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ĀṬĀR AL-BĀQĪA

AL-**ĀṬĀR** AL-**BĀQĪA** ʿAN AL-QORŪN AL-ḴĀLĪA (*The Chronology of Ancient Nations*), a historical work by Bīrūnī, composed at the age of twenty-seven, in A.D. 1000 (he calls the year 1311 of Alexander "this year of ours," ed. Sachau, p. 194). The book is one of the works that first gave him fame in the West; it is no. 105 in Bīrūnī's own bibliography (see Kraus, *Ēpître*, p. 42). He dedicated this magnificent mine of historical information to his master, Šams-al-maʿālī Qābūs b. Vošmgīr, the Ziyarid ruler of Jorǰān. By this time, according to the Chronology, he had already completed at least seven books on various technical aspects of astrology and astronomy or on history, and was planning two more. Unfortunately, none of these nine has survived.

The *Chronology* is preserved in at least eleven manuscripts (Sezgin, *GAS* VI, p. 270). The oldest, ʿOmmūmī (Beyazit) 4667, was copied by Ebn al-Moʿezzī for Saʿīd b. Masʿūd Qass (Krause, *Handschriften*, pp. 437-532, esp. 479); Saʿīd is apparently identical with Ḡars al-Naʿma b. Masʿūd b. Qass al-Bāḡdādī, who lived during the reign of the last caliph, al-Mostaʿṣem (1242-58) (Suter, *Mathematiker*, pp. 153-54, 227 no. 371a.). Unfortunately, Sachau had access to only three manuscripts, the earliest of which was copied in the seventeenth century. These manuscripts contain the same lacunae, some of which are quite extensive; as a matter of fact two of the manuscripts were probably copied from (copies of) the third, now Edinburgh University Library 161, which was copied by Ebn al-Kotbī, possibly in Tabrīz or Marāḡa, in 707/1307-08 (see Soucek, "An Illustrated Manuscript"). The major lacunae in Sachau's edition have been filled by Garbers and Fück (Garbers, "Eine Ergänzung;" Fück,

"Sechs Ergänzungen"), so that the text should now be read in the following sequence (*DII* = *Documenta Islamica Inedita*): Sachau pp. 3-131; *DII* pp. 45-68; Sachau pp. 132-194; *DII* pp. 72-74; Sachau pp. 195-206.22; *DII* pp. 74-79.10; Sachau pp. 206.22-209.17; *DII* pp. 79-80; Sachau pp. 209.17-214; *DII* pp. 80-84; Sachau pp. 215-307; *DII* pp. 84-95; Sachau p. 308-331.16; *DII* pp. 95-98; Sachau p. 331.18-362. There still remain minor lacunae in Sachau's text; these could be filled and many other problems in the text resolved by an examination of the several early manuscripts not utilized by him.

Contents. The *Chronology* may be divided into three major sections: astronomical (chapters one to five), historical (chapters six to eight), and religious (chapters nine to twenty-one). There is extensive interchange between sections of material falling into each of these categories and numerous digressions are scattered throughout the work, a characteristic that enhances both the reader's enjoyment and his instruction. The *Chronology* is based on wide reading in Arabic and other sources regarding the chronology of Arabia, Palestine, Syria, Iraq, and Iran, and on oral information obtained by Bīrūnī from his contemporaries in northern and northeastern Iran. The information concerning the Egyptians, the Greeks, the Romans, and the Byzantines comes from a few Arabic versions of Greek texts, while that on India is very limited and, of course, not yet based on the direct contact with Indians that Bīrūnī profited from in the 410s/1020s and the 420s/1030s. (See Pingree, "Al-Bīrūnī's Knowledge," for the development of his knowledge of Indian astronomy.)

The first two chapters, on astronomical time-divisions, defining the epochs of the day in different traditions and the natures and lengths of years, are elementary, but contain interjections of unusual bits of historical information, e.g., the midnight epoch of the *Zīǰ Šahrīārān al-Šāh* (p. 6) and a discussion of an Indian intercalation scheme (pp. 12-13) that includes a citation from Āmolī's *Ketāb al-ḡorra* based on the *Tarkīb al-aflāk* of Yaʿqūb b. Ṭāreq (which he referred to directly when writing India, see Pingree, "The Fragments of Yaʿqūb ibn Ṭāriq"). There is also an excursus on Muslim fasting (pp. 7-9) and another on the pre-Islamic Arab calendar (pp. 11-12; see also pp. 34-35, 60-64).

