5 · The Balkhī School of Geographers

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WORKS OF THE BALKHĪ SCHOOL

The earliest set of maps to survive from the corpus of Islamic cartography are those that accompany the text Kitāb sūrat al-ard (Picture of the earth) of Abū al-Qāsim Muḥammad ibn Ḥawqal in the manuscript dated 479/1086, found in the Topkapı Sarayi Müzesi Kütüphanesi in Istanbul.1 Similar sets of maps occur in other manuscripts in Istanbul and in several well-known manuscripts in European libraries. The next in age is that from the Forschungsbibliothek in Gotha, dated 569/1173.2 This manuscript, known as MS. Ar. 1521, contains a text of Kitāb al-masālīk wa-al-mamālīk (Book of routes and provinces) of Abū ʿIṣḥāq Ibrāhīm ibn Muḥammad al-Fārisī al-Īṣṭakhri, and because it was published in facsimile by Moeller in 1839 it is better known to scholars in Europe than the copy from Istanbul.3 Other manuscripts contain roughly the same maps and date from the twelfth century to the nineteenth. The relationship of the various sets of maps to each other is very complicated, as is the relationship of the texts that accompany them.

Most of the texts can be connected to one of the two authors mentioned above, either because their names are given in the manuscripts or because the text corresponds closely with other manuscripts that are named. Scholars have been very confused in the past, however, and even now the identity of some manuscripts is doubtful, since there are numerous anonymous abridgments and translations from the Arabic, mainly into Persian (see appendixes 5.1 and 5.2). A later author who used a version of the same maps was Abū ʿAbdallāh Muḥammad ibn Aḥmad al-Muqaddasī, and he was rather more forthcoming about himself and his predecessors, giving us some idea of the relation of each author to the next.4

All together, the efforts of various European scholars sorted matters out considerably, and finally the detailed work of de Goeje produced a scholarly edited text of the works of al-Īṣṭakhri, Ibn Ḥawqal, and al-Muqaddasī that other scholars could use as a base for their research.5 It also appeared that there was yet another author earlier than the three mentioned who seemed to be the originator of this type of work with maps attached, and that some of the extant manuscripts might represent his work. He was Abū Zayd Aḥmad ibn Sahl al-Balkhī (d. 322/934), a scholar whose background, though not his geographical work, was well known in the Arab literary milieu.6 Since he was the earliest of these authors and the other authors admit they are indebted to him, this group has been referred to by European scholars as the Balkhī school of geographers.7

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2. Wilhelm Pertsch, Die orientalischen Handschriften der Herzoglichen Bibliothek zu Gotha, pt. 3, Die arabischen Handschriften, 5 vols. (Gotha: Perthes, 1878–92), 3:142–44. The manuscript of Ahmad al-Tūsī, which is earlier (see appendix 5.1), contains only six maps.

3. Liber climatum, ed. J. H. Moeller (Gotha: Libraria Beckeriana, 1839). This was translated into German and edited by Andreas David Mordtmann, Das Buch der Länder (Hamburg: Druck und Lithographie des Rauhen Hauses in Horn, 1845).

4. This will be discussed below.


7. The appellation “school” is justified here on the grounds that one scholar deliberately followed another.
Al-Balkhi's work, according to al-Muqaddasi, was mainly a short commentary on a set of maps, though other opinions state that al-Balkhi's work was the commentary and the maps were originally produced by Abū Ja'far Muḥammad ibn Muḥammad al-Khāzin (d. between 350/961 and 360/971). It is all very suspect, however, since neither al-Khāzin's maps nor even the commentary of al-Balkhi, which was entitled Ṣuwar al-aqālim (Pictures of the climates), have survived—only some of the earlier portions of al-Iṣṭakhri's text can possibly be thought of as originating in the book of al-Balkhi. Al-Balkhi was primarily a general scholar and not necessarily a geographer. His life is known from the standard biographies. He was born and lived at the end of his life in Balkh in northeastern Iran, where he was supposed to have written his geographical treatise. Most of his life, however, he spent in Baghdad and Iraq, where his scholarly connections mostly belong (fig. 5.1).

Al-Iṣṭakhri, by contrast, was virtually unknown apart from his one work. He does not appear in any of the standard Arab biographies, and all we know about him personally was his meeting with Ibn Ḥawqal, which is related in the latter's own book. Even his work Kitāb al-masālik wa-al-mamālik can be dated only from internal evidence, to the middle of the tenth century A.D. It soon became popular, however, for there are many early

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editions, abridgments, and translations into Persian, often differing considerably from each other. Ibn Hawqal’s life has come down to us in much more detail than al-Iṣṭakhri’s, mainly because he was more open about himself in his book. He was born in Nisibis in Upper Mesopotamia and spent much of his life traveling, setting out on 15 May 331/943 and continuing on and off until 362/973, when he last appears in Sicily. Between these dates he covered most of Islamic Africa and large areas of Persia and Turkestan. It is possible that he acted as a trader on his travels, since his work is full of facts relating to economic activity. That he extols the Fatimid religious policy may mean he was a daʾī or missionary of that sect, and this would be another reason for his moving constantly from place to place. Apart from a short work on Sicily, he is known only for his one geography book, Kitāb ṣūrat al-ard, also known as Kitāb al-mašālīk wa-al-mamālīk, like that of al-Iṣṭakhri.11

A fourth author belonging to the Balkh school was al-Muqaddasi (d. ca. 390/1000).12 Very little is known of his life apart from what he tells us himself, but his origin is presumably Jerusalem, and he was in Mecca in 356/966. He seems to have come from a family of architects. Since he is a native of Palestine, his work is geared to some extent to the western part of the Islamic empire, but the authors he quotes are from the east. He himself is not well known in Arab literature, but he is quoted by some of the later geographers.

The texts of the first three authors are so mixed up in the surviving manuscripts that it is difficult to disentangle them. As I have pointed out, de Goeje attempted to sort out this problem when he produced his critical texts of the work of al-Iṣṭakhri and Ibn Hawqal. Al-Balkh’s work occurs only embedded in the texts of the other two, and it is impossible to distinguish exactly what is derived from him. Al-Muqaddasi states that he had seen three manuscripts of al-Balkh’s work, one mentioning no author (though it was attributed to al-Kharkhi) and another attributed to al-Iṣṭakhri,13 so that even within one hundred years the exact authorship was difficult to unravel. It seems that al-Balkh’s text was filled out by al-Iṣṭakhri and that all the miscellaneous abridgments that exist, whether in Arabic, Persian, or Turkish, are only abridgments of al-Iṣṭakhri and never al-Balkh’s originals.14 According to de Goeje, quotations given by other later authors as coming from al-Balkh can be all found in al-Iṣṭakhri’s text.15 De Goeje thought that al-Muqaddasi may have seen a text of al-Balkh, but certainly Yaḥūt (d. 626/1229), when he quotes al-Balkh, uses the text we know as al-Iṣṭakhri.16 De Goeje also thought that al-Iṣṭakhri compiled a much enlarged version of al-Balkh’s text between A.H. 318 and 321 (A.D. 930–33).17 A final version of al-Iṣṭakhri came later, about 340/951, and this seems to be the basis of most copies circulating in the eastern part of the empire.18 Quotations appear in later authors that are not in al-Iṣṭakhri’s actual text, but some of these missing quotations are found in some of the later abridgments and Persian translations.19 Soon after his book was completed, al-Iṣṭakhri met Ibn Hawqal, who at the author’s request undertook to revise the text. The results of this revision appear in the work of Ibn Hawqal, which follows al-Iṣṭakhri closely.20 Ibn Hawqal became carried away with his own improvements, however, and inserted miscellaneous information relating to his own travels, so that the work becomes much more than a mere revision and stands as a work in its own right (fig. 5.2).21

The main difference between the work of Ibn Hawqal and that of al-Iṣṭakhri is in the former’s discussion of the western (formerly Byzantine) part of Islam. He treats Spain, North Africa, and Sicily as three separate sections. Syria and Egypt are dealt with in more detail, and it is interesting that when later authors like Yaḥūt quote Ibn Hawqal they are almost always referring to these western regions. Ibn Hawqal’s text as we know it today is again the result of three versions—a first redaction from about 350/960 dedicated to the Hamdanid Sayf al-Dawlah (d. 356/967), a second redaction containing criticism of the Hamdanids from about a decade later, and a final definitive version from about 378/988.22

12. Al-Muqaddasi means “the man from Jerusalem,” and an alternative form, al-Maqdisi (meaning the same), is used by some nineteenth-century scholars. Since there are other authors with the same name, there can be some confusion.
13. Al-Muqaddasi, Ahşan al-taqazim; Miquel’s translation, 14–15 (note 8), Ranking and Azoo’s translation, 7 (note 8).
14. Konrad Miller has attributed four manuscripts to al-Balkh, on what grounds is not known; see his Mappae arabicae: Arabische Welt- und Länderkarten des 9.–13. Jahrhunderts, 6 vols. (Stuttgart, 1926–31), Band 1, Heft 1, 17, and Band 5, 109.
19. An example is given by Bartol’d in his preface to the Hudūd al-‘alam, 22 (note 9).
There are only two early manuscripts of al-Muqaddasi's book, entitled Aḥsan al-taqasim fi maʿrifat al-aqālīm (The best of divisions on the knowledge of the provinces); both were used by de Goeje in producing the printed edition of his text. They are very close in content, but one is aimed at the Samanids as patrons and the other at the Fatimids of Egypt. There therefore seem to be two attempts emanating from the author, perhaps from different dates. The text dates itself 375/985, but later information is included.

