

세미나

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The Needham Research Institute and Chinese Science

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The topic of the lecture, assigned to me by Professor Kim Yung Sik is "The Needham Research Institute and Chinese Science." I shall, of course, follow his instruction, but to follow the recent developments in Cambridge, I ask your indulgence to permit me, as my talk progresses, to change the topic gradually into "The Needham Research Institute and East Asian Science."

It is an undisputed fact that the Needham Research Institute owes its existence to Joseph Needham's monumental work, *Science and Civilisation in China*. The first volume saw the light of day in 1954. Until now 15 physical volumes have been published, 2 volumes are with the press and 3 or 4 more are at their final stage ready to be sent to the press. There will be about 30 physical volumes when the whole project is completed. Joseph Needham is now trying to complete Volume VI Pt. 7 on Chinese medicine and the chapter of Volume VII embodying his general conclusions. Just before I left Cambridge last month, Dr. Needham was awarded the Order of Companion of Honour by the Queen of England in recognition of his scholarship and contribution to mankind.

Joseph Needham has been helped by a group of collaborators. Since the last decade he has entrusted most of the other volumes of the series to his collaborators, realising that age was catching up with him. He is now in his 92nd year and we shall consider it fortunate if he is able to complete the two parts of his series that I have just mentioned. In fact, he has told me on several occasions that he never expected, himself, to live to the age of over 90. When I suggested that it was due to his genes, he denied it saying that this could not be true because his mother died in her 70's and his father in his 60's. He attributes his longevity to ginseng. He started taking one pill a day in the 1960's, but in recent years he cut it down to one pill a week on the advice

of his late wife, Lu Gwei-Djen. He asked me to consult Professor Leong Way, an eminent professor of pharmacology in the United States, to find out whether he knows what the active principals are in ginseng that have such a beneficial effect. In fact I am looking forward to seeing Professor Leong Way early next week in Taipei at the Academia Sinica to ask him if he knows the answer. In any case I hope that ginseng will help Joseph Needham to accomplish the task that I have just mentioned.

Now let me come back to the Needham Research Institute. During his work on *Science and Civilisation in China*, Joseph Needham has, since half-a-century ago, built up a unique collection of materials on the history of science in China. Scholars from all over the world have visited Cambridge, not only to collaborate with him on the *Science and Civilisation in China* project, but also for their own researches. For example, one of the earliest visitors was Professor Nakayama Shigeru, who went to Cambridge in 1957 to use these materials while he was writing his doctoral thesis. In 1968 while Joseph Needham was the Master of Gonville and Caius College, he donated his books to a Trust and laid the foundation for a library which later became the East Asian History of Science Library. At first this library was housed in temporary premises. In 1983 the Trustees formed the Needham Research Institute which was to include within it the East Asian History of Science Library, and began to raise funds to erect a new building within the premises of Robinson College. The great majority of the funds came from East Asia, mainly from Hong Kong and Singapore, and also generous donations from both Beijing and Taipei, while the remainder came from the United States of America. The Main Building and the North Wing of the building were completed in 1986 and the South Wing in 1991.

While the primary objective of the Needham Research Institute lies in the completion of *Science and Civilisation in China*, it is taking on new academic activities. As a matter of fact, I myself as Director of the Institute, do not involve myself directly with the great Project, which is in the hands of the two Deputy Directors, Dr. Huang Hsing-Tsung and Dr. Christopher Cullen. The latter is also the Chairman of the Publications Board, which attends to *Science and Civilisation in China* and all other publications including monographs published in the Institute.

My own effort is directed to making the Institute a centre of international scholarship, developing closer links not only between Asia and the West, but also between Asian countries themselves, fostering innovative research, and providing fundamental contributions not only to the history of science in East Asia but to our general understanding of science and its role in society. The civilisations of mankind, so largely independent and isolated in the past, are now coming together into a single global unity. It is urgent, therefore, that they should know more of each other's past, and so understand one another better. Only in ways like this can permanent and universal peace, and international understanding, be brought about. I look upon the

Needham Research Institute as an outpost of East Asian cultures in the Western world devoted to the study of what those cultures have contributed to world science and world civilisation.

The Needham Research Institute has therefore taken on new academic activities such as :

- a) helping in the training of young historians of East Asian science by assisting them to secure financial grants and offering them facilities in the Institute;
- b) providing working facilities for scholars of East Asian science;
- c) creating links with institutions in East Asia in the promotion of the history of East Asian science.

