

On Ice

I believe I have found the explanation for a mysterious winter phenomenon. The ice that covers ponds and lakes usually is of a dull white color. Often the ice will be mottled with black spots of various sizes distributed randomly over its surface. Each of these black spots has many black tendrils radiating outward. The effect is that they look something like a typical stylized drawing of the sun only they are black in color, instead of yellow.

When I looked at my pond after the recent rains, I understood how they are formed. Though the ice appears solid, the rainwater can find its way through minute gaps in the ice. And, although the ice seems to rest on the surface of the water there is a slight gap that can accommodate a certain amount of rainwater. The rainwater falls on the ice. It finds a minute gap and tunnels through the ice. As more rainwater moves through the gap, it gets bigger. The gap-hole draws rainwater from the surrounding area. The flowing rainwater cuts channels into the ice. The tendrils are formed, in this manner.

When I looked at the ice on my pond, it was mushy and the rainwater

had cut many distinct channels that branched into smaller finger-like channels. When the ice re-freezes I assume some of the details will disappear.

Why will the ice be black when it re-freezes? Black ice may be just a clearer form of the regular white ice. And, since the surrounding white ice will protect it from the wind to a certain extent, there will be fewer air bubbles to give the ice its typical whitish cast.