

BREEDING AXOLOTLS IN AQUARIA

We would like to report on our recent observations on axolotls breeding in aquaria. Our method and findings may be of value to anyone contemplating the use of aquaria for the breeding and maintenance of axolotls.

We maintain most of our adult axolotls in groups of 2 or 3 housed in 10 gallon aquaria with 6 liters of 50% modified Holtfreter's solution per animal. Each aquarium's solution is aerated and filtered by an ordinary aquarium pump and a Living World economy bottom filter. The bottom of each aquarium is covered with 3 pounds of gravel. Each animal is fed 2-3 times a week with a chunk of beef liver and the temperature of the aquaria's solution is kept near 20 C.

For our breeding observations we selected 13 pairs of mature, virgin animals: 9 pairs of our May 5, 1977 spawning and 4 pairs of our May 15, 1977 spawning. Until the animals were paired up for observation, the sexes of each spawning were kept separate and the animals were maintained in groups of 3 placed in 10 gallon aquaria. During the evening of December 31, 1978, the animals were paired up and each pair was placed in a freshly prepared 10 gallon aquarium. All pairs were then observed for the next 45 days. The results of the observation period are found in Table 1 (next page).

The spawnings that were produced were spontaneous in that the animals were never treated in any way, such as by hormones. Thus our results indicate that untreated axolotls will mate with each other in a fairly high frequency producing fertile spawnings when kept together in aquaria: 7 of 13 pairs produced 8 fertile spawnings (see Table 1).

We should note that we were particularly interested in the spawnings of our May 5, 1977 pairs because each animal was potentially heterozygous for the eyeless mutant that we wanted to obtain in the homozygous state. Two of the spawnings (January 11, 1979 and February 9, 1979) gave us eyeless animals.

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TABLE 1: SPAWNINGS OF 13 PAIRS OF AXOLOTLS HOUSED IN AQUARIA AND OBSERVED FOR 45 DAYS

Pair Number*	Spawning Date	Number of Eggs	Number of Fertile Eggs	% of Eggs Fertile
1	1-4-79	206	180	78.3
2	1-11-79	456	389	84.6
3	2-9-79	219	200	91.3
4	2-11-79	243	205	84.3
5	NS**			
6	NS			
7	NS			
8	NS			
9	NS			
10	1-9-79	186	135	72.5
	1-31-79	155	110	70.7
11	2-5-79	300	180	60.0
12	2-8-79	219	174	79.4
13	NS			

* Pairs 1-9 were of our May 5, 1977 spawning; pairs 10-13 were of our May 12, 1977 spawning.

** No Spawning