



TICKLISH ROCK

No one set this boulder on its pedestal. This is an example of "differential weathering" where different types of rock have eroded at different rates, creating fascinating natural sculptures. Ticklish Rock is made of sandstone. The tiny pedestal is only 18 by 30 inches. It is located in Sullivan County.



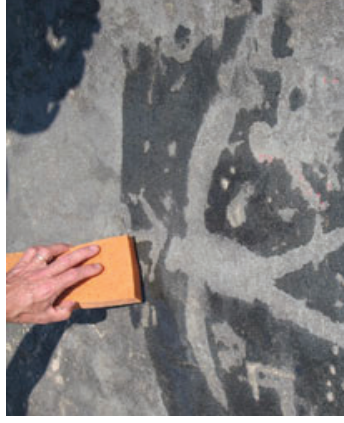
INDIAN GOD ROCK

Located in Venango County, the petroglyphs on this 22-ft wide sandstone boulder were probably carved about 1000 years ago. When Europeans came to the area, the native "Indians" made it clear to them that this was a sacred place, so the Europeans began calling it "Indian god" rock. As with all PA petroglyphs, the writing in the rock has experienced a lot of erosion and is becoming difficult to see.



BALANCED ROCK

This boulder is perched on the edge of a cliff, looking as though it might fall at any moment. Most likely, this rock survived erosion better than the surrounding rock, which has been weathered away. It has been this way for thousands of years, so it's not likely to fall any time soon. Balanced Rock is in Huntingdon County.



"LITTLE INDIAN ROCK"

This petroglyph is on the edge of the Susquehanna River, on the border between York and Lancaster counties. It is thought that the Algonquin peoples made the carvings. There is a similar boulder near by called Big Indian Rock.



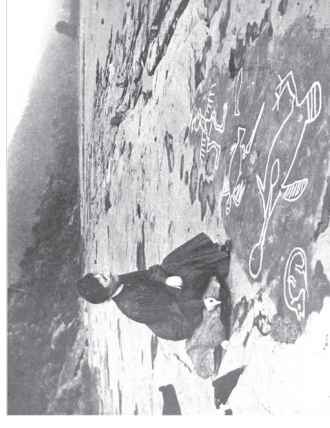
SUGAR GROVE PETROGLYPHS

These designs were probably carved by the Monongahelan people. The 23-foot boulder is made of sandstone. There are 48 designs which include human figures, animal tracks, birds and bird tracks, and abstract designs. It is located in Greene Co.



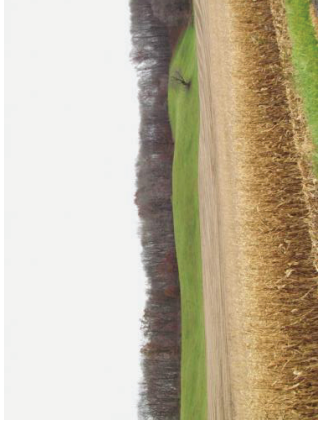
PARKERS LANDING PETROGLYPHS

Several boulders on the edge of the Allegheny River near the town of Parker (Clarion Co.) have ancient petroglyphs carved on them. This design is called the "antlered panther." Its significance in Native American culture is unknown.



SMITHS FERRY PETROGLYPHS

These Monongahelan petroglyphs are very close to the Ohio border (Beaver Co.). It was a popular tourist attraction in the early part of the 20th century. Now all the petroglyphs are under water, due to the construction of a dam. Plaster casts of the designs were made by the Carnegie Museum before the dam was opened.



WEST LIBERTY ESKER

An esker is a long ridge of gravel left behind by a retreating glacier. This ridge of sand and gravel is all that remains of a temporary stream created by melting ice. This 3-mile long esker is located in Butler County. Nearby is Moraine State Park, another site formed by ancient glaciers.



BOULDER FIELD HICKORY RUN STATE PARK

Hickory Run State Park (in Carbon Co.) is located at the edge of the area of North America that was once covered by glaciers. It is believed that this field of boulders was left by a retreating glacier. Boulder Field covers over 16 acres.



