Too Cold

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Bob Muller maintains contact with a number of local nature and watershed groups in addition to having a leading role in the Royal Oak Nature Society. Bob had enlisted me to help with the Clinton River Watershed Council's annual stonefly survey, 3 Feb. 2007. I got up when the alarm clock beeped and, of course, dressed for the weather. I drove to Bob's house and loaded my net and spare clothing into his van. Kelly, Bob's wife, stated what I had already heard elsewhere: "You are crazy to get in the water in this weather."

A 25-mile trip brought us to a branch of Stony Creek near Romeo, Michigan. The wind was light and the sun was out. (Too bad that in Michigan we pay for *any* sunshine during the winter.) At 10 A.M., the temperature was 12°F. The forecast for the next day was 3°F with a –13°F wind chill. In other words, we had the *good* day of the weekend.

Walking to the bridge brought a positive sign: open water.[1] The current was faster at the bridge and the water a little deeper. We cut through the woods towards a section of riffles upstream. Here the creek was an average six feet across, 18 inches deep, with a current of two mph. Dan Keifer, from the Clinton River Watershed Council (CRWC), brought an eight-pound sledgehammer to break the ice shelf at the shore. He didn't want volunteers to break through the ice, find that the bottom was another foot down, and fall in.

Bob had his eight-foot, eighth-inch mesh seine. He held the seine brails and I kicked the gravel and cobble on the creek bottom to chase darters into the net. We found it hard to lift the seine and see our catch when it also contained 20 pounds of ice crystals. After a few more seine passes that brought up mostly ice, Bob switched to his Perfect Dipnet and I to my "Uniseine (version 3.05)," the third seine I've designed to help me fish without help.

Bob caught a few Rainbow Darters and more ice. The sun was getting higher in the sky, and Bob could see green-gray ice—called anchor ice—on the bottom of the stream.[2] By locating where the bottom was ice-free, Bob was able to catch a mayfly and Rainbow and Fantail Darters.

With my Uniseine—a 4-foot by 4-foot, eighth-inch mesh one-man seine on adjustable brails—I worked along the shore and caught too much debris from the broken ice shelf. Setting the net and kicking filled the net with ice (dislodged from the bottom) and made it nearly impossible for one person to lift. I broke the ice near the bank, let it float clear, and tried another kick. The result was yet another net containing three gallons of ice crystals.

I did manage to catch a few small Fantail Darters. The exertion made me warm. I took off my scarf and unzipped the collar of my coat. This brief break in the action allowed my Uniseine, which was on the bank, to freeze. No problem. I had seen worse the month before. In Arkansas, a 30-foot seine froze overnight while in Jim Graham's car-top net box. By soaking the seine in the bayou and pulling as it thawed—for *seven* minutes—the net was finally unfurled and ice-free. So I let my frozen Uniseine soak, but the ice didn't melt. There were even frozen droplets of water on the PVC brails.[3] I had to quit because the Uniseine was now too heavy to use.

[1] In previous years I had collected downstream from here in Stony Creek Metropark with Leo Long. One time, the ice was five inches thick. I found a rock as big as a softball and tossed it 20 feet up in the air. It landed near the center of the creek, but only a scuff of ice was removed.

[2] Anchor ice is frozen water that forms at the bottom of a stream, usually in a shallow, turbulent section of the river.

I walked back to the road to the CRWC's identification and education station. They had a few mayflies and stoneflies that were caught in their kick screen by Dan and three volunteers. Jenny Graessle of the CRWC was teaching macroinvertebrate identification to six volunteers. The specimen selection she had was being sealed into an ice cube tray. Other aquatic animals were put in a small petri dish and under a microscope; the dish almost froze solid. Bob answered questions on the native fishes he caught, making the point that the presence of darters is a sign of good stream quality.

I appreciated the CRWC's hot chocolate and muffins. Then I noticed that as I walked it felt like shin guards were hitting my knees. I had on breathable waders, which are soft, thin and lightweight. But on this day, my waders had gained a stiff coat of ice. My toes were cold, and my fingers felt like they were getting frostbite since the neoprene gloves were wet. There was even ice on the outside of the glove fingers. So what did I do?

I grabbed a D-frame net and a small bucket and went back into the creek.

A D-frame is shaped like the letter "D" and is 12 inches long on the straight edge. With this small net, I was surprised to catch a nice male Fantail Darter. (The water must really be cold if a fish called a "darter" is that slow.) I used my forceps to pick critters from the net. Every time another macroinvertebrate was added to the bucket, I used the forceps to stab a hole in the ever-thickening ice film. I brought back some mayflies, a green caddisfly, a spiral stone-cased caddisfly, a scud, and a sow bug.

I also found fingernail clam shells and one freshwater mussel. The mussel valves were slightly open with gray flesh showing. The flesh seemed hard. There was no give when I gave the valves a squeeze (not too hard because I didn't want to injure the mussel). Mussels are not legal to possess in Michigan, alive or dead. I took it anyway to have it identified. Bob quickly determined that the mussel was solid and dead—long dead. It was a brachiopod, dead for hundreds of millions of years.

In conclusion, participation in the CRWC's stonefly survey was good exercise with lots of fresh air. I was dressed properly for the weather and the water (although one toe itched afterwards for two hours). Some collecting equipment was rendered useless. The dipnet worked when we avoided surface, floating and subsurface ice. We caught fish, including nice pairs of Rainbow and Fantail Darters, so we weren't skunked. All in all, it was a good morning of collecting.

[3] A dam was 20 yards upstream. As I watched water spill over the top of the dam, fall three feet, and flow in the narrow creek, I remarked that water could only get so cold before it turns to ice. One person corrected me—moving water *can* be colder than frozen water. When this super-cold water slows down near the rocks on the bottom, it turns to ice. This super-cold water freezes to, instead of thaws, any ice that's stuck to a net.