

IU Axolotl Colony Update

Sandra J. Borland

Indiana University Axolotl Colony
Department of Biology
Bloomington, IN 47405

Terrific News! We'll be in operation at least another five years. Not only was the grant renewed, our budget was accepted almost without change (thanks to the work of Susan Duhon).

As many of you may know, IU is busy renovating the Biology Animal Quarters, where the colony is located. For a variety of reasons, the schedule of events has gotten drawn out, so we are still in temporary quarters and probably will be until this fall. Nevertheless, we hope to continue matings through June with minimal interruptions.

Shipping news. Those of our shippers who receive embryos might consider having us ship via Federal Express instead of Express Mail. Only embryos can go Federal Express, because they are not considered live animals. Using your Federal Express account number, we can make shipments right from our building, and you will be billed by Federal Express instead of being invoiced by us. (That could save everybody some paperwork.) We hope that having Federal Express as an option may lessen some of the problems researchers have had with receiving material past its guaranteed arrival time. Even though we can get refunds on these boxes, the material is often wasted when the embryos arrive too advanced for use. It would definitely make things easier on us as well, because we could simply take the boxes downstairs to our departmental office, instead of packing them out to our cars and driving them to the Bloomington Post Office.

I am very interested in the quality of our shipping methods, especially for adults and larvae. Are boxes and bags arriving intact with plenty of water? Is there any air left in the bags? What temperature are they on arrival? Are the animals what you wanted? I would not mind some constructive criticism!

We are still supplying international researchers with material. This year we have shipped embryos and larvae to Japan, Ger-

many, Canada, and Sweden. We have been having some problems with security holds and embargoes causing delays and complicating arrangements, but this should end soon as the airlines relax their security precautions. The increase in air cargo costs is most likely permanent, however.

When returning boxes to the colony, please do not deface stickers. Also, please return the ENTIRE package including outer cardboard, inner styrofoam, and ice pack (if packed with one).

Axolotl husbandry. We are continuing to house many adults in communal tubs set up on a flush system (*Axolotl Newsletter* no. 19). This system of housing has proved satisfactory for over a year and a half now. We have not had any disease problems spreading through the animals, partly due to the antibiotic regimen we are using (Amikacin every 6-8 months). The death rate is low, at approximately 1.49% out of an average 497 adult animals in 1990.

In the fall of 1990 we noticed that some animals in the tubs had injured limbs. These animals were separated and noted to be otherwise very healthy. They had no difficulty healing themselves when placed in glass bowls. To help prevent the problem, we have started having our student workers scrub the tubs more often (once/month), rather than just aspirating and flushing with clean water. This seems to have solved the problem, as we rarely find injured limbs anymore. Possibly the plastic provides an ideal substrate for bacteria. After a few months, the bacterial build-up caused the deterioration of vulnerable skin on the axolotls' digits and forelimbs. Preventing excess bacterial build-up solves the problem.

Our spawning rate for the season is 19%. This is sufficient to meet most requests for material, but it is low compared to last year's phenomenal 31%. We are attributing this to the poor lighting of our temporary quarters as well as to a few other factors associated with the renovation, such as changes in the tap water quality.

We have switched to using 1.5 liter PVC bowls (USDA approved as food containers) to house juvenile axolotls. Rarely breaking, they are much easier to handle than the quart-sized glass drum fish bowls we had been using, have a larger opening at the top, and are much lighter. They are scrubbed daily and filled with one liter of water. We would be

Axolotl Newsletter Number 20

happy to supply more information to anyone interested.

Animal identification. Housing axolotls in communal tubs was made possible when we were able to mark individual axolotls so that they could be identified. Up to now the axolotls have been tattooed on the tail. Tattooing has proved to be unsatisfactory on dark animals because the tattoo fades quickly, sometimes within a few weeks. Repeated tattooing takes its toll on the animals' health, since the animals must be completely anesthetized (with MS 222). The stress often leaves the animals very susceptible to illness.

For these reasons, we are adopting an electronic marking system consisting of a programmed transponder placed under the back skin of the axolotl. This transponder encodes a unique identification number, which can be read with hand-held wand and then translated into the animal's axolotl colony number. During this past winter, we obtained several transponders, which allowed us to determine the best site for implantation, the most effective and efficient form of local anesthesia, and whether or not the axolotls would accept or reject the implant. We have decided to use an ice pack laid over the back for a local anesthetic. As of yet (approximately four months) no animal has rejected or lost its transponder.

Animal availability. We should have embryos for shipping at least through June. The

demand for larvae has drastically increased, so we are raising every embryo that hatches and lives. Because larvae are extremely time consuming to properly care for, and, even more important, take up a LOT of space, we have had difficulty raising larvae to the larger sizes! On top of it all, we are getting ready to move temporarily into smaller quarters for the second phase of the renovation. Therefore, I'd like to request that whenever possible you order axolotl larvae small in size and raise them in your own lab. With more constant attention than we could possibly give them, they will grow very quickly (~1 cm/week). They usually can be started on 1/8" pellets (Ax. News. no. 18) when they are between 3 and 4 centimeters in length.

We have some adults available now. Please specify health and breeding requirements when you call, and we'll see what we can provide you with. Obviously we have more sick, non-breeders than healthy breeders, but we may have a few of the latter.

Personal note. I have had a great year at the Axolotl Colony. My job is interesting and dynamic. I have particularly enjoyed speaking and corresponding with the researchers whom we supply with material. We are working hard to improve the colony so that we may serve more of you in bigger and better ways. Please do not hesitate to contact me directly to establish a dialogue.