JAKES ROCKS

Like the Shohola Stone, these rocks are believed to have been left behind by glaciers. The Allegheny plateau's valleys were probably carved out by melting glacial streams. This rock formation is very close to a scenic overlook where you can look out over the Allegheny Reservoir near the Kinzua Dam in Warren County.



ARCHBALD POTHOLE

This 38-ft deep hole was discovered by accident in the late 1800s. At that time it was full of sand and gravel and had to be cleaned out. Geologists believe it was created by water erosion at the end of the Ice Age. The hole cuts through layers of sandstone, shale and coal. It is possible that the pothole was at the bottom of a waterfall that spilled off the top of a glacier. The pothole is located in Lackawanna Co.



WHALEBACK ANTICLINE BEAR VALLEY STRIP MINE

This 7-acre site in Northumberland County is one of the best folded rock structures in the U.S. You can see three kinds of faults, as well as folds, joints, cleavage and lineations. Plant fossils (found in shale) and layers of coal are common in this area. The anticline (folded mound) shown here looks like the back of a whale.



DEVIL'S DEN at Gettysburg

According to legend, the name of this rock feature came from an 8-ft black snake that lived here prior to the Civil War. During the Civil War, this was the site of an important battle. The rocks are part of an igneous intrusion into ancient sediments. Devil's Den is located in the Gettysburg National Military Park in Adams County.



SHOHOLA STONE

This boulder was left by a glacier. Even though it might look like it was cut, this is its natural shape. The Lenape (Delaware) tribe called the boulder "Peace Stone" ("shohola" means peace) and believed it to be the center of the Universe. This stone is located in Pike County.



ROCK GARDEN AT WORLD'S END STATE PARK

This geological feature is part of an area of PA called the Endless Mountains region of Sullivan County. Geologists believe that they are not really "true" mountains that got pushed up, but are remnants of extreme erosion, where harder rocks were left as mountains and softer rocks eroded into valleys. Fossil hunters report finding petrified lungfish burrows in this area.



SLIPPERY ROCK GORGE McConnells Mill State Park

This rocky gorge in Lawrence County is a very popular hiking area. The gorge gets its name from Slippy Rock Creek, which runs through an area of the state known for its oil reserves. Most likely, oil came to the surface and covered some of the rocks along the creek making them oily and slippery. The hiking trails go through many interesting rocky crevasses.



CHERRY SPRINGS VISTA Cherry Springs State Park

Located in Potter County, Cherry Springs Vista sits on top of the Allegheny Plateau at an elevation of 2,300 feet above sea level. Its remote location makes it ideal for observation of the night sky. Many amateur astronomers come here with their telescopes. The park got its name from its abundance of black cherry trees.



MT. DAVIS the highest point in PA

The top of this mountain is 4314 feet above sea level, the highest elevation in PA. Mt. Davis is in Somerset County and is part of a 30-mile ridge. It was named after John Nelson Davis, a naturalist and surveyor (and Civil War veteran) who studied the plants and animals of this area.



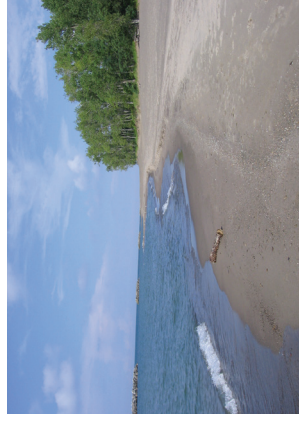
MT. NITTANY

This mountain in Centre County is a focal point for many aspects of local culture. From the scenic overlook, you can see the entire campus of Penn State University, whose mascot is the Nittany Lion. According to legend, Nittany was the name of a local "Indian" princess. The top of the mountain ridge is made of sandstone with patches of quartzite at higher elevations. Under the sandstone is a layer of shale, followed by more sandstone, then limestone.



DRAKE'S OIL WELL

This site in Venango County is the first place in North America where a commercial oil well was built. The well goes down 70 feet into a layer of sandstone that has a reservoir of oil in it. Drake installed a pump that pumped out about 20 barrels of oil a day. At that time all you could do with the oil was burn it in a lamp or use it as medicine (yes, they really did drink it!).