Al-Muqaddasi's text was based on the same principles as the texts of al-Ṭakhrī and Ibn Ḥawqal, and it covers, in the same way, only the area of the Islamic empire. Similarly, his maps are recognizably from the same mold as those of the earlier authors. The book, however, shows considerable variation from the pattern established. For instance, he includes a section on astronomical geography giving the Greek idea of the climates based on the length of the noonday shadow. He has more detail, especially about those districts he has traveled through. There are detailed passages on large towns, with their population and products; there are sections in the introduction on place-names, rivers and seas, capital towns, and the dimensions of the Islamic empire as well as other things. In fact, this work is probably the most advanced of all surviving Arab geographical works. Basically its form is inherited from al-Ṭakhrī. The regional divisions are more or less the same, and each region has its basic map. The region is also known as a climate (iqlim), and this idea clashes with the idea of the Greek climates mentioned above as appearing in his introduction. Each regional area is described and then summarized under subject headings, and finally routes with their distances are given in the manner of al-Ṭakhrī and Ibn Ḥawqal.

23. Editions and translations of al-Muqaddasi’s work are given in appendix 5.2, and manuscripts are listed in appendix 5.1. Of the two recensions, the earlier is connected with the Samanids (manuscripts from Istanbul and Leiden) and the later with the Fatimids (manuscripts from Berlin).
25. See also pp. 93–94.
The Maps of the Balkhī School

The maps accompanying these texts seem at first sight to be a not entirely necessary supplement to the texts, the text being so complete in itself. This is often so with illustrative material in classical Arab texts, certainly with maps in some later geographical works. Some manuscripts of the works I am discussing have no maps at all, and some have spaces left for them in the text, though none have been inserted. However, there is every evidence that these authors were definitely, if not primarily, interested in the maps and designed their own maps even if they did not draw them themselves. According to al-Muqaddasi, al-Balkhi "intended in his book chiefly the representation of the earth by maps.... He described each map [only] briefly without giving useful particulars or setting forth clearly or in order the facts which were worth knowing." He also states that al-Balkhi's book is "a book with very carefully prepared maps, but confused in many places and superficial in its commentaries, and it does not divide the provinces into districts."26 This makes it appear that al-Balkhi's main interest was in the maps, which were the important items while the text was secondary. Al-Iṣṭakhrī's work was still a commentary on the maps, and he states that "our plan is to describe, and to delineate on maps, the various seas, ... affixing the name of each, so that it may be known in the maps,"27 thus showing the importance he placed on the maps. The cartography, therefore, was still the essential element in the work.

He was also interested in the composition of the maps, and at his meeting with Ibn Ḥawqal they compared their maps. Ibn Ḥawqal states that al-Iṣṭakhrī had drawn a map of Sind, but he had made some mistakes, and he had also drawn Fars, which he had done extremely well. For my part, I had drawn the map of Azerbaijan which occurs on the following page and of which he approved, as well as that of al-Jazirah which he considered excellent. My map of Egypt, however, he condemned as wholly bad and that of al-Maghrib as for the most part inaccurate.

Because he states in the text that the map "occurs on the following page," he lets it be known that the map the reader sees is the one he drew himself.28 Ibn Ḥawqal himself seems originally to have wished to produce a set of maps,29 but he was carried away by his commentary, and this becomes much more voluminous and interesting than that of al-Iṣṭakhrī, while to the ordinary reader the map loses its importance because of its inadequacy. All this shows, however, that the map is linked directly to the scholar in each case and not added by the copyist, as are many illustrations to manuscript books or even early printed books, which thus had a completely different provenance than the text.

Ibn Ḥawqal goes one stage further than al-Iṣṭakhrī. In addition to his text on a particular region, he also inserts a section that describes the map literally in the simplest terms. Whether this is meant to be an aid for the cartographer is difficult to say. This description can be understood only in conjunction with the map itself and does not add to the information in the main text. The section can easily be deleted without affecting the rest of the text. An example from the section on Kirman begins:

Explanation of the names and legends that are found on the map of Kirman. The sea appears at the top of the map; to the right of this is [the legend] "The map of Kirman," then in the corner the word "West" while in the corner on the left is the word "South." Then there begins to the extreme right of the sea, going down [the page] an inscription, stretched out round the three sides of the map which says "Boundary of Kirman ..." (and see figs. 5.4 and 5.5 below).

What one really wishes to know is how close to the original version of these scholars is the map we see in a manuscript produced several centuries after the death of the scholar himself. This is very difficult, since probably only one of the manuscripts now extant was produced within two hundred years of the original map it was taken from.

Kramers, however, has attempted to classify the surviving manuscripts using the state of the maps as his criterion.31 This he finds fits the state of the text as well and agrees with the comments de Goeje made about them.

Kramers finds that the texts presumed to be by al-Iṣṭakhrī can be divided into two groups, and he regards one as earlier in origin. In this earlier group (Iṣṭakhrī I), the maps are more geometric than the later ones (Iṣṭakhrī II), while the text that goes with the later maps is more finished and polished. On the other hand, it is the earlier texts that mention the name al-Iṣṭakhrī, so that Miller attributes the anonymous (Iṣṭakhrī II) texts to al-Balkhi, presuming wrongly that they are earlier than the others.32 Miller, however, gives no criteria for his decision. De
Goeje bases his printed edition of al-İstakhri on these İstakhri II texts mainly because they are more complete and less mutilated. Kramers has also classified the texts attributed to Ibn Ḥawqal in the same way. Things here are a little more complicated, however, since the two best manuscripts contain blank pages where the maps should be. These are the Leiden and Oxford manuscripts, which have practically identical texts. A manuscript in the Topkapı Sarayi Müzesi in Istanbul contains a very complete text, and this is accompanied by a set of maps, while the abridged Ibn Ḥawqal from the Bibliothèque Nationale, Paris, has a set of maps that are very different from those of Istanbul and are obviously a later development. Comparing the text of the Istanbul manuscript with those of Oxford and Leiden, Kramers concludes that the Istanbul manuscript represents an earlier version of Ibn Ḥawqal (I) and the other two manuscripts (without maps) a later version (II). The maps of the Paris abridgment, however, he regards as a great improvement on those of Istanbul, so that he identifies this manuscript as a later version of Ibn Ḥawqal’s work (III) even though the text may hark back to an original that is earlier than the Istanbul text. He therefore has three recensions of Ibn Ḥawqal, the middle ones being: (1) Hamburg, Staats- und Universitätsbibliothek, Cod. Or. 300 (dated 1086/1675); (2) Bologna, Biblioteca Universitaria di Bologna, Cod. 3521, undated but related closely to 3; (3) Berlin, Staatsbibliothek Preussischer Kulturbesitz, Orientalabteilung, MS. Sprenger 1 (Ar. 6032) (dated 1840), both 2 and 3 from a copy of 589/1193; and (4) London, British Library, MS. Or. 5305.

33. Leiden, Bibliothek der Rijksuniversiteit, Cod. Or. 314, and Oxford, Bodleian Library, MS. Huntington 538 (MS. Or. 963).
34. The Topkapı Sarayi Müzesi Kuruphanesi manuscript is the one mentioned in the first paragraph of this chapter, A. 3346. The Paris manuscript is Bibliothèque Nationale, MS. Arabe 2214.
one having no maps to show us. The maps of other manu-
scripts from Istanbul, which Kramers saw, seemed to fit
into the same categories of his divisions I and III. Thus
there are two versions of the maps that accompany Ibn
Hawqal’s text, an earlier and a later. All together, in
the Balkhi-Isṭakhrī-Ibn Hawqal set of writings, we have four
distinct recensions of what is basically one set of maps
(fig. 5.3). For these I shall follow Kramers’s example and
call the four types Isṭakhrī I, Isṭakhrī II, Ibn Hawqal I,
and Ibn Hawqal III. The manuscripts of Ibn Hawqal III,
though all undated, are much later than the other texts,
probably from the late thirteenth or early fourteenth cen-
tury A.D. The regional maps are nevertheless copies of
the earlier versions. The world map of Ibn Hawqal III,
however, is so different from the other world maps that
it warrants special treatment in chapter 6.

