Penitentiary Glen Rocks?

By Dan Burnett, Nature Center Manager with contributions from Jonathan Foise

Let's break it down...

Understanding the geology of a place is the first step to understanding its natural history. Rocks set the stage for the rest of the story. Geology influences not only the shape of the land, it also affects climate, soils, vegetation, animals, habitats and even human activity.

So what about Penitentiary Glen, what's its story...and does it rock?

Well, Penitentiary Glen's story started long before dinosaurs roamed the earth, approximately 360 million years ago, during the middle of the Paleozoic Era. At that time, Lake County was often covered by a shallow ocean. Mud, silt and sand were deposited as sea levels fluctuated. Gradually, the layers of sediment solidified and hardened into layers of shale, siltsone and sandstone. Today these sedimentary rocks may be exposed and make up our area's surface rocks.

Dinosaurs came and went (approximately 245 – 65 million years ago in the Mesozoic Era), then came the Cenozoic Era…on and on and on…And then came the Pleistocene Era, the time of the glaciers, when things really began to rock and roll.

During the Pleistocene Era or Ice Age (1.6 million to 10,000 years ago), glaciers scoured the landscape and dragged boulders and sand into lowland areas. Each new glacial advance erased most of the evidence of the previous advance and era. Between 14,500 and 12,500 years ago, the last glacier began melting back to the north.

Now let's fast forward to today...

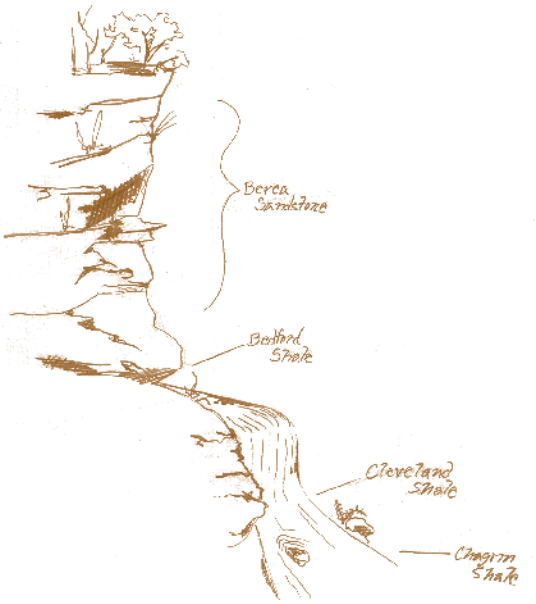
Down in Penitentiary Glen's deep gorge lays Stoney Brook, the cold water stream that divides the park in two. Compliments of the erosion qualities of Stoney Brook, the story of the Glen is being exposed and is ready to be retold in Penitentiary Glen's extensive gorge. The gorge is a deep ravine that cuts through the interior of the park. This sensitive natural area with its cool moist climate (often 10 degrees cooler than above), sandy, shallow soil and fast moving stream provides habitat for unique plants and animals, such as mountain maple, northern red salamander and Louisiana waterthrush. Two state-listed endangered species of birds that usually migrate to Canada to nest, the dark-eyed junco and winter wren, find suitable habitat in the gorge and are summer residents at Penitentiary Glen.

In 1912, the Halle family sought out the fresh air of the gorge for building their summer estate, in contrast to the healthy air of city life at the time. Today, park naturalist guides lead hikes through the gorge. Gorge hike programs are found on page 19; Call (440) 358-7275 to register.

So whether you are interested in geology or not, it tells our earth's history and you can see it for yourself at this park.

Penitentiary Glen really does rock!

Geology Exposed in the Gorge



- **Berea Sandstone** is marked by inclined stratification called crossbreeding.
- **Bedford Shale** contains two significant siltstone layers and Euclid Bluestone.
- **Cleveland Shale** is usually black, has a high content of carbon and will burn if flame is applied to it.
- **Chagrin Shale** is a gray shale generally covered with vegetation. It can be used for making bricks and red tile.

Naturally Speaking...

By Jonathan Foise, Gorge Hike Volunteer

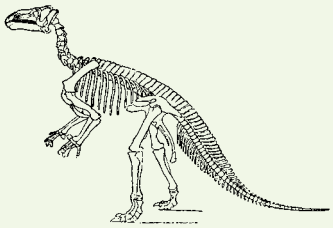
Geological changes may seem to take forever, but in my nearly 20 years of hiking the gorge, I have seen plenty of changes.

I often start a gorge hike by saying (with a smile) "if it doesn't look like we know where we are going, it is only because we don't." Every time I go down there, the water flow is a little different or a newly fallen tree changes our path. Sometimes we'll find big changes, like the big slabs of fallen sandstone last autumn, and the bright yellow of the newly exposed rock faces they left behind. Of course there are the changes that each season brings: the icicles of winter, the salamanders of spring, the lush green of summer and the reds and yellows of fall.

Most importantly, every person that goes into the gorge brings his or her own sense of wonder and interpretation of what they see, hear and feel. By sharing that with me, they allow me to see the gorge in new ways. That is a never-ending resource that I feel privileged to enjoy.

Question:

Why don't we find any dinosaur bones in Northeastern Ohio?



Answer:

Those layers of bedrock were scraped away by glaciers.

Did you know?

The settlers in the early 1800s called the gorge "Penitentiary Gully," because it was very difficult to get out of the deepest part, much like a prison or penitentiary.