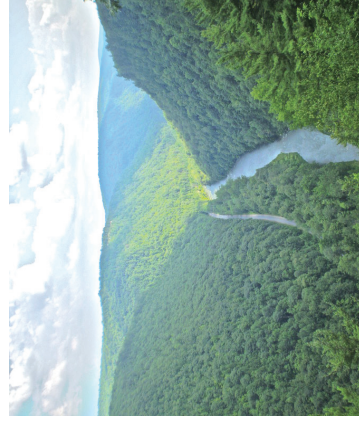
PRESQUE ISLE

In French, Presque Isle means "almost an island" (a peninsula). Presque Isle is the main geological feature of Erie County. The peninsula has many beaches and picnic sites along both sides. The waves of Lake Erie are constantly eroding the beaches. In the mid-1800s, water covered the lower part of the peninsula and turned it into an island. In the 1950s, a concrete seawall was built to slow down the process of erosion.



ARCH ROCK

This amazing road cut is located along Route 322 below Lewistown in Juniata Co. This road cut helps us to understand how sedimentary layers formed in PA. Since rock does not bend, these layers must have been folded and wrinkled while the sediments were still soft and pliable. After they were folded, they then hardened. Layers often alternate between different colors and textures of limestone, shale, and sandstone.



PA GRAND CANYON

The correct name for this land feature is Pine Creek Gorge, though most people in the state call it the PA Grand Canyon. The Native Americans used the gorge much as we use our modern highways. In the 1800s the gorge had most of its trees chopped down by loggers. It is located in Tioga Co.



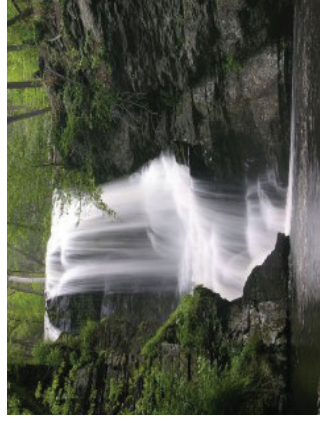
SCULPTURED ROCKS at Conewago Falls

These rocks are located in the Susquehanna River right below Three Mile Island near Harrisburg. They are a type of igneous rock called diabase. Most of PA is sedimentary; igneous formations are rare. In this part of the river, an ancient lava flow cut through the sediments. Moving water, possibly from melting glaciers, then eroded the diabase forming these fantastic shapes.



OHIOPLYE FALLS

Ohioplye Falls is one of a series of falls on the Youghiogheny River in Fayette Co. This scenic area was made even more famous when architect Frank Lloyd Wright built a house out over one of the falls. (The house is called Fallingwater.) The word "Ohioplye" is a Lenape (native) word meaning "it turns very white," referring to the churning water at the bottom of the falls.



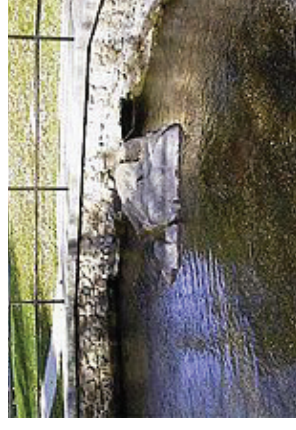
BUSHKILL FALLS

Bushkill Falls, in Pike County, is a series of eight waterfalls, the tallest of which is 100 feet. The falls are located in the Pocono Mountains region of the state. The falls are inside a private park that charges an admission fee. The water from the falls flows into the Delaware River, then into the Delaware Bay, then into the Atlantic Ocean.



CENTRALIA MINE FIRE

Centralia, in Columbia County, is in the anthracite coal region of PA. During the 1940s and 50s, the town began using an old strip mine as a garbage landfill. In May of 1962 the town decided to get rid of the landfill by burning the garbage. Unfortunately, the fire spread to the coal seam running underneath the dump, and began burning underground ever since. The town had to be abandoned.



