

## Mind-altering rock art

Drawings on the walls of rock shelters along the Pecos River, near the Texas-Mexico border, depict scenes containing human figures, animals, and various shapes and symbols of uncertain meaning. These images portray ancient shamans performing rituals that were intended to forge connections to the spirit world, according to a number of researchers.

A new analysis of plant remains at Pecos River sites, informed by ethnographic accounts of Indian groups in that region, now imbues this ancient art gallery with a hallucinogenic glow. In many of the scenes, the shamans are surrounded by jimson weed and peyote, consciousness-altering substances that have been found in Pecos River rock shelters dating to at least 4,000 years ago, assert Carolyn E. Boyd and J. Philip Dering, both of Texas A&M University in College Station.

"We have evidence in the archaeological sediments and in the art indicating great antiquity for the use of two powerful psychoactive plants [by shamans]," Boyd and Dering conclude in the June ANTIQUITY.

Pecos River rock art shows many shaman figures holding staffs attached to oval, spine-covered shapes that correspond to the prickly seed pods of a regional plant known as *Datura*, the scientists contend. In low doses, powders prepared from *Datura*, also called jimson weed, cause restlessness, disorientation, hallucinations, and high fever. Historical records cite widespread use of *Datura* by shamans in the southwestern United States and northern Mexico as early as 500 years ago.

Some Indians in that area considered peyote, a cactus that causes hallucinations when dried and ingested, to be a gift from their deer god, according to 19th-century accounts. Shamans shot arrows into the peyote cactus before cutting it

up, as if it were a deer being hunted. Deer and black dots impaled by arrows appear near shaman figures in Pecos River pictures and represent peyote, Boyd and Dering argue.

## Bridge over northern waters

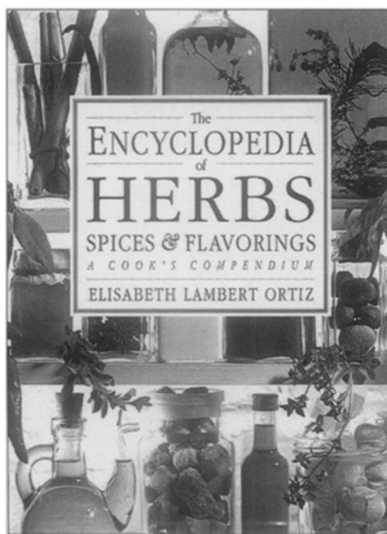
The Bering land bridge, thought to have provided a passage-way from northeastern Asia to North America for ancient New World settlers and large mammals, existed until about 11,000 years ago, according to a report in the July 4 NATURE. That's much later than some prior studies had suggested.

Although the land bridge has often been thought of as an arid grassland capable of satiating the appetites of mammoths and other large beasts, vegetation there 11,000 years ago consisted mainly of hardy plants and shrubs adapted to tundra conditions, assert Scott A. Elias of the University of Colorado in Boulder and his coworkers. Such plants could not have supported extensive grazing by large mammals, the scientists argue.

"This new evidence tells us that the big mammals probably did not linger on the land bridge," Elias contends.

The researchers analyzed 20 core samples from the floor of the Bering and Chukchi Seas. The cores contain layers of organic peat and silt that encase plant, pollen, and insect remains. Radiocarbon dates for this material indicate that vegetation typical of the modern Alaskan tundra characterized the now-submerged region from 14,000 to 11,000 years ago.

A previous radiocarbon study of seafloor sediment placed the land bridge inundation at about 14,400 years ago. But dates for those samples may have been inaccurate because of contamination by other substances in the soil, Elias holds.



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