

Revealing the secrets of China

Much of China's ancient history remains inscrutable and mysterious to the Western World, but recently the Chinese have been offering archaeological glimpses into their past. Two years ago photos and stories came out of China announcing the excavation of a 2,150-year-old tomb of a Han Dynasty noblewoman (SN: 8/12/72, p. 103). Now, Jenmin Jih Pao, the official party paper, tells of the unearthing of two more tombs—those of the woman's husband and their 30-year-old son. The tombs are located in Changsha, about 1,000 miles south of Peking.

The woman's tomb and the body it contained were almost perfectly preserved. The tomb of the husband had rotted and contained only three seals confirming the identity of the man. He was the Marquis of Tao, a minor nobleman who died 2,150 years ago. The tomb of the son had not decayed and it was found to contain hundreds of unique artifacts of the Han Dynasty. Most interesting among the relics were the ancient writings. Among them were two copies of the philosophical writings of Lao Tzu (the founder of Taoism), a treatise on the movement of the stars, a book on how to combine punishment with virtue, scientific texts on the elements, medical scripts written on 200 bamboo strips and a 4,000-word essay on how to judge horses. The tomb also contained some of the oldest maps ever discovered in China, silk paintings and 300 lacquerware pieces.

Scientists and religion

Liberal Protestant faiths (Unitarian, Episcopal, Presbyterian) produce many more scientists than do fundamentalist Protestant faiths (Methodist, Baptist, Lutheran) or the Roman Catholic faith, which is grossly under-represented in the production of scientists. These are the results of several surveys conducted in the first half of the century.

Kenneth R. Hardy of Brigham Young University has compiled data to extend such studies through 1960. He suggests that the northern states have produced more scholars than the southern states because of "the effects of a secularized, relatively liberal Protestantism in contrast to the conservative, often anti-intellectual fundamentalism of the South." Hardy computes productivity by comparing the number of doctorates to college graduates. Utah, he finds, has been by far the most productive state. In the Aug. 9 *SCIENCE* Hardy concludes that the value systems of the high producers (such as Mormons and other liberal Protestant faiths) seem to include such things as naturalism, an intrinsic value of learning, serious dedication and a pragmatism unfettered by traditional restraints.

Not in the stars

Some studies have suggested that an unusually high number of schizophrenics and manic-depressives are born during winter months (SN: 6/22/74, p. 402). Researchers at Washington University School of Medicine, however, have studied 500 patients and, using strict diagnostic criteria, found that the winter months do not produce an excess number of schizophrenics or manic-depressives. In fact, they report in the August *AMERICAN JOURNAL OF PSYCHIATRY* that all mental illnesses seem to be randomly distributed through the zodiacal signs and quarters of the year. People born under the signs of Capricorn, Aquarius or Pisces do not seem to be prone to mental illness.

Mountains and global atmosphere

The major high points on the earth—the Rocky Mountains, the Andes, the Tibetan Plateau, Greenland and Antarctica—have now been incorporated into computer models of the earth in an effort to better understand global atmospheric circulation.

In computer models being developed at the NOAA Geophysical Fluid Dynamics Laboratory in Princeton, N.J., Syukuro Manabe and Theodore B. Terpstra have found that the high regions, which thrust up into the atmosphere like pilings in a river, seem to have their greatest effect on the upper troposphere and the stratosphere. Closer to the surface of the earth, thermal effects seem to have greater influence.

The models were provided with climatic variables for the month of January, including solar radiation, water vapor, carbon dioxide, ozone and cloud cover. They showed, for example, that the European anticyclone that produces a high-pressure area over Siberia is intensified and shoved northward by the Tibetan Plateau. Yet a stationary cyclone over the Aleutians seems to survive with no help from mountains.

Year of the killer tornado

Although 1973 was certainly the "year of the tornado," with a record 1,109 reported, 1974 may well be the year of the killer tornado, according to the National Severe Storms Forecast Center.

"We will probably have fewer tornadoes this year than in 1973," says the center's director, Allen Pearson, "but through July we have had more 'maxi' tornadoes—the ones that kill—than in any previous year." A typical maxi tornado is about a quarter of a mile wide and stays on the ground for about 25 miles, but they have been known to be as wide as a mile and a half with a track up to 200 miles long and rotational wind speeds as high as 300 miles per hour.

Of the 1,109 tornadoes in 1973, only 34 were maxis, resulting in 87 deaths. In the first seven months of 1974, 725 tornadoes were reported, but 105 of them were maxis, 65 of which caused fatalities—360 deaths by the end of July.

The worst outbreak so far this year occurred on April 3 and 4, when a fusillade of 100 tornadoes, more than half of them maxis, struck in a 14-state area over a 12-hour period. More than 300 people died. A month later, 13 deaths and \$3.5 million worth of damage resulted when a tornado ripped through Drumright, Okla., followed two hours later by one fatality and \$20 million in damage in Tulsa itself.

NOAA's first new birds

After years of making do with second-hand aircraft and loaners from other agencies for its research programs, the National Oceanic and Atmospheric Administration has just ordered its first two new planes, designed from the skin in for its own environmental and weather-modification studies.

The aircraft, Lockheed WP-3D Orions, are to be delivered in May 1975 and January 1976, in time to be instrumented for use that summer in hurricane-modification work in Project Stormfury. Besides the flight crew of four, there will be provision for a "mission crew" of 12 scientists, technicians and observers, as well as seats for five extra passengers.

The \$7 million aircraft, each carrying some \$3 million worth of instrumentation, will be capable of spending 10 hours at 28,000 feet in a target area 650 miles from base, with a two-hour fuel reserve remaining upon return.