**Description of the Maps**

This set in most cases comprises twenty-one maps,
although some manuscripts lack a map or so. The con-
sistency with which the same set of maps appears in so
many manuscripts and with several different authors led
Miller to call the set the “Islam-atlas,” and it has been
called this by several other scholars. The set consists of
a world map, maps of the three seas—the Mediterranean,
the Persian Sea (Indian Ocean), and the Caspian Sea—and
maps of seventeen “provinces” of the Islamic empire. I
place the word “provinces” in quotation marks because
in some cases provinces are linked together in one map
(Azerbaijan, Armenia, etc., and Spain and the Maghreb)
and because the Persian Desert is hardly a province. The
word the texts use for “province” is iqsīm, from the Greek
κλώμα, a word that reaches Arabic through the transla-
tion of Ptolemy. The word was used first to translate the
Persian kishvar, which was a specific geographical region,
and hence comes the present usage. A complete list of
these maps in the order usually found in a manuscript is
as follows: (1) world map; (2) Arabia; (3) Indian Ocean;
(4) al-Maghrib (North Africa); (5) Egypt; (6) Syria; (7)
Mediterranean Sea; (8) al-Jazirah (Upper Mesopotamia);
(9) Iraq (Lower Mesopotamia); (10) Khuzistan; (11) Fars;
(12) Kirman; (13) Sind; (14) Armenia, Arran (Alvan), and
Azerbaijan; (15) Jibal (central Persian mountains); (16)
Daylam and its neighbors (Rayy, Tabaristan); (17) Caspian
Sea; (18) Persian Desert; (19) Sijistan; (20) Khurasan; (21)
Transoxiana. The thirteen maps that represent the Persi-
ian-speaking provinces of the Islamic empire are fairly
consistent in form throughout all the manuscripts. Their
form was stereotyped by the time of the first al-Isṭakhrī
recession, and Ibn Hawqal seems to have found no need
to change these maps. Even Azerbaijan and al-Jazirah, of
which Ibn Hawqal produced good versions approved by
al-Isṭakhrī, do not seem to have changed much through

The recensions. It is therefore appropriate to describe
these maps of the Iranian area and then use them as a
standard for the rest of the set.

The maps of each of these regions consist of an area
that is roughly rectangular and usually, although not
always, surrounded by a line representing its boundary
with the surrounding areas. There is no projection to
form the base of the map. The maps cannot be joined
together as a multisheet map like the sectional maps of
al-Idrisī. Even if they are reduced to the same scale,
this cannot be done as it can for the sectional maps of
the European edition of Ptolemy. The maps are thus
individual entities and are seen as such by the draftsman.

**Selection of Material**

This set of maps does not cover the whole world as do
the sectional maps of al-Idrisī that follow in the twelfth
century and the texts of the earlier geographers like Ibn
al-Faqih or Ibn Khurradadhbih. These latter include con-
siderable detail on China and India and give some account
of Africa and Europe. The Balkhi maps specifically cover
the Islamic empire as it appeared in the tenth century.
Even Spain has no separate map and is omitted in the
text, though it was Muslim at the time. It was, of course,
ever part of the Abbasid Empire. Inside the Dār al-Islām
each province is then given its own map and a description
that forms an individual chapter dealing systematically
with towns, rivers, mountains, and inhabitants, followed
by itineraries throughout the province. S. Maqbul Ahmad
has a theory that this Islamicization of the maps and
geography was a deliberate policy developing away from
the work of the earlier al-Maʾmūn type of geographer,
which, based mainly on Ptolemy, covered the whole of
the known world.40

Besides this policy of portraying only the areas of the
Abbasid caliphate at its greatest extent, it is further
obvious that there is a bias toward things Iranian: so much
so that Kramers has suggested there may have been old

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36. The manuscripts from Hamburg and Bologna have a complete
set as I have described them, as do also the Gotha MS. Orient. P. 36
and the set of maps in the Vienna manuscript, Österreichische Nation-
albibliothek, Cod. Mixt. 344 (Flügel 1271). This was the number of
maps mentioned by al-Muqaddasi belonging to the set produced by al-
Balkhi; see Ranking and Azoo’s translation, 6 (note 8), Miquel’s trans-
lation, 14 (note 8).

37. See chapter 4.

38. A list is given by Miller, *Mappae arabicae*, Band 1, Heft 1, 23
(note 14), giving the best-known manuscripts outside Istanbul and the
actual maps they contain. He also gives reproductions of all the maps
from all the main manuscripts.

39. See below, pp. 162–63, esp. fig. 7.6.

40. Ahmad, “Khaṯīta,” 4:1079, and also Ahmad, “Djughrāfiya,”
2:581–82 (note 6).
Iranian maps that are the basis of these Balkhi maps. There is no evidence for the existence of the former, but the maps may ultimately be based on early lists of postal routes surviving from Sassanid times. These lists may perhaps also be seen as the origin of the lists of Islamic postal routes found in the works of the al-Masālik wa-al-mamālik type. The Iranian bias also appears in the contents of the set of maps. The Iranian area is divided systematically into areas for mapping, whereas the areas the Arabs conquered from the Byzantines were treated in a much less systematic way. This may, however, reflect the administrative situation in the two empires that pre­ceded the Islamic empire at the time when the Arab con­quest took place. Al-Balkhi and al-ʾIṣṭakhri were both patronized by the Samanid rulers of Persia, and the emphasis is very much on the Iranian area.

Ibn Ḥawqal’s interest was much more in the Mediterra­nean area, and his first patron was the Hamdanid Sayf al-Dawlah of Syria. Later his Fatimid interests predomin­ated, and the center of Fatimid interests was always the Mediterranean. In his maps the real innovations occur in these regions. The map of the Maghreb is itself really a detailed map of the Mediterranean (he refers to this fact in his text when describing the map). The Mediter­ranean map is little more than a reduced version with little detail, and of course the Nile area has been com­pletely redrawn in the map of Egypt.

Al-ʾIṣṭakhri and Ibn Ḥawqal show no interest in pro­jections or mathematical astronomy. Neither do they mention longitude and latitude in any form, or any sort of map construction. They both give distances between places on their routes (maraḥalah = day’s journey), and they add these up roughly to give the dimensions of the inhabited world. These distances are not recognizable on the map, however. It therefore does not seem that the authors envisaged any kind of formal scale at all in con­structing these maps.

Each map consists of a set of geometric configurations. Though some are more geometric than others, most lines are straight or arced, rivers are wide parallel lines, and lakes are often perfect circles. Towns are sometimes squares, circles, or four-pointed stars or, if they are stop­ping places on a straight route, resemble small tents or perhaps doors to caravansaries. Thus much of the work­ing is ruled with either a straight or a curved edge. The only exceptions are mountains, which are drawn as a collection of peaks or perhaps piles of rocks, though even here the base, which probably represents the position of the range on the map, is a straight line or a regular curve.

The basic purpose of the maps (especially those of the Persian-speaking areas) seems to be to incorporate the caravan routes across the province, with all the stages marked. This is most noticeable on the map of the Khurasan Desert, where the boundary of the desert is given with the bordering villages and oases marked around it. Straight lines then join those places on opposite sides where traffic flows, and the name of the route is written on the line so drawn.

The Treatment of the Persian Provinces

A good example of a map from the Persian-speaking areas is that of Kirman, a province in the southeast of Persia (figs. 5.4 and 5.5). This is a simple and clear example of one of these maps that can be described without great complication. However, any attempt at description is bedeviled because few of the place-names still exist, and a comparison with a modern map (fig. 5.6) reveals very little. Of the five main towns and district centers of Kir­man in the tenth century, Sirjan, Jiruft, Narmashir, Bar­dah (now the town of Kirman), and Bam, only the last two exist as inhabited towns. The first two survive as district names only, yet Sirjan, the former capital, was larger than Shiraz in its heyday.

The top (south) of the map in figures 5.4 and 5.5 shows a crescent shape representing the sea (Persian Gulf). The left (east) side, a straight line, is the border with Sind. The bottom (north), again a straight line, is the border with the desert of Khurasan and Sijistan. The right (west) side is more elaborate, being made of three straight lines, and represents the border of Fars. It is interesting that on the map of Fars the Kirmani border has the same

46. André Miquel, La géographie humaine du monde musulman jusqu’au milieu du 11e siècle, vol. 2, Géographie arabe et représentation du monde: La terre et l’étranger (Paris: Mouton, 1975), 19–20, has mentioned these geometric shapes and inferred that there are reasons for using such shapes. However, the various manuscripts have not kept rigidly to the same shape, and there is no way of reproducing the original shapes used by the authors for the map.
47. For the Khurasan Desert, see the reproductions of this map in Miller, Mappae arabicae, Band 4, Beieht, Taf. 48–51 (Wüste) (note 14).
49. Also in Miller, Mappae arabicae, Band 3, Beieht, Taf. 31–33 (note 14).
kink, but the angles and dimensions do not correspond. It is not possible to make a "fit." Just inside Kirman on the eastern side are two crescent-shaped areas looking like arcs of a circle on most manuscripts. These are two mountain ranges, while toward the interior from these are several small mountain groups, a partial selection from a very mountainous area. Most of the province is made up of routes starting in the north, radiating out from the capital of Sirjan. All these are difficult to follow, since the present-day road system bears no resemblance to this at all. The modern routes are based on the new capital, Kirman, which is on the main route from northeastern Iran (via Yezd) toward Sind and India—a route that is not represented on the al-Iṣṭakhrī maps at all, though it must have been centuries old. It is interesting that Ibn Khurرادdibih, writing before the Balkhi authors, gives this latter as a main route through Kirman province, showing that the Balkhi school authors are not using Ibn Khurرادdibih directly.50

The comparison of the various texts and this map gives us a clue to the origins of the type of map. The concentration on these routes is important and shows a continuation of an early ninth-century preoccupation with this feature. The early texts of the form al-Masālik wa-al-mamalik were fundamentally texts of post routes through the Islamic empire, although most early writers were not limited to the empire, extending their work through India and China as much as possible and again by sea in the Indian Ocean and mentioning as much of

