

At year's end, with the area soon to be ceded to Palestine, Israeli archaeologists were intensifying their search for antiquities in the vicinity of Jericho.

There was much interest in Manfred Korfmann's new exposures at traditional Troy. At Bogazkoy new Hittite buildings were cleared, and outside the archaeological territory road repairs yielded an interesting inscribed bronze sword dedicated to one of the Hittite kings.

In Egypt the well-established yearly field efforts continued, and none of the archaeologists appeared to have been affected by the political unrest in that country. In the Nile delta region, tests indicated the time of the beginnings of fertile soil deposition as about 6500–5500 BC. Farming in Egypt apparently began as a consequence, with settlement from the Levant. There still were claims of earlier plant cultivation in the southern desertic regions, however.

Egyptian and German archaeologists uncovered the tomb of an army commander of pharaoh Ramses II. At Tell el-Daba in the delta, a site linked to a pharaoh of Hyksos times, the remains of scattered mural paintings were found. The style of the paintings was clearly that of the Minoan murals of Crete.

The Greco-Roman World. A very useful updating of the current understandings of Bronze Age developments on the Greek mainland was published in the *American Journal of Archaeology*. This complemented the coverage in Machteld Mellink's "Newsletter" of the excavations dealing with the same time range in Turkey. Further surface survey work continued on Crete.

For the Classical (1st millennium BC) time range, the various national archaeological research schools were active in Greece, but little in the way of results was yet available. Excavations at sites in Turkey such as Ephesus, Pergamum, and Sardis were all well reported. At Nikopolis, Greece, site of the sea battle of Actium, ship wreckage was being recovered. Another, earlier seabed recovery was being conducted off the island of Alónnisos; the wreck was a very large, upright ship of c. 400 BC containing hundreds of jars that had held wine. Greek and U.S. experts were involved in the restoration of broken metopes of the Athenian Parthenon.

In Italy work in various laboratories continued on the Roman bronze statues recovered in 1992 from a wreck near Brindisi. On the island of Ischia, near Naples, detailed attention was being given to a large number of cremated skeletal remains, evidently Greek colonists, of the 8th–6th century BC.

The remains of a long wooden boat were exposed in Dover, England, while modern sewers were being enlarged.

Of middle Bronze Age times, the boat was believed to have been used for cross-channel voyages. *Current Archaeology* also described work on Celtic, Roman, and Middle Age sites in Britain, Scotland, and Ireland. Recovered town remains dating from some hundred years after London was founded (c. AD 50) suggested about a century of near desertion from c. AD 150 to 270. The decline was assumed to be economic. A fascinating attempt to present computer-assisted reconstructed views of the very old abbey of Cluny, France destroyed during the French Revolution, was described in *Science*.

Asia, Africa, and the Pacific. Radar images from a National Aeronautics and Space Administration space shuttle yielded evidence of the track of the Silk Road from northwestern China to the Middle East and settlement remains along the route. Much archaeological news from East Asia focused on the problems of antiquity smuggling, evidently particularly troublesome in China. One extraordinary discovery in China was an underground tomb near Xian (Sian) dating to c. 2500 BC. It had been looted twice in antiquity, but on its ceiling was a remarkable printed map of the stars and a series of constellations.

There was uncertainty about the origins of human occupation of Australia. Existing physical evidence had been determined to be at the limits of the early reach of radiocarbon dating, but thermoluminescence assays now suggested that human settlement began as early as 50,000 years ago. *Antiquity* considered the interesting circumstances for archaeological research in Australia and discussed how such efforts had changed with the growth in respect for the aboriginal peoples.

