

# 7 • Cartography of al-Sharīf al-Idrīsī

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Al-Idrīsī was born in Ceuta, Morocco, in 493/1100.<sup>1</sup> He belonged to the house of the ‘Alawī Idrīsids, claimants to the caliphate, who ruled the region around Ceuta from A.D. 789 to 985; hence his title “al-Sharīf” (the noble) al-Idrīsī. His ancestors were the nobles of Málaga, but unable to maintain their authority, they migrated to Ceuta in the eleventh century. Al-Idrīsī was educated in Córdoba and began his travels when he was barely sixteen years old with a visit to Asia Minor. Then he traveled along the southern coast of France, visited England, and traveled widely in Spain and Morocco.<sup>2</sup> Sometime about 1138, he was invited by the Norman king of Sicily, Roger II (A.D. 1097–1154), to Roger’s court in Palermo, ostensibly to protect al-Idrīsī from his enemies, but in fact so Roger could use the scholar’s noble descent to further his own political objectives.<sup>3</sup> Lewicki has put forward the hypothesis that Roger was more interested in al-Idrīsī as a possible pretender and potential puppet ruler than as a geographer.<sup>4</sup> As a descendant of the Ḥammūdids, former rulers of Málaga, he would have been useful to Roger in his plans to conquer Islamic Spain and establish his hegemony over the western Mediterranean. From al-Idrīsī we learn that Roger’s territorial hold over North Africa was extensive.<sup>5</sup> Al-Idrīsī was conscious of Roger’s expansion in North Africa, and he might even have been expecting to become ruler of some part of North Africa himself.

Whatever Roger’s objective in inviting al-Idrīsī to his court, he capitalized on the scholar’s rich personal experience with regard to North Africa and western Europe and asked him to construct a world map and write a commentary on it. Initially, it seems that al-Idrīsī was not well versed in either geography or cartography. He records his admiration for Roger’s proficiency in mathematical and practical sciences and for his devising “iron” instruments for calculating latitudes and longitudes.<sup>6</sup> In time, however, al-Idrīsī himself came to be regarded as one of the foremost geographers and cartographers of medieval Europe. In collaboration with other scholars in Roger’s court, he completed a world map engraved on silver (no longer extant) and the geographical compendium entitled *Nuzhat al-mushtāq fi’khtirāq al-āfāq* (The book of pleasant journeys into faraway lands), also

known as the *Book of Roger* (containing a small world map and seventy sectional maps). These can be rated as the zenith of Islamic-Norman geographical collaboration. The task of constructing the world map and producing the book was accomplished in the month of Shawwāl 548 (January 1154). After Roger’s death in 548/1154, al-Idrīsī continued to work at the court of his son and successor William I, called the Bad (r. 1154–66), but toward the end of his life he returned to North Africa, and he died in 560/1165, probably in Ceuta.<sup>7</sup>

## AL-SHARĪF AL-IDRĪSĪ AS A MAPMAKER

Of the two cartographic schools developed during the early period—the Ptolemaic and the Balkhī—al-Idrīsī followed the former. The Ptolemaic school was the older, going back to the time of the caliph al-Ma’mūn (r. 198–218/813–33), and its origins lay in the classical geo-

1. A fuller name is Abū ‘Abdallāh Muḥammad ibn Muḥammad ibn ‘Abdallāh ibn Idrīs, al-Sharīf al-Idrīsī. For a short biography of al-Idrīsī, see Giovanni Oman, “al-Idrīsī,” in *The Encyclopaedia of Islam*, new ed. (Leiden: E. J. Brill, 1960–), 3:1032–35.

2. S. Maqbul Ahmad, “al-Idrīsī,” in *Dictionary of Scientific Biography*, 16 vols., ed. Charles Coulston Gillispie (New York: Charles Scribner’s Sons, 1970–80), 7:7–9.

3. See S. Maqbul Ahmad, *India and the Neighbouring Territories in the “Kitāb nuzhat al-mushtāq fi’khtirāq al-āfāq” of al-Sharīf al-Idrīsī* (Leiden: E. J. Brill, 1960), 3–4 and the references cited there. No primary source states the year when al-Idrīsī arrived in Sicily (although historians generally believe he arrived in 1138), and the only relatively certain date we have indicates he was present at Roger’s court in 548/1154; see Tadeusz Lewicki, *Polska i Kraje Sąsiednie w Świetle “Księgi Rogera” geografii arabskiego z XII w. al-Idrīsī’ego*, 2 vols. (vol. 1, Krakow: Nakładem Polskiej Akademii Umiejętności, 1945; vol. 2, Warsaw: Państwowe Wydawnictwo Naukowe, 1954), 1:15–16 and the references cited there.

4. Lewicki, *Polska i Kraje Sąsiednie*, 1:12–14 (note 3).

5. Roger had conquered Jazīrat al-Jarbah (Djerba) in 529/1134, Aṭṭābulus (Tripoli) in 540/1145, Sfax in 543/1148, and Būna in 548/1153, and al-Mahdiyah had a governor on behalf of the king in al-Idrīsī’s time; see al-Idrīsī, *Opus geographicum; sive, “Liber ad eorum delectationem qui terras peragrare studeant,”* issued in nine fascicles by the Istituto Universitario Orientale di Napoli, Istituto Italiano per il Medio ed Estremo Oriente (Leiden: E. J. Brill, 19[70]–84), fasc. 3, pp. 281, 282, 291, 297, 305.

6. Al-Idrīsī, *Opus geographicum*, fasc. 1, pp. 5 and 6 (note 5).

7. Lewicki, *Polska i Kraje Sąsiednie*, 1:17–19 (note 3).

graphic work of Ptolemy (ca. A.D. 98–168). Ptolemy's *Geography* (Arabic *al-Jughrāfiyā*), sometimes rendered in Arabic as *Ṣūrat al-ard*, became the basis of several geographies.

Al-Idrīsī was also aware, in a limited way, of the followers of the Balkhī school, for he refers to the work of Ibn Ḥawqal as one of his sources. The special feature of the cartography of the Balkhī geographers was that they confined themselves to drawing regional maps of the Islamic empire. They divided the kingdom into twenty to twenty-two *aqālim* (regions or provinces) and drew separate maps of each, giving their descriptions. Although their maps and descriptions gave new geopolitical and religious orientations to the growth of regional geography and cartography, their maps varied considerably from the Ptolemaic tradition, having no mathematical basis of latitudes and longitudes.

Although al-Idrīsī made Ptolemaic cartography the basis of his sectional maps in the *Nuzhat al-mushtāq*, we are able to surmise that they were an improvement over the maps drawn during the time of the caliph al-Ma'mūn (such as al-Ma'mūn's map). Although al-Ma'mūn's map is not extant, we learn from al-Ma'sūdi that it was the most exquisite of all the maps he had seen.<sup>8</sup> Al-Ma'sūdi had seen a map attached to Ptolemy's *Geography*, but the work was in Greek, as were the names of the seas, rivers, and so on, and so it was unintelligible to him. He had also seen the world map of Marinus of Tyre.<sup>9</sup> As for al-Ma'mūn's map, al-Zuhri (fl. ca. 530/1140) states that a copy of it was made by al-Fazārī and that al-Zuhri's own work, *Ja'rāfiyah*, was based on al-Fazārī's copy. An analysis of the work of al-Zuhri shows that the original map of al-Ma'mūn therefore must have represented a synthesis of the Iranian *kishvar* system and the Ptolemaic tradition of cartography.<sup>10</sup>

Another early map drawn in the tradition of Ptolemy was by Abū Ja'far Muḥammad ibn Mūsā al-Khwārazmī (d. ca. 232/847). Although the map has not survived, it has been reconstructed by S. Razia Ja'fri based on the coordinates given in al-Khwārazmī's extant text titled *Kitāb ṣūrat al-ard*.<sup>11</sup> Comparing this map with Ptolemy's shows close affinity between the two, though there are some differences: for example, the Indian Ocean in al-Khwārazmī is not landlocked as in Ptolemy but is connected with the Pacific in the east. Al-Idrīsī's sectional maps are certainly an advance over both these maps (as reconstructed); as we might expect, the sections of al-Idrīsī's sectional maps that cover Europe, North Africa, western Asia, and Central Asia are more accurate than those that cover Southeast Asia, China, and the Far East. Moreover, al-Idrīsī's method of dividing the seven climates into ten sections longitudinally was original, and this method was followed later by Ibn Sa'īd in his text (discussed below).

Some scholars attribute to al-Idrīsī a second geographical work titled *Rawḍ al-uns wa-nuzhat al-nafs* (Gardens of intimacy and pleasure of the soul), prepared for Roger II's successor, William I.<sup>12</sup> Although no trace of this work has been found, its existence is posited on a reference to it by Ibn Bashrūn, a Sicilian-Arab poet and contemporary of al-Idrīsī, and on passages from al-Idrīsī that appear in Abū al-Fidā's *Taqwīm al-buldān* (Survey of countries), though they do not correspond to any passages in the *Nuzhat al-mushtāq*.<sup>13</sup> Some recent authors have questioned the existence of this second geographical work.<sup>14</sup>

In the early twentieth century, yet another work by al-Idrīsī was discovered in Istanbul. There are two titles associated with it—*Uns al-muhaj wa-rawḍ al-faraj* (Intimacy of souls and gardens of pleasure), which appears at the beginning of the manuscript, and *Rawḍ al-faraj wa-nuzhat al-muhaj* (Gardens of pleasure and recreation of the souls), which appears at the end of the manuscript and which I will use in this chapter. Scholars do not agree on the exact relation of this text to al-Idrīsī's other works; some think it is related to the *Rawḍ al-uns wa-nuzhat al-nafs*, while others believe it is an abridged edition of the *Nuzhat al-mushtāq*.<sup>15</sup> The manuscript contains text,

8. See above, p. 95.

9. S. Maqbul Ahmad, "Al-Ma'sūdi's Contributions to Medieval Arab Geography," *Islamic Culture* 27 (1953): 61–77, esp. 67.

10. S. Maqbul Ahmad, "Kharīṭa," in *Encyclopaedia of Islam*, new ed., 4:1077–83; and see above, p. 95.

11. S. Razia Ja'fri, *al-Khwārazmī World Geography*, Tajik Academy of Sciences and Center of Central Asian Studies, Kashmir University, Dushanbe, Tajikistan (USSR), 1984.

12. In the nineteenth century by Dietrich Christoph von Rommel, *Abulfedae Arabiae descriptio commentario perpetuo illustrata* (Göttingen: Dieterich, 1802), 2 ff., and by Joseph Toussaint Reinaud, in his *Introduction générale à la géographie des Orientaux*, vol. 1 of *Géographie d'Aboulféda: Traduite de l'arabe en français*, 2 vols. in 3 pts. (vol. 2, pt. 1, trans. Reinaud; vol. 2, pt. 2, trans. Stanislas Guyard) (Paris: Imprimerie Nationale, 1848–83), cxxi. They were followed in this by many later authors.

13. See Giuseppina Igonetti, "Le citazioni del testo geografico di al-Idrīsī nel *Taqwīm al-buldān* di Abū 'l-Fidā," in *Studi Magrebini*, vol. 8 (Naples: Istituto Universitario Orientale, 1976), 39–52.

14. See Giovanni Oman, "A propos du second ouvrage géographique attribué au géographe arabe al-Idrīsī: Le 'Rawḍ al-uns wa nuzhat al-nafs,'" *Folia Orientalia* 12 (1970): 187–93, and Igonetti, "Le citazioni del testo geografico" (note 13).

15. Seybold, who had photographs of the entire manuscript and had begun to edit it, said that it is a summary of al-Idrīsī's *Rawḍ al-uns wa-nuzhat al-nafs* (C. F. Seybold, "al-Idrīsī," in *The Encyclopaedia of Islam*, 1st ed., 4 vols. and suppl. [Leiden: E. J. Brill, 1913–38], 2:451–52); he was followed by several other authors. But J. H. Kramers believed it was an abridged edition of the *Nuzhat al-mushtāq*; see his "Djughrāfiyā," in *Encyclopaedia of Islam*, 1st ed., suppl. 61–73, esp. 67–68; and idem, "Geography and Commerce," in *The Legacy of Islam*, 1st ed., ed. Thomas Arnold and Alfred Guillaume (Oxford: Oxford University Press, 1931), 78–107, esp. 90. See also Sezgin's introduction to al-Idrīsī, *The Entertainment of Hearts and Meadows of Contemplation/Uns al-muhaj wa-rawḍ al-furaj*, ed. Fuat Sezgin (Frankfurt: Institut für Geschichte der Arabisch-Islamischen Wissenschaften, 1984).

a climate map, and seventy-three sectional maps (to be discussed below), and these have been sometimes referred to as the “Kleine Idrisikarte,” as Miller calls it to distinguish it from the maps of the *Nuzhat al-mushtāq*.<sup>16</sup>

### THE NUZHAT AL-MUSHTĀQ FĪ KHĪRĀQ AL-ĀFĀQ

Al-Idrīsī’s descriptive geography contains a preface followed by a description of the world divided into the seven climates. Each climate is further divided into ten sections, and the *Nuzhat al-mushtāq* is the first example of an Islamic geographic text that is so divided. Exhaustive descriptions in the text include the physical, cultural, political, and socioeconomic conditions of each region, and each of the seventy sections of text has a corresponding sectional map (although the text and map are not identical in content). There is also a small round world map in some extant manuscripts. Of the extant versions of the *Nuzhat al-mushtāq* (listed in appendix 7.1), five have complete text and eight have maps.