Europe as they could. The text of Ibn Khurradadhbih is the only one that survives as an independent work. He was a postal official of the empire, and so his interest in the postal routes was professional. His routes through Kirman are easy to follow, giving the distance between places in parasangs (about four miles). It is possible that his routes were actually compiled from material left over from the days of the Sassanid Empire. Al-Jayhani and al-Marwazi, who wrote similar works that are now lost and may perhaps be based on Ibn Khurradadhbih, probably followed in the same tradition.\(^{51}\) The Balkhi-Iṣṭakhri school—note that al-Iṣṭakhri also calls his work Kitāb al-masalik wa-al-mamalik—likewise probably perpetuated this tradition, but it is obvious by a simple comparison with the existing texts that the routes were subsequently rethought. We have the same idea based on new facts, whose origin is not known, but contemporaries assumed that this material was new and up to date. Thus Ibn Ḥawqal copies it almost blindly for areas like Kirman. Al-Muqaddasi too follows this information. When we come to later geographers who base their works on the earliest geographers and generally eschew the Balkhi-Iṣṭakhri traditions, we find that they take their place-names directly from al-Iṣṭakhri for areas in Iran and neglect the important route system of Ibn Khurradadhbih.\(^{52}\)

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**FIG. 5.6. MODERN KIRMAN AND SURROUNDING AREA.** A modern map of Kirman for comparison.

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**THE ARABIC-SPEAKING PROVINCES**

The four provinces that are not Persian speaking—Arabia, Syria, Egypt, and North Africa—are treated somewhat differently from the Persian provinces, although Syria, being nearest to the Iranian area, diverges less. The Arabian Peninsula is very impractically represented when one considers that from an Islamic standpoint, as the center of the pilgrim routes, it is so very important (fig. 5.7). Also, much had been written on the Arabian Peninsula by Arab writers, and a work like al-Hamdani’s Šifat jazirat al-‘Arab (History of the Arabian Peninsula) had already been produced by the time of these authors.\(^{53}\) Al-Iṣṭakhri shows the peninsula as a protrusion sticking out into the Persian Sea with the African coast beyond

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51. All these authors are mentioned in chapter 4.
52. The most obvious of these is the anonymous Persian text Ḥudud al-‘alam, ed. and trans. Minorsky (note 9).
53. Al-Ḥasan ibn Ḥajmad al-Hamdani died in 334/945.
FIG. 5.8. ARABIA ACCORDING TO THE BALKHĪ SCHOOL, İŞTAKHRĪ I. North is toward the lower right corner. Size of the original: not known. By permission of the Otdeleniya Instituta Vostokovedeniya Akademii Nauk, SSSR, Leningrad (MS. C-610, fol. 13a).

(fig. 5.8). South is to the top left. Most of the detail in the peninsula relates to the Hijāz and Yemen. Below, it is separated from the rest of the landmass by the Euphrates and the Tigris, and only the area immediately above and to the left refers to the larger part of the peninsula (Najd, Bahrain, and Oman). Most of this latter area is devoted to the sands and to the two mountains of Ṭa‘l. Routes radiate out from Mecca and Medina, as one might expect; for example, from Mecca to Bahrain, Oman, and Aden and from Medina to Basra, Kadesia (Qadisīya), Raqqā, and through Taima toward Syria. The later recension of al-İşṭakhrī is much more vague but has Mecca and Medina much farther north, giving more space in the southern part of the peninsula but even less for the north, east, and center (fig. 5.9). Ibn Ḥawqal’s map of Arabia is even more vague, little more than a hurried sketch map based ultimately on al-İşṭakhrī (figs. 5.10 and 5.11).

The maps of the two westerly provinces, Egypt and the Maghreb, vary enormously from recension to recension. There can certainly have been no original Iranian lists of postal routes for these areas and probably no Byzantine or any other Western equivalent. The sources are therefore limited to Ptolemy and any Muslim writers or collectors of information active since the Islamic conquest of these areas. The early writers of masālik literature like Ibn Khurradadhbih did not neglect these areas, and from their works a considerable amount of geographical information could be obtained. When considering these areas we must also consider the map of the Mediterranean, one of the few places where information relating to non-Islamic areas is found in these texts (fig. 5.12). The Mediterranean begins in İşṭakhrī I as a com-

54. Maps of the Arabian Peninsula are in Miller, Mappae arabicae, Band 3, Beiheft, Taf. 19–21 (note 14).
complete circle with a wide entrance to the Encompassing Ocean on top.\textsuperscript{55} Details of North Africa lie on the left and those of Europe (mainly Islamic Spain) on the right. At 90° from the mouth of the sea (Strait of Gibraltar) we have a wide, straight water channel lying due north-south that is the Bosporus, and at 270° there appears another channel, the mouth of the Nile. This has a semicircular area with the entrance of the Nile to the left, containing two islands (Tinnis and Damyāṭ). At the bottom of the design (east) are three parallel rivers. In the center of the sea symmetrically west-east are a large mountain, Jabal al-Qilāl (in the Strait of Gibraltar), and a line of three large circular islands; Sicily, Crete, and Cyprus. This shape is reflected in the maps of both North Africa and Egypt. North Africa, which includes Spain, is really a map of the western end of the Mediterranean with a circular Spain on the north and a straight (horizontal east-west) North African coast (plate 6 and fig. 5.13).\textsuperscript{56} The large mountain is again present but farther inside the Mediterranean, and there is one island (Sicily) and a prominent circular area on the African side that seems to house Sijilmasa and the land of the blacks (Bilād al-Sūdān). Egypt (fig. 5.14) also fits roughly to the Mediterranean map except that the seacoast is straight. The delta remains semicircular, with its two islands and a long, straight Nile with ranges of mountains on each side.

The later recension of İṣṭakhrī (II) is somewhat the same. The Mediterranean on its own map becomes elongated, and the central islands are much smaller (fig. 5.12b). The Nile and the Bosporus are not so symmetrically arranged, and the mountain in the strait is much smaller. In the North African map, Spain loses its circular shape, becoming extended obliquely on the east and in some manuscripts flattened on the south (fig. 5.13b).\textsuperscript{57} Egypt also varies slightly (fig. 5.14b).

\textsuperscript{55} The maps of the Mediterranean are reproduced in Miller, Mappae arabicae, Band 1, Beiheft 1, Taf. 1–4 (note 14).
\textsuperscript{56} The maps of the Maghreb occur in Miller, Mappae arabicae, Band 2, Beiheft, Taf. 5–7 (note 14).
\textsuperscript{57} Miller, Mappae arabicae, Band 1, Beiheft 1, Taf. 4 (Bologna).
In the Ibn Hawqal recensions the map titled al-Maghrib includes the whole of the Mediterranean, and the outline of the sea has been completely revised (fig. 5.12c and 5.12d). The mountain is gone, and though Spain and North Africa remain roughly the same geometric shape, they are well covered with rivers. The important thing, however, is that the eastern end of the Mediterranean is no longer a circle but has a recognizable shape. There is a peninsula for Italy and another for Greece. The Alps are visible, Corsica and Cyprus appear, and there are signs of an Anatolian peninsula (wrongly oriented). The earlier recension (Ibn Hawqal I, fig. 5.12e) has another map of the Mediterranean (this time titled correctly) that is a simplification of the other, slightly more stylized, while the second recension has only one map (also ostensibly North Africa) that is inferior to the first recension of Ibn Hawqal but still a great improvement of that of al-Iṣṭakhrī. Egypt too has been completely redrawn by Ibn Hawqal, giving more detail to the Nile Delta (fig. 5.14c). This map of Egypt is reproduced in Ibn Hawqal III (fig. 5.14d) but is more stylized and angular—again not really an improvement on 1 but vastly better than al-Iṣṭakhrī.

The impression one gets of Ibn Hawqal’s maps of western Islam is that they are the work of someone who has been there and knows what he is portraying but is working within a traditional cartographic style and does not wish to depart too far from it. Such a conclusion is emphasized by the Paris abridgment manuscript. This also contains a map of the Nile basin from al-Khwārizmi that is based on Ptolemy and is drawn in a much freer and more natural style than the other Balkhi school maps.

All the provincial maps of this school of geographers may be based on practical considerations like land routes. These routes and the order of towns along them must have originated from the constant observations of those who traveled them. All the maps, however, except perhaps for the western areas of Ibn Hawqal’s work, appear to have been drawn for mnemonic purposes, rather than for any other practical use, and for this their geometric style is admirably suited.

The World Map

The world map and the map of the Indian Ocean, which is enlarged from it and always referred to as the Persian Sea, are a different proposition. These two maps are built up by what might be called academic conjecture—an armchair attempt to see all the provinces set down relative to each other. The whole has to fit into a stereotyped idea of what the whole world should look like. According to Arab geographical theory based entirely on Ptolemy, this would be a sphere. Since the far side of a


The North African map is found in Band 2, Beiheft, Taf. 5 (Berlin,) and Taf. 7 (Bologna).


