Al-Samarqandi, Shams Al-Din Muh?ammad Ibn Ashraf Al-h?usayni | Encyclopedia.com

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(*b*. Samarkand, Uzbekistan, Russia, *fl* 1276)

mathematics, logic, astronomy.

Al-Samarquandī was a contemporary of Nasī al-Dīn al-Tūsī (1201–1274) and Quṭb al-Dīn al-Shīrāzī (1236–1311). Al-Samarqandī was not among the scientists associated with al-Tūsī at the observatory at Marāgha. A noted logician, al-Samarqandī was best known to mathematicians for his famous tract *Kitāb Ashkāl al-ta'sīs* ("Book on the Fundamental Theorems"). This work of twenty pages, probably composed around 1276, summarizes with their abridged demonstrations thirty-five fundamental propositions of Euclid's geometry. To write this short work, Samarqandī geometry. To write this short work. Samarqandī consulted the writings of Ibn al-Haytham, 'Umar al-Khayyāmī, al-Jawharī, Nasīr al-Dīn al-Tūsī, and Athīr al-Dīn al-Abharī. Several mathematicians, notably Qādī Zāda, commented on this work by al-Samarqandī.

It was chiefly with his book on dialectics that al-Samarqandī became famous. This valuable work, entitled *Risāla fī ādāb al-bạth* ("Tract on the Methods of Enquiry"), was the subject of several commentaries. Two other works on logic by al-Samarqandī are known: *Mīzān al-Qustās and Kitāb 'Ayn al-nazar fi' ilm al-jadal*. Al-Samarqandī was also interested in astronomy. He wrote Al-Tadhkira fi 'l-hay'a ("Synopsis of Astronomy") and a star calendar for 1276–1277. His *Ṣaḥā'if al-ilāhiyya* and his *'Aqāid* are two works on dogmatic theology.

BIBLIOGRAPHY

MSS of the works of al-Samarqandī are listed in C. Brockelmann, *Geschichte der arabischen Literatur*, I (Weimar, 1898), 486; and *ibid*., supp. 1 (Leiden, 1937), 860. See also H. Suter, *Die Mathematiker und Astronomen der Araber* (Leipzig, 1900), 157; and "Nachträge und Berichtigungen zu *'Die Mathematiker ...,'" in Abhandlungen zur Geschichte der Mathematik*, **14** (1902), 176.

Also helpful are Ḥājjī Khalīfa's Kashf al-'zunūn. G. Flügel, ed. (Leipzig, 1835–1855), 1, 322; Carra de Vaux's article "Bahth," in *Encyclopaedia of Islam*, 1st ed., I (1911), 587; and G. Sarton, *Introduction to the History of Science*, II (Baltimore, 1962), 1020–1021.

For a demonstration of Euclid's fifth postulate attributed to al-Samarqandī, see H. Dilgan, "Démonstration du V' postulat d'Euclide par Shams-ed-Dīn Samarkandī," in *Revue d'histoire des sciences et de leurs applications***13** (1960), 191–196. For the attribution of this demonstration to Athīr al-Dīn al-Abharī, see A. I. Sabra, "Thābit ibn Qurra on Euclid' Parallels Postulate," in *Journal of the Warburg and Courtauld Institutes*, **31** (1968), 14, note, 9.

HÂmit Dilgan