Ice by Bill Menke, March 3, 2021

The winter sometimes brings snow to the high places of southern New York, but always ice.



Pin Ice, Ramapo-Dunderberg Trail, Harriman SP

compose each sheaf.

Fall's freeze-thaw cycle keeps the ice on ponds and puddles very thin. When, during the night, the still water cools below freezing, blades of ice form on its surface. They reach out, and by morning, the entire surface is a mosaic of clear, polygonal tiles. Some extend outward from partially-submerged logs, giving me the impression of giant dragonflies. Sometimes, the water in the In the late fall, when the nighttime temperature dips below freezing, yet the sunny afternoon is still almost warm, my eyes search for pin ice as I hike. It sprouts up from the trail - sheaves of curly shiny grass, with blades of pure crystal, and with crumbs of soil clinging to their ends. It is hard to catch at its most beautiful. The heat of the sun soon melts it, and the boot of the unobservant passerby tramples it. Yet it is renewed each morning. I kneel and get my eyes close to it, to see the fine needles of ice that



Blades of Ice on a Puddle along the Long Path, Tallman Mountain SP



Icicles over a stream Along Route 106, Harriman SP

puddle subsides and inch or so, leaving the blades suspended in the air, supported only by their tips on the pond's edge. Then the blades turn bright white, from frost adhering to their surfaces. When the puddle drains before the mosaic is complete, the blades are separated by triangular gaps.

As the weather grows colder, ice lasts through the day. Droplets of water sprayed up from even very small streams cling wherever they land. Even a very thin overhanging twig can accumulate a thick rind of ice. Far from pointed, these bulbous icicles are often thickest at their bottoms, which are closest to the source of the spray, and their surfaces are corrugated. They form in the shadows, for they depend upon persistent cold, but when lit by the sun, they have a deep luminance that reminds me of sunset.



Rock Ledge along the Long Path Harriman SP

Should snow fall, the ice is displaced from its visual dominance. Wide, pastel landscapes and not small, sparkling crystals attract the eye. The snow smooths out rough ground, turning boulders into humps and logs into curbs. Shadow is everything. The multitude of long, thin parallel shadows cast by tree trunks mark a relentless direction across the land. The deep shadows behind rock ledges create the appearance of caves. The bank of a stream that in the summer might be insignificant is now amplified by shadow into a long and sinuous ridge.

The appearance of the snow strongly depends on the direction in which its viewed. With the sun ahead, the snow seems to me bluish and delicate. With the sun behind, it seems yellowish and solid. A rock ledge that seemed distinctive on the outward leg of my journey might be unrecognizable to me on my return.

Snow does not last long in these southern hills. When it melts, the water is fodder for yet more ice. Every stream now flows strongly, and every cascade becomes an ice fall. Even very modest streams can collect a wide and thick covering of ice, for every droplet of water randomly thrown up into the air will freeze onto some nearby surface. The texture of the ice flow is marvelously varied. Some parts are composed of archetypical icicles, arrayed in a line like so many organ pipes. Some parts are composed of the bulbous, inverted icicles I associate with smaller streams. Many surfaces are corrugated or knobbed, and others are staircases of flat terraces with water dribbling down them. The falls give me a sense of hidden energy. Not all the cascade is iced over. Long open slots reveal jets of water and clouds of spray. I can see it through the translucent ice, too, now surging, now ebbing. The



Ice Falls, Tallman Mountain SP

whole ice fall is singing to me, a soft song of tinkling and gurgling water.

This winter beauty must be cherished the moment it is seen. All ice is transitory. Even in the winter, a day is enough to change the ice formations dramatically. What today is an array of long and slender icicles, may be a curtain of ice tomorrow, or have been covered by snow, or washed away rain. And the surge of ice brought by the snowmelt is as much of an encore as a performance. The skunk cabbage has started to bloom. The world is about to change.

Bill Menke is a professor of Earth & Environmental Science at Columbia University, an advocate for open spaces and the preservation of Nature, and an avid hiker and kayaker.