

17 • Geographical Mapping

JOSEPH E. SCHWARTZBERG

This chapter examines well over two hundred individual geographical maps or sets of such maps. Although these works originate from many parts of South Asia, a disproportionately large share comes from only a few regions: Kashmir, Rajasthan, and Maharashtra. Eastern India, including what is now Bangladesh, by contrast, is scarcely represented. Most of the maps to be considered are from the eighteenth and nineteenth centuries, and it therefore seems probable that many of them, especially those that had some bearing on military, political, or fiscal matters, would have been directly or indirectly influenced by ideas and possibly even maps emanating from Europe. Yet they retain enough of an indigenous, traditional flavor to warrant being discussed in this survey. Many other works to be examined, however, show not the slightest trace of influence from beyond India. This is particularly true of works that relate in some way to religion; for example, certain maps concerning pilgrimage, especially with the Jain community, or copies on palm leaf of architectural plans of Hindu temples, originally prepared as early as the twelfth century.

The scales of the maps considered in this chapter vary greatly, ranging from very small-scale world maps to very large-scale plans of individual edifices or gardens. In general the account proceeds from smaller to larger scales. Thus, I begin by considering a rather limited corpus of world maps, mostly but not entirely based on Middle Eastern prototypes. Included in this group is a portion of one of the globes examined in the chapter on cosmography, on which a substantial portion of the northern hemisphere has clearly recognizable terrestrial referents.

I proceed to an examination of topographic maps, some of which cover very large areas (in two cases more than a million square kilometers) and certain others that show no more than a few hundred square kilometers. To the extent that I could determine the areas covered with reasonable precision, I have mapped their territorial extent on figure 17.7. Given the wide range of cartographic styles employed on South Asian topographic maps, I have provided in figure 17.8 a synoptic chart that conveys some sense of the diversity of map conventions utilized. That chart, however, will not help one understand some of the more abstract religious diagrams

included among the group of Indian topographic maps. For several of the more important maps illustrated, I have prepared supplementary diagrams to indicate, by means of a superimposed geographic grid of latitude and longitude, their varying degrees of departure, from one part of the map to another, from a planimetrically exact representation of the areas depicted.

For ease of analysis, I have ordered the discussion of topographic maps into sections dealing with more or less coherent groups: Mughal; late premodern, with a further breakdown by region; hybrid (maps embodying collaboration between Europeans and Indians); and finally Nepali (usually also with substantial European influence). Because Nepali maps are too numerous to discuss individually, this chapter includes an appendix that indicates, in brief outline, details about their provenance, age, physical characteristics, content, and documentation. A similar appendix covers a group of maps relating to the religious topography of the sacred region of Braj, in northern India.

South Asia has given rise to a diversity of route maps, often in the form of scrolls. These form the next group of maps discussed in this chapter. Some such maps were carried on long journeys and consulted by travelers along their way. Others were largely decorative and perhaps related to specific historical events, which could be recounted by a narrator using the maps in much the same way as one might today use color slides to illustrate a public lecture. Pilgrimages and military campaigns were certainly among the activities that route maps were intended to document. Where possible I have mapped, on figure 17.29, the specific or generalized courses indicated by the route maps we know about.

In terms of total numbers, maps of small localities—the penultimate group I discuss—account for roughly half our total corpus. Figure 17.37 indicates the specific places these maps relate to. For analytic purposes, I divide the groups by sections treating, in order, maps of small rural areas, secular plans of cities and towns, secular oblique perspective views of cities and towns (with a few notes on frontal panoramas), plans of sacred places, and plans of forts. Given the large number of maps to be considered, I have had to be rather arbitrary in selecting indi-

vidual maps for illustration and discussion; but this unavoidable limitation is partially mitigated by the virtually complete coverage provided for the maps on which we have information in five more tabular synoptic appendixes.

The final group of works to be analyzed comprises architectural plans. Since my research on this cartographic genre has been much less assiduous than for other map categories, what I present here is intended to do no more than suggest the types of materials a more thorough search would presumably reveal, and I make no pretense that the sample of plans I present is in any way representative. The places included in the sample are shown in figure 17.37.

Not all the maps discussed in this chapter survive. A number that have been noted and in some instances briefly described in works published over the past half-century or so have apparently vanished for a variety of reasons. But the great majority can fortunately still be located and await more penetrating study than has been possible in preparing the following account. Of the surviving corpus, I have personally inspected, though sometimes only fleetingly, a rather large proportion, including most of the works that I regard as particularly important. Susan Gole, whose indispensable work *Indian Maps and Plans* has provided much of the raw material for this section, has probably seen an even larger number.¹ She has also been able, in many instances, to obtain at least partial and sometimes complete translations of their legends as well as a substantial number of the photographs that I present in this chapter or have used for study. Many of the works I have chosen to omit are treated briefly in her book, along with one or more photographs, usually of good to excellent quality and quite often in color. I have chosen, wherever possible, to present views not available from Gole, thereby broadening the selection of photographs of primary sources for scholarly inspection.

WORLD MAPS

Although South Asians have produced, over the centuries, a number of works that may be considered world maps, the surviving corpus is so meager and diverse that it is not possible to analyze it in the same systematic way as one may the large number of medieval European *mappaemundi*.² In this section I take up, in order, the following: (a) several Indian copies of world maps of Middle Eastern provenance; (b) two early maps from what is now Afghanistan; (c) a group of three Indo-Islamic maps that borrow, in varying degrees, from Middle Eastern prototypes; (d) a highly eclectic, but essentially Islamic, work; (e) the more geographic portion of the cosmographic globe at Varanasi analyzed above (pp. 355–56)

and (f) a Maratha world map that bears little relation to any of the foregoing. There were also some representations of globes in seventeenth-century Mughal paintings, and on at least one a fairly detailed map of much of the world was portrayed; but for reasons to be explained below, I shall treat that work along with other essentially topographic maps.³

One known and one presumably Indian copy of Arab world maps are illustrated and discussed by Gole in *Indian Maps and Plans*.⁴ The former, now in the British Library, London, was inserted in a nineteenth-century copy of a sixteenth-century Persian translation of Zakariyā' ibn Muḥammad al-Qazwīnī's *Kitāb 'ajā'ib al-makhlūqāt wa-gharā'ib al-mawjūdāt* (Marvels of things created and miraculous aspects of things existing) and is based on al-Qazwīnī's thirteenth-century original.⁵ Although the general appearance of this small work (17 cm in diameter) appears to conform to that of its medieval Arab prototype (see pp. 143–45), a noteworthy addition of the Indian version is a large lake near the heart of Eurasia into (or out of) which four major rivers flow. Gole surmises that this addition might originate from the Puranic notion of Lake Anotatta (Manasarowar) in Tibet, which is the mythological source of four great rivers. But it might equally well represent the Baḥr Jurjān (Caspian Sea), which some early Islamic maps show in roughly this position.

The second and more detailed map, presumably of Indian provenance, also appeared in a copy of al-Qazwīnī's *'Ajā'ib al-makhlūqāt*. This copy—in Persian, the lingua franca of India from the fourteenth to the eighteenth century—was made, translated, and brought back to England by Sir Robert Chambers, chief justice of the Supreme Court of Adjudicature of Bengal (1789–99). The work was subsequently extracted, translated, and pub-

1. Susan Gole in *Indian Maps and Plans: From Earliest Times to the Advent of European Surveys* (New Delhi: Manohar Publications, 1989).

2. See David Woodward, "Medieval *Mappaemundi*," in *The History of Cartography*, ed. J. B. Harley and David Woodward (Chicago: University of Chicago Press, 1987), 1:286–370.

3. In addition to these works, there are some grounds to suppose that the Chinese pilgrim Xuan Zang, who visited India during A.D. 629–45, may have traced his own route on a supposed Indian world map (i.e., of Jambūdvīpa) that was the ultimate basis of much later works that survive in Korea and Japan. To have been of any use to a pilgrim, however, the map Xuan Zang used would have had to be substantially different from the dogmatic cosmographic works discussed above in the section on cosmographic mapping. The surviving works in question are noted briefly by Gole in *Indian Maps and Plans*, 26–27 (note 1), and more fully in Hiroshi Nakamura, "Old Chinese World Maps Preserved by the Koreans," *Imago Mundi* 4 (1947): 3–22. If Xuan Zang did indeed obtain an Indian "world map," it is hardly likely that it would have been a unique production.

4. Gole, *Indian Maps and Plans*, 27–28 and 76–77 (note 1).

5. London, British Library, Add. MS. 7706, fol. 59b.

lished by William Ouseley in 1799.⁶ It too includes the previously noted lake (here labeled the Sea of Kolzum, the Arabic name for the Red Sea) and four rivers. In the Indian Ocean it shows four stylized sailing ships. Three of these are shown as belonging to the Portuguese, English, and Dutch, while the fourth is labeled Sofala (possibly after the port in East Africa and possibly suggesting a persisting belief in the great southern continent, which on some Arabic world maps bears the notation “Sofala”). Places identified on the map include Portugal, England, Holland (shown as an island north of England), Istanbul, Bulgar (near modern Kazan in European Russia), Egypt, Arabia, Basra, Sind, Malabar, Dive a Mehel (the Maldives), Bengal, Moluc (either Malucca or the Moluccas), Sea of Cheen (China Sea), a number of rivers, and the legendary wall of Gog and Magog. Unlike the previous production, the map translated by Ouseley also delimits in the Northern Hemisphere the seven Ptolemaic *aqālim* (climates; singular = *iqlim*), a common feature of Arabic world maps.

A third copy, in Persian, of an originally Arabic work appears in a manuscript titled *‘Ajā’ib al-buldān* (Wonders of the countries) and is at present in the Khuda Bakhsh Oriental Public Library in Patna (MS. 635). This small work (image is 18.7 cm in diameter) in black and blue ink and pencil is not itself dated; but since the date 968/1560 is given on folio 3 of the manuscript, it cannot be earlier than that. Although the map’s present location in Patna argues for an Indian copyist, that Andalus (Iberian Peninsula), Feringhi (land of the Franks), Sicily, Rus, Maghreb, and other North African place-names occur, as opposed to only two locales in India (Kashmir and Sind), suggests a prior Mediterranean source area.

Apart from the foregoing, I am not aware of other known or possible Indian copies of world maps of Middle Eastern origin, but it seems likely that a thorough search of libraries in such leading centers of traditional Islamic culture in South Asia as Ahmadabad, Aligarh, Delhi, Hyderabad, Lahore, and Rampur would reveal a number of such works. If so, that would demonstrate that ignorance of world maps, at least among the literati of Islamic society at the time of the European conquest, was not quite as widespread as suggested in the literature bearing on the history of South Asian cartography. And it would follow that, if exotic models were at hand, the probability of constructing South Asian derivatives of those models would be commensurately enhanced.

From what is now Afghanistan, most likely from the cities of Ghazni and Herat, come two additional world maps. The first is by the renowned polymath Abū al-Rayḥān Muḥammad ibn Aḥmad al-Bīrūnī, much of whose work was done under the patronage of the Ghaznavid ruler Maḥmūd (ninth/tenth century A.D.) and his successor Mas‘ūd I (r. 421–32/1030–40); the second is

that of the Timurid geographer ‘Abd Allāh ibn Luṭf Allāh al-Bihdādīnī, known as Ḥāfiẓ-i Abrū (d. 833/1430). Some of al-Bīrūnī’s contributions to our knowledge of the geography of India were noted in chapter 15. Included in al-Bīrūnī’s *Kitāb al-tafhim* (Introduction to astrology), dated about A.D. 1030, is a map of the seven seas that was in effect a rough outline map of the world’s land masses as well. Since this map and other aspects of al-Bīrūnī’s work have been discussed and illustrated above (esp. pp. 141–42 and fig. 6.4), I need say no more about them here except to suggest that his scientific legacy should have persisted not only among the savants whom he personally knew and with whom he corresponded, but also among their intellectual heirs, and that it might have diffused beyond the northwestern mountain girdle of the subcontinent into India itself. Though the work of Ḥāfiẓ-i Abrū is less well known, he has left us one world map, dated 1056/1646 (fig. 6.12 above).⁷ The work is said by Irfan Habib to be based on the prototype of the Ilkhanid geographer Ḥamd Allāh Mustawfī (Ḥamd Allāh ibn Abī Bakr al-Mustawfī Qazvīnī), prepared in 1339–40.⁸

Undoubtedly the most important of the surviving Indo-Islamic world maps is that of a Muḥammad Ṣādiq ibn Muḥammad Ṣāliḥ of Jaunpur, known as Ṣādiq Iṣfahānī. This map (fig. 17.1) is one among thirty-three in an atlas of the “Inhabited Quarter” (northern half of the Eastern Hemisphere), which forms part of an encyclopedic work in Persian, the *Shāhid-i Ṣādiq*, finished in A.D. 1647. The only complete copy of this work, now in the British Library, has been discussed in the article on Mughal cartography by Irfan Habib.⁹ Habib also includes a copy and translation of the six atlas folios that relate wholly or in part to India. The work is also prominently considered in Gole’s *Indian Maps and Plans*, which includes not only a photograph of the overall map but also smaller-scale photographs of the thirty-two additional folios that make up the atlas, as well as a folio-by-folio inventory of what the atlas depicts.¹⁰ For convenience, I

6. William Ouseley, “Account of an Original Asiatick Map of the World,” in *The Oriental Collections*, vol. 3 (London: Cadell and Davies, 1799), 76–77. Gole, *Indian Maps and Plans*, 76–77 (note 1), reproduces both Ouseley’s copy and his translation of the map.

7. Ḥāfiẓ-i Abrū is discussed above, pp. 149–50.

8. Irfan Habib, “Cartography in Mughal India,” *Medieval India, a Miscellany* 4 (1977): 122–34, esp. 122; also published in *Indian Archives* 28 (1979): 88–105. Another Timurid world map, clearer and more detailed than that of Ḥāfiẓ-i Abrū and dated about 1413, has recently been discovered in a volume of miscellaneous scientific papers (B-411) in the Topkapı Sarayı Müzesi in Istanbul. I thank Dr. Glenn Lowry of the Freer Gallery of Art, Washington, D.C., for making this painting known to me and Marjan Adib, Department of Near Eastern Art, Arthur M. Sackler Gallery, for providing relevant details (the map is discussed above, pp. 126–27 and fig. 5.25).

9. Habib, “Cartography in Mughal India,” 124–28 (note 7).

10. Gole, *Indian Maps and Plans*, 29 and 82–87 (note 1).

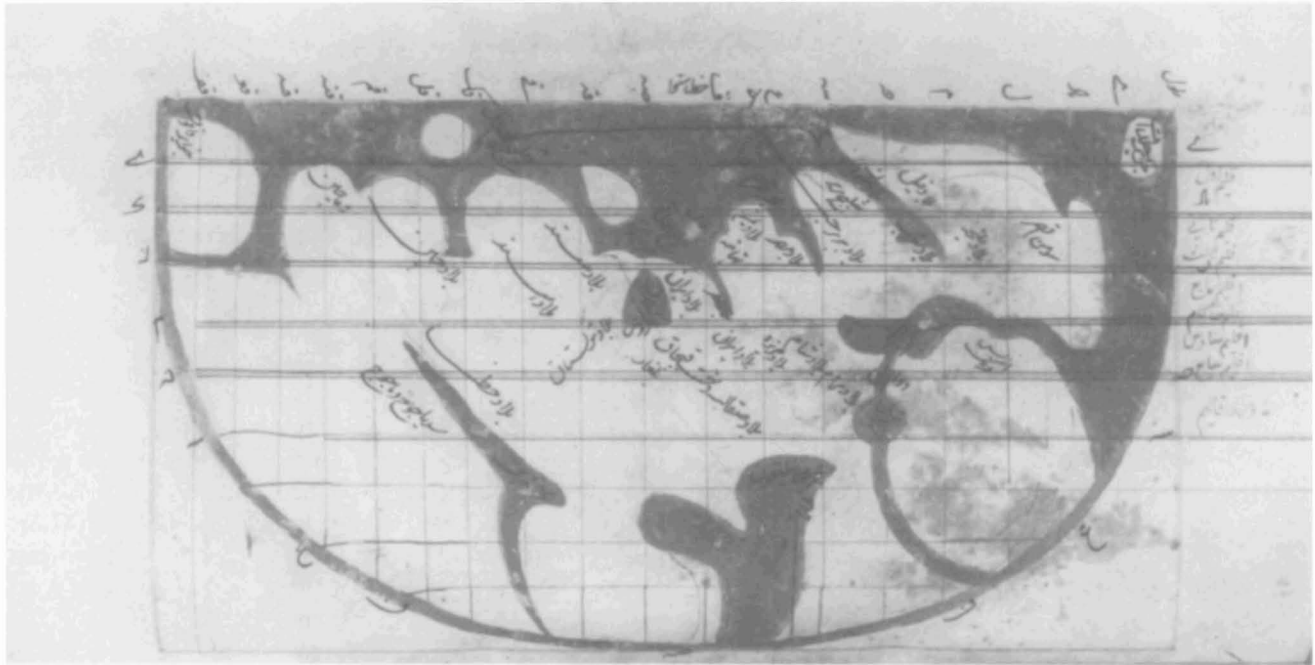


FIG. 17.1. MAP OF THE "INHABITED QUARTER." From the *Shāhid-i Šādiq*, an encyclopedic work in Persian by Šādiq Iṣfahānī. The map is ink and watercolor on paper. Longitude is measured from the island at the upper right, probably representing the ancient *Insulae Fortunatae* (Canary Islands). To the left of it is *Sus al Aqsa*, westernmost Africa, and below that are Andalusia and the country of the Franks. Near the equator the pointed tip of Africa is called the Land of Elephants. Morocco is misplaced across the long adjacent gulf, while Egypt is sited across the shorter pointed gulf and Yemen is farther to the left. Below Yemen are Syria and the region of *Jazirah*. Near the

center of the map is the more or less triangular shape of the Caspian Sea, with Iran to the right of it, and below it are, right to left, the Kipchak Desert, Bulgar (modern Saratov), Russia, and Turkestan. The names *Sind* and *India* appear in the peninsula above and farther left, and in the two-cusped peninsula even farther left are written *Chīn* and *Mahāchīn*, both representing China. Below, on the two sides of the long sea appear *Katha* and the wall of *Gog and Magog*. The large semicircular shape at the upper left represents the *Waqwaq* Islands. Size of the original: 14.2 × 26 cm. By permission of the British Library, London (MS. Egerton 1016, fol. 335r).

shall discuss the world map and the overall plan here and the sectional folios specifically relating to South Asia under the heading of topographic maps below.

In Habib's view, Šādiq Iṣfahānī's mapping is traceable to the work of Ḥāfiẓ-i Abrū and thence back to Ḥamd Allāh Mustawfī. Comparing Šādiq Iṣfahānī's work to that of Ḥamd Allāh Mustawfī, Habib observes that the former's world map is

less detailed, and if anything, more erroneous. It does, however, represent India as a peninsula and adds Ceylon at its southern tip, though the latter improvement is spoilt by showing another island of similar size in close proximity. As with Ḥamdullāh, the South is put at the top, and North at the bottom. The degrees of longitude are shown along the Equator and the latitudes along the rim of the half disc. The seven "climes" (*iqḷīm*), the Greek divisions along parallels according to the varying lengths of the longest days [a practice of Ptolemaic origin, which Šādiq Iṣfahānī explains on fols. 333b–334b], are also marked on the rim. But like Ḥamdullāh, Šādiq fails to give curvature

to his meridians: These do not meet at the North Pole, but running in straight vertical lines meet the rim . . . at different points.¹¹

Habib noted that Needham incorrectly inferred that the use of a grid on Ḥamd Allāh Mustawfī's map—which was followed by Šādiq Iṣfahānī—indicated that it belonged to the [so-called] Mongolian school and drew upon Chinese inspiration.¹² "This misunderstanding," he suggests,

may possibly have arisen because Needham, knowing of the maps only from the *Tārikh-i Guzida* [a work dated 1329–30], missed the explanations provided in the text of the *Nuzhatu-l Qulūb* [1339–40]; and also because Ḥamdullāh failed to adjust his meridians to the discoidal representation of the world in his world-

11. Habib, "Cartography in Mughal India," 125 (note 7).

12. Joseph Needham, *Science and Civilisation in China* (Cambridge: Cambridge University Press, 1954-), vol. 3, *Mathematics and the Sciences of the Heavens and the Earth* (1959), 564 and fig. 240 (pl. LXXXVII).

map, thereby giving rise to the suspicion that his vertical meridians were grids.

In his text Ḥamdullāh describes his Map of Iran as a *jadwal* (table) in which the various towns are placed according to the longitudes and latitudes assigned to them in the astronomical tables (*zījāt*). The map is indeed a table if one disregards the lines representing the coasts. The straight lines forming the squares of the table represent degrees of latitude and longitude; and the name of each place is written in the appropriate square (with no spot to indicate its position) according to the co-ordinates assigned to it. It is thus easy to see that the map originated out of an attempt at tabulating the co-ordinates in a new and concise form. The addition of the coast-line may be the only reason for treating it as a map, not a table.¹³

But Habib, in my judgment, goes too far in stating that Ḥamd Allāh Mustawfī's map—and by implication Ṣādiq Iṣfahānī's as well—was “based on the simple non-perspective cylindrical projection, precisely the kind out of which Mercator's projection was to develop subsequently.”¹⁴

As in Ḥamd Allāh Mustawfī's map, parallels and meridians on Ṣādiq Iṣfahānī's world and sectional maps form equal squares, and towns are placed in many such squares according to their coordinates, which are listed in the accompanying text (fols. 352a–359a), though no point symbol is employed to represent a town. Names of countries are written astride several squares, thereby giving some rough intimation of their extent. Boundaries (as in all but one of the world maps discussed in this section) are lacking. Cartographic signs, however, were employed by Ṣādiq Iṣfahānī and were explained, in his own words, as follows: “In these pages . . . the straight lines in vermilion represent degrees (of latitude and longitude); cuts represent the rivers, with the insides filled in with vermilion, and (similarly) the oceans. The black straight lines represent the parallels dividing the ‘climes’ (*iqlīms*). The wavy lines symbolize the mountains.”¹⁵

Although Ṣādiq Iṣfahānī's mapping improves on known earlier works in respect to scale and detail (especially for India), the thirty-two sectional maps contain numerous careless errors, some of which I shall consider in the later discussion of the six folios that relate to South Asia. To what extent Ṣādiq Iṣfahānī was himself responsible for these errors and to what extent they may be attributed to a sloppy copyist are matters for speculation.¹⁶

A much fuller and undoubtedly later world map than that of Ṣādiq Iṣfahānī was reproduced in facsimile, translated, and described by Edward Rehatsek in *Indian Antiquary* of 1872 (a portion is shown in fig. 17.2).¹⁷ Regrettably, the original copy, in Persian, is now lost and cannot be accurately dated. The map, already “in a dilapidated state,” was obtained from a Muslim from “Junner” (Jamner) in East Khandesh district of what was then the Bom-

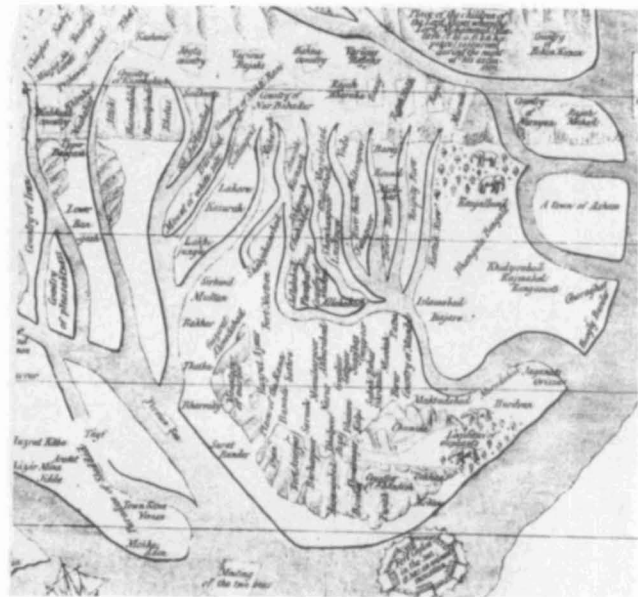


FIG. 17.2. FACSIMILE OF A PORTION OF A WORLD MAP. This map, by an unknown Indian Muslim author, was published by Edward Rehatsek in 1872. It was translated from a Persian original, which probably dated from the mid-seventeenth century. Its provenance is unknown, but it is quite likely from western India. Depicted here is the portion of the map, roughly one-third of its total area, on which India is shown. Though India is represented at a much larger scale than the areas of China, Europe, and Africa (there is not even an intimation of Southeast Asia) and is greatly contorted, the topological relationships of places within India are reasonably well maintained. Most of the names provided may easily be matched to known places, very few of which lie to the south of the Vindhya Mountains. Though the density of toponyms outside India is less than within India, the relative shortage is largely made up for by an abundance of notes of a mythological nature about many of the places indicated.

Size of the original: not known. From Edward Rehatsek, “Facsimile of a Persian Map of the World, with an English Translation,” *Indian Antiquary* 1 (1872): 369–70.

bay Presidency, now Jalgaon district in Maharashtra, but that person could provide no hint as to its origin. Given the large number of Indian place-names (more than one hundred) on the map, the fact that India took up about a fourth of its total area, and the high proportion of places shown that have special significance for Muslims,

13. Habib, “Cartography in Mughal India,” 123 (note 7).

14. Habib, “Cartography in Mughal India,” 123 (note 7).

15. Quoted from Egerton 1016, fol. 334b, MS. Or. 1626, fol. 345b in Habib, “Cartography in Mughal India,” 125 (note 7).

16. Habib, “Cartography in Mughal India,” 126 (note 7). My caption for figure 17.1 closely follows the description of the map in Gole, *Indian Maps and Plans*, 82, fol. 335r (note 1).

17. Edward Rehatsek, “Fac-simile of a Persian Map of the World, with an English Translation,” *Indian Antiquary* 1 (1872): 369–70 plus foldout map.

it appears virtually certain that the original mapmaker was an Indian follower of Islam. Although the map does not resemble those of Arab provenance, its non-Indian details largely reflect those of Arabic maps and suggest that the ultimate source of the work is Arabic.

The map depicts the world's land area within the elliptical frame of an encompassing ocean and divides it into seven *aqālim*. These *aqālim*, however, do not extend northward from the equator, but rather stretch from the southern to the northern limit of the map. From west to east, the places shown in the southernmost *iqlim* of this map are the "Country of Abyssinia," "Mokha Aden," "Meeting of the two seas," the southern limit of India, and "Fort Ceylon." Within Fort Ceylon a note states: "In the sea; it has an eminent mountain" (presumably Adam's Peak). Bombay appears on the map, but curiously, neither Calcutta nor Madras is shown, though "Hoogly Bunder" (port on the Hooghly) might be taken as a rough surrogate for the former. The name "Shahjehanabad" on the map, in place of Delhi, signifies that the map could not antedate the year 1627, when Shāh Jahān ascended the Mughal throne. In the western portion of the map, Portugal is noted (near a well labeled "Darkness"), and there are several references each to Farang (land of the Franks) and to Rus (Russia). Lack of mention of England or Holland argues for a date not much later than the 1627 limit.

Much of the northeast of the map is taken up by China (mentioned five times), and the easternmost land shown is labeled "An island of China." In the west one finds, in addition to the European places, the "Frontier of Magrab" (northwestern Africa), and in the north the "Country of Serpents" and the "Place of Gog Magog."

The map is replete with intriguing pictorial elements, many accompanied by notes. In addition to the well labeled "Darkness," there are the Tower of Alexander (with the notation "built of Qāqāh stone, whoever sees it gives up the ghost laughing laughing"), the "Dome of a Talisman," and the "Tower which Pharaoh had built to make war against God the Most High, and from which he was shooting arrows." There are also pictographic elements without notes: a Portuguese caravel, Fort Khyber, herds of elephants (in both Abyssinia and India), serpents, and trees. Mountains are prominently shown with shading and suggestions of their ruggedness. An east-west range, extending across the entire map, seems not only to stand for the Himalayas but to evoke the Caucasus/Imaus/Emodus of classical antiquity. Within this east-west range are certain faintly bounded and unshaded areas with such labels as Candahar, Kashmir, Jogta Country (?), Various Rajahs, and Country of Nur Bahadur. There are enough personalized toponyms of the last type to lead one to suppose that dating the map would not be too formidable a task.

The map also abounds in allusions derived from biblical, Koranic, and other mythological sources, some rather cryptic. The "Place of [the giants,] Gog [and] Magog," it is said, was "closed [i.e., walled off] by Alexander. Their stature is one hundred cubits. Each increases till one thousand. When he dies they [the nearby serpents?] eat him." And just below that, "Here the lost ship of Alexander again came up by philosophy." In the "Grecian Sea," between Portugal and Constantinople, is an island bearing the note, "The mother of the Sultan of Rūm [the Ottoman Empire] having revolted from her son in this island made this place." And within the mountains just south of the "Frontier of China" we read, "Place of the children of the Lord Moses, where the Lord Mohammad Mustafa . . . sojourned during the night of his ascension."

Despite the fanciful nature of much of this map, the topological relationships among places in South Asia are fairly well preserved. The same may be said for much of central and southwestern Asia. Africa and Europe, however, are hopelessly garbled. The depiction of what must be the Ganga (Ganges) (not named) and its northern tributaries is fairly detailed, and a suggestion of the Indus system is also provided. On balance, the map is much more detailed, but less accurate, than that of Šādiq Iṣfahānī and, unlike the latter, makes no use of geographic coordinates.

Yet another rather peculiar world map (fig. 17.3) was accidentally discovered by Susan Gole "in a bazar in Delhi, as a piece of waste paper."¹⁸ Entitled "World Map" in Persian, this circular wood-block illustration, 37 centimeters in diameter, shows considerable detail for Eurasia, indicates Africa mainly by a large oblate form labeled "Cape Island," and includes a few other African names on islands to the north. Though probably drawn in the late nineteenth or twentieth century, the map incorporates much older information (e.g., Seringapatam, in Karnataka [formerly Mysore] which the British practically destroyed in 1799), along with "such names as Iceland, Lapland, and Edinburgh (not in Scotland, also named, but in England)."¹⁹ London is indicated twice, once in England and once "between Germany and Denmark (which also appears twice)."²⁰ Numerous names appear in India, including not only Calcutta and the nearby former Portuguese settlement of Hooghly but such relatively inconsequential places as Pilibhit in northern Uttar Pradesh. The seven *aqālim* we have found on other Islamic maps also appear here; however, the "equator" they commence from has been displaced well into

18. Gole, *Indian Maps and Plans*, 28 and 81, quotation on 28 (note 1).

19. Gole, *Indian Maps and Plans*, 28 (note 1).

20. Gole, *Indian Maps and Plans*, 81 (note 1).

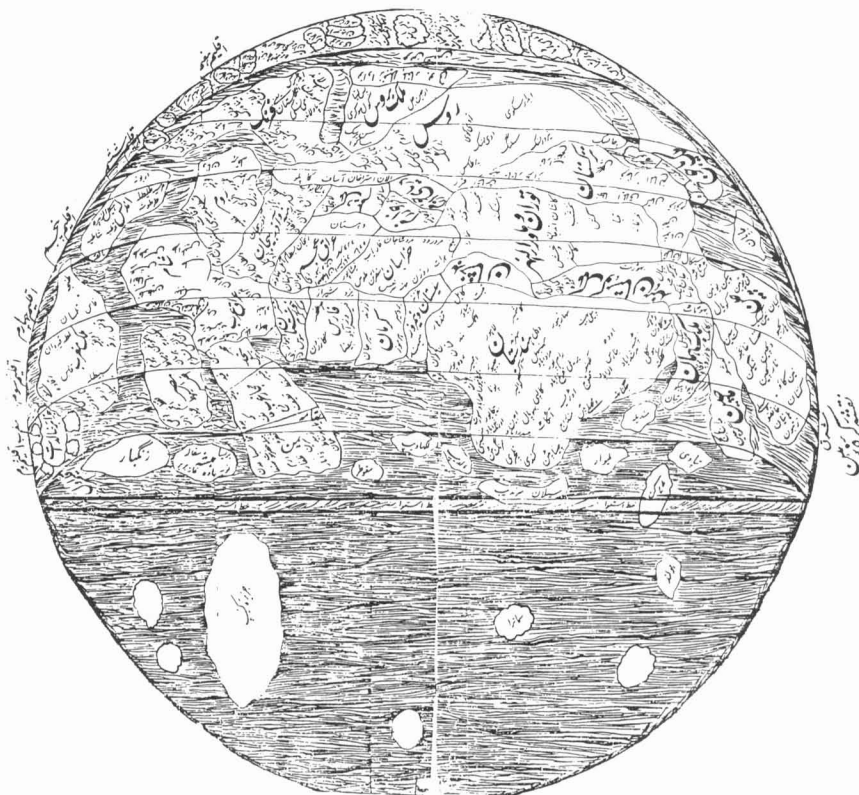


FIG. 17.3. WORLD MAP. By an unknown, presumably Indian, Muslim author, this wood-block print was found as wastepaper in a bazaar in Delhi and is now in a private collection. It dates possibly from the late nineteenth or early twentieth century, though incorporating much information of an earlier date. This map includes an abundance of Indian place-names on a disproportionately large India, but it also shows many places, some of them twice, in other parts of Eurasia, and even as far away

as Iceland. Africa's presence is marked by several islands in the lower left quarter of the map. The seven *aqalim* are shown, though they do not commence at the equator. Orientation is toward the north. The significance of the many boundaries depicted is not known.

Diameter of the original: 37 cm. By permission of Momin Latif, New Delhi. Picture courtesy of Susan Gole, London.

the Southern Hemisphere. There also appear to be numerous boundaries (whether national or regional is unclear), which are conspicuously missing on other world maps. The purpose of these lines, however, is problematic. Given its presumed late date, this map seems to be the work of a cartographer whose access to new knowledge from the West was relatively circumscribed.

A particularly beautiful and eclectic world map (fig. 17.4 and plate 29), probably dating from the middle or latter part of the eighteenth century, is at present in the Museum für Islamische Kunst in Berlin. This large map (260 × 261 cm), painted in tempera on cloth, is richly illustrated with miniature depictions, largely—but not entirely—of scenes from the *Iskandarnāmah* (a mythologized and widely disseminated account of the exploits of Alexander the Great, the origins of which date back at least to the middle of the fourth century). On stylistic grounds the painting is thought to originate from either Rajasthan or the Deccan; in both areas, schools of miniature painting were particularly well developed. A

remarkable feature of the painting is the diversity of languages and scripts used for the map text. The descriptive geographic text is in Arabic; some names of countries and towns are in Persian; and in India the place-names are in both the Arabic and Devanagari scripts. The use of the latter suggests that Hindu artists might have been employed by Muslim patrons in its production. (Knowledge of Persian and the Arabic script was not uncommon among educated Hindus in eighteenth-century India, whereas this did not hold for Muslims and the Devanagari script.)

Although like many Arabic maps this one is oriented with south at the top, the depiction of the earth on the Berlin map is essentially Ptolemaic. Knowledge derived from the fifteenth-century pilot Ibn Mājid, whose no longer extant work *Asrā al-bahr* (*Secrets of the sea*) is cited on the map. (Whether such a work existed is problematic in that Ibn Mājid's known writings never mention the title in question.) Also included on the map is information from European contacts since the time of Vasco

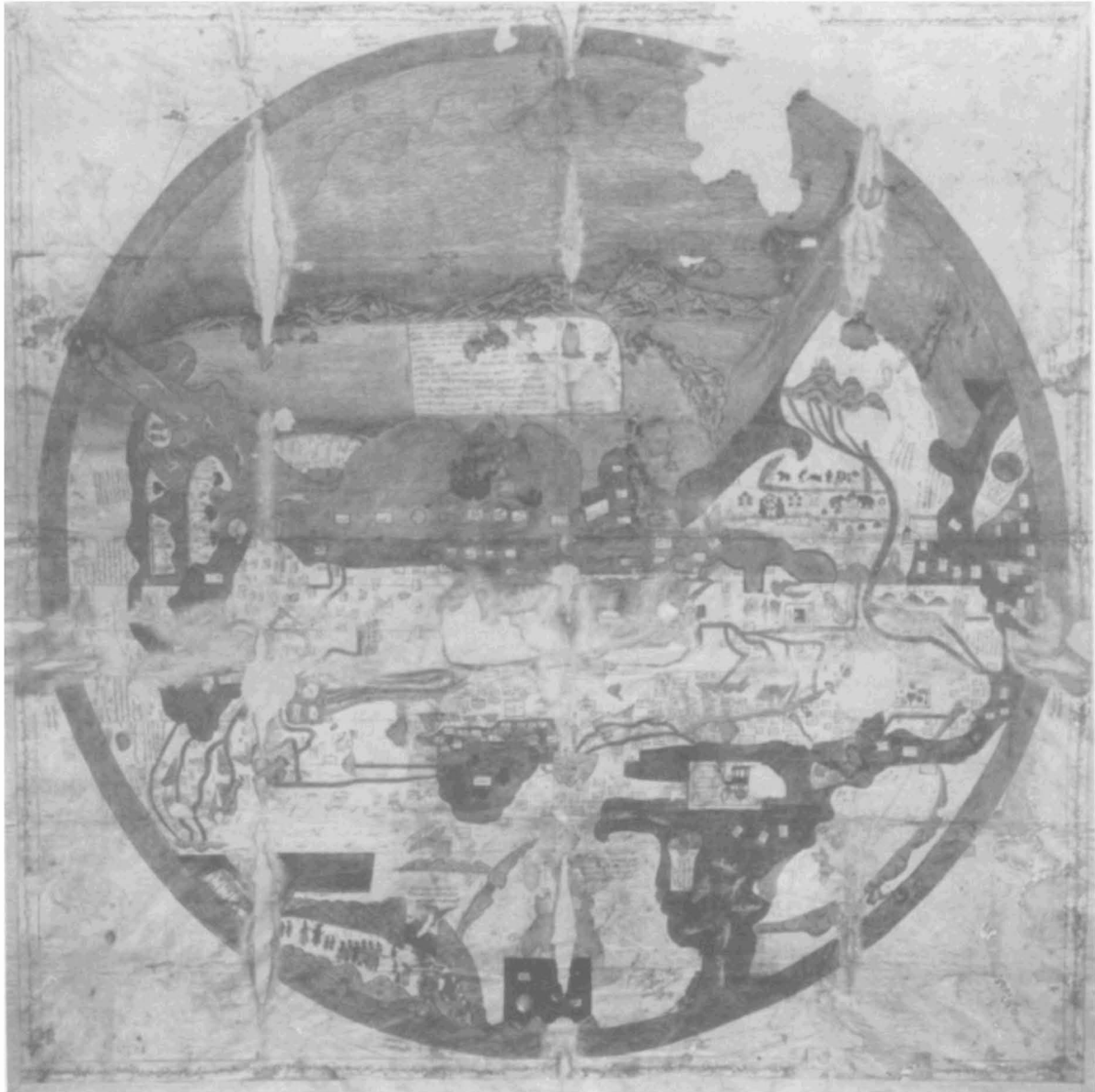


FIG. 17.4. AN ECLECTIC WORLD MAP. Essentially in the Islamic (but ultimately Ptolemaic) tradition, this map has text in Arabic and Persian and, for the area of India, in both the Arabic and Devanagari scripts. It is painted in tempera on cloth, is oriented with south at the top, and is probably an eighteenth-century work (see also plate 29). The map incorporates much of the same real and mythological detail as on figure 17.2, much

of it derived from the very popular *Iskandarnāmah* (History of Alexander the Great). The style of miniature painting on the map suggests either a Rajasthani or a Deccani origin. Size of the original: 260 × 261 cm. By permission of the Museum für Islamische Kunst, Staatliche Museen Preussischer Kulturbesitz, Berlin (inv. no. I. 39/68).

da Gama. Places noted in Europe (close to the right edge of the map) include France, Germany, and Austria. The name Portugal appears near a red caravel, with an adjacent dinghy, both at anchor in the Indian Ocean, along with the misplaced names of several Portuguese islands in the Atlantic Ocean. The largest number of place-names, however, approximately fifty in all, are in South Asia. Calcutta is named, and Amer (Amber) persists in

place of Jaipur, which succeeded it as the Kachwaha Rajput capital in 1728, an apparent anachronism. (This argues more for a Deccani than for a Rajasthani source.) Curiously, Sri Lanka is depicted twice, possibly a throw-back to the dual depiction of Taprobane on some European reconstructions of Ptolemy's world map as well as on Ṣādiq Iṣfahānī's. Alternatively, the dual representation may be the result of copying from two different earlier

maps, each depicting the island in a different place. There is also an abundance of Middle Eastern place-names. Constantinople is prominently shown by a large rectangle joined to the mainland by a narrow tongue of land. The city is in the shape of a domed kiosk. Mecca is indicated by the black stone of the Ka'ba. In Africa, the Nile is the most prominent feature. It originates, as on many Islamic maps, in several streams in the southerly Mountains of the Moon, on which the legendary palace of Alexander is perched, and swings far to the west to join the Mediterranean near Morocco. East (left) of India there appear Japan, shown as a vertical island in which are seated a group of dog-faced creatures; China, along the edge of the earth disk; and rectangles with the names of English and Dutch colonies.

In its depiction of elements from the *Iskandarnāmah*, the Berlin map includes the "Spring of Life," whose discovery is attributed to Moses, shown as a black rectangle at the bottom center; the place of Alexander's meeting with those who sought his help against the people of Gog and Magog; the wall he built for that purpose, to the left of the foregoing; islands inhabited by ape-men; and as already noted, Alexander's palace on the Mountains of the Moon.

It is interesting to speculate on who commissioned the painting of the Berlin map and why. The chief purpose of the map was very likely ornamental, but one should not rule out an additional didactic motive. No very similar map is known—though that described by Rehatsek has some corresponding features—but it seems likely that comparable productions will eventually come to light.²¹

Of the Hindu globes discussed above, the wooden globe at the Victoria and Albert Museum in London, the bronze and copper globes at the British Museum, and the brass globe at Oxford may be regarded as wholly or almost entirely cosmological. The Varanasi (BKB) globe, however, does contain a measure of geographical content sufficient to warrant its consideration under the rubric of world maps. The essentially geographic portion of this globe (plate 30 and fig. 17.5) contains at least fifty names for which it is fairly easy to establish real-world correspondences. Most of these fall between the equator and the semicircular arc of the Himāchala (Himalayas) extending roughly 45° west, north, and east of Laṅkā (0°, 0°). Unfortunately, within that arc the paint depicting most of the area to the west of the prime meridian of Ujjain has flaked away (suggesting much handling and study of this area), as it has in smaller areas as well. Thus few place-names remain near the western rim of the semicircle. To the north, above a mountain range that might correspond roughly to the Pir Panjal, one finds Kashmir, and clockwise from Kashmir, and outside the range described, are Nepal, Assam, and Gangasagara (the place where the Ganga joins the sea). Continuing clockwise

along the coast are Calcutta; Jagannath, marked prominently by a temple, in Orissa; Utkal (an ancient name for a part of Orissa); Kadalivana (Cuddalore?); Baramūla (?), not to be confused with the present-day Baramula in Kashmir; an unnamed—but prominently drawn—temple at what ought roughly to be Cape Comorin on the Ujjain meridian (but on a concave rather than convex portion of the coast); and appropriately, Drāvīḍa, just to the west.