#### PUBLICATIONS AND TRANSLATIONS

Extracts from the Arabic text of the *Nuzhat al-mushtāq* were published in Rome for the first time in 1592, under the title *Kitāb nuzhat al-mushtāq fī dhikr al-amṣār wa-al-aqṭār wa-al-buldān wa-al-juzur wa-al-madā’in wa-al-āfāq* (Recreation of the desirer in the account of cities, regions, countries, islands, towns, and distant lands).<sup>17</sup> This, however, was a rather careless selection. Passages were excluded arbitrarily, without due regard for the continuity of the text. It was then translated into Italian in 1600 but not published, and later it was translated into Latin and published in 1619 by two Maronites under the title *Geographia nubiensis*.<sup>18</sup> In Plessner’s view these translations are “an example of how Arab geographical books helped to instruct the West at a time when Western geographical research into the Orient, let alone studies of the geographical literature of Islam, had not yet begun.”<sup>19</sup>

Work on al-Idrīsī was revived by Orientalists in the nineteenth century, and Jaubert rendered the *Nuzhat al-mushtāq* into French under the title *Géographie d’Edrisi*.<sup>20</sup> Separate sections of al-Idrīsī’s work together with the relevant maps have also been translated from time to time.<sup>21</sup> But by far the most detailed work on al-Idrīsī’s cartography was done by Miller, who reproduced the original sectional maps of six manuscripts and placed the towns and other physical features on modern sketch maps of these countries. In his commentary he also attempted to identify places.<sup>22</sup> Many other scholars have also worked on al-Idrīsī’s sectional maps, and the Iraqi Academy of Science, Baghdad, published the maps with orig-

inal Arabic names, basing their research on five illustrated manuscripts of the *Nuzhat al-mushtāq*.<sup>23</sup>

In recent years, the enormous task of editing the complete Arabic text of al-Idrīsī’s *Nuzhat al-mushtāq* was undertaken by the Istituto Universitario Orientale di Napoli under the auspices of the Istituto Italiano per il Medio ed Estremo Oriente. The work has been published in nine fascicles, titled *Opus Geographicum*.<sup>24</sup>

#### AL-IDRĪSĪ’S INSTRUCTIONS FOR MAKING A WORLD MAP

In the preface to the *Nuzhat al-mushtāq*, al-Idrīsī describes briefly how Roger collected information to prepare an up-to-date map of the world and to write a book to accompany it.<sup>25</sup> Lauding the political glory of King Roger, al-Idrīsī says that, having firmly established his suzerainty, Roger

16. Konrad Miller, *Mappae arabicae: Arabische Welt- und Länderkarten des 9.-13. Jahrhunderts*, 6 vols. (Stuttgart, 1926–31), Band 1, Heft 3.

17. This version, cataloged under the title *De geographia universali*, was among the first secular Arabic works printed by the Medici Press (Rome, 1592). Many studies have been based on various parts of this text.

18. This edition was translated by Gabriel Sionita and Joannes Hesronita (Paris: Typographia Hieronymi Blageart, 1619). In addition, there are two abridgments of the *Nuzhat al-mushtāq* by other authors; see Oman, “al-Idrīsī,” 1033 (note 1).

19. Martin Plessner, “The Natural Sciences and Medicine,” in *The Legacy of Islam*, 2d ed., ed. Joseph Schacht and Clifford Edmund Bosworth (Oxford: Oxford University Press, 1979), 425–60, esp. 455.

20. *Géographie d’Edrisi*, 2 vols., trans. Pierre Amédée Emilien Probe Jaubert (Paris: Imprimerie Royale, 1836–40).

21. For a detailed survey of the work done on al-Idrīsī up to 1969, see Giovanni Oman, “Notizie bibliografiche sul geografo arabo al-Idrīsī (XII secolo) e sulle sue opere,” *Annali dell’Istituto Universitario Orientale di Napoli*, n.s., 11 (1961): 25–61, and the following addenda to that article (all in the *Annali*): n.s., 12 (1962): 193–94; n.s., 16 (1966): 101–3; and n.s., 19 (1969): 45–55.

22. Miller, *Mappae arabicae*, Band 6 (note 16), reproduces the sectional maps from all of the extant manuscripts except Istanbul, Köprülü Kütüphanesi, MS. 955, and Sofia, Cyril and Methodius National Library, MS. Or. 3198. Parts of *Mappae arabicae* have been republished in at least two other forms: Konrad Miller, *Mappae arabicae*, 2 vols., Beihfte zum Tübinger Atlas des vorderen Orients, Reihe B, Geisteswissenschaften, no. 65 (Wiesbaden: Reichert, 1986); and idem, *Weltkarte des Arabers Idrisi vom Jahre 1154* (Stuttgart: Brockhaus/Antiquarium, 1981).

23. This was published by the Maṭba‘ al-Misāha, Baghdad, in 1951. It was based on Miller’s edition of the sectional maps (in *Mappae arabicae*) but was compared with the original maps from five illustrated manuscripts and with other Arabic geographical works.

24. See note 5 above for a full reference to this Arabic edition. This edition does not contain maps, but the Istituto Universitario Orientale may publish the maps in the future (correspondence, 1990).

25. In addition to this, al-Idrīsī’s preface contains miscellaneous material that relates to the cartographic concepts of the day. For instance, he provides a description of the position of the earth as a stationary body in the celestial sphere, discusses the circumference of the earth, and speculates on matters such as the extent of the inhabited world

wished that he should accurately know the details of his land and master them with a definite knowledge, and that he should know the boundaries and routes both by land or sea and in what climate they were and what distinguished them as to seas and gulfs [what was the shape of the coastline] together with a knowledge of other lands and regions in all seven climates whenever the various learned sources agreed upon them and as was established in surviving notebooks or by various authors, showing what each climate contained of a specific country.<sup>26</sup>

Roger was especially keen to obtain information about the other countries of the seven climates. This would be derived from the opinions of scholars and from geographical writings. Although numerous works on the subject were studied in compliance with Roger's objective, "he did not find a clearly formulated commentary, but only considerable disagreement."<sup>27</sup> Roger then had discussions with scholars, and they revealed that their knowledge was not much better than that recorded in the books, so people who were well informed about his empire and had traveled far and wide in it were brought to his court.

They studied together, but he did not find much extra knowledge from [other scholars] over what he found in the aforementioned works, and when he had convened with them on this subject he sent out into all his lands and ordered yet other scholars who may have been traveling around to come and asked them their opinions both singly and collectively. But there was no agreement among them. However, where they agreed he accepted the information, but where they differed, he rejected it.<sup>28</sup>

This process, according to al-Idrisi, continued for about fifteen years. New facts were uncovered and critical discussions were held about the authenticity of the information.<sup>29</sup>

The next phase involved collating this material by preparing a *lawḥ al-tarsīm*, "drawing board," and entering the relevant data on it.

He wished to make sure of the accuracy of what these people had agreed upon both of longitudes and latitudes [and in measurements between places]. So he had brought to him a drawing board [*lawḥ al-tarsīm*] and had traced on it with iron instruments item by item what had been mentioned in the aforementioned books, together with the more authentic of the decisions of the scholars.

All this he examined closely until he was convinced that the information was correct.<sup>30</sup>

The cartographic climax of all this work was to be a map in permanent form engraved on precious metal. It was ordered that

a disk [*ḍāʿira*] should be produced in pure silver of a

large extent and of 400 Roman *raṭls* in weight, each *raṭl* of 112 *dirhams* and when it was ready he had engraved on it a map of the seven climates and their lands and regions, their shorelines and hinterlands, gulfs and seas, watercourses and places of rivers, their inhabited and uninhabited parts, what [distances] were between each locality there, either along frequented roads or in determined miles or authenticated measurements and known harbors according to the version appearing on the drawing board, not differing from it at all and thus following what had been decided there without any variation.<sup>31</sup>

From the description above, it is obvious that Roger was keen to have an authentic, durable, and up-to-date world map prepared. Ptolemy's *al-Jughrāfiyā*, used by al-Idrisi (al-Idrisi calls it *Ṣūrat al-arḍ*), must have been considered out-of-date.

From this we can see that there were three distinct stages in constructing the world map. The first was to collect the data from both the written and oral sources, to test the veracity of the data, and to sort out the authentic material. The second stage was to collate the material on the drawing board and simultaneously ascertain latitudes and longitudes with the help of instruments as part of the compilation process. The third was to engrave faithfully on a silver disk the image on the drawing board. Neither the drawing board nor the silver world map is extant.<sup>32</sup> Although there is no positive evidence about the relation of the silver world map and the drawing-board map to the sectional maps found in al-Idrisi's *Nuzhat al-mushtāq*, it is likely that the sectional maps were based on the drawing-board map and the silver map.<sup>33</sup>

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north and south of the equator, the nature of the Encircling Ocean, the division of the inhabited quarter into seven climates, and the seven seas called "gulfs" entering the landmass. His ideas do not reflect much original thought, nor are they a critical evaluation of the conceptions of the Greek or the early Islamic geographers and astronomers; for a critical analysis of his concepts, see Ahmad, *India*, 5–8 (note 3).

26. Al-Idrisi, *Opus geographicum*, fasc. 1, p. 5 (note 5).

27. Al-Idrisi, *Opus geographicum*, fasc. 1, p. 6 (note 5).

28. Al-Idrisi, *Opus geographicum*, fasc. 1, p. 6 (note 5).

29. Al-Idrisi, *Opus geographicum*, fasc. 1, p. 6 (note 5).

30. Al-Idrisi, *Opus geographicum*, fasc. 1, p. 6 (note 5). We know nothing more about the "drawing board" or the "measuring instruments," which are reported only in this passage.

31. Al-Idrisi, *Opus geographicum*, fasc. 1, p. 6 (note 5). The usual weight of a *dirham* was 2.97 grams (see G. C. Miles, "Dirham," in *Encyclopaedia of Islam*, new ed., 2:319–20), therefore the total weight was about 134 kilograms.

32. Miller, following others, says the silver disk was destroyed or disappeared in an A.D. 1160/61 coup d'état, although I know of no definite evidence for this.

33. Lewicki believes that the "silver planisphere" was a model (*Musterentwurf*) for the sectional maps; see Tadeusz Lewicki "Marino Sanudos Mappa mundi (1321) und die runde Weltkarte von Idrisi (1154)," *Rocznik Orientalistyczny* 38 (1976): 169–98, esp. 177.

WRITING THE *NUZHAT AL-MUSHTĀQ*

When the silver map had been completed, Roger ordered a book to be written that would follow the format of the map. The idea was that

they should produce a book explaining how the form was arrived at, adding whatever they had missed [in the map] as to the conditions of the lands and countries, concerning their inhabitants and their possessions and places and their likenesses, their seas, mountains and measurements, their crops and revenues and all sorts of buildings, their property and the works they have produced, their economy and merchandising, both imports and exports, and all the wonderful things relating to each and where they were with regard to the seven climates and also a description of their peoples with their customs and habits, appearance, clothes, and language. The book would be called the *Nuzhat al-mushtāq fi'khtirāq al-āfāq*. This was all completed in the first third of January agreeing with the month of Shawwāl in the year A.H. 548.<sup>34</sup>

The commentary that al-Idrīsī wrote in response to this agenda is one of the most exhaustive medieval works in the field of physical, descriptive, cultural, and political geography. It is dominated by the description of towns and places with their distances and directions. Al-Idrīsī is not consistent, however, in describing distances in the *Nuzhat al-mushtāq*. He uses different measures (see table 7.1), apparently because of the different sources he used: the Arabic and also those current in Sicily at the time.

