

Less stress in traditional Japan

Why does Japan have the lowest rate of coronary heart disease of any industrialized nation, while the United States (with more than one million serious coronary attacks every year) has one of the highest rates? Why does the rate of heart disease increase significantly in Japanese men as they migrate eastward from their homeland to Hawaii and then to California? Smoking, cholesterol, blood pressure and exercise have all been linked to heart disease. And in recent years, stress has come to be regarded as a factor in heart disease. Now, a 10-year study of almost 4,000 Japanese men living in the San Francisco Bay Area suggests that stress may be a major contributor to rising heart disease rates.

Researchers from the School of Public Health of the University of California at Berkeley have found that, on the average, Japanese-Americans in the Bay Area who have become westernized have a two-and-one-half times higher rate of heart disease than do those who continue to live a traditional Japanese life style. And those who have become most removed from their culture have five times the rate found in the most traditional groups. They reach a rate as high as for white males in the United States—one in every 300 dies of coronary causes each year.

Because Japan appears to be as modernized, industrialized and as stressful as the United States, researchers assumed that diet would explain the increase in heart disease as Japanese moved westward. Thorough examinations of the men, their diets and life styles, however, have changed that assumption. The major differences seem to be in life style and stress. The Japanese culture, sociologists point out, has built-in buffers to stress that are not found in the United States. For instance, traditional Japanese have considerable stability in their life. Many live in closely knit groups, with their future vocational places in society determined when they are young. They have strict customs to guide their actions in most situations. Also, there is more emphasis on the group than on the individual, so that a person is not preoccupied with intense competition for a place on the ladder of success. With social, personal and occupational pressures lessened, it appears that stress and the incidence of heart disease are minimized.

Death in the Land of Fire

When Magellan first sailed the strait now named for him, he could look off to port at a large island alight with bonfires. He called the island Tierra del Fuego (Land of Fire). That was in 1520. And with Magellan's arrival, the lights began to go out. The fires that dotted the island were from the hunting camps of the nomadic, stone-age Ona Indians who inhabited Tierra del Fuego. At the time, there were about 2,000 of the Indians. Now, according to a report from Chile, the last full-blooded Ona Indian has died.

Contact with Europeans meant the beginning of the end for the Ona. Sixteenth and seventeenth century explorers hunted them like animals and gave them tuberculosis and venereal disease. Charles Darwin described them as cannibalistic savages that hardly seemed human. Following this, futile attempts were made to Christianize the Ona. In more recent times, sheepherding and the discoveries of gold and oil in Tierra del Fuego have destroyed what was left of the Ona way of life.

A similar fate seems to await the Alacalufe Indians, another tribe that once inhabited islands in the Magellan Strait and the southern part of the mainland. Like the Ona, the Alacalufe refused to mix with the newcomers and were gradually forced into a small area in Chile. Only 100 members of the tribe still survive.

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Mesolithic peat makers

The blankets of peat that cover areas of the British Isles may have formed as a result of human interference in the work of nature. Trees and forests, it seems, should have grown up where some of the peat bogs are. The spread of peat bogs and the demise of former woodlands was once thought to have been due to deteriorating climate. Recently, however, researchers have suggested that the vegetation regression began at about the time of increased human activity in the area. In the Aug. 7 NATURE, J. H. Tallis of the University of Manchester suggests that peat formation was the result of deliberate woodland clearance, including the burning of forests. Continued burning off of trees may have allowed peat moss to accumulate to the point where it was no longer possible for trees to take root.

Studies have shown that much of the blanket of peat in the southern Pennines (a range of hills running from southern Scotland into central England) started to form almost 7,000 years ago. Investigation of peats from three sites there has yielded evidence of widespread burning—either in the form of microscopic carbon particles (similar to soot), small charred plant fragments or larger lumps of charcoal. Probably, says Tallis, the whole southern Pennine area is within the potential altitudinal range of tree growth, but it appears that the colonization by trees was prevented by recurrent fires. These fires could have been a natural phenomenon, he says, but it is equally plausible that they were of human origin. Numerous Mesolithic sites, for instance, have been discovered in the southern Pennines near present-day peat margins, and the area seems to have been a favored seasonal hunting ground for Mesolithic populations. The widespread use of fire may have been among attempts to increase the stocking capacity of hunting grounds and to control herd movements.

Snaketown turquoise trading

Turquoise is found just about everywhere these days, in expensive boutiques as well as in archaeological sites throughout the southwestern United States. The geographical distribution of the mineral, however, is limited to the margins of the Colorado Plateau. With the aid of instrumental neutron activation analysis (INAA) to detect trace elements, researchers are now able to tell which turquoise came from which mine. With this information, it is possible to fit together the nature of prehistoric procurement systems and to define ancient exchange and trade routes. One such study is described in the Aug. 8 SCIENCE by Anne Colberg Sigleo of the University of Arizona in Tucson.

The earliest turquoise artifacts known from the Southwest were found at Snaketown—a 121-hectare village of single-unit dwellings occupied by the pre-Columbian Hohokam culture group from about 2,000 to 800 years ago. The village is situated on the Gila River Indian Reservation southwest of Chandler, Ariz. Thirteen turquoise beads from Snaketown and multiple samples from each of 24 mines in the Southwest were tested by INAA. Trace element patterns from each of the beads were found to be similar. They correlated with that of samples from the Himalaya group of mines near Halloran Springs, Calif., but not with turquoise from other mines. This, says Sigleo, was unexpected because there are several turquoise mines with prehistoric workings geographically closer to Snaketown.

Cultures and cultural ties are constantly changing, and it is expected that trade patterns will also change with time because of political and economic pressures, or the depletion of a resource procurement area. Chemical analysis of a commonly used material such as turquoise, explains Sigleo, is one method of detecting or monitoring these changes.

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