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In Memoriam: Tang Chung Chang (C. C. Tang), 1905-1993

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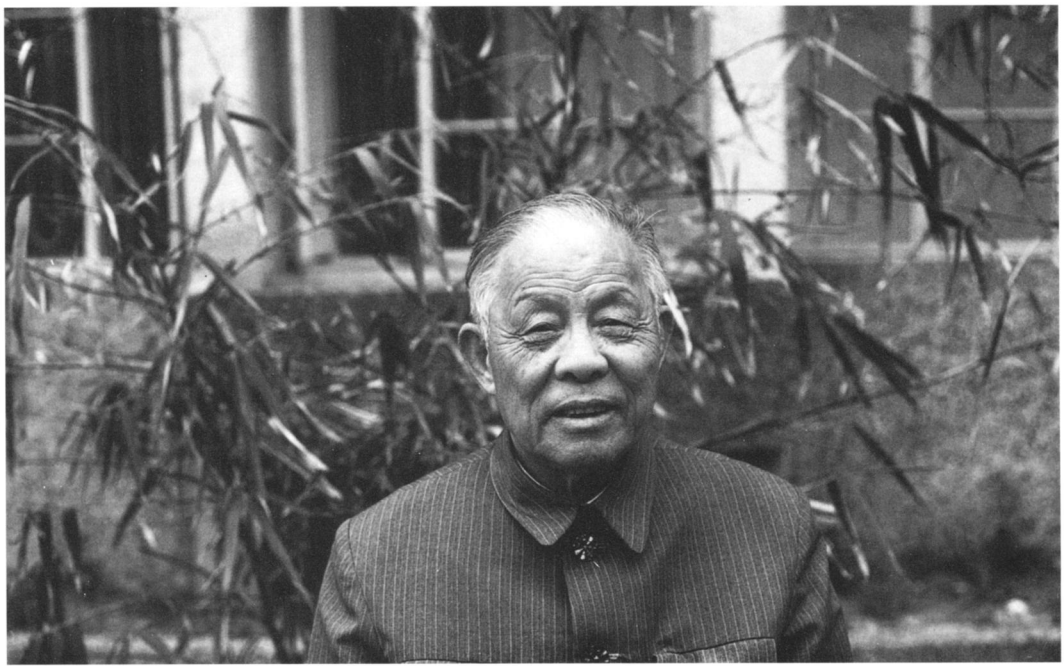
IN MEMORIAM

TANG CHUNG CHANG (C. C. TANG) 1905–1993



Professor Tang Chung Chang at Xiamen University in April 1985.

On 21 July 1993, Tang Chung Chang, also known to his colleagues as C. C. Tang, died at the age of 88 in Xiamen, his home in Fujian Province, People's Republic of China. Professor Tang was known in his country as a leading biologist and helminthologist, and he was honored internationally. His life's work was devoted to the furtherance of the understanding of helminthic organisms, especially those associated with some of the diseases that had a grave impact on the people of Fujian and those elsewhere in China.

Tang Chung Chang was born in 1905 in Fuzhou, the capital of Fujian Province. When he was 8 mo old, his mother died, and he lost his father, Tang Zi-tin, a doctor of traditional Chinese medicine, when he was 12. With funds he earned himself, he was able to enroll in the Middle School of Economics at Fuzhou. In 1923, he entered Fujian Christian University, Fuzhou, but because he had to seek part-time employment and due to a severe illness, several years passed before he obtained the undergraduate degree in 1931. His thesis (unpublished) was entitled "Insects in Chinese Materia Medica."

At the University, Tang was deeply influenced by the entomologist (and zoologist) Claude R. Kellogg, who taught the courses in invertebrate zoology, including the course in parasitology, and whom he assisted in the field and in the laboratory. Professor Kellogg welcomed the students into his laboratory; Tang observed the experimental work concerning *Nosema bombycis* in silkworms and was much impressed. He took his first course in parasitology from Professor Kellogg.

During the last 2 yr of his studies, Tang had become ill with a pulmonary disease mistakenly diagnosed as tuberculosis, and thus was obliged to leave the University; 2 yr were spent in recovery in the hospital and at home, but he was able to graduate 3 mo after he finally reentered as a student. He had continued to study biology during the time of his convalescence, and he was determined then that upon recovery he would try to devote himself to work relating to human health. At the hospital he had become acquainted with other patients, and one in particular drew his interest—an individual who was being treated for schistosomiasis, having become ill after he had immigrated to Fujian Province. No pathogenic schistosome had been reported in Fujian, but the information from that patient led Tang to consider that *Schistosoma japonicum* might be indigenous to the province.