59. The first-recension maps of Egypt are reproduced in Kramers’s edition, pis. between pp. 134 and 135 (note 5), and also in Kramers and Wiet’s edition, vol. 1, pl. 5 (note 28). They are not reproduced by Miller. The second-recension maps (Ibn J:Iawqal III) appear in Miller, Mappae arabicae, Band 2, Beiheft, Taf. 9 (Paris,) (note 14).

60. Paris, Bibliothèque Nationale, MS. Arabe 2214.

61. The map of the Nile basin is illustrated in figure 6.2 and can be compared with al-Khwārizmi’s map, see plate 4.

62. Here we are dealing with the maps of al-Iṣṭakhrī (I and II) and the first recension of Ibn Hawqal (I). Ibn Hawqal III is discussed in more detail in chapter 6.

63. See, for example, p. 4.


FIG. 5.15. THE WORLD, ISTAKHRĪ II. Size of the original: 27.5 x 17.7 cm. By permission of the Biblioteca Universitaria di Bologna (Cod. 3521, fol. 2r).

world sphere (an upside-down world) was practically inconceivable, only a hemisphere was thought to be inhabitable. This could easily be “projected” onto a flat area and represented by a circle. That Ptolemy represented the inhabitable world as occupying 180 degrees of the earth supported this idea. Thus al-Istakhri represented the world as a circle surrounded by the Encompassing Sea, with the two main seas reaching in from the east and the west toward the center, where they would join except for a small, narrow land barrier—the barzakh of the Qur‘ān (plate 7 and fig. 5.15).64

In his text, al-Istakhri gives a simple description of the world to explain his map. “The earth is divided into two halves by the two seas, so that we have a north or cold half and a south or hot half. People in these two halves get blacker as you go south and whiter as you go north etc.”65

The main kingdoms are listed together with the kingdoms that adjoin them. This is the only place where non-Islamic areas are given any mention. Measurements are attempted; thus the width from the Encircling Ocean in northwestern Africa to the Ocean in China was 400 days'
journey. However, the distance north to south was not measurable. There were 210 days’ journey through inhabitable lands, but the extreme north was uninhabited because of intense cold and the extreme south because of intense heat. The seas were described briefly, and the fact that the Caspian (Khazar) Sea and the Aral (Khwarazm) Sea were landlocked is mentioned, as well as the sea connection between the Encircling Ocean and Istanbul—that is, the Baltic joins up to the Bosporus.

The map of the Persian Sea is an enlarged version of a portion of the world map, although there are enough differences in the shape of the ocean in the two maps to necessitate some explanation. Three large islands—Khārak, Awal (Bahrain), and Lāft (Qishm Island)—are set symmetrically in what is the Arabian Sea, with the Tigris to the left and the Indus to the right. India and China coalesce into one narrow peninsula, matching Arabia on the other side. The attempt is probably to match the Mediterranean on the other side of the world. Hence India also has a large mountain (Adam’s Peak) to match the Jabal al-Qilāl near the Strait of Gibraltar. This is the Indian Ocean map in the first recension (ʾIṣṭakhri I).

The second (ʾIṣṭakhri II) is not so symmetrical, and the mountain and three islands become much smaller (as they also do in the Mediterranean). In the world map, the islands disappear altogether in the second recension but are there, very large, in the first. There is no “mountain” in either recension of the world map. The surprising difference is that the western tip of the Indian Ocean, which represents the Red Sea (Sea of Quzum), points to the west in the ocean map, but in the world map it turns back on itself to almost touch the southeastern corner of the Mediterranean Sea.

The Ibn Ḥawqal maps, however, are very different. This may be due to a closer reading of the earlier geographers and an attempt to incorporate features from their texts. This would include the Arabic translation of Ptolemy. But we are some way from indicating the Chinese and Golden Chersonese peninsulas of al-Khwārizmi or of Ptolemy, and there is no Taprobane. The main point is that the Red Sea and Persian Gulf are clearly shown, and the Nile rises in the Mountains of the Moon in the easterly extreme of Africa (fig. 5.16). The islands of al-ʾIṣṭakhri have retreated into the Persian Gulf, where they actually belong, and other islands appear from the accounts of the non-Balkhi school geographers. ʾIbn Ḥawqal III, like most of this set, is an inferior edition of Ibn Ḥawqal I with no new, up-to-date features.

**AL-MUQADDASI’S MAPS**

Al-Muqaddasi has the same set of maps as the other two authors, but they have become little more than illustrations to the text and are not really essential to understanding it. The maps generally give much less detail than those of al-ʾIṣṭakhri and Ibn Ḥawqal, whereas his text is much more descriptive than theirs. The set of maps, however, is not quite the same as that of the earlier authors, for he has no world map and no map of the Caspian Sea or of Sijistan, but he does include a newly conceived map of the Arabian Desert showing the pilgrim routes to Mecca from the north and east.

The surviving manuscript maps were apparently taken from the second recension of al-ʾIṣṭakhri, although they seem to be completely redesigned. Al-Muqaddasi himself says that among the more reliable maps he has found are those of al-ʾIṣṭakhri, and he states that he has done his best to bring out the correct representations of the different parts of the empire in making the maps. He also explains that the colors of the maps are significant: “In the maps we have colored the familiar routes red, the golden sands yellow, the salt seas green, the well-known rivers blue, and the principal mountains dull brown.”

He also seems to indicate the relative importance of the towns by the differing size of circles, something he is very keen on in his text. This emphasis is clear in the Leiden manuscript but not very obvious in that from Berlin, although both manuscripts have maps that look more businesslike than the more ornamental maps of the first ʾIṣṭakhri recension, albeit in a sketch map style.

The map of Kirman shows this tendency. It is virtually a redrawing of the al-ʾIṣṭakhri map (ʾIṣṭakhri I) with a few omissions but nothing new. By comparing this map with the equivalent text it is easy to see how al-Muqaddasi developed the text without developing the maps. For instance, he mentions far more towns and villages in his text than either of the earlier authors do, whereas his...
map has, if anything, less detail than theirs. He shows that Bardashir is the seat of government, although Sirjan is the largest town. This sort of thing is not discernible from any map. The Arabian Peninsula, however, looks very different: the surrounding sea has vanished, and the peninsula becomes a square block (fig. 5.17), though rounded off in the south in the Leiden manuscript. The al-İṣţakhrī origin is still obvious, but someone has obviously redesigned it who shows more interest in the peninsula. The routes have been completely redrawn.

In addition, al-Muqaddasi has, as I have said, a new map of the Arabian Desert, formed on the lines of al-İṣţakhrī’s map of the Persian Desert. Presumably al-Muqaddasi, who was more at home in this area, thought it was important to have these desert routes, especially since these were the main pilgrimage land routes. In spite of its possible importance, the final map seems sketchy to modern eyes, and it differs considerably in the two manuscripts. The Berlin manuscript (fig. 5.18) gives several routes from places on the Syrian-Iraqi border of this desert, and these routes meet at Taima, whereas the Leiden map has routes terminating in Mecca. A series of stages are given on each route in both maps in much more detail and more clearly positioned than in any of the maps of peninsular Arabia I have discussed. However, this is nothing like the detail given in al-Muqaddasi’s text, where the routes terminate in Mecca, therefore agreeing with the Leiden manuscript map.

Generally the maps appearing in al-Muqaddasi manuscripts contain little detail for the Persian areas of Islam. The Mediterranean map again is little more than a hurried copy of al-İṣţakhrī. The Arabian areas, however, should be studied. Certainly the map of the Arabian Peninsula, together with that of the Arabian Desert, is superior to any map of the area that has appeared before.

FIG. 5.16. THE WORLD, IBN HAWQAL I. Size of the original: not known. By permission of the Topkapı Sarayi Müzesi Kütüphanesi, Istanbul (A. 3346).
MISCELLANEOUS MANUSCRIPTS BELONGING TO THE BALKHI SCHOOL

In addition to the manuscripts connected with these authors, three other manuscripts with maps show interesting variations on those already mentioned. The first of these is the very late copy (1675) of al-Iṣṭakhri from the Staats- und Universitätsbibliothek in Hamburg, which, according to Kramers, shows a text relating closely to Iṣṭakhri. He therefore classes the maps in the same category. A closer inspection of the maps, however, will show al-Iṣṭakhri features in some of the maps, but the map of Kirman is distinctly of the Ibn Ḥawqal I type. The maps of the Persian area all compare closely with Ibn Ḥawqal's maps, that of Transoxiana being almost identical. The maps of the Mediterranean Sea and the Maghreb are certainly Iṣṭakhri I (fig. 5.19), although the Mediterranean map has only two large islands instead of the usual three. These Hamburg maps were drawn in Persia for the Safavid prince Husayn in 1675. They have a distinctive design, superior to many earlier manuscripts, and the nomenclature is written in a very clear Persian Naskhi script. Considerable trouble was taken over them, and it may be that what were thought to be the best features from several manuscripts of different styles were combined to construct them.


