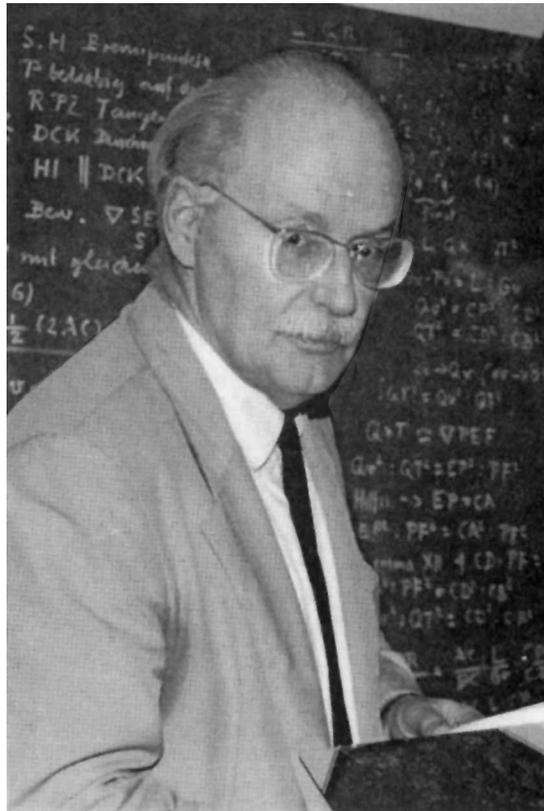


In Memoriam

Matthias Schramm, 1928–2005



M. Schramm

Matthias Schramm, a well-known historian of science and professor at the University of Tübingen from 1966 to 1996, died in Dusslingen near Tübingen on January 24, 2005, shortly before his 77th birthday. He was born on February 6, 1928, in Paris, a child of painters. Due to wartime difficulties, most of his education was acquired at home. In spite of this, he passed the high-school entrance examination prior to his matriculation (Abitur) at the Gymnasium in Kassel. Schramm's school was a classically oriented "humanistisches Gymnasium," and he read Euclid in the original Greek on his own initiative.

Schramm commenced the study of physics in the winter term of 1949 in Marburg, and he continued in Frankfurt with mathematics and classical philology. It was none other than the philosopher Theodor Adorno (1903–1969) who recognized Schramm's talent and recommended that he continue his studies with the distinguished historian of science Willy Hartner (1905–1981). Adorno was right on target with this advice, Schramm later recalled. He received his Ph.D. in 1957 with Hartner in the history of science at the Goethe University in Frankfurt. His dissertation dealt with Aristotelian dynamics and Zeno's paradoxes, and was subsequently published as *Die Bedeutung der Bewegungslehre des Aristoteles für seine beiden Lösungen der Zenonischen Paradoxie* (Klostermann, Frankfurt, 1962). For his Habilitationsschrift he moved forward in time with a major study of the Islamic physicist Ibn al-Haytham (known in the Latin West as Alhazen), a work that was published under the title *Ibn al-Haythams Weg zur Physik* (Steiner, Wiesbaden, 1963). Schramm showed that already some six centuries before Galileo, experimental physics was being cultivated in Iraq and Egypt: "Through a closer examination of Ibn al-Haytham's conceptions of mathematical models and of the role they play in his theory of sense perception, it becomes evident that he was the true founder of physics in the modern sense of the word; in fact he anticipated by six centuries the fertile ideas that were to mark the beginning of this new branch of science" (in *Ibn al-Haythams Weg*, Summary). After a 1-year stay in Oxford devoted to the study of Arabic sources, he was appointed in 1966 to the newly established position of professor of the history of natural sciences at the University of Tübingen (a position that, sad to say, ended with Schramm's retirement). He stayed exactly three decades in Tübingen until his retirement.

Schramm was honored with membership in the International Academy of the History of Science (Paris), in 1966 as a corresponding member and in 1971 as a regular member. He served as an editor of *Archive for History of Exact Sciences* from 1974 to 1985 and as an associate editor of *Historia Mathematica* from 1991 to 1993. The years before his retirement were overshadowed by an unsuccessful attempt to renew his position at the University of Tübingen. After retirement, Schramm lectured very successfully at the University of Ulm, and in 2002 this university made him an Honorarprofessor.

