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### THOMAS MALCOLM SMITH, JR., 1921–2005



Thomas M. Smith, a key figure in the history of science program at the University of Oklahoma from the late 1950s to his retirement in 1991, died in Norman, aged eighty-three, from Parkinson's disease. With deep historical knowledge of both medieval science and modern technology, he was an unusually selfless colleague and a master teacher and greatly respected mentor to a generation of students.

Tom Smith was born in Dowagiac, in southwestern Michigan, the youngest of five children. His family moved to Los Angeles when he was less than a year old, in the hope that California's climate would improve the health of the three family members who had contracted tuberculosis—Tom's mother, his sister Helen (the youngest of three sisters but ten years older than Tom), and Tom himself. The disease took Mrs. Smith when Tom was ten. When their father died two years later, the two youngest children—Tom and his brother Bob, six years older—were looked after by their older sisters. Tom considered that he was raised in particular by Helen, but this beloved sister was carried off by tuberculosis in 1945. Tom's tubercular affliction from infancy

took the form of osteomyelitis, and this resulted in a permanent disability in his left arm.

Neither of the parents had more than a high school education, but there were always books around the house (his mother had been a teacher before marriage), and it was assumed that all five children would go to college. In his elementary school years, Tom would regularly roller-skate to the nearest branch of the L.A. public library to get books. After graduating from Hollywood High School, Tom enrolled at UCLA. Encouraged by Helen to do something in addition to taking classes, Tom said that he "started hanging around the *Daily Bruin* office," and by 1942 he had worked his way up to editor of the UCLA newspaper. This gave him writing and editing experience that he valued all his life.

One semester short of graduating from UCLA, Tom stopped out and went to work in the war effort. Classified 4-F because of his disability, he was hired as a technical writer at the Douglas Aircraft Company in El Segundo. His work focused on preparation of technical manuals for the SBD Dauntless dive-bomber. "We writers were given the run of the factory to accomplish this work," he said. Here he gained an understanding and appreciation of aviation technology that informed his later historical work.

After the war Tom returned to UCLA, graduating in February 1946 with a B.A. in political science. By his own account, after college Tom "hadn't the slightest idea what I wanted to do," and he spent a year beach-combing and body-surfing (and, it would appear, continuing to read) before taking a job at a small private school in Idyllwild, teaching science to sixth through ninth graders as well as seventh-grade English. He found that teaching agreed with him.

A turning point came when Tom read, in the July 1947 issue of *Harper's*, a review by Jacques Barzun of James Bryant Conant's book *On Understanding Science*, published that year. Barzun approved of Conant's project to use historical study of science as a means of public education about what the scientific enterprise really is but stated that there were not so many as six people in the country equipped to teach the subject—and only one university (Wisconsin) then offering an adequate program. Tom impulsively wrote a note to Barzun and was surprised to get an encouraging reply. In fall 1948 he found himself enrolled in the Wisconsin graduate program.

Tom earned the M.A. degree in history of science in 1951 and the Ph.D. in history of science and history in 1955. At Wisconsin one of his teachers was the economic historian and historian of technology Abbott Payson Usher (for whom Tom later wrote a memorial).<sup>1</sup> And in particular he worked under the medievalist Marshall Clagett, who supervised his doctoral dissertation. This was a critical text with translation and commentary of *De latitudinibus formarum* [*On the Latitudes of Forms*], a fourteenth-century text on graphing that had been erroneously attributed to Nicole Oresme but that Tom and his mentor decided should be assigned to Jacobus de Sancto Martino.<sup>2</sup> During his graduate student days he served as Clagett's teaching assistant in history of science courses and in the senior-level "Contemporary Trends" course supervised by the chemist Farrington Daniels. Tom collaborated with Daniels in editing a volume emerging out of this course, *The Challenge of Our Times* (Burgess, 1954). He also collaborated with Maurice Holland in the writing of *Architects of Aviation* (Duell, Sloan & Pearce, 1951).

In 1953 Tom took a three-year position (1953–1956) as assistant professor at the California Institute of Technology. There he wrote a study of the history of aircraft pressurization for which Caltech had contracted. It was during this period at Caltech that Tom met Elizabeth "Libba" Soyars, from Hopkinsville, Kentucky, by way of Swarthmore College, who was then teaching English at a private school in La Jolla. They married in 1956 and in due course had three children: Margaret, Malcolm, and Daniel.

Tom next went to work (1956–1959) as scientific historian for the Air Research and Development Command at Andrews Air Force Base in Washington. There he became a colleague of Kent C. Redmond. Smith and Redmond, who eventually joined the faculty of Fairleigh Dickinson University, were destined to collaborate as researchers and writers for over four decades. Tom's extensive writings for the ARDC were classified and thus had limited distribution.

Wanting to return to college teaching, Tom began his thirty-two-year period as an Oklahoma faculty member in 1959. The OU program had been founded in the early 1950s, when the university accepted the gift of a number of rare science books from alumnus-oilman Everette L.

DeGolyer with the understanding that a teaching program would be developed to make use of them. (Interestingly, DeGolyer's determination to collect old books in the sciences had been inspired at least in part by his reading of Conant's *On Understanding Science*.) The first regular faculty hire (1954) resulting from this bargain was Duane H. D. Roller, who had just finished his Ph.D. at Harvard. For some time—as people close to it well understood—nothing important happened in the OU program without Duane thinking it was a good idea. Hiring Tom Smith was Duane's idea of a good idea. Over the years I heard him reiterate this assessment many times. Duane made it clear that he thought that seeing to Tom Smith's appointment was one of his best ideas. He was right.

