

**A marvelous new permanent exhibit
at the Sam Noble opens a window
into an intriguing part of the state too
seldom seen and fully appreciated.**

WONDERS OF THE BLACK MESA

BY LINDA COLDWELL

On the far northwestern tip of the Oklahoma Panhandle rises a majestic, stark and arid landscape unlike any other in the state. Black Mesa is a tableland of limestone and sandstone capped with black volcanic basalt that rises 4,973 feet above sea level. It is Oklahoma's highest and driest landscape. Many Oklahomans may never make the long drive to visit Black Mesa, but a new exhibit at the University of Oklahoma's Sam Noble Museum now brings this forbidding landscape to Norman. The exhibit was made possible by a \$1 million donation from the Whitten-Newman Foundation of Oklahoma City.

Although from a distance it may seem empty of animal life, the Black Mesa area and the shortgrass prairie that surrounds it are home to hundreds of species of plants and animals. Black Mesa is a harsh environment, where rainfall is scarce and temperatures vary widely from summer to winter. The plants and animals that live there are sturdy survivors, adapted to withstand the extremes of heat and cold and to make the most of the short spring.

The Black Mesa exhibit brings this unique terrain and its occupants to the second-floor museum gallery. A simulated seasonal stream flows under enormous cottonwood trees, fabricated around the gallery's structural support pillars. There are 150 species of animals represented in the diorama, and 57 species of plants, nearly all of which were cast from plastic or metal and hand painted with remarkable accuracy and realism. The only thing that gives the exhibit away as an artificial environment is the sheer density of animals it holds. Everywhere a visitor looks, there is more to be discovered. A first glance takes in mule deer, antelope and a cougar prowling a rocky shelf. A deeper look reveals burrowing owls, a badger, and a host of lizards and snakes. An even closer look uncovers darkling beetles on the cactus,



A pair of burrowing owls perch near the entrances of the prairie dog burrows they have appropriated as living quarters.

grasshoppers and butterflies on the wildflowers and fairy shrimp in a seasonal pond.

Many of the species at Black Mesa are found nowhere else in Oklahoma, which means that this ecosystem contributes significantly to the overall biodiversity of the state.

“The Black Mesa is that special habitat that moves Oklahoma into the small group of states that are the richest in numbers and types of species of animals and plants,” says museum director Michael Mares. “With habitats ranging from the southeastern swamp forest to the mesas of the Colorado Plateau in the Panhandle, Oklahoma is blessed with a virtual cornucopia of nature. Black Mesa is key to that diversity.”

The new exhibit is as rich in information as it is in diversity. Touch-screen computer panels allow visitors to delve deeper into the stories of many of the plants and animals featured, including sound clips, photographs of animals in the wild, maps and additional information.

Stories From Black Mesa

Surviving the Drought — The scientists and exhibit designers who planned the Black Mesa exhibit focused on those features that make this ecosystem unique—primarily the lack of water and the extremes of temperature. On Black Mesa, the average yearly rainfall is 17 inches and can be as little as 8 inches in especially dry years. Seasonal ponds appear suddenly in the spring and dry up as the summer progresses. Part of the exhibit features a cross section of such a pond, providing visitors with a glimpse of the life teeming below the surface.

Animals that rely on water for part of their life cycle here are adapted to respond quickly when the water is available. Some species of amphibians, freshwater shrimp and other animals are able to withstand long periods of drought either by burying into the earth or laying eggs that can withstand dry condi-



Konrad Eek

The touch-screen computer panels fronting the long-awaited Black Mesa exhibit on the second floor of the Sam Noble Museum furnish visitors with the back stories of many of the 150 species of animals and 57 species of plants that are represented in the diorama.

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tions. When the water returns, some of these animals are able to reanimate, breed and reproduce within a matter of days. The plains spadefoot toad can burrow as deep as 15 feet to escape arid conditions and is able to remain underground for years, waiting for the rains to return.

Winter’s Strange Bedfellows — The Black Mesa diorama is designed to represent the landscape as it would appear in early October—just as animals are beginning to seek out win-



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The collared lizard, also known as a mountain boomer, is Oklahoma’s official state reptile.

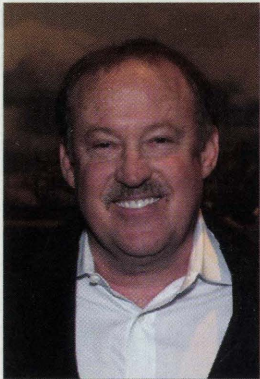
ter hibernation places. With few safe enclosures available in this windswept open country, and many species in need of shelter, hibernation can make for strange bedfellows. The exhibit features a window into a nest of hibernating rattlesnakes that share their winter den with a bull snake, a clutch of palid bats and a white-toothed woodrat. For the winter, at least, they will share their quarters in peace.