To describe the world in his book, al-Idrīsī divided the seven Greek climates (after Ptolemy) into ten sections longitudinally to suit the size of the book. He informs us that “when we desired to enter up these place-names in their climates and their routes and what was relevant about their inhabitants, we divided the length of each climate into ten divisions, deciding the divisions by longitude and latitude.”<sup>35</sup>

The vast amount of information at the disposal of al-Idrīsī, and the problem of incorporating it into the text, shows that he must have evolved a system of sifting the relevant material for each of the sections, as well as a method of indexing and classification under at least seventy headings. Because the book is not divided by natural regions or countries, it would have been necessary to carry over the descriptions of physical features such as the seas, rivers, lakes, and mountains from one section to another, either eastward within the same climate or northward across climate divisions. A proper organization of the material was clearly vital.<sup>36</sup>

MAPS IN THE *NUZHAT AL-MUSHTĀQ*

Although six of the manuscripts of the *Nuzhat al-mushtāq* listed in appendix 7.1 contain a small circular world

TABLE 7.1 Measures Used by al-Idrīsī

## LAND DISTANCES

- 1 classical Arabian *mīl* (mile) = 6,474 feet, or 1<sup>1</sup>/<sub>15</sub> geographical miles
- 1 *farsakh* = 3 Arabian *mīls*
- 1 *Frank mīl* = not certain
- 1 *marḥalah* = 25 to 30 Arabian *mīls* (about one day's march)
- “Long *marḥalah*” = about 40 Arabian *mīls*
- Distance stated in terms of number of days' journey
- Distance in terms of an arrow shot = 180–275 meters
- 10 *manzīls* = 270 Arabian *mīls*<sup>a</sup>
- 1 *rashāshī* cubit = 3 palm lengths<sup>b</sup>

## SEA DISTANCES

- Majrā* = a day's sailing (about 104 Arabian *mīls*)
- Muqayyad al-jary* = another term for *majrā*
- One-half a *majrā* = 52 *mīls*
- 2 *majrās* = 208 *mīls*
- “Small *majrā*” = probably less than a day's sailing
- Al-Idrīsī also uses *mīls* for sea distances

## MEASUREMENT OF GULFS AND BAYS

Al-Idrīsī uses two different methods:

- Rū'sīya* = a distance measured along the sea on a straight line between the two tips of a bay
- Taqwīr* (from *quwwārah*, “scoop”) = a distance measured along the coastline of a bay

<sup>a</sup>Compare al-Idrīsī, *Opus geographicum*; *sive*, “*Liber ad eorum delectationem qui terras peragrare studeant*,” issued in nine fascicles by the Istituto Universitario Orientale di Napoli, Istituto Italiano per il Medio ed Estremo Oriente (Leiden: E. J. Brill, 19[70]–84), fasc. 2, pp. 141–42.

<sup>b</sup>Compare al-Idrīsī, *Opus geographicum*, fasc. 3, pp. 265, 320.

map, this map is not mentioned in al-Idrīsī's text. The versions that are extant (figs. 7.1 to 7.5 and plate 11) depict a circular world surrounded by the Encircling Ocean (*al-muḥīt*). South is placed at the top, a method followed by the Balkhī school of geographers in their world maps. The eastern coast of Africa is shown extending toward the east longitudinally as far as what is now the Pacific Ocean, so that the Indian Ocean is shown landlocked on all sides except the east. The southern quarter of the earth is also covered by terra incognita connected with southern Africa. This is also a Balkhī school concept; al-Idrīsī was unaware of the proposed connection of the Indian Ocean with the Atlantic through channels to the south of the sources of the Nile, a theory

34. Al-Idrīsī, *Opus geographicum*, fasc. 1, pp. 6–7 (note 5).

35. Al-Idrīsī, *Opus geographicum*, fasc. 1, p. 13 (note 5).

36. Yet some mistakes are immediately apparent: e.g., Audaghust and Zawilah belonging to North Africa are included in India; al-Idrīsī, *Opus geographicum*, fasc. 1, p. 20, and fasc. 2, pp. 107, 108, 115, 186 (note 5).



FIG. 7.1. AL-IDRĪSĪ'S WORLD MAP FROM THE PARIS MANUSCRIPT (MS. ARABE 2221). Although damaged, this copy from A.D. 1300 is the oldest surviving version of al-Idrīsī's circular world map. The south orientation and prominent representation of the source of the Nile are characteristic of earlier Islamic world maps.

Size of each folio: 26 × 21 cm. By permission of the Bibliothèque Nationale, Paris (MS. Arabe 2221, fols. 3v-4).



FIG. 7.3. AL-IDRĪSĪ'S WORLD MAP FROM THE ISTANBUL MANUSCRIPT (KÖPRÜLÜ KÜTÜPHANESİ). The manuscript, dated 1469, was copied by 'Alī ibn Ḥasan al-'Ajāmī. Size of each folio: 26.5 × 17.5. By permission of the Köprülü Kütüphanesi, Istanbul (MS. 955).



FIG. 7.2. AL-IDRĪSĪ'S WORLD MAP FROM THE CAIRO MANUSCRIPT. Dated 1348, this world map and the one from Sofia (fig. 7.4) are the only versions without climate boundaries. Size of the original: not known. By permission of the Dār al-Kutub, Cairo (*Juġrāfiyā* 150), photograph courtesy of Istituto Universitario Orientale, Naples.



FIG. 7.4. AL-IDRĪSĪ'S WORLD MAP FROM THE SOFIA MANUSCRIPT. Copied in Cairo by Muḥammad ibn Alī al-Ajhūrī al-Shāfi'ī, the manuscript is dated 1556. Size of each folio: 31 × 21 cm. By permission of the Cyril and Methodius National Library, Sofia (MS. Or. 3198, fols. 4v-5r).



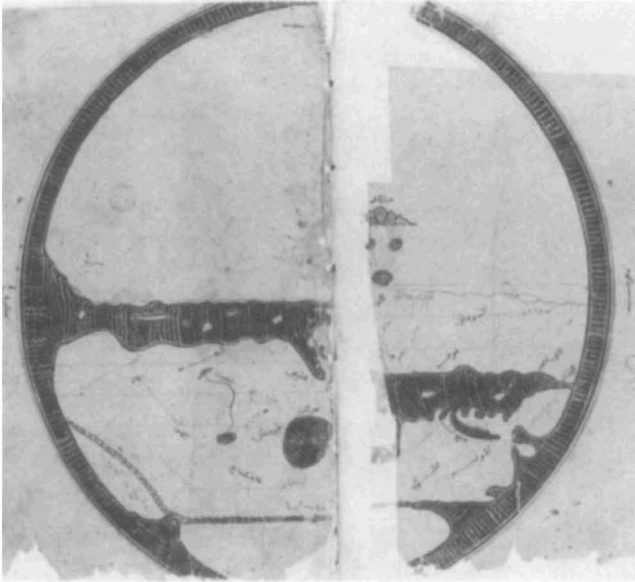
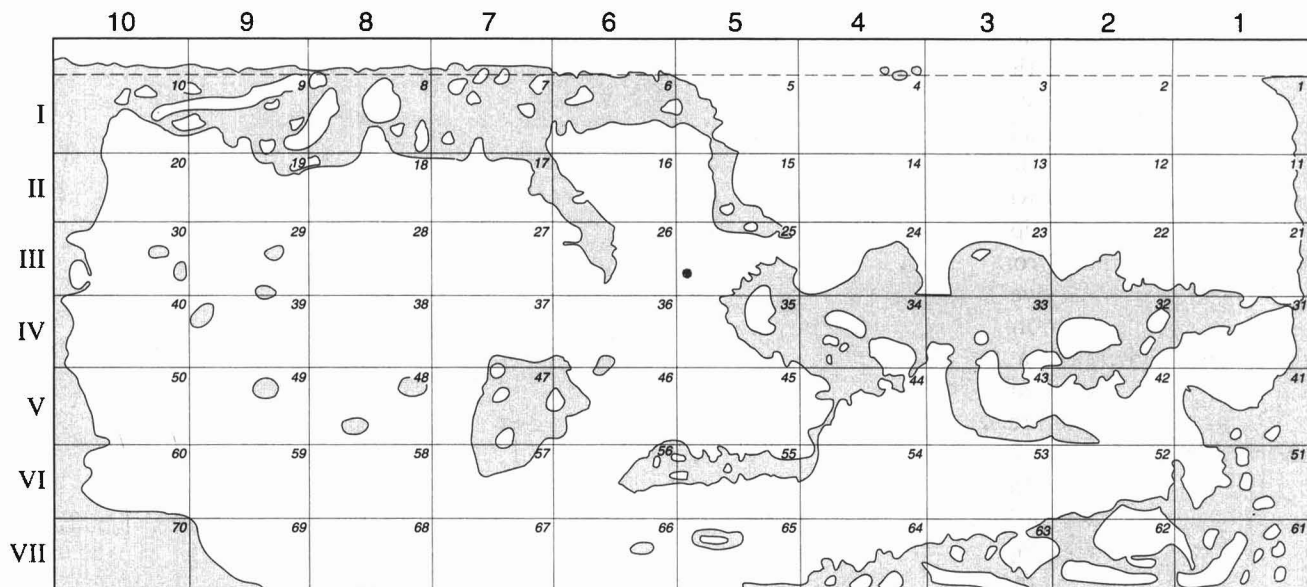


FIG. 7.5. AL-IDRISĪ'S WORLD MAP FROM THE OXFORD GREAVES MANUSCRIPT. This manuscript has been dated to the late fourteenth century and the late sixteenth century (see appendix 7.1). The world map, partially destroyed, has straight climate boundaries, unlike the other extant versions. Diameter of the original: 33 cm. By permission of the Bodleian Library, Oxford (MS. Greaves 42, fols. 1v–2r).

propounded by al-Bīrūnī. Several versions of the map depict the seven climates as curved lines running east-west, beginning at the equator and continuing northward as far as the Scandinavian countries. According to Ptolemy, the northern limit of the *oikoumene* was at 63°N, whereas al-Idrisī places it a little beyond (north of) 64°N. The climates in the circular map are not divided into ten sections longitudinally as in al-Idrisī's sectional maps. The sources of the Nile (Mountains of the Moon) and places like Barbarah, al-Zanj, Sofalah, and al-Waqwaq are placed south of the equator. The map, though differing in details when compared with the sectional maps, is similar in general outline and presentation of physical data. It seems that this miniature circular world map was drawn by al-Idrisī following the larger silver map, with a view to fitting in with the text and the sectional maps and giving a general view of the *oikoumene* as he conceived it.

At the end of his preface to the *Nuzhat al-mushtāq*, and just before he begins his climate-by-climate treatment, al-Idrisī explains the reasons for preparing the sectional maps and their relation to the book. Al-Idrisī's thoughts on this subject, as an early statement of cartographic method and purpose, clearly deserve to be fully quoted.



(North)

FIG. 7.6. INDEX OF THE SECTIONAL MAPS IN THE *NUZHAT AL-MUSHTĀQ*. This line drawing is a simplification of Konrad Miller's composite map showing what the sectional maps (which are interspersed throughout the text in al-Idrisī's *Nuzhat al-mushtāq*) would look like if joined together. The climate numbers are given along the vertical axis, and the ten longitudinal divisions are given across the top. The consecutive numbers sometimes used to refer to the sectional maps are

shown in the upper right corner of each section. Note that these delineations follow most closely the Paris (MS. Arabe 2221) and Oxford (MS. Pococke 372) manuscripts. The exact depictions of coastlines, islands, and so forth, differ in other manuscripts.

After Konrad Miller, *Mappae arabicae: Arabische Welt- und Länderkarten des 9.–13. Jahrhunderts*, 6 vols. (Stuttgart, 1926–31), Band 1, Heft 2.

And we have entered up in each division what belonged to it of towns, districts, and regions so that he who looked at it could observe what would normally be hidden from his eyes or would not normally reach his understanding or [what he] would not be able to reach himself because of the impossible nature of the route and the differing nature of the peoples. Thus he can correct this information by looking at it. So the total number of these sectional maps is seventy, not counting the two extreme limits in two directions, one being the southern limit of human habitation caused by the excessive heat and lack of water and the other the northern limit of human habitation caused by excessive cold.

Now it is clear that when the observer looks at these maps and these countries explained, he sees a true description and pleasing form, but beyond that he needs to learn descriptions of the provinces [of the world] and the appearance of their peoples, their dress and their adornments and the practicable roads and their mileages and farsangs and all the wonders of their lands as witnessed by travelers and mentioned by roaming writers and confirmed by narrators. Thus after each map we have entered everything we have thought necessary and suitable in its proper place in the book, as much as our knowledge and our ability will allow.<sup>37</sup>

From this it is clear that a genuine integration of map and text was envisaged throughout the work, and that al-Idrīsī fully appreciated the particular value of maps in communicating geographical information.