Chapter three discusses various eras: those of the Creation, of the Flood, of Nebuchadnezzar (Nabonassar), of Philip, of Alexander, of Augustus, of Antoninus, of Diocletianus, of the Heǰra, of Yazdegerd, and of the Caliph al-Moʿtażed. All of these except the first are used in one or another astronomical *zīǰ*, and such *zīǰ*s normally give instructions and tables for the conversion of

dates from one calendar to another. What is unique in Bīrūnī's presentation is his inclusion of long asides on Jewish, Christian, and Zoroastrian opinions and arguments about the date of Creation, on the origin of the Septuagint, and on the genealogy of Joseph (pp. 14-23), on the Persian traditions regarding the revelations and on Abū Maʿšar Balḵī's use thereof in concocting and defending his *Zīǰ al-hazārāt* and his *Ketāb al-olūf* (pp. 23-27; see D. Pingree, *The Thousands of Abū Maʿshar*, London, 1968) and the story of the adaptation of the Heǰra calendar (pp. 29-31), including astronomical data relating to the date of the birth of Moḥammad (see also *DII*, pp. 95-96; E. S. Kennedy and D. Pingree, *The Astrological History of Māshāʾallāh*, Cambridge, Mass., 1971, p. 127). The chapter concludes with a discussion of the eras used by the pre-Islamic Arabs (pp. 34-35) and a section on the historical traditions of his native Ḵᵛārazm (pp. 35-36), including a description of Āfrīḡ's (see Āl-e Āfrīḡ) construction of the castle at Fīr (modern Bīrūnī) in A.D. 305 and its destruction by a flood of the Oxus in 384/994.

The next chapter, numbered four, is stated to be devoted to legends concerning Ḏu'l-qarnayn, but also contains a long criticism of the "false" claim of the Buyids to descent from the Sasanian emperor Bahrām Gūr (see also p. 213) and praise of the "true" descent of his patron, Šams-al-maʿālī, and of the shahs of Khorasan i.e., Ḵᵛārazm, and Šervān from the Sasanian royal house (pp. 37-40).

Chapter five discusses the natures and names of the months (and days where appropriate) of various peoples: the Persians, the Seǰestānīs (with information from Aḥmad Seǰzī; cf. Altheim and Stiehl, "Der Kalender"), the Soghdians, the Khwarazmians, the Egyptians, the "people of the West" (using Amōlī's *Ketāb dalāʾel al-qebla*), the Greeks (i.e., Byzantines), the Jews (see further chapter seven), the Syrians (cf. Ludger Bernhard, *Die Chronologie*), and the Arabs; at the end of the chapter (pp. 69-71) is a table of the names of the months in the languages of the nations just mentioned and in those of the Bukharans (?), Qubaians, Turks (twice), Indians, and ancient Greeks (i.e., Macedonians). The names of months and days most interesting for modern scholars, of course, are those of eastern Iran and of Central Asia, and of the West (Spain?). Interspersed in the technical detail of this chapter are various discussions: the *thema mundi* and the birth of Gayōmart (p. 45 and see also pp. 99-100; cf. Pingree, "The Indian and Pseudo-Indian Passages," p. 146 n. 23), of the Sasanian intercalation scheme or schemes (p. 45; see also pp. 32-33, 118-19, and 203-04), of the exposition of the difference between the Indian (actually

Sendhend; see Pingree, ibid., pp. 151-69) year of 6, 5; 15, 30, 22, 30 days and the Greek year in an anonymous *Ketāb maʾḵaḏ al-mawāqīṭ* (pp. 51-52), and the determination of the length of Ramażān (pp. 64-68).

The lengthy chapter six constitutes the core of the historical section of the *Chronology* as it consists largely of tables of kings and the years of their reigns. Much of this material is derived from the *Ketāb taʾrīḵ senī molūk al-arż waʾal-anbīāʾ* of Ḥamza Eṣfahānī and other chronicles, some from the now lost Arabic translation of Theon's *Handy Tables* or from some derivative thereof. Bīrūnī begins with the genealogies and king-lists of the Jews according to Jewish and Christian interpretations of the Old Testament. Following this he gives king-lists of the Assyrians, Babylonians, Chaldaeans (i.e., Neo-Babylonians and Achaemenids), Egyptians, Macedonians (i.e., Ptolemys), Romans, and Byzantines (twice). He states that the king-lists of the Assyrians, the Egyptians, and the first for the Byzantines (which ends in 871) came from a single book; it seems to have depended on Eusebius' *Chronicle* (in spite of Altheim and Stiehl, *Die Araber in der alten Welt* III, Berlin, 1966, pp. 11-14, who argue that Bīrūnī's source for the Egyptians was an Arabic version of Manetho). The king-lists of the Chaldaeans, Macedonians, and Romans are taken from Theon's *Handy Tables*.The second list of Byzantine emperors (which ends in 913) is derived from Ḥamza.