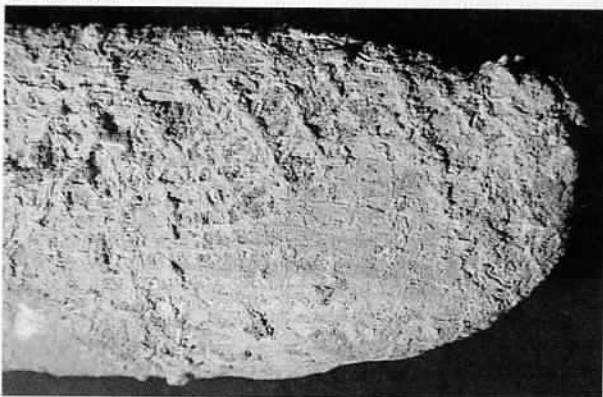
(ROBERT J. BRAIDWOOD)

Western Hemisphere. Archaeological research in the Western Hemisphere in 1993 was marked by discoveries in ancient Mayan and Mexican archaeology, new evidence for the antiquity and origins of early human habitation in North America, and, for the historic period, the unearthing of fortifications built by the earliest 16th-century Spanish explorers. Traditional archaeological discoveries were matched by findings that highlight the role of archaeology in the reconstruction of environmental conditions for areas and time periods before scientific data were collected.

Environmental Archaeology. Reliable official hurricane records exist only for the past 120 years, but the use of archaeological stratigraphic records and radiocarbon determinations of storm-deposited sand in an Alabama lake has provided evidence of major hurricanes in the area every 600 years on the average. By studying the depth of sand lenses to determine relative age and their thickness to determine wind intensity, Kam-biu Liu of Louisiana State University developed a technique that may extend the record of storm activity in the Gulf States to 6,000 years before the present. A basis also may be provided for testing models of global warming that suggested that hurricanes intensify in force and frequency with rising global temperatures.

New insights into the impact of precontact cultures on the landscape helped to explode myths of the pristine nature of these environments. Working in the lowlands of Costa Rica, multidisciplinary teams discovered evidence that America's tropical forests may not be as natural and untouched by past human activity as had been thought. Buck Stanford of the University of Denver, Colo., announced the recovery from the soil of ancient charcoal dating to 1,200–2,000 years before the present, indicating that the area's "virgin" forest was once burned and cultivated. The discovery of a buried stone hearth, burial sites, tools, and food remains supported the idea that the forest inhabitants raised yucca and corn (maize) as early as AD 800. Related studies of corn pollen by Mark Bush, a paleoecologist at Duke University,

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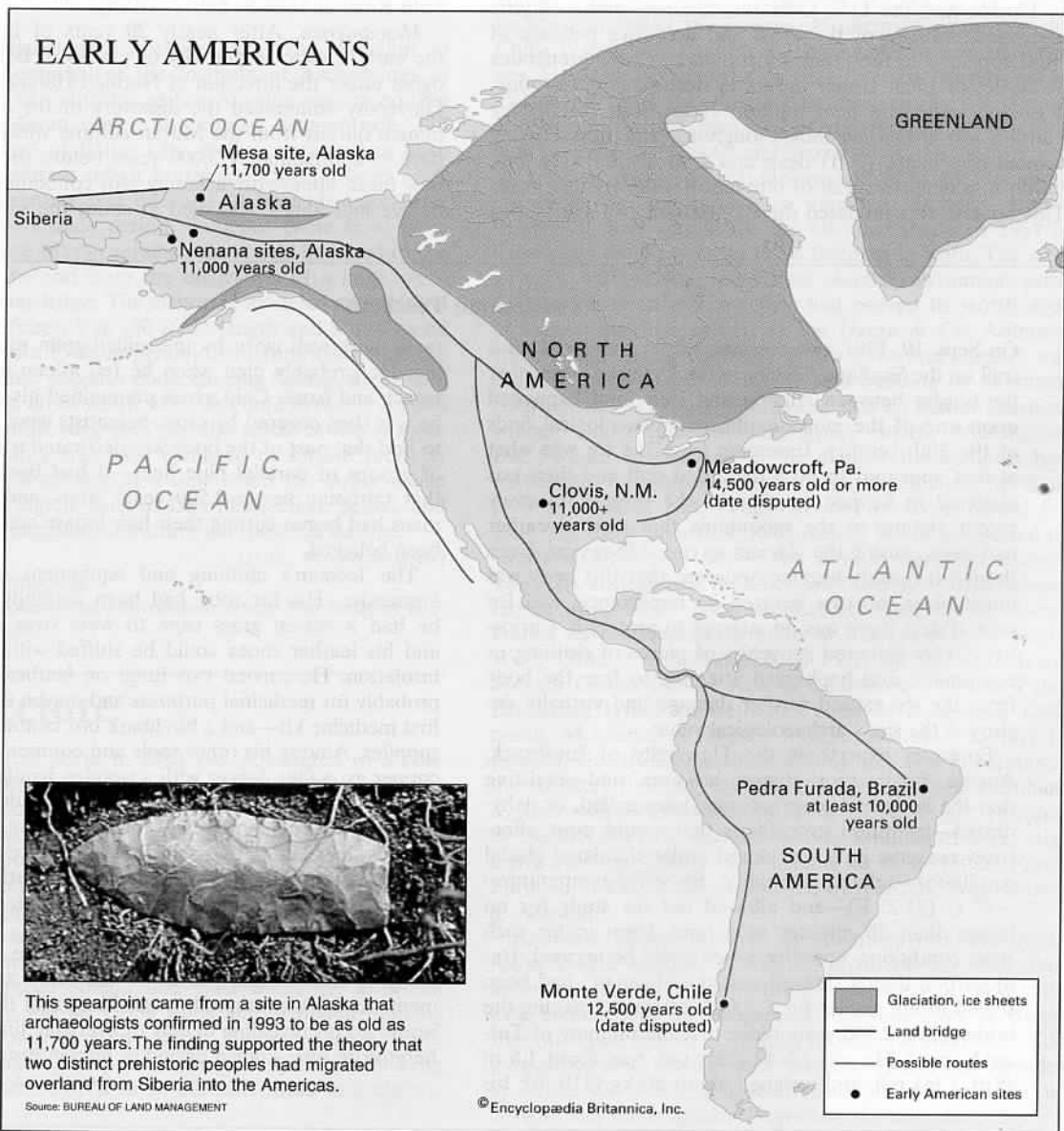
This fragment of woven cloth is the oldest sample of textile ever found. Verified in 1993, the 10,000-year-old cloth was discovered five years earlier at a dig in Turkey begun in 1963 by Robert J. Braidwood and colleagues from the University of Chicago and Istanbul University.

