

Diemictylus viridescens

male



NEWTS

by Mark Gottlob

For most of us, interest in keeping native fish started as a sideline. In some cases native fish provided a secondary source of aquarium fish for tropical fish enthusiasts and for others the keeping of native fish started from a professional involvement with native fish. For me the collecting and keeping of native fish has led to another interest: newts.

Newts are the amphibians comprising the family Salamandridae, one of seven salamander families. Salamanders in general are not a popular animal with most people, but I have found my newts to be an instant favorite of people seeing my aquariums for the first time. They have a rough skin, unlike the slimy skin of other salamanders, which makes them easier to handle. Most newts are essentially aquatic and are at home in a well-planted aquarium. Many, however, do have a land or eft stage, so care must be taken when acclimating them to aquarium life. I have lost several newts who have escaped from well-covered aquariums. A newt acquired in the late summer or early fall is most likely to transform to the eft stage and consequently spend more time at the surface of the tank until it manages to escape. Eggs are laid by aquatic adults in the late winter and spring and by the following fall most young newts become efts. They remain efts for two or three years and then return to the water to become permanently aquatic. My experience and research have not revealed a way to distinguish between a late summer newt, who has lost its gills, and an aquatic adult. This tendency to escape is not always an indication of a transformation to the eft stage. Usually newts attempt escape when first placed in the aquarium. After a week or so they usually settle down and are no longer a problem.

Newts who are willing to stay put are easily cared for. A well-planted tank kept at normal room temperature and a wide range of hardness serves well. I use a basic diet of frozen adult brine shrimp supplemented with pellet food, flake food, freeze dried mosquito larvae, worms, krill and ant eggs, and a variety of live worms and insect larvae. Watching newts prey on live food is

is a treat; they are slow but they always get their worm. Their slowness makes it hard for them to compete in a community aquarium, but they are persistent scavengers and do surprisingly well. It is rare, but I have had small fish disappear when kept with newts. Newts are active even when three or four years old. They are most active when kept with several other newts and have plenty of tank space. The newts themselves are seldom bothered by the fish since their skin has poisonous glands. I have seen one accidentally grab another's leg, mistaking it for a brine shrimp, but they are rarely harmed.

Conant (1958: 213-16) lists three species of newts in eastern North America, all of the genus Diemictylus. Klots (1966:31819) lists the eastern newts as Notophthalmus and Cochran (1972:28) lists them as Diemictylus. I will use Diemictylus.

Diemictylus viridescens viridescens Red-Spotted Newt
N. E. U. S. into Canada

Diemictylus v. dorsalis Broken-Striped Newt North
and South Carolina

Diemictylus v. louisianensis Central Newt Central U. S.
and Florida

Diemictylus v. piaropicola Peninsula Newt Central and
South Florida

Diemictylus perstriatus Striped Newt Northeast Florida

Diemictylus meridionalis Blackspotted Newt South Texas

Cochran(1972: 28), Klots (1966: 318-19) and Smyth (1962: 92) all list the western newts as Taricha:

Taricha granulosa granulosa Oregon Newt Coastal North
California to South Alaska

Taricha g. mazamae Crater Lake Newt Crater Lake, Oregon

Taricha g. twittyi Twitty's Newt Saratoga, California

Taricha klauberi Warty Newt San Diego, California

Taricha rivulais Red Bellied Newt Gibson Creek, California

Taricha sierrae Sierra Newt Butte County, California

Taricha torosus California Newt Bay of San Francisco,
California

The western newts are larger and rougher skinned than the eastern newts. Their behavior is recorded as being similar to that of the eastern newts.

I have caught several species of Diemictylus in Florida and North Carolina. They were caught in a variety of habitats. Newts are most commonly found in small, isolated, weed-choked ponds. On occasion I have caught them along the banks of larger lakes where plants were plentiful and even in small run-filled run-off streams. In North Carolina ponds it is common to see hundreds of newts floating at the surface on sunny spring days. Newts can also be acquired in tropical fish stores. I have seen eastern newts for sale many times and western newts on occasion. The western newts are usually much more expensive.

The behavior of newts though rarely fast moving is varied and for the patient observer rewarding. Next to eating the newts favorite newt past time is piling on. Somewhat like turtles sunning of a spring day, newts can often be seen in an underwater pile. They do not seem to have any territorial instincts and think nothing of walking over a neighbor and do not think anything of being walked over.

This unawareness ends briefly for the yearly mating. The male approaches the female and grabs her from behind. "He frequently twists the fore part of his body around so that he may press his neck, equipped with hedonic glands, to her snout (Smyth, 1962: 90)." Hedonic glands are found in most amphibians and function in males to secrete a substance that arouses the females. The female hedonic secretions allow the male to identify her as to species and sex (Smyth, 1962: 13). After the male has the female's attention, he deposits his spermatophore. The spermatophore is a jelly like sac that contains numerous sperm (Smyth, 1962: 13). The female collects the spermatophore and pulls it into her cloacal lips, located ventrally just behind the back legs. The mating that occurred between my newts was after a water change but no temperature change.

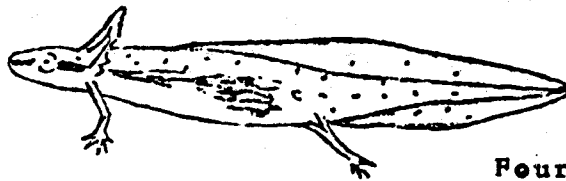
The female deposited the eggs one at a time in the folds of leaves, over several weeks time. She folded the leaves of an Aponogeton for a deposit site, laid an egg in the curl of a young sword plant leaf and laid several among the needles of a Hornwort. The eggs are about one eighth of an inch in diameter. They have a large white embryonic center covered by a clear jelly. The development can be watched for several weeks until the young larva breaks free. The one-half inch larva has a dark back with a lighter venter. The venter has a green cast to it. The gills are apparent from the beginning.

After the eggs hatched I removed them immediately to keep them from being devoured by their parents who began chasing them. The larvae would remain still until disturbed then dart quickly away. I collected nematodes, daphnia and other small invertebrates to feed them. Only one survived this first stage. As soon as the remaining newt reached a length of three quarters of an inch

I switched to a basic diet of frozen brine shrimp. Its development was marked by general growth with little change in form. The color, however, became lighter with the appearance of a mid-body stripe after one month. By this time the growth is rapid and at present, four months, the newt is over two inches long. It has developed numerous spots and is becoming similar to its parents.

I am anxious to watch the metamorphosis to the eft stage, if it occurs. I have a terrarium ready. If all goes well I will have a follow-up article in the future. I would also enjoy sharing information with anyone else who is maintaining and breeding newts.

Diemictylus viridescens



Four month larva

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