RAVENSBURG STATE PARK
CLINTON COUNTY
CASTLE ROCKS

The Rocky Gorge

Ravensburg State Park, near the center of the Appalachian Mountains in Pennsylvania, is located in a steep-walled, rocky gorge that has been carved by Rauchtown Creek (Figure 1) and its tributaries on the side of Nippenose Mountain. Sandstone, conglomerate, shale, and limestone are the typical rock types of these mountains. In the park, sandstone and conglomerate are most visible, although shale underlies most of the park area (see map). The sandstone and conglomerate (Bald Eagle Formation; Figures 2 and 3) are hard, dense, and more resistant to weathering, resulting in the higher ridges surrounding the park. Shale (Reedsville Formation), on the other hand, is softer and more easily eroded; thus in the bottom of the gorge and throughout the flat stream bottom in the park, shale will be found. Limestone is common north of the park near Rauchtown.

Many of the sandstone outcrops and loose blocks contain crossbeds. Crossbeds are layers of sediment, such as sand, lying at an

Figure 1. Rauchtown Creek above warming pool.

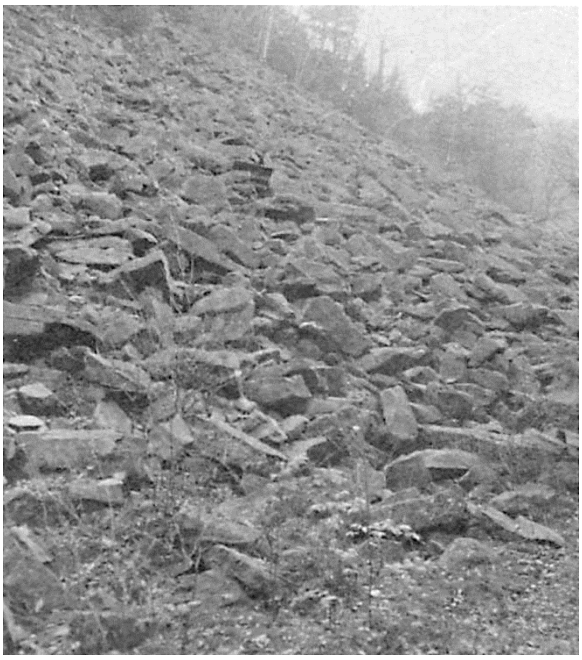


Figure 2. Talus slope of Bald Eagle sandstone.

Figure 3. Bald Eagle sandstone.

angle to the ordinary horizontal layering (Figure 4). In this rock type, they were created long ago when stream currents formed ripples in the loose sand that eventually became rock.

