Hysterical Pregnancy Scorpion Style

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When spring approaches every year, very few people who have recently purchased emperor scorpions (*Pandinus imperator*) will be blessed with a batch of babies. Those few of us who are actually attempting to establish captive breeding populations will be hoping that their females will bear young as well. Here, we offer one system for caring for mama and the kids. Be forewarned: This isn't the only way to do this and may not even be the best. It certainly doesn't discuss all the tricks. But what you read here has worked for us and stands a reasonable probability of working for you too if you're so blessed by the scorpion stork.

This is "cutting edge" technology. Raising baby scorpions isn't done by many, and the few who have done so successful have been hesitant to advertise their experiences, perhaps because they want to retain the trade secret, perhaps because they're overwhelmed or horror-stricken by the prospect of writing up the story and submitting it for public distribution.

The handwriting, however, is on the wall. These animals are already on a CITES list (Appendix II). Take this as a promise that a lot sooner than we'd ever like, our only source for emperor scorpions, like many other plants and animals, will be restricted solely to the offspring of cage raised pets. What you learn with your babies will be of inestimable help to the rest of us. We offer you advice and share our own experiences on the assumption that you, and all others who have had the extreme good fortune to get baby scorpions, will tell us your tricks as well. Publish!, Publish!, Publish! (Schultz & Schultz 1998).

How do you know if she's pregnant? For that matter, how do you know it's a female? The easiest way to determine an emperor's sex is to place the scorpion in a clean, one-liter (one quart), mayonnaise jar so you can see its belly easily. Use a flashlight if necessary. Each scorpion has a pair of feather-like or comb-like appendages arranged in a "V" and attached immediately behind the bases of the legs. These are called pectines and the teeth on the male's pectins are much larger in proportion than the female's. If you need a picture, see page 77 in Rubio (2000). If you need a comparison, you might make a pilgrimage to your favorite pet shop. Don't forget to bring the jar and a pair of light leather gloves so you can handle the scorpions safely. Compare the pectins on several scorpions. The difference is quite obvious. Convincing the pet shop staff that you know what you're doing and that it's safe for both you and the scorpions is another story entirely!

Now, about that pregnancy thing: Usually, only the very largest specimens will be old enough to bear young. The minimum size seems to be around 12.5 centimeters (five inches). The bigger the better. After that, skinny scorpions are seldom fertile, in fact they're usually males. If you have a choice, pick the fattest one you can find. How fat? Really swollen. Check out page 80 in Rubio (2000). Some hobbyists report that they could

see the embryos through the pleural membranes between the solid plates. This may work with the lighter colored species but these authors have tried and been unilaterally unsuccessful with emperors. The pigment is generally too dense.

If you have more than one emperor scorpion cohabiting and one is "preggie," you must separate them because the others might try to eat the babies when the female delivers. Leave the expectant mother in her old familiar cage, move the others to another cage instead. As you remove the others, try very hard not to panic the mother; take your time and do the job with as little disturbance as possible. Unless she already has babies you'll have several days to weeks to complete the chore.

With two exceptions, one now and one later, do nothing to disturb the mother's cage. Everything should be left as it is. Do not cover the walls with black paper (as some have recommended) on the theory that she needs privacy because it will interfere with the normal day/night cycle that she needs.

The change you should make to the cage now is to supply a retreat if she doesn't already have one. Different methods have been tried for supplying such a retreat including a flat clump of moss, a sheet of bark or a wide, flat rock with a small cave underneath, or a piece of plastic plumbing pipe. We prefer the flat rock or a slab of bark.

The ideal situation for supplying a bark or flat rock retreat is to dig two holes in the substrate (usually potting soil) that are about four inches apart. They should be just large enough to hold a golf ball each. Find two small rocks about the size of golf balls (or actually use golf balls!) and place them in the holes. These will prevent the flat rock or bark from crushing the mother if she gets carried away with excavating a burrow. Gently fill in the extra space with well-tamped potting soil. Dig a cavity between the two rocks that is large enough for the scorpion to partly climb into but too small for her to hide in completely. Place a bark slab or flat rock, large enough to span the two smaller rocks, on top of them in such a way that the underlying cave is accessible to the mother. The hope is that she'll find it and enlarge it to suit her preferences.

If you decide to use a plastic pipe, it should be about six inches long and one and a quarter inches in diameter. Black is preferable. Half bury it at a shallow angle in the potting soil substrate but do not fill the pipe with soil, and leave at least one end exposed. In a large enough cage you might even supply both a flat rock and a pipe to give her a choice. In all cases, temporarily remove the water dish. This is to prevent her from digging under the water dish instead.

Always supply a water dish except during the period when you expect her to dig a burrow (no more than a week without). The water dish should be about the size and shape of a small tuna fish can. Always keep a chip of slate or a pebble in the water dish so that crickets and baby scorpions that fall in will be able to climb back out. NEVER, NEVER, NEVER put pieces of sponge or wads of cotton in a water dish for them. These things make sanitation impossible, and the cotton can even entangle a baby scorpion to prevent it from escaping the water.

The potting soil substrate should be kept slightly damp but certainly not wet. This will help maintain a proper humidity. However, condensation on the cage walls is to be strictly avoided. It's a sure sign that either the cage is far too wet, far too poorly ventilated or both. Too much moisture can cause overgrowths of fungi and bacteria on every organic thing in the cage, including the scorpion! It also goes a long way towards promoting mite infestations.

How do you tell if the humidity is too low? If you have to refill the water dish more often than about once a week, the humidity is too low. To correct this, cover part of the lid with plastic food wrap. Always leave at least about ten percent of the lid open for

ventilation, however. If that doesn't raise the humidity enough, use a larger or a second water dish. Remember, emperor scorpions are found in a damp, forest environment.

