The Life and Work of Famous Chinese Mathematician Loo-keng Hua

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Professor L. K. Hua had a dynamic career. He is a distinguished and outstanding mathematician in the world as well as in China. He is the founder of the modern mathematics in China, and led the Chinese mathematics for a long time. His life is eventful and interesting from a self-taught individual into a world-reknown mathematician. His story educated and encouraged several generations in China. He is so famous in China that if you talk about mathematics or mathematicians of China to some people in the world, usually they will speak about L. K. Hua. If you have an opportunity to visit the campus of schools or universities in China, you may find the picture of Professor Hua in their classroom, and quoted some of what he said with his picture, for example; “Cleverness comes from study, natural talent lies in persistence”, “Fist never need to be thrown, tune never need to be hummed”, etc. If you go to a post office to buy a post stamp, perhaps you get a stamp with the picture of Hua. If you walk around on the campus of some institutions in China, you may find his statues. For example, at the campus of Tsing-Hua University, at the campus of University of Science and Technology of China, at the Institute of Mathematics, Academia Sinica, at his hometown, Jintan county, etc. And you may find also some schools that have been named by his name, and some Chinese mathematics competitions have been named by his name, etc. If you watch TV at your hotel in China, you may find some TV shows which describe his life or his story. However, Professor Hua had big influence in China.

Now I like to give a brief outline of his life.

Professor L. K. Hua was born on November 12, 1910 in Jintan county in the south of Jiangsu Province of China. His father managed a small family grocery store. How small this family grocery store was? Hua told me that most customers were poor people. They always bought only one cigarette and had to borrow a light to light it with. Hua’s family was too poor to allow him to enrol in senior middle school when he graduated from Jintan junior middle school. He then attended the Shanghai Chung-Hua Vocational School where he completed one and a
half years of its two-year accounting course. He was forced by the poor circumstances of his family to leave school at the age of fifteen and return home to help his father in the family shop. He could only learn mathematics from few books in his spare time. He was so interested in mathematics that he could not pay full attention to the shop. Of course, his father was unhappy with him and often threatened to burn his books.

In 1927, Hua got a job as a clerk in Jintan middle school and married Wu Xiao-yuan. They had a daughter in the following year, and there are also three sons and two more daughters. In 1928, Hua was struck by typhoid, followed by arthritis which burdened him for life with a lame left leg.

Hua published his first paper in the journal *Science* (Shanghai) in 1929. His second paper *On the incorrectness of Su Jia Ju’s paper* appeared in the same journal in the following year. This paper was noticed by Professor C. L. Hsiung, the chairman of the Department of Mathematics of Tsing Hua University in Beijing. Of course, Hsiung had never heard of anyone called Loo-keng Hua. Later, a Jintan born teacher in this department, P. C. Tang, informed Hsiung that Hua was not even a middle school graduate, but a mere clerk in a small village. Hsiung was impressed and invited Hua to Tsing Hua University as a clerk in his department in 1931. Hua was appointed departmental assistant in the next year. Then he was promoted to the rank of a lecturer and made a research fellow of the China Cultural Foundation in 1934. During this period, his contemporaries at Tsing Hua who were to become distinguished mathematicians were S. S. Chern and P. L. Hse. Hua’s initial research interest was in Waring’s problem in number theory.

In 1936, N. Wiener recommended Hua to G. H. Hardy, and Hardy invited Hua to visit Cambridge, England. Hua had an opportunity to discuss with several young mathematicians in Cambridge, among whom were H. Davenport, T. Estermann, R. A. Rankin and E. C. Titchmarsh. With at least fifteen papers written during his Cambridge period it is obvious that he benefited much from these mathematicians who remained his life long friends.

In July 1937, Japan invaded China, Tsing Hua University together with Peking University and Nanka University had to be evacuated to Kummin in Yunnan province where they formed the Southwest Associated University, and Hua returned from Cambridge to become a professor there from 1938 to 1945. His research works had broadened to include the geometry of matrices, automorphic functions, several complex variables and group theory.