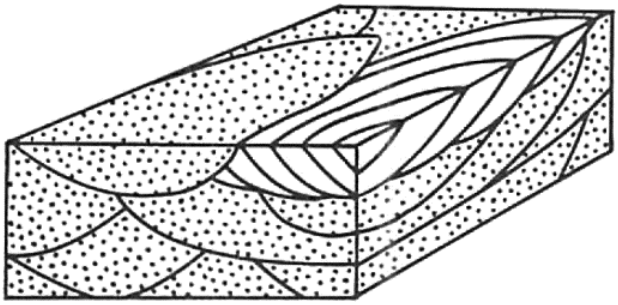
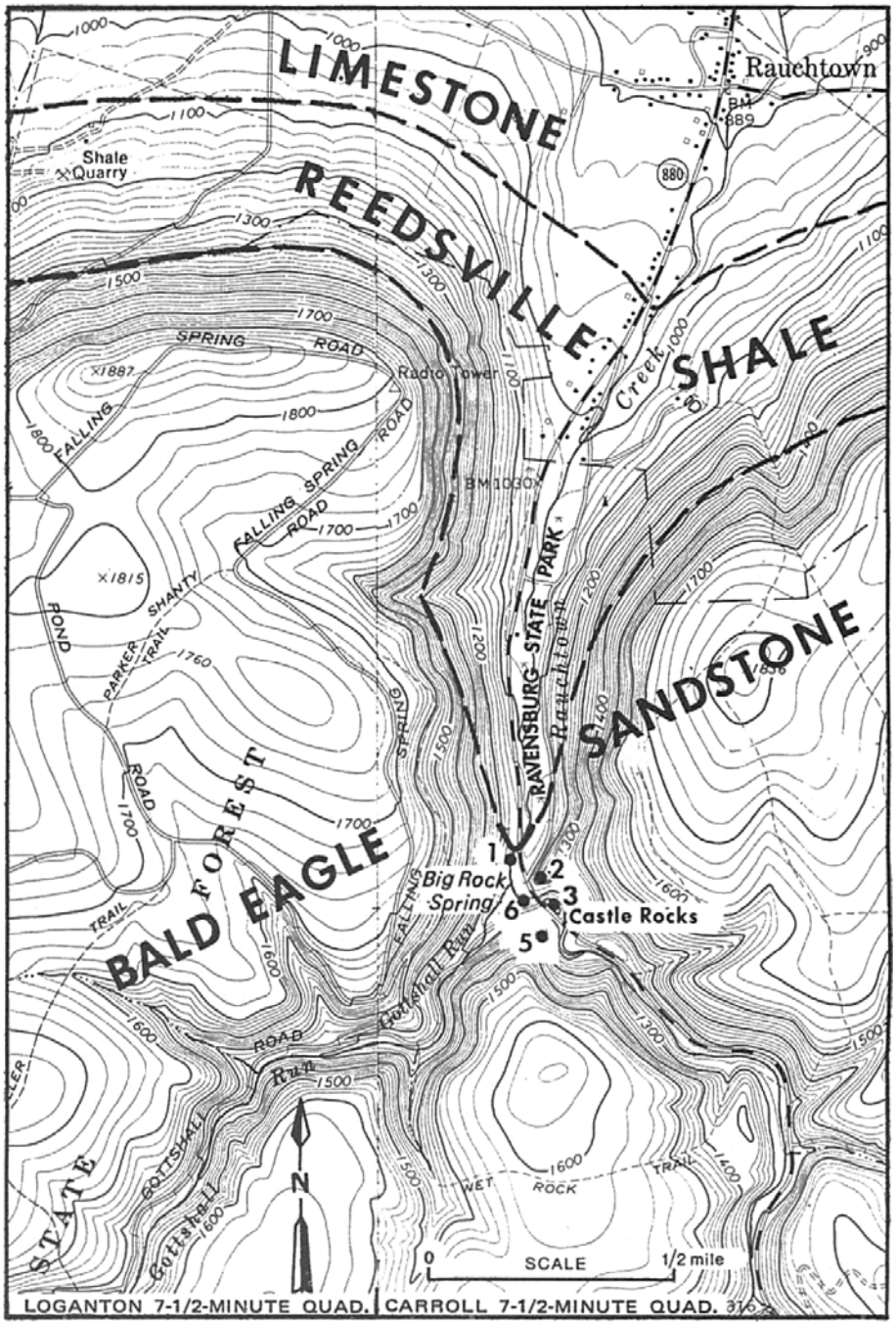


Figure 4. Crossbedding.

Origin of the Rocks of the Area

About 300 million years ago, streams flowed westward, carrying sands, clays, and gravels from highlands in eastern Pennsylvania, New Jersey, and Delaware. Most of these sediments were deposited in a series of deltas covering most of central and western Pennsylvania. This north-south-trending deltaic series formed a coastline for the shallow sea that existed then over the interior lowlands of the central United States. At times the deltas were covered with seawater, and, during these periods, layers of shale and limestone were deposited.

About 250 million years ago, these sediments, which were originally nearly flat lying, were folded as the result of intense forces within the earth, forming a series of large folds in the rock



layers. These “wrinkles” are responsible for Pennsylvania’s long, parallel valleys and mountains. Ridges and valleys seen in the vicinity of the park today are the remains of older, much higher mountains eroded to their present form through the combined action of weather and running water.

Castle Rocks

The most outstanding geologic feature in the park is Castle Rocks (Figure 5). Tall, erosional spires of sandstone are silhouetted against the sky like the towers of an ancient castle. This feature results from the weathering of the sandstone along fractures, joints, and bedding planes. Frost action, primarily, has caused the sandstone blocks to gradually break away, leaving only isolated pillars still standing. Notice the pile of rock rubble at the base of this cliff. Another slope of rock rubble may be seen at the cliff base along the inner park road (Figure 2). The same geologic process is responsible for this rock field.

