

MISCELLANEOUS DISEASES AND OTHER NOTES

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A. Sudden Death

Dr. John Armstrong of the University of Ottawa experienced, among his axolotls, outbreaks of deaths in animals aged three months to one year. There were no preliminary symptoms, and the animals ate until the time of their death. There were no abnormalities at autopsy, except a discoloration of the liver, which may have been due to changes after death. Moving the axolotls from 25% to 100% Holtfreter's solution seemed to halt the outbreak.

B. Fungus Growth

Armstrong, as well as the staff of the Indiana University Axolotl Colony, treats fungus growths on the gills and toes as follows: Methylene blue, 1 ml./liter of a 1% stock solution, for one week; or acriflavine, 2 ml./liter of a 5 gm./liter stock, for a maximum of 18 hours; or a combination of these.

Another treatment from the literature (1) is the addition of a fresh solution of 1:100,000 chloraminium (para-toluol sodium sulphonchloramide), which liberates oxygen. Do not repeat more often than once every three days.

C. Enlargement of Kidney
and Liver

Dr. Warren Fox writes:

Our biggest disease problem occurs when larval or adult animals come in from other areas. They usually die a few at a time showing signs of bacterial inflammation and enlargement of kidney and liver, while the rest of our animals are usually healthy. However, with the last shipment of larvae, the enlargement of the kidney and liver spread to a large number of white animals we raised here while the black wild type Wistar larvae were not affected. I have talked to local California Fish and Game pathologists and they also have similar problems transferring fingerling trout to this area. They now will transfer only eggs which

they disinfest with Wescodyne iodine detergent when they arrive. They recommend that we do the same as it seems that either the stress of moving triggers the problem or there are endemic bacteria, to which animals hatched here can become resistant.

D. Corneal Cloudiness

A disease whose pattern of occurrence suggests that it is contagious has been seen at the Indiana University Colony and at the University of California, Irvine. This involves no more than a cloudiness, whitish in color, over the corneas of the eyes of adult axolotls. The animals may seem less vigorous than normal, but the condition does not progress, and affected animals' death rates are not above the usual level.

E. Subcutaneous Hemorrhage of Juveniles

A more serious problem seen at the same two places as the corneal cloudiness syndrome is the appearance of small areas of hemorrhage - from pin-points to up to 4 mm. in diameter - under the skin of juvenile axolotls. The general condition of the animal declines rapidly and death generally comes within one or two weeks. Neither the cause nor a cure is known.

F. Availability of Nitrofurazone and Aquatic Plants

Dr. Warren Fox of the Center for Pathobiology, University of California, Irvine, has offered to make available nitrofurazone (which may not be available elsewhere) for the treatment of Salmonella. He could also supply small quantities of an aquatic floating plant, Ceratophyllum sp., which is useful for the removal of excess nitrate from the water in bowls and aquaria. It grows rapidly in tap or distilled water, though not in Holtfreter's solution; it needs no gravel substrate since it has no roots.

G. Cautionary Note: Malachite Green

Malachite green is a histological dye useful in treating newts infected with Saprolegnia. Dr. Bruce M. Carlson of the University of Michigan Medical School writes that axolotls with this rare infection should probably not be treated with malachite green, since as little as one minute in the dye solution has killed animals treated with it in his lab.

H. Introduction to Section II

In the following section we have included seven discussions of normal culture conditions for maintaining axolotls. These illustrate the diversity of successful techniques and, we hope, will aid some readers in devising solutions to perplexing problems. Fortunately or not, with axolotls a change in conditions often ends a disease outbreak, even if the change is arbitrarily chosen from among the proven alternatives.

Reference

1. Universities Federation for Animal Welfare, The UFAW Handbook on the Care and Management of Laboratory Animals, 3rd Edition. E & S Livingstone, Ltd., London, 1967, p. 880.