Eight of the manuscripts listed in appendix 7.1 contain sectional maps, although the number extant in each varies. Since the work as a whole was meant primarily to include physical and descriptive geography, latitudes and longitudes were omitted from the maps, and latitude and longitude values are not given in the text, where distances are used for specific locations. In his sectional maps, however, al-Idrīsī did follow a definite geographical order. The seventy maps, when arranged in order of climates and sections, present a broad picture of the world as conceived by al-Idrīsī (fig. 7.6). For the western limit of the inhabited world, al-Idrīsī adopted the prime meridian of the Fortunate Isles (al-Khālīdāt), like Ptolemy and some other Arab cartographers. The extreme eastern limit was Silā Island (Korea) through which 180° was supposed to pass. The northern limit was 64°N, but al-Idrīsī did not specify the southern limit.<sup>38</sup>

Each of the sectional maps depicts the physical features in different colors. Latitudes and longitudes are not shown on these maps, and the locations of towns and other features do not always coincide with the distances given in the text.<sup>39</sup> The maps also vary in other respects from the written descriptions. A glance at the sectional maps would immediately give the impression that they

generally depict Europe, North Africa, the Mediterranean region, and western Asia more accurately than they do the rest of Africa, Asia, or Southeast Asia. However, they compare well with the world map of al-Khwārizmī reconstructed from his tables by modern scholars.<sup>40</sup>

The cartographic style varies considerably between manuscripts, and although these stylistic differences reflect individual copyists rather than al-Idrīsī (none of the surviving manuscripts were contemporary with al-Idrīsī), it is still interesting to note how the few maps that survive depict different features. Bodies of water are usually represented with a pattern of lines or lines and circles. They range from very rushed and haphazard squiggles, sometimes incompletely rendered (figs. 7.7 and 7.8), to carefully, almost elaborately drawn combinations of lines and dots (fig. 7.9). Rivers are usually simple lines of a fairly consistent width (figs. 7.10 to 7.13). Towns are represented as small circles, some plain and others more elaborate rosettes in gold (fig. 7.13 and plate 12), and sometimes as small "towers" (fig. 7.14). Mountains, although similar in general shape and size, have small intricacies of pattern, form, and color in each manuscript (plate 12 above and fig. 7.15).

Very little is known for certain about the chronology and relationship of the maps in the various manuscripts. Studies of the *Nuzhat al-mushtāq* have generally focused on one particular region and analyzed how al-Idrīsī described and mapped it.<sup>41</sup> Scholars have tried to establish the chronology and relationship between the different recensions of al-Idrīsī's text, but similarly exhaustive research has yet to be done on the maps.<sup>42</sup>

### THE RAWḌ AL-FARAJ WA-NUZHAT AL-MUHAJ

A copy of the *Rawḍ al-faraj wa-nuzhat al-muhaj* was discovered in Istanbul in the twentieth century. There are at least two manuscripts in Istanbul and a copy in a private collection (see appendix 7.1). The manuscripts indicate that the original was written by al-Idrīsī and copied in

37. Al-Idrīsī, *Opus geographicum*, fasc. 1, pp. 13–14 (note 5).

38. Al-Idrīsī, *Opus geographicum*, fasc. 1, p. 8 (note 5).

39. However, it is believed that to some extent al-Idrīsī did use latitudes in plotting his localities; see Edward S. Kennedy, "Geographical Latitudes in al-Idrīsī's World Map," *Zeitschrift für Geschichte der Arabisch-Islamischen Wissenschaften* 3 (1986): 265–68.

40. See Hans von Mżik, ed., *Das Kitāb šūrat al-arḍ des Abū Ġā'far Muḥammad ibn Mūsā al-Ḥuwārizmī*, Bibliothek Arabischer Historiker und Geographen, vol. 3 (Leipzig: Otto Harrassowitz, 1926), and the world map reconstructed on the basis of this work by S. Razia Ja'f'ri, "A Critical Revision and Interpretation of *Kitāb šūrat al-'arḍ* by Muḥammad b. Mūsā al-Khwārizmī" (thesis, Aligarh Muslim University).

41. For a listing of many of the individual studies devoted to specific regions, see Oman, "al-Idrīsī," 1033–34 (note 1).

42. See, for example, Roberto Rubinacci, "La data della Geografia di al-Idrīsī," *Studi Magrebini* 3 (1970): 73–77, among others.



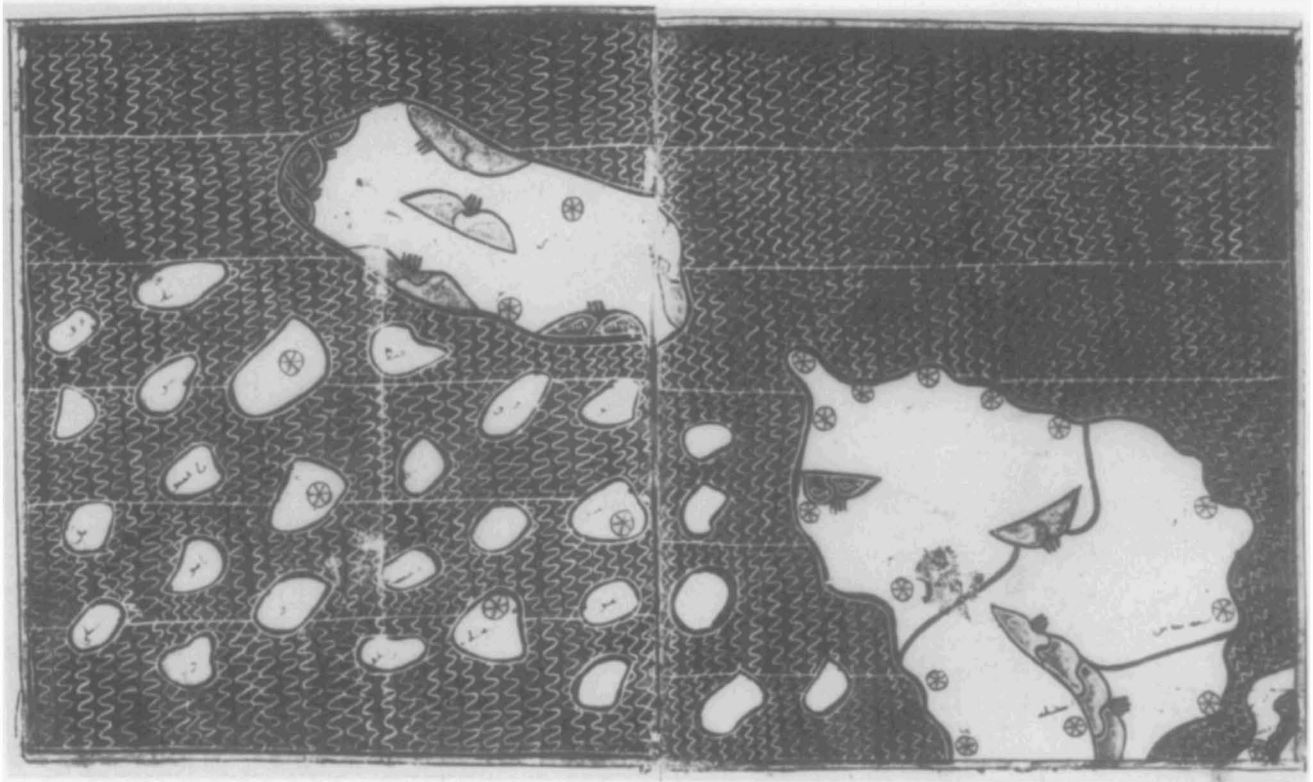


FIG. 7.7. THE AEGEAN FROM THE LENINGRAD MANUSCRIPT. Dated to the beginning of the fourteenth century, this manuscript was restored sometime before 1882. Crete and the islands of the Aegean are depicted on the left, and the water pattern in this section (climate 4, section 4) is typical of many of the extant al-Idrisi manuscripts.

Size of each folio: 25 × 18 cm; size of the map: 19 × 32 cm. By permission of the M. E. Saltykov-Shchedrin State Public Library, Leningrad (MS. Ar. N.S. 176).



FIG. 7.8. PART OF THE INDIAN OCEAN AND TAPROBANE FROM THE OXFORD POCOCKE MANUSCRIPT. Although most manuscripts have some pattern over the bodies of water, in this section the pattern is only partially drawn in on the right. The area depicted here is section 8 of climate 1: the large central island is what is today Sri Lanka, with the southern tip of India visible at the bottom center. Size of each folio: 30.5 × 21 cm. By permission of the Bodleian Library, Oxford (MS. Pococke 375, fols. 33v-34r).

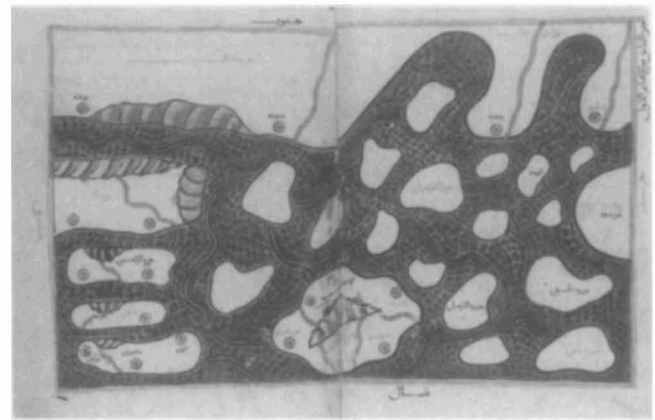
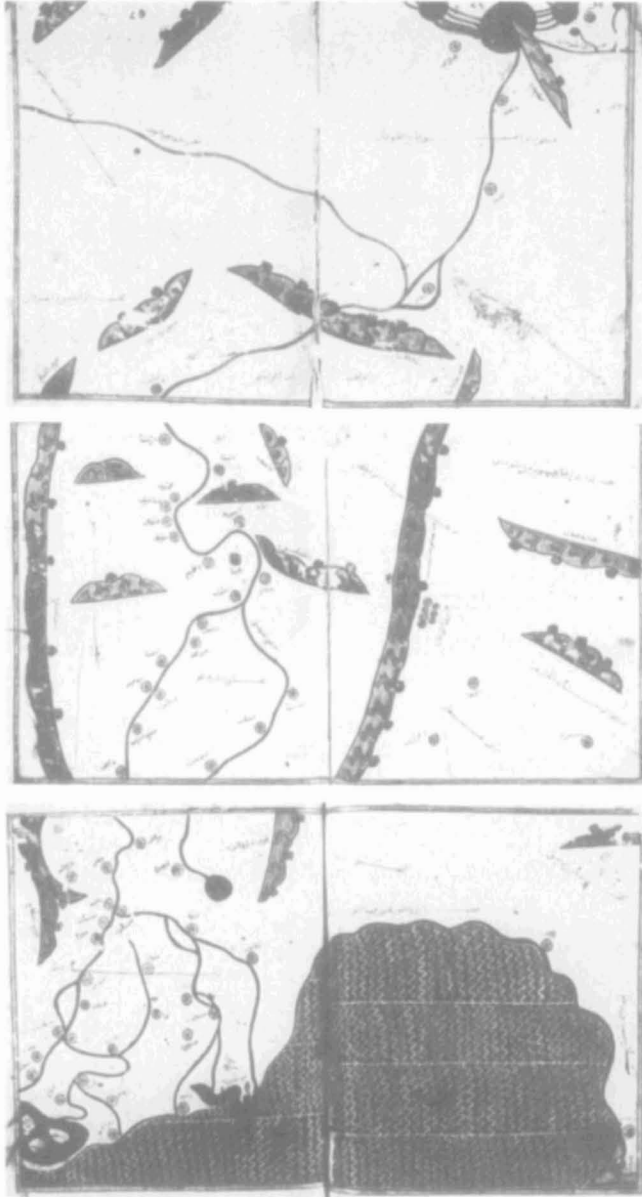


FIG. 7.9. PART OF THE INDIAN OCEAN AND TAPROBANE FROM THE OXFORD GREAVES MANUSCRIPT. Although not identical in appearance, this is also section 8 of climate 1 (fig. 7.8 left). What is today Sri Lanka can be identified as the island at the center bottom with the mountain symbol in the middle, but no peninsular tip of India is shown. The water pattern is elaborately drawn, but in other sections of the same manuscript, it consists of simple parallel wavy lines reminiscent of figures 7.7 and 7.8 above and left. Size of each folio: 32 × 24 cm. By permission of the Bodleian Library, Oxford (MS. Greaves 42, fols. 37v-38r).



FIGS. 7.10, 7.11, AND 7.12. THE RIVER NILE FROM THE ISTANBUL AYASOFYA MANUSCRIPT. Section 4 of the first three climates is shown. Climate 1 (top, fig. 7.10) shows the source of the Nile in the upper right; climate 2 (middle, fig. 7.11) depicts the course of the Nile; and climate 3 (bottom, fig. 7.12) the Nile delta in the left folio. Size of each original: 25.6 × 38.6 cm. By permission of the Süleymaniye Kütüphanesi, Istanbul (Ayasofya 3502).