Never spray the mother or her cage with water. The resulting humidity seldom lasts long enough to do any good and the aggravation may provoke her to eating the babies.

The temperature may be kept as low as room temperature (nominally 72°F) but higher is better. The ideal temperature range is about 80-86°F. Be cautious about using heating devices around the cage. It is far too easy to place a light bulb, for instance, too close to the cage and thereby cook the mother. A far better strategy is to move the cage to a suitably warm part of the house instead.

Emperors usually give birth from mid-spring through mid-summer, although there are always exceptions. In preparation, besides keeping her well fed, start putting large chunks of landscaping bark (two inch pieces or larger) in the cage with her, but add only one a day or every second day so as not to panic her. This is the second and last change you should make to her cage. You want a layer of about one and a half pieces (not inches) thick over most of the cage floor. The spaces between the chunks of bark will allow the babies a safe place to hide when they finally leave the mother.

The biggest danger to the babies is that the mother will become distraught and eat them. As birthing time approaches and the mother begins to look absolutely bloated every attempt should be made to reduce disturbances to an absolute minimum. For the period that she has babies on her back you must absolutely ban all visitors including your spouse, your kids, your best buddy and even your mom from the room where you are keeping the mother with her young! Do not let your teenager play the boom box within a city block of the cage! Do not move the cage. When you move the lid to service the cage (e.g., spot cleaning, adding another bark chip), do so very quietly. Cause as little disturbance as possible.

The mother is likely to be hungry after she delivers and she may very likely eat the babies as a result. Make sure that the female always has a few live crickets in the cage with her, but never more than two or three. You don't want her stampeded by a raging herd of crickets. This will give her something to eat, other than the babies, but you don't want a horde of crickets to spook her into eating those babies.

Within ten days to two weeks after birth the babies will have undergone their first molt. Before the molt they look like little snow-white grubs with black eyespots. (Rubio 2000, page 81.) After the first molt they begin to resemble real scorpions, turning a tan color as their new exoskeleton hardens. Usually they do not molt a second time while riding on the mother, but rather leave within a few days. After the first molt, as soon as you see some of them leaving the mother or if you see the mother eating one, you must immediately remove the remaining babies from her back.

To do this, put on your light leather gloves (Mama will be exceedingly vexed with you!) and gently herd them off her back with the bowl or handle of a teaspoon. Be very careful not to hurt either mama or the babies. Be forewarned, however, that once you start you cannot stop until they are all off her back. Once you disturb her this much she'll likely soon eat any remaining babies to get rid of them. Scorpions instinctively do this, presumably to remove any possible attention from other predators. Once the babies have been taken from mama, remove her from the cage. Leave the babies in the cage where they were born.

You can feed the babies one-eighth inch (one week old) crickets at first but they are easily spooked and will drop the chase at the slightest resistance by the cricket. If this happens in the majority of cases, get smaller crickets or wait two or three weeks before attempting to feed them again. Give them

larger crickets as they grow but don't force larger crickets on them any sooner than necessary. Feed them lots, they will grow surprisingly fast.

You need not worry about the babies eating each other. Emperors (and a few other scorpion species) tend to be quite sociable as long as they're about the same size and moderately well fed. I once saw over two hundred adults in a stock tank (the kind that is used to water horses on a farm). Some were even going through preliminary courtship dances.

We haven't told you everything there is to know about emperors. We don't know THAT much in the first place and there isn't room here for much more anyway. If you're curious about these creatures and are willing to spend a little time in a university library, look up books and scientific papers by Gary A. Polis and others. Also, the books listed below (most available from your favorite pet shop) will have some information in them, but be very cautious about believing everything you read about scorpions in pet shop books. There are too many errors in most of them to make them completely credible. Lastly, look up back issues of the periodicals listed below.

Happy scorping!

Marshall, S. D. 1996 (2001). Tarantulas and other arachnids. Barron's Educational Series. Hauppauge, NY. 104 pp. One of the few authoritative books that discusses scorpions. Few if any errors. Its biggest failing is brevity of treatment, less than four pages on scorpions!

Polis, G. A. [Ed.]. 1990. The biology of scorpions. Stanford University Press. Stanford, California 587 pp. Many interesting scientific papers on scorpion biology. No "how to" information for the enthusiast, however. Search for other publications by Dr. Polis as well.

Rubio, M. 2000. Scorpions, A Complete Pet Owner's Guide. Barron's Educational Series. Hauppauge, NY. One of the newer and better books. Few, if any, glaring errors.

Schultz, S. A. & M. J. Schultz. 1998. Tarantula keeper's guide. Barron's Educational Series. Hauppauge, NY. 288 pp. Almost nothing about scorpions but contains a lot of general information about arachnids, their biology and care that can be "ported over" to scorpions.

Web Resources

Arachnids mailing list **groups.yahoo.com/group/arachnids/**
A hobbyist/enthusiast list

Arachnology mailing list www.ufsia.ac.be/Arachnology/Arachnology.html.
This mailing list was established by professional arachnologists for professional arachnologists. Hobbyists/enthusiasts are allowed to monitor the list but are discouraged from using it except for matters of science.

ATS Enthusiast mailing list **groups.yahoo.com/group/arachnids/**
A hobbyist/enthusiast list

Scorpion Enthusiasts mailing list: groups.yahoo.com/group/Scorpionfans
Hobbyist/enthusiast list.

Do not fail to do web searches for "scorpion" and "arachnid" but be forewarned that much of what you may find on the net, especially by non-professionals, may be fallacious. When in doubt (e.g., conflicting reports or it just looks fishy), contact one of the enthusiast organizations for confirmation or more information.