

Thread of the Silkworm

Iris Chang
BasicBooks, New York; 1995

by **Judith R. Goodstein**

The period we know as the McCarthy era touched many aspects of American life, not the least of which was science and the scientific community. Weighed down by Cold War fears, Americans took refuge in the anti-Communist movement that spread across the country after World War II. In this atmosphere, spurred on by alumni, trustees, and congressmen, college administrators often dealt harshly with faculty whose politics became a public issue. Professors accused of being Communists lost research grants, passports, and travel privileges, and were forced to appear before government committees investigating subversive activities. Some university professors lost their jobs; others had worse things befall them.

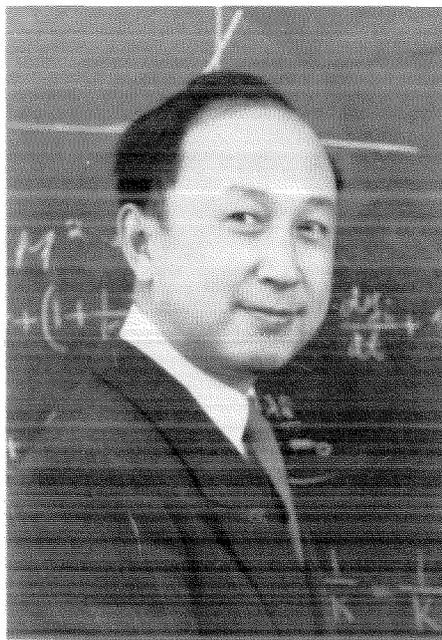
At Caltech, the Red scare also played havoc with individual lives. Jet Propulsion Laboratory cofounder Frank Malina was one example. In 1946 Malina suddenly took a leave of absence from the lab, joined UNESCO in Paris, and remained overseas. Sidney Weinbaum, a gifted mathematician, musician, and chess player, was less fortunate. Weinbaum received his PhD at Caltech, worked in Linus Pauling's laboratory for 12 years, and had just started working for Bendix Aviation in 1941 when he was first accused of membership in the Communist Party. To his own surprise, Weinbaum was cleared for secret work

from 1941 to 1949, by which time he had a permanent job at JPL. His real troubles started in 1949, when he got a telephone call from JPL asking him to fill out a new security form, which included listing all the organizations he had ever belonged to. The FBI wanted him to supply the names of people he had known and associated with in the late 1930s; when he refused, he was tried and convicted of three counts of perjury and one of fraud in denying he was a member of the Communist Party. Then 52, Weinbaum spent four years in jail; when he left prison in 1953, his scientific career was finished.

Tsien Hsue-shen, a distinguished scientist with impeccable credentials in aeronautics and jet propulsion and a friend of Malina and Weinbaum, was another casualty of the Red-baiting fifties. *Thread of the Silkworm*, by Iris Chang, a freelance writer, is the first full-scale biography of Tsien's life. In her well-documented book, Chang draws on all her skills as a reporter to flesh out his story, using interviews with Tsien's former students, classmates, and colleagues in this country and in China, as well as FBI reports and Army Intelligence records in U.S. Customs files and the National Archives, recent articles about Tsien published in China, and documents and letters in presidential libraries and university archives, including Caltech's.

The starting point for anyone studying Tsien is the writings of Milton Viorst, and Chang relies heavily on them to anchor her story. Tsien himself, who lives in Beijing, declined to be interviewed by the author. "One should never write a book until he is on his deathbed, because he won't live to regret

**Tsien Hsue-shen
at Caltech in the
early 1950s.**



it," Tsien is quoted as having once told a graduate student.

Tsien's story goes something like this: Born in China in 1911, he received his BS degree (in railway engineering) in Shanghai in 1934, his master's degree at MIT in 1936, and his PhD in aeronautics at Caltech in 1939. A protégé of Theodore von Kármán, Tsien worked alongside Malina on military rockets during the war, consulted for Aerojet on rocket engines, and served as a member of the air force Scientific Advisory Board from its inception in 1945.

