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## Salih Zeki

Hüseyin Gazi Topdemir

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**Born Istanbul, (Turkey), 1864**

**Died Istanbul, (Turkey), 1921**

Salih Zeki was one of the most important mathematicians of the late Ottoman period. He was the founder of the mathematics, physics, and astronomy departments of Istanbul University and was also one of the first modern Turkish scholars to undertake research on the history of science in Turkey. After the death of his parents, his grandmother sent him to Dârüssafaka (school for orphans) when he was ten. After graduating first in his class in 1882, Salih Zeki was assigned to the Post and Telegraph Ministry (Administration). In 1884, the ministry decided to train expert cable engineers and physicists in Europe, and so he, along with several of his friends, was sent to Paris. After studying electrical engineering at the École Polytechnique in Paris, Salih Zeki returned to Istanbul in 1887 and started working at his former workplace as an electrical engineer and inspector. At the same time, he taught physics and chemistry at the Faculty of Political Sciences (1889-1900). He also served as the director of the observatory (1895) and as a member of the board of the Ministry of Education (1908). After the declaration of the Second Constitutional Government, Salih Zeki was appointed in 1910 as the principal of the Galatasaray High School. In 1912, he became Under Secretary of the Ministry of Education and in 1913 the president of Istanbul University. In 1917, he resigned as the president but continued to be a professor at the University in the Faculty of Sciences until his death.

Salih Zeki played an important role in the construction and administration of the new State Observatory (Rasadhane-i Amire), this approximately 300 years after the establishment of an observatory in Istanbul in 1575 by **Taqi al-Din**. With the support of the French government, an observatory was opened in Istanbul in 1868, whose purpose was to disseminate weather forecasts to other meteorological centers *via* cable. Aristide Coumbary (Coumbary Efendi), who had come to Turkey to develop the telegraph cable network, was appointed as the director. This observatory, which is the forerunner of today's Kandilli Observatory, sent Coumbary Efendi as the Ottoman delegate to the International Meteorological and Astronomical Congress that was held in Vienna in 1873; in accordance with decisions taken at the congress, official ties were established with other observatories in Europe. Every year, weather forecast summaries and reports on earthquakes that occurred in Ottoman territories were published based on the observations made at this observatory. Approximately ten meteorological stations were affiliated with this observatory when it was first established, and these stations reported their daily observations *via* cable to the observatory. The central office in Istanbul forwarded these observations, also *via* cable, to observatories in Paris, Berlin, Vienna, Saint Petersburg, and Hungary and received their reports in the same manner. At the same time, these data were entered on synoptic maps on a daily basis. The

observatory council, comprising three persons, also undertook to determine time, longitudes and latitudes, and magnetic declination.

After Coumbary, Salih Zeki was appointed as the director of the observatory. After Salih Zeki's appointment as the president of Istanbul University, the observatory moved to Maçka, to the building facing the Artillery School. On 12 March 1909, during the Young Turk revolution, the observational equipment and seismographs at Maçka were mostly destroyed. What was salvaged was later given to Kabatas High School. Now Under Secretary to the Ministry of Education, Salih Zeki recommended **Mehmed Fatih Gökmen**, one of the leading scientists at the time, to be director of the observatory. Assuming his duties in 1910, Gökmen was charged with establishing a new observatory; this was accomplished in 1911 with the building of the Kandilli Observatory, which is still in operation today.

Among Salih Zeki's main works in astronomy are a *New Cosmography* (Istanbul, 1915) and an *Abridged Cosmography* (Istanbul, 1916). He also wrote a basic physics textbook, *Hikmet-i Tabiiyye* (Istanbul, 1896), that explained the concepts of general and applied physics and was used as one of the basic textbooks in physics education in Turkey for many years. In history of science, he composed the *Asar-ı Bakiye*, which was written to extol the successes of Muslim scientists, particularly in the fields of mathematics and astronomy. It contains accounts of the historical development of mathematics, algebra, geometry, and astronomy. Salih Zeki wrote this five-volume book by using the works of Western historians of science such as J. E. Montucla, P. Tannery, and M. Cantor as well as original texts in the libraries of Istanbul. The first volume, which deals with plane and spherical geometry, and the second volume, which takes up algebra, were published in 1913/1914; however, his third, fourth, and fifth volumes, which deal with astronomy, were not published. His *Kamus-i Riyaziyat* (Dictionary of Mathematics), whose ostensible purpose was to provide a dictionary of terms for mathematics and astronomy, was also meant to introduce the biographies and works of mathematicians and astronomers. The first two volumes out of the 12 volumes of this work were published, but the other ten volumes remain in draft form. Finally, it is worth mentioning that Salih Zeki also wrote articles for a number of newspapers and magazines that introduced readers to scientific and history of science topics.

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