ARCHAEOLOGY

Joel Greenberg reports from Boston at the 81st general meeting of the Archaeological Institute of America

Sardinia: Opening a new can

Perched like a football off Italy's toe, Sardinia is yielding some significant, unexpected scores for archaeologists. "Archaeological research in Sardinia has been accelerating at such a rate that, in the past 10 years alone, two new cultures have been identified and, less than one year ago, Mycenean pottery was reported there for the first time," says Miriam S. Balmuth of Tufts University. Among the latest developments are the finds of David H. Trump of Cambridge University. Trump, who has identified previously unknown Neolithic and Bronze Age cultures on the island, recently excavated a cave called Grotta Filestru; unlike previously discovered caves, this one was close to a permanent spring of water — indicating it was a domestic dwelling from perhaps 4000 to 1000 B.C., he estimates.

"Dammit, there had to be people living in there," Trump thought when he found the cave. Before finding out, however, he had to dig through "30 to 40 centimeters of donkey and sheep manure" — the end result of the region's use over the years as grazing land. What Trump finally came upon was a 3-meter-deep layered sequence of rock and soil that appears to represent an unbroken record of Sardinian prehistory. The material—pottery, bits of metal, bones, rock and other fragments — has yet to be fully analyzed and precisely dated, but Trump is confident it may provide some of the most valuable information yet uncovered about Sardinia in that time period.

Perhaps the most surprising of recent Sardinia-related discoveries was disclosed by Harvard University language expert Frank Moore Cross Jr. Utilizing the influx of new material and "advances in paleography" in Sardinia, Cross says he has redated the previously found Nora Stele and Nora Fragment, both of which contain inscriptions indicating the presence of Phonecian culture on Sardinia.

Cross says that re-examination of the inscriptions—including comparisons with newly found ancient texts from Crete and Palestine — "pushes [Phonecian] presence in Sardinia back at least two centuries" from what had been believed. It now appears clear that "the Phonecians colonized Sardinia systematically by the last quarter of the 9th century [B.C.]," says Cross. The discovery may help to resolve the long-standing debate over the point at which Mediterranean influence began in Sardinia.

Newly acquired knowledge of script during that period enabled Cross to determine that after its discovery, one of the inscriptions had actually been published upside-down. Once properly dated and correctly read, the inscriptions were found to represent, at least in part, a record of military battle by the Phonecians in Sardinia.

There had been "two to three possibilities" as to how to read the inscriptions, Cross says. Once the correct way was discovered and the inscriptions redated, he says, "I was startled....It is increasingly clear the Phonecians were there much earlier than we thought."

The ancient mint of Athens

Excavations in Athens have confirmed the existence of a mint in use in the city between the 5th and 1st centuries B.C., reports John McK. Camp II of Agora Excavations and the American School of Classical Studies at Athens. The mint, first proposed after preliminary exploration in the 1950s, has now been found to contain more than 100 bronze coin blanks and several dozen cylinders or rods from which they were cut, Camp says. Also recovered were furnaces, basins, cisterns and large quantities of slag and flux, "all testifying to the intensive industrial activity which took place in this quadrant [southwestern] of the building," he reports.

SPACE SCIENCES

Tracking-station closings scheduled

Winkfield, England, is the site of one of the stations in the National Aeronautics and Space Administration's worldwide Spaceflight Tracking and Data Network (STADAN), through which commands and data are passed between ground facilities and numerous satellites orbiting the earth. Both NASA and the British government use the Winkfield station, but by the end of this year, NASA will have pulled out.

This will be the first step in the deactivation of most of the STADAN stations, in preparation for shifting their operations to an orbital vantage point via NASA's upcoming Tracking and Data Relay Satellite System. To become operational in 1982, the full system is to consist of one satellite over the Atlantic, another over the Pacific, an orbiting spare in case either of the others fails, and a second spare in readiness on the ground. The system has been under development for some time, and the schedule for closing the ground stations (which assumes the space shuttle's availability for launching the satellites) was recently completed at NASA's Goddard Space Flight Center in Maryland, from which STADAN is administered.

The next station to be closed is in Rosman, N.C., where operations are to end in January of 1981. The Rosman facility's primary tasks have been to support the Applications Technology Satellite 6, which is no longer working, and the Orbiting Astronomical Observatory, which will complete its mission in November of 1980. With the TDRSS at work in 1982, NASA that year will close down stations in Hawaii, Guam, Ecuador and Chile. A station in Alaska will be kept going until the Landsat 3 earth-resources satellite stops functioning, expected to be in 1984, and the station at Goddard itself will be retained until the International Ultraviolet Explorer satellite becomes inoperative, probably in the mid-1980s. Stations at Bermuda and Merritt Island, Fla., are to be converted to launch-support and range-safety functions.

The only STADAN ground stations to be retained, according to the present plan, are those in Goldstone (Calif.), Spain and Australia, where they share the facilities of NASA's three large Deep Space Network stations, used for communications with interplanetary probes and other payloads far from earth. The STADAN facilities there will monitor earth-orbiting probes in highly elliptical orbits, such as the International Sun-Earth Explorers, while the tracking satellites will handle traffic in relatively low orbits. The space agency is still studying ways to handle satellites in lofty, geosynchronous orbits.

Besides offering the advantages of an orbital viewpoint, the tracking satellites will reduce the number of people required to conduct the tracking and data-gathering operations. The approximately 650 government employees in such roles at Goddard will number only about 425 by 1986, says NASA, and the 5,300 or so contractor personnel with STADAN around the world will be reduced to about 3,000 over the next five years.

Satellite traffic rise cuts bills

"An unusual growth" in satellite communications traffic during 1979 has prompted the COMSAT Corp. to lower its rates by five percent to other U.S. international common carriers leasing COMSAT's voice, data and video channels on the Intelsat satellite system. COMSAT is the U.S. member of the International Telecommunications Satellite Consortium, which runs the Intelsat system. The reduction follows a 15 percent cut in May of 1979.

"Although continuation of such a growth rate is highly unlikely in 1980," says COMSAT president Joseph V. Charyk, "we expect some continuing traffic growth in 1980 and concluded that a rate reduction early in the new year would be appropriate." Ever-increasing use of satellite links has prompted a number of such cuts since COMSAT's commercial service began in 1965.