Within the interior of what would correspond to peninsular India, the topological relations of named places such as Gondwana, Telingana, Karnataka, Satara, Pune, Nasik, and Ujjain to one another are reasonably correct. So too are those on the Gangetic Plain as far west as Agra, including Bangāla (Bengal), Gaya, Kāshī (Varanasi), Prayāga (Allahabad), Ayodhya, and Gorakhpur. As previously noted, however, Delhi and Amber are both misplaced well to the east of where they ought to be in respect to the remarkably well delineated Ganga and Yamuna rivers. The large portion of the map given over to northeastern India, the relative correctness of the spatial relations in that general region, and the exceptional prominence given to Jagannath all argue for a northeast Indian origin. Moreover, the farther northwest one looks, the greater the confusion among localities: Gujarat is shown between Marwar to the north and Mewar to the south, rather than south of both those regions; and Sindhu (Sind) is shown northeast rather than southwest of Multan and Punjab.

Beyond the arc of the Himāchala Mountains and between them and the arc of the Hemakūṭa, fifteen degrees farther away from the central point at Laṅkā, one finds, moving clockwise from the sea, Mecca, Khorasan, Turkhān, and Mānasaghati (the Ghats on the sacred Tibetan Lake Manasarowar?), all west of the prime meridian; the Alaknanda River, just to the east (but above the northern horizon on fig. 17.5); and farther east, Kinnaravaṛṣa, Mahāchīn and Chīn, Lavaguru, and Bhatant. Kinnaravaṛṣa may correspond to Kinnaur, a district in what is now Himāchala Pradesh. Mahāchīn and Chīn, Greater China and China, respectively, replicate a distinction made on not a few Indian maps and also on European maps that show both Serica (northern China, as reached via the ancient Silk Route) and Sinae (southern China, as reached via the sea).²² Lavaguru conceivably recollects the former Mon state of Luovo, with its capital

21. Most of this account was derived from the catalog description of the map provided by the Museum für Islamische Kunst in Berlin. In Gole, *Indian Maps and Plans*, 79–80 (note 1), there is an alphabetical listing of all the place-names shown in India.

22. For a discussion of the varying uses over time of the terms for China, see Henry Yule and A. C. Burnell, *Hobson-Jobson: A Glossary of Colloquial Anglo-Indian Words and Phrases, and of Kindred Terms, Etymological, Historical, Geographical and Discursive*, ed. William Crooke, 2d ed. (Delhi: Munshiram Manoharlal, 1968), 196–98.

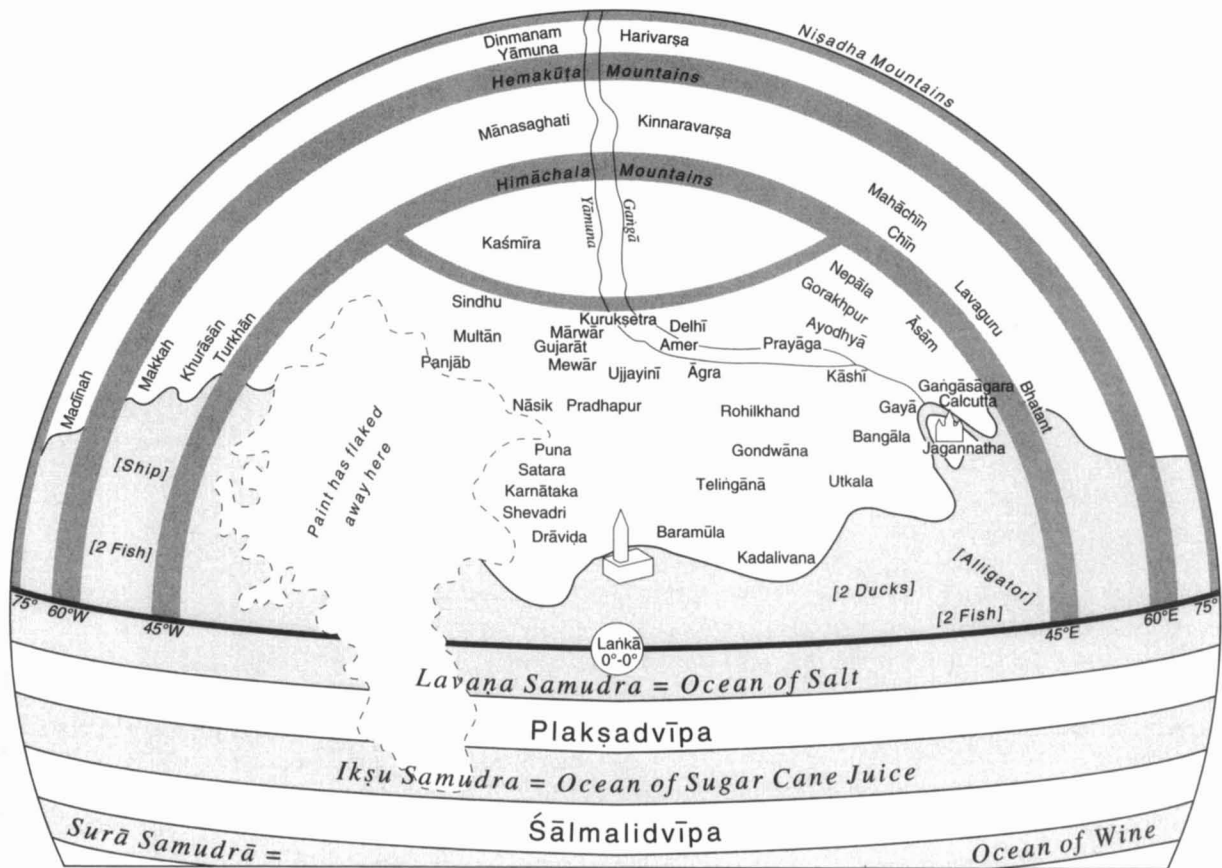


FIG. 17.5. PARTIAL TRANSLITERATION OF HINDU COSMOGRAPHIC GLOBE. Shown here is the geographic portion of the globe in plate 30 with a partial transliteration of place-names.

Transliteration based on readings by Sarala Chopra.

of Lavapura (Lopburi) in what is now southern Thailand. Bhatant has no obvious former or contemporary referent. Its position just beyond the Himalayas suggests it might be Bhutan. On the other hand, given its coastal location, the once important port of Pattani on the Malay Peninsula is also a possibility.²³

So far as I can tell, other places noted between the two mountain areas are mythical, as are virtually all places beyond the Hemakūṭa. Thus, with increasing distance from the focal area of Bhāratavarṣa (Bhārat/India), the Varanasi globe gradually changes from an essentially geographic representation of the world to a wholly cosmographic one.

In seeking to evaluate the geographic portion of the BKB globe, several questions come to mind. First, why, given the notations of latitude and longitude by one degree tick marks along both the equator and the prime meridian, is there so little evidence of the use of a grid in anything but a dogmatic way (e.g., putting Lankā at 0°, 0° and plotting the Himachal range as a semicircular arc 45° therefrom)? Second, why did the mapmaker fail to depict the peninsular form of southern India? Third,

given the globe's supposed late date (mid-eighteenth century), why did it incorporate so little of the knowledge that Indians then had of Europe, Africa, Japan, and other remote areas? Finally, why did it fail to match in quality the atlas of Ṣādiq Iṣfahānī, drawn a century earlier? It is impossible to answer any of these questions with certainty, but I would speculate that the dogmatic framework provided by the space between the equator and the Himachal acted as a cartographic procrustean bed, preventing the mapmaker—despite his reasonably good knowledge of Bhāratavarṣa—from giving full play to the exercise of reason and the rules of evidence in plotting places as he did.

Altogether different from the BKB globe is a terrestrial globe that was briefly seen and photographed by Rudolf Schmidt in 1972 in a building attached to the Jaipur astronomical observatory. Although the globe appears to have been an adaptation of an eighteenth-century European

23. I am indebted to Sarala Chopra of the Bharat Kala Bhavan in Varanasi for her transliteration of the place-names noted in this and the preceding two paragraphs.

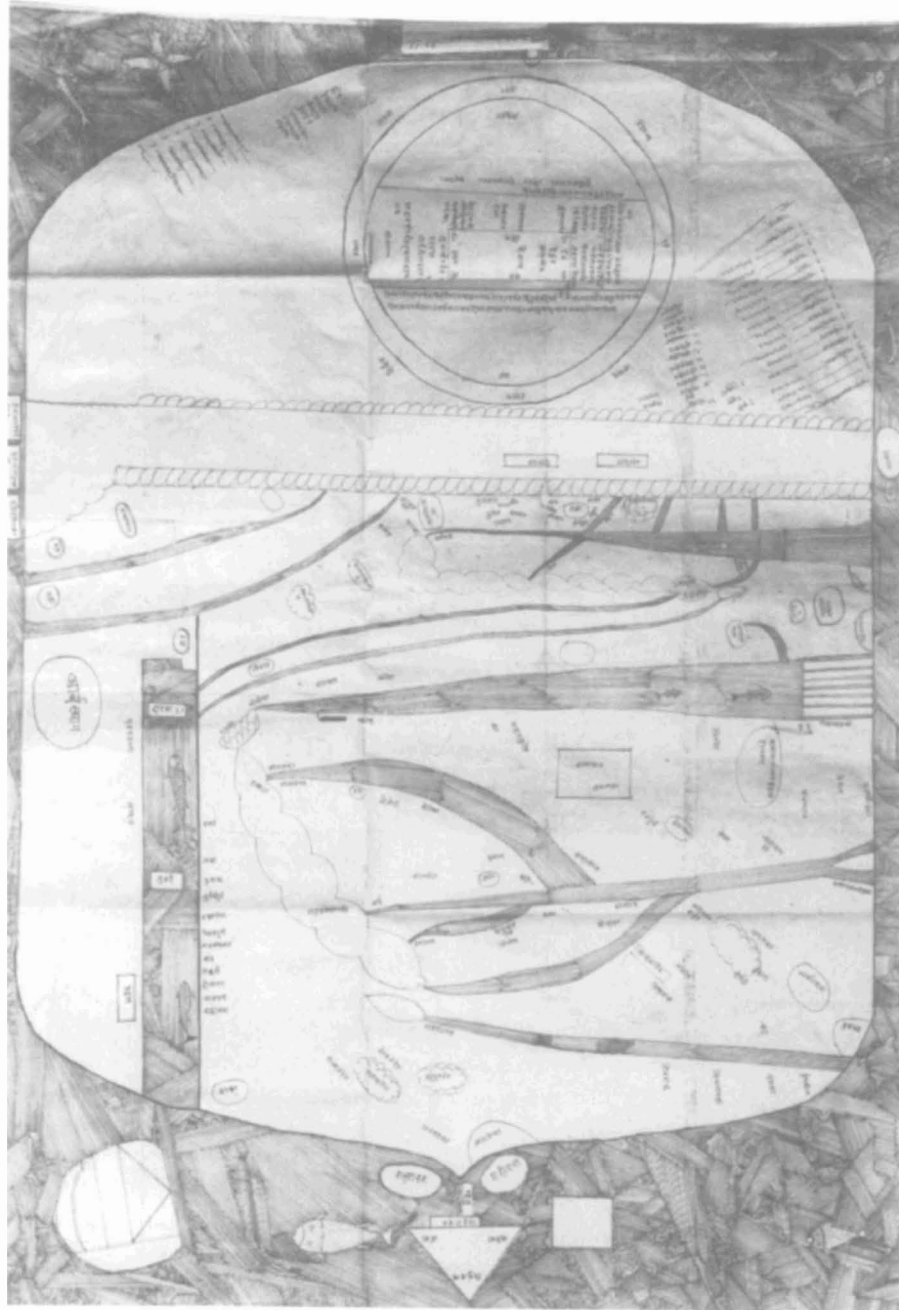
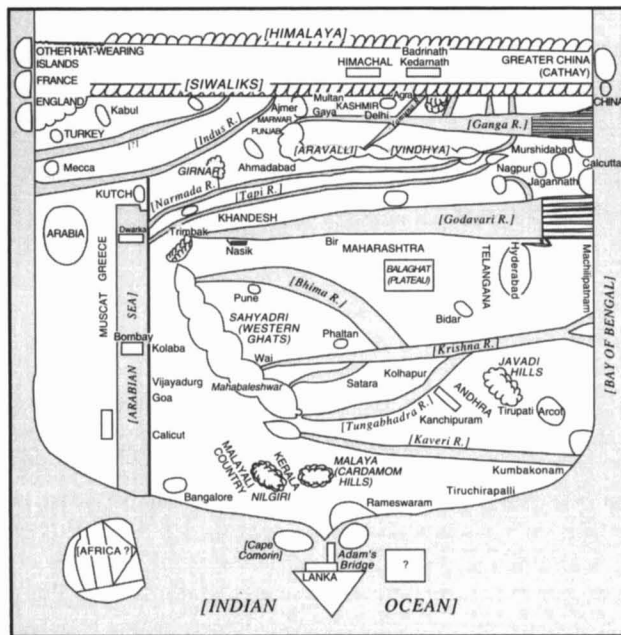


FIG. 17.6. MARATHI WORLD MAP WITH ACCOMPANYING TRADITIONAL COSMOGRAPHIC WORLD IMAGE. (a) The map is ink on paper with text partially in Devanagari and partially in Modi script. North of the two trans-Eurasian mountain ranges (echoing the mountains shown on fig. 17.2) is a Puranic cosmography with which, possibly, the larger part of this map was to have been compared. Much of the greater part of that area is taken up by India and, within India, by lands within the then Maratha Confederacy. Few details are provided for the lands to the west of the Arabian Sea, the vertically oriented body of water in the middle left. A few names only are given for Europe, shown mainly by three small islands in the northwest, and apart from two even smaller islands representing China, East Asia is totally ignored. Unlabeled islands in the southern part of the map might have been

intended to represent the Malay Archipelago and Africa.

(b) Although virtually all the toponyms of this world map were transcribed from their Marathi forms, here I present fewer than half the names, all in their modern equivalents. Most are places of political or religious importance that I was able to identify with certainty. A number of such names (e.g., Mathura and Vrindaban, near Agra) were omitted, however, to avoid crowding. Also plotted, in square brackets, are the names of a number of physical features, mainly rivers and mountain ranges, whose names I inferred from their spatial relation to other features shown on the map.

Size of the original: 100 × 73.5 cm. By permission of the India Office Library and Records (British Library), London (MSS. Mar.G.28.C-K, fol. 1).



b

prototype, the inscriptions on it were in Devanagari characters (probably in Sanskrit). Schmidt's opinion is that the work may have been based on one by Delisle, but precise identification was not possible; nor was there sufficient time to determine to what degree the Indian globe maker might have altered the original conception. From its weight, the globe was judged to be made either of mill-board or of hollow wood. Its estimated diameter was roughly 30 centimeters. The globe was constructed from gores that were painted and varnished. Land masses were shown in brown and sea in slate gray. What appeared to be the equator, the two tropics, and the plane of the ecliptic were painted in bands of alternating orange and black segments.²⁴ The present location of the globe has not been ascertained. I have no information to suggest what impact, if any, this globe had on subsequent Indian cartography.

The final world map that I shall consider is a drawing in black ink on paper with text in Marathi written in both the Devanagari and Modi scripts (fig. 17.6). Like the BKB globe, this map seeks to reconcile a traditional view of an essentially India-centered world with certain new knowledge derived through European contacts. The small symmetrical Puranic view of the world portrayed near the top of the page juxtaposes the old dogmatic view with the newer geographic perspective and suggests that, as with the geographic portion of the BKB globe, the cartographer was considering the relation of the expanding new knowledge of the world beyond India to that of received Puranic wisdom. The result is less than felicitous. Apart from the area that was under Maratha

control or influence toward the middle of the eighteenth century, which takes up most of the map's area, the map displays rather little knowledge and absolutely no sense of scale. But, significantly, it has a northern orientation, which does suggest European influence. Even in the Maratha core region, the spatial relations of named places are rather badly handled. This will be evident from the orientation of the Sahyadri (Western Ghats), from which the Krishna River and three of its tributaries are shown flowing to the east. This more or less north-south trending highland swings markedly away from the vertical band representing the Arabian Sea, rather than paralleling it closely. This is, however, not so surprising in view of the mapmaker's failure to taper the width of the Deccan appropriately toward the southern tip of India.

The principal features shown on the Indian portion of the map are the rivers, although none of them are named. South of the already noted Krishna and its tributaries, the Kaveri is shown; to the north lies the Godavari, with its prominent and highly stylized delta. Beyond the Godavari are the narrow, parallel west-flowing Tapi and Narmada rivers; the Ganga, with a confusing set of northern and southern tributaries, and another prominent delta; and finally, two rivers that flow more or less southwestward, of which the more southerly is probably meant to be the Indus while the more northerly is a mystery. Mountains and hills are also fairly conspicuously shown—sometimes with names and sometimes without—by nebulous, billowy outlines, except for the two unnamed parallel ranges that extend east-west almost entirely across the northern portion of the map. Although in a straight line, rather than a semicircular arc, they recall the two parallel ranges, Himachal and Hemakūṭa, that rimmed Bhāratavarṣa on the BKB globe. On this map no places are indicated beyond these peripheral highlands, though two named rectangles between the ranges are designated as Himachal to the left and Badarikedār to the right. Himachal signifies Abode of Snow, and Badarikedār seems to be a conflation of the two pilgrimage places Badrinath and Kedarnath, near the source of the sacred Ganga. Apart from the unnamed encircling ocean, the only body of salt water shown on the map is the Arabian Sea, in which two rectangular islands are plotted—the island of Dwarka, the site of a renowned temple (one of several holy places prominently shown on the map), and Mumbai (Bombay) well to the south. Within the southern ocean are several additional islands. Of those that are named, the most conspicuous is Laṅkā.

I shall not comment at length on the placement of the

24. Personal communications from Rudolf Schmidt dated 21 September and 24 October 1989, the former including one ten-by-fifteen-centimeter color photograph. I extend my gratitude to him for the information provided.

hundred or so town and regional names in the subcontinent. In the upper reaches of the Krishna drainage basin and along the eastern coast of the Arabian Sea they are reasonably correct. But in all four directions beyond the Maratha domains, space is drastically compressed and contorted. Thus Nagpur in northeastern Maharashtra appears adjacent to the West Bengali city of Makhsūd-ābād (modern Murshidabad), which in turn lies near Calcutta and Jagannath, near the deltas of the Ganga and Godavari, respectively (the latter quite incorrectly). The major intervening river, the Mahanadi, is omitted. The placement of numerous towns north of the Ganga is hopelessly garbled. West of the Arabian Sea are such places as Yavanavasti (land of the Yavana, i.e., Ionians/Greeks), southwest of the island of Dwarka; Maskat (Muscat), to its south; and Arbasthān (Arabia) in the large oval. Makā (Mecca) appears, curiously, well to the north of Arbasthān, between the two southwest-flowing rivers and not far south of Rūm (Turkey), which is not very distant from Kābulsāmā (Kabul). On the western edge of the map appear three islands: Ingrej Vilāyat (England), Phārasispūrlāl (France), and Śēsīhār va Lande Dīngam (other hat-wearing islands), from south to north. Finally, near the map's eastern edge are the small island of Chin and the substantially larger island of Mahāchīn (China and Greater China).²⁵

Despite its detail, the map appears not quite finished. There are a number of empty ovals for which one expects place-names were intended, a large, square anonymous island to the east of Lan̄kā, and an even larger partitioned island near the southern limit of the Arabian Sea. Conceivably the square island might have been meant to signify the islands of the Malay Archipelago and the larger island, Africa—Maharashtrians would have had some slight knowledge of both in the eighteenth century. Alternatively, the square island might be an echo of the dual representation of Sri Lanka on many maps of Ptolemaic origin.

A possible key to the purpose of this map may lie in the text in the uppermost section on either side of the Puranic cosmography. This text, a portion of which has been scratched out, is written in the relatively little known Modi script and has yet to be adequately studied. Although one cannot state why the map was made, or by or for whom, it appears that at least one of its aims was to reconcile Puranic lore with later knowledge; in this sense it seems to bear some similarity to the geographic portion of the BKB globe.

TOPOGRAPHIC MAPS

Under the heading of “topographic maps” I shall consider a wide variety of maps of land areas more inclusive than a single city, town, fort, garden, or other relatively small

locality. I shall, however, exclude strip maps that portray the areas along or in very close proximity to individual roads, rivers, and canals, which will be treated below. I shall also exclude a peculiarly Indian form of geometric diagram relating to areas of varying and sometimes substantial extent that was discussed above (pp. 348–51). These diagrams were originally part of a system of astrological divination but appear over time to have been put to more mundane uses.

Where I have been able to indicate the areas of coverage of South Asian topographic maps with reasonable certainty, I have done so on figure 17.7. This figure shows that, quite apart from the world maps discussed above, a very large portion of South Asia has been covered by one or more indigenous topographic maps. If one considers the provenance of these maps, however, one is struck by the paucity of works from the eastern portion of the subcontinent and from areas to the south of Maharashtra. In the period of production, no map antedates the seventeenth century. We do not know to what extent these spatial and temporal limits reflect the actual frequency with which topographic maps were prepared rather than the accidents of preservation. In all likelihood both factors have to be taken into account in explaining the composition of the surviving corpus.

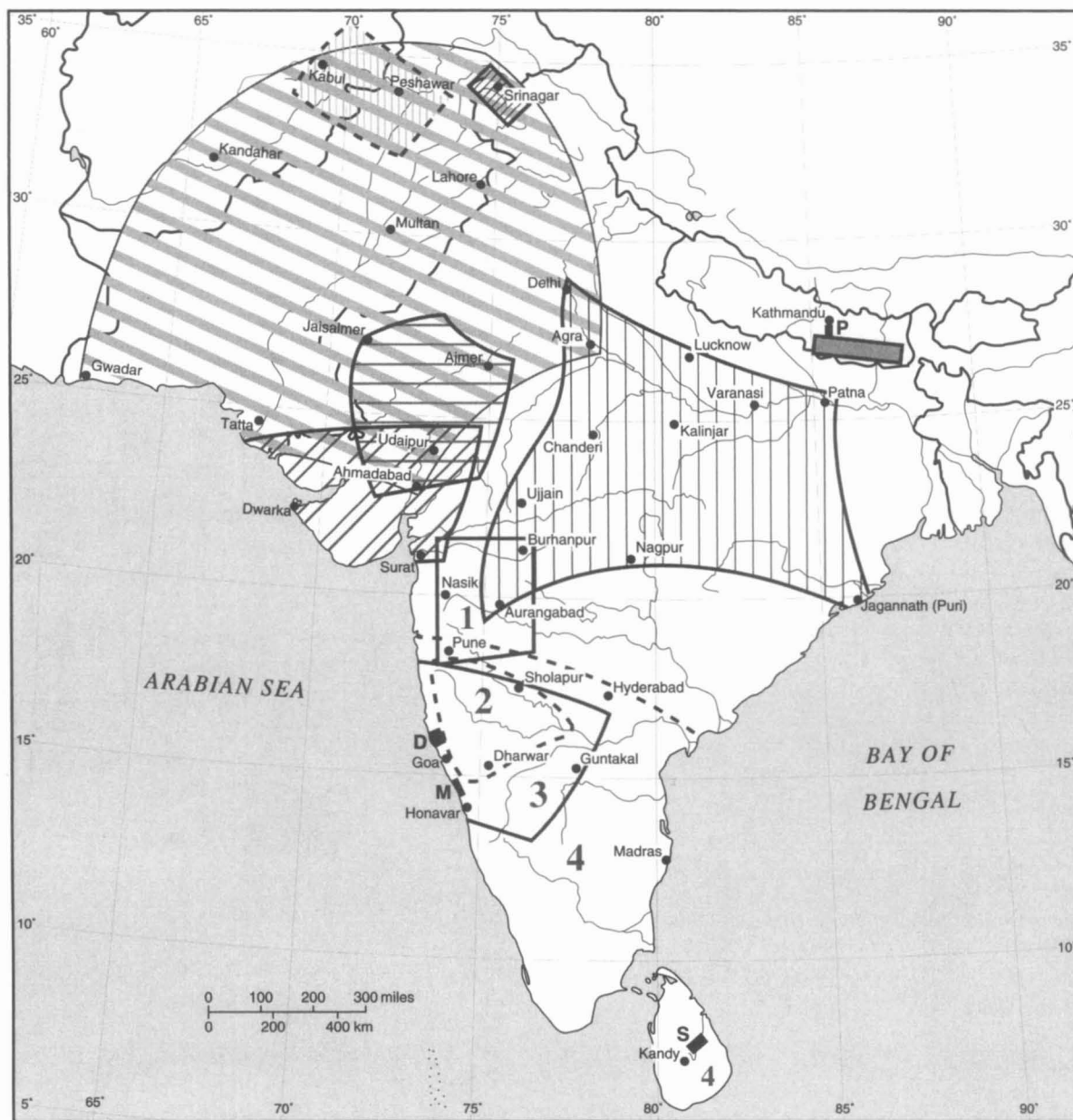
Limited as the surviving corpus is, it displays, as I make clear below, considerable stylistic diversity. Some intimation of this diversity may be obtained by examining the analytic chart shown in figure 17.8.

MUGHAL MAPS

Although I have already discussed Šādiq Iṣfahānī's 1647 atlas of the “Inhabited Quarter” under the rubric “World Maps,” each of the thirty-two sectional folios the atlas includes may in its own right be considered a small-scale map. The amount of information on these folios ranges from nil—save for notations of latitude and longitude for a few folios that cover areas of ocean or little-known land (e.g., fols. 343v and 347r)—to relatively detailed images. Not surprisingly, the areas treated in greatest detail are South and Southwest Asia; but for some unexplained reason, coverage is lacking for southernmost India and Sri Lanka. Gole provides a brief synopsis of the contents of each folio as well as a small-scale photograph.²⁶ Figure 17.9 shows one of the folios depicting part of northern India. Additionally, Habib provides a fuller discussion and a redrawing, with translations, of the six folios, all or part of which relate to South Asia

25. I am indebted to Indira Junghare, who transliterated the text of this map for me. The interpretation and identifications, however, are my own.

26. Gole, *Indian Maps and Plans*, 82–87 (note 1).


















- | | | |
|--|---|---|
| <p>— Limit of coverage relatively certain</p> <p>- - - Limit of coverage relatively uncertain</p> <p>Mughal Maps:</p> <p> Mughal map of northwestern South Asia, originally drawn between 1650 and 1730</p> <p> Mughal map of area of military campaign in northwest, ca. 1675</p> <p>Maratha Maps:</p> <p> Map of northwestern Deccan, probably early 19th century</p> | <p>Maratha maps, cont'd.</p> <p> Map of upper Krishna River watershed, probably late 18th or early 19th century</p> <p> Map of west central Deccan, probably late 18th century</p> <p> Map of Konkani coastal area in the vicinity of Devgarh, probably late 18th century</p> <p> Map of portion of Malabar Coast in North Kanara district, probably early 19th century</p> <p> Map of central and southern peninsular India, probably from 18th century</p> <p>Other Maps:</p> <p> Maps of Vale of Kashmir, late 17th or early 18th century and early 19th century</p> | <p>Other maps, cont'd.</p> <p> Map of much of Rajasthan and adjacent part of Gujarat, probably early 18th century</p> <p> Map of Gujarat and adjacent part of Rajasthan, mid-18th century</p> <p> Map of large area of north central India, focusing on Bundeikhand, probably ca. 1760</p> <p> Sinhalese map, mid-17th century</p> <p> Map of a part of southeastern Nepal, 1860s</p> <p> Map of Patan district of Nepal, ca. 1880</p> |
|--|---|---|

FIG. 17.7. AREAS OF COVERAGE OF SELECTED SOUTH ASIAN TOPOGRAPHIC MAPS.

MAP AREA COVERED; DATE/PERIOD; LANGUAGE/SCRIPT; WHERE ILLUSTRATED ^a	ORIENTATION	CITIES, TOWNS, VILLAGES ^b	OTHER PLACES OF SPECIAL IMPORTANCE ^c	ROADS	RIVERS AND LAKES ^d	COAST AND SEA	MOUNTAINS AND HILLS	VEGETATION
1. Northwest South Asia; Orig. betw.1650 and 1730; Persian; Fig. 17.11 and Gole, 88-90	Varies	H , , mainly , et al.; all b	I P, for example all b	b	D b	b	b	Textual notes indicate areas of barren land
2. Vale of Kashmir; Late 17th-early 18th century; None on map proper; Gole, 116-17	Varies, generally outward from center	N Entirely pictographic	I F and P often combined	r	D b on v edge b	Not applicable	w on bl Higher ranges Lower (nearer) ranges, v	Many types shown, for example, g
3. Vale of Kashmir; Probably early 19th century; Persian; Figs. 17.14 and 17.15 and Gole, 117-19	As above	As above	As above	br or br with people walking along route	D edges b, interior bl	Not applicable	b, w Higher ranges Lower (nearer) ranges	As above
4. Kashmir; Early 19th century; Persian; Fig. 17.16 and Gole, 120-25	Varies	H b (outline) and o or v; b	As above, though few are shown	None shown	D edges b, interior g	Not applicable	b, v or b, o	As above and the g, br characteristic Kashmiri poplar
5. Much of Rajasthan and small part of Gujarat; Late 17th or early 18th century; Urdu and Dhundari; Figs. 17.17 and 17.18 and Gole, 109-11	Varies, but mainly to the east	H Pictographs and with names; all b	I P, F, and O in various combinations	b	D Only one river shown Principal symbol	Not applicable	Passes noted b	g and a few palms in one area
6. Gujarat and a small part of Rajasthan; Mid-18th century; Persian and Devanagari; Fig. 17.19 and Gole, 114-15	East	H Pictographs and and b (outline) and r	I F and P in various combinations	Not shown except within a few cities	D bl	bl Many types of sea creatures shown	v	and many other types, g, b, y, etc.
7. North-central India; Mid-18th century; Persian; Fig. 17.22 and 17.23 and Gole, 138	South	H (implied by figures on land revenue) b (outline) and y	None shown	y	g	Not shown	v or v, b	None shown
8. West-central Deccan; Probably late 18th century; Marathi, Modi; Deshpande, pl. IV	West	H and ; all r	Many temples shown in stylized F	r	D edges b, interior bl	bl Many fishes depicted	b, v or b, v	Similar to no. 6
9. West coast near Devgarh; Probably late 19th century; Marathi; Gole (1983), 19	East	H b, y and b	Ports, markets, and administrative centers noted by text	r	b lines on bl field	b, bl Many fishes and boats depicted	r, v Only crest of Western Ghats is shown	g, y, r Very abundant
10. Southern peninsular India; Mid-18th century; Marathi; Gole (1983), 20	East	H , et al.; all b (outline) and y	None evident	r	edges b, interior bl	b, bl Sea full of sea creatures and boats	b, o Very nebulous	None shown

^aGole without a date refers to Susan Gole, *Indian Maps and Plans: From Earliest Times to the Advent of European Surveys* (New Delhi: Manohar Publications, 1989). Gole (1983) refers to *India Within the Ganges* (New Delhi: Jayaprints, 1983). Deshpande refers to C. D. Deshpande, "A Note on Maratha Cartography," *Indian Archives* 7 (1953): 87-94.

^bH = hierarchy explicitly stated or apparent; N = no standardized symbols.

^cI = individual depiction; Perspective: F = frontal, O = oblique, P = planimetric.

^dD = differentiated by width or size. Colors are indicated where known: b = black, bl = blue, br = brown, g = green, o = orange, r = red, s = silver or grey, v = violet or mauve, w = white, y = yellow. Map features painted in gouache are here represented by various grey screens. Outlines of such features are usually in black, but sometimes in red or other colors; these are generally not indicated on this figure.

FIG. 17.8. ANALYTIC CHART OF ATTRIBUTES OF SELECTED SOUTH ASIAN TOPOGRAPHIC MAPS.

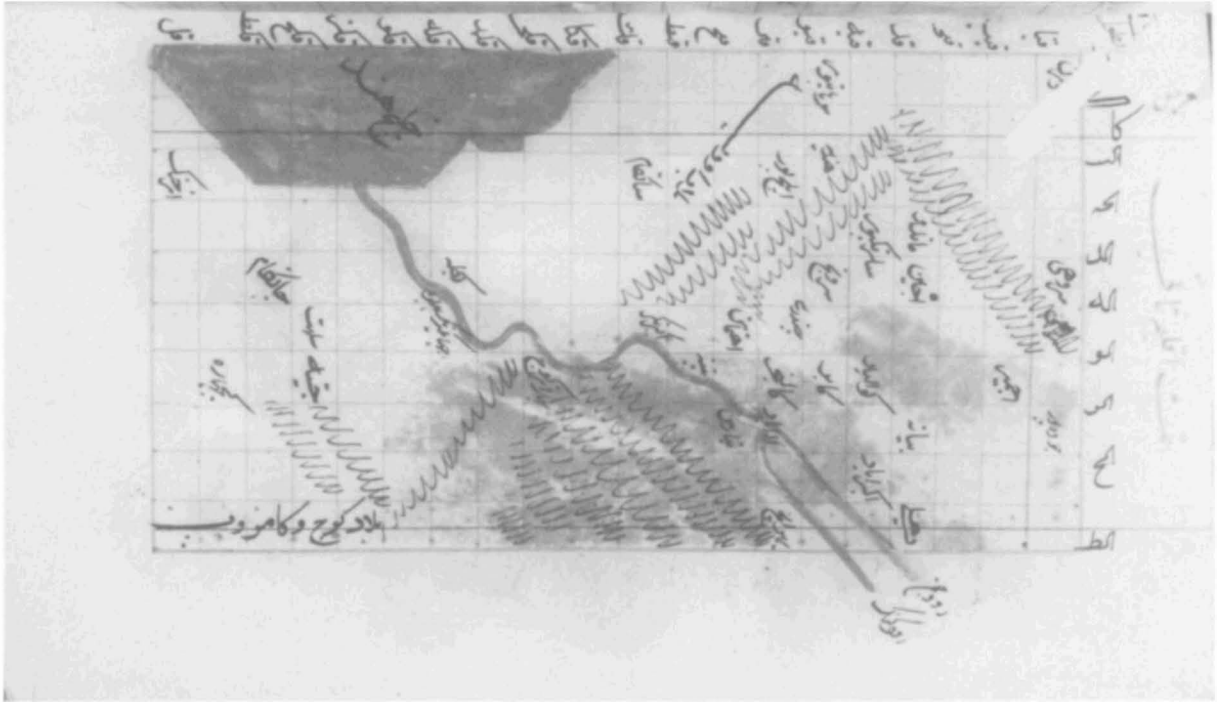


FIG. 17.9. SOUTH ASIA AS PORTRAYED ON ONE FOLIO OF THE *SHĀHID-I ŠĀDIQ*. This folio depicts part of northern India (south is at the top). Several cities are shown, including Jodhpur, Ajmer, Delhi, Agra, Allahabad, and Patna. The Ganga and Yamuna rivers flow into the Bay of Bengal (upper left corner). The Himalayas are shown with approximately the correct

alignment, but the Aravalli range is oriented virtually at a right angle to its true southwest-to-northeast axis. Grid lines are at one-degree intervals.

Size of the original: 26 × 14.2 cm. By permission of the British Library, London (MS. Egerton 1016, fol. 342v).

(these form the basis of fig. 17.10).²⁷ I shall confine the discussion of Šādiq Iṣfahānī's sectional maps to the area covered by these six folios. To aid the analysis, I have also added to figure 17.10 lines that exhibit the degree of distortion within each of the folios and have noted the areas where it is impossible to match the information of one folio with that given on another.

Whatever merit one can ascribe to the use of geographical coordinates and the systematized presentation of Šādiq Iṣfahānī's maps, one is struck by the seeming insouciance of either the author or, much more likely, a later map copyist responsible for the one complete surviving manuscript (which Habib suggests is from the eighteenth century).²⁸ Hence the inconsistent plotting of Mansūra, Bhakkar, Diu, Cambay, and Burhanpur on folios 345r, 342r, 342v, and 338r and the consequent inability to make the sectional maps match along the parallels or meridians that mark their edges or in the areas where adjacent sheets provide overlapping coverage. The same is true in regard to the delineation of coastlines and, less markedly, of rivers. With respect to mountains, one is struck by the failure of the ranges shown in folios 338r and 338v to carry over into folio 342v to their north and, even more perplexingly, by the cavalier extension of the

mountains of folio 338v several hundred kilometers eastward into the Bay of Hind (Bay of Bengal).

Regrettably, we do not know the sources for Šādiq Iṣfahānī's representation of longitude and latitude. "The detailed coverage of India," Habib states, "makes it unlikely that he had simply picked up and reproduced the maps and the accompanying lists of co-ordinates from a work written in Persia";²⁹ and the author himself noted in the portion of his text preceding the discussion of his map that for various reasons, including the use of "faulty instruments," he could not depend entirely on the numerous geographic works of his predecessors.³⁰ "He had, therefore, exercised his faculty of selection in dealing with the recorded information and also made use of what he could gather from wise and learned travellers over land and sea."³¹ What Šādiq Iṣfahānī used as his prime meridian is unclear. If we take as accurate the longitude of Benares (Varanasi), which lies only a little to the east

27. Habib, "Cartography in Mughal India," 124–28 and map plate (note 7).

28. Habib, "Cartography in Mughal India," 124 (note 7).

29. Habib, "Cartography in Mughal India," 126–27 (note 7).

30. Habib, "Cartography in Mughal India," 126–27 (note 7).

31. Habib, "Cartography in Mughal India," 127 (note 7).

of Jaunpur, where Şadiq Işfahānī worked, then his prime meridian would have been in the Atlantic Ocean considerably west of Ptolemy's or al-Birūnī's prime meridian. Latitudes, as one would expect, have less margin of error

than longitudes. Nevertheless, Şadiq Işfahānī's parallels vary significantly from the true position of similarly numbered parallels on modern maps (see fig. 17.10). Generally speaking, in the spacing of Şadiq Işfahānī's

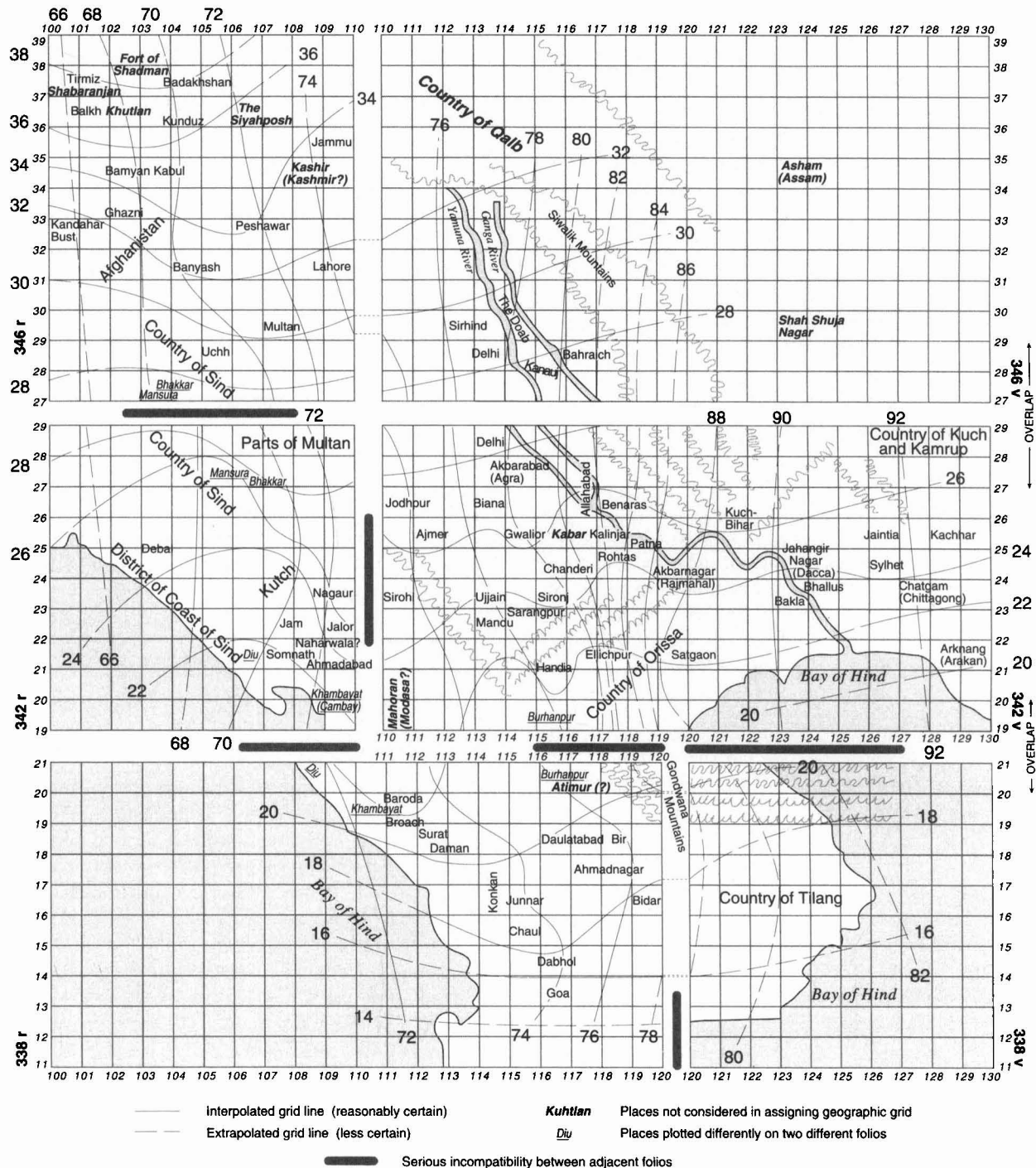


FIG. 17.10. THE DEGREE OF DISTORTION IN THE *SHAHID-I ŞADIQ*. The degree of distortion is shown in the folios representing South Asia. The diagram also includes transliteration of some of the place-names from the Persian originals. The numbers along the right and left margins represent degrees of latitude, while those at the top and bottom signify longitude.