588/1192.<sup>43</sup> The text consists essentially of itineraries and distances. There is an additional climate added south of the equator, and he includes this part of the map in the first climate. On the small circular climate map (fig. 7.16) this portion is given the name *khalf wast al-ard* (behind, or south of, the center of the earth, i.e., the



FIG. 7.13. COURSE OF THE NILE FROM THE CAIRO MANUSCRIPT. From section 4 of climate 2 (compare fig. 7.11 left), this map shows part of Egypt south of the Nile Delta. The Nile can be seen on the left leaf, with towns simply designated by a circle with a cross inside. Size of the original: not known. By permission of the Dār al-Kutub, Cairo (*Jugrāfiyā* 150), photograph courtesy of Istituto Universitario Orientale, Naples.



FIG. 7.14. INDIA FROM THE SOFIA MANUSCRIPT. In this depiction of climate 2, section 8, the top right corner is the Arabian Sea, the top left corner is the Bay of Bengal, and the southern tip of India extends off the map (top center). The symbols for towns are different from those on other extant al-Idrisi manuscripts. Size of each folio: 31 × 21 cm. By permission of the Cyril and Methodius National Library, Sofia (MS. Or. 3198, fols. 73v–74r).

equator). The introduction to the *Rawḍ al-faraj* contains somewhat more astronomical information than al-Idrisi's

43. See the facsimile containing both Istanbul manuscripts at the Süleymaniye Kütüphanesi (Hekimoğlu MS. 688 and Hasan Hüsnü MS. 1289): al-Idrisi, *Entertainment of Hearts* (note 15).

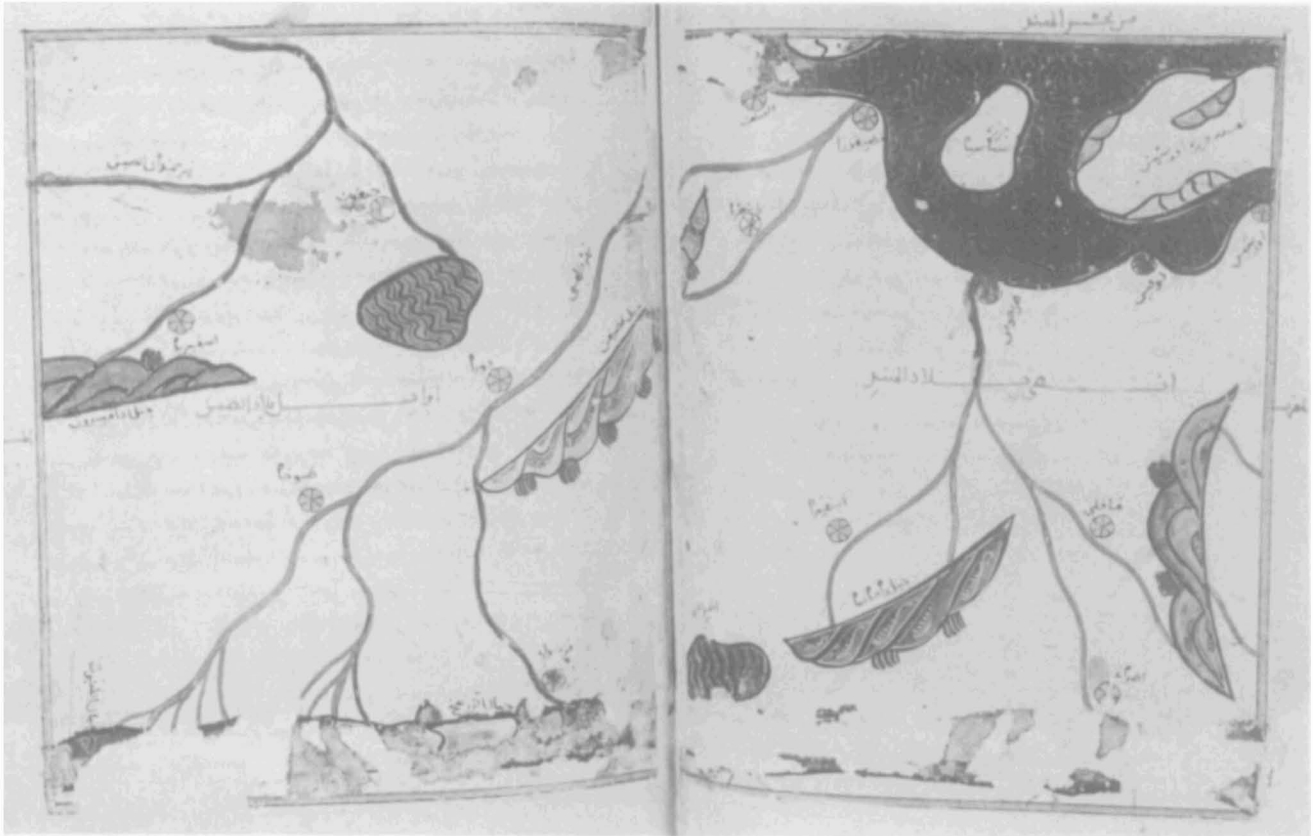


FIG. 7.15. REGION NORTHEAST OF THE BAY OF BENGAL FROM THE PARIS MANUSCRIPT. Although damaged in the lower section, this depiction of climate 2, section 9, which is of the region northeast of the Bay of Bengal (visible in the upper right), does show a few examples of mountains drawn

in similar styles with minor variations in elaboration and decoration.

Size of each folio: 26 × 21 cm. By permission of the Bibliothèque Nationale, Paris (MS. Arabe 2221, fols. 82v–83).

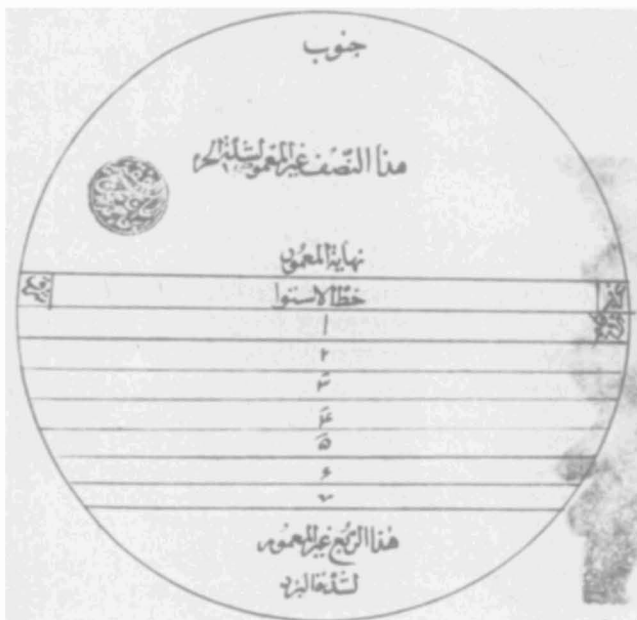


FIG. 7.16. CLIMATE DIAGRAM FROM THE RAWD AL-FARAJ.

Size of the original: not known. By permission of Süleymaniye Kütüphanesi, Istanbul (Hasan Hüsnü MS. 1289).

*Nuzhat al-mushtāq*, though neither text reveals any cartographic principles.<sup>44</sup>

There are seventy-three sectional maps. These maps resemble those in the *Nuzhat al-mushtāq* in general form and in what they depict, but they are not of equal size; sometimes there are two sections on one map, they often overlap, and they do not fit together as well as those of the *Nuzhat al-mushtāq* (figs. 7.17 and 7.18). There are fifteen sectional maps that represent the first climate, ten sectional maps each for climates two through five, and nine each for climates six and seven. Except for the first five maps, the maps have east at the top in the two extant manuscripts (south orientations and one north orientation are found in the first five maps).

Since the maps in the *Rawd al-faraj* are smaller than those in the *Nuzhat al-mushtāq*, they predictably show less information. The maps depict many of the same physical features, but in a more simplified manner (figs. 7.19 and 7.20). Mountains, cities, rivers, and bodies of water

44. Kramers, "Djughrafiya," 67–68 (note 15). Miller, *Mappae arabicae*, Band 1, Heft 3 (note 16), discusses the "Kleine Idrisi," as he calls it, and reproduces maps from Hekimoglu MS. 688.

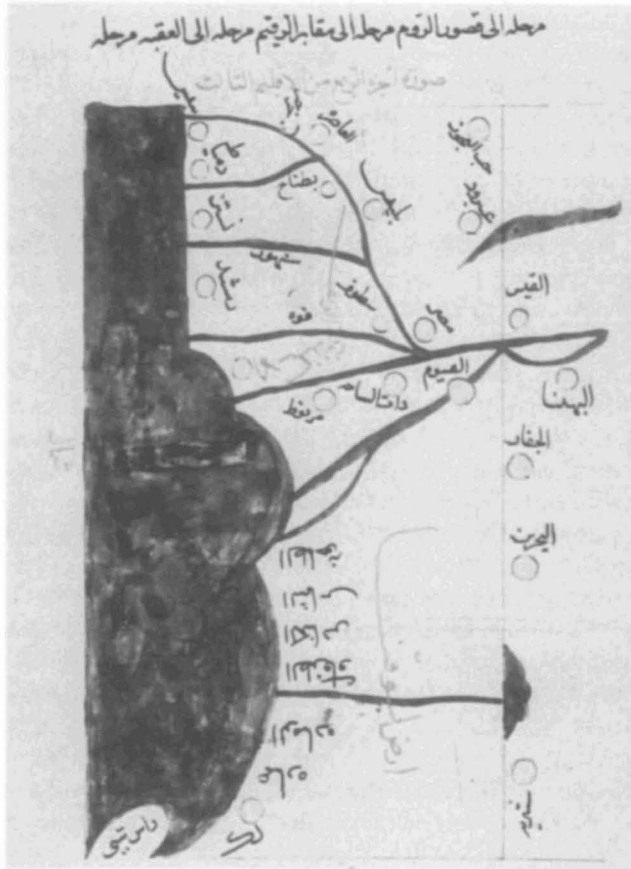


FIG. 7.17. THE NILE DELTA FROM THE RAWD AL-FARAJ. Section 4 of climate 3 is shown with east at the top and the Mediterranean on the left (see also fig. 7.18). Size of the original: 29.3 × 18.4 cm. By permission of Süleymaniye Kütüphanesi, Istanbul (Hekimoğlu Ali Paşa MS. 688).



FIG. 7.18. THE COURSE OF THE NILE FROM THE RAWD AL-FARAJ. With east at the top, this depiction of section 4, climate 3, would be geographically adjacent to the map in fig. 7.17, and it is clear that the maps do not match up as precisely as those of the same regions in the *Nuzhat al-mushtāq* (compare figs. 7.11 and 7.12, for example). Size of the original: 29.3 × 18.4 cm. By permission of Süleymaniye Kütüphanesi, Istanbul (Hekimoğlu Ali Paşa MS. 688).

are unadorned, without distinguishing patterns or designs.<sup>45</sup>

### THE SOURCES FOR AL-IDRĪSĪ'S *NUZHAT AL-MUSHTĀQ*

We know that by working in Roger's court, al-Idrisī had access to a wide range of sources, making use of some aspects of both the Balkhī and Ptolemaic cartographic traditions. He utilized Ibn Ḥawqal's work, which was rooted in the Balkhī tradition, but this source did not match al-Idrisī's objective and described only the *mamlakat al-Islām* (Islamic empire). It left out the rest of the world, whereas al-Idrisī was required to deal with the whole of the known world as the Ptolemaic tradition did. There is little doubt that al-Idrisī also used a number

of non-Arabic sources for his text and maps. Considerable information was supplied to him by the European travelers at Roger's court, and it is not unlikely that he also used some maritime information derived from Roger's navy, especially concerning the coastal regions of North Africa. Here I will attempt to fix al-Idrisī's position among his predecessors and to establish his indebtedness to different traditions.

45. It was said in 1930 that except for Konrad Miller and some passages by Carlo Alfonso Nallino, this manuscript remained virtually unexplored (al-Idrisī, *La Finlande et les autres pays Baltiques Orientaux*, ed. and trans. Oiva Johannes Tallgren-Tuulio and Aarne Michaël Tallgren [Helsinki, Societas Orientalis Fennica, 1930], 9–10, 17–18). This is still largely true, with the exception of the 1984 facsimile (note 15).