After the war, Tsien joined the faculty of MIT, then returned to Caltech in 1949 to become the first director of the school's new Jet Propulsion Center. He also took the necessary steps that year to become a U.S. citizen. By then, a series of political events—ranging from the trial of Alger Hiss and the Russian detonation of an atomic bomb to Mao Tse-tung's victory over Chiang Kai-shek in China, and the Korean War—turned America's obsession with anti-Communism into an international crusade.

The first hint that Tsien's future was on the line came in the spring of 1950, when he learned that FBI agents had been on campus asking questions about him. In June he lost his security clearance. It was now revealed that Tsien, Malina, and Weinbaum, back in the 1930s, had participated in what they

called a social group but which actually had turned out to be Professional Unit 122, the local Communist group.

In 1950, accused of having concealed membership in the Communist Party, Tsien was arrested by the FBI, held without bail for two weeks at the Immigration Detention Center at Terminal Island, then released on bail until the time of his hearing. After reviewing the file on Tsien, President Truman's assistant secretary of the Navy, Dan Kimball, wrote Caltech President Lee DuBridge a melancholy note about the government's case against Tsien. "It is nothing but a witch-hunt," he told DuBridge.

Tsien was ordered deported but prohibited from leaving the country. Free on bail, he continued to teach and work at Caltech until August 1955, when the Immigration Service notified him that he was free to leave the country. Tsien, accompanied by his wife and children, sailed for China that September, and he has never returned to the United States. The deportation order was rescinded in 1984; the charges are still on the books.

America's loss was China's gain. Chang describes how Tsien, a first-rate engineer, presided over the rise of China's missile program, building it from the ground up into the formidable military enterprise it has become in recent decades. To Chang, it's just a simple extrapolation from Tsien's

training and work in America to the Silkworm antiship missile used against the United States during the Persian Gulf War.

Chang starts out determined to rescue Tsien's reputation. Tenacious to a fault, she has interviewed everyone even remotely connected with the events leading up to his arrest and detention: Malina's first wife, Weinbaum's second wife, the owner of the Bekins Van and Storage Company in Pasadena. Was Tsien a Communist in the 1930s? Did it matter then? Does it matter now? Chang solemnly tells us that "an independent investigation conducted by the author revealed that it was unlikely that Tsien had ever joined the party." She praises DuBridge for his efforts on behalf of Tsien, but faults the aeronautics department for not trying hard enough to vindicate him.

But Chang can't quite make up her mind what the focus of her book is. Two-thirds of the way through, she does an about-face. She lectures the reader about Tsien's shortcomings: he suffered from the sin of too much pride. "Most likely," Chang writes, "if Tsien had kept a low profile during the McCarthy era . . . he . . . would have suffered a decade of lost clearance . . . and reclaimed his clearance at a later date." Even prison, she seems to suggest at one point, would have been better than serving the Communist regime in mainland China. Tsien is no longer the foreigner caught in the FBI's web; he has become our enemy, the scientist who shares the blame for building weapons that can cause destruction on a global scale.

At one point the author muses: "If Tsien had died in 1955 and had never gone to China, his life would not have merited a first-rate biography." Can anyone blame Tsien for not wanting his biography written just yet?

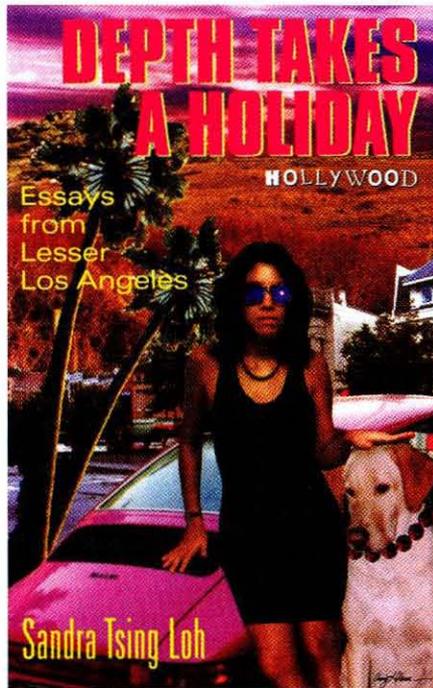
Judith Goodstein, who holds a PhD in the history of science from the University of Washington, has been Caltech's archivist since 1968 and registrar since 1989, and is also a faculty associate in history. She has long had an interest in the Red-scare era of Caltech's history.