The chronological lists of the Persians, which are interspersed with many digressions on Iranian mythological or historical traditions, are divided into three periods: the Pīšdādīān and Kayānīān, the Aškānīān (Arsacids), and the Sasanians. For each of these periods Bīrūnī gives at least three king-lists; one according to common opinion as reconstructed by himself, and two given by Ḥamza from different sources. To this basic material he adds a table of mixed Assyrian, Neo-Babylonian, and Achaemenid kings drawn from a Western source (pp. 110-11); tables of the Aškānīān according to Abu'l-Faraǰ Zanǰānī and to the *Šāh-nāma* of Abū Manṣūr ʿAbd-al-Razzāq (pp. 116-17); and tables of the Sasanians according to Zanǰānī and to Mūsā Kesrawī, the latter from Ḥamza (pp. 126-31).

The next large section of this chapter is devoted to pre-Islamic Arab chronology, with tables of the Himyarite, Ghassanid, and Lakhmid kings. This is followed by chronological tables of events in the life of Moḥammad and of the reigns of the early caliphs, the Omayyads, and the ʿAbbasids. The final table in this long chapter is in *ṭaylasān* form, displaying the intervals in days (expressed sexagesimally and decimally) between the eras used in

astronomical tables (see another example in Pingree, op. cit., pp. 185-86).

The digressions in chapter six are both numerous and long. They include a criticism of the astrologers' computation of the longest possible human life enlivened by some examples of teratology and two extended citations from Šāḏān's *Ketāb al-moḏākarāt* (pp.78-84; cf. Pingree, ibid., pp. 170-71). A list of the titles of princes (pp. 100-02), with which should be compared the discussion of the titles of the caliphs (pp. 132-35) as well as of the ecclesiastical titles of the Christians and, from Aḥmad Ahwāzī, the ecclesiastical and political titles in Byzantium (pp. 289-90); the date of the birth of Mānī (p. 118; see also p. 208); the horoscopes of the years in which Ardašīr I and Yazdegerd III were crowned (p. 119); astrological arguments for limiting the duration of the Aškānīān to 240 or to 265 years (*DII* p. 45); the so-called "chess problems" from his own, otherwise lost *Ketāb al-arqām* (pp. 135, 138-39; cf. E. Sachau, *ZDMG* 29, 1875, pp. 148-56); and the conversion of dates in one calendar to those in another, in part derived from Abū Maʿšar (pp. 140-43; see Pingree, *The Thousands*, pp. 37-41 and cf. 130-31).

Chapter seven presents an elaborate explanation and criticism of the intricacies of the Jewish calendar, followed by a discussion of technical aspects of the Greco-Syrian, Muslim, and Persian calendars. The only earlier work than Bīrūnī's on the Jewish calendar (except, perhaps, for that of his older contemporary, Qāʾenī) seems to be the *Maqāla fī esteḵraǰ taʾrīḵ al-Yahūd* composed by Ḵᵛārazmī in the early 3rd/ninth century, though Bīrūnī appears not to have known it. Bīrūnī applies Hipparchus' method to the data on the lengths of the seasons in the Jewish calendar to derive the longitude of the solar apogee (pp. 183-85). Other excursions give the names of the planets and of the zodiacal signs in Arabic, Greek, Persian, Syriac, Hebrew, Sanskrit, and Khwarazmian (pp. 192-93), and a *moǰarrad* table for correlating the thirty-year Muslim intercalation cycle with the week-days (pp. 197-200; see for the earliest *moǰarrad* table, D. Pingree, "The Fragments of the works of al-Fāzārī," *JNES* 29, 1970, pp. 103-23, esp. 110-11, frag. Z 10).