The prime meridian on which Şadiq Işfahānī based his map is not known. This reconstruction has north at the top. Base information after Irfan Habib, "Cartography in Mughal India," *Medieval India, a Miscellany* 4 (1977): 122-34, diagram facing 128; also published in *Indian Archives* 28 (1979): 88-105.

grid the greatest conformity to that of modern maps is in the real-world area west of 80°E and north of 28°N. Why he should have compressed the longitudinal breadth of the Gangetic Plain to both the west and the east of Jaunpur and Benares is a puzzle—more so, perhaps, than the even greater compression in the much less well-known highlands and the adjacent area of Orissa farther to the south. Also puzzling is his pronounced spreading of the east-west extent of Bengal, another well-known area. Conceivably, the slowness and difficulty of east-west travel caused by the need to cross numerous south-flowing rivers within the Gangetic Delta may have conveyed to seventeenth-century travelers an exaggerated impression of the actual longitudinal breadth of the region. The representation of peninsular India on folios 338r and 338v and the mismatch of the latter to the former as well as to folio 342v are especially problematic. In particular, the considerable distance of the coastal locations of Goa, Dabhol, Chaul, Konkan, Broach, and Cambay from the west coast, as depicted by Ṣādiq Iṣfahānī, is a mystery, as is the prominent east-coast promontory between 16° and 17°N.

Possibly the best feature of Ṣādiq Iṣfahānī's map is the reasonably correct representation of the Ganga (Ganges) and Yamuna (Jumna) rivers—a substantially better rendition than on the European maps of the period, and one that is rather similar to the representation on the previously discussed BKB globe.³² One wonders, however, why there is no trace of the Indus or any of the major peninsular rivers of India. In contrast to his good rendition of the Ganga and Yamuna rivers, the depiction of India's mountains is slapdash. This shortcoming, like others noted, may well be attributable to carelessness by the copyist. The Siwaliks are correctly shown as the range flanking the Gangetic Plain, and the idea of the Himalayas parallel to and behind the Siwaliks is more or less correctly conveyed (on folio 346v); but the northern flanking mountains on folio 342v are confusingly rendered, as are the extent, location, and directionality of the mountains of peninsular India. Thus, although the unnamed Aravallis are situated, as in actuality, between Ajmer and Sirohi in Rajasthan, their trend is at right angles to their true orientation.

Who made use of Ṣādiq Iṣfahānī's map and how are matters for speculation. But as we shall see when we examine the surviving Indian topographic maps of the nearly two centuries that followed, the advances in geographic knowledge he put into cartographic form did not become sufficiently widespread to make a major impact on subsequent mapping. In particular, no later traditional map employs a geographic grid.

A second Mughal map covering a large portion of northwestern South Asia, including virtually the whole of what is now Pakistan and adjacent portions of India

and Afghanistan, was brought to light by Colonel Reginald Henry Phillimore in 1952.³³ This map (fig. 17.11a) is a copy, with translation, of an original that is thought to have been drawn in the period between 1650 and 1730. It certainly postdates the 1627 accession of Shāh Jahān to the Mughal throne, in that it shows Delhi as Shāhjahānābād. The copy, judging from the watermark of the European paper it was drawn on, presumably dates from between 1792 and 1795. The nonextant original map and the copy published by Phillimore were in Persian. Though obviously I cannot comment on the writing style of the former, the Persian script on the latter is very clear and legible. The copy, in two sheets, is in the National Archives of India in New Delhi. The English translation was done by a competent anonymous Persian scholar. Figure 17.11b highlights some of the more important places and physical features depicted on the map and gives a general view of the distortion on the map.

The style of this map varies in every major respect from that of the sectional maps of Ṣādiq Iṣfahānī. Although the work makes no attempt to portray places according to latitude and longitude, it has the virtue of being exceedingly rich in detail. Roughly five hundred settlements, forts, rivers, and mountains are named on the portion of the map that was not destroyed on the original. Among these, the more prominent cities and forts are depicted with special emphasis, sometimes with pictographic detail (as in Shāhjahānābād and Thatta [Tatta], near the mouth of the Indus). The shapes and pictorial elements, however, do not conform closely to the realities they represent. The representation of the Indus River system is reasonably detailed, though the courses are not properly aligned. Exceptional prominence is given to the distributaries of the delta and to channels built around certain towns such as Pakpattan (toward the upper right), presumably for defense. In what is now Afghanistan (left center), the Helmand and one other unnamed stream, perhaps its Arghandab tributary, are shown as simple vermiform features. The rendition, in black, of the Ganga in the upper right corner, of the Yamuna to its west, and of the Nahr-i Bahisht (ʿAlī Mardān) Canal a bit farther west is strikingly different from that of other hydrographic features. Hills and mountains are inserted in many parts of the map in a realistic style, but one derives no sense from their depiction of their greatly varying heights, the modest features of the eastern portion of the map appearing about as prominently as the much loftier ranges of the west.

The principal purpose of the map was undoubtedly to guide military movement and other travel. Distances in

32. Farther west, on folio 345v, the Tigris and Euphrates are also well depicted.

33. Reginald Henry Phillimore, "Three Indian Maps," *Imago Mundi* 9 (1952): 111–14, plus three map inserts.

kos (sing. *cos*, equal to about two miles) between major points or between adjacent stages along particular routes are set down in great detail. Supplementing these indications of distance are advisory comments such as, "From

hence lay in a stock of food and water for Bikaner," "No habitation over this hilly tract," "A barren country without town & trees," and so forth. Although these numerical and verbal notations would probably have sufficed



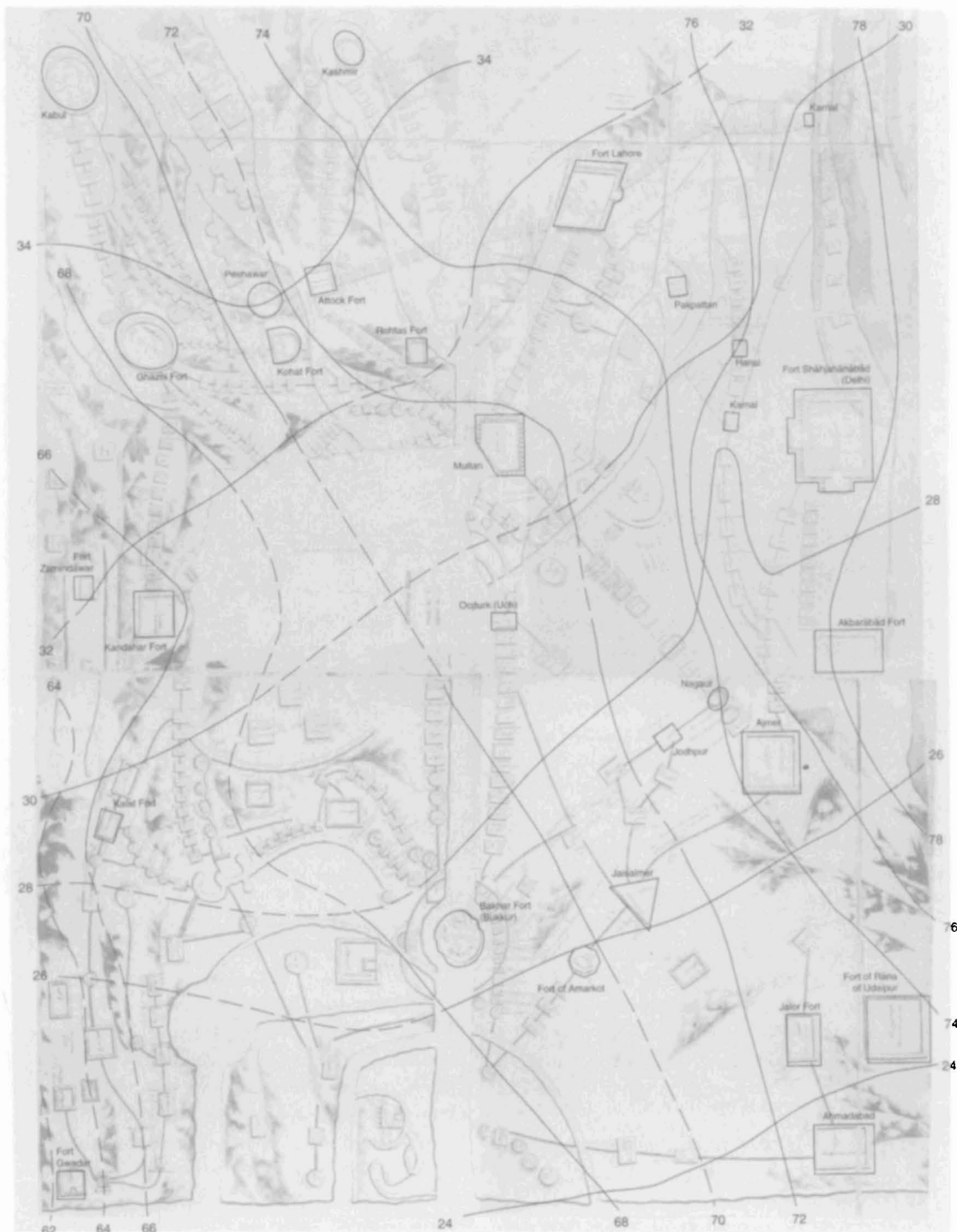
a

FIG. 17.11. MUGHAL MAP OF NORTHWESTERN SOUTH ASIA. (a) This copy of a Persian original with English translation is ink on paper in two sheets. The copy presumably dates between 1792 and 1795 and the original from between 1650

and 1730. Its provenance is unknown. The roughly five hundred toponyms on this map and the large area of its coverage place it among the most important cartographic artifacts of South Asia.

for the logistical needs of the day, the map's inattention to scale and direction presumably limited its utility. Many routes were compressed, as suggested by the closeness of the stages plotted along them, while others, space

allowing, were considerably stretched out. Some routes that were tortuous, such as the mountain road between Kohat Fort through what is now the North-West Frontier Province of Pakistan to the Afghan city of Ghazni, were



(b) The degree of areal distortion in the Mughal map of north-western South Asia. The interpolated geographic gridline is relatively certain, and selected key locations are shown. Although the sequencing of places along the many routes portrayed presumably is generally correct, the distortion of distances and

directions is substantial. Nevertheless, I infer that the map had considerable utility for military planning.

Size of original two sheets: 79 × 49 cm and 79 × 69 cm. National Archives of India, New Delhi (F. 97/10, 11).

represented by nearly straight lines. Conversely, essentially direct routes, such as that between Delhi and Lahore, in the upper right corner of the map, were portrayed with sharp right angles to conform more to the size and shape of the paper than to geographic reality.

The latitudinal and longitudinal grid lines, interpolated at two-degree intervals on figure 17.11*b*, indicate in a general way where and how the distortion of the map was distributed. The stretching out of the middle Indus Plain and the east-west compression of Baluchistan (in the lower left corner of the map) are particularly noteworthy, as is the northward protrusion of the area just south of latitude 28°N to the southwest of Delhi. On the whole, the map appears to be distended in a north-south direction or, alternatively, compressed from east to west.

A third Mughal map, falling completely or almost entirely within the area covered by the foregoing (see fig. 17.7) was discovered by Chandramani Singh in 1987 in the hilltop fort of Jaigarh overlooking Amber and Jaipur.³⁴ The map, which has no title, shows the dispositions of the army of the Mughal emperor Aurangzib, including Rajput troops under his vassal Maharaja Jaswant Singh of Jodhpur and under Prince Kishan Singh of Amber, and of the rival Afghan forces under various chiefs at some time during a campaign that lasted from 1674 to 1677. This map, drawn in ink on paper, was presumably prepared in the field during that campaign, which would help account for its crude appearance. Despite its sketchiness, its author still saw fit to include on it the following imprecise observation: "Zamindari [estate] of Khushal-Khatk, the rebel who has led and joined the accursed theologian. His native place is rendered desolate." Apart from the Persian text, identifying the various forces, several Afghan clan territories and estates, several major towns (including Kabul, Jalalabad, Peshawar, and Attock), several valleys, the Khyber Pass, and the Indus River, most of the map space is taken up by undecipherable wavy lines that conceivably are intended to convey the sense of rugged terrain. The Indus, however, is denoted by a thin curved line nearly one-third of the way up from the bottom of the map, while about midway across the map appears a more irregular line that might signify where the Indus Plain meets the hills to its northwest. The depiction of the area of the map in figure 17.7 is necessarily approximate.

How the map just described might have been used in battle is not at all clear. It is not even certain, in the absence of an accompanying manuscript text, that it was so used. Although tens of thousands of Mughal Persian documents and manuscripts from the sixteenth and seventeenth centuries have survived, many relating to military matters, not one, so far as I am aware, contains or relates to a military map.



FIG. 17.12. REPRESENTATION OF A GEOGRAPHIC GLOBE IN THE MUGHAL PAINTING "JAHĀNGĪR EMBRACING SHĀH 'ABBĀS," BY ABŪ AL-ḤASAN. Although the depiction of a large part of Asia and adjacent areas in this painting of about 1618 is obviously based largely on one or more European models, the representation of India appears to incorporate much knowledge not then available to Europeans.

Size of the original: 23.5 × 15.25 cm. Courtesy of the Freer Gallery of Art, Smithsonian Institution, Washington, D.C. (acc. no. 45.9).

Before concluding this discussion of small-scale Mughal maps, let me note that fragments of maps appeared as parts of larger painted compositions commissioned by Mughal emperors. In these paintings the emperors were depicted standing atop, holding, or otherwise positioned in relation to globes to signify their temporal sway over extensive earthly domains. The most noteworthy of these works, titled "Jahāngīr Embracing Shāh 'Abbās," is to be found in the Freer Gallery of Art

34. The account of this map is based mainly on Gole, *Indian Maps and Plans*, 146 and fig. 70 (note 1). A description also appears in G. N. Bahura and Chandramani Singh, *Documents from the Kapad-dwara* (Jaipur: P. C. Trust, 1988).

in Washington, D.C. (fig. 17.12). It depicts Jahāngīr embracing his powerful Persian rival, with whom he was disputing possession of the region of Kandahar, and signifies Jahāngīr's hope that Shāh 'Abbās would concede the issue in his favor. The wishful thinking in the symbolism of the lion and the lamb scarcely requires comment.³⁵ "The ultimate inspiration for this portrait," writes Milo Beach, "must . . . have come to India with Sir Thomas Roe, for such compositions are based on English allegories."³⁶ Roe, the first ambassador to the Mughal court, arrived in India in 1615. Paintings, including portraits, were among the many objects he presented to or showed the emperor.

There can be no question that the general shapes of the portions of Asia, Africa, and Europe indicated on the globe depicted in figure 17.12 derive from European maps, and for that reason I did not deem it appropriate to discuss the work as a South Asian world map.³⁷ But within the area of India, the delineation of rivers looks intriguingly distinctive (fig. 17.13). These appear to be notably more accurately aligned than on roughly contemporaneous European maps—certainly much more so, for example, than the map of the Mughal Empire in the 1625 edition of *Purchas His Pilgrimes*, which was copied from the 1619 map drawn by William Baffin on the basis of information provided by Roe. The Ganga and Yamuna rivers on the painted globe are strikingly like those of Ṣādiq Iṣfahānī's later sectional maps (fig. 17.9), and the peninsular rivers too seem more accurately represented than on Baffin's map or other European maps of the seventeenth century. Finally, the locations on the map of the names, in Persian, of various countries and provinces (shown in transliterated form in fig. 17.13a), are much more accurate than that of any known roughly contemporary European map.³⁸ This suggests that, for India at least, there were Mughal cartographic sources of which we have no surviving example.

LATE PREMODERN MAPS FROM VARIOUS REGIONS

Kashmir

Within South Asia the region most often portrayed on surviving indigenous maps is undoubtedly the Vale of Kashmir. The maps made of that surpassingly beautiful area vary widely in scale, provenance, date, and style, but virtually all are remarkably detailed. The topographic maps are, with one exception, also similar in showing the mountain ranges encompassing the Vale around the edges of the map, thereby distorting its essentially oval shape into the form of a rectangle, and in representing the capital city of Srinagar and its environs in a particularly prominent manner with commensurate reduction in the scale at which more peripheral areas are portrayed. Further, in and around Srinagar additional prominence is given to

those features for which Kashmir is famous: the Shalimar and other Mughal gardens, Dal Lake, the Jhelum River and its wooden bridges, the network of canals, the Hazratbāl mosque, the hilltop Hari Parbat fort, and so forth. The maps characteristically and charmingly combine planimetric and frontal perspectives, the former in delineating areas and the latter in portraying works of architecture, trees, human beings (in diverse attitudes), and animals. There is no consistent orientation. Objects are normally shown as they would most likely be viewed by an observer in situ. Thus trees or houses along both sides of a road will be shown with their tops facing away from the road. Similarly, the peaks of hills and mountains (often shown as snowcapped along the outer edges) generally point away from the adjacent lowlands from which they would most frequently be seen. Text, when present, tends to be correspondingly aligned. Some of the maps

35. A fuller account is provided by Stuart Cary Welch in *Imperial Mughal Painting* (New York: George Braziller, 1978), 80–81.

36. Milo Cleveland Beach, *The Imperial Image: Paintings for the Mughal Court* (Washington, D.C.: Freer Gallery of Art, 1981), 30–31 and 169–70, esp. 170. Although the prototype in question is unknown, a similar painting of Queen Elizabeth I (ca. 1592) by Marc Geerarts the Younger (1561–1635) is on display in the National Portrait Gallery in London. Apart from the painting reproduced in figure 17.12, one may cite paintings of *Jahāngīr on a Globe*, in the Los Angeles County Museum of Art; of *Jahāngīr with an Orb in His Hand* and *Jahāngīr Standing on a Globe*, both in the Chester Beatty Library and Gallery of Oriental Art, Dublin; *Jahāngīr Using a Globe as a Footstool*, in the Freer Gallery of Art, Washington, D.C.; *Shāh Jahān Standing on a Globe* (mid-seventeenth century), in the Kevorkian Album, cat. no. 18d; Metropolitan Museum of Art, New York; and *Portrait of Shāh Jahān*, in the Bodleian Library, Oxford, published in Wayne E. Begley and Z. A. Desai, comps. and trans., *Taj Mahal: The Illumined Tomb: An Anthology of Seventeenth-Century Mughal and European Documentary Sources* (Cambridge: Aga Khan Program for Islamic Architecture, Harvard University and Massachusetts Institute of Technology, distributed by the University of Washington Press, Seattle, 1990), pl. 9. (I thank Susan Gole for several of the foregoing references.) The depiction of lands and sea in some of the paintings cited may be fanciful. In the last of these, the globe depicted shows an equator and a series of seven concentric circles in the hemisphere below it. If the globe is oriented with south at the top, these circles might represent the *aqālīm* of the Northern Hemisphere. But that would raise two questions. First, why was the globe held in such a way that the area of interest to Shāh Jahān was not within his line of vision? Second, why was there a total of eight lines, since only seven were necessary to delineate the *aqālīm* (given that the northernmost extended to the Pole)? An intriguing, though less probable, possibility is that the emperor was holding a Hindu cosmographic globe and that the concentric circles thereon represented alternating ring continents and oceans as described in the section on globes in chapter 16.

37. The northern shore of the Arabian Sea, for example, bears a striking resemblance to the delineation of the same coast on Henricus Hondius's 1625 map of the Mughal Empire (*Magni Mogolis Imperium*). Among places beyond South Asia that are named on the globe are Portugal, France, Hungary (Majār), Moscow, Egypt, Abyssinia, Kingdom of Forest Dwellers (Africa), numerous locales in Southwest and Central Asia, the Kingdom of Mac (in Vietnam), China, and Cathay.

38. I am indebted to Milo Beach for sending me the transliterations.

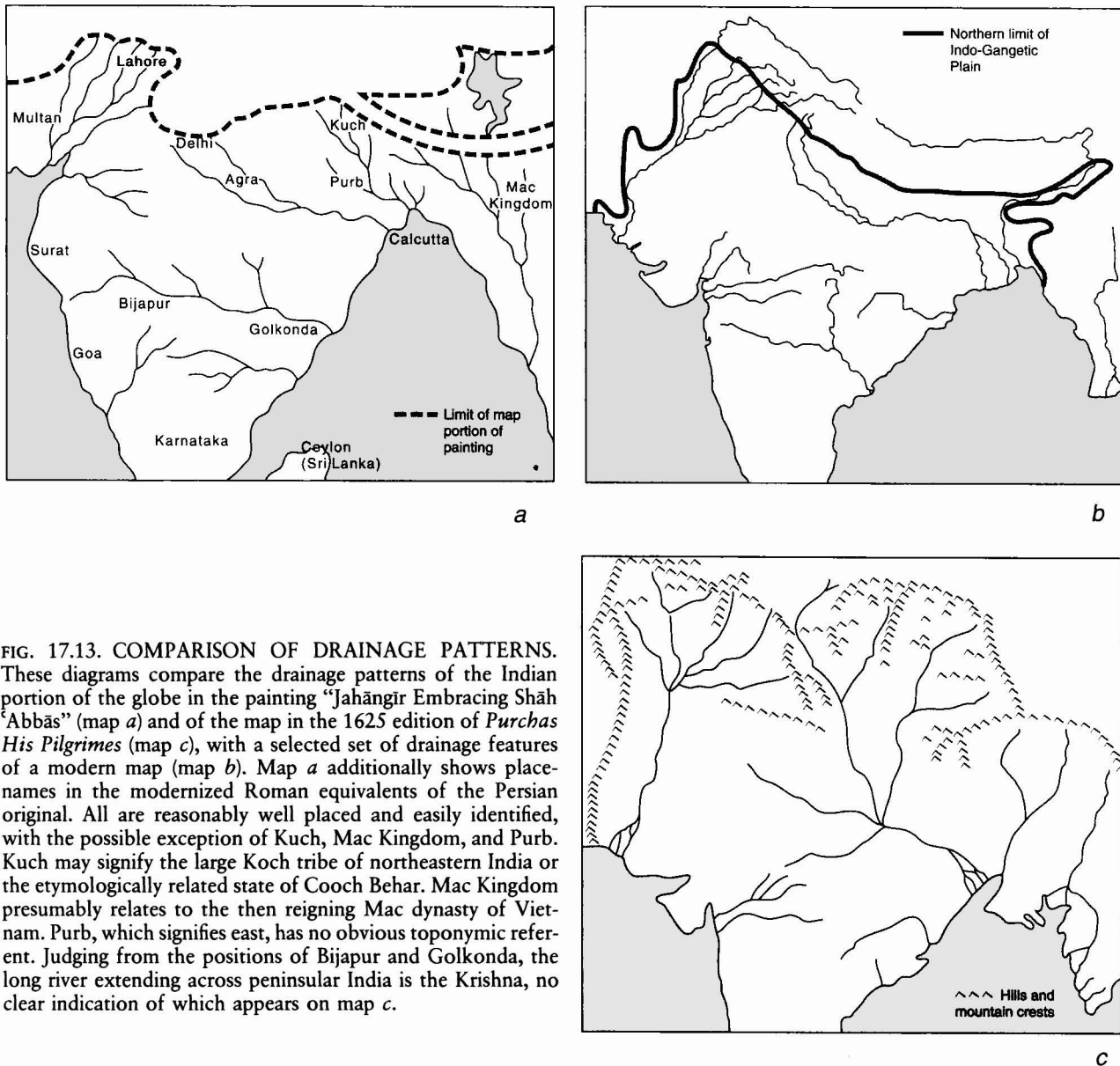


FIG. 17.13. COMPARISON OF DRAINAGE PATTERNS. These diagrams compare the drainage patterns of the Indian portion of the globe in the painting “Jahāngīr Embracing Shāh ‘Abbās” (map *a*) and of the map in the 1625 edition of *Purchas His Pilgrimes* (map *c*), with a selected set of drainage features of a modern map (map *b*). Map *a* additionally shows place-names in the modernized Roman equivalents of the Persian original. All are reasonably well placed and easily identified, with the possible exception of Kuch, Mac Kingdom, and Purb. Kuch may signify the large Koch tribe of northeastern India or the etymologically related state of Cooch Behar. Mac Kingdom presumably relates to the then reigning Mac dynasty of Vietnam. Purb, which signifies east, has no obvious toponymic referent. Judging from the positions of Bijapur and Golkonda, the long river extending across peninsular India is the Krishna, no clear indication of which appears on map *c*.

probably served no utilitarian purpose other than providing pleasure to their viewers. Gole presents photographs and succinct discussion of virtually all the maps known to me.³⁹

Probably the oldest of the topographic maps is the one in the Maharaja Sawai Man Singh II Museum, Jaipur (frequently called the City Palace Museum), which Singh suggests, on stylistic grounds, dates from the early eighteenth century or possibly even the late seventeenth.⁴⁰ This large work (280 × 223 cm) is on white starched cotton fabric and has a coarse cotton stitched border with the words, in Devanagari, “Map of Kashmir” written on all four sides. There is no other text. The map is painted in a rich palette, including yellows, greens, blues, vermilion, black, mauve, and brown. The work abounds in winsome details such as the

various wandering animals, . . . a tiger who is paying respect to the rising sun. . . [and a] goatherd [who] follows his charges, leading a young goat by a rope. Flower-beds, green rice-fields, trees with fruit and ponds with water-birds and lotuses give the impression that the artist is depicting Kashmir sometime in October or November. Human figures in local costume are

39. Gole, *Indian Maps and Plans*, 31–32 and 116–31 (note 1). For the few maps in the following account I did not personally see, I have relied mainly on Gole and, to a lesser degree, on Chandramani Singh, “Early 18th-Century Painted City Maps on Cloth,” in *Facets of Indian Art: A Symposium Held at the Victoria and Albert Museum on 26, 27, 28 April and 1 May 1982*, ed. Robert Skelton et al. (London: Victoria and Albert Museum, 1986), 185–92, esp. 189–90.

40. Singh, “City Maps on Cloth,” 189 (note 39); the map is cat. no. 120.

painted on the roads, in contrast to the emptiness of the town. The rampart of the fort and its architecture are also drawn very successfully and painted in the actual colour of the stone. A windmill also finds a place on this map.⁴¹

Gole suggests that the map may have been commissioned by one of the rajahs of Jaipur who served the Mughal emperors and occasionally went on official visits to Kashmir, but it is also possible that it was acquired in Kashmir without having been made at the behest of any external patron.⁴²

Among the few Indian maps whose probable author can be identified is an exceptionally large (408 × 226 cm) and elaborate work, on cloth, in the British Library (figs. 17.14 and 17.15). An inscription in the lower right corner of the map indicates that it was acquired by a certain Captain Wade from an otherwise unknown Abdur Rahim. Three additional inscriptions appear on the back of the map: (a) "Punjab. Panoramic Sketch of the Valley of Cashmeer by Abdool Raheem, a Native of Bokhara"; (b) "Recd. from W. H. McNaughton Esq Secy to Govt of India Poll Dept. 24th August 1836 (34)"; and (c) "Panoramic view of Cashmere. In a Lr. from the Poll. Agt. at Loodhiana d/4th July 1836." In the late 1830s or early 1840s, the map appears to have passed from either the Calcutta or the London authorities of the East India Company to Hugh Falconer, a botanist who went to Kashmir in 1837, and it was presented to the Royal Geographical Society in London by Falconer's daughter in 1891. In 1981 it was purchased by the British Library.⁴³ Gole provides some additional particulars:

In the Political Letter dated 30th Jan. 1837, the receipt of the map was recorded, and the Surveyor General was ordered to reconstruct it on a "European Model." In a later letter, dated 10th April 1837, a sum of Rs 500 was sanctioned to be paid to "the Native Author of the Map,"—a large sum in those days. It appears from this that the map had been made shortly before it was presented to Wade, but it is also possible that Abdur Rahim claimed to have made it, when he had acquired it from somewhere. At some stage the directions were added in English, and some numbers were written beside some of the Persian legends.⁴⁴

Though comparable in beauty to the map now in Jaipur, the Abdur Rahim map has a somewhat more naturalistic appearance and shows much greater concern for scalar relationships, and though Srinagar's position is more correctly rendered, the foreshortening with distance from that city is hardly eliminated. Both opaque and lighter wash paints are used along with ink. The map depicts cultivated fields in light green, village groves in dark green, bare earth in tan, water in blue, mountains in purple, snowcaps on the peripheral ranges in white,

and roads in brown. Many features, especially of settlements, are drawn or outlined in black or gray ink. Rivers and lakes are shown in abundance, and much attention is given to the meandering course of the Jhelum. Rivers disappear behind mountains in their upper courses or, in the case of the Jhelum, when the river exits from the Vale at the Baramula Gorge. All the *parganas* (administrative subdivisions) are named and the main towns in each are noted, and many additional villages and hamlets are shown. The network of roads, some with figures walking along them, appears to be fairly dense. Many roads are shown as lined by the characteristic Kashmiri poplar. The map text is abundant.

Much less appealingly executed than either of these two maps, but nevertheless brimming with interesting detail, is a map in the India Office Library and Records, London, probably also dating from the early to mid-nineteenth century. This medium-sized work (63.5 × 82.7 cm) was drawn in ink on paper, with spotty applications of gray, brown, and green gouache for certain features.⁴⁵ Srinagar takes up an exceptionally large part of the map, and little detail is shown to the north or east of it, though the Shalimar and Nishat gardens do appear conspicuously near the northeastern corner, with nothing between them and the mountains at the edge of the Vale. The gardens are painted in the only green used on the map. Rivers are shown with little regard to their true courses. Except for a short stretch close to its source at Achabal Spring, the Jhelum is indicated in an enormously exaggerated width and, like the lakes and canals, is painted in a heavy gray wash. A whirlpool, signified by concentric swirls, marks the mouth of the Jhelum Gorge. Mountains and what might be the Karewa terraces are lightly emphasized in tan. The mountains are drawn in a conventionalized style similar to that employed on the map details illustrated in figure 17.17 below. Vegetation is of various types and includes numerous poplars, though no poplar-lined roads are shown. Settlement is represented mainly by stylized houses, seen in frontal perspective, while important buildings (mosques, forts, etc.) are rendered in considerable detail. A distinctive feature of the map is that, except for the areas close to the northern, eastern, and southern edges, the roofs of a great majority of the houses are shown pointing toward the west. In this and other

41. Singh, "City Maps on Cloth," 190, which includes details in two photographs (note 39). Gole, *Indian Maps and Plans*, 116–17 (note 1), provides a photograph of the entire map and three more detailed views.

42. Gole, *Indian Maps and Plans*, 116 (note 1).

43. Data obtained from note on map by Andrew S. Cook, head of the Map Division, India Office Library and Records, London.

44. Gole, *Indian Maps and Plans*, 118–19 (note 1).

45. The map is cat. no. x/1817; Gole, *Indian Maps and Plans*, 126 (note 1), provides an illustration of the entire map.



FIG. 17.14. MAP OF THE VALE OF KASHMIR, ATTRIBUTED TO ABDUR RAHIM OF BUKHARA. This map is ink and watercolor on cloth with text in Persian and probably dates from the early nineteenth century. The essentially oval shape of the Vale is here altered by having its bordering mountains aligned along the four edges of the map. As on other maps of

the Vale, Srinagar is depicted at a disproportionately large scale, and prominent features such as the region's renowned gardens are rendered in great detail. Size of the original: 408 × 226 cm. By permission of the British Library, London (B.L. Maps S.T.K.).

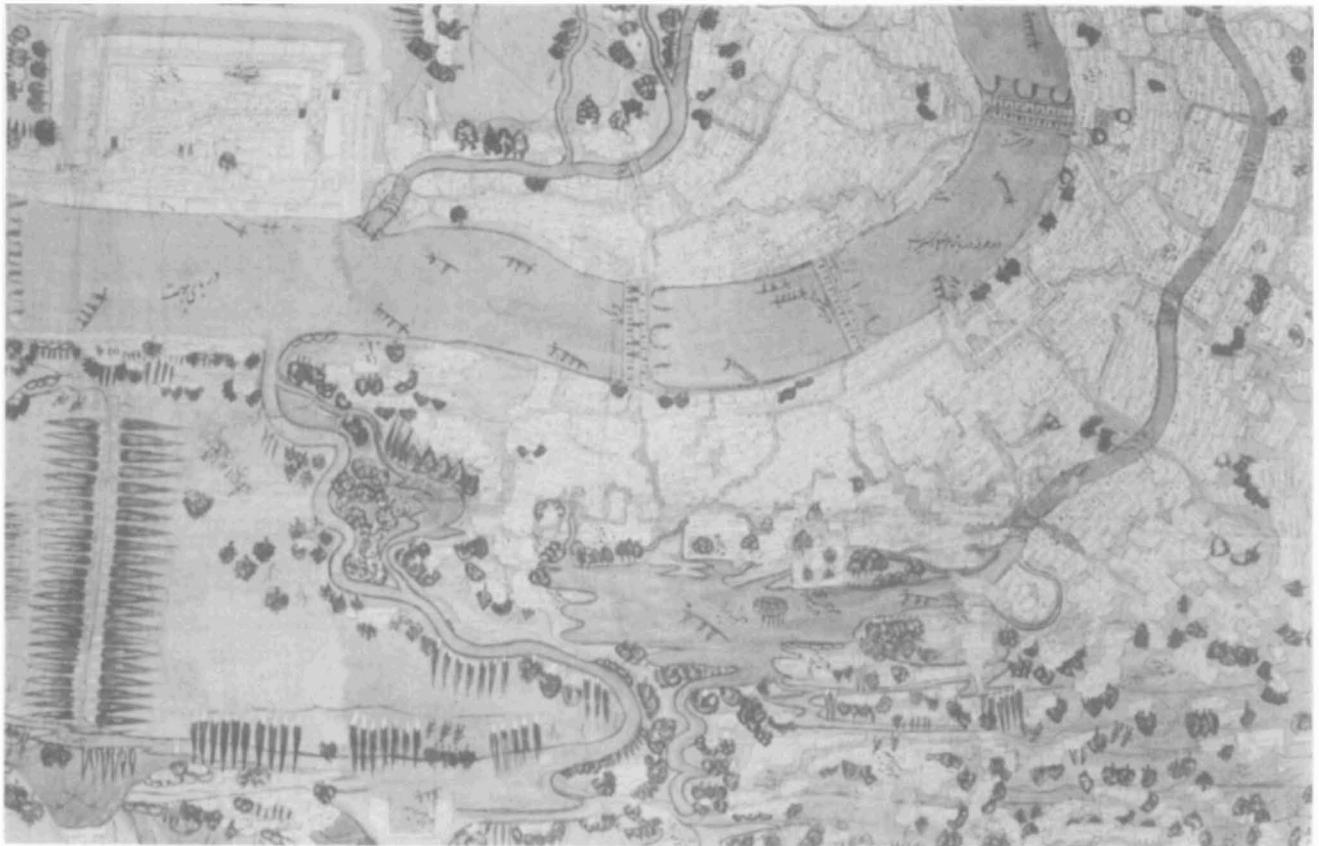


FIG. 17.15. DETAIL FROM MAP OF VALE OF KASHMIR. This detail from figure 17.14 shows a portion of the city of

Srinagar and adjacent area, including the Shalimar Gardens. By permission of the British Library, London (B.L. Maps S.T.K.).

respects this map appears to have a predominantly western orientation. Especially prominent are the ten bridges across the Jhelum; their roadbeds are shown planimetrically, and their piers, all pointing upstream, are depicted in frontal perspective. Boats of various sizes are painted in the river and in some lakes but do not constitute an important element of the map. Roads are hardly indicated outside the area of Srinagar and a few other settlements.

The general fineness of the ink line work on this map and the utter crudeness of the painting suggest that the latter may have been an ill-advised addition by someone other than the original artist. Conceivably the painting was aborted because of the slapdash way it was being carried out.⁴⁶ Added to the map in orange lettering in Devanagari script are numerous place-names, and the names of some important features are shown also in Arabic script.

A very important cartographic work, most of which Gole has illustrated, is a set of eighteen single-page and fifteen double-page maps that form a complete atlas of Kashmir within an 858-page history of that region.⁴⁷ That untranslated history, the *Tārīkh-i qal‘ah-i Kashmīr*, was written by Mir Ahmed [Jalalawad] at the behest of Mihan

Singh, a governor of Kashmir when it formed a province of the Sikh kingdom, sometime between the region’s annexation in 1819 and the death of the powerful monarch Ranjit Singh in 1839. Formerly in a library in the Punjabi town of Kapurthala and then in the archives of the Punjabi state of Patiala, the work is now held by the Maharaja Ranjit Singh Museum in Amritsar. As a rule, separate atlas maps were prepared for each of Kashmir’s former *parganas*, but occasionally more than one *pargana* was shown on a two-folio map (fig. 17.16). Map titles appeared in red cartouches at the top of each 38 by 54 centimeter page. The pages were numbered in black, from right to left, and on some pages English-style numbers have been added in pencil. Gole describes the work as follows:

The maps are very detailed regarding villages and rivers, but no roads have been marked, not even tracks

46. Gole’s opinion, *Indian Maps and Plans*, 126 (note 1), with which I do not concur, is that the work was “unfinished, or perhaps made in preparation for a proper map.” The amount of detail, especially in the representation of housing, strikes me as inconsistent with such a view.

47. Gole, *Indian Maps and Plans*, 121–25 (note 1).



FIG. 17.16. ONE OF THIRTY-THREE PARGANA MAPS IN AN ATLAS OF KASHMIR COMPOSING A PART OF THE *TĀRĪKH-I QAL'AH-I KASHMĪR*. Maps in this atlas are drawn on either one or two sheets of paper, usually one *pargana* (administrative subdivision) per map. The text is in Persian. This single-page map covers the *pargana* Tulub. It was probably drawn between 1819 and 1839.

Size of the original: each page 54 × 38 cm. By permission of Cultural Affairs, Archaeology and Museums, Punjab, Chd. Photograph courtesy of Susan Gole, London.

across the mountains. Bridges, however, have been shown; on [one folio] six are shown at close intervals over the same stream. Most of the rivers have been coloured in silver paint, a style which has been seen on other maps from Kashmir, but not elsewhere. Some large buildings are shown in elevation. . . .

Great attention has been paid to the mountains and hills. Some of the latter are coloured orange, while the mountains are mostly in dark purple. Trees are stylised, some round and some tall and thin, which must be the poplars so frequently planted in avenues in Kashmir.⁴⁸

It is not known whether the atlas attempted to provide a complete inventory of the villages of Kashmir, but it seems likely that that was among its purposes. Nor can

we say, in the absence of detailed study, what its territorial coverage was. A noteworthy feature of many of the atlas folios is that for the localized areas they depict they tend to replicate the rectangular mountain or hill frame that one finds on maps of the Vale as a whole, transforming the highlands around the *pargana* core into a box not quite the size of the paper the map is drawn on.

The final Kashmiri map I shall consider here is quite unlike any of the foregoing. It is a paper map, thirty-eight by sixty-nine centimeters, that shows a river system in considerable detail. Regrettably, there is virtually no textual material on the map and no information about it at the Sri Pratap Singh Museum in Srinagar where the work is kept.⁴⁹ The rivers, painted in gray and silver, quite likely represent a major portion of the Jhelum drainage basin within the limits of the Vale; but the absence on the map of the large Wular Lake in the northern part of the basin argues against that hypothesis. More study of the work in combination with modern large-scale topographic maps will be required to make a positive determination of the area it covers. The map's purpose is also a puzzle. Kashmir abounds with pilgrimage places (*tīrthas*), many situated on streams (*tīrtha* literally means "ford"), and hundreds of individual *tīrtha* maps are bound into two large albums in the Sri Pratap Singh Museum (these are discussed below). Possibly the map in question has some sort of synoptic function in respect to pilgrimages to these *tīrthas*.

Rajasthan and Gujarat

In the Maharaja Sawai Man Singh II Museum in Jaipur there is a rather large (150 × 107 cm) paper map of an extensive tract of Rajasthan together with a much smaller adjacent region of Gujarat (figs. 17.17 and 17.18) that appears conceptually to be much like the Mughal map brought to light by Phillimore.⁵⁰ This map, drawn in black ink, with vegetation added in green watercolor, is particularly rich in details of settlements and routes and indicates many distances, in *kos*, between important places. Important cities, towns, and forts are pictorially depicted in a variety of sizes that suggest their relative prominence. Udaipur, Ajmer, Nagaur, and Jaisalmer in Rajasthan and Ahmadabad in Gujarat are particularly salient, but the last seems less integrated into the map as a whole than are the major places in Rajasthan. Moreover, the interior detail of the city is fanciful, as proved by

48. Gole, *Indian Maps and Plans*, 121 (note 1).

49. The map is cat. no. 2063/107; see also Gole, *Indian Maps and Plans*, 128 (note 1), which illustrates the work.

50. Gole, *Indian Maps and Plans*, 110–11 (note 1), provides, in addition to a photograph of the entire work, three photographs of details thereon.



FIG. 17.17. DETAILS FROM TOPOGRAPHIC MAP OF MUCH OF RAJASTHAN AND A PORTION OF GUJARAT. The map these details come from is in black ink and green watercolor on paper, and the text is in Urdu and Dhundari, the latter written in the Devanagari script. It dates from the late seventeenth century or the first half of the eighteenth. The areas depicted are outlined in figure 17.18. The left photograph, like the map as a whole, is centered on the town of Sojat in the heart of the Rajasthani region of Marwar. Five villages situated at the mouths of ravines penetrating the Aravalli range are shown in the right portion of the photograph. The right photograph shows Raj Sagar Lake and the nearby hilltop fortress towns of Chittorgarh and Mandalgarh. To the left one sees the eastern portions of ravine passes through the Aravalli range. Size of the entire map: 150 × 107 cm. Courtesy of the Maharaja Sawai Man Singh II Museum Trust, Jaipur (cat. no. 119). Photographs courtesy of Susan Gole, London.

comparison with the way Ahmadabad is depicted on the more or less contemporaneous map of Gujarat discussed below. Hills and mountains are also prominently and naturalistically indicated, especially the Aravalli range, which extends across the middle of the map and through which numerous passes are shown linking settlements on its southeastern and northwestern flanks. Surprisingly, despite—or perhaps because of—the fact that the map covers a largely desert area, there is an almost total lack of information on drainage other than lakes. The only river shown is the Sabarmati, on which Ahmadabad is situated, and that stream is shown flowing east-west rather than north-south as it actually does. Vegetation is signified, not very systematically, by trees drawn in small green clumps. Although some slight differences exist in their rendering, they do not appear to suggest that the mapmaker intended to symbolize various vegetation types. An exception is the painting of palms in the vicinity of Ahmadabad.

Writing on this map is aligned in all directions, largely as one might read it from the map's several edges; but the dominant orientation and the manner of depicting

the Aravallis, the most prominent map feature, suggest that east is at the top. At all four edges cardinal points of the compass are indicated. The original text of the map was in Urdu, but duplicate text in Dhundari, a Rajasthani dialect, written in the Devanagari script, was subsequently added.

