



Figure 5. Map showing major geologic provinces of Oklahoma (from Johnson and others, 1972, p. 1). Solid square indicates location of Robbers Cave State Park.

terbedded sandstones and shales and has a total thickness of 2,134 feet. Exposures of the McAlester Formation are in the southwestern and south-central parts of the area mapped (pl. 1). Shales in the road cuts along State Highway 9 are part of the McAlester Formation, along with the coals which have been mined by surface mining. Some of the mines are shown in the south-central part of the map (pl. 1).

The Savanna Formation overlies the McAlester Formation and was named for the town of Savanna, which is also in Pittsburg County, Oklahoma. The Savanna consists of brown, fine-grained sandstone beds and siltstone beds interbedded with gray-green to dark silty shales. There are 14 mappable units in the formation (pl. 1). The sandstones are up to 200 feet thick, and the shales range in thickness from 200 to 550 feet. The total thickness in Latimer County ranges from 1,470 to 1,990 feet.

Most of the rock outcrops in the park are of the Savanna Formation, the most extensive formation in the map area, with many fine exposures in easily accessible road cuts along State Highway 2 and at various localities throughout the park area. Most of the ridges are capped by Savanna sandstones, whereas valleys have formed on the shales. As the shales weather and erode, the thick overlying sandstones form large slump blocks. Some are as much as 30 to 40 feet high. Robbers Cave has formed in sandstone unit IPsv-11 (pl. 1) that also forms the high bluff

upon which cabins have been built. Rough Canyon to the west of Robbers Cave contains large boulders of Savanna sandstones. Shale at the top of the Savanna Formation is exposed along Lake Wayne Wallace and Lake Carlton.

Overlying the Savanna Formation is the Boggy Formation, named from exposures along Boggy Creek in Atoka and Coal Counties, Oklahoma. The Boggy Formation consists of brown to buff sandstones and siltstones interbedded with dark- to light-gray silty shales. There are eight mappable sandstone units with seven interbedded shales in the formation. The Boggy ranges in thickness from 700 feet in western Latimer County to 2,136 feet in eastern Latimer County. The basal sandstone is the Bluejacket Sandstone Member, which forms spectacular bluffs on the west side of Lake Carlton. The Secor coal lies just above the Bluejacket Sandstone. The Boggy Formation is present in the park only in the western part but is present also on the east side of the map area (pl. 1).

Paleontology

Paleontology, the study of life in the geologic past, relies on fossil plants and animals. The fossil