

# MEMORIAL RESOLUTION

## WILBUR RICHARD KNORR

(1945 - 1997)

Wilbur Richard Knorr died on March 18th 1997, of cancer (melanoma), at the Palo Alto Nursing Center, after an illness of half a year. He was 51, and had been a member of the Stanford faculty for almost two decades. He was survived by his mother, Mrs. Dorothy Knorr of Queensbury, NY; by his sister Valerie Maione, her husband Michael Maione and their children Elizabeth and Alexander, of Columbia, MD. A memorial service was held in Stanford's Memorial Church on March 31.

Knorr was born August 29th, 1945 in Richmond Hill, New York. He graduated from Harvard in 1966, summa cum laude (and Phi Beta Kappa), and continued at Harvard for graduate degrees, attaining the Ph.D. in 1973. He was a teaching fellow and teaching assistant at Harvard between 1968 and 1971, and was a junior faculty member at the University of California in Berkeley and at Brooklyn College between 1971 and 1979 (until Brooklyn discontinued its History of Science Department), and was a member of the Institute for Advanced Study at Princeton in 1978-79. Starting in the study of the history of computer science, he soon settled into work on the history of ancient Greek mathematics and its medieval continuations.

Knorr came to Stanford in 1979, and was advanced to permanency as Associate Professor in 1983. He was Professor, of history of science, beginning in 1990, with joint appointments in The Department of Philosophy and the Department of Classics, and in the History of Science Program. His courses included surveys of the history of cosmology from ancient times to the twentieth century. One graduate student has described him as "wonderful, patient and extremely quick. I would get piles of notes from him whenever I handed something in." A continuing education course once organized by Knorr for the wider public involved two other professors (a physicist and a Chinese specialist); it surveyed ancient astronomical knowledge from China to the Near East to Mesoamerica. (Knorr's rich personal library contained the latest work on pre-Columbian astronomy.) His ability to engage an intelligent public audience is evidenced by a highly readable article on comets, notably Halley's, in the Stanford Magazine, Summer 1985.

But Knorr made his mark in work of great difficulty and subtlety. One colleague has described him as "one of the world's most distinguished historians of ancient mathematics." In his too short life of effective work, scarcely twenty-four years, he produced four books, over fifty-five major articles (many of them long and technical), and left seventeen more partly finished. He wrote many reviews, including five major review articles. He was on the editorial boards of the Archive for History of the Exact Sciences, Isis, and Historia

Mathematica. If a scholar whose interests were extraordinarily broad can be allowed a special interest, Knorr's was the history and analysis of the development of geometry and proportion theory in the Greek world between 400 and 200 BCE. His distinctive claim was to reject the received view that mathematicians picked up their cues from the puzzlings of the Eleatics and other philosophers. Knorr argued that ancient mathematics was autonomous, making stunning advances quite without powerful modern techniques, and that the philosophers looked on with amazement, picking up crumbs. He pursued the study of such texts as survive -- Euclid, Archimedes, Apollonius, etc. -- through late antiquity and the middle ages, teaching himself Arabic and Hebrew for the purpose. (He had Greek and Latin of course; one of his hobbies was Biblical studies, pursued in Hebrew.) Thus he became expert in high philological (and highly controversial) problems of the filiation of medieval manuscripts. He later became an expert on manuscript illumination and handwriting, in his studies of the astronomical tradition in Europe in the thirteenth and fourteenth centuries, a subject which consumed him in the last years of his life and which constitutes most of his unfinished work.

One of his Ph.D. students, now a professor of the history of science in another California university, has offered evaluations of Knorr's books: "In his book *The Evolution of the Euclidean Elements* (1975), Knorr provided a coherent, autonomous, mathematical reconstruction of the development of proportion theory built out of technical concerns in early Greek number theory and so-called geometrical algebra, preserved in texts such as Euclid, Archimedes, the scholia to Theodosius, Nicomachus, Theon of Smyrna, and Boethius. In his most recent work, he was drawing connections between some Babylonian algebraic texts and Euclid's *Elements* II ... to develop a deeper understanding of the discovery of incommensurability. Knorr used close textual analysis of all aspects of the text, including the structure of proofs, the layout of diagrams in proofs, or the use of words ... to work out the history of mathematical influence and dependence. ... His work *The Ancient Tradition of Geometrical Problems* (1986) is probably the best general history of Greek mathematics, even though it deals with only one aspect of the subject. In it he traces the history of the three major problems, circle squaring, angle trisection, and cube duplication."

Using these subtle techniques in many of his writings, he was able to retrieve from later Greek, Latin, Arabic and Hebrew sources evidence of classical mathematics and mechanics. He followed this study with a magisterial treatment of the textual tradition of Greek mathematics and the practice of ancient and medieval editors and mathematicians using Greek mathematics, particularly of Archimedes' *Dimension of the Circle*. Knorr showed how this text emerges as a palimpsest of repeated editing, and made bold and convincing conjectures in many cases as to who the editors were and how they worked. Certainly the most striking was his hesitant suggestion that Hypatia was both a source of an important extant commentary on Apollonius' conics, and the editor of the common ancestor of the extant Greek edition of the *Dimension of the Circle* and of its medieval Latin translations.

The same writer concludes, "... he was a wonderful person, passionate about everything he did, rose gardening, weight lifting, Biblical study ... frugal in his personal life (except when it came to book acquisition)..." Another colleague and close friend in England recalls his love of music, gymnastic "working out," and his "infuriating puns"; he recalls Wilbur's participation in a conference only a few months away from death but still vigorous, jogging daily. Unmarried, he was a beloved "Uncle Billy" to his young niece and nephew.

Stanford's faculty has lost a colleague of a kind that can never be replaced.

(This committee acknowledges gratefully the collaboration of Henry R. Mendell, Professor of the History of Science, California State University in Los Angeles.)

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