74. Compare the various maps of the Hamburg manuscript that are scattered throughout Miller, Mappae arabicae (note 14); the Transoxiana map is in Band 4, Beiheft, Taf. 59.
75. Miller, Mappae arabicae, Band 1, Heft 1, 17 (note 14).
The manuscript was dedicated to the Seljuk ruler Tughrul ibn Arslan, who died in 590/1193, so its date must be slightly earlier than that. It contains the work entitled ‘Ajā’ib al-makhlqāt of Ahmad (or Muḥammad) al-Ṭūsī, who was alive at the time the manuscript was written. The maps, of which only six appear (two in the text and four as separate small plates at the beginning), are drawn in very sketchily with a pen (fig. 5.20). Although these maps are sketchy, they seem to resemble recension III of Ibn Hawqal, as shown in the Paris manuscript (Bibliothèque Nationale, MS. Arabe 2214). The Caspian Sea, however, is more individual, while the Mediterranean is a very badly drawn Iṣṭakhrī. The connection of these maps with the others is very uncertain, since the text itself is not related to that of al-Ṭūsī.76

The third set of maps occurs in a manuscript from Vienna that is a Persian epitome of al-Ṭūsī, in spite of being attributed to Naṣr al-Dīn al-Ṭūsī. This is a beautifully written manuscript, but the maps (of which there is a full set) have been reduced to mere outlines, with the towns lined up in any order on the land and the rivers and mountains lined up too, so that the whole appears as a pictorial listing of the topographical features rather than as a map (figs. 5.21 and 5.22). Only those areas like the Mediterranean with a distinctive coastline are recognizable.77

The maps in the two nineteenth-century manuscripts in London that Miller attributed to al-Jayhānī have nothing to do with al-Jayhānī.79 The text comes from another

76. Miller, Mappae arabicae, Band 1, Heft 1, 21 (note 14), and Wilhelm Persch, Die orientalischen Handschriften der Herzoglichen Bibliothek zu Gotha, pt. 1, Die persischen Handschriften (Vienna: Kaiserlich-Königliche Hof- und Staatsdruckerei, 1859), 58–61. According to Cevdet Türkyay, İstanbul Kütüphanelerinde Osmanlı’lar Devrine Aid Türkç–Araba–Farsça Yazma ve Başma Coğrafiya Eserleri Bibliyografyası (Istanbul: Maarif, 1938), 3, another manuscript of this text exists in Istanbul, Hamid-i Evvel Kitaplığı, no. 554, and Türkyay dates the Istanbul manuscript 555/1160. There may be others. Whether they have maps I do not know.

77. There are empty pages that may have been meant for more maps. The existing maps are reproduced by Miller, Mappae arabicae (Gotha, manuscript); Band 1, Heft 1, Taf. 4 (Mediterranean); Band 3, Heft 1, Taf. 21 (Arabia), Taf. 22 (Indian Ocean), and Taf. 36 (Sind); Band 4, Heft 1, Taf. 42 (Jibal), and Taf. 48 (Caspian Sea) (note 14).


Persian abridgment of al-Iṣṭakhri that included a set of maps and was copied in India for a European scholar. The regional maps (especially those of the Persian areas) are quite passable examples of Iṣṭakhri I, though less detailed than those of the twelfth-century manuscripts. The maps of the seas (with mermaids and fish), however, are very corrupt (fig. 5.23), and the world map is little more than a rough sketch of al-Iṣṭakhri’s world map (fig. 5.24). But the map of Egypt gives the source of the Nile, showing Arab Ptolemaic influence, although the delta area is taken directly from al-Iṣṭakhri and the anchor shape of the Mediterranean again shows a comparison with the Ibn Ḥawqal III map from the Paris abridgment.80

There is at least one map of the Balkhi school that possesses climate boundaries. It is a very late map (ca. 816/1413) from a Timurid scientific manuscript now in the Topkapı Sarayı Müzesi Kütüphanesi in Istanbul (fig. 5.25).81 It was obviously drawn with special care, and the climates are spaced so that the southern ones are wider than the northern ones and the boundaries are straight lines due east and west. The southern edge of the Indian Ocean follows the southern boundary of the first climate (presumably the equator, though not labeled as such and appearing well to the south of the world circle). A Pro-

80. Miller, Mappae arabicae, Band 5, Beiheft, Taf. 67 (Aegypten und Mittelmeer) (note 14).

lematic feature occurs in the mountains at the source of the Nile. The map itself has all the features of the Iṣṭakhri I map (although it has only two islands in the Mediterranean) but is unusual in having detailed nomenclature in the Persian area and only selected material in the rest of the world.

Finally, some of the maps taken from the al-Iṣṭakhri set were used as the basis of maps in some later geographers' works. Thus the occasional new work perpetuated a map when the remainder of the Balkh maps had lost their currency (except in direct copies of existing works). The Kitāb 'ajā'īb al-makhlūqāt of Zakariya' ibn Muḥammad al-Qazwī and the Kharidat al-'ajā'īb of Sirāj al-Dīn Abū Ḥafṣ 'Umar Ibn al-Wardī are often accompanied by a world map that is based on that of al-Iṣṭakhri but has enough individual features to allow it to be classified as an al-Qazwī or an Ibn al-Wardī world map. Both these works were extremely popular, and many manuscripts have survived (on the maps, see below, pp. 143–44). Also, Ḥāfiz-i Abrū, a Persian geographer of

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**FIG. 5.23. MAP OF THE INDIAN OCEAN FROM THE BRITISH LIBRARY MANUSCRIPT.** A Persian epitome of al-Iṣṭakhri from nineteenth-century India.
Size of the original: 25.5 × 13 cm. By permission of the British Library, London (MS. Or. 1587, fol. 39r).

**FIG. 5.24. WORLD MAP FROM THE BRITISH LIBRARY MANUSCRIPT.**
Diameter of the original: ca. 15 cm. By permission of the British Library, London (MS. Or. 1587, fol. 5).
the fifteenth century whose maps will be mentioned later, had sketch maps of the Persian and Mediterranean seas based on the form of al-Iṣṭakhri’s maps but including the extra islands mentioned by Ibn Ḥawqal.

CONCLUSION

One might ask, What are the origins of this set of maps? The only maps whose construction has been considered earlier than those of the Balkhi school are maps formed from Ptolemaic data or the world map associated with al-Maʾmūn.\(^{82}\) There is nothing to show any connection between these and the Balkhi school maps. The Arab geographers before these writers have been either Ptolemaic scholars, collectors of travel writings, or listers of postal routes. The one complete survival of this last genre is the text of Ibn Khurradādhibh, and the routes across the maps of al-Iṣṭakhri are very reminiscent of Ibn Khurradādhibh’s routes except that the latter does not break his routes into provinces but follows them naturally from one end to the other before turning to another route.

\(^{82}\) See chapter 4 above.
Also, al-Iṣṭakhrī and al-Muqaddasi do not take their information from Ibn Khurradadhbih, so that the stages have different names even though their routes are sometimes the same.

Nevertheless one can imagine a scholar drawing out Ibn Khurradadhbih's routes and then splitting them up into areas, but the maps we are dealing with have more to them than this. They have boundaries and coastlines, lakes, rivers, and mountains—in fact, a backdrop on which to display the routes. This backdrop is not unlike some of the medieval mappaemundi, and the idea could be derived from Byzantine material. If one allows for the geometric style of the Arab maps, as, for instance, in the Iṣṭakhrī world map, the resemblance is quite noticeable. The Ibn ʿHawqal maps of the Mediterranean may have even more of the mappamundi style. There is also the possibility that since the maps of the Iranian area are obviously standard they may go back before the Islamic period and have a Sassanian origin. The groupings of the maps, however, are definitely administrative in origin, and it seems possible that some scholar (al-Balkhi or someone else) took material such as the routes from a work similar to Ibn Khurradadhbih's and produced maps in an original burst of enthusiasm. This may be why the title al-Masālik wa-al-mamālik is taken up by the authors of this school from the Ibn Khurradadhbih–Sarakhsi–Jayhānī group of writers, whose origins were as listers of postal routes. That individuals were experimenting with map construction is shown by al-Muqaddasi's discussion about the man from Sarakhsh. Al-Balkhi's idea of a set of maps obviously became popular, and "atlases" of this sort became common. The number of manuscripts that have survived speak to this, but they were always based on the texts of the few authors I have described. Also, the style in which the maps are drawn became established. Future mapmakers used the cartographic style of these maps as a basis for their own efforts even when the content of their maps was completely different, as in maps of Ptolemaic origin. It is these later authors, al-Idrisī and others, whose works will be discussed in the following chapters.

83. A difference of emphasis can be seen: the European map emphasizes the Mediterranean Sea and Palestine, whereas the Arab authors emphasize the Islamic landmass. A comparison can be made between Ibn ʿHawqal’s world map (Ibn ʿHawqal I, fig. 5.16) and the mappamundi illustrated in Woodward, “Medieval Mappaemundi,” figs. 18.61 to 18.63 (note 64).