Books continued

***Depth Takes a Holiday* Essays from Lesser Los Angeles**

Sandra Tsing Loh
Riverhead Books, New York; 1996

Sandra Tsing Loh is 1) a reluctant Caltech graduate (BS Physics, 1983); 2) a musician and performance artist who once played her piano atop a downtown building while scattering dollar bills (her own) on the audience below; 3) a very funny woman, as this collection of essays, most published in *BUZZ* magazine, hilariously demonstrates. Loh was pushed by her father, also a Caltech graduate, to be an aeronautical engineer: "He believed I was destined to shine in the Advanced Tactical Weapons Division at Hughes Aircraft Company," she says. "He was wrong." Hughes' loss is our gain. Loh's weapon of choice is clearly the keyboard (piano or computer), and her strategic target LA, including the San Fernando Valley ("the Grid"); beginning screenwriting classes ("... the screenplay is a thong bikini, exposing all structural flaws. I and my pear-shaped musings were advised to cover ourselves in the loose old bathrobe of the novel"); and most of all, her own "futon set"—those downwardly mobile, arty, 30-somethings squeezing out meager livings from strange part-time jobs while they wait for MacArthur Genius Grants, lust after IKEA furniture ("an enlightened person . . . understands that self-assembly is the key to affordability") and consume room-temperature Trader Joe's products (not being able to afford French brie, they console them-



selves with the Trader's "canny invention: Canadian brie!")

A few casual allusions to computer expertise and an admission of an addiction to Nintendo do hint at a technological bent that Caltech may have fostered. But Loh's father was probably wise not to wait for that first check from Hughes. Instead he dove for the rooftop dollars, reportedly exclaiming, "Finally I get some of my money back!"

—Rebecca Rothenberg

Linus Pauling ***A Life in Science and Politics***

Ted Goertzel and Ben Goertzel
Basic Books, New York; 1995

A second biography of Pauling published late last year (*E&S* carried a chapter from Tom Hager's *Force of Nature* in a previous issue), this one covers much of the same ground but less thoroughly—it's less than half as long. Correspondingly, Pauling's science is covered in less depth, and Caltech readers will probably find the explanations of scientific background superfluous. Sociologist Ted Goertzel's parents, Mildred and Victor Goertzel, started work on this book in 1962 as part of

their work on the childhoods of eminent people, and did so with Pauling's cooperation. It does not, however, claim to be an authorized biography, and it is quite critical of the famous chemist, in particular of some of his actions in his later years. And, since the original authors were most interested in the personality of their subject, this emphasis continues to dominate the book, which includes in the appendix several fascinating current interpretations of a Rorschach ink-blot test that Pauling took in the 1950s.

Information Proficiency **Your Key to the Information Age**

Thomas J. Buckholtz
Van Nostrand Reinhold, New York; 1995

A man lassoing a tornado of sheets of paper graces the dust jacket of this book, whose author offers advice on how to accomplish this difficult task—more generally defined as keeping up with the challenges and fast-paced changes of today's information technology. Caltech alumnus Buckholtz, who earned his BS in mathematics from Caltech in 1967 (and a PhD in physics from UC Berkeley) gives practical insights and techniques for both organizations and individuals on how to get a grip on the Information Age. Buckholtz, called "the information wizard" by *InfoWorld*, developed his ideas during a stint from 1989 to 1993 with the federal government as commissioner of the Information Resources Management Service of the General Services Administration.