The eighth chapter—the last in the historical section—is one of the most interesting since in it Bīrūnī has collected information concerning "pseudo-prophets" and their sects. These include Būḏāsaf and the Sabeans of Ḥarrān, the Buddha, Zeus, Zarādošt (Zoroaster), Bar Dīṣān (Bardesanes), Marcion, Mani, Mazdak, and several from the early Islamic period. The chapter concludes with a *ṭaylasān* table illustrating the intervals between the eras of the false prophets (*DII* p. 82).

Chapters nine through twenty give extremely valuable accounts of various peoples' festal calendars: the Persians (nine), Soghdians (ten), the Khwarazmians (eleven), the Greeks (thirteen), the Jews (fourteen), the Malkite Christians of Ḵᵛārazm (fifteen), the Nestorian Christians (seventeen), the Sabeans of Ḥarrān (eighteen), and the Muslims (twenty). Interspersed among these are chapters twelve (on the Ḵᵛārazmšāh's reform of the Khwarazmian festal calendar in 959), sixteen (on Lent and its dependent festivals), and nineteen (on the Arabic names of the months, on the beginnings of the seasons in various calendars, and on the fairs of the pre-Islamic Arabs). Aside from the many stories that Bīrūnī relates concerning the origins of various festivals, some of his more interesting digressions in the chapters under review are the following: a table of the lucky and unlucky days in the Persian calendar (pp. 230-32; cf. the "Egyptian days"); a table of the names of the *nakṣatra*s in Soghdian and Khwarazmian (pp. 239-40; cf. W. B. Henning, *JRAS*, 1942, pp. 229-48, esp. 242-48; also Pingree "The Indian and Pseudo-Indian Passages," p. 146); a description of the homocentric solar model of Abū Jaʿfar Ḵāzen (p. 259; J. Samsø, "A Homocentric Solar Model by Abū Jaʿfar al-Khāzin," *JRAS* I, 1977, pp. 268-75); a brief discussion of the principles of hydrology (pp. 261-265); and the horoscope of the founding of Baghdad on 29 July 762 (pp. 270-271; see Pingree, "The Fragments of the Works of al-Fazārī," p. 104).

The final chapter in the *Chronology*, numbered twenty-one, provides a wealth of historical, divinatorial, anecdotal, and astronomical information about the *manāzel al-qamar* (lunar mansions). The last part of this section is a table of the longitudes and latitudes of the fixed stars in the *manāzel*; its epoch is 989. Bīrūnī concludes the chapter and the book with a short treatise concerning the projection of points on the surface of a sphere onto a plane and the construction of celestial and terrestrial maps.

This survey will indicate to some degree the rich variety of the contents of the *Chronology*. Much of this material Bīrūnī has gleaned, as has been intermittently demonstrated, from the works of his predecessors, and much of the value of his book for us lies in the fact that many of his sources are no longer extant. He has also relied heavily on informants, such as Abu'l-Faraǰ Zanǰānī (pp. 44, 215, and 230; he also used Zanǰānī's chronicle, see pp. 116, 117, 126-28, and 319-20), Abu'l-Ḥasan Āḏarḵorā (pp. 44, 99, and 219), Aḥmad Seǰzī (p. 42; see also note 32), the Espahbaḏ Marzbān b. Rostam (p. 209), and the Jewish physician Yaʿqūb b. Mūsā, whom he met in Jorǰān (p. 276). He regrets not to have been able to consult anyone competent to explain the Jacobite

Christian calendar to him (p. 315).

The factual material drawn from many disparate sources, the honesty with which it is presented, and Bīrūnī's intelligent and critical treatment of it make the *Chronology* an invaluable collection of information concerning many topics of Near and Middle Eastern history. The inadequacy of these sources, however, prevented Bīrūnī from dealing adequately with regions outside of Iran and Iraq, or from solving many of the problems inherent in his material, even when he recognized them as problems. The influence of his book among later Muslim writers, save for the chronologists, does not appear to have been great, though a serious investigation of this matter has yet to be made. The existence of a dozen manuscripts of the *Chronology* surely proves that it was read, but the question remains: By whom?

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Chapter three: on Ḵᵛārazm, one may now consult the archeological work carried out in Ḵᵛārazm by S. P. Tolstov and reported, e.g., in his "Dated Documents from the Toprak-kala Palace, and the Problem of the "Śaka Era" and the "Kaniṣka Era"," *Papers on the Date of Kaniṣka*, ed. A. L. Basham, Leiden, 1968, pp. 304-26.

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