84. Al-Muqaddasi, ʿAbṣar al-taqāṣīm; Miquel’s translation, 19 (note 8), Ranking and Azoo’s translation, 7–8 n. 4 (note 8).
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<tr>
<td>1 Berlin, Staatsbibliothek Preussischer Kulturbesitz, Orientabteilung, MS. Sprenger 1 (Ar. 6032 [Ahlwardt])b</td>
<td>Orig. MS 589/1193, copy ca. A.D. 1840</td>
<td>Standard text used by de Goeje; author not named; earliest parts (pre-309/921) may be al-BalkhI</td>
</tr>
<tr>
<td>2 Bologna, Biblioteca Universitaria, Cod. 3321</td>
<td>Orig. MS 589/1193. Same as copy above?</td>
<td>Similar to no. 1</td>
</tr>
<tr>
<td>3 Cairo, Där al-Kutub, MS. Geog. 199</td>
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<td>Text on which al-Ĥini’s printed text is based, resembles Topkapı Saray Müzesi Kütüphanesi, A. 3348</td>
</tr>
<tr>
<td>4 Cairo, Där al-Kutub, MS. Geog. 256</td>
<td></td>
<td>Used by al-Ĥini, resembles de Goeje’s text based on Leiden and Gotha manuscripts</td>
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<td>5 Cairo, Där al-Kutub, MS. Geog. 257</td>
<td></td>
<td>Used by al-Ĥini, similar to previous manuscript</td>
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<tr>
<td>6 Eton, Eton College, Oriental MS. 418, present location unknown</td>
<td></td>
<td>Persian translation of al-İštâkhri</td>
</tr>
<tr>
<td>7 Gotha, Forschungsbibliothek, MS. Orient. A. 1521 [Pertsch]c</td>
<td>569/1173</td>
<td>Later abridgment of second recension of al-İštâkhri, who is mentioned by name</td>
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<tr>
<td>9 Hamburg, Staats- und Universitätsbibliothek, Cod. Or. 300</td>
<td>1086/1675</td>
<td>Al-İštâkhri’s text</td>
</tr>
<tr>
<td>10 Istanbul, Süleymaniye Kütüphanesi, Ayasofya 2613</td>
<td>878/1473</td>
<td>Al-İštâkhri’s text</td>
</tr>
<tr>
<td>11 Istanbul, Süleymaniye Kütüphanesi, Ayasofya 2971a</td>
<td>n.d. (850/1450 by Kamal)</td>
<td>Al-İštâkhri’s text</td>
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<tr>
<td>12 Istanbul, Süleymaniye Kütüphanesi, Ayasofya 3156</td>
<td>n.d. (ca. 800/1400 by Kamal)</td>
<td>Described in Tûrkay as al-BalkhI’s Masâlik wa-al mamâlik—probably and im-şâkhri; Persian translation</td>
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<tr>
<td>13 Istanbul, Topkapı Saray Müzesi Kütüphanesi, B. 334</td>
<td>ca. 870/1460</td>
<td>Persian text of al-İštâkhri</td>
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<td>14 Istanbul, Topkapı Saray Müzesi Kütüphanesi, R. 1646</td>
<td>ca. 1075/1664</td>
<td>Persian text of al-İštâkhri attributed (Tûrkay) to Ibn Khurradâdbibh</td>
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<td>15 Istanbul, Topkapı Saray Müzesi Kütüphanesi, A. 2830</td>
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<td>Al-İštâkhri text; Arabic attributed (Tûrkay and Karatay) to al-BalkhI Şuwar al-aqâlim</td>
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<td>16 Istanbul, Topkapı Saray Müzesi Kütüphanesi, A. 3012</td>
<td>ca. 867/1462</td>
<td>Al-İštâkhri text</td>
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## Maps and Versions

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<th>Comments on Maps</th>
<th>References*</th>
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<tr>
<td>18 maps</td>
<td>No world map or Fars; Iṣṭakhrī II</td>
<td>De Goeje, Kramers, Miller (b₁); Miller attributed to al-Balkhī</td>
</tr>
<tr>
<td>Complete set of 21 maps</td>
<td>Iṣṭakhrī II</td>
<td>De Goeje, Kramers, Miller (b₀); Miller attributed to al-Balkhī</td>
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<tr>
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<td>Iṣṭakhrī I</td>
<td>Al-Ḥini</td>
</tr>
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<td>Has maps</td>
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<td>Al-Ḥini</td>
</tr>
<tr>
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<td>Used by Ouseley in his edition; Afshār</td>
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<tr>
<td>20 maps</td>
<td>Arabia missing; Iṣṭakhrī I</td>
<td>De Goeje, Kamal (3.2:591–94), Kramers, Miller (g₁), Moeller, Mordtmann</td>
</tr>
<tr>
<td>21 maps</td>
<td>Complete set of Iṣṭakhrī I</td>
<td>Kamal (3.2:611–15), Miller (g₂), Ouseley</td>
</tr>
<tr>
<td>21 maps</td>
<td>Mixed set of maps (see text above for details)</td>
<td>Kramers, Miller (h₁); Miller attributed to al-Balkhī</td>
</tr>
<tr>
<td>Maps²</td>
<td>Iṣṭakhrī II</td>
<td>Karatay, Kramers, Ritter, Türkay (p. 12)</td>
</tr>
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<td>Maps</td>
<td>Iṣṭakhrī II</td>
<td>Kamal (3.2:600–604), Karatay, Kramers, Ritter, Türkay (p. 8)</td>
</tr>
<tr>
<td>Maps</td>
<td>Iṣṭakhrī II; Egypt and Kirmān reproduced in Afshār</td>
<td>Afshār, Kamal (3.2:606–10), Türkay (p. 12)</td>
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<tr>
<td>21 maps</td>
<td></td>
<td>Afshār, Türkay (p. 57)</td>
</tr>
<tr>
<td>20 maps</td>
<td></td>
<td>Afshār, Kamal (3.2:621–22), Türkay (p. 56)</td>
</tr>
<tr>
<td>21 maps</td>
<td>Iṣṭakhrī II</td>
<td>Karatay, Kramers, Ritter, Türkay (p. 59)</td>
</tr>
<tr>
<td>Maps</td>
<td></td>
<td>Kamal (3.2:605), Karatay, Kramers, Ritter</td>
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<th>Date</th>
<th>Details of Text</th>
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<tr>
<td>17 Istanbul, Topkapı Sarayı Müzesi Kütüphanesi, A. 3348</td>
<td>684/1285</td>
<td>Al-İşakhrî text, similar to Gotha, MS. Ar. 1521</td>
</tr>
<tr>
<td>18 Istanbul, Topkapı Sarayı Müzesi Kütüphanesi, A. 3349</td>
<td>878/1473</td>
<td>Al-İşakhrî text</td>
</tr>
<tr>
<td>19 Leiden, Bibliotheek der Rijksuniversiteit, Cod. Or. 3101 (Cod. 1702 [de Goeje and Juynboll])</td>
<td>569/1173</td>
<td>Al-İşakhrî text; author is named; similar to Gotha, MS. Ar. 1521, but without 12th-century additions</td>
</tr>
<tr>
<td>20 Leningrad, Otdeleniya Instituta Vostokovedeniya Akademii Nauk SSR, C-610</td>
<td>1164/1750</td>
<td>Persian translation of al-İşakhrî</td>
</tr>
<tr>
<td>21 Leningrad, Otdeleniya Instituta Vostokovedeniya Akademii Nauk SSR, V-797</td>
<td>14th century</td>
<td>Persian translation of al-İşakhrî</td>
</tr>
<tr>
<td>22 London, British Library, MS. Or. 1587</td>
<td>1256/1840</td>
<td>Ashkâl al-sâlam Persian abridgment of al-İşakhrî attributed to al-Jayhâni in text</td>
</tr>
<tr>
<td>23 London, British Library, MS. Or. 5305</td>
<td>930/1523 from earlier manuscript of 878/1473</td>
<td>Arabic text of al-İşakhrî, al-Masalik wa-al-mamalîk</td>
</tr>
<tr>
<td>24 London, British Library, Add. MS. 23542</td>
<td>1251/1835</td>
<td>Ashkâl al-sâlam Persian abridgment of al-İşakhrî attributed to al-Jayhâni in text</td>
</tr>
<tr>
<td>26 Meshed, Ästân-i Quds-i Ragavi, private no. 483, general no. 5623</td>
<td>670/1272</td>
<td>Persian text of al-İşakhrî, corrupt and incomplete</td>
</tr>
<tr>
<td>27 Oxford, Bodleian Library, MS. Ouseley 373</td>
<td>726/1325</td>
<td>Persian text of al-İşakhrî</td>
</tr>
<tr>
<td>30 Tehran, Kitâb'khanâ-i Majlis, no. 1407</td>
<td>726/1325</td>
<td>Persian version of al-İşakhrî, copy of Tehran, MS. 3515 above</td>
</tr>
<tr>
<td>31 Tehran, Kitâb'khanâ-i Malik, MS. 5990</td>
<td>ca. 700/1300</td>
<td>Persian version of al-İşakhrî</td>
</tr>
<tr>
<td>32 Tehran, Kitâb'khanâ-i Markazi-i Danishgâh-i Tihran, no. 1331</td>
<td>670/1272</td>
<td>Fragment from Persian version of al-İşakhrî</td>
</tr>
<tr>
<td>33 Tehran, Kitâb'khanâ-i Saltanati, no. 1867</td>
<td>n.d.</td>
<td>Persian version of al-İşakhrî</td>
</tr>
<tr>
<td>34 Vienna, Österreichische Nationalbibliothek, Cod. Mixt. 344 (MS. Ar. 1271 [Flügel])</td>
<td>n.d. (10th/16th century by Kamal)</td>
<td>Persian text of al-İşakhrî attributed to Naşîr al-Dîn al-Ṭûsî</td>
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**APPENDIX 5.1—continued**