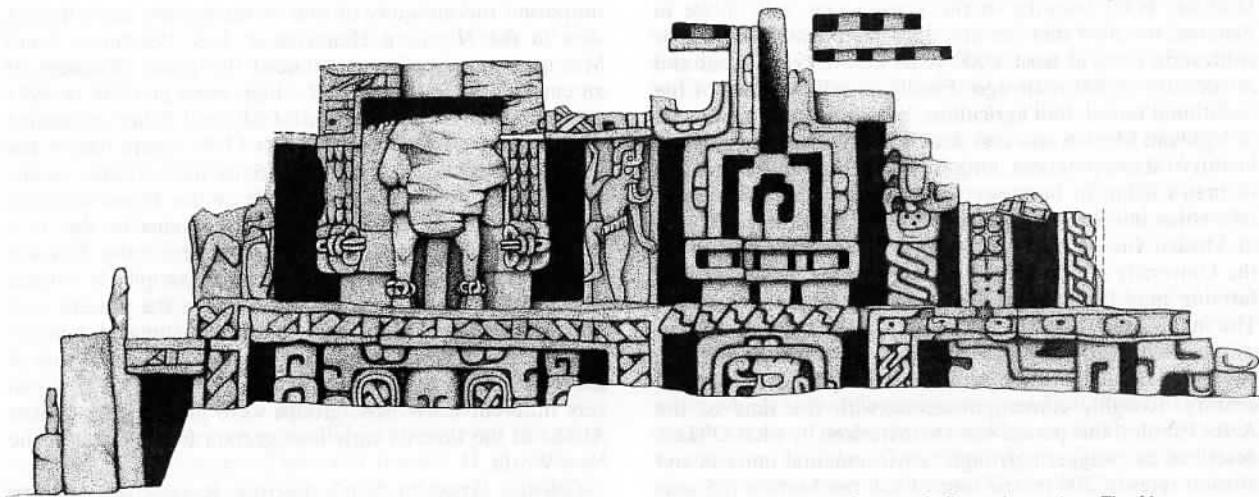
Durham, N.C., working in the Darién Gap rain forest in Panama, revealed that the area had been heavily altered by cultivation from at least 4,000 years before the present and as recently as 300 years ago. Finally, parallel studies of the traditional raised field agriculture of the ancient inhabitants of highland Mexico also cast doubts upon the environmental health of these practices, long held to represent an example of man's living in harmony with nature. A series of deep lake cores into the sediments of Lake Pátzcuaro, northwest of Mexico City, by a team headed by Sarah L. O'Hara of the University of Sheffield, England, provided evidence that farming may have induced severe environmental impacts. The investigators identified three major episodes of ancient soil erosion, with the third and most destructive dating to between AD 1200 and the arrival of the Spanish in the 16th century. Roughly contemporaneous with the time of the Aztec Empire, this period was characterized by what O'Hara described as "staggeringly high" environmental impacts and erosion rates of 208 metric tons of soil per hectare (85 tons per acre) per year.

