



Species Spotlight Northern Short-tailed Shrew

Blarina brevicauda

What if I told you that a terrifying animal lurked in the woods behind your house - maybe very inches from your back door? Its body is a kind-of Frankenstein's monster mash-up of many different animals. It has a Swiss Army knife set of 32 teeth built for seizing, grasping, tearing, crushing, and chewing; and claws ideal for digging - but it's not a bear. Hiding in the pitch dark will do you no good, because it can use echolocation to find its way through the inky shadows - but it's not a bat. If it does find you, well, that's when things really turn ugly. See, this animal's saliva is venomous - nope, it's not a snake. Problem is, it lacks the fangs to directly inject this neurotoxic poison, and must *chew* it in to you. For some things it hunts, it's enough to kill. But for others it only paralyzes, allowing them to be stashed away for later (but this isn't a spider). I'll leave it up to your imagination what those unlucky beings last few moments on Earth are like.

If another animal is unwise enough to try to make a meal of this creature - they are in for an unpleasant surprise. It can produce a highly malodorous musk from its body that is enough to turn the stomachs of many a would-be predator - but it's not a skunk or opossum. So who the heck is the enigmatic, stuff-of-nightmares marauder?

Just When You Thought it Was Safe to Go in the Woods

If you think this all sounds like some bad Hollywood monster movie - you'd be right. 1959's *The Killer Shrews* (3 out of 10 stars on IMDB) brought the worst characteristics of the northern short-tailed shrew (the big reveal!) to the silver screen. But don't worry. As scary as the animal described above sounds, take heart that this member of the shrew family is only about 4 inches long and weighs in at around an ounce - soaking wet. Sheerly terrifying for an earthworm, snail, or beetle though. They are capable of taking down prey much bigger than themselves as well, including mice, snakes, and even ground-nesting bird chicks.

Definitely not a Mouse

People with only a passing interest in small, furry things often categorize all critters that scamper about the woods or in their house as "mice". But shrews are not only not mice, they're not even rodents. Shrews take their place in the much more sparsely populated family tree of "insectivores", a branch of which that includes the moles. Upon close inspection they share little in common with mice. No outward ear flaps, beady eyes, and a short, stalky tail. This body build is ideal for a life under the leaf litter, under the snow pack, or underground - good thing since that just so happens to be where shrews spend the majority of their short, frenetic lives.

195 Pounds of Food a Day

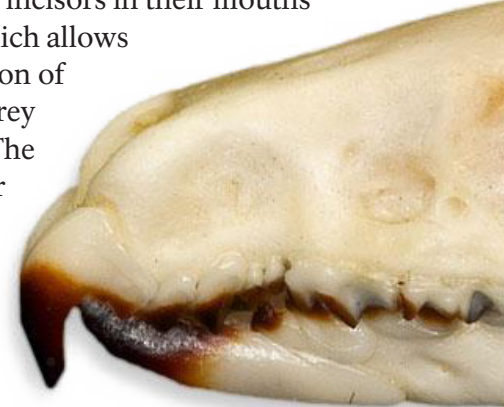
That's how much the average American male would have to ingest if humans shared the appetite and metabolism of this shrew. Being small, warm-blooded, and a carnivore means they must maintain a very high rate of metabolism to keep up with the relatively rapid loss of water and heat from their tiny bodies. To do so requires consuming the equivalent of their body weight every day. Going without a meal for even just a few hours could lead to starvation. No wonder they are so twitchy and high-strung. In their near constant search for prey, they pack in between 800 to 1300 heart beats a minute and up to 12 body movements *per second*.

Seeing with Sound

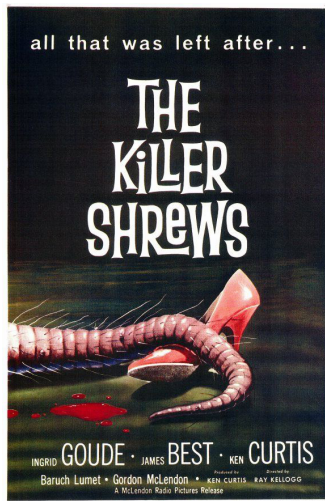
The poppy seed-like eyes of this shrew are useful for little more than distinguishing light from dark. Good enough for a life spent largely underground. Shrews, remarkably, rely more on the trick of echolocation to find their way. Most famously used by bats to pinpoint tiny insect prey, shrews abilities are far less precise. They emit twittering vocalizations of varying pitch to sonically examine their surroundings by analyzing the returning reverberations. This helps them determine the nature of a particular location (thick grass, a collapsed vole tunnel, etc.) and how best to navigate through it.