The date and exact provenance of the map are unknown. Chandramani Singh suggests, on stylistic grounds, that it may have been made in the late seventeenth century.⁵¹ But near the small town of Asop, not far south of Nagaur, one of several notes with political information suggests a later date. That note identifies Asop as the residence (birthplace?) of Suraj Mal.⁵² Although Indian history records several prominent individuals by that name, the most likely appears to be the Jaipuri founder of Bharatpur state (somewhat to the east of the area on the map), who reigned 1733–63.⁵³

51. Noted in Gole, *Indian Maps and Plans*, 110 (note 1).

52. Gole, *Indian Maps and Plans*, 110 (note 1). I was unable to determine precisely which of the many settlements shown was Asop.

53. "Bharatpur State," in *The Imperial Gazetteer of India*, new ed. (Oxford: Clarendon Press, 1908), 8:72–86, esp. 75–76.

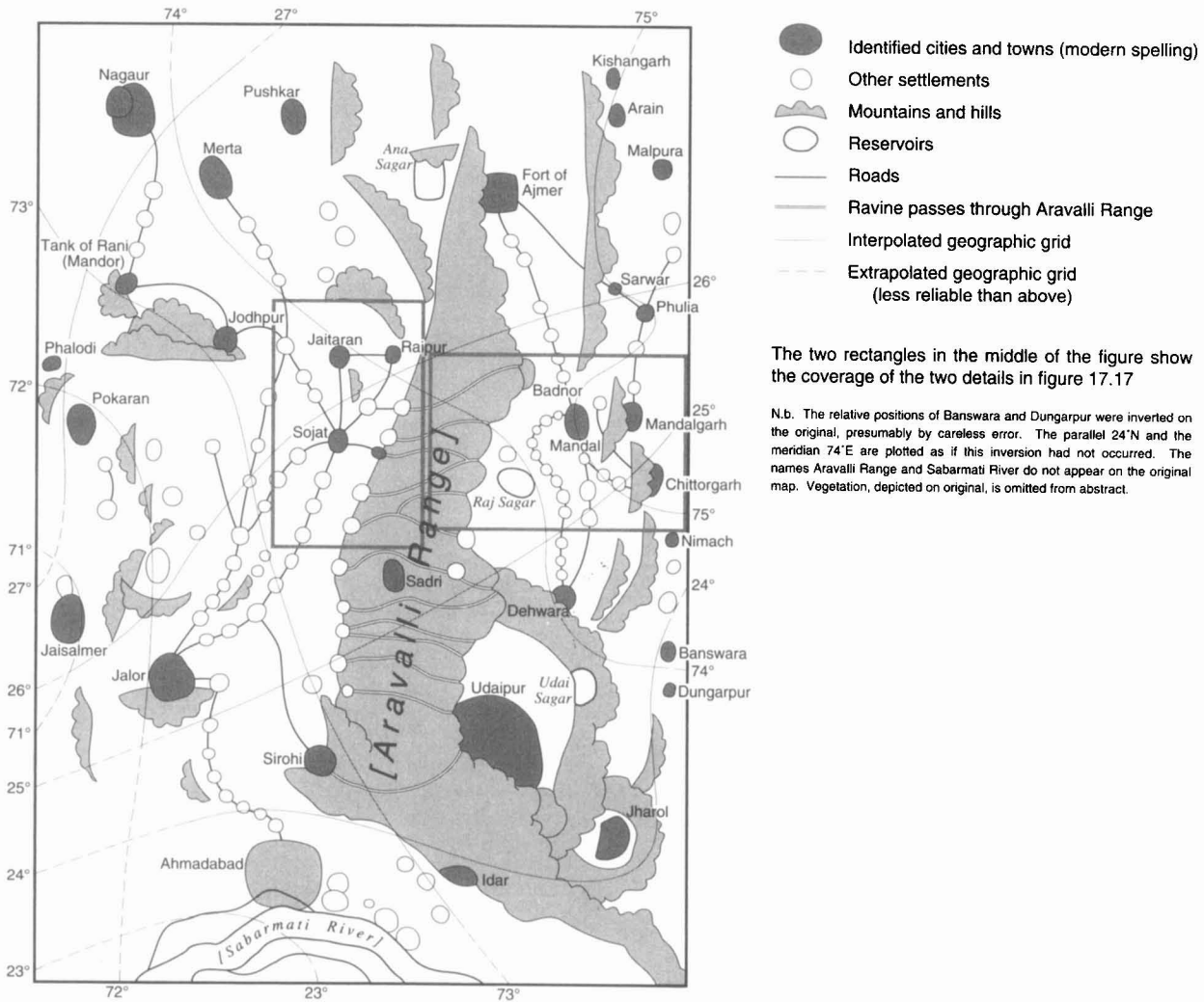


FIG. 17.18. ABSTRACT OF TOPOGRAPHIC MAP OF MUCH OF RAJASTHAN AND GUJARAT. This abstract of the topographic map from which the details in figure 17.17 were

Another locality of note was Sojat, possibly the place where, or with respect to which, the map was made, not only because of its centrality, but also because the mountains and hills to the east, north, west, and south of it are all drawn with their crests pointing away from the town as if seen from that point. (This echoes the treatment of the mountains around the Vale of Kashmir as seen from Srinagar on several Kashmiri maps.) Furthermore, there seems to be less departure from the average scale of the map in the vicinity of Sojat than in other areas, in most of which the map ratio of latitudinal to longitudinal distance varies considerably from the true terrestrial ratios. The misalignment of the Sabarmati River in the south, the compression of scale around Jaisalmer in the southwest, the transposition of the locations of Dungarpur and Banswara in the southeast and, in the north, the exaggeratedly large distance between Ajmer

taken depicts the entire map. Superimposed is a distortion grid indicating the general areal distortion on the map.

and Pushkar (actually less than ten miles in reality) all point to increasing geographic ignorance with distance from Sojat. Further study of the incompletely translated map text will be required to provide additional evidence as to the origin of the work.

Overlapping the area of the Rajput map just discussed and of a similar date is an exceedingly large painted cloth map (440 × 406 cm) covering virtually the whole of Gujarat and an adjacent portion of Rajasthan. This map, now in the Museum and Picture Gallery, Baroda, has been illustrated and briefly described by R. N. Mehta and is discussed even more briefly by Gole.⁵⁴ Almost certainly,

54. R. N. Mehta, "An Old Map of Gujarat," in *Reflections on Indian Art and Culture*, ed. S. K. Bhowmik (Vadodara: Department of Museums, Gujarat State, 1978-79), 165-69, and Gole, *Indian Maps and Plans*, 113-15 (note 1). Both provide illustrations depicting the entire map, Gole's being the better of the two. Gole also provides more

according to Mehta, this map is identical to the one noted by a Narmadashankar Bhatt in his history of Cambay, *Khambat nu Sanskritika Darshan* (n.d.). Bhatt recorded that the work was painted by 'Alī Moḥammad Khān, an important Gujarati historian, in 1756 and was kept in the city of Cambay with the family of the dewans (chief ministers) of the "emperor." It is not clear to whom the word "emperor" would have applied in 1756, since that Gujarat was wrested from the Mughals by the Marathas over the period 1725–57. Mehta's description of the map reads in part as follows:

While hanging it shows east on the top. Due to this feature all the names are written in a way that they could be read from that view point. The map shows rivers as zig-zag lines, the sea as [a] large area, where rivers join. The mountains are shown as blocks from which rivers flow and also bear distinct colours and vegetation.

The map shows . . . sea animals . . . , land animals, stylised trees etc. . . . The central position on the map is given to Ahmedabad which is correctly shown on the eastern bank of Sabarmati. Similarly the position of Surat, Bharuch, Khambhat, Baroda, Champaner, Ghogha, Talaja, Jafarabad, Diu, [and] Junagadh are accurately shown. The directions of Jodhpur, Anasagar lake, Udaipur, Dungarpur, Jalore, [and] Disa are fairly accurately shown.⁵⁵

In contrast to most of the small-scale maps previously discussed, the style of this production is opulent, as may be seen from the detail of the area in the general vicinity of Dungarpur (fig. 17.19) from its northeastern section—perhaps a twelfth or so of the total map area.

The main purpose of the map, Mehta suggests, was to show the relative positions of cities and to portray their outlines and, for some, their principal internal roads. It was evident that the artist had a good knowledge of the towns he depicted. In particular, the outlines of the forts within them were well delineated. Surprisingly, roads between towns are not shown on the map; and though directions were indicated to important places in Rajasthan, indications of distance appear not to have been provided, judging from the fact that neither Mehta nor Gole mentions them. Because of the exceptionally large size of the map and the circumstances of its storage, it has yet to be reproduced well in a single photograph. For this reason and also because of the lack of a full translation of the text, it is not possible to evaluate the scalar distortions of the map in the way I have done for several other works. But clearly, the relative prominence given to the central area of and around Ahmadabad on this map is even more pronounced than for the areas around Ajmer or Udaipur on the work previously discussed. Conversely, the peripheral areas are considerably compressed, as are areas between cities and towns other than Ahmad-

abad, which are also depicted greatly out of proportion to their actual territorial extent.

A final point of similarity between this map and the one previously noted is the writing in two scripts, in this case Persian and Devanagari. Mehta does not state what language is being conveyed by the latter script but observes that it was not uncommon to "bear witness" to eighteenth-century Persian manuscripts through the Devanagari medium.⁵⁶

Braj

The surviving Indian topographic maps discussed to this point were by and large drawn to meet secular needs. To most Indians, however, the religious topography of their country is also of considerable interest. Thus, for many sacred places maps have been drawn to aid the pilgrim's quest for merit. Most such maps are recent printed works relating mainly to specific holy cities, mountains, and shrines. These are properly discussed below. But at least one region, Braj—associated with the early life of Lord Krishna—has inspired a remarkable diversity of maps, originating in widely separated areas of India and ranging from exceedingly abstract representations to views in which individual features of the landscape can easily be recognized. Gole illustrates five maps of Braj, each quite different from all the others, but even these do not cover the full range from the abstract to the realistic ends of the semiotic spectrum.⁵⁷ Appendix 17.1 provides essential details of nine maps of Braj, including several for which no additional information is provided in this chapter.

The region of Braj "is often conceived of as a lotus, a flower which symbolizes devotion and love."⁵⁸ But the number of petals this lotus possesses varies, according to the many sacred texts written on Braj, from as few as 12 to as many as 966 arranged in seven concentric rings.⁵⁹ Figure 17.20, possibly drawn in Braj itself, presents an intermediate view, a lotus of 56 petals and three rings. Although each petal allegedly stands for a specific object within the region of Braj, it would be futile to try to establish a full set of real-world correspondences. Rather, one should view this figure and other similarly abstract

detailed photographs of three separate portions of the map and possesses additional photographs of others.

55. Mehta, "Old Map of Gujarat," 166 (note 54). A search in various bibliographies has failed to reveal the present whereabouts of the history by Bhatt that Mehta refers to. It may well be a manuscript in the possession of a private individual.

56. Mehta, "Old Map of Gujarat," 167 (note 54).

57. Gole, *Indian Maps and Plans*, 25 and 58–61 (note 1).

58. Amit Ambalal, *Krishna as Shrinathji: Rajasthani Paintings from Nathdvara* (Ahmadabad: Mapin, 1987), 14.

59. Alan W. Entwistle, *Braj: Centre of Krishna Pilgrimage* (Groningen: Egbert Forsten, 1987), 247.



FIG. 17.19. DETAIL FROM MAP OF GUJARAT AND A PART OF RAJASTHAN. The map is painted on cloth with Persian and Devanagari script (it is not clear which language the latter script is employed for), and was probably painted in 1756. Shown in this view are the Mahi River and the nearby Rajasthani town of Dungarpur. The area shown is a rather small segment

of what may be India's largest surviving traditional topographic map.

Size of the entire map: 440 × 406 cm. Courtesy of the Museum and Picture Gallery, Baroda (cat. no. G.R.5631). Photograph courtesy of Susan Gole, London.

creations as Tantric mandalas, or visual foci for meditation, “drawn as a means of concentrating power during worship” of the deity within the image.⁶⁰ Arguably, I might have included figure 17.20 within the discussion of Hindu cosmography, but presenting it here will aid comparison with other images of Braj.

Not quite so abstract as the image just discussed is figure 17.21, whose text is written in the Sanskrit language but employing the Bengali script. This suggests a Bengali author but not necessarily Bengali provenance, since

60. Entwistle, *Braj*, 246 (note 59).

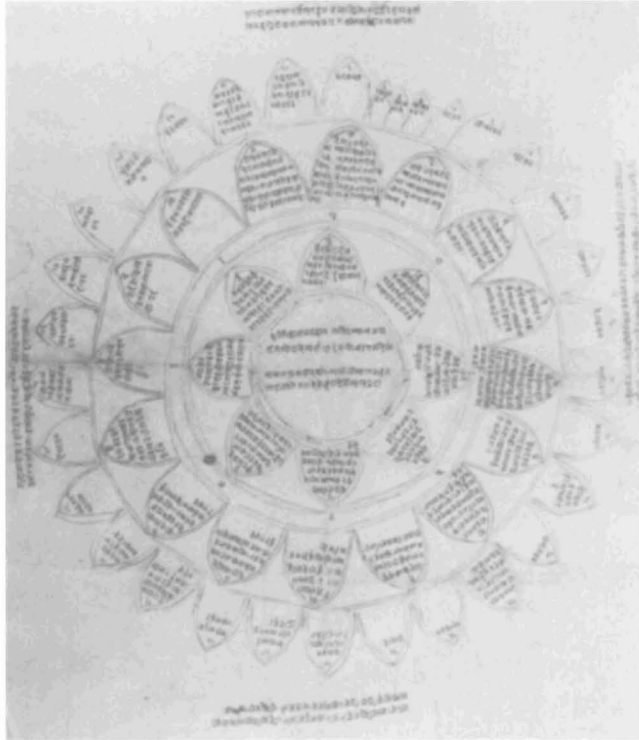


FIG. 17.20. THE REGION OF BRAJ CONCEIVED AS A LOTUS. This diagram, ink (?) on paper, is from a nineteenth-century (?) manuscript in Braj dialect but written in Gujarati script. It is based on a textual description from the late seventeenth or early eighteenth century. Here there is no attempt to make the distribution of places shown conform to their actual geographical positions; rather, they are listed in the order of three clockwise circumambulations of Braj. The eight petals of the inner ring are the places from Mathura to Mukhrai, the sixteen of the middle ring are the places around Govardhan, and the outer thirty-two are the remaining portions of the pilgrimage circuit. The diagram thus represents a strip map topologically distorted into a set of concentric circles—by implication, a spiral with three whorls. Size of the original: 24 × 18 cm. Vrindaban Research Institute, Vrindaban (acc. no. 5295).

Mathura has a large resident community of Bengali Krishna devotees. The Yamuna River is clearly shown on this diagram, and the names of the sacred bathing ghats along that river are written in the petals that adjoin it. How much of the remainder of the extensive text relates to now identifiable places in Braj has not been ascertained, but since the work is described as a guide to the “Chaurāsi Krosh Parikramā” (Pilgrimage of eighty-four *kos*), one may suppose that a substantial part of it would do so.⁶¹

Completely different from the foregoing is plate 31, one of many paintings of Braj associated with the Nathdwara school of Indian painting. This school takes its name from a small Rajasthani town to which many Krishna devotees of the Pushtimarg sect fled in 1671

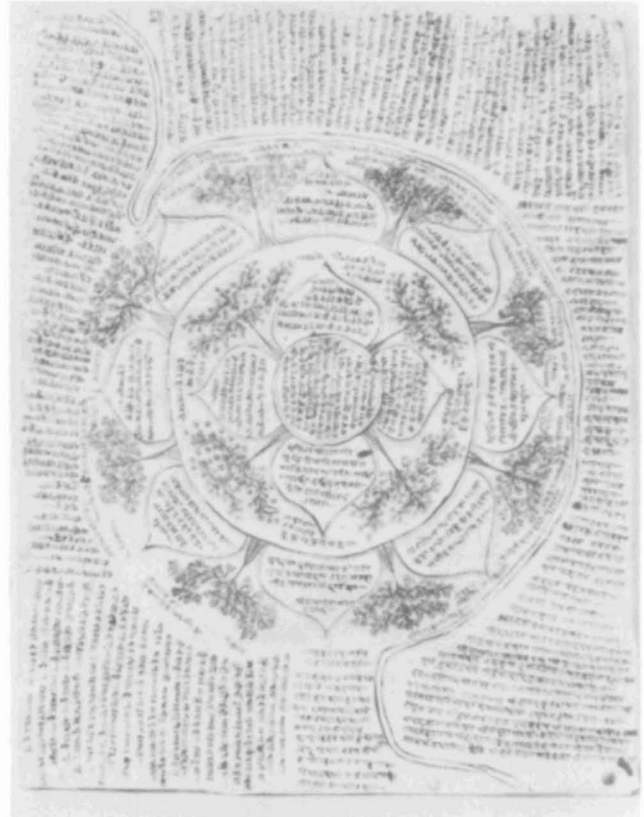


FIG. 17.21. SEMIABSTRACT MAP OF BRAJ IN THE FORM OF A LOTUS. This nineteenth-century (?) map, titled “Chaurāsi Krosh Parikramā” (Pilgrimage of eighty-four *kos*), is painted in black, green, and vermilion on paper and has a Sanskrit text written in the Bengali script. It is not markedly different from figure 17.20 but conforms more closely to geographic reality. Not only is the Yamuna River clearly shown, but the names of the sacred bathing ghats along that river are written in the petals that adjoin it. Size of the original: 57 × 44 cm. Vrindaban Shudh Sansthan, Vrindaban (MS. 4706).

when the Mughal emperor Aurangzib sought to root out Krishna worship in its traditional core region.⁶² On this map numerous places associated with the life of Krishna can readily be discerned: the Yamuna River, the sacred cities of Mathura and Brindaban along its bank, Mount Govardhan (left center), the many *bans* (sacred groves) where Krishna played, and so forth. Though much of the detail may be nothing more than decorative space fillers, the relative locations of the principal elements of the map

61. The number eighty-four is a conventional auspicious figure that should not be taken literally. The *kos*, a traditional measure of distance in India, is about two miles, but used together with the number eighty-four it has no clear-cut distance connotation.

62. “Nāthdwāra,” in *The Imperial Gazetteer of India*, new ed. (Oxford: Clarendon Press, 1908), 18:415.

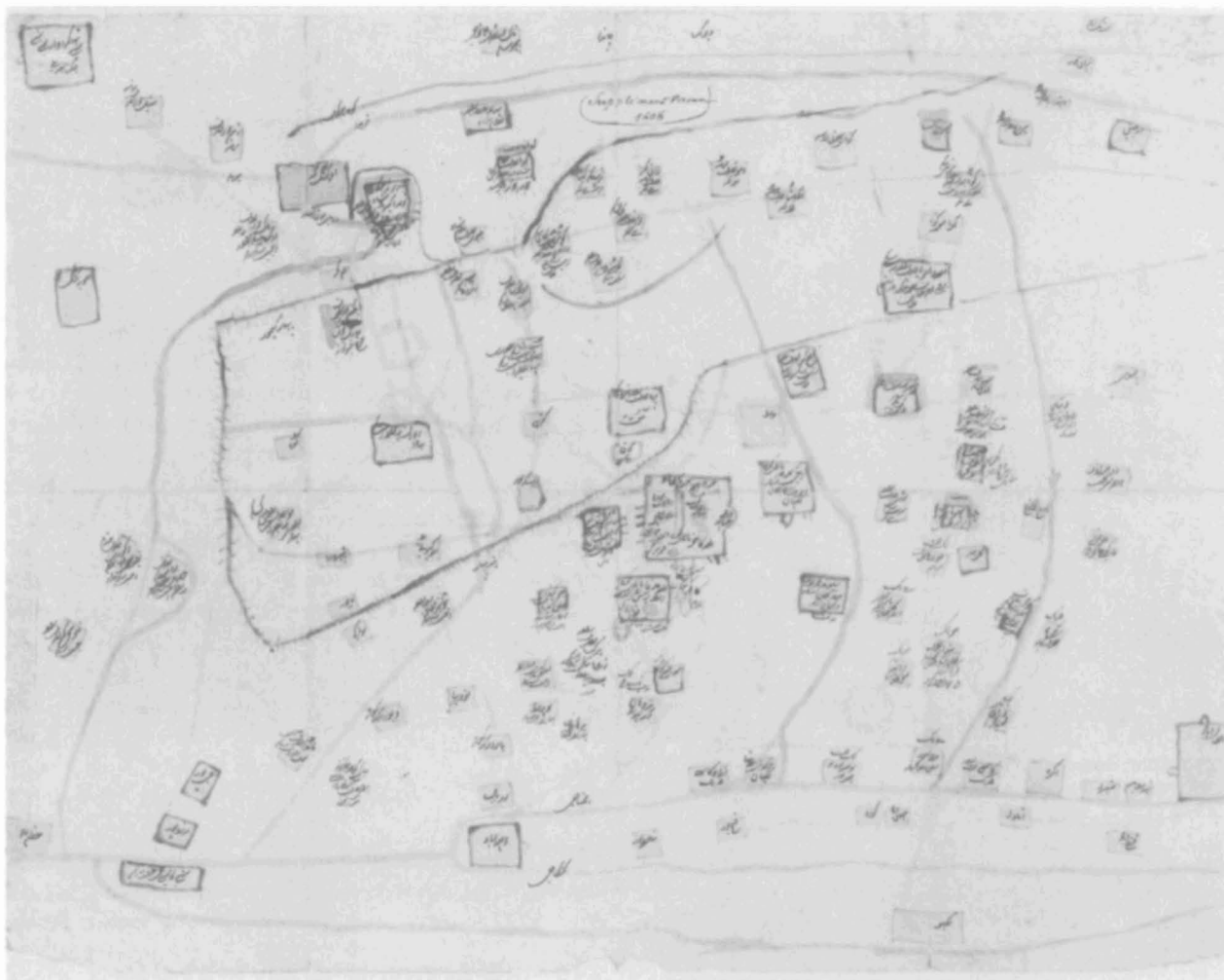


FIG. 17.22. MAP OF NORTH-CENTRAL INDIA WITH EMPHASIS ON BUNDELKHAND AND BAGHELKHAND. In watercolor and ink on paper with text in Persian, this mid-eighteenth-century map is oriented with south at the top. The focal regions of Bundelkhand and Baghelkhand, actually fairly small, account for perhaps three-fifths of the total map area,

which, as figure 17.23 shows, represents a very large part of north-central India.

Size of the original: 51.5 × 66 cm. By permission of the Bibliothèque Nationale, Paris (Département des Manuscrits, Division Orientale, Suppl. Pers. 1606).

are all reasonably accurate. Paintings of this type, designated *pichhvāīs* (signifying that they were intended to be hung in the back of temples), are still being produced in Nathdwara by a group of artists whose families have practiced their craft for many generations.⁶³

Central India

In the Bibliothèque Nationale in Paris is a rather crudely executed, yet fairly detailed, paper map of a rather large part of north-central India (figs. 17.22 and 17.23). Although the file card relating to the map states “sans lieu, ni date,” it has been possible to determine its area

of coverage and probable date within reasonable limits. The map text is in Persian—still used as a lingua franca

63. Ambalal, *Krishna as Shrinathji*, 63–64 (note 58). There are also *pichhvāīs* that are maps of the city of Nathdwara itself. These will be discussed below. The Nathdwara school of painting is said to date from the year 1765. Additional illustrations of Braj *pichhvāīs* may be found in Gole, *Indian Maps and Plans*, 61 (note 1); Walter M. Spink, *Krishnamandala: A Devotional Theme in Indian Art*, Special Publications, no. 2 (Ann Arbor: Center for South and Southeast Asian Studies, University of Michigan, 1971), 10, with details on 7, 11, and 28; and Kay Talwar and Kalyan Krishna, *Indian Pigment Paintings on Cloth, Historic Textiles of India at the Calico Museum*, vol. 3 (Ahmadabad: B. U. Balsari on behalf of Calico Museum of Textiles, 1979), pls. 23 and 24, with text on pp. 26–27.

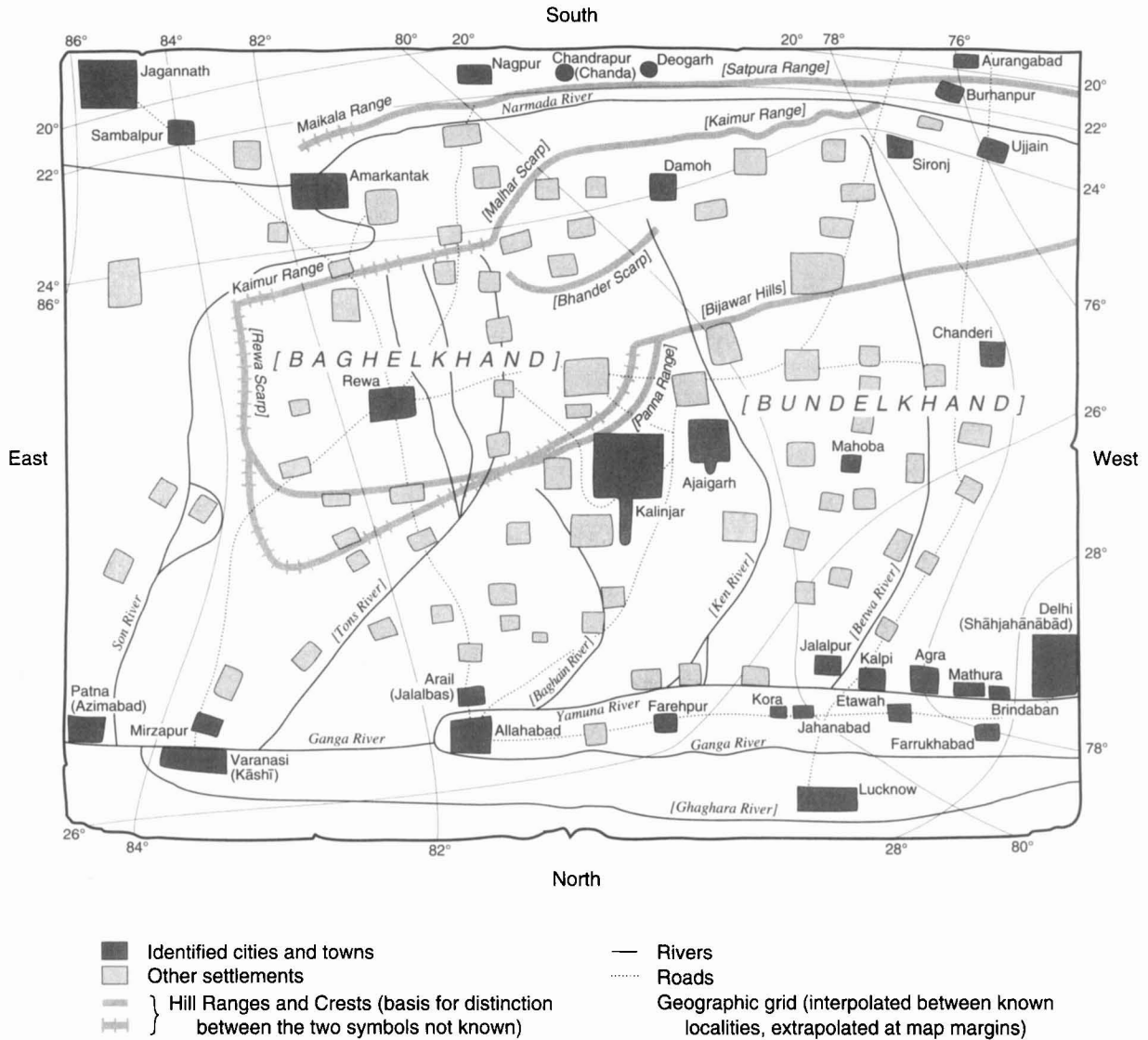


FIG. 17.23. ABSTRACT OF MAP OF NORTH-CENTRAL INDIA. The principal places and the degree of areal distortion in figure 17.22 are shown.

over much of India in the eighteenth century—in a difficult Shikasta script (without vowels and with most consonants having a variety of possible interpretations), but enough of the text has now been translated or transliterated to permit one to state that the map’s principal function was to indicate the amount of revenue to be collected from the lands around many of the more than one hundred towns and cities shown.⁶⁴

For many such places named there are notations such as “Ajaigarh. . . In the possession of Kalyān Singh, . . . two lakhs” (i.e., Kalyān Singh would have been responsible for collecting two lakhs [200,000] of rupees from the locale named). Other persons named included Maha-

raja Ajit Singh and Jehat Singh, the two most frequently mentioned; Mubārak Mahal, a woman whose possession of Mukandpur (south of Rewa, but not traceable on a modern map) yielded her revenue—according to the map text—for her household expenses; the Nizām Shāh, of Hyderabad; and Jānoji Bhonsle, one of the more powerful leaders within the Maratha Confederacy that ruled over a very large part of India in the mid-eighteenth century. In several places notes read simply “Under the con-

64. I thank Sajida Alvi and Iraj Bashiri of the University of Minnesota, Minneapolis, and Irfan Habib of Aligarh Muslim University for translating certain portions of the map and transliterating many of the place-names.

rol of the Marathas.” Jānoji reigned from 1755 to 1785, and our map unquestionably dates from that period. Positive identification of the other persons named has not yet been made. Nizām Shāh, for example, is merely a title. Ajit Singh is a fairly common name that during Jānoji’s time could conceivably have referred to the maharaja of either Kotah or Bundi (1756–59 and 1770–74, respectively), but those two Rajput states lay somewhat to the west of the area covered by the map, and among the numerous petty states of the Indian regions of Bundelkhand and Baghelkhand on which the map centers, there could well have been another Ajit Singh.

A further pair of clues to the possible date relate to the map’s showing Lucknow and Farrukhabad among the small number of important places in its northwestern corner. That Lucknow, rather than Fyzabad (Faizabad), appears suggests that the map dates from a time when it and not Fyzabad was the capital of Awadh—either 1754–65 or after 1775. But the inclusion of Farrukhabad, which was incorporated into Awadh in 1771 and thereafter lost much of its importance as a princely capital in its own right, argues for a date earlier than 1771. Hence 1754–65 seems the most likely time for the creation of the map.

Gole speculates that “it may have been a map of this type that Rennell used for Bundelkund, when making his large map of Hindustan in 1782.”⁶⁵ This is certainly a plausible suggestion, and it is even possible that our map was the very one that Rennell consulted. But in any event, one wonders why the map would have turned up in a French rather than a British library. Conceivably Colonel Gentil, whom I will discuss below, had a hand in the matter.

Of the authorship of the map we can say little; but it is certain that it was drawn by a Hindu, despite its use of Persian—which was known to many educated Hindus—because of the use of the honorific “*shri*” before the names of such holy places as Kāshī (Kāśī, modern Varanasi) and Jagannath. One may hazard the guess that the work was commissioned by one of the many rajas of Bundelkhand or Baghelkhand.

Apart from providing data relevant to political control and to the collection of land revenue, the map might well have served certain military purposes. Its most prominent and most central feature is the renowned hilltop fortress of Kalinjar, from which project short lines that could signify cannons; these point mainly toward the Gangetic Plain, from which any attack would have been most likely. To the west of Kalinjar the fort of Ajaigarh, of somewhat lesser importance, has been similarly depicted. Rivers, hill ranges, and escarpments also figure prominently on the map. The rivers, which are easy to identify even when not specifically named, are rendered in grayish green and the hills and escarpments in purple and violet

(though the latter color could result from fading of the former). At first one is inclined to doubt that the purple and violet lines of the map relate to orographic features, since they cross rivers with seeming abandon, but examining modern medium-scale topographic maps enables one to identify, with near certainty, all such lines, though only a few are actually named.⁶⁶ Among the hill lines there is an interesting distinction between those emphasized by tick marks and those lacking such emphasis. I can assign no obvious reason for this but suggest, since all of the former lines are in the more humid east, that they might signify forested hills as opposed to those merely covered by scrub vegetation. A final important attribute of the map is its depiction of roads; these are shown by yellow lines that, regrettably, do not show up well in the photograph.

Figure 17.23 indicates the places that have been named on the map and notes as well as, in square brackets, additional unnamed but identifiable physical features and regional names. It also includes an interpolated two-degree grid of latitude and longitude indicating where and to what degree the map is distorted. The map’s focus in Bundelkhand and Baghelkhand is quite clear, and as is often the case with Indian maps, peripheral areas are much compressed in scale. Certain locations near the four corners of the map that seem in effect to anchor it in space are particularly noteworthy: Shāhjahānābād, capital of the then moribund, but still important, Mughal Empire in the northwest; the major religious centers of Kāshī, Jagannath, and Ujjain in the northeast, southeast, and southwest, respectively; and the strategic pass town, Burhanpur, also in the southwest. Nagpur, the politically important capital of the Bhonsle line of the Maratha Confederacy, is shown near the south-central edge of the map. Several other outlying places appear to be included only because of their political or religious importance, for example, Lucknow, the capital of the then-rising nawabate of Awadh (Oudh), and Amarkantak, the sacred source of the Narbada River.

Maharashtra and Other Areas of Maratha Activity

A number of small-scale Maratha maps covering extensive areas of peninsular India and Gujarat are known to exist—or to have existed until recently—in addition to the so-called world map discussed above (fig. 17.6). A number of these have been reported on and partly illustrated in brief articles by D. V. Kale and C. D. Desh-

65. Gole, *Indian Maps and Plans*, 138 (note 1); see also above, p. 325.

66. See, for example, the National Atlas and Thematic Mapping Organization, *National Atlas of India* (Calcutta: Organization, 1979), vol. 1, pl. 29 (1:1,000,000).

pande.⁶⁷ Regrettably, however, some of these have not been made accessible to interested scholars; others appear to have vanished in the past few decades; and at least one is in such bad repair that studying it is all but impossible. Hence the discussion of this type of Maratha cartography will necessarily be less than satisfactory. Although it has been possible to plot the approximate areas of six of these maps on figure 17.7, it is difficult to date any of them with precision. It seems likely, however, that all belong to the last half of the eighteenth century or the beginning of the nineteenth.

Most of the maps are in the Marathi language and are written in the Modi script, which relatively few Marathis, even among the educated classes, can now read; others are written in the Marathi variant of the Devanagari script. Most are oriented with east at the top, and the alignment of text generally conforms to that perspective, though crowding and other considerations may result in departures from that rule. Frequently, compass directions are noted along the map edges. Stylistically the maps display considerable variety, ranging from rather simple ink outline sketches with relatively little detail to exceedingly crowded maps full of adornment—vegetation, animals, fish, temples—much of which lacks any specific referent. In what follows, I shall consider ten maps, proceeding from north to south in respect to the general areas of their coverage, although there is considerable territorial overlap among them.

Formerly at the Prince of Wales Museum of Western India in Bombay and illustrated and discussed by Deshpande, but now missing, was a map portraying most of Gujarat.⁶⁸ The size of this map was not recorded, but apparently it was large, since four pieces of paper appear to have been pasted together to compose the work. Judging from a published photograph, the medium appears to be black ink. The Kathiawar peninsula was included, but whether Kutch was is not certain. The shape of Kathiawar on this map was very distorted. Features shown include a multitude of settlements, their relative importance indicated by the size of lettering and by enclosure within thickly lined boxes. The administrative hierarchy of the settlements, noting seats of *prānts* and *paraganas* (larger and smaller administrative regions), was specified by special textual suffixes. Major rivers were crudely shown by double lines, and the coast, curiously, was also indicated by a double line. Boundary lines between administrative features were absent, as were relief features. The principal purpose of the map is judged to be political.⁶⁹

In the Maratha History Museum, Deccan College, in Pune, there is a small (38 × 60 cm), fairly simple paper map that shows Pune, Bir, and Burhanpur; the sacred sites of Śrītrimbakeśvara (Trimbak) and Bhimashankar, in the Western Ghats; the site of the important battle of

Rakshasbhawan (1763); a few major rivers, including the Tapi, the upper Godavari, and the Mula and Mutha tributaries of the Krishna; and the Ajanta range. The cities, shown as if from nearby hilltops, are portrayed as clumps of buildings, rendered in a wash of blue and gray. Rivers are in blue, text is in black. The name “Wellesley” appears on the map, suggesting that it may date from about the time of the second Anglo-Maratha war (1805). It departs from most Maratha maps in being oriented with north at the top, being written in the Devanagari script, and having a ruled frame on all four sides, outside which (as was customary) the four cardinal directions are noted. Although, as represented in figure 17.7, the area covered by this map extends farther from north to south than from east to west, the map itself is wider in the latter dimension, the scale being contracted from north to south.⁷⁰

Simplest among the Maratha topographic maps is a sketch in black and white ink, on paper, of the upper portion of the Krishna River watershed, an area of approximately 30,000 square miles. On this map the Krishna and ten tributaries, as far north as the Bhima, are named, along with about fifty places—mainly situated on the named rivers—in which the Marathas were interested. A line, presumably signifying the crest of the Sahyadri, from which each of the rivers originates, is also indicated. The map is illustrated by Deshpande, who suggests that it could have been “a route map indicating the valley routes in the Maratha campaigns.”⁷¹

Covering virtually the entire area of the previously discussed map and extending significantly farther to the south and east is a map that had been at the Prince of Wales Museum of Western India when Deshpande studied it but was subsequently transferred to the State Archives of Maharashtra, also in Bombay. This large cloth map (268 × 212 cm), which Deshpande believes to show “late eighteenth century influences,”⁷² is badly torn in places and has been laminated with some type of plastic, now clouded, which renders it barely legible and virtually precludes photography. Fortunately, Deshpande was able to have it photographed before lamination and reproduces about a third of the map in his 1953 review.⁷³

67. D. V. Kale, “Maps and Charts,” *Bharata Itihasa Samshodhaka Mandala Quarterly*, special issue for the Indian History Congress of 1948, vol. 29, nos. 115–16, pp. 60–65; and C. D. Deshpande, “A Note on Maratha Cartography,” *Indian Archives* 7 (1953): 87–94.

68. Deshpande, “Maratha Cartography,” 90–91 and pl. II (note 67).

69. Deshpande, “Maratha Cartography,” 91 (note 67).

70. The information in this paragraph is derived from a photograph and set of notes sent to me by Susan Gole on 28 March 1984. The map is illustrated and described in Gole, *Indian Maps and Plans*, 145 (note 1).

71. Deshpande, “Maratha Cartography,” 91 and pl. III (note 67).

72. Deshpande, “Maratha Cartography,” 92 (note 67).

73. Deshpande, “Maratha Cartography,” 92 and pl. IV (note 67). I

Painted in black, red, blue, yellow, green, and purple, this map uses a sumptuous array of abstract and pictorial symbols to depict settlement, terrain, and vegetation. Some of these symbols are shown in figure 17.8. A settlement hierarchy is suggested by either single or double circle symbols. Forts are more boldly portrayed by red circles. Ports along the Arabian Sea coast are noted by adding the suffix “*bandar*” to place-names. Along with settlements, temples are prominently shown, frequently by drawings in frontal elevation, much larger than villages and towns. Roads are not a prominent feature of the map, being indicated by faint (possibly faded) red lines. Although no terrain feature is explicitly named, the Sahyadri and numerous interior crests—more than a dozen—are emphatically depicted in purple and outlined in black. They are often strewn with vegetation in yellow and green. Additionally, a great variety of charmingly rendered trees, painted much larger than villages and towns, occupy the interstitial spaces over most of the map, presumably indicating a dominantly forested landscape. Whether these were intended to suggest local variations in natural vegetation types is unclear.

A peculiar aspect of the map is that, contrary to the usual Maratha custom, it is oriented toward the west. Almost all of the text and most pictorial details accord with that perspective. Mountain and hill summits, however, usually point away from a hypothetical observer standing in the adjacent lowlands from which such summits would most likely be viewed. In some cases, where broad lowlands flank both sides of a hill range, the summits alternate in pointing first in one direction and then the opposite way. This is, so far as I am aware, a unique cartographic device.

At the Bharata Itihasa Samshodhaka Mandala in Pune is a beautiful medium-sized (82 × 57.5 cm) paper map that is remarkably similar in style to the map previously discussed, though oriented toward the east and drawn at a considerably larger scale. A photograph in Gole’s *India within the Ganges* shows most of the work.⁷⁴ The map covers a portion of the Konkani coast in the vicinity of the port and fort of Devgarh, an area approximately thirty kilometers east-west and twenty kilometers north-south. Within this area between 100 and 110 named localities are shown, and it seems likely that every village within the area covered found a place on the map. If so, this would be the first of the Maratha topographic maps I have considered that attempts a complete village inventory. In addition to the villages, all shown within yellow ovals ringed by red or yellow perimeters, the map depicts at least half a dozen forts and several towns. For Devgarh the location of the fort gate and the adjacent port are specially shown. The names of many villages include suffixes and prefixes such as -khurd, Mauje-, and Peth-(bazaar) that signify their hierarchical or commercial

functions, and often next to the names the word *taraf* (direction) denotes the relation of a village to some larger settlement. Linking the settlements there is a dense network of trails, shown by red lines. Drainage is prominently shown, with the common wave symbol and fish used both in rivers and in the Arabian Sea. Four three-masted ships and one lateen-sailed one master are also shown at sea. A wavy line at the top (eastern edge) of the map signifies the crest of the Sahyadri, through which the Phonda Pass is shown by name. No other relief features are noted. In the interstitial areas between villages, several types of trees are shown. That palms are concentrated in immediate proximity to the coast and in certain riverine localities suggests the mapmaker’s desire for verisimilitude in depicting vegetation. A final noteworthy feature of the map is a straight red north-south line that bisects it. If this line was intended to be a meridian of longitude, it would be the only representation of a portion of a geographic grid on an indigenous premodern map from South Asia, apart from the individual folios in the atlas of Şādiq İşfahānī.

Covering another relatively small coastal area of North Kanara district, to the south of the map of the Devgarh region, is a crude pen-and-ink map that was brought to light and briefly described by Phillimore.⁷⁵ The map, possibly a copy, is on six small pieces of paper pasted together to form a sheet about 150 by 55 centimeters. The watermark was judged to be probably Portuguese. At the northern edge of the map is a reference to the southern boundary of Goa, written, like the rest of the map text, in the Modi script. Like the Devgarh map, this one terminates eastward at the Sahyadri (here roughly twelve miles from the coast), which is shown by a thin wavy line. Included on the map are several towns, five forts, and a great many villages, their limits roughly sketched in; the limits of lands described as jungle, hill, paddy fields, or gardens; two islands; rivers and ferries; and the names of several passes through the Ghats. On the map when it was found were faded English translations of the entire map text. “The English names are squeezed in and so badly written as to be difficult to read,” says Phillimore, “but on the whole are very fair renderings of the vernacular.”⁷⁶ About a dozen of the

was able to study the map at some length in 1984 with the aid of an archivist who could read its Modi script. The plotting of the area of the map on figure 17.7 was made possible by his rendition of about two dozen names of important places among the more than five hundred (my estimate) shown on the map, many of those names being close to the edges of the map. Gole subsequently searched for the map in vain, and it is questionable whether it can still be traced.

