

Amazon Cave Yields Ancient Culture

Excavations in a Brazilian cave near the Amazon River have uncovered evidence that humans inhabited a tropical locale about 11,000 years ago and that their lifestyle differed from that of their better-known prehistoric contemporaries in North America.

The new discovery, along with previous reports of other 11,000-year-old human sites in South America, challenges the theory that the first New World settlers immediately trekked inland after crossing the Bering Strait from Asia, mainly hunted big game, and moved into South America along the Andes Mountains.

Instead, the Brazilian work suggests that ancient travelers moved down the Canadian coast and entered North and South America by following major rivers, such as the Amazon. It documents the ancient presence of folks who gathered fruit, caught fish, and hunted a variety of land animals in a humid, tropical forest far from the Andes, asserts Anna C. Roosevelt, an archaeologist at the Field Museum in Chicago and director of the international scientific project.

People must have reached North America at least 12,000 years ago to have had time to settle Brazil and points farther south over the next millennium, Roosevelt holds.

"I'm delighted that this new find fits into what we know about a number of other prehistoric human sites of about the same age in South America," remarks Betty Meggers, an archaeologist at the Smithsonian Institution in Washington, D.C. "Much of the field work there has only been published in Spanish and has been overlooked by some North American researchers."

Previously reported South American sites from around 11,000 years ago lie mainly in Chile and Argentina (SN: 10/14/95, p. 250).

Findings at the Brazilian cave, known as Caverna da Pedra Pintada, include thousands of carbonized fruits and wood



Brazilian rock paintings similar in style and age to those in the 11,000-year-old cave recently discovered at an Amazonian site.

fragments from tropical trees and the remains of fish, birds, reptiles, large forest game, and shellfish. Excavations also uncovered lumps and drops of red pigment, apparently used in paintings on the walls.

Researchers found 24 stone implements, including blades and triangular spear points, in the sediment, along with debris produced during tool making.

Radiocarbon dating of 56 carbonized plant specimens and independent analyses of natural radioactivity accumulation in the sediment indicate that people visited the cave regularly from around 11,200 to 10,000 years ago, Roosevelt and her colleagues report in the April 19 SCIENCE.

Prehistoric foraging bands that frequented the Brazilian cave during that period later gave way to fishing villages, where pottery making developed, Roosevelt adds. Pottery found in the cave and at nearby sites dates as far back as 7,500 years ago and is the earliest yet documented in the Americas. Later, agricultural and complex societies flourished in the area until the time of the European conquest.

"It seems that ancient Americans around 11,000 years ago were able to adapt to a broad range of habitats, including the tropical forests of Amazonia," Roosevelt contends.

Some investigators, however, have found evidence of a more arid, open environment in the Amazon at that time, says Tom D. Dillehay of the University of Kentucky in Lexington.

Uncertainty also surrounds the lifestyles of North America's prehistoric inhabitants. Roosevelt argues that although they are often classed primarily as big-game hunters, they may have consumed more plants, fish, and small game than has been assumed. — B. Bower

Pinpoint cold saves sight, not acuity

Since its beginnings early in the baby boom, the plastic oxygen tent that serves as a womb for premature babies has saved many lives—but often at the cost of the infants' eyesight.

Now, doctors who can save a preemie weighing just 1 pound can sometimes preserve the infant's vision, though it may never be 20/20, says Earl A. Palmer of the Oregon Health Sciences University in Portland in the April ARCHIVES OF OPHTHALMOLOGY.

The key is cryotherapy—pinpoint applications of extreme cold—to the retina.

The link between oxygen and blindness was recognized in the 1940s. At that time, doctors thought excess oxygen was the only culprit. They now know better. Excess oxygen halts the growth of blood vessels in the eye. As preemies are weaned from the oxygen, cells in the retina react by issuing a chemical that triggers rapid blood vessel growth. The new, weak-walled vessels leak blood, prying the retina from its bed. This causes severe loss of vision in 60 percent of the smallest preemies.

Doctors use cryotherapy to destroy tissue bordering the retina, thereby limiting the creation of new vessels. In this way, a baby's vision can sometimes be saved.

The researchers studied 234 children in 25 medical centers. They treated just one eye in each child with cryotherapy to find out whether treated eyes fare better than untreated ones. Thus researchers could "make sure each patient gets the best treatment, not knowing which it would turn out to be," says Palmer.

At age 5, 32 percent of the children had lost all sight in the treated eye; 48 percent had lost all vision in the untreated eye. On the other hand, 13 percent of the children who retained sight in the treated eye had 20/40 vision or better, whereas 17 percent of the children with sight in the untreated eye had 20/40 vision or better.

Anthony Adamis of Harvard Medical School in Boston says that unless methods improve, saving premature babies means having more blind children. "The incidence is rising," he notes.

— S. Sternberg



Doctor examines a preemie with vision loss.

