Oldest Civilization in the Americas Revealed

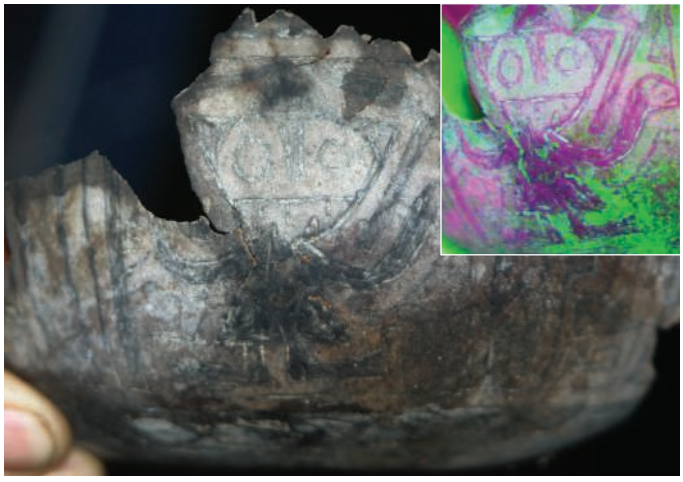
Almost 5000 years ago, ancient Peruvians built monumental temples and pyramids in dry valleys near the coast, showing that urban society in the Americas is as old as the most ancient civilizations of the Old World

BARRANCA, PERU—A few miles northeast of this small fishing town, the Pan-American Highway cuts through a set of low, nondescript hummocks in the narrow Pativilca River valley. If they were so inclined, the truckers thundering along the road could spot on the hillocks the telltale signs of archaeological activity—vertical-sided cuts into the earth surrounded by graduate students with trowels, brushes, tweezers, plastic bags, and digital cameras.

The Pativilca, about 130 miles north of Lima, is one of four adjacent river valleys in the central Peruvian seacoast known collectively as the Norte Chico, or Little North (see map, p. 35). Pinched between rain shadows caused by the high Andes and the frigid Humboldt Current offshore, this is one of the driest places on earth; rainfall averages 5 cm a year or less. Because of the exceptional aridity, ancient remains are preserved with startling perfection. Yet the same aridity long caused archaeologists to ignore the Norte Chico, because the region lacks the potential for the full-scale agriculture thought to be necessary for the development of complex societies.

Then in the 1990s, groundbreaking research directed by archaeologist Ruth Shady Solis of the Universidad Nacional Mayor de San Marcos established that such societies had existed in the Norte Chico in the third millennium B.C.E., the same time that the Pharaohs were building their pyramids (*Science*, 27 April 2001, p. 723). And in the 23 December issue of *Nature*—in what archaeologist Daniel H. Sandweiss of the University of Maine at Orono describes as "truly significant" work—archaeologists Jonathan Haas of the Field Museum in Chicago and Winifred Creamer and graduate student Alvaro Ruiz of Northern Illinois University in DeKalb reported the startling scope of the Norte Chico ruins, which include "more than 20 separate residential centers with monumental architecture," and are one of the world's biggest early urban complexes. The ruins are dominated by large, pyramid-like structures, presumably temples, which faced sunken, semicircular plazas—an architectural pattern common in later Andean societies. The new work includes 95 radiocarbon dates that confirm the great antiquity of this culture, which emerged about 2900 B.C.E. and survived until about 1800 B.C.E.

The concentration of cities in the Norte Chico is so early and so extensive, the archaeologists believe, that coastal Peru must be added to the short list of humankind's cradles of civilization, which includes Mesopotamia, Egypt, China, and India. Yet the Peruvian coast, as Shady has argued, is in some ways strikingly unlike the others. She points out that most of the Eurasian centers "interchanged goods and adaptive experiences," whereas the Norte Chico "not only developed in isolation from those [societies], but also from Mesoamerica, the other center of civilization in the Americas, which developed at least 1500 years later." The result, according to Haas, is that the Norte Chico provides a laboratory in which to observe "that most puzzling phenomenon, the invention of the state." The people of this ancient, isolated society, says Haas, "had no models, no influences, nobody to copy. The state evolved here purely for intrinsic reasons."



Gourd lord. This piece of gourd reveals a figure (shown in false color, inset) carved about 2250 B.C.E. in the Norte Chico region.

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Cities without farms

Although the Norte Chico mounds were flagged as possible ruins as far back as 1905, researchers never excavated them because, according to Ruiz, "they didn't have any valuable gold or ceramic objects, which is what people used to look for." The first full-scale excavation took place in 1941, when Gordon Willey and John M. Corbett of Harvard discovered a single multiroomed building at Aspero, a salt marsh at the mouth of the Supe River. Puzzled by what seemed to be an isolated structure, the team took 13 years to publish their data.

Willey and Corbett also noted a half-dozen odd "knolls, or hillocks," which the two men described as "natural eminences of sand." Thirty years later, in the 1970s, Willey returned to Aspero with archaeologist Michael E. Moseley, now at the University of Florida at Gainesville. They quickly established that the site actually covered 15 ha and that the natural knolls were, in truth, "temple-type platform mounds." It was "an excellent, if embarrassing, example," Willey later wrote, "of not being able to find what you are not looking for." When carbon dating revealed that the site was very old, Moseley says, "it became obvious that Aspero was something big and important."

It was also a conundrum. All complex Eurasian societies developed in association with large river valleys, which offered the abundant fertile land necessary for agriculture. And social scientists have long believed that the organization of labor necessary for agriculture was the wellspring of civilization. Aspero, on a little river that coursed through a desert, had almost no farmland. "We asked, 'How could it sustain itself?'" Moseley says. "They weren't growing anything there, or almost anything."

The question prompted Moseley in 1975 to draw together earlier work by Peruvian and other researchers into what has been called the MFAC hypothesis: the maritime foundations of Andean civilization. He proposed that there was little agriculture around Aspero because it was a center of fishing, and that the later, highland Peruvian cultures, including the mighty Inca, all had their origins not in the mountains but in the great fishery of the Humboldt Current, still one of the world's largest. Bone analyses show that late-Pleistocene coastal foragers "got 90% of their protein from the sea—anchovies, sardines, shellfish, and so on," says archaeologist Susan deFrance of the University of Florida, Gainesville (*Science*, 18 September 1998, pp. 1830, 1834). "Later sites like Aspero are

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