



Mouse Trails



THIS MONTH, dear readers, I invite you to consider mice. I understand that empathy may be limited for animals who move so readily into our homes. White-footed mice and deer mice fill our boots with seeds and convert our sweaters into nests. They are also original inhabitants of these lands, and life-sustaining members of natural communities.

Because mice are small, I imagine them living small, especially in winter. Mouse tracks lead in short, straight lines from one hole in the snow to another. Sometimes, though, mouse trails set off cross-country. Until this week, I worried about these mice. I imagined them lost and doomed to roam until they lucked into another tunnel entrance.

Although I worried and wondered, I admit that I never followed such tracks very far. I told myself that I would make time to follow mouse trails when I was too old to go far. Recently, however, I have become old enough to know that when I reach that age, I might also be too old to see well or too old to remember what I'm looking at. This week, therefore, I followed the trail of a wandering mouse. The trail began in a welter of mouse tracks emanating from a big pine and headed off to the north. So did I.

The farther they went, the more I wondered. The surface of the snow was littered with the seeds of yellow birch and spruce. Was the mouse taking advantage of this bounty? I saw only a few spots where her regular hopping strides were interrupted, but I saw no clear evidence of feeding. The trail led in a slightly meandering line from one tree to another. In a few places, the mouse abruptly changed direction but tacked north.

I lost the trail in just the place I hoped I might, at another hub of mouse activity—a hollow sugar maple with a pile of seeds spilling from a hole in the base. Here was a mouse castle with overflowing storerooms. The mouse had traveled 530 feet, according to my GPS. Consider a rough distance-equivalency comparison: if a mouse is about 2" tall



and a person is 5'10" tall, the mouse's 530 foot journey would be about 3.5 miles for the person— not epic, but far enough to challenge my notions about a mouse's world.

I headed home with more questions. How far do mice commonly travel? Were all of the tracks I saw made by one mouse? What are their winter social arrangements? Are they more inclined to cross long distances on the surface of the snow? Do they know where they're going if they do?

I hit the scientific literature looking for answers. I learned that I needn't worry about mice being lost. Mice have a good homing instinct. Murie and Murie (1931) reported a deer mouse traveled two miles in two days to return home. Calisher et al. (1999) recorded a homing journey of three-quarters of a mile in one day. Sheppe (1965) found that some white-footed mice would swim to return home, with one mouse swimming 765 feet to return to its island home. As for how far a mouse can travel on such short legs, Hoslett (1950) measured the distance mice could run in a wheel over 24 hours. The record was for a deer mouse who ran 23 miles. The navigation puzzle remains. Some studies found that blind mice and mice with no sense of smell were able to find their way home about as well as mice with their senses intact.

I also learned that mice often nest communally in the winter and that they are more tolerant of related mice than unrelated mice. They

can recognize relatives even if they've never met before.

Possessed of this information, I returned to the mouse castle after dark hoping to learn more. Were the tracks in this section of woods made by one mouse, or were there two big households with one mouse traveling between them? I know mice love sunflower seeds and have an uncanny ability to find them. I put some out at the base of the tree and retreated to wait. This was the first warm night in a couple of weeks, with temperatures just below freezing. I was prepared to spend up to an hour. To amuse myself, I imagined myself into a mouse's form and into a mouse's world. This was surprisingly informative. Here are a couple of insights: while navigating the caverns of the world beneath the snow, whiskers provide a tactile shield in front of a mouse's face and relay the contours of the space around them. On the other hand, mice are built with short front legs and long springy hind legs—they are built to bound. Bounding is not a gait suited to the close spaces of the world beneath the snow, at least as I imagined it. If a mouse wanted to cover distance and quickly, bounding across the surface would be more efficient, if more dangerous.

At the end of the hour, I had seen no mice but felt I had a better understanding of their winter experience. The next time I see a set of mouse tracks heading cross-country, I'll follow them. I hope you will too. I'd love to hear what you learn.