



# BĪRŪNĪ, ABŪ RAYḤĀN I. LIFE

## BĪRŪNĪ, ABŪ RAYḤĀN

### i. Life

Bīrūnī was born in the outer suburb (*bīrūn*, hence his *nesba*) of *Kāt*, the capital of the Afrighid *Ḳvārazmšāhs* (see [āl-e afrīg](#)), and spent the first twenty-five years of his life in *Ḳvārazm* studying both the *al-ʿolūm al-ʿarabīya* “Arab sciences” (*feqh*, theology, grammar, etc.) and the *al-ʿolūm al-ʿajamīya* “non-Arab sciences” (essentially Greek: mathematics, astronomy, medicine, etc.); in the later part of his life, much of his contemporary reputation was to be as a *monajjem* or astrologer at the Ghaznavid court. It is likely that his own sympathies, and perhaps also his family connections, were with the Afrighids, who in 385/995 were overthrown by the rival dynasty in Gorgānj of the Maʿmunids (see [āl-e maʿmūn](#)). At all events, he left his homeland for the Samanid capital of Bukhara and secured the patronage of the antepenultimate Samanid amir, Maṣṣūr II b. Nūḥ II (387-89/997-99). He had previously been in correspondence with Ebn Sīnā there, and there is extant an important exchange of views between the two scholars (ed. S. Ḥ. Naṣr and M. Moḥaqqueq, *Abū Rayḥān Bīrūnī wa Ebn Sīnā, al-asʿela waʿl-ajweba*, Tehran, 1352 Š./1973). He then went, apparently in 388/998, to the court of the Ziyarid amir of Ṭabarestān and Gorgān, Šams-al-Maʿālī Qābūs b. Vošmgīr (q.v.), and it was there that he wrote his first major work, *al-Āṭār al-bāqīa ʿan al-qorūn al-kālīa* on historical and scientific chronology (see vi, below), probably in about 390/1000, though he made later emendations to it. He clearly came to accept the accomplished fact of the definitive passing of the Afrighids and made his



peace with the Ma'munids, whose court in Gorgānj was becoming famed for its brilliance. He served the Ḳvārazmšāh Abu'l-'Abbās Ma'mūn b. Ma'mūn (399-407/1009-17) for seven years, according to the historian [Abu'l-Faḍl Bayhaqī](#) (who utilized Bīrūnī's history of his homeland, the *Ketāb al-mosāmara fī aḵbār Ḳvārazm*, see below, for his own *Tārīḳ-e āl-e Saboktegīn*), he acted as a *nadīm* or boon-companion and adviser to the Ḳvārazmšāh, being also used by the latter for delicate diplomatic missions.

A well-known anecdote of Neẓāmī 'Arūzī Samarqandī (*Čahār maqāla*, ed. Qazvīnī, pp. 118-19, rev. tr. E. G. Browne, London, 1921, pp. 86-97, cf. idem, *Lit. Hist. Persia* II, pp. 96-97) describes how Sultan Maḥmūd of Ghazna, jealous of the splendor of Ma'mūn b. Ma'mūn's court circle, sent him an ultimatum demanding that all the leading scholars there be sent forthwith to Ghazna in order to adorn his own court. The story goes on to tell how the philosophers Ebn Sīnā and Abū Sahl 'Isā Masīḥī escaped to the west, the former eventually serving the Kakuyid 'Alā'-al-Dawla Moḥammad in Isfahan till his death there, but Bīrūnī, the mathematician Abū Naṣr Jīlānī, and the physician Abu'l-Ḳayr Ḳammār went to Ghazna and entered Maḥmūd's service. Bīrūnī then spent the remainder of his life, what must have been well over three decades, with the Ghaznavids Maḥmūd, Mas'ūd, Mawdūd, and their successors, dying at some unknown date after 442/1050, perhaps during the sultanate of 'Abd-al-Rašīd.

According to recent works by scholars in Tashkent, Bīrūnī died on 2 Rajab 440/11 December 1048 (Karimov, pp. 150-51; cf. Bulgakov); unfortunately, the details and the chronology of Bīrūnī's life under the Ghaznavids are most obscure. He seems to have been generally famed as court astrologer there, and another anecdote of the *Čahār maqāla* (pp. 91-93, rev. tr. 65-67; cf. Browne, *Lit. Hist. Persia* II, pp. 97-98, which does not, however, seem credible) describes how his accurate astrological prognostications nevertheless led him into difficulties with the irascible sultan. It seems probable that Bīrūnī spent part at least of his twelve years or so under Maḥmūd in imbibing information about India, acquiring a knowledge of Sanskrit and contemporary Indian languages and of Hindu philosophy and science in those northwestern parts of India under Ghaznavid control and possibly accompanying Ghaznavid plunder raids into the northern Indian heartlands, although as Sachau pointed out (*Alberuni's India*, London, 1888, repr. Delhi, 1964, preface, pp. ix, xi ff.), there is nothing to show that Bīrūnī enjoyed any sort of official patronage or favor under Maḥmūd. He did however utilize the information

