

MONTH OF NEWTIS

WINTER FORESTS ARE ALIVE WITH NICE (BUT DEADLY) LITTLE SALAMANDERS

Matt Winters/Chinook Observer

A rough-skinned newt hot-footed it toward a dog's leash it might have mistaken for prey on Jan. 10 near Cape Disappointment. Newts are among the most obvious wintertime species on the local forest floor. Harmless unless eaten, they contain a poison that paralyzes and kills.

By MATT WINTERS
For The Daily Astorian

With their deadly foes — garter snakes — snugly curled up in their hibernacula (winter quarters), rough-skinned newts are wiggly kings of the forest floor on these fairly moderate January days in Cape Disappointment.

Since they're camouflaged to blend in with the curled-up fallen alder leaves, avoiding squishing them along the old North Head Lighthouse Road takes fancy footwork. For cold-blooded creatures, newts can get out of the way faster than expected or twist around to show potential predators their orange "Warning: Don't eat me" bellies. They are quick enough to overtake worms, slugs, many bugs, maybe even a sluggish little frog.



Part of the salamander family, newts lay eggs in the water. Any eggs not slurped by predators hatch into larvae, which go through metamorphosis over the course of about half a year while turning into miniature adults like one currently residing near my doorstep.

All salamanders are amazing amphibians with a deep footprint in world folklore, most famously because of their false mythical reputation for being flame-proof. The six major kinds we have here near Willapa Bay are well-adapted survivors in an environment where they must vie with hostile invasive species, loss of habitat, toxic runoff and other threats.

Amphibian populations are on a downward trajectory around the world because of climate change and a spreading fungal infection. They all breathe through their skin, which makes them particularly vulnerable to trace quantities of petroleum and other manufactured chemicals. If all goes well, they can live close to 20 years.

It's important to be aware of these useful and interesting little neighbors and do what we can to help them.

Loaded to kill

I've written about newts before. These gentle creatures are among the most toxic animals known to science. At least



Jackson D. Shedd

Willapa National Wildlife refuge is home to one of the highest concentrations of Dunn's salamanders.

this is true of ours; their otherwise identical cousins living in southwest British Columbia have almost no tetrodotoxin, a substance many times more deadly than cyanide. This TTX is produced by a bacteria that partners with newts and a few other species, including the pufferfish so irresistibly dangerous to Japanese gourmets.

In what's been called an evolutionary arms race, the toxicity of our newts is directly linked with the garter snakes that prey on them. To discourage snakes, newts from parts of Washington and Oregon have built up so much poison in their skins that a single newt contains enough TTX to kill 25,000 mice — if its skin was pureed into teeny mouse-sized doses and slipped into their food supply by some fiendish rat. Meanwhile, the snakes continually build up increasing levels of immunity to newt poison.

Around here, researchers 10 years ago discovered newts in Chinook and Warrenton are particularly deadly. But at the same time, our snakes have achieved a near-perfect equilibrium of immunity.

Newts are perfectly good little animals but shouldn't be handled. If you do, wash up before touching your eyes, or

risk irritation. Best practice is let them go their way in peace.

The same advice applies to one of our other poisonous salamanders, the ensatina, nicknamed "sword that is small."

"The ensatina was named for its habit of brandishing its tail like a sword," according to the U.S. Fish and Wildlife Service. "When threatened, the salamander straightens its legs to their full height, arches its back slightly, and points its tail in the air. The tail is packed full of poison glands and detaches very easily, allowing the animal to escape while its opponent deals with a writhing, oozing tail."

Newt people

If newt poison is so deadly, you'd think people would have come up with ways to misuse it, and you'd be right. Supposedly, some Pacific Northwest Indian tribes administered newt skin to execute criminals and political enemies. It's true that a single newt contains easily enough toxin to kill a person, as a drunken 29-year-old Coos Bay man discovered in 1981 after eating one on a dare.

"Dependent largely upon the amount of poisoning, Tetrodotoxin has a historical fatality rate of 50-60 percent,"

according to the FBI.

They reputedly taste absolutely awful, but there are European folktales about newts being used to murder dinner guests — perhaps in a heavily spiced dish.

Sir Walter Scott recorded a schoolyard rhyme about a young man expecting to die soon after being slipped "a four-footed fish" in a meal made by his wicked stepmother.

"What did she do with the bones of it," he's asked by his real mother. "She gave them to the little dog," he responded, "... Oh it shot out its feet and died!"

Kirkpatrick Sharpe, a collector of old stories, said, "The nurse, or nursery-maid, who sung these verses (to a very plaintive air), always informed her juvenile audience that the stepmother was a rank witch, and that the fish was an 'ask' (an old word for newt) which was in Scotland formerly deemed a most poisonous reptile."

The story underlying this rhyme "preserves in short and simple form what is perhaps the last living — still orally transmitted — link with a tale possibly terrible in origin and certainly mysterious in its subsequent history," wrote Iona and Peter Opie, the children's literature experts. There are clues that date it 800 years back, to a time from which very little survives of the language of common people. Using a newt as poison clearly made a lasting impression.

Let's you be tempted to weaponize one of our innocent newts, be forewarned that the symptoms are distinctive and horrible, and the poison is a cinch to detect. This doesn't keep some from thinking about it. In 2011, a Chicago-area man eventually pleaded guilty to a failed plot to murder his wife for insurance money using tetrodotoxin. He was arrested by an FBI-led Joint Terrorism Task Force after acquiring 98 milligrams of TTX in 2008. "That's a ton," an expert told the Chicago Tribune. "He was buying enough to kill 98 people." The would-be poisoner was sentenced to about eight years in federal prison and required to pay more than \$500,000 in restitution.

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