74. Susan Gole, *India within the Ganges* (New Delhi: Jayaprints, 1983), 19.

75. Phillimore, “Three Indian Maps,” 113–14 and appended map 3 (note 33).

76. Phillimore, “Three Indian Maps,” 114 (note 33).

names could be identified on Survey of India one-inch maps. Phillimore suggests, quite plausibly, that the map “may have been prepared for the first British Collector [district revenue officer] of 1799, for whom it would have provided the most valuable information.”⁷⁷ Though the area covered by the map is in the present state of Karnataka, there can be no doubt that the author was a Marathi rather than a Kannada speaker. Stylistically, the map has little in common with other Maratha maps described in this section.

Among the now missing maps, formerly at the Prince of Wales Museum of Western India and briefly noted by Deshpande, is one that extended from northwest to southeast across peninsular India.⁷⁸ On the Arabian Sea coast it ran from a point west of the Maratha capital at Pune south to North Kanara (just south of the state of Goa) and on the Bay of Bengal from Madras to the Kaveri delta. The map’s principal function apparently was to portray routes for military operations in the regions of Hyderabad, Mysore, and the Kaveri, around each of which a particular abundance of place-names was indicated, as was also true in the Krishna-Tungabhadra drainage area. Pune was shown as a transport node from which strings of place-names emanated. Distances between places were given in *kos*. Prominent places, including such important religious sites as Mahabaleshwar, Gokarn, Srisailam, and Srirangam, were boldly inscribed on the map. Deshpande has inferred that the map dates from the mid-eighteenth century.⁷⁹ He says nothing, however, about its size, the medium, the use of particular kinds of symbols, or other key map attributes that would help one compare and relate it to other known Maratha works.

An immense map, originally measuring about 450 by 300 centimeters but now in at least a dozen crumpled and tattered fragments, is kept in the library of the Bharata Itihasa Samshodhaka Mandala in Pune. It is doubtful whether this map, which allegedly covers the area from around Pandharpur (about 200 km southeast of Pune) southward to Cape Comorin at the southern tip of India, can or will ever be restored and accorded the study it deserves. A fleeting inspection of some of the map fragments shows that the work is (was) quite detailed; and it is conceivable therefore that not only poor storage but also heavy use contributed to its present sorry state.

Also at the Bharata Itihasa Samshodhaka Mandala and in reasonably good condition is a map that covers an even larger area than the work previously noted, extending from slightly north of Pune to Cape Comorin and also including the island of Sri Lanka (at a scale much smaller than that of peninsular India) and two additional islands in the Gulf of Mannar at substantially enlarged scales (fig. 17.7).⁸⁰

The map probably dates from the mid-eighteenth cen-

ture. It is on cloth-backed paper and measures 179.5 centimeters north-south and 103.5 centimeters east-west, with east at the top. Stylistically, it has some features in common with the map seen at the State Archives of Maharashtra in Bombay, though on the whole it is less ornate. Painted in yellow, blue, red, and orange watercolor and black ink, it is rich in detail in some areas and sketchy in others. It appears to have been designed to meet both military and administrative needs. Possibly it also served fiscal purposes. The exuberant depiction of vegetation that characterized the map seen in Bombay is here totally lacking, and mountains and hills are rendered relatively simply by squiggly black lines. Rivers appear in blue, and a solid blue sea teems with fish, other marine animals, and sailing ships of European appearance. (A three-master and two smaller craft lie offshore near the Kaveri delta.) Roads are abundantly shown by red lines. The most prominent features of the map are settlements, which are portrayed by a wide variety of yellow symbols outlined in black. One supposes that these symbols represent some sort of administrative hierarchy, but the standardization of symbols is not sufficient to show any obvious pattern.

The map text, in the Devanagari script, includes little or nothing but toponyms and does not indicate distances between places. Not all parts of peninsular India were well known to the Marathas, and that is reflected in the distribution of place-names—very few are shown on the Malabar coast. Elsewhere the locations of certain places are transposed or much less accurately plotted than one might expect for the mid-eighteenth century. Surprisingly, Hyderabad is placed much farther north of Pune than it should be.⁸¹

Finally, in his brief 1948 note on the maps and charts of the Bharata Itihasa Samshodhaka Mandala, Pune, Kale mentions that apart from maps of small specific localities, other maps covered areas “containing a number of forts and villages. These are efforts to accommodate a very wide area within the small space of 2' × 3', of course

77. Phillimore, “Three Indian Maps,” 114 (note 33).

78. Deshpande, “Maratha Cartography,” 91–92 (note 67).

79. Deshpande, “Maratha Cartography,” 92 (note 67).

80. Gole, *India within the Ganges*, 20 (note 74); and Kale, “Maps and Charts,” map plate facing p. 61 (note 67). The Bharata Itihasa Samshodhaka Mandala, Pune, has not granted permission to have any part of this important map reproduced in either this volume or Gole’s *Indian Maps and Plans*. It did, however, allow the reproduction of a photograph of a small part of the work in Gole’s *India within the Ganges* and another, of the entire map, in the article by Kale, “Maps and Charts.”

81. Deshpande, “Maratha Cartography,” 92 (note 67). Another now-vanished small-scale map, formerly at the Prince of Wales Museum of Western India, Bombay, is related to the area around Hyderabad. Deshpande found the work generally similar to the map of the area from Pune to Cape Comorin, which also emphasized routes and settlements.

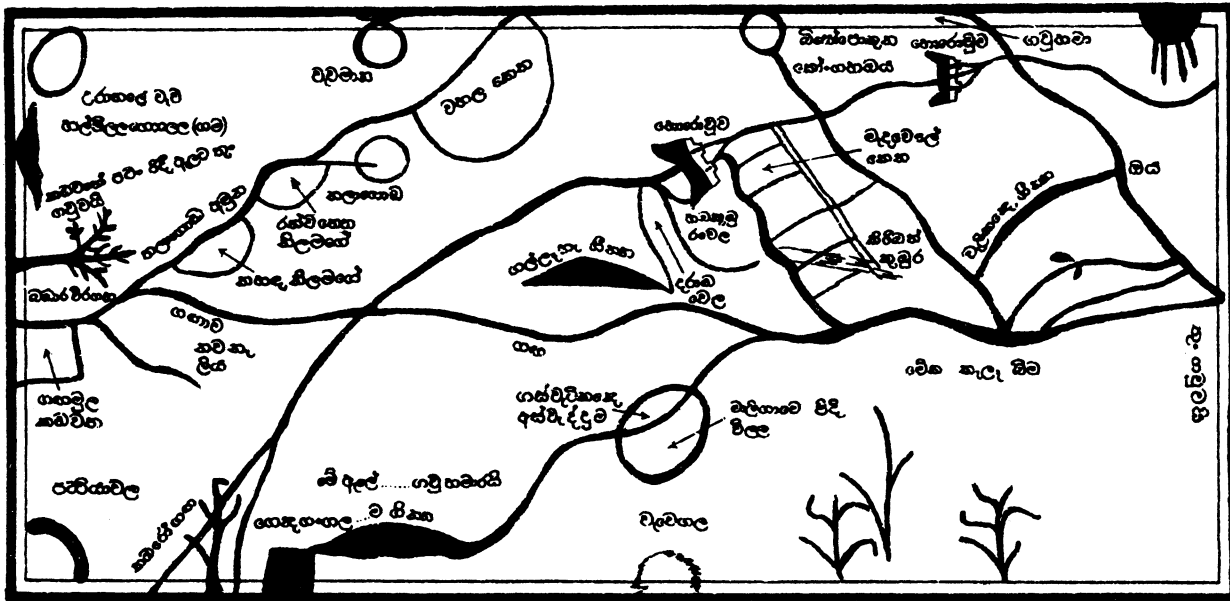


FIG. 17.24. SINHALESE MAP OF A SMALL AREA IN CENTRAL SRI LANKA. This is the sole known traditional geographical map of Sri Lankan provenance. It covers an area of several hundred square kilometers in the east-central part of the country and may have been made at the behest of a member of the Kandyan royal family. The original from which this copy

was made is painted on cloth and probably dates from the seventeenth century. Size of the original: 101.5 × 216 cm. From R. L. Brohier, *Land, Maps and Surveys*, 2 vols. (Colombo: Ceylon Government Press, 1950–51), vol. 2, pl. LIV.

without scale and without compass.”⁸² How many such maps he may have been referring to is not specified. Of the maps I have discussed, only the one along the Arabian Sea including an area in the vicinity of Devgarh fits the approximate dimensions of 2 × 3 feet. Thus the number of vanished Maratha maps, leaving aside the seventeenth-century productions made by or at the behest of Shivāji, may be even greater than the present account indicates.

Sri Lanka

Many inquiries have revealed only one indigenous map (not counting cosmographies) of Sri Lankan provenance. The map (fig. 17.24) is reproduced, translated, and well described by Brohier, who states: “It is an attempt to map certain lands and the topography including the irrigation system in the valley of the Amban-ganga, near Elahera, in the District of Matale.”⁸³ The area covered extends about thirty to thirty-five kilometers from northeast to southwest and slightly more than half that distance from northwest to southeast. The circumstances in which the map was preserved and brought to light are noteworthy. The following account, as related to Brohier, is that of a Sinhalese surveyor, R. T. Samerasinghe, who, sometime before 1950, lent the map to the Colombo Museum:

About 1935 whilst out camping in a village called Attara-gal-lewa, an old Veddah type of man residing in a hamlet a few miles deeper in the jungles, presented

this cloth map to me. He told me it was found in a well-sealed earthen vessel—and that this is a plan during the days of Godopora Maharaja.

The correct name is Godopola Maharaja, brother to Rajasingha the II. Pending further investigation the map may be provisionally accepted as a 17th century production.⁸⁴

Brohier provides a partial translation of the places indicated and the corresponding area, at roughly the same scale, as shown on a modern topographic map. The following is extracted from Brohier’s description.

The material on which the drawings and lettering have been made is a close-woven fabric 40 inches by 85 inches, treated on the working surface with some vegetable dye which is dull cream in colour. The writings and line work are in three colours and include the indigo or light blue, very rare in Sinhalese art. . . .

The unit of measure, as stated on the map [by local notes, rather than by a scale], is the Sinhalese mile or *gouwa*. By comparing distances between principal junctions on the old map with corresponding points on the modern map, it is possible to reconcile one inch on the drawing as equivalent to [a] quarter mile

82. Kale, “Maps and Charts,” 64 (note 67).

83. R. L. Brohier, *Land, Maps and Surveys*, 2 vols. (Colombo: Ceylon Government Press, 1950–51), vol. 2, R. L. Brohier and J. H. O. Paulusz, *Descriptive Catalogue of Historical Maps in the Surveyor General’s Office, Colombo*, 192 and pl. LIV.

84. Quoted in Brohier, *Land, Maps and Surveys*, 2:192 (note 83).

on the ground. This is not quite constant, thus implying that measurement must have been carried out by pacing, or with the aid of [a] measuring-cord, or with a measuring-stick.

Features used for orientation are the rising sun, shown on the right top corner, and the waning moon, on the left lower corner of the drawing. These indicate East and West respectively. Obviously the determination and expression of direction by the compass or any other means was unknown.⁸⁵

The original contains a variety of interesting notes, identifying varying villages, the “paddyfield of the royal palace,” land belonging to various other individuals, and the location of sulfur rock.

Rajasinha II, referred to above, ruled over the Kandyan kingdom from 1629 to 1687 and had considerable interaction with Europeans of various nationalities, holding many in a loose form of bondage for long periods. Among those so detained was Robert Knox, who resided in Kandy from 1659 to 1679 and left a very detailed account of the kingdom.⁸⁶ Whether he or other Europeans had any influence on Sinhalese cartography is an open question, though I see nothing in the style of the one surviving map to suggest such influence.

Northeastern India

From near the northeastern corner of the Indian subcontinent comes another large-scale map of a rather small area, which, like the North Kanara map, might better be considered a hybrid production than a truly indigenous work. This faded ink sketch is among the three maps Phillimore described and illustrated. The original (roughly 65 × 25 cm) was, as Phillimore relates, “found on a page of a volume of correspondence of 1849 of the Revenue Surveyor in charge of the survey of Goalpara District, Lower Assam.”⁸⁷ The map’s southern limit was the northern rim of the Garo Hills, now in the Indian tribal state of Meghalaya, but I have not been able to pinpoint the precise area covered. I surmise that it was no more than five miles north-south and perhaps ten to twenty miles east-west. The sparse map text—only eighteen toponyms and the four cardinal directions are noted—is in Bengali, very likely by a clerk of the deputy collector, who was “in no way a surveyor.”⁸⁸ The map indicates several rivers, hills, estates, and one village, all in the then administrative area (*pargana*) of Habraghat. The map has no definite orientation; names are read from all directions.

HYBRID MAPS AND THE GENTIL ATLAS

A number of South Asian maps that appear to be indigenous in style were made at the behest of the British and

other Europeans serving in governmental and other capacities in India and adjacent countries. I have briefly discussed two such maps in the preceding section of this chapter and taken note of others in the introduction. Still others will be discussed in the following section, “Late Eighteenth- and Nineteenth-Century Nepali Maps.”

A few others exist in which the European style is so predominant that I have chosen not to consider them in any detail. Let me note in passing, however, that Gole discusses and illustrates three such maps.⁸⁹ Two of these are of Gujarat: an undated work by an otherwise unknown Hahfizjee, now in the British Library (Add. MS. 13907[e]), with map text in English; and another by Sudānand, a Brahman in the employ of the British resident at Cambay, about 1785, also in the British Library (Add. MS. 8956, fol. 2). The third, “*faites par des Brahmes*,” covered the southern part of peninsular India. A portion of it was rendered into French and published in 1785, the original having been obtained when Abraham Anquetil-Duperron was in India in 1761.⁹⁰ The published map looks more European than Indian, and we do not know to what degree it varied from the original or whether that original was made expressly for Europeans. Of some interest is the plural authorship of the no longer traceable Brahman work.

Without a doubt, the most important hybrid cartographic production to emerge from Europeans’ use of indigenous Indian collaborators is the atlas prepared in 1770 under the direction of Colonel Jean Baptiste Joseph Gentil, a French nobleman who served as a military advisor to the nawab of Awadh (Oudh). Gentil, who resided at the Awadhi capital of Faizabad from 1763 to 1775, engaged three Indian artists to record many aspects of contemporary Indian life and compiled a large encyclopedic album, *Recueil de toutes sortes de dessins*, in which many of the illustrations relating to relatively small localities contain cartographic components.⁹¹ Additionally, these artists contributed to an atlas of forty-three folios titled *Empire Mogol divisé en 21 soubas ou gouvernements tirés de differens écrivains du país en Faizabad en MDCCLXX*. Each of twenty-one map folios of

85. Brohier, *Land, Maps and Surveys*, 2:192 (note 83).

86. Robert Knox, *An Historical Relation of the Island Ceylon, in the East-Indies: Together, with an Account of the Detaining in Captivity the Author and Divers Other Englishmen Now Living There, and of the Author’s Miraculous Escape* (London: Richard Chiswell, 1681).

87. Phillimore, “Three Indian Maps,” 113 and appendix map 2 (note 33).

88. Phillimore, “Three Indian Maps,” 113 (note 33).

89. Gole, *Indian Maps and Plans*, 112–13 and 136 (note 1).

90. For further details, see the introductory chapter to South Asian cartography, pp. 324–25 and corresponding note.

91. This album is now in London, Victoria and Albert Museum, Indian collections, cat. no. 89.

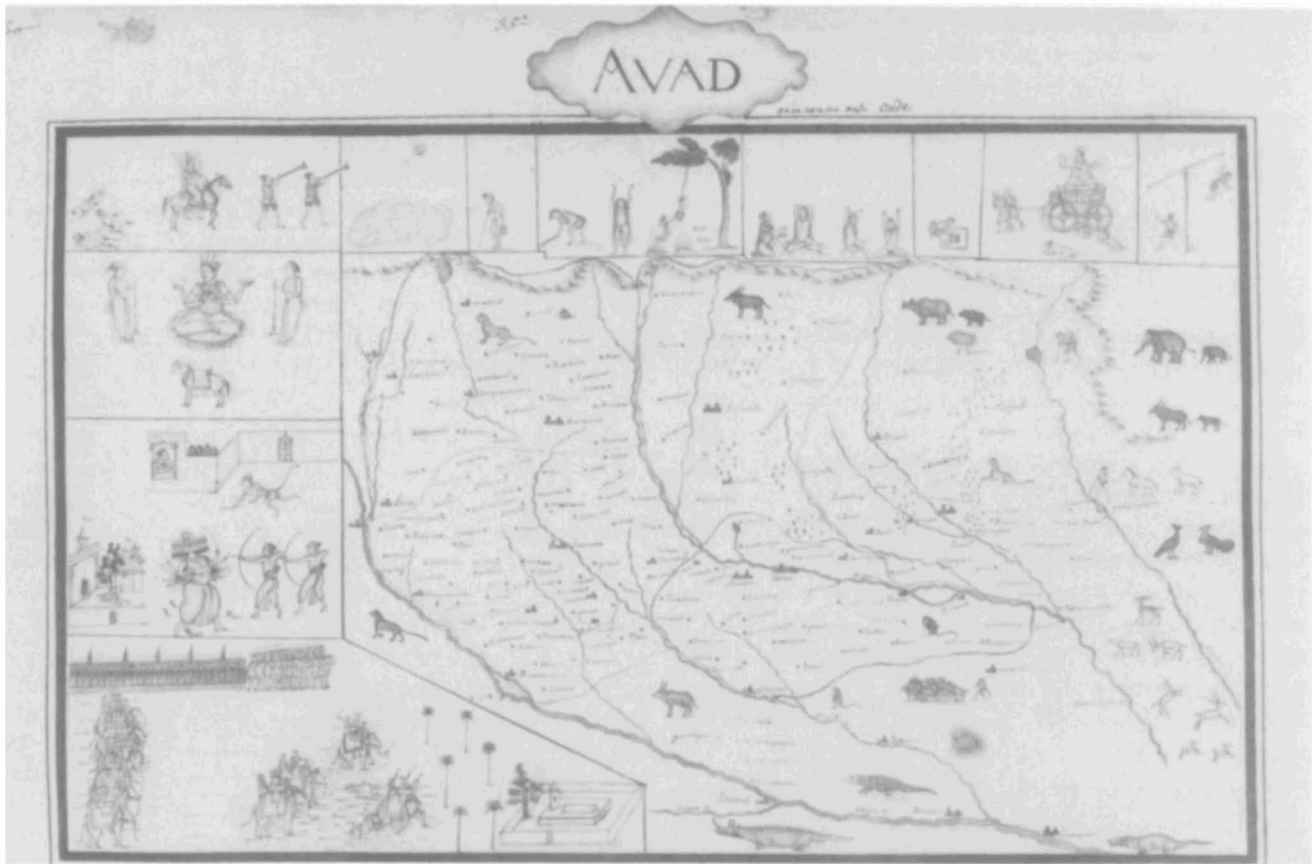


FIG. 17.25. THE *ṢUBĀ* OF AVAD (OUDH) AS PORTRAYED IN GENTIL'S ATLAS OF THE MUGHAL EMPIRE. This map is watercolor and ink on paper, drawn in Faizabad in 1770. It is one of a set of regional maps drawn by Indian artists for Colonel Gentil and then assembled in an atlas covering all of India. These maps are of interest not only for the depth of their

detail (surpassing that of wholly European maps of the same period), but also for the accompanying regionally specific diagrams, which offer glimpses of the Indian life of Gentil's era. Size of the original: ca. 27.3 × 45 cm. By permission of the India Office Library and Records (British Library), London (Add. MS. Or. 4039, fol. 19).

the atlas (approximately 38 × 55 cm) relates to a single *ṣūba* (province), and each is preceded by a list of the various *sarkārs* and *parganas* (successively smaller administrative units) into which the *ṣūbas* were subdivided. There is also a cover page bearing the inscription, "*Cet atlas appartient à M. Gentil l'indien,*" along with Gentil's Persian seal.⁹² The maps were compiled mainly from literary sources, principally Abū al-Faḥr's *Ā'in-i Akbarī* (Institutions of Akbar), rather than from surveys. The names of some of the Indian artists, including Niwasi Lal and Mohan Singh, both presumably Hindus, are known.⁹³ Two manuscript copies of Gentil's atlas are known to exist: his personal copy and a second, made after his return to France and presented to the king for the royal library. The latter lacks a title page and has none of the drawings that embellish the original. An annotated edition of the twenty-one map folios of Gentil's personal copy of the atlas, reproduced at a slightly reduced size and with introductory commentary, has been brought out by Gole.⁹⁴

The scale, accuracy, and orientation of the Gentil maps differ substantially from sheet to sheet. Detailed study of the entire work is needed to ascertain fully its varying quality and its internal consistency, especially along the boundaries between *ṣūbas*, which, as Gole has indicated, often do not fit together well. Figure 17.25 represents the *ṣūba* of Avad (Oudh), of which Gentil had extensive

92. Mildred Archer, "Colonel Gentil's Atlas: An Early Series of Company Drawings," in *India Office Library and Records: Report for the Year 1978* (London: Foreign and Commonwealth Office, 1979): 41–45, esp. 41.

93. *The Indian Heritage: Court Life and Arts under Mughal Rule*, catalog of exhibit at Victoria and Albert Museum, 21 April–22 August 1982 (London: Victoria and Albert Museum and Herbert Press, 1982), 49.

94. Susan Gole, ed., *Maps of Mughal India: Drawn by Colonel Jean-Baptiste-Joseph Gentil, Agent for the French Government to the Court of Shuja-ud-daula at Faizabad, in 1770* (New Delhi: Manohar, 1988). Gentil's personal copy is in London, India Office Library and Records, Prints and Drawing Section, Add. MS. Or. 4039; the second copy, in the Bibliothèque Nationale, Paris, is cataloged as FR 24,217.

personal knowledge. All sheets, however, would compare favorably in accuracy with most of the indigenous topographic maps I have discussed, with European maps of the interiors of South Asia made before 1770, and even with many interior portions of Rennell's maps of India up to the year 1793. It is probable that Gentil relied heavily on Jean-Baptiste Bourguignon d'Anville's four-sheet map of India drawn in 1752 for his coastline and for some interior detail as well. Although both left certain lacunae in their portrayal of the more remote regions of India, the gaps were much less extensive in Gentil's coverage than in d'Anville's. It seems clear that Gentil supplemented the detailed knowledge derived from the *Ā'in-i Akbari* with information from numerous other sources, both indigenous and European (e.g., the Jesuit missionary to India Joseph Tieffenthaler).

There is no evidence that Rennell was aware of Gentil's atlas while he was preparing his own maps of India and various regions of that country. There is certainly no mention of it in his *Memoir of a Map of Hindoostan*. To what extent he might have placed faith in Gentil's work and altered his own maps accordingly, had he known of the atlas, is an interesting matter for speculation.

The conventions of the Gentil atlas are highly standardized and easy to interpret even without a legend. Rivers are shown in varying widths by single lines or multiple parallel lines in black ink, with yellow watercolor filling in the width of those shown by more than a single line. Lakes are also outlined in black, emphasized by closely spaced horizontal lines and colored yellow. Mountains and hills are shown naturalistically, in frontal perspective, as if seen from adjacent lowlands, though their placement is frequently very inaccurate. They are outlined and partially shaded in black ink and painted in mauve watercolor. Escarpments are similarly shown, but with vertical hatching extending down from a line at the top of the escarpment. Settlements, all in black, appear to be grouped in several hierarchical categories. The larger ones comprise aggregates of adjacent squares, while the lowest order is most frequently shown by small circles with a small vertical stroke at the top, though this last symbol does vary somewhat from map to map. Forests are selectively represented by simple vertical tree symbols. Boundaries are generally shown by black dotted lines, emphasized by thin watercolor bands in yellow, red, or violet. The rationale for the choice of colors is not readily apparent. Conspicuously missing on all but one or two sheets of the atlas is any representation of roads or of distances between settlements. Nor does any sheet include an explicit indication of scale. Most are oriented to the north, but there are a number of exceptions. On some sheets the sides are labeled *nord*, *sud*, *est*, and *ouest*.

For historians and historical geographers, much of the

interest of Gentil atlas will be in its marginal illustrations.

The maps in Gentil's personal copy of the atlas . . . are decorated with subjects that relate to the various parts of the Mughal empire. Shahjehanabad (or Delhi), for example, includes the royal insignia of the Mughal Emperor, his throne, howdah, flags and jewels. The map of Gujarat includes a painting of the Somnath temple; the desert of Ajmer is enlivened with camels, water-melons and a sarus crane. Warlike Malwa is embellished with armed elephants, horses and soldiers, Bihar with the Baijnath and Gaya temples, Kashmir with dancing-girls, Bidar with examples of Bidri ware [vessels inlaid with silver or brass], Aurangabad with the Ellora Caves and a procession of Maratha horsemen. Each map incorporates drawings depicting the costume of the region, local trades and occupations, religious festivals, ascetics, birds, animals and plants.⁹⁵

From an art historian's perspective, the Gentil atlas is noteworthy for initiating what has come to be known as the "Company style" of drawing, for it was shortly imitated in Lucknow, after Oudh came under the protection of the British in 1775, and elsewhere by numerous other Indian artists in the employ of the British East India Company. It is significant, says Archer, "that in Gentil's atlas, subjects which were later to become the stock-in-trade of 'Company' painters were already present in miniature form."⁹⁶ Among the Company style of drawings one finds occasional architectural plans, a few of which I shall consider below.

LATE EIGHTEENTH- AND NINETEENTH-CENTURY NEPALI MAPS

Francis Wilford's description of a large Nepalese map that was presented to Warren Hastings, who served as governor of Bengal from 1772 to 1774 and then as governor general of India until 1787, was cited above. Regrettably, that wholly traditional work, which Wilford found quite accurate for the Vale of Kathmandu, no longer survives. A substantial number of other premodern Nepali maps do survive, however, including some that cover fairly extensive areas and others that relate to relatively small localities, and written testimony informs us of still others that cannot now be traced. Not surprisingly, given Nepal's situation between India and Tibet and the cultural diversity of its peoples, many of its maps are hybrid in style. Those that appear to be closer to or wholly within the Tibetan cartographic tradition are discussed elsewhere.⁹⁷ The rest are discussed along with

95. Archer, "Colonel Gentil's Atlas," 43 and 45 (note 92).

96. Archer, "Colonel Gentil's Atlas," 45 (note 92).

97. See *History of Cartography*, volume 2, book 2, forthcoming.

other maps from South Asia. Within the latter group, the surviving maps that might be considered, in a broad sense, as topographic all appear to be influenced in varying degrees by Nepali contacts with the British and other Europeans who resided for a time in Nepal. Nevertheless, they retain enough of an indigenous flavor to warrant inclusion in this section.

The Nepali geographer Harka Gurung provides us with a richly illustrated monograph, *Maps of Nepal*, that, though dealing primarily with modern works, contains a useful, if not quite complete, account of pre-twentieth-century cartography.⁹⁸ That chapter begins as follows:

When the Newar king Jayasthiti Malla (1382–1395) first introduced [the] caste system in [the] Kathmandu Valley, the people were categorised into 64 castes or rather sub-castes according to their traditional occupation. It is interesting to note that one of the castes then recognised was of Kschetrakara or “land measurer” which in modern parlance may be termed as “surveyor.” We know not whatever happened to this caste group related to geographers since it does not appear in modern surnames. There is however another current Newar caste known as Dangol which Petech interprets as “measurer of land.” Whether these traditional caste groups were engaged merely in cadastral work or drew other maps is a matter of conjecture. That there was some tradition of map-making in Nepal is suggested by a distant evidence. This refers to the authority of Tsio Ying-k’i, a Chinese officer who participated in the 1720 campaign of Tibet and reported in a Chinese geography of Tibet that in 1734, the Malla King of Bhaktapur sent to the Chinese emperor a letter and some presents. Among the presents were included a geographical map of Ngo-na-k’e-t’e-k’e (India) and Pa-eul-po (Nepal).⁹⁹

Whether Johan Grueber, who visited Kathmandu as early as 1661, or other seventeenth-century Jesuit missionaries ever saw Nepali maps is uncertain; but the accounts they were able to piece together with Nepali and Tibetan assistance formed the basis for some of the earliest European cartographic depictions of that country. Thereafter the map described by Wilford is the first unambiguous Western reference to Nepali cartography. Among early British visitors to Nepal who produced maps of their own were William Kirkpatrick (route survey in 1793), Charles Crawford (route surveys in 1802 and 1805), and Francis Hamilton (born Buchanan) (fourteen-month sojourn in 1802–3). It is not known whether Kirkpatrick and Crawford saw any indigenous maps, but it was said that Hamilton “obtained five native maps of parts of Nepal and Sikkim, which he deposited in the library of the East India Company.”¹⁰⁰ Two of these maps, one made by a lama (Tibetan monk) and another by a Kirat, a member of an ethnic group of eastern Nepal, were presumably more Tibetan than Indian in style. The

others, however, judging from the names and ethnic affiliations of their makers, were quite likely of a different type. Hamilton reports employing “a slave of the Raja of Gorkhav . . . to construct a map” and says that this slave, who was “very intelligent, and a great traveller . . . [in] order . . . to execute this with more care . . . refreshed his memory by several journies in different directions.”¹⁰¹ He does not mention training the slave. Of this map and the two previously cited, Hamilton states:

as might be expected, [they] are very rude, and differ in several points; but they coincide in a great many more, so as to give considerable authority to their general structure; and, by a careful examination of the whole, many differences, apparently considerable, may be reconciled.¹⁰²

Writing of the country between the Vale of Kathmandu and the river Kali on what is now Nepal’s western border, Hamilton says that his account is based on two maps

prepared by Sadhu Ram and Kanak Nidhi, with the assistance of Kamal Lochan, one of the natives attached to the survey of Bengal, on which I was engaged. Although they differ in some points, they agree in so many more, especially in the eastern parts, that considerable reliance may be placed on their giving some tolerable idea of the country.¹⁰³

Finally, the account notes:

A map of the western parts of the dominions of Gorkha . . . was composed by Hariballabh [a Brahman

98. Harka Gurung, *Maps of Nepal: Inventory and Evaluation* (Bangkok: White Orchid Press, 1983), 5–22. L. Boulnois, *Bibliographie du Népal*, vol. 3, *Sciences naturelles*, bk. 1, *Cartes du Népal dans les bibliothèques de Paris et de Londres* (Paris: Editions du Centre National de la Recherche Scientifique, 1973), should also be consulted. Although the catalog of maps it contains is exclusively of modern works, the “Aperçu historique sur les cartes européennes du Népal” (pp. 13–41) provides useful background on the ways the early Jesuits and later Europeans made use of Nepalis and Tibetans in producing their own maps.

99. Gurung, *Maps of Nepal*, 7 (note 98). I have omitted from this quotation Gurung’s notes to the following: Luciano Petech, *Mediaeval History of Nepal (ca. 750–1480)*, Serie Orientale Roma 10 (Rome: Istituto Italiano per il Medio ed Estremo Oriente, 1958), 182 and 188; and L. Boulnois, personal communication, 2 March 1981.

100. Clements R. Markham, ed., *Narratives of the Mission of George Bogle to Tibet and of the Journey of Thomas Manning to Lhasa*, Bibliotheca Himalayica, ser. 1, vol. 6 (1876; reprinted New Delhi: Mañjuśrī Publishing House, 1971), cxxxii. In fact, Hamilton’s account specifies no fewer than seven maps, though not all of them may have been deposited with the India Office; see Francis Buchanan Hamilton, *An Account of the Kingdom of Nepal and of the Territories Annexed to This Dominion by the House of Gorkha*, Bibliotheca Himalayica, ser. 1, vol. 10 (first published 1819; reprinted New Delhi: Mañjuśrī, 1971), 1–5.

101. Hamilton, *Account of the Kingdom of Nepal*, 2 (note 100).

102. Hamilton, *Account of the Kingdom of Nepal*, 3 (note 100).

103. Hamilton, *Account of the Kingdom of Nepal*, 4 (note 100).

from Kumaun, now in India, but part of Nepal from 1790 to 1815], with the assistance of Kamal Lochan. The same person gave me another map explaining the country, which extends some way west from the Sutluj [the river whose left bank marked the high-water mark of Nepali expansion].¹⁰⁴

The need for maps for political and military intelligence during this early period of British contact with Nepal was not felt by the British alone. Gurung cites a letter, dated Vikram 1864 (A.D. 1807), from the then ruler of Nepal, Bahādur Sah, ordering payment of 325 rupees to Kesav Gurung, a relative of the Nepali commander on the western front in 1806, “as a reward for drawing a map of Kangra,” now in the Indian state of Himachal Pradesh, toward which Nepal had launched an abortive military campaign.¹⁰⁵

The earliest of the surviving Nepali maps are those of the Hodgson collection presented to the India Office Library and Records, London, in 1864. These were collected or, in large part, commissioned by Brian Houghton Hodgson, who lived in Nepal from the time of his appointment as assistant resident in 1820 until 1844, being promoted to acting resident in 1829 and resident in 1833. “Hodgson was an indefatigable collector, and wrote voluminously on all matters connected with Nepāl.”¹⁰⁶ Although the portion of his vast collection of papers that is in English has been reasonably well studied and was cataloged in 1927, the portion in Nepali and other indigenous languages has yet to receive similar treatment.¹⁰⁷

The several dozen vernacular maps in the Hodgson collection, though diverse in the matters they relate to, are alike in several particulars: all are drawn in either pencil or ink or both on paper; all, or virtually all, are crudely executed; and all presumably date from Hodgson’s years in Nepal. In size, they fall within a fairly narrow range, being drawn on pages varying in height from approximately nineteen to forty-five centimeters and in width from sixteen to fifty-eight centimeters. However, several maps comprise two or more pages pasted together or drawn with a view to being joined later. The principal differences among the maps are summarized in appendix 17.2. For the sake of completeness, I have included in this appendix some maps that were almost certainly drawn or annotated by non-Nepalis, judging from the languages used, which in a number of instances were either Tibetan or Persian or both. To what degree the English patronage and other foreign influences—especially those of *dobāshīs* (translators) and clerical staff in the employ of the English—might have shaped the style of the maps cannot yet be stated with certainty. Some *dobāshīs* may well have been Nepalis educated during a period of British military service. It seems, however, that many of the maps are sufficiently distinctive and tradi-

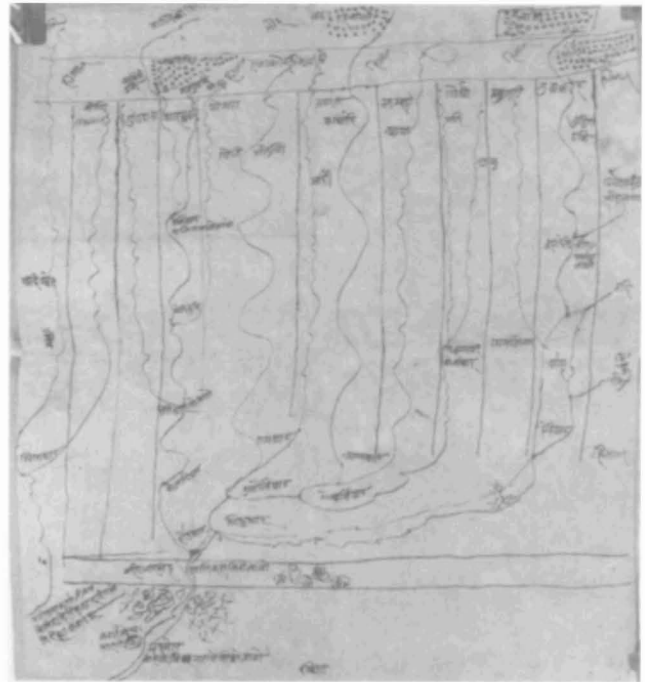


FIG. 17.26. CENTRAL NEPAL. This map covers an area of roughly 250 miles east-west and 70 miles north-south between the Himalayas and the Mahabharat Lekh, a range of hills bordering the North Indian Plain. It is ink on paper, from Nepal, ca. 1835–40.

Size of the original: 42 × 38 cm. By permission of the India Office Library and Records (British Library), London (Hodgson MS., vol. 56, fols. 59–60).

tional to warrant brief consideration here.

I have chosen to illustrate only two maps from the Hodgson collection. The first, figure 17.26, is an ink sketch that covers a rather extensive area of Nepal from just west of Kathmandu westward roughly 250 miles to the Karnali River valley and from the Himalayas, marked by a pair of horizontal lines near the top of the map, to the Mahabharat range, marked by another such pair of

104. Hamilton, *Account of the Kingdom of Nepal*, 5 (note 100).

105. Gurung, *Maps of Nepal*, 9 (note 98). For details of Nepali expansion in the late eighteenth and early nineteenth centuries and the Anglo-Nepali wars of 1815 and 1816, see Joseph E. Schwartzberg, ed., *A Historical Atlas of South Asia* (Chicago: University of Chicago Press, 1978), pl. VII.A.2, esp. map d, and text on p. 212.

106. George Rusby Kaye and Edward Hamilton Johnson, *India Office Library, Catalogue of Manuscripts in European Languages*, vol. 2, pt. 2, *Minor Collections and Miscellaneous Manuscripts* (London: India Office, 1937), 1063–64. It is interesting that Gurung makes no mention of the Hodgson papers, nor does he note the map cited by Wilkins and several other Nepali maps that I shall be discussing.

107. For the observations that follow on the maps in the Hodgson Collection, I am grateful for the assistance of Michael Hutt of the School of Oriental and African Studies, University of London, who has prepared a preliminary, as yet unpublished, catalog of the Nepali materials. Additional assistance was rendered by Champaka Prasad Pokharel, a graduate student at the University of Minnesota, Minneapolis.



FIG. 17.27. ADMINISTRATIVE/CADASTRAL MAP OF A PORTION OF WESTERN NEPAL. This map shows the boundaries of administrative districts, names their governors, states the sources of revenue to be collected in each district, and notes the authorities to whom that revenue is to be distributed. It is ink on paper, from Nepal, ca. 1830–40. Size of the original: 56 × 48 cm. By permission of the India Office Library and Records (British Library), London (Hodgson MS., vol. 59, fols. 25–26).

lines near the bottom. As the true north-south distance between the two named ranges averages only about 70 miles, and since the map area between them is roughly square, the east-west scale on this map is compressed to less than a third of that from north to south. This accounts for the narrow named regions between the mountain spurs indicated by straight vertical lines extending south from the Himalayas. Also named on the map are the rivers between these mountain spurs, the Gandak (here called the Saligrama) being most prominent. Among the features of the map that suggest its traditional concerns are the prominence given to Latarameswar temple near the southwest corner, not far from the place where the Gandak enters the Tarai Plain, and to the sacred Gosain Lake near Kathmandu on the east, and the seemingly de rigueur inclusion of Lhasa, plotted incorrectly nearly four hundred miles to the southwest of its true position and shown by the rectangle near the upper right corner of the map. The floral embellishment midway across the Mahabharat range provides another interesting map element whose significance is problematic.

Figure 17.27, the second example from the Hodgson papers, is one of a series of cadastral maps (fols. 25–50) extending from west to east across the whole of Nepal. In each map is indicated a number of *zillas* (districts), and within each *zilla* there is a rough indication of the amount of land revenue the area was responsible for. The revenue figures are broken down according to source (e.g., taxes on rice land, taxes on other lands, labor to be performed in lieu of taxes), and intended recipient (e.g., local governors, royal treasury). Additional topographic information (e.g., rivers, mountain crests) seems to be kept to a minimum, being provided only where it helps establish a *zilla* boundary. Along the district boundaries are notes stating the names of the adjacent districts in each direction. Curiously, the name of a particular district does not appear within the boundaries of the district itself but must be inferred from the notes along the boundaries of neighboring districts.

The series is thought to date from either the 1830s or the early 1840s. An interesting feature of this set of maps is that folios 25–40 and 49–50 are oriented with north at the top, whereas folios 41–48, beginning with the sheet for Kathmandu and proceeding eastward, are oriented toward the east. Another point of inconsistency within this series is that folios 38–40 are in Persian rather than Nepali. This suggests that the series was made at the behest of the British and was drawn up by an ethnically mixed staff of employees; any work commissioned by the Nepali government for its own use would surely have been entirely in the Nepali language. There seems to be little attempt in the series to maintain a constant scale or any high degree of planimetric fidelity. Whether the series covers all of the higher Himalayan regions of Nepal or of the southern lowland Tarai fringe has not been determined.

Gurung's monograph notes only two surviving nineteenth-century maps that remain in Nepal. One, a *pouba* (scroll painting) in the National Museum of Nepal, Kathmandu, covers an attenuated east-west tract in south-eastern Nepal as indicated on figure 17.7. The map, measuring 84 centimeters from north to south and 495 centimeters from east to west, is beautifully illustrated in color on six successive pages of *Maps of Nepal*.¹⁰⁸ The enlarged detail in figure 17.28, whose precise locality I have not ascertained, represents less than 1 percent of this very detailed and attractive work. The map is said to have been begun on a Nepali date corresponding to February 1860. There is no indication of when it was finished. Gurung describes the *pouba* as follows:

The map covers parts of [the] Mahabharat Lekh,

108. Gurung, *Maps of Nepal*, 10–15 (note 98). Although the reproduction is quite clear, all six pages are reversed (left to right) owing to a printing error.

