第13届教学大赛

大英综合组总决赛 说课文本

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| *China has long been famous for its Four Great Inventions: the compass, gunpowder, papermaking and printing. And now, thanks in no small measure to the work of Joseph Needham, there is growing recognition throughout the world of the many other important inventions to have been discovered first in China.*  **Joseph Needham and “China Firsts”**  *Steve Bale*  ***1*** By any measure, the rapidity of China’s progress in science and technology in the last two decades has been nothing short of astounding -- the airports, the high-speed rail network, the subway systems, the 4G and increasingly 5G connectivity, the electric-vehicles and the “cashlessness”, among others.  ***2*** The growing fascination for all things Chinese has spurred a wave of interest in Chinese history. One of the popular subjects is ancient China’s technological superiority. Long-overdue news of China’s “four great inventions” – paper making, printing, gunpowder, and the compass – has at last reached large numbers of people in the Western world.  ***3*** The story has travelled far and wide. But, as is so often the case with stories, very few people know the name of the storyteller.  ***4*** This would not have worried Joseph Needham (1900-1995) in the slightest. He was fully focused on one, albeit Herculean task: To give China the long-overdue respect it deserves for its scientific contributions to humankind.  ***5*** Joseph Needham studied biochemistry at the University of Cambridge under the tutelage of Sir Frederick Gowland Hopkins, who would be jointly-awarded the Nobel Prize in Physiology or Medicine in 1929. Needham was a brilliant student and equally exceptional researcher, who would go on to author more than 100 scientific publications between 1921 and 1942. Surely, then, it would only be a matter of time before he followed Sir Frederick’s path all the way to the Nobel rostrum.  ***6*** Perhaps he would have, had he not met three young Chinese students who had arrived at Cambridge in 1937 to pursue doctoral research in biochemistry, including Lu Guizhen, who would become his second wife in 1989.  ***7*** Lu ignited his intense passion for studying Chinese characters, which he went on to describe as, *“… A liberation, like going for a swim on a hot day. [For it gets you] entirely out of the prison of alphabetical words and into the glittering, crystalline world of ideographic characters.*” Lu also fired Needham’s fervent interest in China’s long and illustrious history in numerous fields of science.  ***8*** With his strong scientific background and language proficiency, Needham was dispatched by the British government in late 1942 to head the British Scientific Mission in China. For the next six years he traveled around the country by all means of transportation, including jeeps, junks, wheelbarrows, camels, litters and goatskin rafts, collecting obscure, secondhand books on traditional science that became the basis of his extensive and unusual library.  ***9*** Many scientists and others he met were keen to talk about China’s incredible science history. They also introduced him to the literature that provided the all-important evidence that supported the many extraordinary stories.  ***10*** The greatest moment of enlightenment came at the ancient Mogao Caves, where Needham saw with his own eyes that the date appearing on the Diamond Sutra found in the “Library Cave” corresponded to the 11th May 868 in the Gregorian calendar. Even more remarkable was that it was not hand-drawn, but printed…587 years before the first book was printed in Europe.  ***11*** This was the “China first” that inspired Joseph Needham to embark on what would be a more than 50-year mission to dispel a long-held view in the West that China had neither science nor made any contribution to modern science, and to persuade the world that China had been the home of the world’s most advanced ancient civilisation by far.  ***12*** His experiences and rich encounters in China convinced him that the plan to write a “single slim volume” on the history of science in China needed to be re-thought*: “During my time in China I realised that one volume would not be enough, and that it would probably have to be seven,”* he wrote.  ***13*** Back in Cambridge, Joseph Needham began to type the pages that would become the monumental *Science and Civilisation in China*. He was surrounded by mountains of beloved books from numerous Chinese sources. A kid in the world’s biggest and best sweet shop:  *“What a cave of glittering treasures was opened up! … One after another, extraordinary inventions and discoveries clearly appeared … often, indeed generally, long preceding the parallel, or adopted inventions and discoveries of Europe. … Wherever one looked, there was ‘first’ after ‘first.’”*  ***14*** Indeed, there were so many “firsts” after “firsts”, including those in chemistry, mathematics, navigation, medicine, botany, mechanics, civil engineering and agriculture, that, although the plan for seven volumes didn’t change, volumes 4 to 7 were split into 24 parts. Several of these were completed by academics from the Needham Research Institute and published after his death in 1995.  ***15*** The final book in the collection, *Science and Civilisation in China, Volume 7, Part II: General Conclusions and Reflections*, lists the 262 “firsts” that were described in earlier volumes of the work.  ***16*** Students of China consider Dr. Needham’s work a singular achievement and have compared it to that of Darwin and Gibbon in its size and scope. The historian Jonathan Spence wrote in 1982 that *Science and Civilization in China* was “the most ambitious undertaking in Chinese studies during this century.”  ***17*** On March 24th, 1995, Joseph Needham died at the age of 94. The world lost not only one of its greatest scholars of the 20th century, but also the most renowned bridge builder between the East and the West of our time.  ***（877 words）*** |