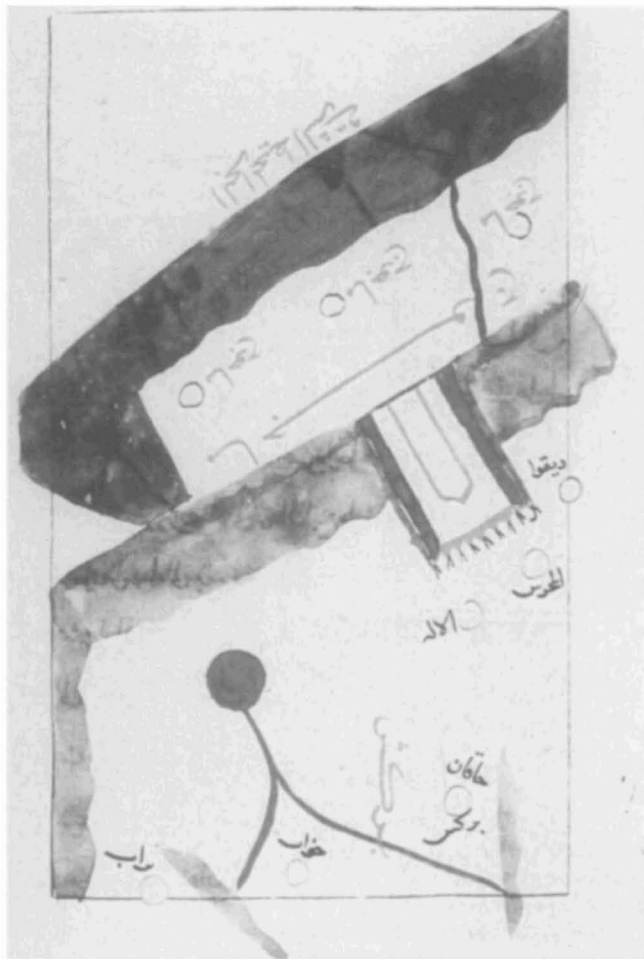


FIG. 7.19. CLIMATE 6, SECTION 9, FROM THE *RAWḌ AL-FARAJ*. Compare figure 7.20 (note that east is at the top in this figure).

Size of each folio: 29.3 × 18.4 cm. By permission of Süleymaniye Kütüphanesi, Istanbul (Hekimoğlu Ali Paşa MS. 688).

It was mentioned in chapter 4 that Ptolemy's *Geography* had been introduced into Arabic scholarly circles at least by the time of the caliph al-Ma'mūn (198–218/813–33). The map scholars produced for al-Ma'mūn has been described and also the difficulty of deciding whether this was based on Ptolemy's tables or on the Iranian *kishvar* system. According to al-Zuhri, whose text is built up following the *kishvar* system, his work was based on al-Ma'mūn's map. Al-Ma'sūdi also referred to this map, considering it superior to all the other maps he had consulted. It is therefore possible that al-Ma'mūn's map already represented a synthesis of the Iranian and Ptolemaic traditions of cartography long before al-Idrisi worked.

About the time al-Ma'mūn's map was constructed, al-Khwārazmī compiled the coordinates of places in tabular form in his book *Kitāb ṣūrat al-arḍ*. If he drew a map apart from that of al-Ma'mūn, this map is lost, but the

tabulated coordinates have survived, and a map has been reconstructed based on the data given in the book.<sup>46</sup> Comparing this twentieth-century reconstruction with extant maps in Ptolemy's *Geography* shows a close resemblance between them. Thus we can perhaps see how the Muslims of that time may have perceived the Ptolemaic world through the eyes of al-Khwārazmī.

It has been shown that several translations of Ptolemy into Arabic were made at this time, particularly that of Thābit ibn Qurrah,<sup>47</sup> and references to Ptolemy appear in Islamic geographical works. Another table of latitudes and longitudes was also compiled by Suhrāb (fl. 340/950) in his book *'Ajā'ib al-aqālīm al-sab'ah* (Book of the wonders of the seven climates). Besides giving longitudes and latitudes broadly similar to those of al-Khwārazmī, albeit with some differences, this text gives instructions on constructing a map from the listed coordinates. Finally, it is possible that the world map of Ibn Yūnus and al-Muhallabī was ultimately based on Ptolemy,<sup>48</sup> so we find that by the twelfth century when al-Idrisi drew his world and sectional maps, a rich tradition of using Ptolemaic material already prevailed in the western parts of the Islamic world.

Al-Idrisi tells us that he used the *Ṣūrat al-arḍ* (Map of the earth), called *al-Jughrāfiyā* by Ptolemy, as the basis of his description of the earth.<sup>49</sup> It had been used by a number of Islamic geographers and cartographers. Some idea of the original source can be gathered from *Kitāb ṣūrat al-arḍ* of al-Khwārazmī and the world map mentioned above. We are therefore faced with the question, Which of the Arabic versions of Ptolemy's work did al-Idrisi use? Al-Idrisi refers to Ptolemy and his work several times in the *Nuzhat al-mushtāq*, but none of these allusions provide us with any clue which Arabic version of Ptolemy he used.<sup>50</sup> It should be emphasized, however, that his source was different from the *Geography* of Ptolemy and his maps as we know them today.

There are, for instance, variations between the *Geography* and al-Idrisi's maps owing to different calculations

46. Von Mzik's edition, *Das Kitāb ṣūrat al-arḍ*, and Razia Ja'fri, "Critical Revision" (note 40).

47. See appendix 1.1 above, pp. 10–11. According to Abū al-Fidā' Ismā'il ibn 'Alī, *Kitāb rasm al-rub' al-ma'mūr* (Book of the picture of the inhabited quarter) was translated into Arabic for the caliph al-Ma'mūn. It was rendered into Arabic from Greek. Then, according to the *Fihrist* of Muḥammad ibn Iṣḥāq Ibn al-Nadīm, *Kitāb jughrāfiyā fī al-ma'mūr wa-ṣifat al-arḍ*, in eight chapters, was translated for the philosopher Abū Yūsuf Ya'qūb ibn Iṣḥāq al-Kindī (d. 260/847), but it was a poor translation; then, Abū al-Ḥasan Thābit ibn Qurrah al-Ḥarrānī (d. 288/901) rendered an excellent translation of it into Arabic. A Syriac version was also available.

48. See above, p. 96.

49. Al-Idrisi, *Opus geographicum*, fasc. 1, p. 7 (note 5).

50. Al-Idrisi, *Opus geographicum*, fasc. 1, pp. 7, 17, 43; fasc. 2, p. 103; and fasc. 3, p. 221 (note 5).

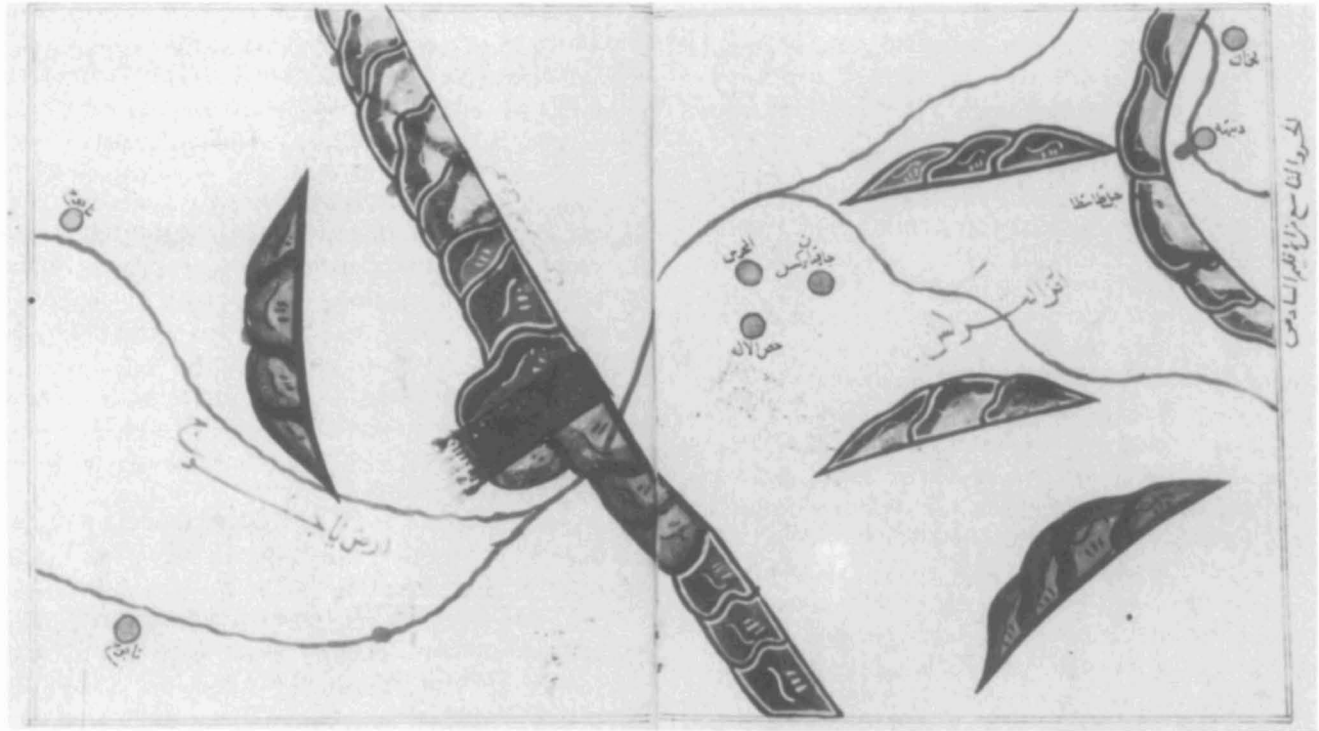


FIG. 7.20. CLIMATE 6, SECTION 9, FROM THE *NUZHAT AL-MUSHTAQ*. This is the same region as figure 7.19 (note that south is at the top in this figure).

Size of each folio: 30.5 × 21 cm. By permission of the Bodleian Library, Oxford (MS. Pococke 375, fols. 304v–305r).

of the climates and the arbitrary division of the climates al-Idrisi adopted. Thus in Ptolemy the east coast of Africa turns eastward at 15°S, 80°E; in al-Khwārazmī it turns at approximately 14°S, 72°E; and in al-Idrisī it turns at 4°N. Or again, al-Idrisī gives two different figures for the junction of the Indian Ocean with the Pacific in the east: on the map it takes place between 1°S and 4°N, whereas in the text he mentions the origins of the Indian Ocean (in the east) at 13°S; in al-Khwārazmī it takes place at 14°30'S, 164°E. Such differences are inconclusive. It is almost impossible at the present stage of research to identify the Arabic version of Ptolemy's work used as a source by al-Idrisī. A more thorough analysis and a comparative study of Arabic works on mathematical geography need to be done before we can arrive at a definite conclusion.

Besides Ptolemy, al-Idrisī mentions a number of sources in the preface to the *Nuzhat al-mushtaq*.<sup>51</sup> In addition, he names a few other authors in other parts of the work,<sup>52</sup> but again a thorough analysis of these needs to be undertaken. Generally speaking, for Europe and the Mediterranean region, al-Idrisī depended on the accounts and reports of the travelers and merchants that were available in Sicily. But for Asia and Africa he depended largely upon the written Arabic sources,

51. The written sources that al-Idrisī mentions in his preface are: *Kitāb al-ʿajāʾib*; al-Jayhānī; Ibn Khurradādhbih; al-ʿUdhri; Ibn Ḥawqal; Khanākḥ ibn Khāqān al-Kīmāki; Mūsā ibn Qāsim al-Qurḍī; al-Yaʿqūbi; Iṣḥāq ibn al-Ḥusayn; Qudāmah ibn Jaʿfar al-Baghdādī; and Ursiyūs al-Anṭāki (Paulus Orosius). See al-Idrisī, *Opus geographicum*, preface, fasc. 1, pp. 5–6 (note 5).

Al-Idrisī attributes the *Kitāb al-ʿajāʾib* to two different authors (see *Opus geographicum*, fasc. 1, pp. 5 and 43); for more information see Ahmad, *India*, 15–17 (note 3). Abū ʿAbdallāh Muḥammad ibn Aḥmad al-Jayhānī was the author of *Kitāb al-masālik wa-al-mamālik* (written ca. 310/922), which is not extant. On Abū al-Qāsim ʿUbayd Allāh ibn ʿAbdallāh ibn Khurradādhbih (d. ca. 300/911), author of *Kitāb al-masālik wa-al-mamālik*, see chapter 4 above. Aḥmad ibn ʿUmar al-ʿUdhri (393–478/1003–85) wrote *Nizām al-marjān fi al-masālik wa-al-mamālik* (not extant) and *Tarṣīʿ al-akḥbār wa-tanwīʿ al-āthār wa-al-bustān fi gharāʾib al-buldān wa-al-masālik ilā jāmiʿ al-mamālik* (ed. ʿAbd al-ʿAziz al-Ahwānī [Madrid, 1965]). On Abū al-Qāsim Muḥammad ibn Ḥawqal (d. ca. 367/977), see chapter 5 above. Khanākḥ ibn Khāqān al-Kīmāki and Mūsā ibn Qāsim al-Qurḍī cannot be identified. On Aḥmad ibn Abī Yaʿqūb al-Yaʿqūbi (d. 284/897), see chapter 4 above. Iṣḥāq ibn al-Ḥusayn (eleventh century) was the author of *Ākām al-marjān*, which is not extant. Qudāmah ibn Jaʿfar al-Baghdādī (d. between 310–37/962–48) was the author of *Kitāb al-kharāj*; see excerpts in *Kitāb al-kharāj*, ed. Michael Jan de Goeje, Bibliotheca Geographorum Arabicorum, vol. 6 (Leiden: E. J. Brill, 1889; reprinted 1967). Paulus Orosius dates from the first part of the fifth century A.D.