At the time Tom came to Oklahoma as its second faculty member in the history of science, it had a doctoral program in the field (the fourth one created in the United States, following those at Harvard, Wisconsin, and Cornell) and an established set of undergraduate and graduate courses. Duane Roller had adopted a strategy of overload teaching to drive up undergraduate enrollment and thus convince the administration to authorize additional faculty hiring. Tom threw his energies behind this effort, and the result within a dozen years was the addition of four more history of science faculty budget lines. Tom taught comprehensive surveys, courses in ancient and medieval science, and a new course on science and technology in modern America, as well as the inevitable graduate seminars, where he excelled.

Reminiscences by former students tend to recall above all Tom's tutelage in two settings: seminars focused on learning to do historical research and writing and private discussions of his detailed review and commentary of drafts for theses and dissertations. Although reliably calm and measured in his assessment of student work (terms such as "low-key," "encouraging," and "gentlemanly" arise repeatedly in appreciations written by grateful students), Tom was a rigorous critic, tough but fair. He brought many students to overcome their disinclination to believe that, yes, the devil very often *is* in the details. Something of the quality of his seminars is conveyed through the recollection of a typically brutal session in which one graduate student's written work was subjected to collective attack, in accord with a long-honored convention in program seminars, under Tom's supervision. As the waves of withering criticism finally subsided, Tom offered his opinion that the student had written a good paper. The student exploded, "It's about time someone said it!"

<sup>1</sup> The memorial appeared in *Technology and Culture*, 1965, 6:630–632.

<sup>2</sup> The text is excerpted in Marshall Clagett, *The Science of Mechanics in the Middle Ages* (Madison: Univ. Wisconsin Press, 1959), pp. 392–401.

Whether Tom chaired the committee or served as just one of several members, graduate students knew they could rely on his thoughtful and constructive scrutiny of their efforts. They knew he would catch them in instances of muddled thinking and push them to deeper reflection on the meaning of their historical evidence. They knew how deeply he held both to high scholarly ideals and to generous concern for their intellectual and personal growth. A certain former graduate student has a special reason to remember Tom's trusting commitment to his students' welfare: one night Tom cheerfully put up his family's home equity as bond to bail out this young man, who after a few too many beers had been arrested for driving his motorcycle on the Norman sidewalks.

Although situated nominally within the Department of History, history of science at Oklahoma was actually administered at the outset by a multidisciplinary committee reporting directly to the university president, George L. Cross (a botanist whose remarkable twenty-five-year administrative tenure witnessed the institution's great postwar growth and its desegregation, and who is likely to be remembered longest for his witty but not entirely inapt observation that he hoped to build a university the football team could be proud of). In 1971 the administrative status of history of science shifted, with its creation as a distinct department within the College of Arts and Sciences. Tom agreed to serve as the department's first chairperson, not because he wanted to—which he pretty clearly did not—but with a good grace because he was plainly needed.

While Tom was not thrilled with administrative work, he did believe strongly in the traditional model of collegial participation in faculty governance, and he gave a good deal more than his fair share of time and energy to it. He also believed in full engagement within his wider community. I recall that, as a young and inexperienced faculty member, I marveled at what a wide acquaintance Tom and Libba seemed to have, both within and beyond the university. They certainly knew more about what was going on in local politics than anyone else around me (Libba served for a number of years on the city council), and I learned that you sometimes had to stand in line to consult with Tom or Libba about the issues around election time.

Tom's most intense scholarly collaboration was with Kent C. Redmond, of Fairleigh Dickinson University. Together they wrote *Project Whirlwind: The History of a Pioneer Computer* (Digital, 1980) and *From Whirlwind to MITRE:*

*The R&D Story of the SAGE Air Defense Computer* (MIT, 2000). Upon the appearance of the latter volume, reviewer Michael Friedewald referred to the 1980 book as a "classic" that "remains the most important account of the first digital electronic computer," and in praising the 2000 work's detailed historical exposition he stated that it "is also a book that is a pleasure to read." Reviewer I. B. Holley, Jr., described *From Whirlwind to MITRE* as "offering a superb account of the creative engineering process and its organizational requirements."<sup>3</sup>

One of many things I learned from Tom, while he was working up the stories of *Whirlwind* and *SAGE*, was that to understand the modern R&D process it may be necessary to abandon—or at least adjust—traditional distinctions between "science" and "technology" and to see much recent technical development as happening through an unprecedented hybrid that was neither one of these categories but a new, integrated form of both together.

Some of what Tom did as a teacher was hard to emulate, though easy to admire. Such was the quality of his patience. Tom was a strong Socratic teacher, and one of the reasons is that he seemed to have almost superhuman patience. Many of us, I am sure, like the idea of the student's active participation in learning through dialogue. Quite a lot smaller, however, is the number of teachers who have the necessary level of what I am tempted to call nonsense-tolerance. Tom had an unusually high capacity for resisting the urge to cut short the often meandering pathway toward understanding involved in dialogue with students. I can picture Tom in my mind's eye, calmly continuing some scholarly interrogation with a handful of students, a long way past the point where most of us ordinary teachers could not repress the need to step in and set everyone straight. And as I see Tom in this exercise of patience, he is genuinely enjoying the spectacle of the circuitous approach to understanding, always respectful of what a student might be saying, but not without an amused twinkle in his eye.

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<sup>3</sup> Michael Friedewald's review appeared in *Technology and Culture*, 2002, 43:203–204; I. B. Holley's comment is in *Journal of American History*, 2002, 88:1597–1598.