The first item includes two young Japanese scholars completing their doctoral theses at the Institute and supported by grants from the Anglo-Daiwa Foundation. The National science Foundation has so far supported two American scholars to work on their Ph.D. theses at the Institute. As for the second item, the number of scholars who have utilised the facilities of the Institute is too large for me to mention. But I cannot omit the name of Dr. Jeon Sang-woon, who spent many months at the Institute in 1991 and also the beginning of this year. The most recent visitors are Professor Chen Meidong, Director of the Institute of the History of Natural Science, Beijing, Professor Liu Dun of the same Institute and Mr. Liu Jiemin of the Beijing Normal University. The visits of the first two gentlemen are sponsored by the East Asian History of Science Foundation, Hong Kong, while Mr. Liu Jiemin received a generous grant from the Li Foundation of New York.

It is the third item, however, which I would like to deal with at some length. We have cultivated an excellent relationship with both the Institute of the History of Natural Science in Beijing, and the Academia Sinica and the National Tsinghua University in Taiwan. The recent visits of Professor Chen Meidong and Professor Liu Dun form part of our plan to develop a closer link with Beijing. Scholars from the Academia Sinica have been invited by Joseph Needham to write some sections of the remaining volumes of *Science and Civilisation in China*. The Institute joins the National Tsinghua University in publishing a *Newsletter for the History of East Asian Science* and I am involved myself in a research project at Tsinghua on the *shushu* pseudo-science as well as conducting classes for post-graduate students in that university. Here I find my dual capacity as member of Academia Sinica and Honorary Professor of the Chinese Academy of Science extremely helpful. It is my duty to take care of the interests of all the parties I represent, namely Cambridge, Beijing and Taiwan. Fortunately, since history of science is a binding force, my work is made so much easier and enjoyable.

As I said earlier, the interest of the Needham Research Institute has extended beyond China. In the belief that, after having developed into one of the world's

leading economic powers, Japan should make a greater contribution to world peace and prosperity in the 21st-century by extending and developing the present knowledge of the fundamental sciences and by promoting creative academic research, the people of the three cities of Kyoto, Osaka and Nara are building a new city which will have access to traditional culture as well as modern science and research facilities. This is the so-called Kansai Science City, located in the Kei-Han-Na hills, between the three cities mentioned. Among the many projects in this new city is the International Institute of Advanced Studies. Construction of the building began last year and is expected to be completed by the end of this year. The Director of the Institute is Dr. Okamoto Michio, formerly President of Kyoto University.

It is proposed that there will be a 'Center for the History of East Asian Science' within the International Institute of Advanced Studies. The two persons charged with the responsibility of planning this unit are Professor Kunio Goto of St. Andrew University outside Kyoto and Professor Nakayama Shigeru of Kanagawa University. Discussions between the three of us have been taking place since 1990, to explore areas of mutual co-operation. The first meeting took place in Osaka in September 1990 when it was proposed to hold a workshop which duly took place in Kyoto on the 19th and 20th January 1991. The workshop, attended by 29 persons including Dr. Jeon Sang-woon, was held at the Kyodai Kaiken, near Kyoto University.

The following points directly relating to The Needham Research Institute were discussed :

a) the possibility of the Needham Research Institute helping with the production of English translations of Japanese texts on the history of science, particularly those pertaining to East Asia and perhaps also with their publication, with remunerations for translators and the cost of publication to be borne by Kansai;

b) the Japanese are very grateful that the Needham Research Institute is looking after scholars from Japan under the Anglo-Daiwa Foundation scheme, and feel that Japan should take the responsibility for seeking funds to look after Japanese scholars working in the Institute;

c) the hope that mutual help will continue between Japanese libraries, The Needham Research Institute collections, including means of enriching the Japanese holdings of the Institute;

d) the feasibility of using The Needham Research Institute as an outpost or agency for the Kansai International Institute for Advanced Studies, the parent body of the proposed Center.

Co-operation between the proposed Center and the Institute of the History of Natural Sciences in Beijing was also discussed.

I have spoken elsewhere in Japan saying that Chinese historians of science were unable to make Chinese science known to the world because their works were written

in the Chinese language. They had to wait for Joseph Needham to make Chinese science known. In the case of Japan, there are very few people in the outside world who know about, for instance, the contributions to mathematics by Seki Takakasu. And although Professor Yabuuchi Kiyoshi is indeed an eminent scholar in Japan, his work is known to very few outside the country. I have suggested that the service of the Needham Research Institute may be utilised for the translation and publication of some important Japanese works to make them known to the world.

Let me now come to Korean science. I wonder how many people in the West know about the great 15th-century astronomer and calendar expert Yi Sun-ji in the reign of King Sejong, or about the *sirhak* scholar Hong Tae-yong of the 18th century. Perhaps Korean scholars would like to do something about it. In this connection I should mention and acknowledge with thanks the generous gift of books on the history of Korean science from the Daewoo Foundation. I hope that this is the first step towards a link between the Needham Research Institute and some similar centre of Korean science. I am sure that the Institute for the History of Natural Science in Beijing, the Academia Sinica in Taipei and the National Tsinghua University in Hsinchu will be just as happy as we are in Cambridge to promote links between all our Institutes for the study of East Asian science.