52. See, for example, al-Idrisī, *Opus geographicum*, fasc. 1, pp. 50–52, 66, 75–76, 93; fasc. p. 4, 419; and fasc. 6, p. 721 (note 5).



namely the geographical works and the travel accounts of merchants and explorers, as well as incorporating his own experiences. For certain parts of Asia, such as Ceylon, India, and northern Asia, he also used Ptolemy, but mainly for physical features.

### THE INFLUENCE OF AL-IDRISĪ'S WORK ON LATER AUTHORS

We can trace the influence of al-Idrisī's text, and to a lesser extent his maps, in a number of later authors. There is strong evidence for the influence of al-Idrisī upon 'Alī ibn Mūsā ibn Sa'īd al-Maghribī (d. 685/1286). Ibn Sa'īd's text, *Kitāb baṣṭ al-arḍ fī ṭūlihā wa-al-'arḍ* (Exposition of the earth in length and breadth), is based on the text of al-Idrisī, with the climates divided into longitudinal sections, and this format was transmitted through Ibn Sa'īd to later Middle Eastern authors. In addition to al-Idrisī, Ibn Sa'īd used the work of al-Khwārazmī, Ibn Fāṭimah (twelfth century A.D., which is not extant), and the Arabic versions of Ptolemy to complete his manuscript. Ibn Sa'īd describes the works of all three authors as a "map of the earth" (*al-jughrāfiyā*), and although Ibn Sa'īd's work contains no maps, it does give latitude and longitude values similar to those of al-Khwārazmī.

Another clear case of al-Idrisī's influence is on the Arab historian Ibn Khaldūn (d. 808/1406). This author evidently had great regard for al-Idrisī in the fields of geography and cartography and used al-Idrisī's book as the source for the geographic section of his world history, *Kitāb al-'ibar*. Speaking of the seas and the rivers, he says: "Ptolemy has described all this in his book, and al-Sharīf in the *Book of Roger*. In *al-jughrāfiyā* they depicted all the mountains and the seas and valleys found in the inhabited world."<sup>53</sup> Ibn Khaldūn then drew for his historical work, a "*ṣūrat al-jughrāfiyā* [map of the world] on the pattern of the map drawn by the author of the *Book of Roger*."<sup>54</sup> The map is extant in at least three manuscripts of *Kitāb al-'ibar*,<sup>55</sup> and its similarities to al-Idrisī's small circular world map, are evident (fig. 7.21).

Another historian who used the work of al-Idrisī was Ḥāfiẓ-i Abrū (d. 833/1430).<sup>56</sup> One of the most important historians of the Timurid period, Ḥāfiẓ-i Abrū wrote copiously on world geography in his *Tārīkh* and quoted al-Idrisī several times on general geography. He does not, however, follow al-Idrisī in his maps. In the sectional maps accompanying his history, he followed the Balkhī school, and in the world map (as in his delineation of the climates) he seems to represent the latest knowledge on world geography, which is totally different from al-Idrisī's concept of the known world. The first climate begins at 12°40'N and the seventh climate ends at 50°20'N, but the inhabitable zone goes up to over 66°N. In his map there is no trace of the eastward extension of Africa, which indicates al-Birūnī's influence on him.<sup>57</sup>

In addition to the examples above, a continuous influence of al-Idrisī can be noted in many other authors who mention using his work in one form or another.<sup>58</sup> By the sixteenth century, al-Idrisī's work was perpetuated largely by the members of the al-Sharafi al-Ṣifāqsi family of Tunisia. All of them were born in Sfax, and most of them lived there or in El Qayrawān (Tunisia), or occasionally in Cairo. The family took to teaching mathematics and astronomy.<sup>59</sup> At this time al-Idrisī's works were preserved in Tunisia, which would explain why the al-Sharafi al-Ṣifāqsi family was able to use them in compiling their own maps. The surviving maps from this family pertain mainly to the Mediterranean and Black Sea areas, for which al-Idrisī's maps were likely the only Islamic maps of reasonable detail available to the mapmakers, but there are also some world maps.

Four examples of world maps produced by the family between 1551 and 1601 have survived and all are partly based on al-Idrisī. The first two are found in manuscript atlases dating from 1551 and 1572 and are loosely copied from al-Idrisī's small circular world map. The second two, dated 1579 and 1601, are planispheres that use al-Idrisī as a source for the eastern half but employ Catalan sources in the western part of the map (maps by this family are illustrated below, figs. 14.21 to 14.25 and plate 24). The work of the al-Sharafi al-Ṣifāqsi family is curiously isolated. The maps reveal no influence either of contemporary western European cartography or of the

53. Ibn Khaldūn, 1:81 (author's translation); Ibn Khaldūn, *The Muqaddimah: An Introduction to History*, 3 vols., trans. Franz Rosenthal (New York: Bollingen Foundation, 1958), esp. 1:103.

54. Ibn Khaldūn, 1:87 (author's translation); Ibn Khaldūn, *Muqaddimah*, ed. Rosenthal, 1:109 ff. and the color reproduction opposite the title page (note 53).

55. See Rosenthal's edition of the *Muqaddimah*, 109 n. 43 (note 53), and Ignatiy Iulianovich Krachkovskiy, *Izbrannye sochineniya*, vol. 4, *Arabskaya geograficheskaya literatura* (Moscow, 1957), translated into Arabic by Ṣalāh al-Dīn 'Uthmān Ḥashīm, *Tārīkh al-adab al-jughrāfi al-'Arabī*, 2 vols. (Cairo, 1963–65), 1:443.

56. 'Abdallāh ibn Luṭf Allāh al-Bihdādinī, known as Ḥāfiẓ-i Abrū.

57. *Tārīkh-i Ḥāfiẓ-i Abrū*, Persian text edited by S. Maqbul Ahmad (unpublished). The world map by Ḥāfiẓ-i Abrū is illustrated above, fig. 6.12.

58. Abū al-Fidā', who wrote *Taqwīm al-buldān*, used both the *Nuzhat al-mushtāq* and the *Rawḍ al-faraj wa-nuzhat al-muhaj*. See *Géographie d'Aboulféda: Texte arabe*, ed. and trans. Joseph Toussaint Reinaud and William MacGuckin de Slane (Paris: Imprimerie Royale, 1840), and the French translation, *Géographie d'Aboulféda* (note 12). Other scholars include Ṣarīm al-Dīn Ibrāhīm ibn Muḥammad, Ibn Duqmāq (d. 809/1407?), Sirāj al-Dīn Abū Ḥafṣ 'Umar ibn al-Wardī (d. 861/1457), 'Abdallāh Muḥammad ibn 'Abd al-Mun'im al-Ḥimyarī (d. 900/1494), Muḥammad ibn Aḥmad ibn Iyāṣ (852–930/1448–1524), Leo Africanus or al-Ḥasan ibn Muḥammad al-Wazzān al-Zayyātī (d. ca. A.D. 1552), and Muṣṭafā ibn 'Abdallāh Ḥājji Khalifah (Katib Çelebi; d. 1067/1657). For more on these authors, see Krachkovskiy, trans. Ṣalāh al-Dīn, *Tārīkh*, 2:471–72, 2:500–504, 1:447–50, 2:490–93, 1:453, 2:618–36, respectively (note 55).

59. Krachkovskiy, trans. Ṣalāh al-Dīn, *Tārīkh*, 1:455–56 (note 55).



FIG. 7.21. WORLD MAP FROM IBN KHALDŪN'S *KITĀB AL-ʿIBĀR*. The map, which is nearly identical to the world map from the Oxford Pococke manuscript (plate 11), is found in only a few Ibn Khaldūn manuscripts. In the manuscripts that

do contain the map, such as this one copied in 804/1401–2, Ibn Khaldūn's text contains a lengthy description of it. Size of the original: not known. By permission of the Süleymaniye Kütüphanesi, Istanbul (Atıf Efendi 1936).

*Kitāb-i bahriye* of Pīrī Reʿīs. The latter would have provided the best representations of their native Tunisia but would not have been circulating in Tunisia at this time.<sup>60</sup>

The last trace of al-Idrisī in the Islamic tradition is found in the world map of Abū al-Qāsim ibn Aḥmad ibn ʿAlī al-Zayyānī (1147–1249/1734–1833), a historian of the Maghreb. In an account of his journeys titled *al-Tarjumānat al-kubrā fi akhbār al-maʿmūr barran wa-baḥran* (The great translator of news from the [inhabited] world, by land and sea), he drew a sketch map of the world following the sectional maps of al-Idrisī (fig.

7.22).<sup>61</sup> The map has a grid of seventy squares, each corresponding to one of al-Idrisī's sectional maps, and obviously derives from an al-Idrisī manuscript. Al-Zayyānī is the only Muslim author I know of who combined the sectional maps in this way, but by this time the

60. The maps and atlases made by the al-Sharafī al-Ṣifāqsi family are discussed in detail below, pp. 284–87.

61. Krachkovskiy, trans. Ṣalāḥ al-Dīn, *Taʾriḫ*, 1:770–71 (note 55). See also Evariste Lévi-Provençal, *Les historiens des Chorfa: Essai sur la littérature historique et biographique au Maroc du XVI<sup>e</sup> au XX<sup>e</sup> siècle* (Paris: Emile Larose, 1922), fig. 3.

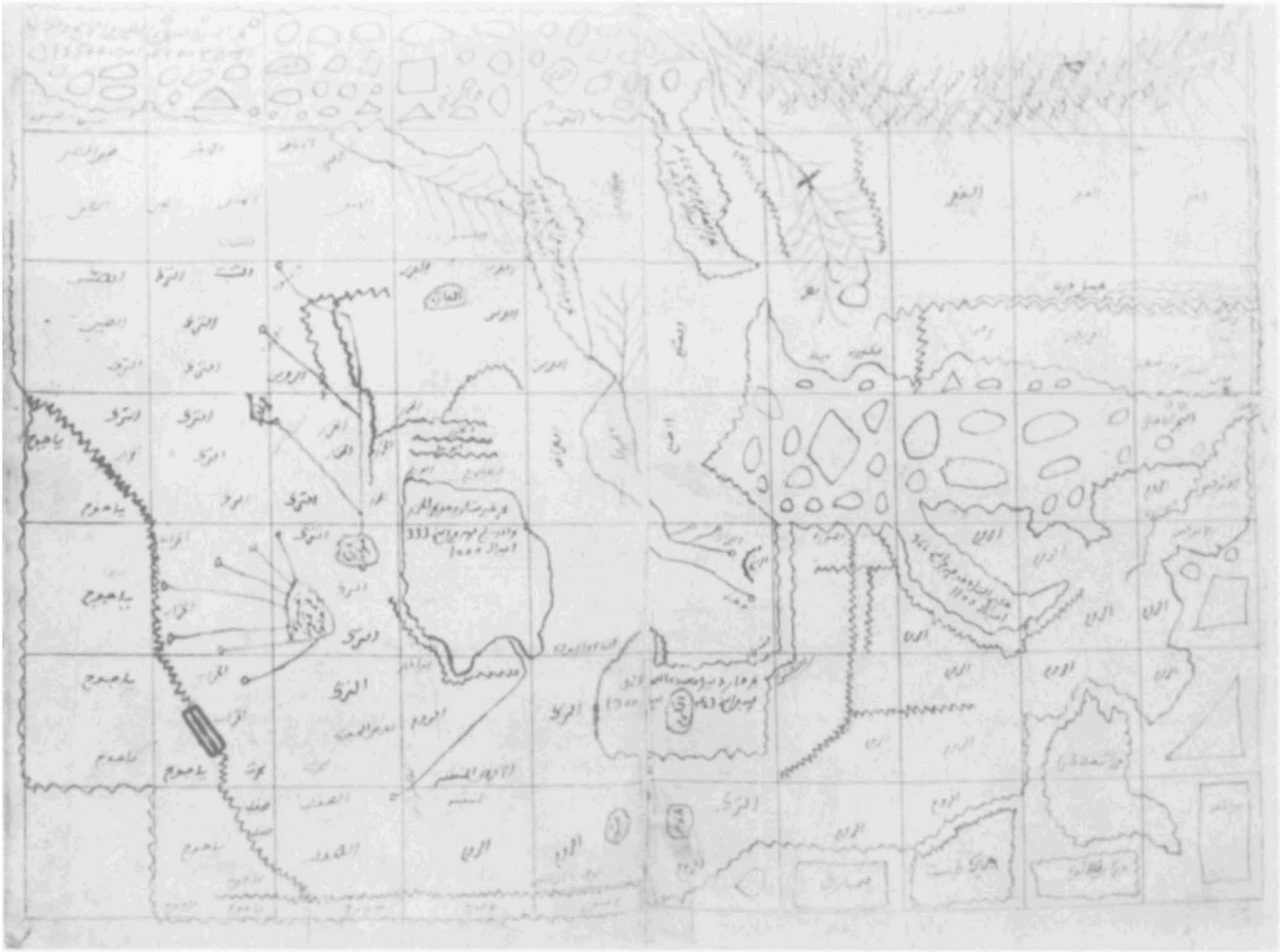


FIG. 7.22. AL-ZAYYĀNĪ'S SKETCH MAP BASED ON AL-IDRĪSĪ'S SECTIONAL MAPS. Found in al-Zayyānī's *al-Tarjūmānat al-kubrā* written in 1233/1818.

