



January 18, 2007

Eye on the Environment: Survival Food of the Forest

By Melanie Parker for The Seeley-Swan Pathfinder

The cold days of January have me thinking a lot about what makes the difference between life and death in the winter environment. I know for me it has a lot to do with the abundant beetle killed lodgepole pine that is stacked up in our woodshed and everyday provides warmth to our house. It also has something to do with the wild game meat that fills our freezer, though I must confess that the bulk of our winter food supply is brought to us by the grace of petroleum products that deliver fresh food from all over the world to our local grocery stores. I would like to say my survival was directly tied to my success as a gardener, but I'm afraid almost all of the summer produce is usually gone by early November. About the only thing we can count on this time of the year are the raspberries that I still ration out by the handful in bowls of yogurt or cereal.

What captured my imagination most this past week during the high winds was the supply of nutritious food floating around on the air currents and landing all throughout the forest. These winds delivered a vast store of survival food from the tree tops down onto the ground. I'm talking about the black clumps of thread-like tree lichens that grow in the limbs and branches of most of our local trees. I know that many of us don't consider this stuff beautiful. We might even think it to be harmful to the trees themselves, but in fact this 'old man's beard' lichen, as it is locally called, is a major source of nutrition and warmth for those animals that choose to stay on through the cold Montana winters.

Native people from all over the Pacific Northwest have known this lichen to be a good source of winter nutrition and regularly made use of it. I suspect they learned this simply by watching the deer and elk. After a wind storm deer and elk hastily go about nibbling up all of the lichen clumps that they can find on the surface of the snow, since most of what is reachable up in the trees has long since been browsed off.

One of my favorite stories about old man's beard lichen was one I heard about ten years ago from homestead era resident Harold Haasch. He was telling a group of our students about how he had participated in winter range surveys all throughout the Swan, Clearwater, Blackfoot and South Fork drainages in the 1930's. Apparently, he and his partner noticed this same thing...that the deer and elk were feeding heavily on the tree lichen. They decided to gather some up, he said, and send it to the lab in Missoula. Just for kicks, he chuckled, they also sent in what they had been eating...canned vienna sausages. Well, he said, the lab results came back and to their surprise the lichen had

more food value than their government rations! He told that story with such a joyful irony in his voice, I'll just never forget it.

Old Man's Beard is also known as speckled horsehair or *bryoria fremontii*. Though it colonizes the tree limbs to take advantage of the water that is captured by the branches and the sunlight that is more accessible in the tree tops, it does not directly affect, so far as we know, the tree itself. Because it is a lichen, it is by definition a friendly match between a fungus and an algae. The fungus gives the lichen its structure and the algae are the single celled plant organisms that photosynthesize and produce food for the fungus. The main way that this lichen reproduces is simply by breaking off and traveling to a new site. This happens when animals transport it or when, you guessed it, there's a big powerful wind!

Old Man's Beard grows thickest and densest in mature forests and it is particularly noticeable in the winter all through the crowns of our largest larch trees. One animal that is frequent in old forest stands is the flying squirrel. This is a nocturnal squirrel, which many people don't even realize is common in the Seeley-Swan. Flying squirrels are notorious for building their nests from old man's beard in the cavities of decaying snags. Not only do they insulate themselves with the lichen, they cache it in their homes with them so as not to have to venture out too much in cold winter air. Flying squirrels typically feed on old man's beard for up to seven months of the year. The rest of the year they feed heavily upon truffles underneath the forest duff layer.

Many of our winter birds also utilize tree lichens to line and insulate their nests. I once found a chickadee nest in an old broken off alder shrub that was about four inches in diameter down by the creek. The alder had a small cavity excavated in it, and in the hole, the chickadees had stuffed about two fists worth of old man's beard. And in addition to birds, apparently many of our spiders and insects insulate themselves from winter within walls old man's beard.

Tree lichens have been found to be strong indicators of pollution and are increasingly being seen as broad indicators of forest health. Their presence, abundance and diversity are starting to be monitored and measured across the northwest as indicators of overall biological diversity and health. So, far from indicating a sick forest, as many people may think, old man's beard is one sign of health in our forest canopies.

Learning more about the importance of this common tree lichen to the winter survival of local wildlife has made me appreciate its beauty. I can remember looking up at a snow adorned larch tree and thinking that it sure would be prettier if it didn't have all that black stuff hanging from it. Now I look at the ice crystals suspended in the black webs of the lichen and am filled with wonder and appreciation for this survival food of the forest.