RANDOM SAMPLES

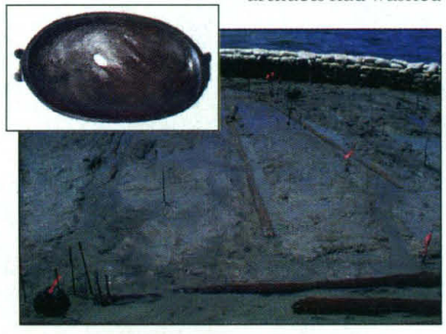
edited by CONSTANCE HOLDEN

Archaeology Find in Cuba

Archaeologists last month discovered the submerged remnants of a large house built by the Taino, an agricultural people who lived in the Caribbean between the 6th and 17th centuries. The find is "an absolute surprise," says team leader David Pendergast of the Royal Ontario Museum in Toronto: No other Taino dwelling has ever been found.

Archaeologists know very little about the Taino aside from accounts by their 16th century Spanish conquerors. Although the Taino left artifacts, such as a spoonlike spatula used for ritual vomiting, they left few material clues about how their society was organized.

Last year, Pendergast's team of Canadian and Cuban archaeologists began exploring in shallow waters just off the north coast of Cuba where occasional artifacts had washed ashore. Then last month they came upon the well-preserved remains of a large wooden house that had apparently collapsed in place. The round building, almost 20 meters across, has a pair of center posts nearly 7 meters long. The team also found palm leaves that were used as thatch. The scientists, who also recovered Taino bowls, needles, and other artifacts, say the material—much of it made from a very hard wood known as lignum vitae—is exceptionally well preserved. Pendergast wants to test the clayey soil to see if it has preservative qualities.



PHOTOS: ROM

Buried treasure. Sandbags border dig offshore of Cuba. Inset—wooden bowl.

Pendergast says the site, which extends at least 1.5 kilometers along the waterfront, shows that the Taino culture in Cuba was much more highly developed than had been thought. West Indies specialist William Keegan, assistant director of the Florida Museum of Natural History in Gainesville, says the find should "supply a wealth of information on the way [the Taino] organized their living space," as well as clues about their larger social organization.

A Cool New Kind of Star

Astronomers have revised a century-old system of categorizing stars to include a large class of objects so cool and dim that they can barely be seen by most optical telescopes.

Stars by definition have to have enough mass to trigger hydrogen fusion at their cores. Astronomers sort them on a scale running from O (hot, blue, and short-lived) on to B, A, F, G, K, and finally M (small, faint, red, and long-lived). But a new infrared survey has at last taken a close look at a dim bunch of objects scientists are calling L dwarfs. Some are brown dwarfs— "failed stars" not massive enough to support fusion—but some are believed to be actual stars.

Scientists with the 2 Micron All Sky Survey reported last week in San Diego at a meeting of the American Astronomical Society on their analysis of a group of about 20 objects all cooler than M stars. Six of them appear to contain lithium, an element that disintegrates at fusion-sustaining temperatures, which confirms them as brown dwarfs, said astronomer J. Davy Kirkpatrick of the California Institute of Technology in Pasadena. But others are believed to be faint but bona fide stars. His team hopes to confirm that by finding an L dwarf orbiting another star, which would reveal its precise mass.

Retired astronomer Philip Keenan of Ohio State University, Columbus, applauds the new designation of some dwarfs as L stars. "They certainly are different beasts," he says.

Whale of an idea. Japan, ever on the lookout for homegrown energy to reduce its dependence on costly foreign oil, next month launches a 2-year trial run for "Mighty Whale," a device that is supposed to generate clean energy by swallowing waves and spewing electricity.

The $8 million prototype, built by the Japan Marine Science and Technology Center and anchored in 40 meters of water near Gokasho Bay, has three 12-meter-high chambers. Open to water at the bottom, they have narrow air openings at the top fitted with turbine generators. Waves force air into and suck it out of the chambers, driving the rotors on the generators.

Mighty Whale's clean energy costs twice as much as that generated by oil-driven power plants, says project leader Yukihisa Washio. But he says it could be very useful for isolated communities or remote fish farms. Mighty Whale details will be posted at www.jamstec.go.jp/

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Child Care Good for the Health?

Infant humans and other large-brained primates need an unusually long amount of time and nurturing for proper development. Some scientists think it is for this reason that human females, the primary caregivers, have evolved to live longer than males. Now researchers have found that in other primates, whichever sex devotes more energy to raising offspring lives longer.

Neurobiologist John Allman and colleagues at the California Institute of Technology tested the idea that caregiving translates into longevity by analyzing records of survival rates among eight captive species of primates as well as a large human data set from Sweden.

They found that in species in which females care for the young—such as gorillas, chimps, and orangutans—the females outlived the males, with chimp females living a whopping 41% longer. Human females, who share some caregiving with males, have a smaller advantage, with women in the Swedish sample living 8% longer than men. As for siamangs and Titi monkeys, species in which the male carries the infant almost exclusively, males live 10% to 20% longer, the scientists report in the 9 June *Proceedings of the National Academy of Sciences*.

Allman says the logical explanation for the differential favoring females is that hormones offer protection from disease and other health problems. But it's not clear what the mechanism is for male caregivers. The authors say male aggression is a factor in males' lower life expectancy, but point out that male spider monkeys, who don't do much child care, die sooner than females even though they don't fight much.

In any case, other longevity researchers are impressed. "It's a fascinating comparative study," says neuroendocrinologist Caleb Finch at the University of Southern California in Los Angeles.