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Perched on a rocky outcrop, this mountain lion stalks a pair of mule deer below. Mountain lions, also known as cougars or pumas, have the largest range of any large wild mammal in the Western Hemisphere, stretching from the Yukon into South America.

Whitten-Newman at the Museum



Reggie Whitten

The Sam Noble Museum recently has received two generous gifts from the Whitten-Newman Foundation that funded a spectacular new addition to the permanent exhibits. The donation of \$1 million provided for the construction of the Black Mesa diorama, which opened in the Hall of Natural Wonders on March 5.

The Whitten-Newman Foundation has been a major supporter of the museum since the fall of 2007, when the organization gave \$950,000 to create the Whitten-Newman Foundation's ExplorOlogy Program. Now in its fourth year, this program provides hands-on science experiences for students and educators across the state of Oklahoma through field programs for middle and high school students, teacher workshops, outreach programs and a combined teacher/student experience during spring break.

The Whitten-Newman Foundation focuses its charitable giving on programs for young people that provide enrichment and help prevent substance abuse through education. The foundation is a private family foundation established by Reggie Whitten, his wife, Rachele Whitten, and brother-in-law Robert Newman in 2007, partly as a way of memorializing the Whittens' son, Brandon,

who was killed in a motorcycle accident in 2002. Initially, the foundation sought ways of providing educational opportunities for "the underdogs"—young people with potential that might not otherwise be recognized or supported.

From that beginning, the Whitten-Newman Foundation has grown to provide substance abuse programs, athletic camps, science education opportunities and outreach projects to Africa.

"Reggie Whitten and the Whitten-Newman Foundation are great supporters of the Sam Noble Museum," says Director Michael Mares. "Because of their generosity and willingness to give back to Oklahoma and to the University of Oklahoma, our museum's exhibits and programs have been immensely improved. We are a better museum because of their support."

For additional information about the Whitten-Newman Foundation, visit www.whitten-newmanfoundation.org.


The American Burying Beetle —

Another story showcased in the exhibit is the strange lifecycle of an endangered insect native to the Oklahoma Panhandle called the American burying beetle. When it comes time to lay their eggs, the burying beetle pairs seek out a small dead animal, such as a mouse or bird, and systematically bury it by excavating the soil from underneath the body. Once buried, the carcass serves first as a safe haven for the beetles' eggs, and later as a food source for the adults and their newly hatched larvae. The exhibit features an enlarged model of a beetle pair and mouse carcass with a description of how this miniature herculean feat is accomplished.

Racing with Ghosts —

A relatively common sight in the Panhandle is the distinctive—and speedy—pronghorn antelope. A pronghorn can run nearly 60 miles per hour. This impressive speed easily leaves all of its modern predators in the dust and leaves scientists to wonder why these animals need to hoof it at such a prodigious pace. Why evolve to run at 60 mph when a mere 40 mph would do? The answer lies in the past. More than 10,000 years ago, Oklahoma's plains were home to a predator we have come to associate with the African savannah—cheetahs.

During the Pleistocene, large cats appeared on the plains with physical characteristics adapted for running, similar to modern cheetahs. Though originally thought to be an early ancestor to cheetahs, these animals are now thought to have evolved independently from their African relatives in an example of convergent evolution. Whatever their origins, they are likely the high-speed predator that necessitated the speed adaptations in pronghorns. Though the cheetahs went extinct approximately 11,000 years ago, the adaptation for speed remains in their erstwhile prey—frustrating wolves, mountain lions and modern human hunters to this day.

The Sam Noble Museum is located on the OU Norman campus at Timberdell Road and Chautauqua Avenue. Hours are 10 a.m. to 5 p.m. Monday through Saturday and 1 to 5 p.m. Sunday. Admission is \$5 for adults, \$4 for seniors age 65 and older, and \$3 for children ages 6 to 17. Children age 5 and under are free. For more information about the museum, visit the website at www.snombh.ou.edu, or call (405) 325-4712. 



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The most recent addition to the Sam Noble Museum's permanent exhibits celebrates the harsh yet majestic landscape of Black Mesa in the far northwestern Panhandle area with its hundreds of species of plants and animals.



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A mini diorama within the Black Mesa exhibit features the bizarre lifestyle of the burying beetle, which lays its eggs on the carcasses of small mammals or birds. The mouse and accompanying beetles in this display are 12 times actual size.

Linda Coldwell is publications and promotions specialist for the Sam Noble Museum.