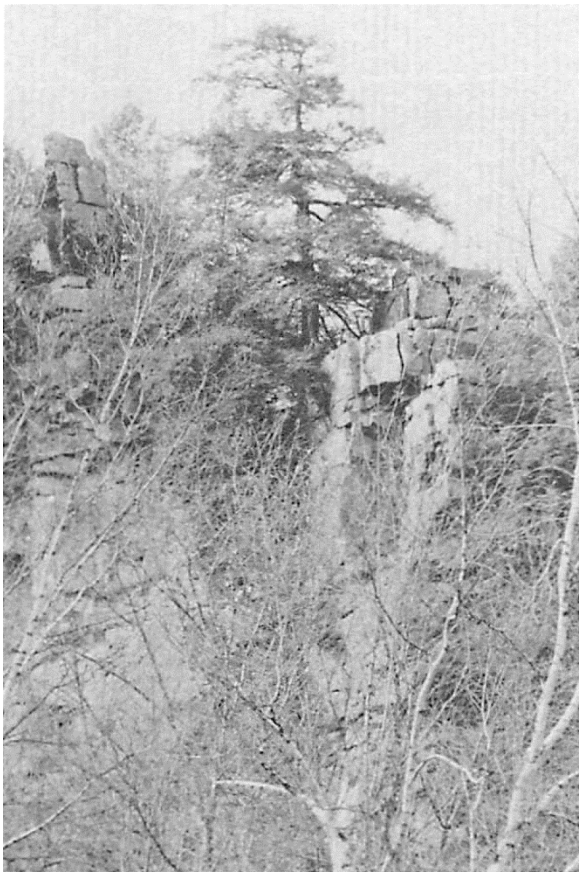


Figure 5. Tall spires of Castle Rocks.

Big Rock Spring

Most springs in Pennsylvania emerge where groundwater intersects the land surface. Passageways through which this groundwater travels in the rock are tabular openings a fraction of an inch wide that occur along fractures (joints and faults) and bedding planes. Big Rock Spring (Figure 6) is a typical spring that issues from fractures and bedding planes in the sandstone. The groundwater discharging from this spring has traveled through the sandstone from the top of the nearby ridges.

Figure 6. Big Rock Spring.

—Alan R. Geyer and
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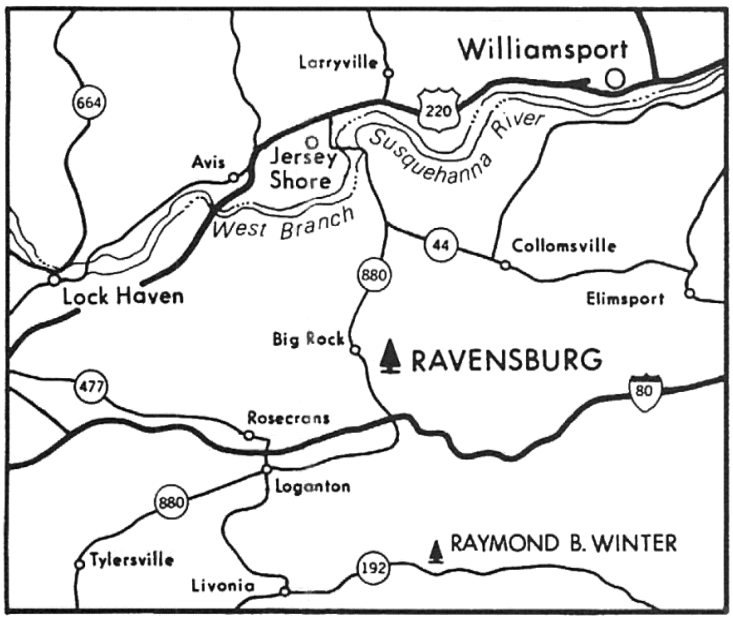
Pennsylvania Geological Survey
1980



LOCATION MAP

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PREPARED BY

Department of Conservation and Natural Resources
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