

## Michigan's Petoskey Stones

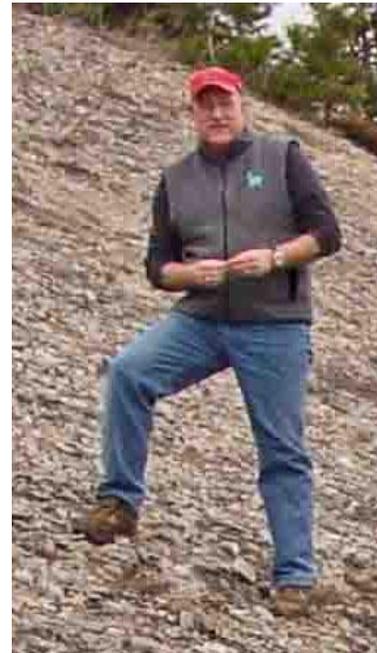
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During the first week of April 2009, I was fortunate to be able to travel to the small town of Petoskey in northern Michigan, where I attended and gave presentations at the Annual Conferences of the Michigan Chapter of the Wildlife Society and the Michigan Bird Conservation Initiative. The meetings were held consecutively on the campus of North Central Michigan College. Petoskey is located on the southeastern shore of Little Traverse Bay of Lake Michigan.

I had done some research on the area before my trip and found that the city's name was synonymous with a paleontological phenomenon that I had become familiar with as the result of a friend's gift. A few years back, a good friend, Greg Geise, Director of the Binder Park Zoo in Battle Creek, MI, had sent me a beautiful polished stone—known as a "Petoskey Stone." These remarkable and unique objects are actually the fossilized remains of Devonian (355-415 mya) corals of the genus *Hexagonaria*. One hundred million years before the time of the dinosaurs, Michigan was covered by a warm shallow sea that extended from what is now the Gulf of Mexico all the way to Canada. As these ancient colonial corals died, mud and other sediments covered them, and eventually transformed into shale. During the fossilization process, the coral's porous structure was filled in by calcium carbonate, making it now possible to give the stones a beautifully polished surface. At one time, some of these ancient corals were invaded by crude oil, which gives some of them a soft brown color. It is the amount of crude oil invading each stone, which gives it either a lighter or darker color.

Interestingly, the deposits from which the fossil corals originated were not found in Michigan, but rather in regions to the north. Around 70,000 years ago, the Wisconsin ice sheet, began forming in the vicinity of Hudson Bay. This massive glacier, which some geologists believe was two miles thick, began moving southward, gouging out huge colonies of fossilized coral that had weathered to the surface. As the glacier moved across the state it carried with it a large quantity of these corals, which when the ice melted, were deposited widely across Michigan, Illinois, Indiana and Iowa. The glacial action itself helped to shape the Petoskey stones. The crushing weight of the glacier, combined with its forward movement, dragged the fossilized corals over bedrock, and broke them up. Most Petoskey stones are round in shape and their surface is relatively smooth. This is due to the constant wave action produced by Lake Michigan and other northern lakes, which produces a tumbling action. Stones found further away from lakes tend to be far more rough and irregular in shape. The best places to find Petoskey stones are on lake beaches, in streambeds running into lakes, in gravel pits, and in road cuts (also known as cutbanks).

In 1965, then Governor George Romney signed House Bill 2297, recognizing the Petoskey as Michigan's Official State Stone. State regulations restrict collection of the stones. In State and National Parks collecting is prohibited, and fines can range from \$50-\$500. However, given the traditional nature of the activity, the authorities typically tolerate a few stones being taken out for personal viewing and study. One cannot collect on private property without permission, but collection is permitted at road cuts 66 feet from the center of the road. Petoskey stone collecting has, unfortunately, become commercialized and this is a reason for concern. I noticed many people selling stones, including local rock shops, the hotel I stayed at, and the airport gift shop. Some of the stones have even been transformed into tacky souvenirs—including being cut into the shapes of animals and the state of Michigan. Even small, poor quality polished stones sold for \$7, while the larger ones sold for \$20 or more, depending on size and quality.



As it so happened, my friend, Greg Geise, also attended the conference and was able to join me for a day of Petoskey hunting. To help in our search, we used Bruce Mueller and William Wilde's *The Complete Guide to Petoskey Stones*, published by The University of Michigan Press and the Petoskey Publishing Company. We started out from Petoskey at 9:00 AM and drove south on Highway 31 towards Traverse City at the southern most tip of Grand Traverse Bay. The views of Lake Michigan, its shores still covered with ice, were spectacular. Our first stop was Fisherman's Island State Park, located just one mile south of Charlevoix. The book suggested hunting on the beach or driving to the end of the road and searching in and around a shallow stream. But there was so much snow on the road, and the ruts were so deep, that the underside of the car was scraping. We decided to pull over and look on the beach, which still had a great deal of ice on it. We walked south along the beach looking for Petoskeys amongst a sea of normal beach stones, but saw nothing. However, we happened upon a small stream a few hundred yards down the beach and decided to explore. Walking slowly up the streambed, Greg spotted the first Petoskey, and after we had developed a "search image", we found several other fine specimens. Our hands became nearly numb from plunging them into the icy water. After a couple of hours of collecting and feeling the need to thaw out, we decided to move on.

After stopping in Traverse City to have lunch and peruse a few antique malls and bookstores, we headed north toward Sutton Bay, a small community located at the northwestern side of Grand Traverse Bay. The Muller and Wilde book had recommended two road cuts in this portion of the state and I wanted to find them. The first site was at Rt. 72 and Armstrong Road. This was a large road cut that exposed one side of a large sand dune. There were many rocks protruding from and scattered down the cut, a good sign. We parked the car safely to the side and began examining the area. Within a few minutes, we had found several Petoskey stones, including many that were less weathered than those we had found near the lakeshore.

We spent perhaps two hours at this location, before moving onto the next site, a large road cut on Rt. 22 just outside the township of Sutton's Bay. This road cut was much larger and steeper than the one we had visited earlier. However, there were also many existing footprints on the bank, suggesting that this location had attracted others. After searching for 30 minutes or so, neither one of us could find any Petoskey stones. I eventually found one, but it was of lesser quality than the ones we had found at the two previous locations. However, there were some larger, darker colored grey rocks protruding from the bank, which appeared to be weathered shale. Cracking a few open with my rock hammer, I began to find numerous shell fossils. One larger rock I found split open very easily and revealed hundreds of brachiopod fossils. One round section was nearly 24 inches in diameter and was thick with white brachiopods and other shells, some of them red in the dark shale. I gave this to Greg, knowing I'd never be able to get it home on the plane. I kept a smaller (6 x 12 inch) piece for myself, which I knew would easily fit into my brief case.

By this time, it was beginning to get dark. Exhausted from the day of productive hunting, we stopped to get some dinner and a beer in Traverse City and then proceeded back to the hotel. It was a great day of fossil hunting and a wonderful time spent with the friend who had originally introduced me to the strange and fascinating State Stone of Michigan, The Petoskey Stone.