## **Chipmunks,** *Tamias striatus* **The Striped Housekeepers**

There is a two-inch chipmunk doorway in our hard-packed dirt driveway. Every time we drive away or home again, our heavy machines barrel right over it, and yet it has been active and serviceable for many years. Sometimes we have half-heartedly filled it in a little, thinking it has reached ankle-twisting proportions. But the opening is soon cleared of whatever pebbles or stones we drop in. This is the doorway to something important and those little housekeepers may be small, but they accomplish much.

Some folks hate chipmunks. I know because I have old and beloved friends who have said this and acted against chipmunks in an angry and cruel way, about which they later brag. These folks are so adamant and spunky and outspoken that they can forget who they are talking to. Also forget what about: miraculous creatures they barely know. Maybe they barely know me, too.

I have noticed and marveled about chipmunks all my life, and the more I learn the more I realize I don't know. How lucky am I for this. Most recently I drove way up to Nova Scotia and went for a walk with an old pal in a deep valley with tall trees, especially growing up from the narrow floodplain by the brook at the bottom. Down there it was shady and damp, and we were looking at mushrooms, taking pictures, eyes on the ground. That's how I saw the bits of hop hornbeam blossom lying around. It's only in the last twenty years or so I've even known a hop hornbeam blossom when I see one. They grow at the top of the trees where I never get to, but I found a blossom floating in our sap evaporator, having blown in an open steam vent on the sugarhouse roof. I know the trees, with their delicately shingled bark, but I had never craned my neck, or taken binoculars out to look at those treetops overhead. I had never even wondered at the name! How ignorant is that?

I do know hopvine blossoms. We have hops that grow up over our deck to make a shady place for summer. This year they pro-



vided meals for the hop merchant caterpillars. Those hop blossoms are well within sight just outside the house, and I have collected them to make beer.

That time I found a lookalike blossom in the sugar house, the penny dropped. And when I saw parts of these blossoms underfoot in Nova Scotia last month, I knew them. I quit looking for mushrooms and raised my gaze off the ground to see the familiar trunk of a hop hornbeam tree. Folks in Nova Scotia call these "ironwood," because the wood is very hard, but here we have some other kind of tree we call "ironwood," which also has real hard wood. This is the world of locally differing common names for things. We biologists think that if we keep to the scientific names, we'll all be speaking the same language and can understand each other, but those who use the Latin and the Greek names risk the rolling of eyeballs from their English-speaking friends. You go around crying Tamias striatus every time you see a chipmunk and risk poor communication at the very least.

With the tree I am talking about, I will say "hop hornbeam" and hope for the best. The amazing thing about the Nova Scotia tree I saw that day is that it had moss growing on it, and not in a straight line! Not in random blobs! Not all up the north side like in the scout manuals. No, this familiar tree I know from home had a garland of moss spiraling up it in a consistent and regular way, like I had never seen before anywhere in the woods.

Just recently I read a fine book a friend handed to me: Gathering Moss , by Robin Wall Kimmerer. This is a catchy title and you might think the book is a personal jour-

nal about being a rolling stone or not. No, it is book about moss! And I learned so much, in the capable hands of this writer, that I am still raving, happy. One thing I learned, about which I had never even wondered (and why not), is about the moss on fallen logs in the woods. The chipmonks like to run along the tops of logs. It gets them up on a raised pathway, an elevated highway with good visibility. They get uninterrupted running, and can see anything of interest coming their way, dangerous or not. As they scamper through the woods, they run through patches of moss and pick up spores on their feet. Coming to a fallen log, they hop up onto it and leave sporey footprints as they go. If conditions are just right, those spores will start up a line of moss on top of the log.

If a chipmunk, or anyone else who has scampered across moss, does so 17 just when the sporophytes are topped by capsules ready to pop open and disperse spores, chances are good these will get all over its feet. Spores are single-celled agents of dispersal and reproduction for mosses, mushrooms, bacteria, and algae. They are not "seeds." You need to be a flowering plant to make a seed. Spores start up young mosses wherever they land, if conditions are favorable. This must have been true for the trunks of those six or eight hop hornbeams I saw in Kentville, NS. Maybe it was not a chipmunk heading up that tree looking for its next meal of hop hornbeam seeds. It could have been a red squirrel, for instance. I need to go back and stake out the site, collect data and observations, maybe recruit some willing chipmunks to walk across a pan of moss spores and then climb a tree. See what happens. This is science, and it is a miracle of life on earth, plus a whole new notion to me.

Thank you, thank you, all the elements that converged early in October: the timing, the old friend, the ferry, the weather, my chance notice of the blossom parts, and glance up the trunk, my having just read that book. I should be so lucky! Maybe it was a chipmunk, maybe not. I am entertaining the notion, for now. We call this a hypothesis. Are we jumping to conclusions? Nah. Eyes wide open, we are jumping to more questions.

— Bonner McAllester