Size of the original: not known. From Evariste Lévi-Provençal,

*Les historiens des Chorfa: Essai sur la littérature historique et biographique au Maroc du XVI<sup>e</sup> au XX<sup>e</sup> siècle* (Paris: Emile Larose, 1922), fig. 3. Attempts to locate a manuscript of this work have proved fruitless.

Ptolemaic tradition had long given way in his own country to the newer techniques of cartography employed in European maps.

Finally, there is the question of the influence of al-Idrisī's maps, if any, on Renaissance European cartography. In 1592, as I mentioned, an Arabic abridgment of al-Idrisī's *Nuzhat al-mushtāq* was published in Rome. This was perhaps the only geographical work of its type that became current in Europe at the time. An engraved map by Petrus Bertius (1565–1629), apparently influenced by this 1592 edition, incorporates all of al-Idrisī's sectional maps into one map.<sup>62</sup> Miller has suggested that al-Idrisī's cartography influenced the map of Marino Sanudo (prepared by Pietro Vesconte, 1318–20) and also the Catalan maps, but this is dismissed as unlikely by Krach-

kovskiy.<sup>63</sup> If there was any influence of al-Idrisī in western Europe, it was only indirect.

62. Chicago, Newberry Library, *Nova orbis tabula, ex fide geographi nubienensis delineata*; M. A. Tolmacheva, "Arab Geography in 'Nova Orbis Tabula' by Bertius," unpublished paper delivered at the Fourteenth International Conference on the History of Cartography, Stockholm, 1991.

63. Miller, *Mappae arabicae*, Band 1, Heft 2, p. 51 (note 16), and Krachkovskiy, trans. Šalāh al-Dīn, *Ta'rikh*, 1:292 (note 55). But, for a conflicting view, see the article by Lewicki, "Marino Sanudos Mappa mundi" (note 33), and Fuat Sezgin, *The Contribution of the Arabic-Islamic Geographers to the Formation of the World Map* (Frankfurt: Institut für Geschichte der Arabisch-Islamischen Wissenschaften, 1987), 33–35. For examples of European cartographers using al-Idrisī, see Gerald R. Tibbetts, *Arabia in Early Maps* (Cambridge: Oleander Press, 1978), 26–30.

## APPENDIX 7.1 MANUSCRIPTS OF THE WORKS OF AL-ĪDRĪSĪ

Location and Catalog Reference	Date <sup>a</sup> and Place	Maps	References		Additional Comments
			MA <sup>b</sup>	OG <sup>c</sup>	
<i>NUZHAT AL-MUSHTĀQ FI’KHTIRĀQ AL-ĀFĀQ</i>					
Paris, Bibliothèque Nationale, MS. Arabe 2221 (Suppl. MS. Arabe 892)	1300	1 world; not well preserved; curved climate boundaries 68 sectional; missing climate 7, sections 1, 10, and half of climate 9 All maps in color; drawn and colored with care: ocean blue, waves white, mountains dark red bands, rivers green, cities with “rosettes” of gold	P <sub>1</sub>	P	26 × 21 cm; 352 fols.; 24 lines/page; Maghribi script; oldest surviving; complete text
Istanbul, Süleymaniye Kütüphanesi, Ayasofya 3502 (Hagia Sofya 3502; <i>Ğuğrāfiyā</i> 705)	Beginning 14th century <sup>d</sup>	No world 30 sectional (climates 1–3)	Co	I	25.6 × 19.3 cm (20.2 × 13.8 cm); 326 pages, 23 lines/page; written in Naskh form; text not complete
Leningrad, M. E. Saltykov-Shchedrin State Public Library, MS. Ar. N.S. 176 (Saint Petersburg, Cod. Arab. 4, 1, 64) <sup>e</sup>	Beginning 14th century	No world 36 whole, 2 half sectional maps (most of climates 4–7—missing climate 7, sections 7, 10, half of climate 8, and half of climate 9) All maps in color (seas in blue, mountains in brown); map size: 19 × 32 cm (each map on two pages)	Pe	L	25 × 18 cm (map size 19 × 32 across two pages); manuscript torn, damaged at beginning and end; was restored in the 19th century (before 1882, noted on sheet 1); binding is light-brown leather, 19th century (possibly prepared after restoration); manuscript given to the Public Library in 1897
London, India Office, Loth 722 (MS. Ar. 617)	Beginning 14th century	No maps		IO	Approx. 25.5 × 20 cm; 118 fols.; 27 lines/page; appended as supplement to another geographical work, the <i>Mukhtaṣar kitāb al-buldān</i> of Ibn Faqih; fols. 109v–18r are the <i>Nuzhat</i> : section 9 of climate 6, all of climate 7 except section 1, then section 8 of climate 6
Paris, Bibliothèque Nationale, MS. Arabe 2222 (Suppl. MS. Arabe 893)	1344 (Almería)	No maps	P <sub>2</sub>	A	30 × 21 cm; 238 fols.; 29 lines/page; complete text (fols. 2 and 3 have been redone); came to library in 1741; used by Jaubert for French edition; last fols. (236–38) contain chapter of al-Birūnī, <i>Tārīkh al-Hind</i>
Cairo, Dār al-Kutub, <i>Juğrāfiyā</i> 150 (Egyptian Library, Gezira 150; Kat. Vs. 167)	1348	1 world; no climate boundaries; in middle of introductory chapter 19 sectional (all of climate 1, and 9 sections of climate 2)	Ca	C	
<p><sup>a</sup>There is great discrepancy in the dating of some of the manuscripts. The dates in this column follow those given in al-Īdrīsī, <i>Opus geographicum</i>; sive, “<i>Liber ad eorum delectationem qui terras peragrare studeant</i>,” issued in nine fascicles by the Istituto Universitario Orientale di Napoli, Istituto Italiano per il Medio ed Estremo Oriente (Leiden: E. J. Brill, 19[70]–84); discrepancies are noted in footnotes where they are known.</p> <p><sup>b</sup>This column gives the manuscript designation in Konrad</p> <p>Miller, <i>Mappae arabicae: Arabische Welt- und Länderkarten des 9.–13. Jahrhunderts</i>, 6 vols. (Stuttgart, 1926–31).</p> <p><sup>c</sup>This column gives the manuscript designation in al-Īdrīsī, <i>Opus geographicum</i> (note a).</p> <p><sup>d</sup>The Süleymaniye Kütüphanesi dates the manuscript 924/1518 (correspondence, 1990).</p> <p><sup>e</sup>Rubinacci states that Istanbul, Ayasofya 3502, and Leningrad MS. Ar. N.S. 176 were probably part of the same manuscript and were almost contemporary with Paris, Bib-</p>					
<p>liothèque Nationale, MS. Arabe 2221. Ayasofya 3502 and MS. Ar. N.S. 176 were together in Egypt in 1456, where they served as a model for Oxford, Bodleian Library, MS. Pococke 375, but their paths diverged, probably not before 1518; see Roberto Rubinacci, “Il codice Leningradense della geografia di al-Īdrīsī,” <i>Annali dell’Istituto Orientale di Napoli</i> 33 (1973): 551–60.</p>					

## APPENDIX 7.1—continued

Location and Catalog Reference	Date <sup>a</sup> and Place	Maps	References		Additional Comments
			MA <sup>b</sup>	OG <sup>c</sup>	
Istanbul, Köprülü Kütüphanesi, MS. 955 ( <i>Ğuğrafiya</i> 702)	873/1469	1 world map 70 sectional maps <sup>f</sup> All maps in color			Copied by ‘Ali ibn Ḥasan al-‘Ajāmi; 26.5 × 17.5 cm (20 × 12.5 cm); 344 fols.; 25 lines/page
Oxford, Bodleian Library, MS. Pococke 375 (Uri 887) <sup>g</sup>	960/1553 <sup>h</sup> (Cairo)	1 world on fols. 3v–4r; well preserved; curved climate boundaries 69 sectional (missing climate 7, section 10) All maps in color: seas and lakes dark blue, usually with white wavy lines (lakes occasionally green); rivers blue or green; mountains in pink, brown, dark green, white, and gray; towns yellow, red, or pink circles outlined in black, red, or brown	O <sub>1</sub>	O	Copied by ‘Ali ibn Ḥasan al-Hūfī al-Qāsimī; 30.5 × 21 cm; complete text
Sofia, Cyril and Methodius National Library, MS. Or. 3198 (MS. Or. 3180)	1556 (Cairo)	1 world 69 sectional maps All maps in color; ink is black, red, and rosy violet		S	Copied by Muḥammad ibn Alī al-Ajhūrī al- Shāfī; 31 × 21 cm (23 × 14 cm); 325 fols.; 25 lines/page; writing in a clear, legible Naskh and Thuluth; complete text
Oxford, Bodleian Library, MS. Greaves 42 (MS. Greaves 3847–42; Uri 884) <sup>i</sup>	Undated, end 16th century <sup>j</sup>	1 world on fols. 1v–2r; partially destroyed; straight climate boundaries 30 sectional (climates 1–3) Color: seas and lakes blue with white wavy lines (lakes occasionally green); rivers green; mountains drawn in segments of pink, purple, brown, red, green, and gray, outlined in black, each segment containing in white a shape resembling a horizontal letter S accompanied by groups of white dots; towns are gold rosettes with red centers	O <sub>2</sub>	G	32 × 24 cm; 242 fols.; 23 lines/page; Maghribī script; contains part of introduction and climates 1–3
<i>RAWḌ AL-FARAJ WA-NUZHAT AL-MUHĀJ</i>					
Istanbul, Süleymaniye Kütüphanesi, Hekimoğlu MS. 688 (Ali Paşa 688)	8th/14th century	1 climate map 73 sectional maps (climate 1, 15 maps; climates 2– 5, 10 maps each; climates 6–7, 9 maps each)			29.3 × 18.4 cm (19.6 × 10.5 cm); 162 fols.; 16 lines/page
Private collection	?				
Istanbul, Süleymaniye Kütüphanesi, Hasan Hüsnü MS. 1289	Copied 1090/ 1679?	1 climate map 73 sectional maps (same division as above) <sup>k</sup>			122 fols.; 21 lines/page

<sup>f</sup>Ramazan Şeşen, Cevat İzgi, and Cemil Akpınar, *Catalogue of Manuscripts in the Köprülü Library*, 3 vols. (in Ottoman Turkish) (Istanbul: Research Centre for Islamic History, Art, and Culture, 1986), 1:485.

<sup>g</sup>This designation refers to its catalog number and description in Joannes Uri, *Bibliothecae Bodleianae codicum manuscriptorum orientalium*, pt. 1 (Oxford, 1787), no. 887.

<sup>h</sup>According to the Bodleian Library, the manuscript is clearly dated 960/1553 (correspondence, 1989 and 1995); Uri, *Bibliothecae Bodleianae codicum manuscriptorum orientalium* (note g) gives A.H. 906.

<sup>i</sup>Described in Uri, *Bibliothecae Bodleianae codicum manuscriptorum orientalium*, no. 884 (note g).

<sup>j</sup>The Bodleian Library dates the manuscript late fourteenth century (correspondence, 1990).

<sup>k</sup>A facsimile reproduction of both Istanbul manuscripts is al-Idrisi, *The Entertainment of Hearts and Meadows of Contemplation/Uns al-muhaj wa-rawḍ al-furaj*, ed. Fuat Sezgin (Frankfurt: Institut für Geschichte der Arabisch-Islamischen Wissenschaften, 1984).