

FAIRLEIGH DICKINSON UNIVERSITY'S AXOLOTL
COLONY: DISEASES AND ABNORMALITIES

Gervasia M. Schreckenberg*

At Fairleigh Dickinson we are maintaining a small axolotl colony of about 50 adults and 30 larvae. The animals are cared for regularly in terms of cleaning using standing tap water and feeding using newly hatched brine shrimp for the early larvae and raw beef liver for the later larvae and adults. The animals have a healthy skin color and they exhibit normal behavior: they look "dumb and dull" but they are ferocious when being fed.

So far we have not encountered any appreciable diseases. However, in one case we have detected an external tumor which was located dorsal to the left front leg. There also have been several cases of eye abnormalities, one eye being excessively large and non-functional. This is known to be genetically related. In two cases the larvae continued to shed their skins at several periods of development. In this process the gills were ultimately lost and the snout had become more and more pointed. The animals behaved and looked like typical salamanders. When given a stone into the water to accommodate their amphibian life style, they used the stone as a spring board and they jumped out of the buckets and literally "walked away"--never to be seen again!

In third generations of progenies we have detected a number of different abnormalities, such as stunted body morphology and hunch backs. The latter is probably due to excessive partial floating in the water medium. All in all, it seems probable that such abnormalities could be due to the effects of "inbreeding".

*Dept. of Biology, Fairleigh Dickinson University
Rutherford Campus, Rutherford, NJ 07070

In one of our experiments on brain histology of developing axolotl larvae and mature animals it has been observed that the sulcus limitans was significantly distorted. In many cases even the entire ependymal layer of the developing brains showed extensive abnormalities. More experimentation is needed to ascertain whether or not this phenomenon actually is due to animal treatment or not. (These axolotls had been injected with alcohol from early larval stages to adulthood.) In one experimental adult animal which behaved and looked normal externally, we found a brain which was flared apart extensively in the mid-brain region, (Fig. 1 and 2). While performing autopsies on several animals it was also found that often the liver and spleen showed abnormalities in color and size. It would indeed be of interest to know the causes for the observed irregularities and abnormalities in axolotl morphology and histology.

FIG. 1



NORMAL BRAIN (dorsal view)

FIG. 2



ABNORMAL BRAIN (dorsal view)