The Pryor Mountains and Raptor Country

The Pryor Mountains are located on the horizon to the southeast. The prominent cliffs and dip slopes are Madison Limestone, which was deposited in shallow seas over 300 million years ago. Along the margins of the mountains, younger tan-colored Tensleep sandstone and brick-red Chugwater Formation crop out. Canyons in the range expose older rocks, including Precambrian basement rock more than two billion years old. Crustal blocks that form the Pryor Mountains were uplifted along reverse faults about 65-55 million years ago.

Over millions of years, water dissolved deep caves in the limestone. Some open vertically to the surface, allowing cold dense air to sink down into the cave. The rock acts as an insulator, trapping the dense air and moisture underground, resulting in spectacular ice caves, such as Big Ice Cave. Other caves in the mountains have fantastic formations of stalagmites and stalactites.

About 115 million years ago, a 10-foot long dinosaur with razor-sharp claws and teeth and retractable slashing talons on its hind feet hunted in packs in this area. Lightly-built, agile and quick, this intelligent carnivore could run at speeds up to 25 miles per hour and was the perfect killing machine of its time. In 1964, on a wind-swept hill in the badlands near here, Yale professor John Ostrom discovered the fossil remains of just such a creature. Called *Deinonychus* ("Terrible Claw"), the discovery of this animal revolutionized the study of paleontology and changed our understanding of dinosaurs. Because of its unique skeletal structure, *Deinonychus* had more in common with birds than it did reptiles. The great amount of energy needed for it to survive has also led some to believe that it was warm-blooded rather than cold-blooded like its reptilian cousins. Because of *Deinonychus*, paleontologists now consider dinosaurs to have been agile, smart, and social animals rather than slow-moving and dull-witted. Fortunately for us, *Deinonychus* died out millions of years ago and no longer scours these hills for prey.

Deinonychus, *illustration by Norman Paul Dwyer.*

Geo-Facts:

- The Pryor Mountains are named for Sergeant Nathaniel Pryor, a member of the Lewis and Clark Expedition (1804-1806).
- The Chugwater Formation is named for a town in Wyoming and is easily recognizable by it brick-red color, which is caused by the oxidation of iron minerals in the rock.
- The *Velociraptors* in the Jurassic Park movies are a close relative of *Deinonychus*.

Geo-Activity:

- Imagine you are back in time when *Deinonychus* hunted in packs in this area. Can you spot any places where you might be able to hide? This dinosaur could run at speeds up to 25 miles per hour. What are some animals that are alive today that can run this fast?

Pryor Mountains, photograph by Kristi Hager.