Archaeology

Urban planning in ancient Near East

Welcome to the spacious, not to mention airy, abodes of Titris Hoyuk, a planned community ahead of its time. Sorry, these dwellings in southeastern Turkey don't feature running water or any other newfangled amenities. Titris Hoyuk last bustled with activity more than 4,000 years ago. But its remains provide a rare glimpse of the thoroughly modern city design envisioned by early architects of urban life, according to an archaeological team excavating the 125-acre walled site.

"Evidently, the conception of what was urban in 2500 to 2200 B.C. was not all that different from what is considered urban today," says project director Guillermo Algaze of the University of California, San Diego.

The first large-scale civilization arose in southern Iraq more than 5,000 years ago (SN: 3/3/90, p. 136). City building expanded northward around 2500 B.C. However, little is known about the organization of those early urban centers and the manner in which their rank-and-file citizens lived.

Most ancient Near Eastern cities were inhabited for thousands of years—some still are. The original structures of these urban success stories are difficult to excavate because they lie under many later layers of occupation. Moreover, investigators who unearth a city's roots usually focus on palaces and other hangouts of society's upper crust.

Consider, however, Titris Hoyuk. This city's rapid rise and fall over a 300-year span, defined by a series of radiocarbon datings, left the initial buildings relatively unobscured. Fieldworkers led by Timothy Matney of Whitman College in Walla Walla, Wash., dug only about 2 1/2 feet to reach the third millennium B.C. remains.

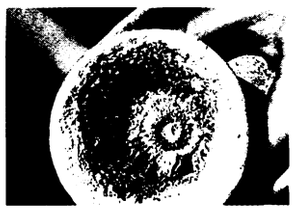
Work at Titris Hoyuk began in 1991 but intensified in 1993 with the decision to map underground remnants of the city using a hand-held magnetometer. This device records deviations in Earth's magnetic field triggered by buried objects.

Armed with magnetometry maps, which now cover more than half the site, and clues from pilot excavations, the investigators have uncovered clusters of houses in two neighborhoods situated within a larger community. Rock-paved streets were built first, followed by identical residences constructed according to standardized plans, Algaze contends. One neighborhood contained slightly larger, ritzier dwellings, he notes.

Extended families probably lived in the houses, each of which contained several cooking areas, according to Algaze. All nine houses excavated so far include stone crypts, intended for deceased family members. The tops of these chambers jut above the floors of central courtyards or rooms. Each tomb contains from seven to nine people, as well as weapons, food, and other burial items.

Titris Hoyuk's founding residents buried their ancestors at home to maintain a close spiritual bond among all family members, living and dead, Algaze theorizes. — *B.B.*

Algaze



Skeletal remains of a woman in her fifties found in a household crypt at Titris Hoyuk. Another tomb contained a fossilized flower, its stem intact, long ago placed in a vase.

Biomedicine

Death zone for stroke

Researchers know that people who live in the stroke belt, an 8- to 10-state region in the southeastern United States, face a higher-than-average risk of stroke. A new study identifies a zone within that belt where the risk of dying from a stroke is particularly high.

George Howard of Wake Forest University's Bowman Gray School of Medicine in Winston-Salem, N.C., and his colleagues define this zone as a 153-county area in the coastal plains sectors of North Carolina, South Carolina, and Georgia. People in this zone who are 35 to 54 years old face twice the national average risk of dying from stroke. That extra risk translates to about 1,000 more stroke deaths per year, Howard says.

Although the researchers looked only at deaths, they believe the risk of suffering a nonfatal stroke in this region is also much higher than average. They report their findings in the May STROKE.

Scientists had previously suggested that the below-average socioeconomic status of the Southeast accounts for the higher-than-average risk of stroke, but the new research shows that poverty does not fully explain the extra deaths.

A zone of extra-high risk (red) lies within the stroke belt (yellow).

Howard identifies some possible reasons for the excess risk. People living in the region may have inherited a genetic vulnerability to the disorder, something in the environment may trigger an increased risk, or the risk may stem from a lifestyle factor common to the area, such as smoking.

This study doesn't provide answers to the mystery. "There's no concerted national effort to figure out what's going on here," Howard says. He believes there should be. — *K.F.*

Vaccine shields chimps from HIV

A novel vaccine has protected two chimpanzees from infection with HIV, the virus that causes AIDS. Though chimps can become infected with this virus, they rarely develop any of the symptoms of AIDS.

Researchers gave two chimps intramuscular injections of the DNA vaccine, which is made from genetic material resembling that of HIV. The vaccine spurs muscle cells to crank out HIV proteins. Because of genetic alterations the researchers introduced, these proteins aren't likely to cause disease; however, they may spark an immune response, says David B. Weiner of the University of Pennsylvania in Philadelphia.

Weiner and his colleagues gave a third chimp an injection without the genetic material, then gave each of the three chimps a massive dose of HIV.

Using a standard test that measures the amount of virus in the bloodstream, the team failed to find any evidence of HIV in the two vaccinated chimps. So far, that protection has lasted a year, Weiner says. In contrast, the control chimp shows infection with HIV. The study appears in the May NATURE MEDICINE.

"This approach seems promising and clearly warrants further investigation," observes Ronald C. Kennedy of the University of Oklahoma Health Sciences Center in Oklahoma City in an accompanying commentary.

Weiner's group and other scientists are now testing the vaccine to see whether it protects uninfected people at high risk of AIDS (SN: 2/17/96, p. 100). The researchers are also studying whether the vaccine will benefit people already infected with HIV. "It appears to be boosting immune response in those patients," Weiner told SCIENCE NEWS. — *K.F.*