Schramm's publications show his singular abilities: he was concerned, more or less, with all of the great civilizations, i.e., with Babylonian astronomy, Egyptian arithmetic, al-Khwarizmi's algebra, Greek concepts of natural law, Chinese thinking, Copernicus' astronomy, Mayan chronology, Huygens' optics, Newton's mechanics, Hamiltonian dynamics, Hilbert's geometry, and so on. The sources (of course in their original languages) of most of these topics were also read and discussed in detail in Schramm's seminar. Participants in the seminar praised the meetings as unforgettable (for a list of seminars, see *Mathesis*, 1999, pp. 20–22). A bibliography of his writings by Eberhard Knobloch was published in *Historia Mathematica* 20 (1993), pp. 121–125, and continued in 1999 in *Mathesis* (pp. 24–30); it contains about 75 publications, including three books.

Despite Schramm's outstanding familiarity with his discipline, he did not regard the history of science in either content or method as a unified and cumulative theory, but as one that is mostly linked and distinguished by various modern viewpoints. The increase in diversity and complexity in the development of even a single branch of science (let alone the great variety of all branches of natural science) is too great to be comprehended by a single mind. The historian of science cannot view cuneiform writing and tensors of relativity theory in one collective glance, and it is because of this difficulty that he proposed to study cultures instead of disciplines:

For a long time the history of science has taken its starting point and its yardstick from the individual disciplines. It has tried to determine when and by whom the large advances of mathematics, astronomy, and

physics have been achieved and how these individual branches have been shaped and become independent subjects. Anything that did not fit into the compass of these conceptions, where above all the technical meaning of the individual branches was paramount, was not included in this understanding. One attached no weight to smaller or larger detours, such as astrology and alchemy, which departed from the actual goal. Now a new, deepened view of the history of science has replaced the older: instead of individual disciplines the cultural context in which these results were obtained has come into the foreground. The view itself of the connection between individual features and their meaning for the overall development has begun to sharpen, and above all the points of contact between the separate cultural areas, cultural exchange and its history, have become important subjects of research. [1989a, 177–178]

What is needed is a cultural explication of historical knowledge by a critical examination of its contents. In this spirit Matthias Schramm discussed the question “What is ‘Arabic science’?” and observed: “The expression is certainly better than ‘Islamic science’ which is used everywhere nowadays. For it was created not just by Muslims, but also, and especially at the beginning, by Christians and Jews . . . And do language and religion really signify the clear-cut lines of demarcation we are accustomed to seeing in them?” [2001, p. 311].

The history of science should not be a simple supplement to the modern branches of science. An excellent corrective to such an approach is Schramm’s 1985 book *Natur ohne Sinn? Das Ende des teleologischen Weltbildes* (Nature without meaning? The end of the teleological image of the world), which is undoubtedly one of the best books written in the history of science within the recent past. It is necessary to assign meaning to the world if we are to explain changes in nature and to classify the manifold of sensations, in short, if we are to order our experience. Hence scientists look for meaning in natural phenomena; they presuppose some meaning or even regard meaning per se as granted. Schramm analyzed in detail and with clarity why all special attempts to understand, for example, the principle of least action failed, but he showed that nevertheless we are forced to interpret nature as meaningful.

Schramm pointed out that the history of science is in continual need of criticism from the outside in order to avoid becoming the refuge of those who are unable to work in either the natural sciences or philology. Historical sources open up only to those who can read and interpret them. In this connection he had finished an article “The creation of the principle of least action,” which appeared just a few days before his death. This study examined the formulation by the 18th-century savant Pierre Louis Moreau de Maupertuis (1698–1759) of an important variational principle of physics. Schramm concluded, “Those who start getting [involved in historical studies] . . . will regret that out of a lack of knowledge of the facts and from a lack of understanding of the matter one should have felt entitled to raise accusations or to ridicule Maupertuis’ endeavours” [2004, p. 311]. In the end, I believe we are entitled to extend this statement concerning the special case of Maupertuis to the study of the history of science more generally and regard it as a description of the state of the art and the special difficulties of this history. Today’s historian with all his contemporary knowledge but with possibly incomplete understanding of the past must avoid easy judgments and strive instead with historical rigor to give the past its full due.

The admiration of his colleagues was richly deserved. Those of us who knew him personally feel the loss keenly. Schramm’s wife died a few months before him; he leaves behind a son, Johannes, and two grandchildren.

Additions to Schramm's bibliography

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A Festschrift in honor of the 70th birthday of Matthias Schramm was published in 2000: *Festschrift zum siebenzigsten Geburtstag von Matthias Schramm*. Rüdiger Thiele (Ed.), GNT-Verlag, Berlin. Prof. Dr. Fuat Sezgin, director of the Institut für Geschichte der Arabisch-Islamischen Wissenschaften in Frankfurt, is preparing a *Gedenkschrift* containing those papers of Schramm concerning Arabic-Islamic science.

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