gathered over these years for his major work on India, the *Taḥqīq mā le'l-*



*Hend*, conventionally known in Western scholarship as his *India*, completed in 421/1030 just after Maḥmūd's death (see viii, below). Shortly before this he had completed a concise work on mathematics and astronomy, the *Ketāb al-tafhīm le-awā'el ṣenā'at al-tanjīm* (see iii, below). At the opening of Sultan Mas'ūd's reign, Bīrūnī finished his *al-Qānūn al-mas'ūdī fi'l-hay'a wa'l-nojum* on astronomy and science (421/1030). He must have been encouraged to carry on his scientific work and provided with the necessary facilities, for we have from the reign of Mawdūd b. Mas'ūd (432-40/1041-1048 or 1049) his treatise on mineralogy, the *Ketāb al-jamāher fi ma'refat al-jawāher*, and at the end of his life, when he states that he was over 80 (hence after 442/1050), he wrote his book on pharmacology and materia medica, the *Ketāb al-ṣaydala fi'l-ṭebb* (see v, below).

Bīrūnī was obviously a prolific author, who preferred to use Arabic, the scientific language of the Muslim world, for most of his works, rather than Persian, in which the creation of a technical and scientific vocabulary was only just taking rough shape during his time. In the introduction to his *Ṣaydala*, Bīrūnī inveighs against the use of Persian for scientific works, implying that such a usage was in fact taking place in his lifetime. One of his major works, the *Tafhīm*, exists in both Arabic and Persian versions, and it is unclear which came first. However, it was more common at this period to translate from Arabic into Persian than vice-versa, and G. Lazard is inclined to treat the Persian version as a very early translation of an Arabic original, whether made by Bīrūnī himself or not being unclear (*La langue des plus anciens monuments de la prose persane*, Paris, 1963, pp. 58-62).

In the bibliography of Rāzī's works, *Resāla fi fehrest Moḥammad ebn Zakarīyā' al-Rāzī*, which Bīrūnī composed in 427/1036, Bīrūnī also inserted a *fehrest* of his own works to that date, computing them at 103 completed and 10 unfinished ones (in which last group were placed the *al-Āṭār al-bāqīa* and *al-Qānūn al-mas'ūdī*). His total works amount, according to Boilot, to 180, ranging from large-scale treatises covering great expanses of knowledge to brief epistles on specific topics. Boilot has listed these in his "L'œuvre d'al-Bērūnī. Essai bibliographique," in *Mélanges de l'Institut dominicain d'études orientales du Caire* 2, 1955, pp. 161-256, 3, 1956, pp. 391-96, following the earlier attempt of H. Suter, E. Wiedemann, and O. Rescher in "Beiträge zur Geschichte der Naturwissenschaften. LX. Ueber al Bīrūnī and seine Schriften," *Sb. der Physikalisch-Medizinischen Sozietät zu Erlangen* 52-53, 1920-21, pp. 55-96.



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The secondary literature on Bīrūnī is extensive. Standard works include Suter, *Mathematiker*, pp. 98-100; G. Sarton, *Introduction to the History of Science*, Baltimore, 1927, I, pp. 707-09; Brockelmann, *GAL* I<sup>2</sup>, pp. 626-27, Suppl. I, pp. 870-75; Sezgin, *GAS* III, index, V, pp. 375-83; E. S. Kennedy, "Al-Bīrūnī . . . , Abū RayḤān . . . Muḥammad b. Aḥmad," in *Dictionary of Scientific Biography*, New York, 1970, II, pp. 148-58; *IA* II, pp. 635-47.

D. J. Boilot, "al-Bīrūnī," in *EI*<sup>2</sup>, contains a detailed bibliography of secondary works. It is supplemented by the special sections on Bīrūnī in Pearson, *Index Islamicus* and its quinquennial supplements under philosophy and science: individual scientists and philosophers. Recent works of bibliographical interest include Šalāḥ-al-Dīn Monajjed, "Molāḥazāt 'alā ṭaba'āt mo'allafāt al-Bīrūnī," in *The Commemorative Volume of Biruni International Congress . . . A: Persian and Arabic Papers*; A. S. Khan, *A of the Works of Abu'l-RayḤān Bīrūnī (in Urdu)*, New Delhi, 1982 (Pers. tr. 'A. Ḥabībī, *Ketāb-šenāsī-e Abū RayḤān Bīrūnī*, Tehran, 1352 Š./1973); M. Mīnovī, "Abū RayḤān Bīrūnī," in *Barrasīhā-ī dar bāra-ye Abū RayḤān Bīrūnī be monāsabat-e hazāra-ye welādat-e ū*, Tehran, 1352 Š./1973; S. Ḥ. Naṣr, *Ketāb-šenāsī-e tawṣīfī-e Abū RayḤān Bīrūnī*, Eng. title, *Al-Bīrūnī. An Annotated*, Tehran, 1352 Š./1973.

For question of dating, see P. Bulgakov, *Life and Works of Bīrūnī*, Tashkent, 1972; U. Karimov, tr., *Šaydana*, Tashkent, 1973.