<table>
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<tr>
<th>Maps and Versions</th>
<th>Comments on Maps</th>
<th>References*</th>
</tr>
</thead>
<tbody>
<tr>
<td>21 maps</td>
<td>Ištakhri I</td>
<td>Kamal (3.2:595–99), Karatay, Kramers, Ritter</td>
</tr>
<tr>
<td>21 maps</td>
<td></td>
<td>Karatay, Ritter</td>
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<tr>
<td>18 good maps</td>
<td>No Arabia, Egypt, or Syria; Ištakhri I</td>
<td>De Goeje, Kamal (3.2:587–90), Kramers, Miller (le1)</td>
</tr>
<tr>
<td>Complete set of 21 maps</td>
<td>Ištakhri I</td>
<td>Miller (lg1)</td>
</tr>
<tr>
<td>Incomplete set, 15 maps</td>
<td>Ištakhri I</td>
<td>Miller (lg2)</td>
</tr>
<tr>
<td>19 maps</td>
<td>Described in text above, pp. 125–26</td>
<td>Miller attributed to al-Jayhānī</td>
</tr>
<tr>
<td>21 maps</td>
<td>Ištakhri II</td>
<td>Kramers</td>
</tr>
<tr>
<td>19 maps as atlas in center of manuscript</td>
<td>Mentioned in text above, pp. 125–26</td>
<td>Miller attributed to al-Jayhānī</td>
</tr>
<tr>
<td>18 maps</td>
<td>No world map, Arabia, or Persian Sea</td>
<td>Afshār, Miller (io), Robinson (pp. 10–12; nos. 54–71)</td>
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<td></td>
<td>Åstān-i Quds-i Ragāvī catalog (3:356, no. 178)</td>
</tr>
<tr>
<td>17 maps</td>
<td>Maps not discussed by Miller</td>
<td>Possibly Ouseley’s own text, which he used as base of his edition</td>
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<tr>
<td>18 maps</td>
<td>No Egypt; Ištakhri I</td>
<td>Miller (p1)</td>
</tr>
<tr>
<td>20 maps given in color by Afshār</td>
<td>Ištakhri II</td>
<td>Afshār</td>
</tr>
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<td>Afshār</td>
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<tr>
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<td></td>
<td>Afshār</td>
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<td>Maps similar to Tehran, MS. 3515 above</td>
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<tr>
<td>Complete set of 21 maps</td>
<td>Maps described in text above, p. 125; Egypt and Kirman in Afshār</td>
<td>Afshār, Kamal (3.2:616–20), Miller (w)</td>
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<td></td>
<td>Found only in Türkay (p. 6)</td>
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<td>Location and Number</td>
<td>Date</td>
<td>Details of Text</td>
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<td>---------------------</td>
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<tr>
<td>36 Istanbul, Suleymaniye Kütüphanesi, Ayasofya 2934</td>
<td>n.d. (ca. 600/1200 by Kamal)</td>
<td>Ibn Hawqal text</td>
</tr>
<tr>
<td>37 Istanbul, Suleymaniye Kütüphanesi, Ayasofya 2577</td>
<td>n.d. (ca. 750/1350 by Kamal)</td>
<td>Ibn Hawqal. Abridgment of Topkapi Saray Müzesi Kütüphanesi, A. 3346; Türkay attributed to al-Balkhi</td>
</tr>
<tr>
<td>38 Istanbul, Topkapı Saray Müzesi Kütüphanesi, A. 3346</td>
<td>479/1086</td>
<td>Text of Ibn Hawqal naming author, original date 362/973</td>
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<tr>
<td>39 Istanbul, Topkapı Saray Müzesi Kütüphanesi, A. 3347</td>
<td>n.d. (ca. 700/1300 in Kamal)</td>
<td>Ibn Hawqal's text</td>
</tr>
<tr>
<td>40 Leiden, Bibliotheek der Rijksuniversiteit, Cod. Or. 314 (Cod. 314 Warn. [de Goeje and Juynboll])</td>
<td>725/1325?</td>
<td>Ibn Hawqal II text</td>
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<td>41 Oxford, Bodleian Library, MS. Huntington 538</td>
<td>n.d.</td>
<td>Ibn Hawqal II text</td>
</tr>
<tr>
<td>42 Paris, Bibliothèque Nationale, MS. Arabe 2214</td>
<td>n.d. (849/1445 in Kamal)</td>
<td>Abridgment of Ibn Hawqal, text of Topkapi Sarayi Muzesi Kütüphanesi, A. 3346, including material to 540/1145</td>
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<td><strong>AL-MUQADDASI</strong></td>
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<td>44 Berlin, Staatsbibliothek Preussischer Kulturbesitz, Orientabteilung, MS. Sprenger 6 (Ar. 6033 [Ahlwardt])</td>
<td>n.d.; recent copy (ca. 19th century)</td>
<td>Late and bad copy of Berlin, MS. Sprenger 5, see below; reference copy of collector (A. Sprenger)</td>
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<tr>
<td>45 Berlin, Staatsbibliothek Preussischer Kulturbesitz, Orientabteilung, MS. Sprenger 5 (Ar. 6034 [Ahlwardt])</td>
<td>900/1494</td>
<td>Al-Muqaddasi text of 375/985</td>
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<tr>
<td>46 Istanbul, Suleymaniye Kütüphanesi, Ayasofya 2971 bis</td>
<td>658/1260</td>
<td>Al-Muqaddas text of 375/985</td>
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<tr>
<td>47 Leiden, Bibliotheek der Rijksuniversiteit, Cod. Or. 2063</td>
<td>1255-56/1840</td>
<td>Copy of Istanbul, Suleymaniye Kütüphanesi, Ayasofya 2971 bis</td>
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<tr>
<td><strong>AHMAD (OR MUHAMMAD) AL-TÜSI</strong></td>
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<tr>
<td>49 Istanbul, Suleymaniye Kütüphanesi, Hamid-i Evvel Kitaplığı (Murad Molla Kitaplığı), no. 554</td>
<td>555/1160</td>
<td>Same title as above according to Türkay</td>
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*De Goeje and Juynboll, *Catalogus codicum arabicorum*, 2:1 (note e).
&lt;Pertsch, *Die persischen Handschriften*, 58-61 (note d).
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<th>Maps and Versions</th>
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<td>Kamal (3.3:660-63), Karatay, Türkay (p. 9)</td>
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<td>Kamal (3.2:655-59), Karatay, Kramers, Ritter</td>
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<td>Ibn Ḥawqal III</td>
<td>Kamal (3.3:810), Karatay, Kramers, Ritter</td>
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<td>De Goeje, Kramers, Miller</td>
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<td>21 maps (including a zone map)</td>
<td>Ibn Ḥawqal III</td>
<td>De Goeje, Kamal (3.3: 811-17), Kramers, Miller (p.9) attributed to Ibn Sa'id</td>
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<td>Miller; n.b. MSS. Ar. 2216 and 2217, which could be copies</td>
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<tr>
<td>No maps</td>
<td></td>
<td>Kramers (Enc. of Islam); Miquel on al-Muqaddasi</td>
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<tr>
<td>19 maps</td>
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<td>De Goeje, Kamal (3.2:674-77), Miller (b.2)</td>
</tr>
<tr>
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<td>De Goeje, Kamal (3.2:672-73), Karatay, Miller, Türkay (p. 8)</td>
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<tr>
<td>15 maps</td>
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<td>De Goeje, Miller (le2)</td>
</tr>
<tr>
<td>6 maps</td>
<td>For details see text above, pp. 124-25</td>
<td>Miller (g.3)</td>
</tr>
<tr>
<td>?</td>
<td></td>
<td>Türkay (pp. 1 and 28) only; this manuscript does not seem to have been inspected by anyone else</td>
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</table>
APPENDIX 5.2  
LIST OF PRINTED EDITIONS AND TRANSLATIONS OF WORKS BY AUTHORS OF THE BALKHI SCHOOL

AL-İŞTAKHRİ  
Printed Editions  


*al-Masalik wa-al-mamalik.* Edited by Muhammad Jābir ʿAbd al-ʿĀl al-Hinī. Cairo: Wizarat al-Thaqafah, 1961. With rep­roductions of manuscript maps (eighteen maps are given [İşakhrī II], but it is not clear from which manuscript).

*Masalik wa mamalik.* Edited by Iraj Afšār. Tehran: Būngāhī Tarjamah va Nashr-i Kitāb, 1961. Twenty colored maps (İşakhrī II) from Tehran manuscript (Mūzah-i Irān-i Bāstān, MS. 3515) used in the text; also Egypt and Kirman in black and white from the Vienna manuscript (Österreichische Nationalbibliothek, Cod. Mixt. 344), and Istanbul manu­script (Suleymaniye Kütüphanesi, Ayasofya 3156).

Translations


*Das Buch der Länder.* Edited and translated by Andreas David Mordtmann. Hamburg: Druck und Lithographie des Rauhen Hause in Horn, 1845. Translation of *Liber climatum* above, using the same maps.

IBN ḤAWQAL  
Printed Editions  


Translations


AL-MUQADDASI  
Printed Edition


Translations
