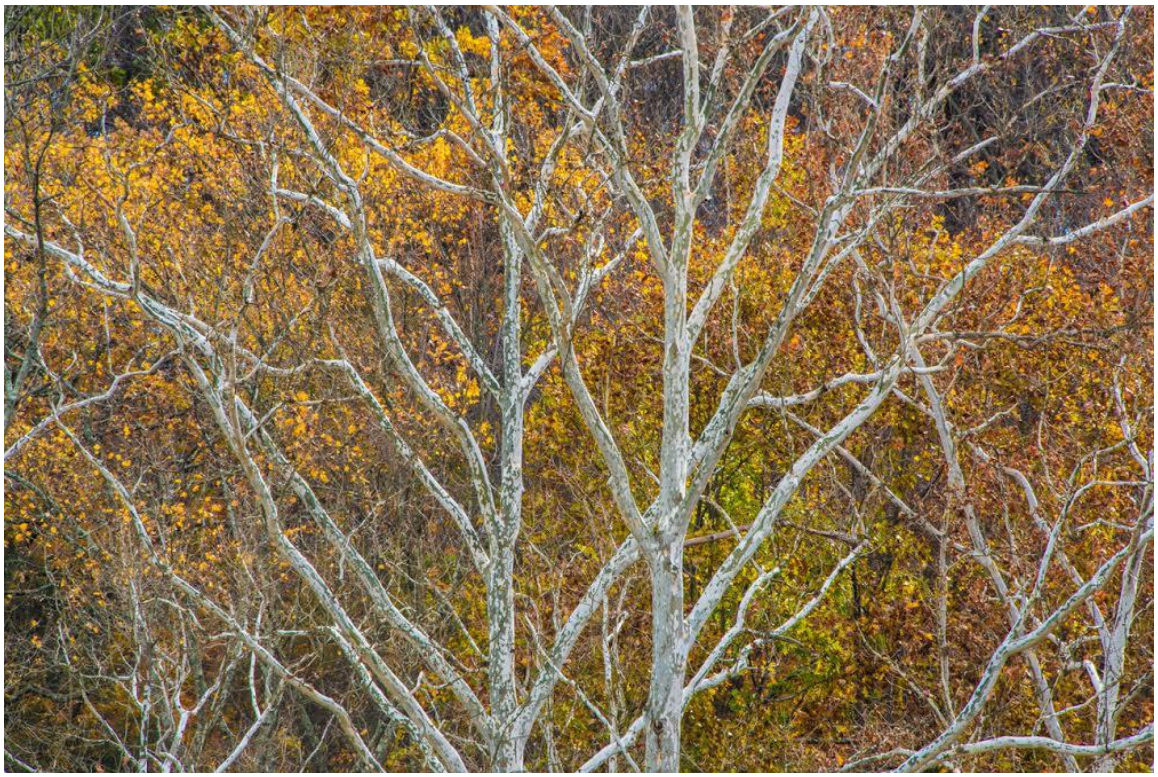
Seeing the Sourlands

Summer into Winter: Part III November

By Jim Amon



The blaze of October color came in November this year and was muted

In the October essay I described the biological process that causes the leaves to turn yellow, orange, red and purple and then die and drop to the ground. For the trees, shedding their leaves is good riddance. Those leaves could become platters to hold snow, and the weight could break branches or even take down entire trees.

In addition to the miracle of fall color and trees denuding themselves of leaves, there is another process that trees undergo in the fall that is totally invisible but equally miraculous. It may come as a surprise to you, as it did to me, that trees are made up of 50% water. Imagine a forest of trees whose cells are full of water standing for several months in temperatures that most of the time are below freezing. How do they survive? If the water in a living cell freezes it will kill the cell, so why don't the trees

die when all their cells freeze? There are a couple of reasons. One is that the sugars that were made by photosynthesis act as a kind of antifreeze; the sugar-saturated water in the trees freezes at a lower temperature than pure water. Further, in winter the dormant trees require less water and nutrients, sort of like the reduced metabolism of a hibernating bear.

The antifreeze effect of sugar water is interesting but it is not miraculous, and I said that there is a miraculous event to save the trees from freezing to death in winter. So here it is: in late autumn the trees' cell walls become porous and pliant. The water in the cells moves through the cell wall and occupies the space between cells. The pliant quality of the cell wall allows the cells to be squeezed but not to be killed when the water around them expands from freezing.

As we pass through November into wintery weather there are noticeable changes in the forest other than the drama of the leaves. The natural sounds of the forest are a lot quieter in November than August. This being central New Jersey, there is no place in the Sourlands that is truly quiet; there is always a background din from airplanes, traffic and leaf blowers. But there are no leaves rustling in the wind and most of the songbirds have migrated. The birds that remain seldom vocalize. Many of the squirrels are beginning their hibernation. But the Red Bellied Woodpecker's call is heard everywhere in November. Ornithologists presume that they are still protecting territory with their constant calls, but it reminds me of Canada geese, who just can't seem to help themselves from making noise all the time. While in spring and during summer flocks of birds are mostly all one species, in November we are beginning to see the mixed species flocks that spend the winter here and forage for food together. Chickadees, Nuthatches, Downy Woodpeckers, Titmice, sometimes a Brown Creeper or a Yellow-rumped Warbler seek protection by flocking together while they fly from tree to tree seeking seeds and grubs. There are also the new arrivals--notably White Throated Sparrows and Slate Colored Juncos, who spend their summers further north, but come to the Sourlands for the winter.

I used to think that mid-October was the highlight of fall color and that by early November the trees had lost more than half their leaves. This year, however, the peak of fall color came in early November. The droughty September and warm October muted the display and it wasn't until mid-November that half the leaves had fallen. Global warming? Probably.

I have always liked the Sourland forest in the winter. I like its open, light quality and I like seeing the architecture of the bare trees. I like the feel

and the sound of walking on leaf-strewn paths. I like the beech trees—watching the leaves become paler and paler as November progresses to April. I revel in the occasional patch of green—from Christmas fern or Partridgeberry or a splash of moss on a rock. And then, I love the forest in spring!