

"Situating the History of Science: Dialogues with Joseph Needham", Edited by S. Irfan Habib and Dhruv Raina, Oxford University Press, 1999, Rs. 575/-.

On 24 March, 1995, Joseph Needham, the doyen of scholarship on the History of Science died at the age of ninety four. Needham, best known for the monumental and pathbreaking " Science and Civilisation in China" was responsible, more than any of his contemporaries in forcing a revision of perspectives on history of science. In 1996, the National Institute of Science, Technology and Development Studies, Delhi and the Maison de Sciences de l'Homme, Paris jointly organised a seminar on Needham and his remarkable work. The book under review is a collection of papers from that conference.

Joseph Needham was born in London in 1900 into a middle-class family; his father was a Harley Street specialist and the owner of a fine library with many works on religion and philosophy; his mother was a gifted musician and composer. He studied medicine and biochemistry at Cambridge from where he took his doctorate in 1924 and became a fellow of Caius College, an institution that was to remain his home till the end of his life. He was a trained biochemist and embryologist and he pursued his biochemical research at Professor F.G. Hopkins' laboratory. In 1931 he published his three-volume Chemical Embryology with an extensive introduction about the history of embryology -- his first contribution to the history of science.

In 1936, three young scientists from China came to the laboratory where Needham was working and started collaborating with him. One of them, Lu Gwei-djen became his assistant and informant and remained his closest collaborator ever after. Thus, it was when he was in his late thirties that Needham became acquainted with, and deeply interested in those aspects of Chinese civilisation that naturally appealed to him as a scientist. In 1942, he went to China as the director of the Sino-British Science Co-operation Office and was there till 1946. In these years, he travelled extensively and developed close contacts with many Chinese historians, including his close collaborator in later years, Wang Ling.

After the War, he spent some years at UNESCO (in fact, he is still credited with putting the "S" in UNESCO) It was at this time that he started collecting material for the first volume of the historic "Science and Civilisation in China" (SCC) .He returned to Cambridge in 1948 and continued to work on the SCC project. The huge SCC project turned out many volumes (seventeen published and at least seven under preparation) and has been rightly called one of the most complex projects ever undertaken in Chinese studies. SCC has been universally acclaimed as a work of momentous importance, providing, for the first time, a reliable and detailed inventory of a largely unexplored dimension of Chinese civilisation.

Perhaps his most striking quality was the combination of human and professional interests that normally are not united in one person. He was a scientist and yet a humanist; while being a convinced Christian, he liked to call himself 'an honorary Taoist'; he was committed to both free thought and Marxism. As an historian of science and technology he wanted to break through the parochial, Europe-centred views of most of his colleagues by disclosing the achievements of traditional China. But beyond that he wanted through that insight to contribute to a better, ecumenical world, and at that level those seemingly contradictory ideals -- scientific, humanist, religious, Marxist -- were integrated. They all are combined in the title and subtitle of a text he wrote in 1945, "History is on Our Side. Essays in Political Religion and Scientific Faith".

The central problem which emerged from Needham's investigations and what has been termed as the "Needham paradox" can be stated simply: Given that before the sixteenth century, China had a high level of development in science and technology, why is it that modern science and technology as we know it, took off in Europe rather than China? Needham himself referred to it as

“one of the greatest problems in the history of civilisation”. He was exploring this question of course challenging the dominant hegemonic view which asserted that the West was the best because of biological, cultural and religious reasons. Indeed, it had been so since the ancient Greeks. Hence it was natural that Galileo was born in Europe and not on the banks of the Yangtze. This was, it was asserted, because China had neither democratic institutions nor a scientific tradition. Needham’s research demonstrated convincingly that China had both. It had democratic traditions as well as an abundance of ancient philosophy and technology. He went further and countered the claim that though Chinese had a wealth of empirical talent they lacked abstract thought by showing that the pre-modern views of nature in China were complex and sophisticated. In his view, what was missing was the modern approach of formulating mathematically the theories of nature in the form of experimentally testable hypothesis.

As the editors point out in their introduction, “the contributions to this volume deal not so much with the history of science, as with the historiography of sciences. They seek to identify changing conceptions of history and civilisations in as much as they have a bearing on the renewal of the history of Sciences.” The basic point is to “deconstruct science in a manner that challenges the transcendent accounts and restores it to its social context”. This is in the spirit of Needham who always accorded primacy to the scientist as a social animal. In 1936, in an essay titled “ Science, Religion and Socialism” he says, “ Science does not exist in a vacuum; scientific discoveries are not made by an inexplicable succession of demiurges sent to us by Heaven; science is , de facto, involved with ‘particular social and economic theories,’ since it exists and has grown up in a particular social and economic structure”.

Shobhit.mahajan@gmail.com

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