Early Human Sites. Archaeologists working in northern Alaska reported evidence from radiocarbon datings that

supported the antiquity of one of the earliest early human sites in the Northern Hemisphere. U.S. Bureau of Land Management scientists announced the initial discovery of an early Paleo-Indian site on a high mesa in 1978. In 1993 the team, under the direction of Michael Kunz, confirmed the antiquity of this find at 9,700–11,700 years before the present. In addition, the 50 bifacially flaked fluted points found there were similar to those of the Clovis complex tools found with extinct mammoth remains in the U.S. Southwest half a century earlier. They were quite different from points found at the Nenana culture complex in Alaska, which also dates to c. 11,000 years before the present, and showed strong cultural parallels to early stone tool industries in eastern Siberia for this time period. The discovery of these two distinctive stone tool cultures suggested that two very different Early Man groups were present in northern Alaska at the time of early immigration from Asia into the New World.

Colonial Period in North America. Researchers working under the direction of Kathleen Deagan of the Florida Museum of Natural History at Gainesville announced the discovery of Spanish fortifications that appeared to con-





This 9-m (30-ft) Mayan frieze, shown in an artist's rendering, depicts a ruler, ancestor gods, dancing figures, shells, and monsters. The frieze was found on a pyramid in Belize and was dated to between AD 800 and 900.

UCLA INSTITUTE OF ARCHAEOLOGY

firm the exact location of the earliest European settlement in Florida and the U.S. Over the summer, archaeologists excavated portions of the moat and defensive palisade of what appeared to represent a fort built by Pedro Menéndez de Avilés in 1565. Under orders to destroy Fort Caroline, a French settlement near modern Jacksonville, Menéndez built his fort around an Indian longhouse structure. He dug a moat one metre (3 ft) deep and 4 m (14 ft) wide and, inside it, a defensive wall of one-metre-wide wooden posts. This Spanish fort predated the establishment of Jamestown

by four decades and the landing of the *Mayflower* at Plymouth Rock in 1620 by half a century.

Mesoamerica. After nearly 20 years of investigation at the early Classic Mayan city of Cuello in Belize, archaeologists under the direction of Norman Hammond of Boston University announced the discovery of the earliest known human burials from the Mayan culture, which appeared to date to approximately 3,000 years before the present. The new finds, apparently a family plot containing the remains of five individuals who died at about the same time, were

The Iceman Teacheth

On Sept. 19, 1991, two German hikers wandered off a trail on the Similaun Glacier in the Tyrolean Alps, near the border between Austria and Italy, and happened upon one of the most significant archaeological finds of the 20th century. Emerging from the ice was what at first appeared to be a discarded doll and then was assumed to be just another of the several relatively recent victims of the mountains that warm weather had been causing the glaciers to reveal that year. Even though it quickly became apparent that this body was much older, no one realized its importance, and for several days there was no attempt to protect it. Curiosity seekers gathered souvenirs of pieces of clothing or equipment, and haphazard attempts to free the body from the ice caused further damage and virtually destroyed the site's archaeological value.

