

BOOK REVIEW

Tu Youyou and the Discovery of Artemisinin: 2015 Nobel Laureate in Physiology or Medicine *by Yi Rao, Daqing Zhang and Runhong Li*

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This short book presents the remarkable story of artemisinin – the most important new anti-malarial drug of the past fifty years – from the justifiably proud and quite nationalistic viewpoint of the Chinese who discovered and developed it during the turbulent Cultural Revolution of the 1960s and '70s. It rightly highlights Professor Tu Youyou, who led much of the scientific and initial clinical work, and includes her speech when accepting the Nobel Prize in 2015. The focus is on the political, managerial and military organisation of research in the People's Republic of China at that time, whereas the science involved is virtually excluded.

The hunt for new anti-malarials was initiated by Chairman Mao and Premier Zhou in 1964 at the request of the Viet Cong, whose soldiers in the Vietnam War were badly affected by chloroquine-resistant malaria. Tu Youyou and her colleagues followed a weak lead in the ancient Chinese literature that a solution obtained by ringing out *Artemisia annua* (sweet wormwood) in cold water could cure intermittent fevers. There followed about ten years of difficult work to identify and study the novel compound artemisinin and its derivatives, including human safety tests the researchers undertook on themselves.

The book suffers from a number of limitations. Much of the information in the various sections is duplicated. The absence of a table of contents, an index, and almost any references detracts from its capacity to reveal an outstanding story of drug discovery and personal courage. There are, however, lengthy appendices listing the managerial structure of the Chinese research effort and the many Chinese institutes involved (in English and Mandarin), and a calendar of the development of artemisinin in China.

The book's value lies in showing how groups of researchers, rather than mainly unnamed individuals, overcame the problems caused by rigid, centralised control in a country disrupted by the Cultural Revolution and with few sophisticated scientific resources. Progress to the new medicine is listed in outline but not in detail. The eventual success is presented as a triumph of Chinese nationalism based on Traditional Chinese Medicine. The artemisinin story is a case study in political management circumvented by individual achievements that remain largely unacknowledged.

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