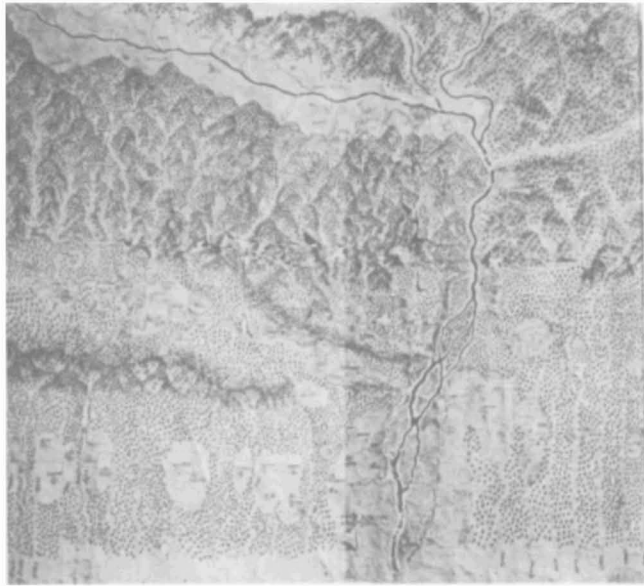
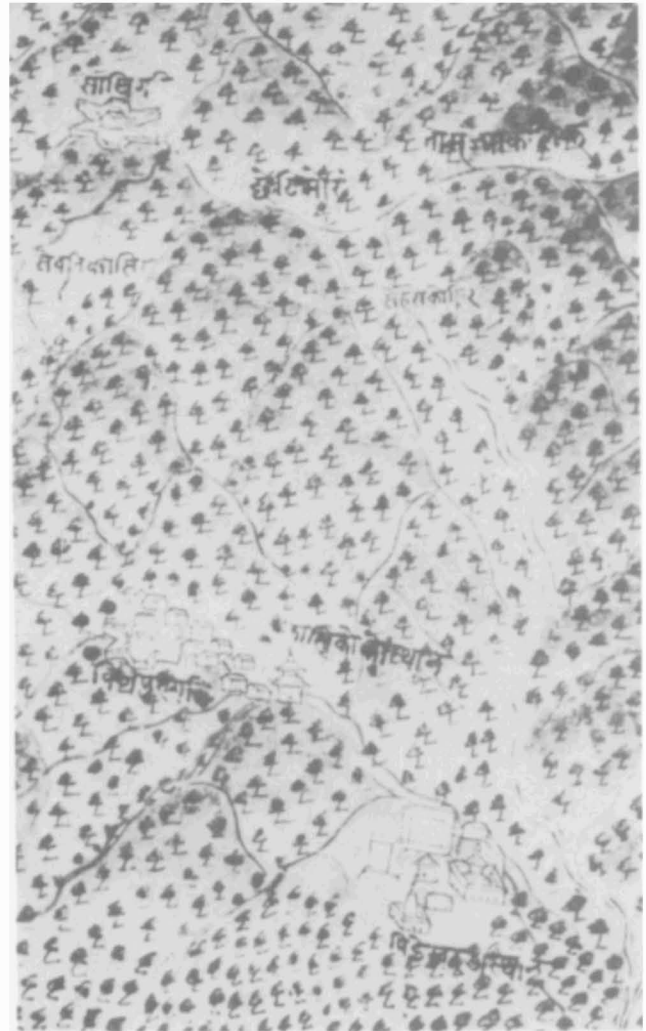


FIG. 17.28. EXCERPTS FROM TOPOGRAPHIC MAP OF SOUTHEASTERN NEPAL. These are small portions of a long scroll map, begun in 1860, that is painted on paper and backed with cloth. The detail on the right shows the artist's meticulous attention to detail. For the area of coverage of the inclusive work, see figure 17.7.

Size of the entire scroll: 84 × 495 cm. From Harka Gurung, *Maps of Nepal: Inventory and Evaluation* (Bangkok: White Orchid Press, 1983), figs. 3 and 4. By permission of the National Museum of Nepal, Kathmandu.

Chure range and Tarai tract between Hetauda and Morang. Forest areas are shown with trees in green, rivers in blue with their names at the lower margin. Routes are shown in red with staging-points and other cultural features such as settlements, [and] religious sites and forts are pictorially represented in black and white. . . . [Despite] the basic structure of a macro ground plan, the hills are drawn in profile while natural features like trees and all cultural features are drawn in terrestrial perspective. The composite mosaic of individually painted trees gives an impression of dense forest both in the hills and Tarai wherein settlements and cultivated areas appear as discontinuous pockets. The Tarai landscape is well-distinguished between forest area and grassland east of the Kosi River. Although houses both in the hills and plain are given in a uniform symbol of a single-storeyed hut to represent settlements, fort representation is more realistic and individualistic. For example, Makwanpur has separate complexes of a walled fort and another walled camp, Udayapur has [a] quadrangle-cross plan while Hariharpur, Chaudandi, Sanguri and Bijayapur all have a hexagonal plan. Such details regarding fortifications and reference to mileage between staging-points suggest that the map was prepared for military purposes.¹⁰⁹

All in all, though not yet a modern work, this map clearly appears to have been strongly influenced by Nepali con-



tacts with the British, which by 1860 had become quite close.

The one remaining nineteenth-century map described by Gurung is a rectangular (92 × 118 cm), multicolored map of Patan district in the Vale of Kathmandu. It has been designated "Kathmandu no. 57" and may thus be the sole surviving example of a map series—not necessarily finished—of the period about 1879–84 when it was made. Although the map bears a square grid and includes compass rose, scale, legend box, and ruled borders, "the representation of elements in the landscape is of traditional style and perspective."¹¹⁰ For example, hills are shown in frontal perspective, and their summits generally point away from the observer as on all the traditional maps I have examined for the Vale of Kashmir. The orientation of the map as a whole, however, is to the north, as it is for the *pouba* map previously described. The map

109. Gurung, *Maps of Nepal*, 9 (note 98).

110. Gurung, *Maps of Nepal*, 9 and 16 (note 98).

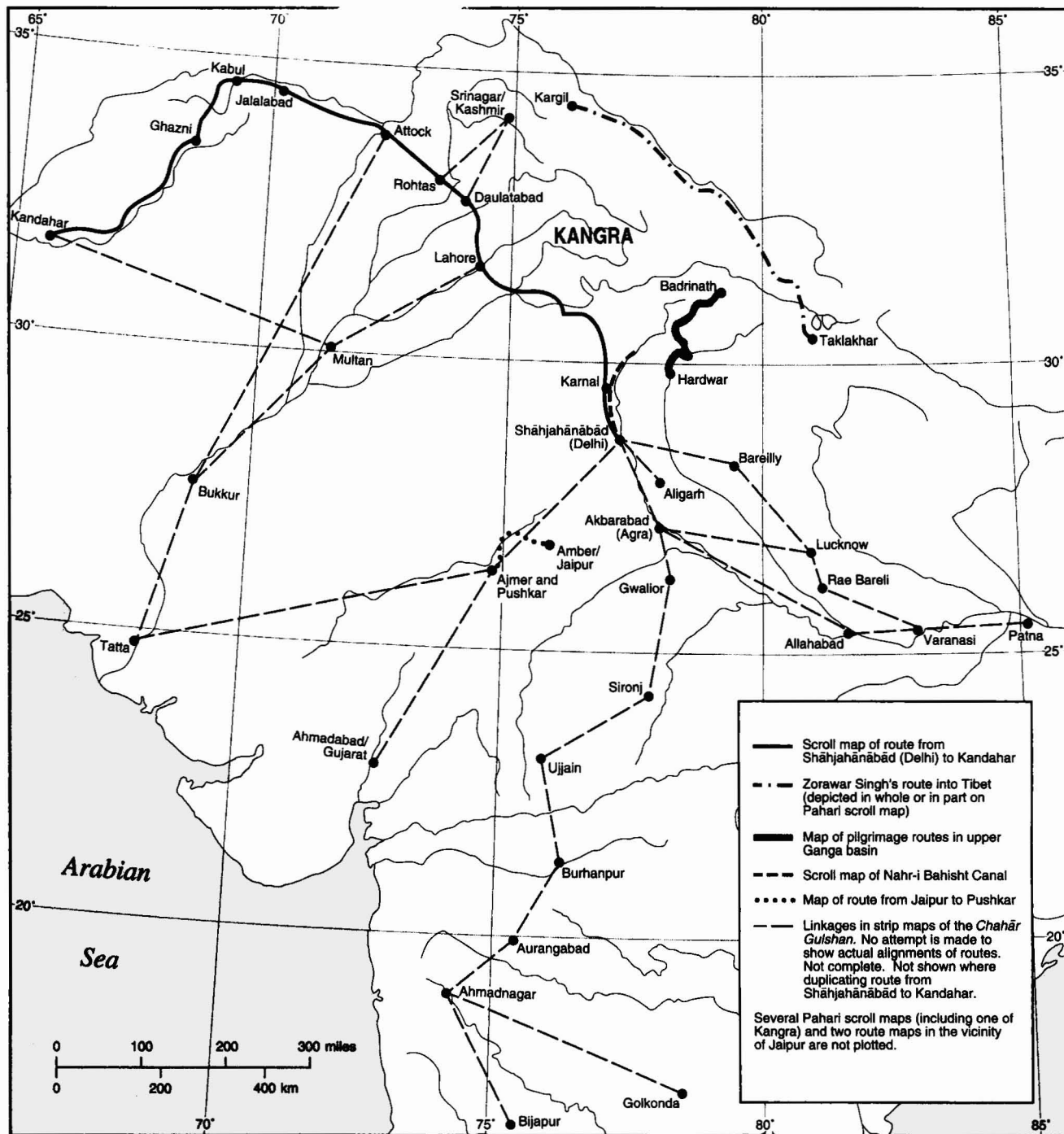


FIG. 17.29. ROUTES DEPICTED ON SELECTED SOUTH ASIAN ROUTE MAPS.

is at a rather large scale—probably averaging between 1:15,000 and 1:20,000—and quite detailed, covering an area not larger than several hundred square kilometers.

Finally, let me note the map illustrated by Sylvain Lévi in his classic work, *Le Népal*. Although described by Lévi as “une carte indigène”—and thereby used by him to raise some rhetorical questions about Nepali cartography—this map, like the two previously discussed, is obviously an

eclectic production.¹¹¹ Quite likely it was made expressly for a Mr. Minayeff, professor of Sanskrit at the University of Saint Petersburg, who visited Nepal in 1875 and there collected a large number of manuscripts.¹¹² It was Minayeff who turned the map over to Lévi. The map covers

111. Sylvain Lévi, *Le Népal: Etude historique d'un royaume Hindou*, 3 vols. (Paris: Ernest Leroux, 1905–8), 1:72 and map on facing page.

112. Lévi, *Le Népal*, 1:144 (note 111).

the whole of the Vale of Kathmandu (see fig. 17.7), but nothing beyond the Vale. It is a moderately detailed production showing the principal settlements by neatly drawn circles, several rivers by bands of varying widths, roads by thin lines (with what appear to be distance markers alongside them), and a variety of major government buildings, temples, bazaars, and so forth. The mountain crest surrounding the Vale is rendered in a fashion that one might have found on some nineteenth-century European maps. Lévi offers no verbal description or explanation of the map, but he does provide a numbered transparent paper overlay and a key to forty-one mapped features.

ROUTE MAPS

Under the designation “route maps” I here consider a variety of geographical maps, most of which are in strip form. Such maps relate not only to roads but also, in a few cases, to canals and river courses. Only maps whose coverage extends beyond a small locality (e.g., a single street of a city) are discussed in this section. The routes depicted on some of these maps are shown on figure 17.29.

Among the surviving route maps, the most wide ranging constitute a collection in a work entitled the *Chahār Gulshan* (Four Gardens, also *Chitr Gulshan/Tārikh-i Nīk Gulshan*); several manuscript copies are known to exist in various libraries and museums. The text is a “compendium of Indian history and geography, originally compiled by Ray Chaturman Kāyat’h in 1173/1759–60,” rearranged and edited by his grandson in 1789, and written in Persian in the Nastaliq script.¹¹³ The author’s name indicates that he was a Hindu of the scribal caste of Kayasthas; many of them found employment in the administrative services of the Muslim rulers of India and not a few, incidentally, have become cartographers since India gained its independence in 1947.¹¹⁴ According to Gole, who illustrates and provides a detailed account of the contents of all twelve map pages of the Aligarh manuscript, “the topographical notices were mainly taken from the *A’in-i Akbari* [Institutions of Akbar], with additional information from other works.”¹¹⁵ Figure 17.30 depicts folio 104r, of the 1825 transcription of the manuscript in the National Museum in New Delhi along with a translation of the information on the original. The simplified rendition of many routes covered, as shown in figure 17.29, is also taken from that manuscript, whose pagination differs from that in Aligarh.

The cartographic signs of the *Chahār Gulshan*, though simply rendered, seem sufficient to satisfy the main purpose of the text—to provide a general sense of the places and obstacles (mountain ranges and rivers) along various overland itineraries. The manner of presentation is essen-



FIG. 17.30. A PAGE FROM THE *CHAHĀR GULSHAN*. This is an encyclopedic work on paper originally composed in 1759–60. It names and notes the relative importance of stages along several routes in the Deccan and shows rivers and hill ranges to be crossed. The terminal points along some of the routes are shown in figure 17.29. However, none of the places named in the lower half of the right-hand column could be located on a modern map. Size of the original: 34.6 × 17.3 cm. By permission of the National Museum, New Delhi (MS. 688, fol. 104r).

113. M. H. Razvi and M. H. Qaisar Amrohvi, comps., *Catalogue of Manuscripts in the Maulana Azad Library, Aligarh Muslim University*, vol. 1, pt. 2 (Aligarh: Maulana Azad Library, Aligarh Muslim University, 1985), 252–53. I thank Irfan Habib for bringing this manuscript to my attention.

114. A member of this caste who worked for me over a period of years was the first of many from that group from a single village in Uttar Pradesh who have joined Indian government service as cartographers since about 1953.

115. Gole, *Indian Maps and Plans*, 91–93, esp. 91 (note 1).

tially that of the strip maps that various automobile clubs provide their members for planning and executing specified point-to-point journeys. Occasionally two alternative routes between points are noted. Here and there certain folios give special prominence to important features or places (as in the separate side-by-side designations of the city and fort of Ahmadnagar in the right-hand column of fig. 17.30). On at least five folios there are also lists of distances in *kos* from one important place to a number of others even when the road itineraries are not provided. The major places in question include Akbarābād (Agra), Shāhjahānābād (Delhi), Lahore, Kabul, and Multan. There are also occasional historical notes (e.g., “Aurangabad’s first name was Kirkee and it is now famous as Khujastabunrad”).

Much more detailed than the *Chahār Gulshan* are two route maps executed on long scrolls that relate to the itinerary from Shāhjahānābād to the Afghan city of Kandahar via Lahore and Kabul. Both are at present in the India Office Library and Records. One of the scrolls, made of cloth, is approximately twenty-five centimeters by twenty meters; the other measures about twenty centimeters by twelve meters. The former (I.0.4725) is said to have been “drawn up by Maulavī Ghulām Qādir, who accompanied [Lord Mountstuart] Elphinstone to Kandahar in 1841 [*sic*, should read 1814]”; the latter (I.0.4380), seemingly copied from the former (or vice versa), has no attribution of authorship and is dated “mid-19th century.”¹¹⁶ However, Gole, who has illustrated and commented at length on the entirety of the cloth scroll and also studied the other, asserts that on the basis of “internal evidence” the maps “are from an earlier period, . . . but may have been presented to Elphinstone at Kandahar, perhaps by Qulam Qadir.” She concludes that “one or both of them may well have been drawn between 1770 and 1780.”¹¹⁷

Plate 32 represents two small portions of the cloth scroll map and will convey some sense of the variety and detail of the features they depict: the towns, forts, and sarays along the route; notes on villages and towns that may be reached by roads branching off from the main road; the rivers, hills, and mountains it traverses and parallels; the natural vegetation close to the route and also as seen on the horizon; wayside gardens and groves; and the regularly spaced *kos minar* (stone monuments built at approximately two-mile intervals along much of the route to mark off distance). Differences in vegetation type as one moves from more to less arid regions are easily discerned, and there is also a differentiation in the ruggedness of mountainous terrain. The use of color on the scrolls shows a definite concern for convention: the walls of virtually all settlement and architectural features are in red; city gates are rendered in purple; various greens and a bit of yellow are used naturalistically to show veg-

etation; hills are done in a pink wash, with gray added for shading (generally seen as if illuminated from the southeast); and yellow lines along roads give them added emphasis.¹¹⁸

In a style quite different from the India Office Library and Records maps are four other scrolls from India’s northern mountain rim. One of these, which I have not seen, was sold in April 1989 by the London auction house Sotheby’s to a private individual. The work is painted on paper, measures 63 by 228 centimeters, and has text in the Devanagari script. The catalog description, accompanied by a photograph of a small portion of the work, reads in part as follows:

A bird’s-eye view of a Hill Fort and town, probably Kangra, showing the walls and fortifications enclosing barracks and encampments, rivers running on either side to join below the fort, the town located in two areas up the valley, showing temples, tanks and domestic buildings, hilly terrain on all sides with a few buildings and temples, Pahari, later eighteenth or early nineteenth century. . . .

Indian bird’s-eye views of this type are rare. Their production under both Mughal and Rajput patronage in the eighteenth and nineteenth centuries took place after the advent of European draughtsmanship and cartography.¹¹⁹

The view appears to be a longitudinal representation of an inner Himalayan valley in what is now the Indian state of Himachal Pradesh. It is conceivable that the work in question is the map of Kangra commissioned by the Nepali Bahādur Sah for the military campaign of 1806 (mentioned above), but the validity of any such surmise would hinge in part on the interpretation of the regional style of painting. The word *Pahari* (of the mountain) is not especially enlightening in this regard.

The remaining Himalayan scroll maps are now at the Bharat Kala Bhavan in Varanasi, accession numbers 6830,

116. Quotation from catalog cards in the India Office Library and Records, London.

117. Gole, *Indian Maps and Plans*, 94 (note 1). Gole’s reasoning is as follows: “At the town of Patiala there is a note that it is the residence of Raja Amar Singh. The fort had been built by Amar Singh’s predecessor, Ala Singh, the first raja (died 1765), and if it were to retain a name long after the death of the holder, one would expect it to be Ala Singh who was remembered. This argues in favour of the map being prepared while Amar Singh actually had his residence in Patiala, and not many years after his death. There is mention too of Burhan-ul-mulk, the first Nawab of Oudh, who lived in the first half of the 18th century. The maps cannot have been made earlier than the 1760s, because they mention so many serais that have fallen into ruin, and this must have happened during the turbulent years of the 60s.”

118. In addition to the route maps discussed, there are, according to Irfan Habib of Aligarh Muslim University, additional examples in the Inayat Jang collection in the National Archives of India in New Delhi (personal communication).

119. Sotheby’s, *Oriental Manuscripts and Miniatures*, catalog of sale, London, 10 April 1989, lot 94, pl. 27.

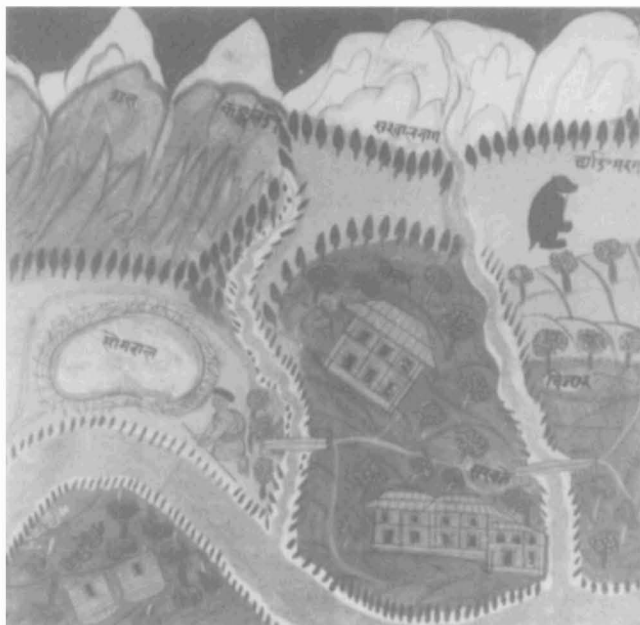


FIG. 17.31. DETAILS FROM A PAHARI SCROLL PAINTING. This mid-nineteenth-century scroll on paper depicts a route along a major river valley, possibly the Sutlej or the Beas, in what is today the Indian state of Himachal Pradesh. In the upper panel traders may be seen ascending and descending a steep mountain along the route. The lower panel shows some of the variety in the cultural landscape the route traverses. In this and other scroll paintings mountains, trees, houses, and people are shown as viewed from the central route. A single house with an accompanying name may represent an entire hamlet, several houses a village. The tame bear in the upper right is one among scores of charming touches illustrating the folkways, fauna, and flora of the region depicted. Size of the entire scroll: ca. 55×600 cm, but now in many pieces. By permission of Bharat Kala Bhavan, Varanasi (acc. no. 6831).

6831, and 6832. Of these, the first relates to a military expedition of General Zorawar Singh of Bilaspur, also in Himachal Pradesh, who entered the service of the Kashmiri Dogra ruler of Jammu and in 1840 led an abortive invasion from Ladakh into Tibet. Chandramani Singh, who has written extensively on Pahari painting, says of this work:

This scroll is a map as well as a scroll painting, full of compositions from battlefields: the army is marching in the valley, frightened *lāmās* are sitting with their folded hands in a corner, soldiers are burning the fort. Although, the battle scenes dominate the scroll, skilled artists did not miss a single chance of showing the social and religious life in that area, which is evident in the illustrations of *lāmās* worshipping in the temple, [and of] farmers ploughing their fields.¹²⁰

Singh dates the painting about 1850, based on the date of the expedition, the artist's use of aniline dyes in his paint (introduced into India about 1825), and the styles of dress of the characters it portrays. Regrettably the map, for which Singh gives the dimensions as 51.5 by 930 cm, was improperly assembled from nine separately painted panels, so that it is now difficult if not impossible to relate the several parts of it to the terrain actually traversed by Zorawar Singh.¹²¹ But like the painting discussed earlier, this scroll portrays a long valley, presumably that of the upper Indus, flanked on both sides by snowcapped mountains shown in frontal perspective as seen from the valley floor. Among the places named is the Ladakhi fort of Kargil. Figure 17.31 presents two small excerpts from another of the Pahari scroll paintings in the Bharat Kala Bhavan. It too shows a route along a river valley, presumably in Himachal Pradesh. The work is suffused with charming details of the bucolic outer Himalayan land-

120. Chandramani Singh, *Centres of Pahari Painting* (New Delhi: Abhinav Publications, 1981), 114–15, esp. 115, and fig. 70. See also her “Two Painted Scrolls from Bharat Kala Bhavan,” *Rhythm of History* (Journal of the Institute of Post-Graduate Correspondence Studies, University of Rajasthan) 3 (1975–76): 49–52 and plate; and Gole, *Indian Maps and Plans*, 132–34 (note 1). Gole provides nine photographs of this work, and the two articles by Singh each include one.

121. Singh, “Two Painted Scrolls,” 49 (note 120), and Singh, *Pahari Painting*, 115 (note 120). There seems to be considerable confusion in regard to the storage of the three paintings, each consisting of a number of panels. When I ordered a complete photograph of no. 6830 (measuring 930×51.5 cm according to Singh), I was sent (in twenty-six separate photographs) what appears to be, based on comparison with a photograph in Singh, “Two Painted Scrolls,” complete coverage of no. 6831 (whose dimensions Singh gives as 607.5×55.3 cm). Similarly Gole, who also requested photographs of the campaign of Zorawar Singh, was sent another completely different set, nine photographs that were published with the appropriately skeptical heading “[March of Zorawar Singh?]” (Gole, *Indian Maps and Plans*, 132–34 [note 1]). Presumably this set represents no. 6832. The terrain depicted does not appear to be Tibetan, and none of the scenes portrays a military campaign. The area shown is probably somewhere in Himachal Pradesh.

scape and merits study for its vivid depiction of the people and settlement of the area covered. It seems likely, espe-



FIG. 17.32. EXCERPT FROM MAP OF THE NAHR-I BAHISHT IRRIGATION CANAL. The map is Mughal, ca. 1760, painted on paper and mounted on cloth, with text in Persian. This small section of the map relates to the area not far from where the canal takes off from the Yamuna River. Distances along the canal are greatly foreshortened in comparison with those leading away from it. To the left of the canal the domed building is identified as the mausoleum of Bhu Ali Qalander, and just below it is the town of Karnal now in Haryana. Various distributaries, weirs, and a bridge (at bottom of photograph) are also depicted. Animals, fish, flowers, and trees decorate spaces for which there was no information to be plotted. Size of the entire scroll: 1,250 × 43 cm. By permission of the Andhra Pradesh State Archives, Hyderabad. Photograph courtesy of Susan Gole, London.

cially in view of the unanticipated emergence of the painting sold by Sotheby's, that new Himalayan scroll maps will come to light. Singh states that "we may assume that similar landscape maps were painted . . . for official use."¹²²

A number of surviving route maps relate to engineering works. The most impressive among these was discovered by Gole in the Andhra Pradesh State Archives in Hyderabad. It relates to the Nahr-i Bahisht (Paradise) irrigation canal parallel to the Yamuna River that was originally built under the Tughluq dynasty and restored and extended by the Mughals during the first half of the seventeenth century under the supervision of the engineer 'Ali Mardān Khān, after whom it is sometimes called. Figure 17.32 presents a view of a small portion of this very long scroll map, illustrated in full and described by Gole, beginning with the village of Benawas, near the point where the Yamuna enters the North Indian Plain, and terminating at the Mughal capital of Shāhjahānābād.¹²³ The map itself has not yet been dated, though that task should not prove excessively difficult in that the map provides the names of the many magnates whose palatial mansions lined the banks of the Yamuna. Gole's initial study suggests a date of about 1760. Among other noteworthy features of this richly detailed map are that it names all the towns and villages close to the canal and, in square symbols, the administrative jurisdictions each was assigned to; gives the distances of each from the canal, in oval symbols; and depicts gardens, noteworthy buildings (e.g., major mosques and mausoleums), and canal-related constructions such as residential headquarters of the canal staff and the hundreds of minor distributary canals, bridges, and Persian wheels used to lift irrigation water out of the canal. Some of the illustration is purely decorative—for example, tigers, deer, flowers, trees, and fish in the spaces along the canal or in it.

Why the map was prepared is not known. Since it postdates the seventeenth-century restoration of the canal, one might conclude that it had no relation to irrigation planning. On the other hand, since the clogging of the canal in the latter half of the eighteenth century created a need to restore it anew, it is conceivable that the map was made with such an undertaking in view. As matters turned out, however, that task was not accomplished until after the British occupation of Delhi early in the nineteenth century.

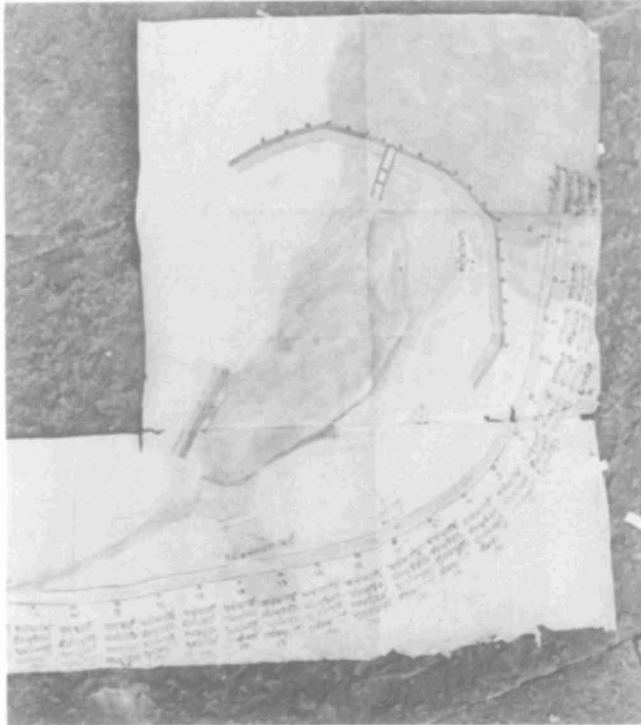
Two other eighteenth-century irrigation maps form part of the collection at the Maharaja Sawai Man Singh II Museum in Jaipur. One of these (fig. 17.33) relates to a large canal that was to bring water from a dam at Ramgarh (now in Alwar district of Rajasthan) to a reservoir near the new capital at Jaipur. Though it was never

122. Singh, "Two Painted Scrolls," 49 (note 120).

123. Gole, *Indian Maps and Plans*, 104–9 (note 1).

built, the plans for this work reveal a relatively sophisticated set of engineering specifications. Gole describes this work as follows:

a



b

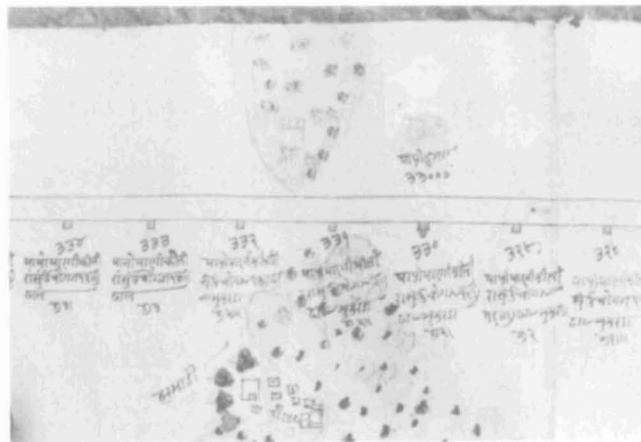


FIG. 17.33. DETAILS FROM MAP OF PROPOSED CANAL IN RAJASTHAN. Although the proposed canal the map was prepared for was never built, it provides a good insight into the engineering aspects such a project would have entailed. These two details show (a) the dam at Bhavasagar and (b) a view from along the proposed canal. Gole's description (quoted in text) provides the essential details. The provenance is Jaipur, eighteenth century. The map is on paper, with text in Dhundari. Size of the entire original: $23 \times$ ca. 1,800 cm. Courtesy of the Maharaja Sawai Man Singh II Museum Trust, Jaipur (cat. no. 65). Photograph courtesy of Susan Gole, London.

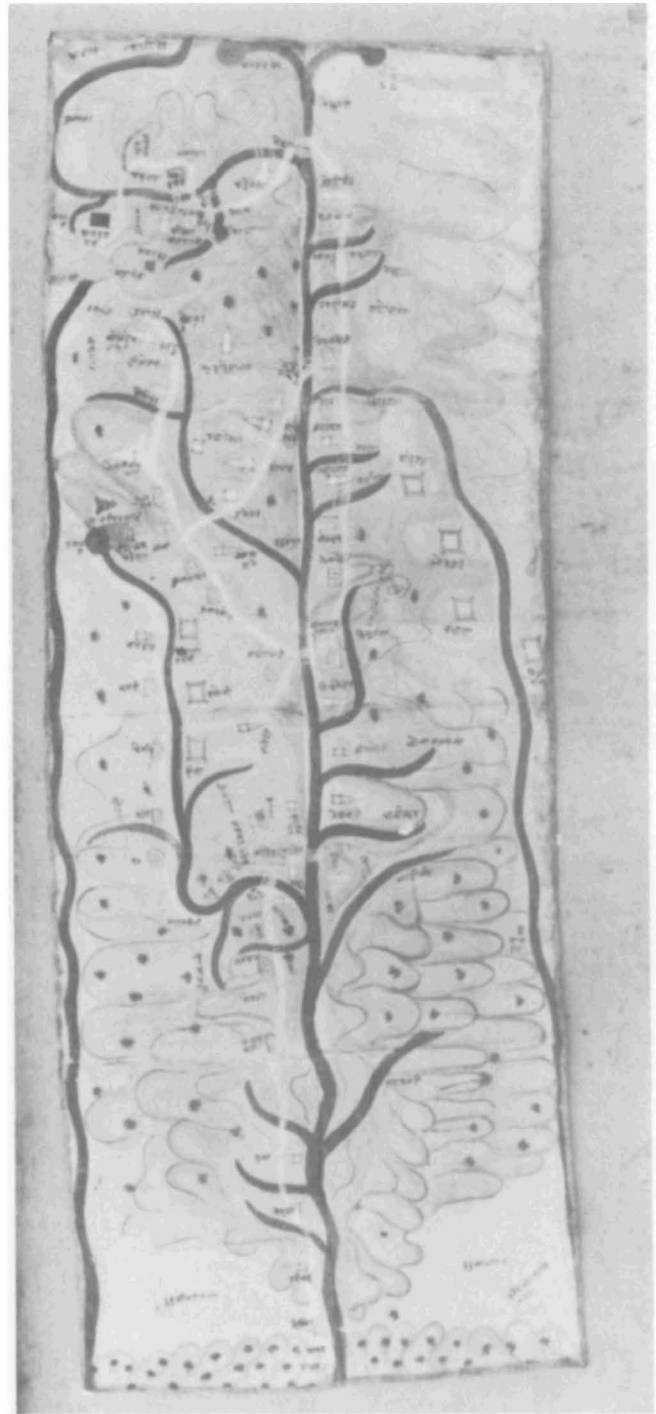


FIG. 17.34. PILGRIMAGE ROUTES ALONG THE UPPER GANGA VALLEY. This map extends from the present Indo-Tibetan frontier to where the Ganga meets the plain at Hardwar. The representation of the sacred Lake Manasarowar beyond the frontier is pro forma, since the distance of that lake from the areas depicted on the map is virtually as great as that otherwise covered by the map itself. The map, painted on paper with text in Hindi, is from Jaipur, early eighteenth century. Size of the original: 129×48 cm. Courtesy of the Maharaja Sawai Man Singh II Museum Trust, Jaipur (cat. no. 132). Photograph courtesy of Susan Gole, London.

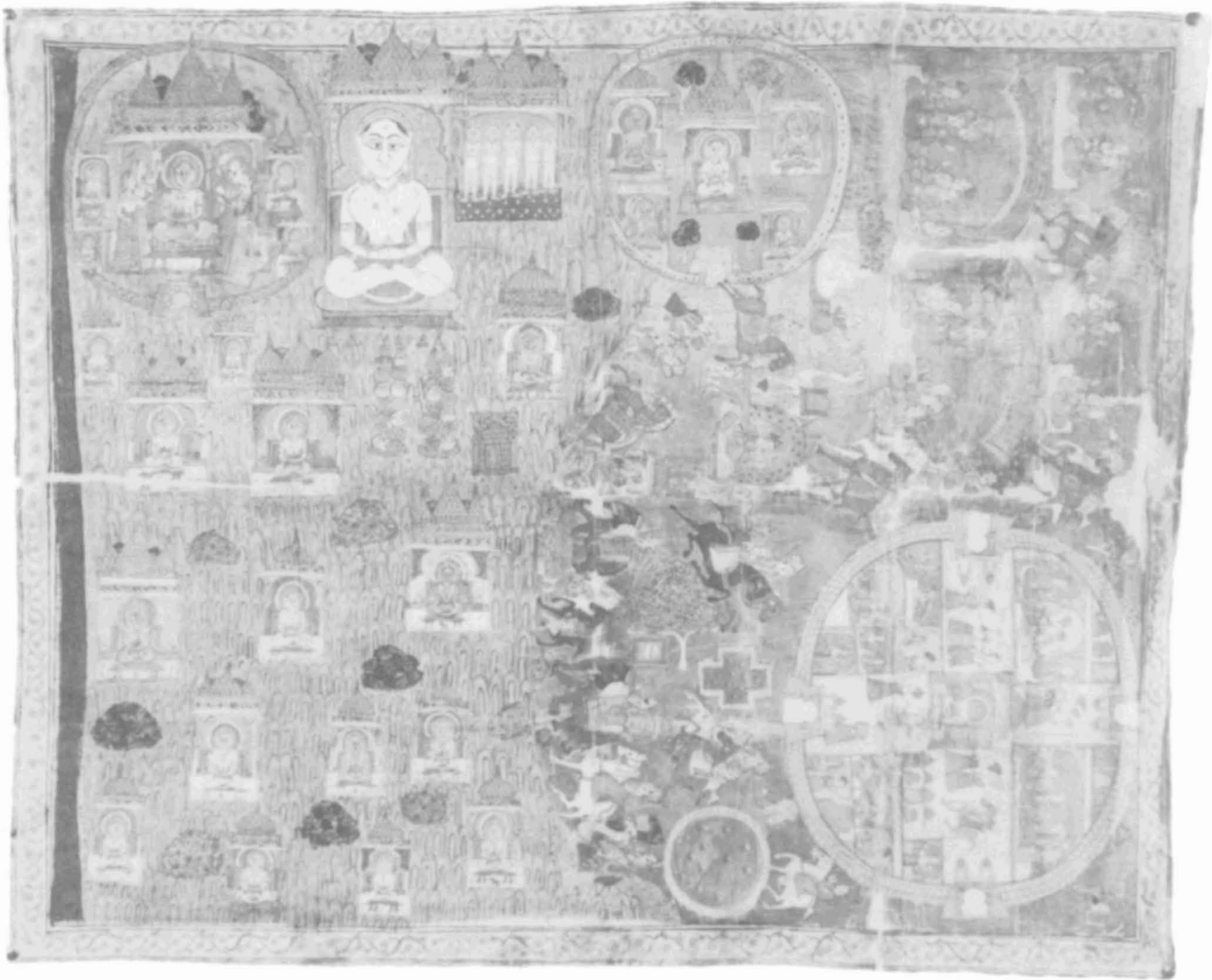


FIG. 17.35. MAP OF A JAIN PILGRIMAGE. This pilgrimage map is painted on cloth, comes from Gujarat or southern Rajasthan, and dates from the late seventeenth or early eighteenth century. The painting is colored in red, yellow, two shades of blue, white, light purple, black, and dark brown with a border

that is mainly yellow with a green and red vine motif. For details of map content, see figure 17.36.

Size of the original: 77 × 96 cm. By permission of the Brooklyn Museum (31.746).

A large canal was planned to be built from Bhavasagar dam at Ramgarh to the Darwati lake near Jaipur, to bring water to the new capital of Sawai Jai Singh. It was never built, but the detailed plans for it reveal how far the project was developed.

Three thousand pillars were to be erected to carry the channel at a regular height, and the distance between the pillars is given in a textual note. Pillars at 1000 gaz [a gaz equals approximately one yard] intervals are shown in red, and at 100 gaz intervals in yellow. Each pillar is numbered, and the height needed to raise the water is given, mostly between four and eight gaz. Villages on either side of the canal have been shown and named, and also the hills between which the canal must pass.¹²⁴

The second map shows a plan for a more limited irrigation project near the palace of Amber, involving the building of two dams and some associated canals. Though fairly detailed engineering specifications are noted for the dams, the map is on the whole relatively crude, perhaps intended as an initial planning aid. Apart from the features immediately associated with the irrigation works, the map shows the nearby hills, colored in mauve and covered with conventionally rendered forest symbols in green. Arguably, this large work (350 × 170 cm), covering an area approximately thirty-five kilometers from north to south, could be described as a

124. Gole, *Indian Maps and Plans*, 199 (note 1).

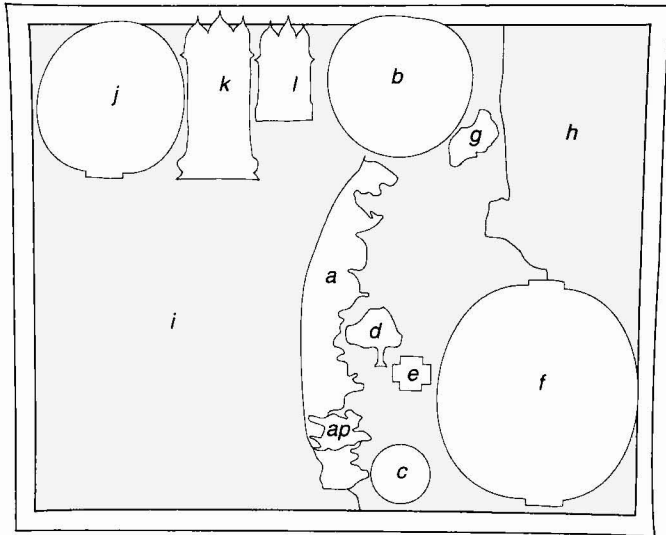


FIG. 17.36. KEY TO MAP OF JAIN PILGRIMAGE, FIGURE 17.35.

- (a) Party of Jain pilgrims. (Actual number was probably far more than those shown here; members of party depicted in subsequent portions of route are not indicated in this key.)
 (ap) The patron of the pilgrimage mounted on a white horse. (He appears at least nine more times in the right half of the painting and once in the upper left.)
 (b) Group of five Jain *tīrthaṅkaras* (preceptors).
 (c) Kuṇḍagāma, the city of birth of the *tīrthaṅkara* Mahāvīra (in Bihar).
 (d) The tree under which Mahāvīra took *dikṣā* (initiation).
 (e) The *samavasaraṇa* (place of first preaching) of Mahāvīra (in Bihar). (The order of visit to c, d, and e is not clear.)
 (f) Pāvā, the city of Mahāvīra's nirvana (in Bihar).
 (g) A Jain monk preaching a sermon seated under a tree.
 (h) Conference scene.
 (i) Sammetaśikhara (Parasnath Peak), in Bihar, where twenty of twenty-four *tīrthaṅkaras* are said to have died; fifteen, not all individually identified, are shown, along with mang and aśoka trees and piles of pots (symbols of luck).
 (j) Śatruñjaya (Shatrunjaya), in Gujarat, place of death of the *tīrthaṅkara* Rṣabha (tentative identification).
 (k) Unidentified *tīrthaṅkara*.
 (l) Five unidentified *tīrthaṅkaras*.

topographic map rather than a route map.¹²⁵

The Maharaja Sawai Man Singh II Museum in Jaipur also possesses several maps related to road construction, but only one of these covers a sufficiently large area to be considered here. It relates to a road from the vicinity of Jaipur to the pilgrimage town of Pushkar near the city of Ajmer, approximately 150 kilometers distant, allowing for the circuitousness of the route.¹²⁶ This map, like the second of the two Jaipuri irrigation maps I have discussed, might also be considered topographic. The remaining construction maps in the Jaipur collection, though not markedly different in style from the Jaipur-Pushkar route map, relate to rather localized areas and are therefore

best treated below in the section on large-scale maps.

Also among the Jaipur holdings is a route map that was undoubtedly made to assist pilgrims to the many sacred sites along the upper Himalayan regions of the Ganga and beyond. It begins at Hardwar, where the river enters the North Indian Plain and extends to the Tibetan frontier (fig. 17.34). Details of temples, towns, villages, bridges, and fords along the route and of tributaries to be crossed appear to be rendered with some concern for fidelity to the real world; yet at the uppermost limit the Ganga is depicted in conformity with Hindu myth. Rather than showing its source just south of the Himalayan crest, the river is shown as originating in Lake Manasarovar, within Tibet and roughly 150 kilometers farther east. Paths for pilgrims to follow are shown in white, and in places alternative routes are indicated. No path is shown as traversing the Himalayan crest and going on to Lake Manasarovar, however, even though intrepid pilgrims did occasionally undertake that hazardous journey. Mountains are depicted in a highly stylized manner, with a single tree on each, to suggest that they are forest covered. Gole, who illustrates this map and provides a more detailed view of its northernmost portion, notes that "at the top an attempt has been made to correct the wrong siting of Manasarovar too far to the left, and it has been replaced to the right."¹²⁷ Although the "correction" is of course an improvement in that it situates the lake somewhat closer to its true, more easterly position, it does not seem likely that the change stems from any desire to make the map conform accurately to reality in this quarter.