THE BUBBLE at Boiling Springs

The water at Boiling Springs (Cumberland Co.) isn't really boiling—it's fresh, cool groundwater, bubbling up from an underground aquifer. The ground water comes up at this place because of an igneous (diabase) intrusion. Boiling Springs just happens to be located at approximately the halfway point on the Appalachian Trail, so it has been a popular place for hikers to stop and refresh themselves.



FRANKFORT MINERAL SPRINGS

During the 1800s, this natural spring was the focal point of a health resort. The water coming out of the spring is rich in minerals essential to human health. People really did feel better after drinking this water! The resort was destroyed by a fire in 1930 and never rebuilt. This site is now part of Raccoon State Park in Beaver County.



RICKETTS GLEN

This state park reaches into three counties: Columbia, Luzerne and Sullivan. It also goes across two physiographic areas: the Allegheny Plateau and the Ridge and Valley area. The plateau is much higher, so creeks flowing down to the Ridge and Valley create waterfalls. Kitchen Creek drops about 1000 feet in just over two miles!



MARCELLUS SHALE

There is a large, continuous layer of shale that runs underneath Ohio, New York, West Virginia, and Pennsylvania. Its name comes from a town in New York where it was first discovered. At some places in PA, the shale can be seen along the surface, as shown in this picture of the roadside near Interstate 80. (On the game board the dot is in Luzerne County.) The Marcellus shale contains a lot of trapped natural gas that can be pumped out and used by the energy industry.



VISIT A CAVE

Tour one of these caves:

Lost River Caverns
or
Lincoln Caverns



VISIT A CAVE

Tour one of these caves:

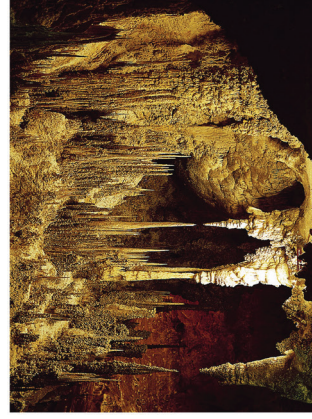
Crystal Cave,
Woodward Cave
or
Penn's Cave



VISIT A CAVE

Tour one of these caves:

Laurel Caverns
or
Coral Caverns



VISIT A CAVE

Tour one of these caves:

Indian Caverns
or
Indian Echo Caverns



FOSSILIZED FERNS in Ambridge, PA

Fossilized ferns can be found in many places in PA. Anywhere you have shale, there is a possibility of finding ferns. This site northwest of Pittsburgh is a place that fossil collecting clubs go to because of the abundance of the ferns.



DINOSAUR TRACKS

Montgomery County has some unique fossils. This shows a track made by an Atrypus dinosaur. Tracks and bones from Phytosaurs have also been found, as well as tracks from various smaller unidentifiable reptiles.



SWATARA GAP FOSSIL SITE

This site was a very popular collection area for many years. Recent road construction resulted in tons of rock being taken to the nearby State Park where people could safely sift through the rocks. Word got around fast, and now there are very few fossils left. However, this site is still worth mentioning because some of the best trilobites ever found in PA were found at this site (Lebanon and Skuykill Counties.)



CENTERFIELD CORAL REEF

Fossilized coral reef, that is! There is a roadcut on Rt. 191 below Stroudsburg (Monroe County) that reportedly has many marine fossils, especially horn corals. It is almost as if there was a coral reef at that site long ago.

		 TOUR A COAL MINE Visit a coal mine that is open for tourists. (Mines that are still in operation can't legally give tours.) Seldom Seen Coal Mine Cambria County	 TOUR A COAL MINE Visit a coal mine that is open for tourists. (Mines that are still in operation can't legally give tours.) Lackawanna Coal Mine Lackawanna County
		 TOUR A COAL MINE Visit a coal mine that is open for tourists. (Mines that are still in operation can't legally give tours.) “Number 9” Skuykill County	 TOUR A COAL MINE Visit a coal mine that is open for tourists. (Mines that are still in operation can't legally give tours.) Pioneer Tunnel Coal Mine top edge of Skuykill County