempting to embed some deceased tarantulas and other arthropods in clear plastic resin. At first, I had to ask myself, “Why do this?” The accepted method of preserving specimens was in a sealed glass container full of various percentages of alcohol or other chemicals of choice. Preserving in liquid is more of a scientific practice, which allows the animal to be examined or dissected when the need arises. I for one don’t wish to curate a mini museum and have no need to end up with a bunch of labeled jars full of noxious liquid that I would never show to anyone.

My intention with the resin was to create...
something that was more of a novelty. I wanted something that could be passed from hand to hand in a demonstration or other gathering. Artifacts cast in clear resin are visually stimulating and while handling there’s no risk of breakage. When held they have a smooth, clear finish that is pleasing to the touch. There’s an element of mystery and wonder while gazing through a solid block of plastic which contains a once living creature. I recall as a child these things always fascinated me, and I never would have guessed that I could make my own. Who knows how long one of these artifacts could last? Maybe thousands of years from now if humanity still exists, one of these pieces could surface in a flea market, or hang on the wall of some restaurant. No one will know or care who crafted it. As long as there are people, there will be flea markets and restaurants. Imagine some shopper of the future looking over a casting of a long extinct tarantula, thinking, “Hmm, these used to crawl around in the rainforest?”

Another reason for embedding some of my deceased pet arthropods was sentimental in nature. After raising a spiderling to a full-sized adult tarantula, then caring for it many years I can’t help but be somewhat attached. When the animal passes on what do you do with it? It’s no longer alive, but still looks awesome and if preserved nicely it can bring a lot of excitement and conversation into situations. Remember, one of the main reasons we appreciate these magnificent creatures is because of the way they look, their colors and their shear size. Casting allows us to continue sharing at least the visual part of the hobby with someone who may never want to look at a living specimen, but would be willing to hold or view a dead animal that is safely embedded in a thick layer of plastic.

The main problems to overcome in casting artifacts with resin are finding the right materials, then learning how to use them. Learning the properties of the resin, how quickly it hardens, how much to use, safety factors, cost, and technique in casting all fall into play.

The hobby grade material available in craft stores is manufactured by a company named ETI located in Fields Landing, CA 95537 - (707) 443-9323.

The three items needed to get started are Liquid Plastic casting resin (32 oz. can), Latex mold builder (16 oz. can) and Catalyst, also known as liquid hardener (1 oz. container).

Hobby grade casting resin has its pros and cons. A 32 oz. supply costs nearly $20, is easy to find in most craft stores and it costs about the same or a little less than professional grade material which is sold by the gallon at about $100 per unit. The cheaper stuff is not quite as clear as you would expect it to be, and produces a lot of odor and noxious fumes while it is curing and hardening. Working with hobby grade resins is not a winter project. You need plenty of ventilation, in fact it’s better to work outdoors or on an open patio so that your house doesn’t smell like a refinery. The hobby grade material also gets very hot while hardening for several hours and can ruin the imbedded specimen unless you follow the directions very carefully. This material can dry to a hardened mass in a few hours, but remains tacky to the touch for several weeks or longer depending upon the volume of the casting, how much hardening agent you mixed with the resin, and the ambient temperature at which it is curing. There are many factors that determine the outcome of your project and the end quality will vary from awful to good. It’s all a matter of how willing you are to read and follow direction, while trying to remain patient as your project takes shape.

I haven’t yet worked with the professional grade resins, but they are advertised to be odor free, curing in less than an hour, and produce very little or no heat while hardening. I promised myself that all future projects will be completed with pro-grade stuff. I researched and located a company named BJB
Enterprises, Inc. that sells liquid plastic systems, polyurethanes, silicone liquids and a complete array of related products for industrial use. I contacted them by phone and the sales rep was helpful. He sent me a folder with a complete set of brochures, a physical sample of a piece of hardened clear rigid urethane, and information on all of their casting systems. Here’s their address and phone number:

BJB Enterprises, Inc, 14791 Franklin Ave
Tustin CA, 92780 - (714) 734-8450

I learned from their product brochures that the best clear casting urethanes are referred to as “water clear” and are measured in hardness by a term called “shore hardness.” There are two hardness scales, “A” and “D.” For example, on the “A” scale (for softer rubber-like materials) very soft silicone rubber used in masks or movie special effects has a shore hardness of zero to ten. An art gum eraser is rated at about 20. A Barbie doll might be rated at 40 - 50. A tire tread has a shore hardness of 60. A garden hose is at 75.