The final work to be discussed under the general heading of route maps also relates to pilgrimage (fig. 17.35). It is a painting executed in Gujarat or southern Rajasthan in the late seventeenth century or, more likely, the first half of the eighteenth and is at present held by the Brooklyn Museum. The painting bears no text, and its cartographic attributes are not readily discernible. Were it not for the incisive analysis of the work by W. Norman Brown, the late doyen of American Indologists, it would not have found a place in this study.¹²⁸ The iconography

125. The map is cat. no. 75; see Gole, *Indian Maps and Plans*, 194 (note 1).

126. The map, 200 by 123 centimeters, is cat. no. 19; see Gole, *Indian Maps and Plans*, 196 (note 1).

127. Gole, *Indian Maps and Plans*, 62 (note 1); the map is cat. no. 132.

128. William Norman Brown, "A Painting of a Jaina Pilgrimage," in his *India and Indology: Selected Articles*, ed. Rosane Rocher (Delhi: Motilal Banarsidass for the American Institute of Indian Studies, 1978), 256–58 and pl. XLVII; originally published in *Art and Thought: Issued in Honour of Dr. Ananda K. Coomaraswamy on the Occasion of His 70th Birthday*, ed. K. Bharatha Iyer (London: Luzac, 1947), 69–72 and pl. XIV. The Brooklyn Museum favors a southern Rajasthani provenance and assigns a date of about 1750.

of the painting links it to the Svetambara sect of Jainism, and it was evidently commissioned by a wealthy Jain patron of a large party of devotees to commemorate their pilgrimage to the principal *tirthas* of the faith. It is possible, however, in light of certain apparent errors and inconsistencies in the painting, that the anonymous artist was not himself a Jain. An unusual attribute of the painting is its division into two halves, each to be seen from a different perspective. The more important and livelier section lies to the right in the illustration and is to be viewed mainly from the left; the remainder is to be viewed from below. No reason for this rendition has been put forward. Figure 17.36 identifies the more important elements of the painting from a cartographic perspective, plus a few others by way of context. The right portion of the painting presents a scene of continuous action in which the figure of the patron (whom I have singled out only at the place of his first appearance) is portrayed no fewer than ten times in the company of various members of his retinue. (He appears one more time in the circle near the upper left corner of the work.) This patron “seems to have attached the greatest importance to visiting the scenes [all in Bihar] of the four great events in the life of Mahāvīra [a contemporary of Guatama Buddha and the principal *tirthankara* (preceptor) of the Jain faith]—birth, initiation, *samavasaraṇa* [first preaching] and *nirvāṇa*.”¹²⁹ It is also certain that the group went to Sammetaśikhara (Parasnath Peak), which occupies most of the left part of the painting and in which fifteen *tirthankaras* are depicted out of a total of twenty who are said to have died there. Additionally, depending on the accuracy of some of Brown’s tentative identifications, they may have visited Girnar and Shatrunjaya in Gujarat, both possibly represented in the circle in the upper left corner, as well as Campā in Bihar.

Large sponsored pilgrimages were an important element of the Jain religious tradition. Brown cites one, probably carried out in the thirteenth century, that allegedly included “4,500 carts, 700 palanquins, 700 carriages, 1,800 camels, 2,900 servants, 3,300 bards, 450 Jaina singers, 12,100 Śvetāmbaras, and 1,100 Digambaras [members of another leading Jain sect].”¹³⁰ He concludes that the retinue of the patron who commissioned the work under discussion was probably much larger than the number of individuals actually portrayed. Any sponsor of so large an undertaking could reasonably be expected to wish to memorialize his meritorious act. If so, we should not be surprised at future discoveries of additional pilgrimage maps from the principal areas of Jain influence.

LARGE-SCALE MAPS, PLANS, AND MAPLIKE OBLIQUE VIEWS OF SMALL LOCALITIES

Here I consider a wide range of large-scale maps, other

than architectural plans, that relate to relatively circumscribed localities and to periods from the mid-seventeenth to the mid-twentieth century. The principal criterion for inclusion is that the work portray an area small enough to be perceived by an individual, directly and more or less comprehensively, from personal experience and observation. Such areas will generally be no more than a day’s walk from end to end in any direction. Figure 17.37 shows the places in South Asia for which such works are known to exist and classifies the known corpus of works into a number of analytic categories. Given the large number of surviving works subsumed within the category of large-scale maps and plans, the following discussion is necessarily highly selective. For works that are not explicitly described in the following analysis, readers may obtain certain essential details from appendixes 17.3 to 17.7; each is arranged alphabetically according to the relevant locales indicated on figure 17.37.

MAPS OF SMALL, PRIMARILY RURAL LOCALITIES

Appendix 17.3 provides data on a group of eleven maps of small, primarily rural areas of India. These maps are of two general styles, both associated with their areas of origin, Rajasthan and Maharashtra. The seven maps in the Rajasthan group are all relatively detailed and provide a good sense of the landforms and vegetation of the areas they depict, along with major settlements and other cultural features. Six of the seven maps, including all three maps of the locality around Khiri (somewhere in the general vicinity of Jaipur), relate to actual and planned works of construction and were presumably made by the Imārat Kārkhāna, the agency of the Jaipur state government concerned with building and construction in general. One such map, for example, shows the plans for constructing various amenities to serve pilgrims traveling to Lohargarh, a sacred place in the vicinity of the small town of Khandela to the northwest of Jaipur.¹³¹ The localities covered by the maps listed in appendix 17.3 generally appear to be less than twenty-five square kilometers, but the map of the area around Amber is probably at least ten times as large. Since I have not been able to locate the areas covered on some of the maps and could not determine the general alignment of features on those maps whose general locales I do know, it is impossible to specify any general rule with regard to their orientation.

129. Brown, “Jaina Pilgrimage,” 258 (note 128).

130. Helmuth von Glasenapp, *Der Jainismus: Eine indische Erlösungsreligion* (1925; reprinted Hildesheim: Georg Olms, 1964), 440, cited in Brown, “Jaina Pilgrimage,” 257 (note 128).

131. This work is illustrated and described in Gole, *Indian Maps and Plans*, 204 (note 1).

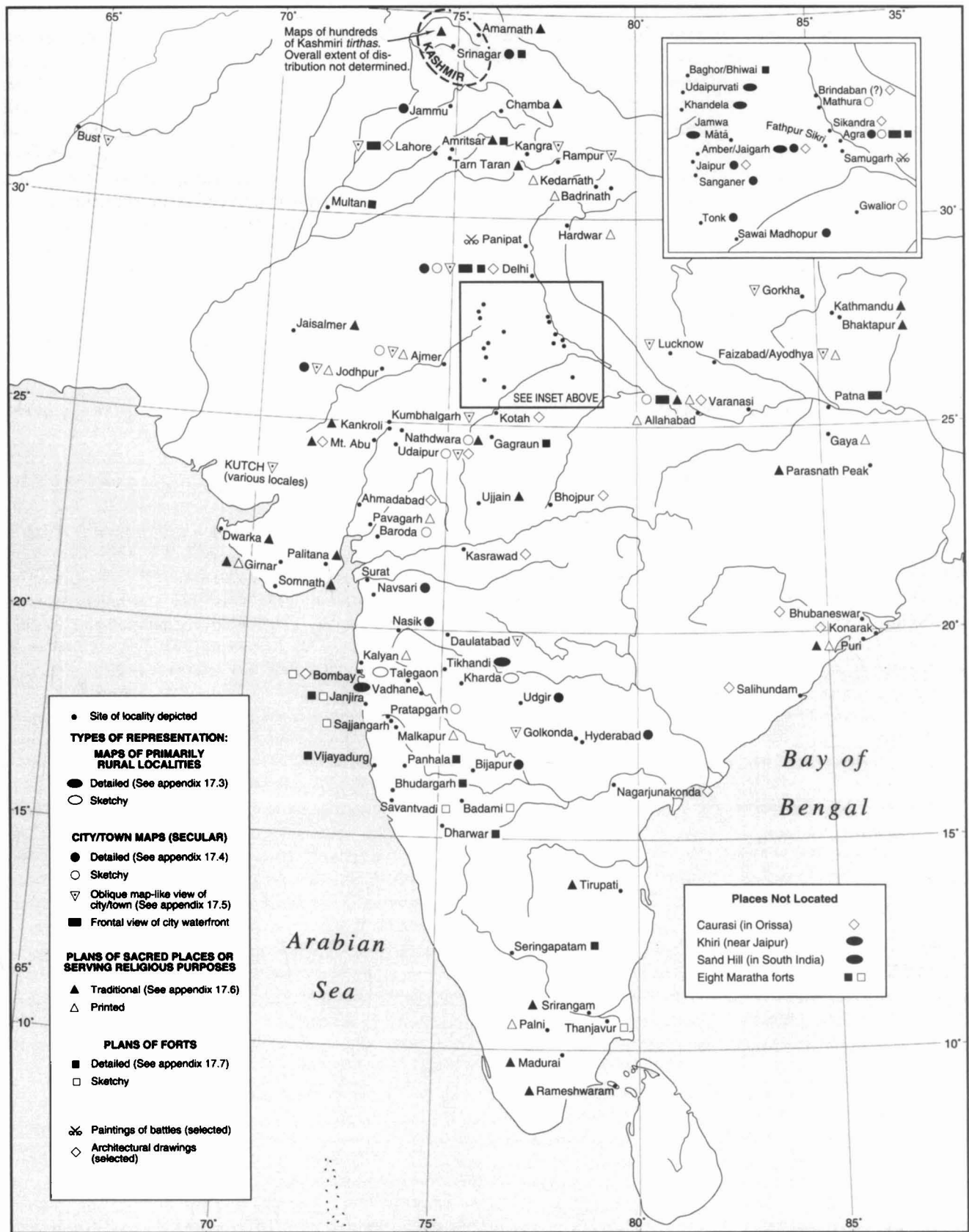


FIG. 17.37. PLACES DEPICTED ON LARGE-SCALE MAPS, PLANS, AND MAPLIKE OBLIQUE VIEWS OF SMALL AREAS AND LOCALES OF SELECTED ARCHITECTURAL DRAWINGS.

The four Maratha maps are more crudely drawn ink sketches. Two of these are of the areas of battles the Peshwa army took part in. Although those battles were significant, they were not among the most important of the numerous military engagements the several major branches of the Maratha Confederacy had with neighboring Indian states, with the British, and occasionally with one another. Thus, one might reasonably suppose that many more battle maps were made in the late eighteenth and early nineteenth centuries and subsequently lost.

The two Maratha village maps I have seen, though stylistically similar, have significant differences deriving from the fact that one predates British penetration of the region it comes from, whereas the other was made after that region was annexed. These maps, drawn in ink on paper, were photographed, translated, and brought to light by Frank Perlin of the Instituut Kern in Leiden. The earlier map (fig. 17.38), of a type Perlin believed was “comparatively rare,” is of the village of Vadhane in the eastern part of Pune district in Maharashtra. It dates from the year Fasli 1193 (ca. A.D. 1784) and is one of a set of two maps made eleven years apart (of which I have been sent only one) that were drawn up in relation to a land dispute. It is not clear whether 1784 is the initial or terminal year of the pair. In describing the map, Perlin notes that

the “whole” village is represented in respect to its actually owned and occupied lands, its settled portion (the rectangle in the centre), and tracks and neighbouring villages. The writing describes and names actual features and where relevant makes comments concerning social matters pertinent to the dispute. The modern survey map shows the village to be highly irregular in shape (by no means rectangular, or [even] four sided). It contains a large area of barren rock and pasture, which, however, is not represented in the diagram (although contemporary fiscal and survey documents do refer to them as residual categories).¹³²

The second map is of the village of Tinkhandi (now Tikhandi) in the district of Ahmadnagar, also in Maharashtra, and dates from the 1820s—that is, from the first decade of British occupation. As on the first map, the village area is here forced into a rectangular frame, though rather longer than the previous map, and there is little concern for the actual shapes of land parcels. Yet the map was “drawn up for the first East India Company attempts at conducting tax-related field and village surveys. Thus whereas the numbers in the first [map] refer to measurements, those in the second . . . are a first attempt to attach numbers to units of ‘holding.’”¹³³ Maps of the latter kind, says Perlin, are much more common than those of pre-British vintage; but both types, in his estimation,

indicate an accomplished mode of representing social space which must have been fairly generalized. . . . Actual field surveys are extremely common for the 18th century, with what looks like the surveyor’s notes sometimes accompanying the more formal listings. Maps, however, do not normally accompany them; nor would they appear to have been necessary . . . given highly effective modes of language [i.e., verbal]-reference to the bits and pieces composing the distribution of rights in a given place.¹³⁴

In concluding this discussion, let me draw attention to the resemblance between figures 17.38 and 17.27 (and all the others in the series of Nepali land revenue maps of which the latter is an example). Although the two revenue maps vary considerably in scale, are of areas hundreds of miles apart, and are separated in time by several decades, they are fairly similar in both appearance and purpose. This leads one to wonder whether Perlin’s observation about the “generalized” nature of the Maratha revenue maps he has studied might also apply to a much broader spatial and temporal frame than the evidence before us makes evident. Thus, even though land revenue maps may have been rare in pre-British days, when the exigencies of a given situation (e.g., land disputes) demanded that they be made, they may have conformed broadly to a widely used, if not a pan-Indian model—one that was perhaps inelegant but was satisfactory for the matter at hand. Further investigation is clearly warranted.

Certain Indian landscape paintings, especially of the eighteenth and later centuries, also have a distinctly map-like quality. One senses in looking at them that their creators sought to render the landscape with considerable fidelity even though the sweep of terrain covered was sometimes greater than one could take in from a single vantage point. Some artists managed to project themselves mentally well above the surface of the earth and to portray substantial areas as if seen obliquely from a balloon. Among the Indian landscape paintings none, perhaps, comes closer to the conventional idea of a map than a number of works produced in Kutch during the eighteenth and early nineteenth centuries. In discussing these paintings the art historians B. N. Goswamy and A.

132. Letter from Frank Perlin, 9 July 1985. I am grateful for this valuable communication.

133. Letter from Frank Perlin, 9 July 1985.

134. Letter from Frank Perlin, 9 July 1985. In addition, there is evidence that the Mughal revenue system provided, in some respects, a model for that of the Marathas. In Mughal revenue papers, villages and towns were listed for each *pargana* (subdistrict) along with their cultivated areas and assessed revenues. Village locations were indicated by their distances in *kos* (*kuroh*) north, east, south, or west from the *pargana* headquarters, which in turn were similarly located with respect to the chief district town. Thus, even though maps as such appear not to have been used for purposes of taxation, officials knew well enough the location of all the towns and villages within their purview.

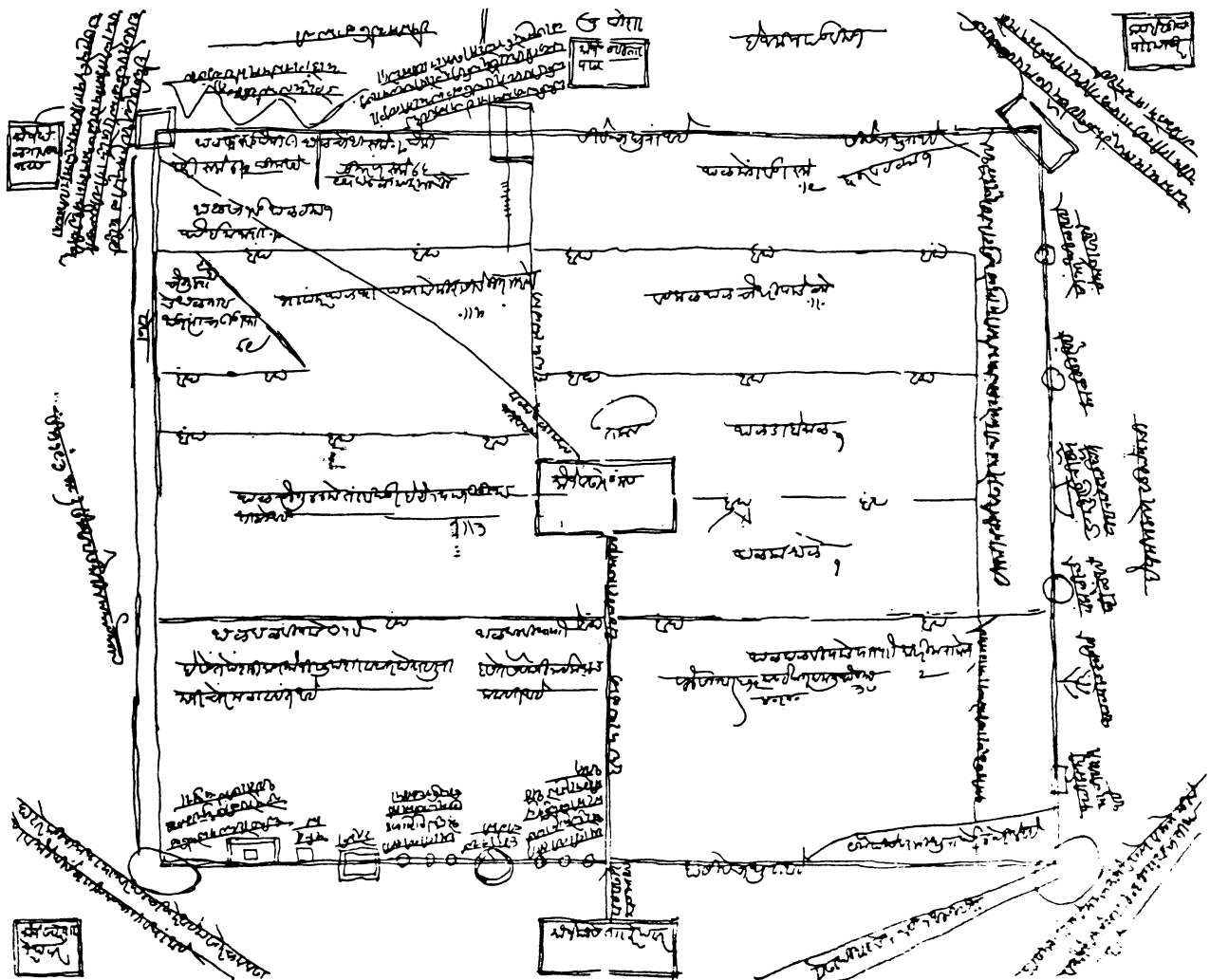


FIG. 17.38. A VILLAGE IN PUNE DISTRICT, MAHARASHTRA. This Maharashtra map, ink on paper, is dated Fasli 1193 (ca. A.D. 1784). Made in reference to a property dispute, this map indicates the settled portion of the village of Vadhane by the centrally located rectangle, the dimensions of areas owned

by various persons in the village, and other noteworthy features. It also provides notes on social matters relevant to the dispute. Size of the original: not known. Collection of Frank Perlin.

L. Dallapiccola suggest that they were the result of the significant influence exerted on Kutch by its contacts with resident British and by earlier Kutchi travelers such as the architect Ram Singh Malam, who in the latter half of the eighteenth century spent many years in Britain and other foreign regions.¹³⁵ From southeastern Rajasthan, an area not far from Kutch, comes another exceptional genre of painting mainly associated with hunting scenes, from which one does derive a dramatic sense of place. Like the Kutchi paintings, these works also adopt a bird's-eye view of the terrain portrayed; but it is doubtful that the painters were greatly concerned about scalar fidelity.¹³⁶ (The same, however, can be said for many plani-

metric maps from India.) Again, in these works foreign influences appear to be at work, especially "Mughal and ultimately Persian antecedents," in which human control over nature is stressed.¹³⁷ Still other naturalistic European

135. B. N. Goswamy and A. L. Dallapiccola, *A Place Apart: Painting in Kutch, 1720-1820* (Delhi: Oxford University Press, 1983), passim. See also their "More Painting from Kutch: Much Confirmation, Some Surprises," *Artibus Asiae* 40 (1978): 283-306.

136. For examples of the genre, see Andrew Topsfield, *Paintings from Rajasthan in the National Gallery of Victoria* (Melbourne: National Gallery of Victoria, 1980), passim.

137. David E. Sopher, "Place and Landscape in Indian Tradition," *Landscape* 29, no. 2 (1986): 1-9, esp. 6.

influences are evident in the landscapes painted in the "Company style," which owes its origins to the influence of Colonel Gentil, whose atlas of Mughal India I have already discussed.¹³⁸

In contrast to the more or less exceptional works just cited, most Indian landscape painting displayed relatively little concern for verisimilitude in depicting terrain and associated vegetation and cultural features. Rather, as Sopher put it:

A particular assortment of landscape elements . . . does not constitute an observed landscape. It is the symbolic connotations of these elements, derived from a long literary tradition, that account for their appearance. . . .

In Indian painting . . . particular elements of the landscape are invoked for their emotional content. The unique organization of elements in actual landscapes and the integral role of human action in making places do not matter in this work. For the artist, it seems, place is a distraction, if not an irrelevancy. Thus, a characteristic, tutored way of seeing the land, not, however, confined to the elite, corresponds to the ideal of eventual detachment from place that is a central concept in the Indian world view.¹³⁹

The corpus of Indian landscape painting is large, and I have not undertaken any extensive or systematic study of the subject. Notwithstanding the generalizations just cited, an exhaustive study would probably bring to light additional maplike works. But one must be cautious in interpreting paintings that have the appearance of referring to real places. Certain artists did achieve the ability to invent landscapes that on examination are seen to bear little resemblance to what they purported to portray. For example, two richly detailed paintings, said to represent Kashmir, are immediately recognizable as flights of the artists' imagination. One, painted in Lucknow about 1760, clearly reflects the Dutch and Flemish pictures that must somehow have come to the attention of the artist Mir Kalān Khān (possibly during a sojourn in Delhi), and the other is a romantic view painted in Hyderabad at roughly the same time, presenting a similarly eclectic view.¹⁴⁰

SECULAR PLANS OF CITIES AND TOWNS

Plans of cities and towns include some of the most beautiful, interesting, and detailed of Indian maps. Appendix 17.4 summarizes essential attributes of twenty such maps—all of which Gole also discusses and illustrates, often with enlargements of certain areas. The cities and towns referred to are plotted on figure 17.37. They originate from relatively few areas: Kashmir, Delhi, Rajasthan, Gujarat, Maharashtra, and the more Islamicized regions of the Deccan. The maps date from the late sev-

enteenth to the late nineteenth century, but mainly from the eighteenth.¹⁴¹

The plans I shall consider here have enough in common to permit a number of stylistic and cartographic generalizations. They also exhibit some noteworthy differences. Almost all the maps are painted in various hues, either on paper or, less frequently, on cloth; but two, both from Kashmir, are embroidered (see, e.g., plate 33). The paper maps are sometimes backed by cloth, but the time of the backing cannot be ascertained. The sizes of the maps vary considerably, from as small as 24.5 by 13 centimeters, for the map that possibly represents Navsari, to as large as 661 by 645 centimeters, for the map of Amber. Only five of the maps are less than 0.5 square meters in area. Most are relatively square; in only five cases is the longer dimension more than one and a half times as long as the shorter, and in no case is it more than twice as long. Almost all the maps include substantial text, though one, the putative Navsari map, has no text at all. In all but a few cases the text is either Persian, the most common language used, or one or another dialect of Rajasthani. Sometimes a second language is added later.

No definitive statement can be made about map orientation because I have not been able to review closely some of the maps being discussed. Many of the maps do include notations along the edges as to the four cardinal directions (occasionally added after the map was drawn); but in the absence of these, and without direct knowledge of the physical layout of the place being mapped, one cannot state the dominant orientation. In any case, on virtually all the maps the orientation of text varies with the direction of the features being mapped, especially in the case of essentially linear features such as streets, city walls, rivers, and hill ranges. Important nonlinear features, such as monuments, temples, mosques, and dwellings, are generally depicted in frontal perspective as they would normally be seen by a viewer on the ground, and

138. A charming example of a landscape at Amarnath, in Kashmir, is provided in Stuart Cary Welch, *Indian Drawings and Painted Sketches: 16th through 19th Centuries* (New York: Asia Society in association with John Weatherhill, 1976), fig. 80, p. 139, and text on p. 138.

139. Sopher, "Place and Landscape," 5 and 6 (note 137).

140. The paintings noted appear in Toby Falk and Mildred Archer, *Indian Miniatures in the India Office Library* (London: Sotheby Parke Bernet, 1981), fig. 238, p. 435, and text on p. 137, and O. C. Gangoly, *Critical Catalogue of Miniature Paintings in the Baroda Museum* (Baroda: Government Press, 1961), pl. XIII and p. 42.

141. Gole discusses and illustrates these plans in *Indian Maps and Plans*, 158–90 (note 1). Excluded from appendix 17.4 are nine rather sketchy plans of places that are shown on figure 17.37 and collectively discussed in brief below; oblique maplike views, which are treated in appendix 17.5; and a number of additional plans made primarily for religious purposes that I will consider as part of a group, along with temple plans and other religiously motivated works, in appendix 17.6.

writing is oriented accordingly. Thus, with few exceptions, the map orientation varies from place to place, often even within a small area.

Like many small-scale topographic maps from South Asia, virtually all city plans variously combine planimetric and frontal perspectives and occasionally oblique perspectives as well. The planimetric perspective is characteristically used for streets, rivers, tanks and ponds, and large enclosed or semienclosed areas (*chauks*), and often for city walls. But ingenious combinations of planimetric and frontal views (e.g., as in plate 34) are often used to

depict the latter. Hill ranges are generally depicted with a more or less correct linear alignment but in a frontal perspective. Vegetation, especially forested areas, is generally portrayed as seen from the ground, usually with little regard for planimetric accuracy, and often is used as a decorative space filler. Gardens and cultivated fields, however, are as a rule rendered planimetrically. Ordinary residential dwellings may be shown either planimetrically, usually by conventionalized squares and rectangles, or in simplified frontal perspective, often with a door and one or more windows. Rarely is any attempt made to show

a



b



FIG. 17.39. DETAILS FROM A LARGE MAP OF AMBER, RAJASTHAN. These details come from a 1711 Rajasthani map painted on cloth. The complete map shows every house in Amber (the streets are named for the occupations of the inhabitants; e.g., street of cloth dyers), and the surrounding countryside is also shown in great detail. Many individual buildings, gardens, waterworks, and such, are rendered with remarkable individuality. Detail *a* represents a portion of the palace complex, and *b* shows a nearby village. This is the largest known surviving Indian map.

Size of the entire map: 661 × 645 cm. By permission of the National Museum, New Delhi (cat. no. 56.92.4).

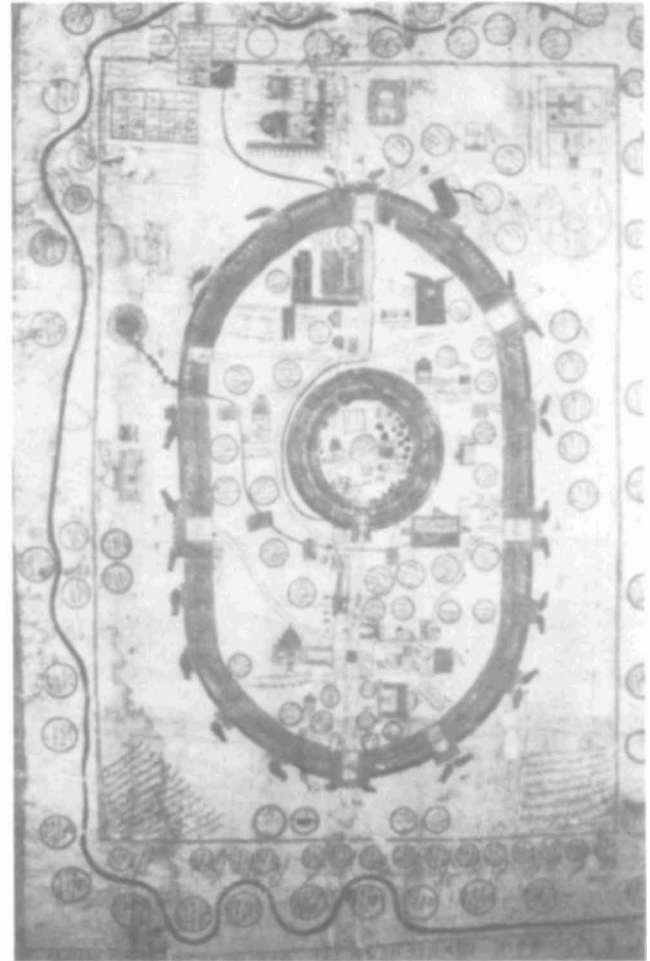


FIG. 17.40. BIJAPUR, KARNATAKA. This Deccani Muslim map dates from the late seventeenth century and is painted on paper backed with cloth. The map emphasizes matters of historical, cultural, and administrative importance: tombs of major figures, mosques, the city wall, gates, cannons, watercourses, wells, and so on. Supplementary marginal notes concern neighboring villages, the revenue due from each, and districts of the sultanate, and there are also ancillary historical notes. There are no details on the residential makeup of the city.

Size of the original: 149 × 102 cm. Archaeological Museum, Gol Gumbaz, Bijapur. Photograph courtesy of Susan Gole, London.

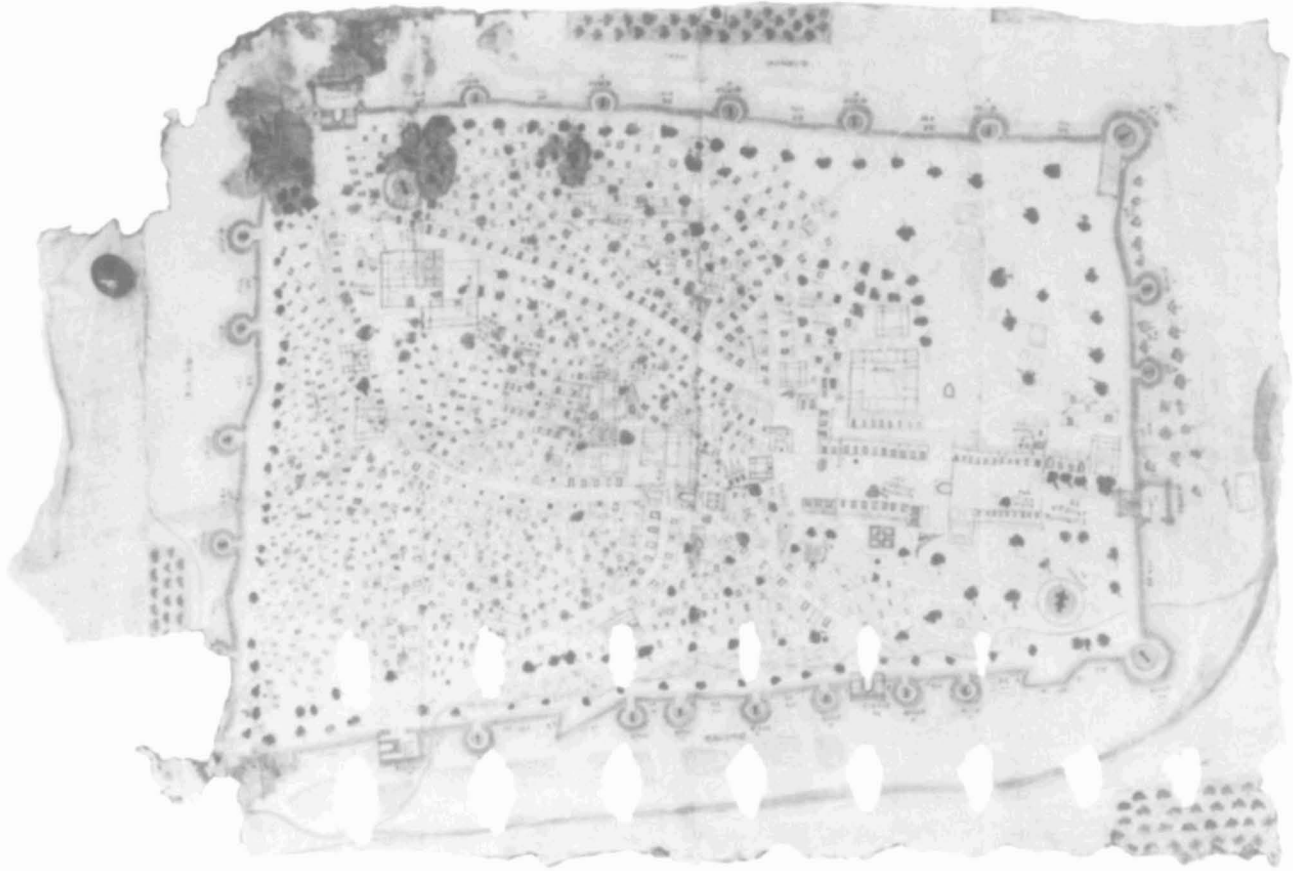


FIG. 17.41. SANGANER. This very detailed map of Sanganer (a town famous for cloth dyeing and printing), in Dhundari and painted on paper, dates from the late eighteenth or early nineteenth century. The streets, major edifices, and town wall are accurately rendered, with the distance between the towers in

the wall surrounding the city given in *gaz*, while the residences are shown in a more stylized manner.

Size of the original: 124 × 165 cm. Courtesy of the Maharaja Sawai Man Singh II Museum Trust, Jaipur (cat. no. 114). Photograph courtesy of Susan Gole, London.

the exact disposition and actual number of houses; but the enormous map of Amber (fig. 17.39) is exceptional in that regard. Occasionally, as in the several maps of Bijapur (e.g., fig. 17.40), the residential component of the city is completely overlooked. The Bijapur map is also noteworthy for the high degree of abstraction in its symbolization—mainly by circles with internal text—of the principal features to be shown. Thus, this Indo-Islamic map is much less pictorial than most.

Certain conventions that we have come to associate with modern Western city plans are entirely or almost entirely lacking on traditional plans from South Asia. Only one such plan, that of Shāhjahānābād (Delhi)—the classification as traditional is open to question—has a graphic scale, and no other map indicates scale of any kind that is applicable to the map as a whole. Several maps in the collection of the Maharaja Sawai Man Singh II Museum in Jaipur, however, do contain numerous notes on the dimensions, usually in *gaz* (yards), of significant features that they portray (fig. 17.41). Nor has

any a reference grid or ruled neat lines apart from decorative borders.

Not included in appendix 17.4 are sketch maps of cities and towns—all but one plotted on figure 17.37 and illustrated in Gole.¹⁴² Eight of these, all rather crude ink drawings on paper, each about thirty by twenty-eight centimeters, form a set that appears to relate to the Maratha wars with the British early in the nineteenth century. The map script is a mixture of Modi and Devanagari. Notes on the map refer to dispositions of different forces, fortified points, places occupied by the British or particular Maratha leaders, buildings of special interest (not necessarily military), water supply, and distances to nearby places (up to thirty *kos* away). Gole suggests that the maps were drawn after the wars were concluded, to illustrate the campaigns, and that they may all be by a single author.¹⁴³ The places shown are Agra, Ajmer, Baroda,

142. Gole, *Indian Maps and Plans*, 158–90 (note 1).

143. The maps are at present in London, India Office Library and Records, MSS. Mar. G28, c, d, e, f, g, h, j, and k.

Brahmavarta (Varanasi), Gwalior, Mathura, Partabgarh, and Udaipur, together with the nearby religious center of Nathdwara. The maps of Udaipur and Mathura are of substantially smaller scale than the others and cover considerable portions of the surrounding countryside.

One additional sketch map, of Delhi, is much more carefully drawn than the set of Maratha maps.¹⁴⁴ Despite its neat outlines of various quarters within the old walled city, it contains little text, and that little is entirely in English. The title reads "Plan of Dehly Reduced from a Large Indostanny Map of That City." The large original map from which this one was made cannot be traced. This map measures approximately thirty-five centimeters square and is drawn on paper. A penciled date "1800(?)" has been added, but the year is obviously no more than a guess.

Not included among the maps discussed in this section are several, considered in the discussion of topographic maps, that depict key cities at considerably larger scales than their surroundings and in some instances incorporate substantial detail about the internal layout and major places within those cities. This is true, for example, for the maps of the Vale of Kashmir, on which Srinagar is invariably a major element (e.g., figs. 17.14 and 17.15 above); the large map of Gujarat and adjacent parts of Rajasthan (a detail of which is illustrated above, fig. 17.19), which gives much prominence to Ahmadabad; and arguably the map of the area in Rajasthan and Gujarat (fig. 17.18), which also gives some prominence to Ahmadabad.

OBLIQUE SECULAR REPRESENTATIONS OF CITIES AND TOWNS

Artists in India occasionally created paintings of cities or towns or of major portions thereof (e.g., the precincts of royal palaces) as if seen from a perch high in space. Some of these oblique perspectives are definitely maplike in character, being sufficiently detailed to give a fairly clear idea of the arrangement of the major spatial components of the areas being depicted: they include city walls, palaces, forts, religious edifices, main thoroughfares, open spaces, reservoirs, residential quarters, and bazaars, in varying degrees of detail. As in so much of Indian painting, conformity to the rules of perspective as they have evolved in the West is not a general characteristic of the oblique views of South Asian cities, though a few such paintings reflect conscious experimentation with Western conventions. Where to draw the line between paintings that may be regarded as maps and those that ought not to be is often difficult to decide, especially without reliable information on how much of what is shown was intended to represent what was actually on the ground and how much was merely the fancy of the artist seeking

to create an aesthetically pleasing composition or a general sense of how the place might have appeared. Because the paintings in question seldom embody text or indicate the orientation of the perspective, and because they relate to landscapes that are no longer extant, it is all but impossible in some instances to check them against the empirical reality of the period when they were painted. Nevertheless, from among the many oblique views of South Asian cities, I have selected thirteen that seem particularly maplike. Relevant details on them are presented in appendix 17.5.

Of the thirteen paintings noted in appendix 17.5, I illustrate only two. One (fig. 17.42) is a miniature from an illustrated manuscript of the *Pādshāhnāmāh* (History of the emperor) commissioned by the Mughal emperor Shāh Jahān (r. 1627–57). The painting is attributed to Murād, an artist of considerable renown, and is at present in the Musée Guimet in Paris. The work depicts a general, Qulij Khān, accepting the keys of a conquered city, which the art historian Stuart Cary Welch claims is probably Bust (Kala [or Qala] Bist), to the west of Kandahar, where it is tentatively plotted on figure 17.37.¹⁴⁵ Although the focus of the painting is obviously not the city itself, the detail suggests that the rendering is based on an actual sketch made in the field. Yet we have no documentary evidence to support such a conjecture.

The second painting (fig. 17.43), rendered in the charming Pahari miniature style associated with the mountainous region of Himachal Pradesh, is of the city of Lahore. Like other Pahari works (e.g., the scroll route maps discussed above), this work incorporates a variety of perspectives for different features depicted, though the clearly dominant view is that of a person facing north. I have decided to include this work among the oblique views rather than among planimetric maps even though its overall layout was essentially planimetric, especially in regard to the walls of the city and fort and the course of the Ravi River. There are grounds to suppose that the painting was essentially decorative. Not surprisingly, it adorned the viceregal lodge in Simla before Indian independence. The total lack of toponyms or other map text, the apparent lack of concern for a faithful rendering of the layout of the city proper, and the abundance of pic-

144. The map is found in New Delhi, National Archives of India, cat. no. F183/22.

145. Welch's suggestion that the city is Bust seems tenable on historical grounds and is supported by its resemblance to the nearby city of Kandahar. (Cf. the adaptation of an 1880 map of Kandahar in Schwartzberg, *Historical Atlas*, 135, pl. XII.B.2, map e [note 105].) However, Welch entitles the painting "Qulij Khan Accepts the Keys to a City in Badakhshan." Since Badakhshan lies in northeastern Afghanistan, more than five hundred miles from Bust, this statement is inconsistent with the view that the city depicted is Bust. Either the title or the city's identification must be incorrect. Stuart Cary Welch, *India: Art and Culture, 1300–1900* (New York: Metropolitan Museum of Art and Holt, Rinehart and Winston, 1985), 247–48.



FIG. 17.42. BUST (KALA BIST)?, AFGHANISTAN. This Mughal view, dated ca. 1646, gouache on paper, is an illustrated folio from a manuscript of the *Pādshahnāmāh*. It shows Qulij Khān accepting the keys to a conquered city, probably Bust. The upper third of the painting shows the citadel and the adjacent city, both walled, in considerable detail. Size of the original: 34 × 24.2 cm (image); 48 × 31.5 cm (manuscript folio). By permission of the Musée Guimet, Paris.

torial detail suggestive of the life of the people support this supposition.¹⁴⁶

The representation of Delhi (item c in appendix 17.5) is strikingly similar in conception to the one just described for Lahore in that it too shows the fort area taking up about half the painting in the background and presents a visually rich, but spatially truncated, adjacent city proper in the foreground. M. K. Brijraj Singh, who illustrates and describes the Delhi painting, notes that similar though less elaborate works commemorate visits of the Kotah Mahārao Ram Singh to the *durbār* (court) held at Ajmer in 1831 by the then governor general Lord William Bentinck, to whom one such scroll was presented. And similar scenes were painted on the walls of one of the Kotah palaces.¹⁴⁷

Not plotted on figure 17.37 is a remarkable series of detailed paintings of religious cities on the walls of the

small, long disused *bhojanasālā* (private dining room) of the maharaja in the palace at Amber. Generally these provide oblique perspective views, but in some cases a planimetric perspective predominates. These rather well preserved works, painted in the seventeenth and eighteenth centuries, are about one and a half meters high and cover a total area of more than fifteen square meters. Gole provides seven color photographs of portions of this assemblage.¹⁴⁸ But because none of the paintings now has a title and because the script identifying many of the specific buildings shown was not very clear, she was unable to determine the locales represented, though the task should presumably not prove excessively difficult for an art historian. As recently as 1984, two were identified with signs stating that they were Mathura and Kāshī (Varanasi); but the hilly topography shown in the vicinity of the two cities argued against those identifications and raised the possibility that they were painted entirely from the artist's imagination, despite their look of realism. Whatever the case, Chandramani Singh has suggested that these paintings may well be the prototypes for later Jaipuri city maps of unquestionable authenticity. The *bhojanasālā* paintings may, in turn, have been based on European Renaissance perspective views made available to the Jaipuri court by seventeenth-century Jesuits and other European visitors.¹⁴⁹

Mural paintings, often in a bad state of preservation, adorn many other Indian palaces, and it seems likely that investigation would reveal additional examples of oblique views of cities or their specific precincts. I have already taken note of those found in Kotah, and there is also said to be a map of Jamnagar (Navānagar) painted on the ceiling of the local palace of that small Gujarati coastal city.¹⁵⁰

In addition to the high oblique views I have just discussed, there are at least two painted frontal perspective views of cityscapes that function somewhat like maps. These show the riverfronts of Varanasi and of Patna. The

146. A map in Schwartzberg, *Historical Atlas*, 135, pl. XII.B.2, map a (note 105), relates to the historical growth of Lahore and shows both the fort, constructed in 1617–72, and the old city wall, erected in 1584–98. Although in figure 17.43 the fort appears to be about as big as the rest of the city, its actual area in the early seventeenth century would have been less than a tenth as large, and by the nineteenth century, when the painting was made, its relative size would have been even smaller. For a large color photograph of this map and additional photographs of selected details and background text, see M. R. A. [Mulk Raj Anand], "Architecture," *Mārg* [34, no. 1], *Appreciation of Creative Arts under Maharajah Ranjit Singh*, 27–33.