Forensics experts at the University of Innsbruck, Austria, finally took charge, however, and—realizing that the body had been naturally mummified, or dehydrated—instituted procedures that would most effectively preserve it. It was stored under simulated glacial conditions—relative humidity: 96–98%; temperature: -6°C (21.2°F)—and allowed out for study for no longer than 30 minutes at a time. Even under such strict conditions, however, much could be learned. Radiocarbon dating showed that the “Iceman” had been sealed in the glacier for 5,200–5,300 years (making the body nearly 2,000 years older than the mummy of Tutankhamen). He was 25–40 years old, was about 1.6 m (5 ft 2 in) tall, and weighed about 50 kg (110 lb); his

teeth were well worn by the milled-grain products he ate. He probably died when he fell asleep in a small trench and froze. Cold winds mummified his body, and he was then covered by snow. Scientists were surprised to find that part of the body was decorated with tattoos of groups of parallel blue lines—it had been thought that tattooing began 2,500 years later—and that humans had begun cutting their hair longer ago than had been believed.

The Iceman's clothing and equipment were also impressive. His fur robe had been carefully stitched; he had a woven grass cape to wear over the robe; and his leather shoes could be stuffed with grass for insulation. He carried two fungi on leather thongs—probably for medicinal purposes and maybe the world's first medicine kit—and a birchbark box containing food supplies. Among his other tools and equipment were a copper ax, a flint dagger with a wooden handle, a backpack with a wood frame, and a newly made and still unstrung bow made of yew. Most impressive, however, was his deerskin quiver, the oldest quiver ever found. In it were 12 unfinished shafts and 2 expertly finished arrows, the latter demonstrating that ballistic principles had been known and applied.

Some 120 researchers in Europe and the U.S. were studying microscopic pieces of the body and equipment. As work continued, it was likely that the Iceman would go on revealing details of everyday life during a heretofore little-known period in human history.

(BARBARA WHITNEY)

found in deep sediment layers dating to the earliest phase of occupation at the site, c. 1200–900 BC, nearly a thousand years before the time period of the previously excavated burials at Cuella.

A basalt stela measuring 1.6×1.2 m (6×4 ft), originally found in 1986 during the construction of a riverside dock near the village of Mojarra, 40 km (25 mi) inland from Veracruz on Mexico's Gulf Coast, provided key evidence for the decipherment of the earliest known readable text in the Americas. The stela depicts the figure of a standing man with an elaborate headdress, bordered on the top and sides by 21 columns of hieroglyphic writing. After two years of study, John S. Justeson, an anthropologist at the State University of New York at Albany, and Terrence Kaufman, a linguist at the University of Pittsburgh, Pa., announced the decipherment of approximately 100 of a total of 150 glyphs from this example of the *epi-Olmec* writing system and the identification of in excess of 30 "logograms," or image elements, depicting the warrior king, sunrise and the stars, jaguars, and a penis, which figured in the Mayan ritual of renewal for the king and his nobles. The carved stela and text were dated to AD 159. This find led some scholars to believe that the earliest Mayan scripts developed gradually over a long period of time rather than in a burst of innovation.

Finally, archaeologists working under the direction of Richard M. Leventhal of the Institute of Archaeology at the University of California at Los Angeles announced that at least one Mayan centre, the city of Xunantunich, 112 km (70 mi) west of Belize City, Belize, appeared to have survived as a vibrant urban centre for 150–200 years after other similar centres had declined or been abandoned at the end of the Classic period. Evidence came from large quantities of late Mayan ceramics that could be dated to the 10th century AD and from the excavation of a huge, well-preserved plaster frieze. The elaborate modeled and painted facade of the frieze, 9 m (30 ft) in length and found along the west side of a 13-story pyramid structure, contained the images of a ruler, ancestor gods, dancing figures, shells, and earth monsters, all of which were executed between AD 800 and 900. Leventhal suggested that this urban centre of some 10,000 inhabitants may have managed to survive precisely because of its small size at a time when the larger urban centres in the region, such as Dos Pilas, Tikal, Seibal, and Caracol, were engulfed in warfare and political decline.

(JOEL W. GROSSMAN)

See also Anthropology.

This article updates the *Macropaedia* article The Study of History: Archaeology.