Noxious Poison or Miracle Cure? Maybe both

Short-tailed shrews belong to that rarest class of life forms: the venomous mammal. Lacking a snake's hollow, venom injecting fangs, shrews had to evolve a different way of introducing the poison into their victims. The bottom incisors in their mouths feature a groove, which allows for easier transmission of venom into shrew prey as it's being bitten. The poison either kills or paralyzes the prey. At least one study suggested that an individual shrew carries within its body enough venom to dispatch up to 200 mice at any given time. Shrews also engage in the practice



A shrew's varied set of teeth, with their reddish tinge, almost appear to be dipped in blood. But the red hue comes from iron deposits believed to make the teeth more durable.



The beady eyes, flexible snout, sharp teeth, and sensitive whiskers of a shrew countenance.

Movie poster for the 1959 cult classic.

of “live hoarding”. In times-of-plenty, they will stash away an emergency supply of meals, often mealworms fittingly, for later consumption in leaner times. A paralyzed, live hoarded mealworm can stay fresh-and-crunchy for up to 15 days. Shrew saliva also contains a protein-digesting substance that helps to quickly break down muscle tissue, a must for an animal that eats almost constantly.

Shrew venom is currently the subject of several medical studies. Some researchers hope it can be part of new suite of miracle drugs that will do everything from smooth out wrinkled skin, to alleviate pain, and even kill certain kinds of cancer cells.

Live Fast, Die Young , Leave a Smelly Corpse

It is hard enough making a living in the wild for a shrew - being in a near constant state of nourishment hunting as they are. Part of making that living, the last part it would seem, is dying. Which these

shrews do with remarkable frequency and in high numbers annually. Shrews typically do no live past their second autumn, and their unconsumed carcasses can be found scattered around the countryside that time of year. As ironic as it sounds, these mass die-offs are actually part

of a survival strategy. Shrews do not hibernate, and come winter a major food source will be gone – most insect species. This makes surviving that leanest of seasons much harder when their prey species must switch to things like harder-to-catch mice. By taking that final dirt nap as it were, these venerable 2-year old shrews gift their maturing offspring a better shot at finding enough food to survive winter without having to compete with their parents’ generation.

Dr. Radford Baines: [after being attacked by a poisonous shrew] Just ripped my trousers, that’s all.

Dr. Milo Craigis: Are you sure?

Dr. Radford Baines: Yes, I know.

[goes to typewriter, writes report, collapses dead]

-- Riveting scene from “The Killer Shrews” 1959

Ed Sharron



A shrew that was killed and rejected by a fisher. After getting a nasty mouthful, they will often spit it out and “scent mark” on the corpse as a later reminder that this meal is a no-go.

Of course, many shrews don’t live long enough to die in that way. Owls, hawks, and snakes commonly feed on shrews. Other, mostly mammalian predators sometimes make the kill, but leave the shrew uneaten. This is likely because in its last moments of life the shrew produced a foul, musky odor from scent glands on its flanks. The nasty odor, and presumably flavor, makes many mammals move-on from this malodorous meal. This odious “adios” didn’t do much to save it’s own life, but hopefully that fisher or fox will think twice about popping the next shrew

that crosses its path into its mouth. Owls and many hawks species lack a strong sense of smell and often swallow their prey whole, so this strategy does little to deter them.

For more information

-Watch a hyperactive shrew take on a garter snake.

Who will win? <https://video.nationalgeographic.com/video/00000144-0a43-d3cb-a96c-7b4f0ec60000>

- For information about how the Northeast Temperate Network monitors the health of national parks, see our website at <https://www.nps.gov/im/netn>.



ACADIA NP • APPALACHIAN NST • BOSTON HARBOR ISLANDS NRA • MARSH-BILLINGS-ROCKEFELLER NHP • MINUTE MAN NHP
MORRISTOWN NHP • ROOSEVELT-VANDERBILT NHS • SAINT-GAUDENS NHP • SAUGUS IRON WORKS NHS • SARATOGA NHP • WEIR FARM NHS