On the “D” scale (for harder rubber-like materials), an extension cord plug is rated 45. Roller blade wheels are 75. A formica table top is rated 95.

The urethane casting material I would want for my tarantulas is rated at 82 on this scale. There are two types, one of which hardens in 15 minutes, and the other in 30 minutes. Either would work fine for my purpose, and the materials’ properties and quality as described are much more refined than any hobby resin I’ve worked with so far.

To cast any piece, you will need a mold in which to pour the liquid plastic. I’ve tried several types of containers, made of plastic, glass, and latex rubber. Soft latex rubber is the best, because it does not stick to the liquid plastic when the casting hardens. The other rigid molds can be a bit difficult to separate, but it can be done.

To make your own latex mold, select any three dimensional, smooth container such as a candle jar lid or ash tray. Try to select an object that has enough depth and width to accommodate the artifact you want to embed. This is important.

Using the liquid latex, brush a coat onto the object container and let it dry. Apply several more coats until you have a nice coating, about 1/8 inch thick or more. When completely dry, peel off the latex layer and you will have a mold of the container. The mold may be a bit “floppy” and to hold its shape you might need to support it on a frame, or flange made of cardboard. Modeling clay, foam padding or Play Dough works well as a method to support the latex mold. Use whatever materials you can to help the mold stay in place and hold shape while you fill it with liquid plastic. It’s possible to place the latex mold inside the container from which it was made, if the mold was made from the inside surface of the container.

To prepare the liquid plastic for pouring into the mold you need to add drops of catalyst hardener. Follow the directions on the products for this. It’s important to mix the right volume measurements to ensure the material hardens nicely in the proper amount of time. It’s also crucial to decide if your casting will be done in single layer, or multiple layers which is actually called “embedding.” Single layer castings of one inch thickness are possible, but the liquid plastic can produce excessive amounts of heat while hardening. If the object you wish to cast can be harmed, discolored, or ruined by high temperature it’s best to “embed” the artifact in multiple layers of plastic. Each layer can be ¼ to ½ inch thick, and the thinner layers produce a lot less heat. Layering takes more patience and time because each layer must be mixed, applied and allowed to set before pouring the next.

Layering with hobby grade plastic resin produced much better results than single layer casting of large objects, especially with adult...
sized tarantulas.

Some of my early mistakes are obvious to see. For example, I cast an adult *Poecilotheria regalis* in a single layer of liquid hobby grade resin. The layer was about one inch thick and the temperature while hardening was hot enough to turn the spider’s colors to a dull brown! The specimen, although preserved and 100% visible is discolored beyond recognition.

Another specimen, an adult male *Lasiodora parahybana* was literally “cooked” while the casting was hardening. Some of the tarantula’s innards escaped and bubbled to the surface of the casting, which essentially ruined the project.

As I learned from my mistakes and developed skill on how to apply thinner layers of the material, my results improved dramatically. So far, the best examples I have of objects successfully embedded in layers are an adult *Theraphosa blondi*, and a windscorpion. These were long term pets that died. I kept them in the freezer until I was ready to work on the castings. Both projects are nice and clear, easy to display and quite impressive.

For the *T. blondi*, I utilized a nine inch Pyrex pie dish to make the latex mold. It took at least six layers of liquid plastic to cover the animal. Also, it’s important to note that prior to embedding I had to remove the entire contents of the spider’s abdomen through a small incision, then carefully stuff cotton balls into the abdominal cavity to ensure the animal retained its lifelike shape. Once fully stuffed, I used a few drops of superglue to close the incision, and this worked like a charm. Again, this is all “prep work” that must be done prior to preparing the liquid plastic for pouring.

Another tip which helps to embed the object in such a way to make it appear suspended, is to pour the first thin layer of liquid plastic into the mold and let it set before placing the object into the mold. Once the object is in place over the first layer, then all subsequent layers will fill the mold, covering the embedded object. Surprisingly, you cannot tell where one layer ends and the next begins unless you mix coloring agents into the different layers. If all layers are clear, no boundary lines are visible!

I’m learning as I go along and it’s been fun playing with the process. In the future, I definitely want to try some of the professional grade, water clear products from BJB Enterprises. If anyone out there tries this, I’d like to compare notes.

Best regards until next time.