

Media Advisory, Fifth International Conference on the History of Science in China

July 11, 1988

MEDIA ADVISORY

EVENT: Fifth International Conference on the History of Science in China

DATES: August 5 - 10, 1988

Approximately 200 scholars from around the world will gather at the University of California, San Diego in August for the Fifth International Conference on the History of Science in China, the first of the series to be held in the United States.

All sessions will be open to the news media, and interviews with participants can be arranged.

One symposium associated with the conference will examine the biological and chemical warfare and research carried out by Japan during World War II.

A central question underlying many of the more than 100 talks during the main conference sessions will be the nature of economic, social, political and philosophical systems that best allow science, the search for the truth in nature, to flourish.

"In 17th century Europe, modern science emerged and distinct ethnic approaches to science began to fade," says Joseph Cheng-Yih Chen, professor of physics at UCSD and chairman of the organizing committee. "Once the fusion of achievements from various civilizations began, progress was very rapid. Today there is only one way of doing physics or math anywhere in the world."

A central question that has puzzled scholars is why the Galilean revolution and the flowering of modern science occurred in Europe but not China, which once had a thousand-year technological edge on the West.

Among those scheduled to attend and be honored at the conference is Cambridge University science historian Joseph Needham, whose pioneering dozen-volume work on the history of Chinese science first led scholars to realize that science is a global human endeavor with multicultural roots.

Needham hypothesized that modern science failed to emerge because of the bureaucratic nature of China's feudal system, its failure to develop a merchant class and the lack of an adequate theoretical basis to guide its science.

Opinions among sinologists vary, however. Not all would agree, for instance, that Chinese science and technology lacked theory.

"Evidence from such fields as algebra, optics and acoustics in early China indicate otherwise," Chen notes. "A set of bronze bells from the fifth century B.C. unearthed in 1978 has been found to represent a chromatic scale

with a range comparable to that of a piano. And the Kuantzu and Lu-Shih Ch'un-Ch'iu, Chinese classics from the fourth and third centuries B.C., contain theories that tell how to produce this set of frequencies and develop a twelve-note scale.

"We have to be careful when looking backward and saying why something didn't happen, why science took opposite historical paths in East and West," he says. "We live in a period when modern science is flourishing. Yet if we look at history, we see cycles in many cultures where science has flowered, then died back or plateaued."

Perhaps a more important question, Chen notes, is why China didn't participate in the Western scientific revolution once word of discoveries reached the East. Instead, the pace of Chinese technology fell behind that of the West, and Chinese science languished until the middle of this century when Chinese intellectuals began to receive training in the West.

Conference sessions and symposia will include:

--Language, Philosophy and Science: Did the Chinese language, with its characters written vertically, or the philosophies of Confucianism, Buddhism or Taoism have negative influences on advances in science?

--Mathematics in China after the 13th Century: Why did advances in math stagnate after the enlightened Sung Dynasty, when China became engulfed in a long period of wars and rule by the Mongol minority, and the use of counting rods died out in favor of the abacus?

--Cosmology and Astronomy: What instrumentation and what physical reasoning and mathematics did the Chinese use in collecting and interpreting data on objects such as Halley's Comet and in forming cosmological theories? Such an understanding is needed to make the records of ancient astronomers more useful to modern scientists.

--Metallurgy and Metal Technology: When did the Bronze Age begin in China? Archaeologists have found a wealth of new artifacts in recent years that are pushing back the date, although it remains relatively late compared to Europe.

Other conference topics include biology and agriculture, paper and printing, medicine and pharmacology, chemistry and alchemy, the crosscurrents of science and technology between East and West from the 17th century onward, and contributions of Chinese Americans to science and technology.

FOR FURTHER INFORMATION OR A FULL CONFERENCE PROGRAM, please call Yvonne Baskin, (619) 534-3120.

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