

## IU Axolotl Colony Update

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### Indiana University Axolotl Colony

It has been an exciting year at the axolotl colony. We will soon complete our most successful breeding season in recent years, and we have been developing new methods of housing and identifying axolotls. We look forward to continuing to improve our service to the research community.

**Change in Staff.** The axolotl colony has a new staff member. Sandra Borland accepted the job as technician last summer. She comes to the colony with several years of axolotl experience, and we are very pleased to have her. Sandra replaces David Able, who is now a graduate student in neurobiology and behavior at Cornell University.

Among Dave's accomplishments while he was at the colony was the development of a new housing system which we now use for some of our axolotls. In the new system, three axolotls are kept in a single tub. Each day excess food and feces are aspirated from the tub, and it is flushed with clean water. This system is good for the animals, because they are not dumped into colanders while their water is changed. It is good for us, because one person can do what was the work of four. We wish Dave every success in the future.

**Renovation.** Big changes are coming to the axolotl colony. The biology department animal quarters, where the colony is housed, are scheduled for renovation beginning this summer. Since we will be moved into temporary (and smaller) quarters during this time, we will stop doing matings early this year—probably by the time you receive this newsletter. We also expect there to be some disruption of our breeding schedule during the 1990-91 season. We will nevertheless do our best during the construction period to meet the needs of those who use our services.

**Boxes.** If you return shipping containers to the colony for reuse:

- Please DO NOT deface or remove the stickers on the outside. If you must do something about the stickers, just wrap the box in brown paper.

- Always return all parts—corrugated box, styrofoam container, lids, etc..
- Please DO return ice packs (artificial ice), unless they have ruptured.
- Mail boxes back by the cheapest rate. There is no need for priority mail.
- All of this applies to domestic shipments only. We do not expect any boxes or ice packs back from overseas shipments.

**International Shipments.** International shipments from the axolotl colony are becoming common enough to be almost routine. Usually larvae are shipped, but this spring we shipped axolotl embryos to Japan and to Sweden. In both cases the embryos arrived before they finished gastrulating. We are able to have them arrive at this comparatively early stage if we first allow them to reach blastula—stage 8 to 9—and then ship them cold by including a large ice pack in the package. The only other requirement is that the embryos be available at the time the shipment is planned. Sometimes it may take several false starts, depending on the genotype needed.

**Getting Spawns out of Axolotls.** Our axolotls have been very cooperative this season. Between September 1 and April 1 we obtained 244 spawns out of 783 matings (31%). All of these spawns were the result of natural matings, without the assistance of hormones. Although other factors contribute, healthy animals always spawn best. Good husbandry is most important for a healthy colony, but we have found the judicious use of antibiotics very helpful.

I have summarized the results of using gentamicin in the colony in *Developmental Biology of the Axolotl*. We are now using amikacin, and I have described our experience with this antibiotic in a short paper delivered at the Third International Colloquium on the Pathology of Reptiles and Amphibians in January, 1989 (*Herpetopathologia* 1:105-108, 1989). These aminoglycoside antibiotics are known to be very renal toxic, but I have only had trial and error to tell me the correct dose. Fortunately, two veterinary students who heard my talk at the colloquium, Derek Duval and Ken Shiarella of the University of Pennsylvania, took an interest in the problem. They have recently completed a study on the effects of various doses of gentamicin on the axolotl kidney. Their results are not yet published,

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but I understand that gentamicin caused significant damage at all doses. The axolotls, however, irrepressible regenerates that they are, repair the damage, so the antibiotic is seldom lethal.

**Mystery solved.** We finally managed to track down the source of the problem leading to our very low spawning success last spring. Our ice machine was grinding itself up and putting

brass and steel shavings into the ice. These shavings were accumulating in our mating tubs, since we usually put ice with each mating pair. As soon as we became aware of this contamination, we took steps to eliminate it, and our spawning success rate immediately approached normal levels. Apparently the brass had little effect on the axolotls' overall health, but made them unable (or disinclined) to spawn while under its influence!