Tang began graduate study in the University's Institute of Science. There, during the years 1932–1939, he taught classes in biology and also undertook research on *S. japonicum.* In work in the field, he discovered an endemic focus of the trematode (a watercourse called by the local people the "sorrowful stream") and identified the snail that served as intermediate host. The snail was described by the American malacologist Paul Bartsch as *Katayama tangi* (now *Oncomelania hupensis tangi*; Proceedings of the Biological Society of Washington, **49:** 139–142, 1936).

The era was one in which much attention was given to the cycles of helminths and to the epidemiology of tropical parasitic diseases; particularly severe problems existed in southern China. Ernest Carroll Faust and Reinhard Hoeppli were among those who went to China to study those conditions. To investigate diphyllobothriids and to collect other parasites with Professor Kellogg (Faust et al., American Journal of Hygiene, **9:** 560–583, 1929), Faust, then working at the Peking Union Medical College, visited Fujian, and C. C. Tang served as his assistant in the field. That association led to further cooperative work; 3 reports by Faust and Tang were published (description of a species of *Syngamus,* Parasitology, **26:** 455–459, 1934; new species of aspidogastrids, Parasitology, **28:** 498–501, 1936; and information on strigeids in Livro Jubilar Professor Lauro Travassos, pp. 157–168, 1938). Through Dr. Faust, C. C. Tang met Professor Hoeppli, who was then director of the Department of Parasitology at Peking Christian University, and he joined Hoeppli's department to work for several months in 1936 and for a 2-yr period from 1940 to 1942, continuing his investigation of the epidemiology of *S. japonicum.* Peking Christian University closed with the invasion by the Japanese in 1942, and Tang returned to Fujian Christian University (the University had moved from the provincial capital on the sea to Shaowu City, in the northwestern part of the province). Five years of great difficulties followed.

After the war, in 1948, perhaps with Hoeppli's support, Tang Chung Chang received a grant from the World Health Organization to enable him to undertake study in the United States. He began work on the M.S. degree at Johns Hopkins University, studying under the guidance of Professor W. W. Cort in the School of Hygiene and Public Health. Because of his prior accomplishments in parasitology (by then he was author or coauthor of 17 publications), Tang was able to complete requirements for the M.S. degree in 1 yr. His Master's thesis, entitled "Sweet-potato cultivation and hookworm disease in Fukien, South China," was published in the American Journal of Hygiene (**50:** 236–262, 1949). In 1951, Tang named 2 trematodes in honor of his mentors: *Ornithobilharzia hoepplii* and *Cortrema corti.*

Tang returned to China in 1949. He held professorial positions at Fujian Christian University, 1949–1950; at Fuzhou University, 1950–1953; Fujian Teachers' College, 1953–1970; and at Xiamen University, from 1970 to the time of his death. The Parasitology Research Laboratory now at Xiamen University was founded in 1956 by Professor Tang as part of the Department of Biology, Fujian Teachers' College in Fuzhou; the Laboratory was relocated to Xiamen University in 1972.

Professor Tang was one of the founders of the Chinese Society of Parasitologists, which was organized at Xiamen in 1985. He was author of the first reports in volume 1 (1964) of Acta Parasitologica Sinica and in Acta Parasitologica Medica et Entomologica Sinica, a journal established in 1990 by the Chinese Society of Zoology and the Chinese Society of Entomology. He was elected to membership in the Chinese Academy of Sciences in 1980.

Tang Chung Chang was author of 80 scientific reports distinguished in text as well as in the excellence of the illustrations. His daughter, Tang Chong-ti, was coauthor of many of those contributions. Together they wrote the first comprehensive volume concerning nematodes to be published in China: Nematology of humans and domestic animals, Sciences Press, Beijing, 1987, 774 p. (The original work—a great handwritten volume—my wife and I were privileged to see in 1985 at Xiamen, before it was sent to press.) A second monograph, concerning trematodes, will be completed by Tang Chong-ti. In addition to his scientific work at Xiamen University, Professor Tang supervised the studies of numerous graduate students.

Professor Tang was the recipient of many honors during his long life. Despite personal tragedies and suffering during the war, he never lost the objective view of the scientist, nor did he lose his enthusiastic spirit and dedication. The volume "Selected works of the late professor C. C. Tang" was published in his honor in 1994 (Sichuan Education Press, 774 p.); it contains 50 of his original reports, in Chinese or in English, as well as a great deal of detailed information about his life and work. Professor Tang's wife, Guo Lu-yu, died in 1986. His daughter, Professor Tang Chong-ti, is the present Director of the Parasitology Research Laboratory at Xiamen University.

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