

Summer Vacations that Teach a Lot
By Dr. E. Kirsten Peters

My finest memory from childhood is sailing a kayak my clever brother had made out of plywood and canvas. The sailing adventure was on a lake in Glacier National Park. The wind was good, my beloved dog was tucked between my knees for ballast, and I scooted over the water like a rocket – or so it seemed to an 11-year old. I have a black and white photo of that event (the world was black and white in those days), and I cherish it greatly even though it’s faded.



If you and your little ones still hope to get in a family camping trip this summer and make some memories, there’s no time to lose. And with that in mind, let me tell you a bit about the geology of Glacier National. Even if you only visit it in prose, it can do your spirits good while you camp or explore nature in parks in local spots wherever you live across the nation. And what geologists have learned in Glacier National is helping them interpret current tectonic events in the Himalayas and the Andes.

But let’s start at the beginning. The rocks of Glacier National are ancient, going back to over a billion years ago. And they are well-preserved. They are sedimentary and show us simple fossils from that ancient time. The fossils are colonial clumps, if you will, of single-celled creatures that lived in the ancient seas. We call them “stromatolites,” and they and the chemistry of the rocks in which we find them help scientists understand the climate and atmosphere of that ancient time.

Long after the stromatolites, the rocks were deformed by the great crunch of ancient tectonic plates. This formed an enormous fault called the Lewis Overthrust that moved rocks up to 50 miles laterally. It was all part of the events that helped make the ancestral Rocky Mountains, similar to events happening in major mountain chains in South America and Asia today.

Now fast-forward with me from the ancient part of Earth history to the much more recent Ice Age. This was the period that enormous glaciers covered much of North America. It’s my favorite part of history, when woolly mammoths and saber tooth tigers roamed our land.

Glaciers are superb agents of erosion and they made deep, majestic valleys in the ancient rocks now in the Park. It’s the steep sides of the valleys that allow us to see the stromatolites and all the other features of the ancient rocks. And it’s the deep, majestic valleys that take the breath away and keep people coming back to Glacier National year after year.

Even a casual visitor to America’s parks and gardens can learn a lot about Earth history and the Ice Age. In Manhattan’s Central Park, for example, some of the rocks show the effects of Ice Age glaciation. Giant blocks of rock moved many miles by glaciers, called “erratics” because they don’t belong in the area, are littered around the Park. And the bedrock shows deep striations or grooves carved by the rocks trapped in the glacier as it moved. So even in urban areas, the natural world can speak to us if we are in the frame of mind to listen.

By the way, besides sailing that kayak, another fine event in Glacier National stands out in my mind. Near streams and in the lowlands there were plenty of huckleberries to pick. What can be better than foraging for your own food on summer vacation when you are a town kid used to hot lunches at schools? I owe my parents a lot, I think, in giving me those early memories.

Now that I’m older I realize one reason we made road and camping trips when I was a kid was that spending time away from home in that mode doesn’t cost as much as some other means of having a get-away. But the fact that local park visits or camping trips are low budget doesn’t mean they are low value.

Seize the day this summer, in our National Parks or someplace closer to home. Picking up rocks or hunting fossils doesn’t cost much, and the soul you enrich may be your own.

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