Architecture

The architectural world in 1993 was dominated to a considerable extent by the personality of the British architect Sir Norman Foster. In December it was announced that Foster, 58, was winner of the annual Gold Medal of the American Institute of Architects (AIA), the highest honour in U.S. architecture. It was the first time since 1966 that the Gold Medal, given for lifetime achievement, had gone to an architect from outside North America.

Foster, an avid aviator, was known for glittering, crisply detailed "high-tech" metal and glass buildings, of which the best known was his Hong Kong and Shanghai Banking Corporation tower in Hong Kong. His mirror-glass Willis Faber office building in Ipswich was the only British building built since World War II to be officially listed as a historic landmark.

Foster's Carré d'Art, an art museum and library, opened in early summer in Nîmes, France, on a site opposite the Maison Carrée, a Roman temple from the 1st century AD. Critics acclaimed the new structure as a light-filled, glass-walled modern equivalent of the classical temple. During 1993 Foster was also named architect for the redevelopment of the Reichstag in Berlin, the ornate former national capitol built in 1871 and burned by the Nazis in 1933. It would house the Parliament of the newly united Germany. Foster was also picked to design the American Air Museum in Duxford, England. His uncharacteristically sober Joslyn Art Museum addition in Omaha, Neb., started construction in June.

Awards. Japanese architect Fumihiko Maki was chosen in April as winner of the \$100,000 Pritzker Prize, the nearest thing in architecture to a Nobel Prize. The award was made in Prague in order to call attention to the architectural merit of that historic Central European city, one of Maki's favourites. Maki, 65, spent the years 1952–65 as a student and teacher in the U.S., then opened a practice in Japan in which he created modern buildings in bold, sculptural shapes, often finished in a surface of brushed aluminum or stainless steel that seemed bathed in light. Among the best known were the Wacoal showroom, known as the Spiral Building, in Tokyo, the Fujisawa Municipal Gymnasium, the Chiba Convention Center, the National Museum of Modern Art in Kyoto, and the Hillside Terrace Apartments in Tokyo. For the latter complex, he received the 1993 Prince of Wales Prize in Urban Design, awarded to Maki jointly with the Swiss architect Luigi Snozzi.

Other prestigious awards included the \$138,000 Praemium Imperiale for architecture to Japanese architect Kenzo Tange, 79, best known for the Olympic stadia of 1964 in Tokyo and the Yamanashi Press Institute in Kofu. The AIA gave its 1993 Twenty-Five Year Award, an annual prize for an American building that had proved its worth over at least a quarter century, to the Deere & Co. Administration Building in Moline, Ill., by Eero Saarinen. It was the sixth such award, a record, to a building by Saarinen. (During the year it was announced that an earlier Saarinen winner, Dulles International Airport outside Washington, D.C., would be enlarged in the manner the architect had envisioned, by extension of the original structure by 98 m [320 ft] at each end). The Twenty-Five Year Award for 1994 was to be presented to Haystack Mountain School of Crafts in Deer Isle, Maine, by Edward Larrabee Barnes. The AIA also picked 18 American buildings for its annual Honor Awards for good architecture. Among the better known were NationsBank Plaza in Tampa, Fla., by Harry Wolf; Canal+ Headquarters in Paris by Richard Meier; Wexner Center for the Arts in Columbus, Ohio, by Peter Eisenman; Hynes Convention Center in Boston by Kallmann, McKinnell & Wood; Buckhead Branch Library in Atlanta, Ga., by Scogin Elam & Bray; and two restorations, the Rookery Building, an 1886 Chicago classic by Burnham & Root with modifications by Frank Lloyd Wright, restored by the McClier firm, and the Furness Building of 1891, originally a college library, now named for its architect, Frank Furness, in Philadelphia, restored by Venturi, Scott-Brown & Associates.

Architect Glenn Murcutt of Australia won the Alvar Aalto Medal, awarded by Finnish architects for work that, according to the citation, "fuses ingredients of modernity with elements of an indigenous rural tradition to create structures that appear . . . locally rooted and universal." The long-anticipated Walt Disney Concert Hall in Los Angeles by Frank O. Gehry, not yet built, won an award for its design from the magazine *Progressive Architecture*.