147. M. K. Brijraj Singh, *The Kingdom That Was Kotah: Paintings from Kotah* (New Delhi: Lalit Kalā Akademi, 1985), fig. 40 and pp. 20–21.

148. Gole, *Indian Maps and Plans*, 171–73 (note 1).

149. Chandramani Singh, personal communication. Singh is an art historian long resident in Jaipur.

150. Letter from Susan Gole, August 1984.

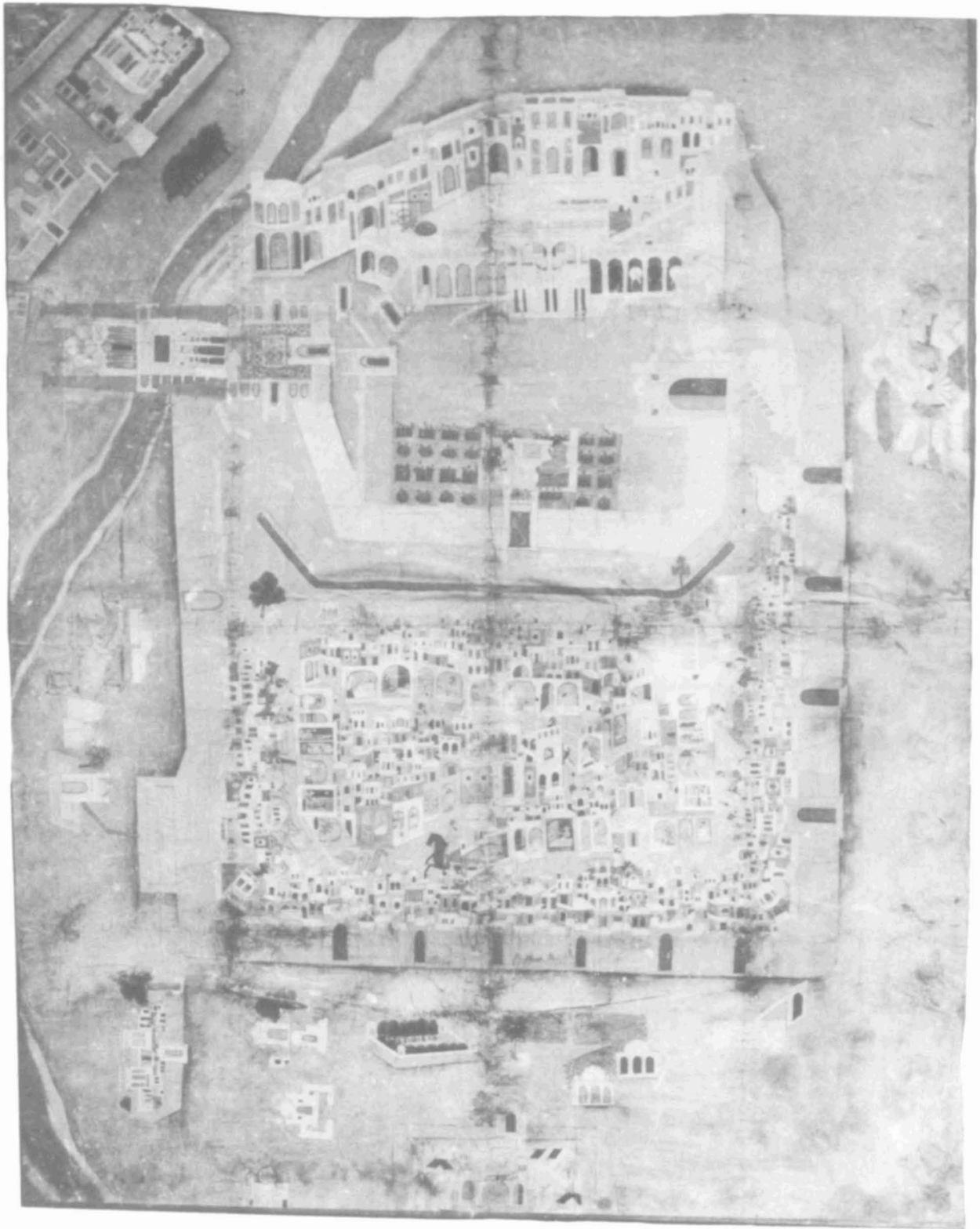


FIG. 17.43. LAHORE, PUNJAB, PAKISTAN. This map in Pahari style is dated to the early or mid-nineteenth century and is painted on cloth. An oblique perspective, looking north, predominates, but perspective alters from one part of the painting to another and the overall view is essentially planimetric. It is

undoubtedly more accurate for the fort than for the adjacent city.

Size of the original: 154 × 124 cm. By permission of the Maharaja Ranjit Singh Museum, Amritsar.

Varanasi painting is on cloth and measures 98.5 by 119.5 centimeters. It depicts and names, in both Persian and Hindi, all the ghats and major riverside edifices along the Ganga, greatly compressed latitudinally and without intervening streets so as to fit within the limited compass of the canvas. The painting is at present in the Ramnagar palace outside Varanasi and belongs to the maharaja of that erstwhile princely state. It dates from the early eighteenth century and may well have been commissioned by a forebear of its present owner. The second painting is of unknown date and is apparently similar to that for Varanasi.¹⁵¹

MAPS OF SACRED PLACES

Maps of sacred places in South Asia take on a wide variety of forms, ranging from the exceedingly abstract to the highly realistic. On the whole, however, they tend toward greater abstraction than most other maps of cities and other small localities examined in this section. Since their authors' concern is not with the world of mundane experience, they tend to sublimate portions of the material landscape that are devoid of religious meaning (except insofar as it provides relevant context for the map user) and to highlight features of religious significance, which they characteristically portray in exaggerated scale and vivid hues, providing considerable detail, much of which conveys a strong iconographic message to the map user. Religious maps also tend to be among the most beautiful available to us. Many use exuberant graphic imagery to depict pilgrims and worshipers, deities and other mythic figures, the architecture of temples and other sacred edifices, and the animal and plant life and even topographic features in the sacred precincts.

Appendix 17.6 provides a summary analysis of maps, including oblique maplike perspective views, showing a substantial number of places of religious importance. The widespread distribution of the places represented is evident from figure 17.37. Not included in appendix 17.6, but also on the map, are some additional locales for which printed religious maps are known to exist. Such printed maps, though produced by modern technology, embody in varying degrees a traditional cartographic outlook and thus warrant at least brief consideration in this chapter. Space prevents me from illustrating as many maps of sacred places as I would wish, and I have therefore found it necessary to confine my selection to only nine that represent some of the more important genres and convey some impression of the breadth of coverage.

Readers will recall from the discussion of "topographic" maps of the sacred region of Braj that the entire area was conceived as if it were in the form of a lotus and that its numerous constituent localities were repre-

sented as occupying positions on one or another of the petals. A similar propensity to view sacred cities through a religiously meaningful iconographic prism is evident in the construction of many Hindu maps. Thus, both the city of Puri, where the renowned Jagannath temple is situated, and Dwarka, a city sacred to Krishna worshipers in the west of India, are associated with the form of a conch (cf. plates 35 and 36 and fig. 17.44).

How and when the imagery of the conch originated is an open question, but it is noteworthy that both Dwarka and Puri were—along with Badrinath, Sringeri, and Kanchipuram—among the five Vaishnavite centers where the great ninth-century philosopher Śaṅkara (whose name embodies the particle *śaṅka*, meaning conch) established Hindu *maṭhas* (monasteries) that survive to this day. I have noted that in Jain monasteries drawing cosmographies was part of the monastic training. Whether any comparable institution arose at the *maṭhas* at Dwarka and Puri is not known. We do know, however, that at both Puri and Nathdwara (to be discussed below) the work of providing painted images of the major deities, of their shrines, and of other sacred icons came in time to be entrusted to certain families for whom it became a hereditary profession. In the case of Puri, all such families belong to the local *chitrakāra* (artist) caste. Although that group is to be found in many villages in Orissa, those who still carry on the function of meeting the needs of

151. The work was made known to me by S. V. Sohoni, a retired officer of the Indian Administrative Service who served for an extended period in Patna. A portion of the work, whose original medium is not known, has been redrawn and published as an appendix to J. F. W. James, "The River Front of Patna at the Beginning of the Eighteenth [sic, should read "Nineteenth"] Century," *Journal of the Bihar and Orissa Research Society* 11 (1925): 85–90. The work was discovered among some old, poorly preserved records in the district judge's office in Patna. Its present condition and location have not been ascertained. Additional large and detailed views of the cities of Delhi, Agra, and Varanasi, as seen from the Yamuna River or Ganga River, are to be found in the Department of Oriental Antiquities at the British Museum, London. Though drawn by Indian artists, all were commissioned by European patrons. Views of each of the three cities named were commissioned by an unknown Italian patron in about 1840. These are cataloged 1962-12-31-014 (for Varanasi), 1962-12-31-015 (for Agra), and 1962-12-31-016 (for Delhi). Another view of Varanasi made for an anonymous patron is in twelve unjoined sheets. It dates from the first half of the nineteenth century and bears the catalog number 1860.7-28.675, 1-12. All four works are rendered in what has been termed the "Company style" of painting. The twelve-sheet Varanasi painting is especially rich in details of human interest, depicting activities along the riverbank. Yet another panoramic view, of three sides of the exterior of the city of Lahore, is held by the Lahore Museum. This work, drawn by an Indian artist presumably for a European patron, measures approximately sixty by twelve inches, is painted in watercolor on paper, and contains text in Urdu. An ink and wash copy of it exists in the Punjab Archives in Lahore. The supposed date is from the early nineteenth century. Accession and cataloging data are not available. I thank James Westcoat for providing me with five transparencies of this work in April 1990.

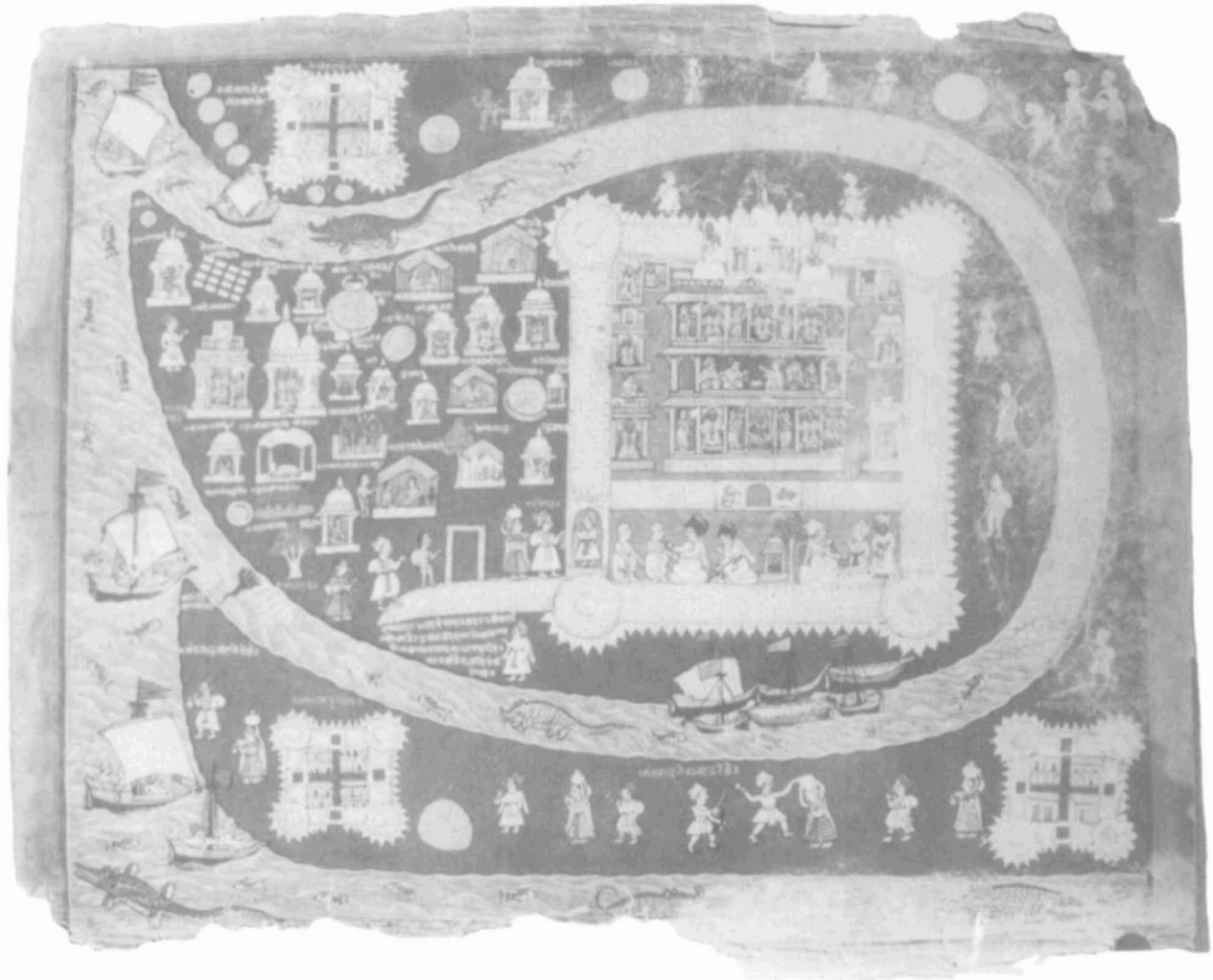


FIG. 17.44. MAP OF SANKHODAR BET, DWARKA, GUJARAT. This Rajasthani map, dated 1773, is painted on paper. The old temple and three others are shown planimetrically, but many of the ancillary temples are shown in frontal

perspective. Also included are vivid depictions of pilgrims, boats, fish, and crocodiles.

Size of the original: 25.2 × 32.5 cm. By permission of the Prince of Wales Museum of Western India, Bombay (acc. no. 70.4).

the Jagannath temple are concentrated mainly in the single village of Raghurajpur, some twelve kilometers from Puri, where, among the twenty-four *chitrakāra* households, thirty-eight out of forty-three family members over age fifteen still practiced their craft about 1980.¹⁵² Puri paintings have recently been “rediscovered” and are enjoying a new vogue. Today they are found in art museums throughout the world. Although I have seen many traditional style paintings of the Jagannath temple per se (indicated by the central square on plate 36) that could in themselves be called maps, I have arbitrarily limited those indicated in appendix 17.6 to six remarkably similar detailed representations of the whole of the sacred precincts of Puri.¹⁵³ Others undoubtedly exist. In contrast to the living artistic tradition at Puri, I have no evidence that a comparable tradition ever existed at Dwarka. Notwithstanding the broad similarities of maps

h and i in appendix 17.6, maps j and k—the former quite refined and signed by a Jaipuri court artist—are of altogether different styles.¹⁵⁴

Some traditional maps of Varanasi (e.g., fig. 17.45) incorporate a square within a circle, the terrestrial referents being the city itself and the *kṣetra*, or field, where

152. J. P. Das, *Puri Paintings: The Chitrakāra and His Work* (New Delhi: Arnold Heinemann, 1982), 9–10.

153. For a description of the religious landscape of Puri, see Durga Charan Sahoo, “The Sacred Geography of Jagannath Dham, Puri,” *Eastern Anthropologist* 34 (1981): 63–67. A detailed key identifying each of sixty-four elements of the Puri painting identified as item gg of appendix 17.6 is provided in Talwar and Krishna, *Indian Pigment Paintings*, 110–12 (note 63).

154. I thank Arthur Duff of Dublin for sending me copies of three traditional and two more or less modern maps of Dwarka along with an unpublished paper titled “Pilgrim’s Maps” (of Dwarka); letter dated 29 August 1989.



FIG. 17.45. VARANASI, UTTAR PRADESH. This map is a lithographic print on cloth with the city depicted as a square within a circle. Key religious features are emphasized, and the Ganga is shown as a bow.

Size of the original: 79 × 92 cm. Photograph and permission courtesy of Jan Pieper, Berlin.

it is situated. That field may be defined as the area included within the pilgrimage route known as “the Panch Koshi Road, the ritual or processional road for the circumambulation of the entire . . . Holy Field of Kaṣhī.”¹⁵⁵ Symbolically, however, the circle also represents mother earth, *kṣetra* being etymologically associated with a seed field and hence with nature and fertility and, more generally, the female principle. The square, on the other hand, signifies the artificial urban cultural creation and, more generally, the male principle. Pieper’s well-informed discussion of these ideas is worth quoting at some length, since the broad thrust of his argument is applicable in large measure to many other religious maps from India:

We now see the Benares pilgrims’ map in a different light and can understand the peculiarities of its design and codification. Like any map, no matter in what cartographic system, it represents only a selected range of information: the city, the tirthas, and the circumambulatory path. No attempt is made to represent distances and sizes to scale, to differentiate between private and public space, to show the circulatory system, the technical infrastructure, the topographical features or other characteristics considered essential in Western cartography. Instead, it holds just sufficient factual information about the holy sites to enable the

155. Jan Pieper, “A Pilgrim’s Map of Benares: Notes on Codification in Hindu Cartography,” *GeoJournal* 3 (1979): 215–18, esp. 215.

pilgrim to find his way around. But at the same time, the Square and the Circle, as well as other details of the map . . . provide unequivocal symbolic information about the ideas the city represents as a whole. The apparent “incorrectness” of the map, therefore, is no indicator of cartographic incompetency, but it is the consequence of a compromise between representation and interpretation, a compromise that characterizes the fundamental objectives of the city and at the same time they indicate how they are to be perceived. They hold information on two planes, factual and symbolic, and here Hindu cartography is certainly characteristic of all the traditional arts and sciences of India, which are often syncretistic beyond their proper objects of investigation, as their main concern is to be both instructive and educational.¹⁵⁶

Much more abstract than these works made for pilgrims coming to Varanasi are two maps from Nepal. One of these presents the city of Kathmandu in the shape of its characteristic icon, a sword, which in Hindu mythology symbolizes enlightenment. The axis of the sword runs from southwest (at the hilt) to northeast, paralleling the main thoroughfare of the city, which forms part of the link from India to Tibet. Ranged along the edges of the blade are a series of thirty-three miniscule named gates representing each of the city’s premodern urban quarters (*tolas*). Despite this radical topological distortion of the city’s actual spatial configuration, the map is one of the very few from South Asia that incorporates a compass rose, a foreign embellishment that here serves no obvious purpose. Conceivably the directions the *tolas* face with respect to the city as a whole are not to be understood in any literal geographic sense (as azimuths), but rather are related to some particular conception of the city’s cosmological setting.¹⁵⁷

The second of the two Nepali religious maps (fig. 17.46), brought to light in a fascinating article by Bernhard Kölver,¹⁵⁸ relates to several groups of religious sites within the city of Bhaktapur, not far to the east of Kathmandu. This map, clearly meant to serve as a mandala (an object of meditation), is a curious mixture of modern and traditional elements. It was commissioned about 1925 by a Newari Brahman, “the father of [its] present owner, who claims . . . that in designing the painting his father drew upon a similar, older map which might even today be kept somewhere in the house of the family.”¹⁵⁹ A brief search, however, failed to turn up the original. The portion of the painting that appears relatively modern is the naturalistic rendition of mountainous landscapes in cartouches along the four edges of the map, which may or may not relate to the actual scenery as viewed from Bhaktapur. Otherwise the painting is a rendition of the religious geography of the city. “Not only can most of the deities depicted be actually found within the town [their shrines are located there], but the relative

position of shrines is exactly mirrored in the painting.”¹⁶⁰

What the painting actually depicts is shown, in part, by figure 17.46b. The figures in the outermost of the three rhomboids of the map represent the shrines of eight mother goddesses (*Aṣṭamātrkāś*). The middle rhomboid shows two sets of figures, one with and the other without surrounding halos, respectively representing shrines to two additional sets of eight deities each, known as Bhairavas and Siddhas, the former being the more potent. Similarly, the innermost rhomboid represents two more sets of eight deities each, Gaṇeśas, and a group whose identity is in some question. Finally, within the innermost rhomboid, a red triangle also includes two groups of deities, three more Gaṇeśas and three deities associated with the New Year festival, the most important period in the Bhaktapur calendar. Space does not allow me to report the systemic interconnections among these several groups, as explained by Kölver, but they are rooted in Nepalese sacred texts and exemplified not merely in the map but also in local architecture and ritual dance performance.

In describing the underlying purpose of the mandala map of Bhaktapur, Kölver, quoting Tucci, sees it as “a map of the cosmos, . . . the whole universe in its essential plan, in its process of emanation and reabsorption.” Such a process, Kölver adds, “is often visualized in a series of deities of ever more universal scope, the nearer we come to its centre.”¹⁶¹ Tucci puts the matter thus: “Transfiguration from the plane of *samsāra* [the cycle of transmigration] to that of *nirvāṇa* [the state of final bliss] occurs in successive phases, by degrees; just as on the cosmic mountain and around the *axis mundi* are disposed, rank after rank, one above the other, the Gods ever purer.”¹⁶² Thus, Kölver concludes, “the town of Bhaktapur,” like the map, “is itself a maṇḍala.”¹⁶³

As found in connection with the Jagannath temple in Puri, there still exists in the small Rajasthani temple town of Nathdwara a group of hereditary artists whose func-

156. Pieper, “Pilgrim’s Map of Benares,” 218 (note 155).

157. Illustrated in Jan Pieper, *Die Anglo-Indische Station: Oder die Kolonialisierung des Götterberges*, Antiquitates Orientales, ser. B, vol. 1 (Bonn: Rudolf Habelt Verlag, 1977), 114, with relevant text on 99.

158. Bernhard Kölver, “A Ritual Map from Nepal,” in *Folia rara: Wolfgang Voigt LXV. Diem natalem celebranti*, ed. Herbert Franke, Walther Heissig, and Wolfgang Treue, Verzeichnis der Orientalischen Handschriften in Deutschland, supplement 19 (Wiesbaden: Franz Steiner, 1976), 68–80.

159. Kölver, “Ritual Map from Nepal,” 68, n. 1 (note 158).

160. Kölver, “Ritual Map from Nepal,” 68 (note 158).

161. Kölver, “Ritual Map from Nepal,” 77–78 (note 158). The work cited is Giuseppe Tucci, *The Theory and Practice of the Maṇḍala: With Special Reference to the Modern Psychology of the Subconscious*, trans. Alan Houghton Brodrick (New York: Samuel Weiser, 1970; first published 1969), 23.

162. Tucci, *Theory and Practice*, 29 (note 161).

163. Kölver, “Ritual Map from Nepal,” 78 (note 158).

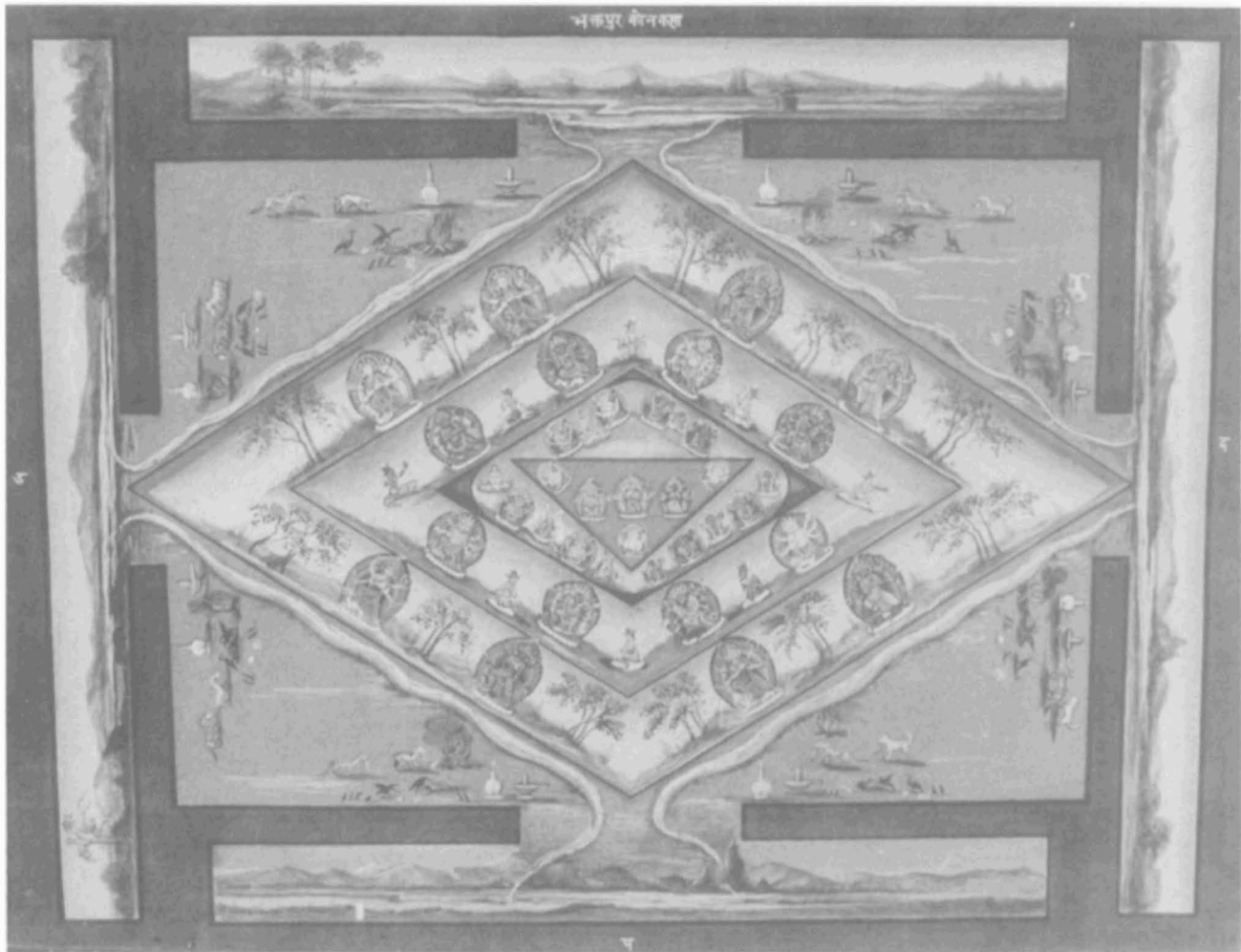


FIG. 17.46. MANDALA MAP OF BHAKTAPUR, NEPAL. This Newari map, ca. 1925 (based on an older model), is painted on paper (?). The highly abstract set of images represents, in the form of three rhomboids around a triangle, a number of important shrines and sacred precincts of the city of Bhaktapur. The mountains on the horizon are naturalistically painted on all four edges of the map. A modern map of the town (on the right) shows the Mātṛkā, Bhairava, and Gaṇeśa shrines associated with the outermost, second, and innermost rhomboids, respectively. Additional identifiable features are plotted by Bernhard Kölver on a second modern map of Bhaktapur (“Ritual Map from

Nepal,” 70) not shown here.

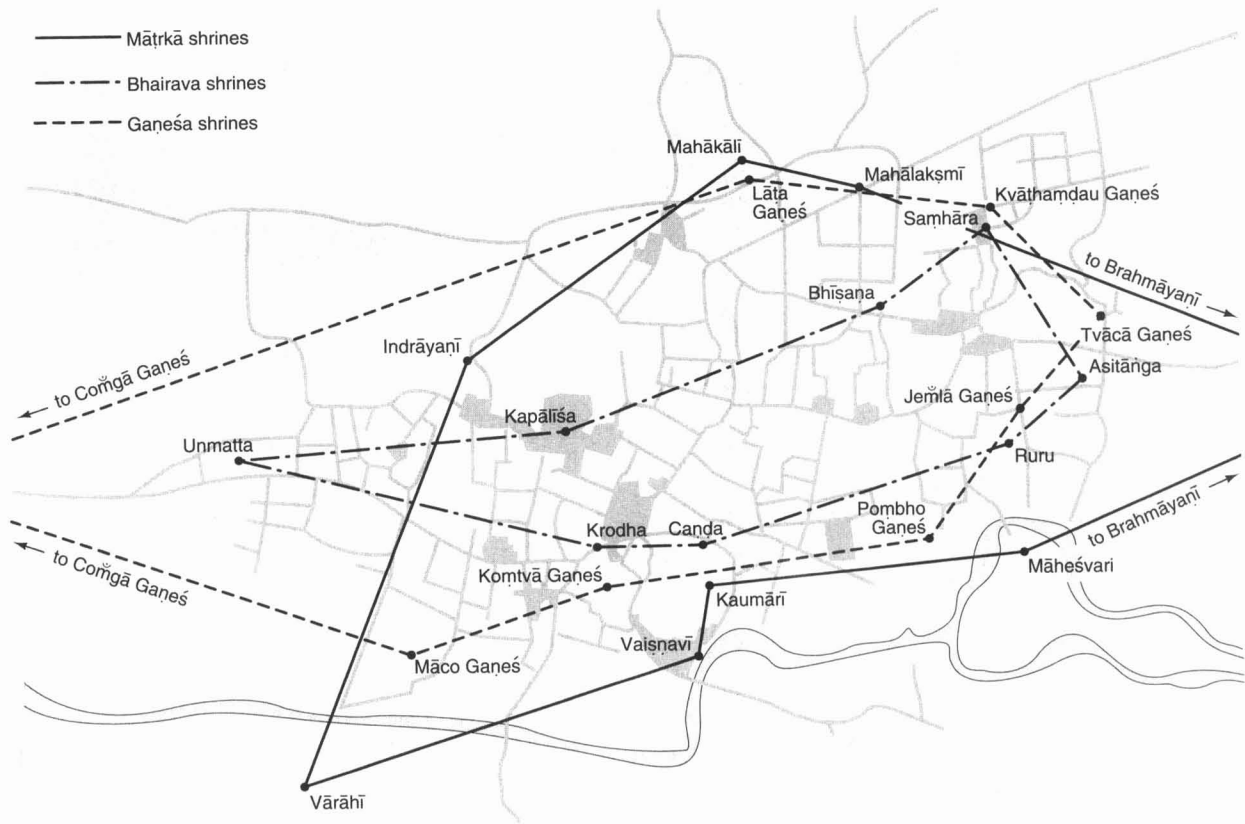
Size of the original: not known. In the collection of Pandit Ratnaraj Sharma of Ichu, Bhaktapur. Photograph courtesy of Jan Pieper, Berlin.

The modern map is after Bernhard Kölver, “A Ritual Map from Nepal,” in *Folia rara: Wolfgang Voigt LXV. Diem natalem celebranti*, ed. Herbert Franke, Walther Heissig, and Wolfgang Treue, *Verzeichnis der Orientalischen Handschriften in Deutschland*, supplement 19 (Wiesbaden: Franz Steiner, 1976), 68–80, esp. 72.

tion is to serve the needs of the temple and the many pilgrims who come there throughout the year to pay homage to Krishna. There is an easily recognizable Nathdwara style of devotional painting that includes among its works a number of maplike paintings of the Nathdwara and nearby temple complexes (e.g., items n, r, s, and t in appendix 17.6). These skillfully rendered works convey an impression of considerable verisimilitude and thus stand in marked contrast to the other religious maps discussed to this point. Yet they are no less charming in their depiction of details of human interest

relating to the ritual and profane activities that mark the religious calendar of the Vallabhacharya sect that provides the principal support for the temples. Figure 17.47 is a good example of the genre.¹⁶⁴

164. A particularly good color reproduction of a small part of one of the Nathdwara paintings appears in Talwar and Krishna, *Indian Pigment Paintings*, pl. IV (note 63). Black-and-white pl. 3 is also quite useful in that it is printed with a transparent overlay on which are identified, in translation, the more important components of the Nathdwara complex.



Another rather detailed painting, one of a relatively small number of religious maps from southern India, is the plan of the Vaishnavite Srirangam temple in Tamil Nadu, the largest of all Dravidian temples (fig. 17.48). This is one of four plans in a bound album of religious paintings, in ninety-one folios, on European paper with an 1820 watermark and a date of about 1830. The text for all captions in the album is in Telugu, the official language of the Indian state of Andhra Pradesh, but the four plans included (all listed under item kk in appendix 17.6) are all of temples in the more southerly state of Tamil Nadu: Srirangam; the nearby Shaivite temple of Jambukeswaram; the Minākṣī temple in Madurai; and the temple at Rameswaram. The plans of the first three temples are executed in a more or less consistent style emphasizing the successive temple enclosures, the great temple gates (*gopurams*) on all four sides of the temples, and the deity to whom each temple was dedicated. The painting of Rameswaram, however, is considerably more abstract. The most prominent features of this work are its set of four nested fields of Shiva *liṅgams* around a single large central *liṅgam* and its set of four images of the elephant god Gaṇeśa at points that presumably signify the main temple gates at the midpoints of the four walls of the temple.¹⁶⁵ Another painting of Srirangam, fairly similar to figure 17.48 but of unknown date and prove-

nance, is that described as item ll in appendix 17.6.

Strikingly different from the relatively rigid style of the plan of Srirangam are the 238 maps of *tīrthas* (pilgrimage places) in Kashmir that are bound in two albums held by the Sri Pratap Singh Museum in Srinagar (plate 37). These gay, primitive renditions of the precincts of an exceptionally large number of sacred localities in Kashmir have a naive charm and exuberance that is characteristic of the maps of no other region, especially those—166 in all—that are in color.¹⁶⁶

Pilgrimage, as we have seen, is as much a part of the Jain tradition as it is among India's Hindus, and Jain art abounds with images relating either to the act of pilgrimage or to the shrines that are the object of Jain pilgrimage. It is often difficult to decide, in viewing such paintings, whether they ought to be classified as maps, and one could make a case for including a substantially larger number of Jain paintings in the listing. Of all the Jain pilgrimage places, none is more popular than the vast

165. The album of paintings is in the Department of Oriental Antiquities of the British Museum, London, and bears the catalog no. 1962-12-31-013. The relevant folios are 1 (Srirangam), 59 (Rameswaram), 61 (Minākṣī), and 71 (Jambukeswaram).

166. Gole, *Indian Maps and Plans*, 129–31 (note 1), provides illustrations of fifteen of these maps (twelve in color) and a brief textual account of the probable circumstances in which they were made.

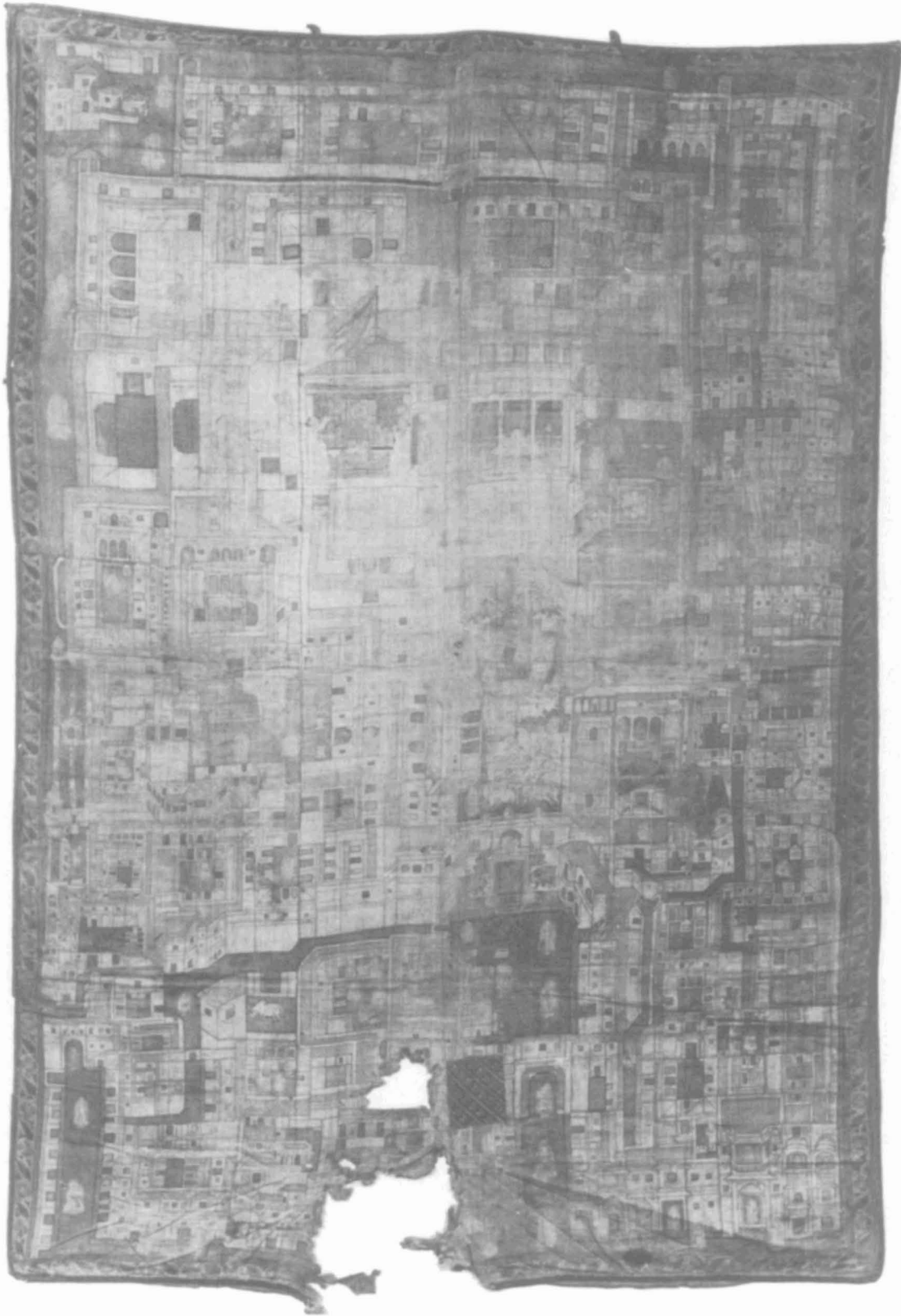


FIG. 17.47. NATHDWARA TEMPLE COMPLEX. This Nathdwara, Rajasthan, twentieth-century map is a *pichhvāi* painted on cloth. It depicts the Shrinathji temple complex with a festival being celebrated within the temple precincts. Despite the recency of this painting, it has faded badly and has lost

much of its presumed original multihued luster. Size of the original: 169 × 119 cm. By permission of the Calico Museum of Textiles, Sarabhai Foundation, Shahibag, Ahmadabad (acc. no. 1561).

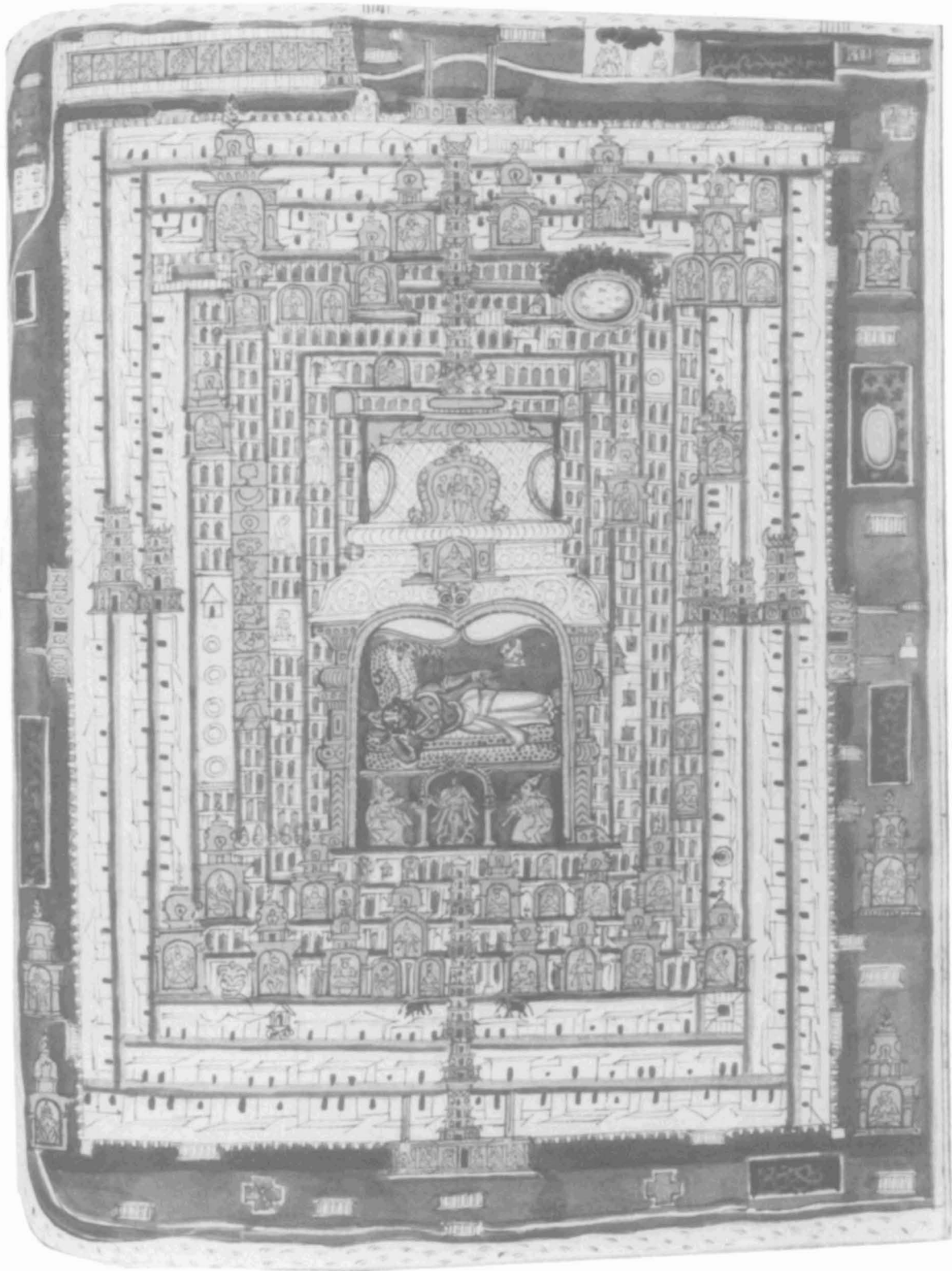


FIG. 17.48. SRIRANGAM TEMPLE, SRIRANGAM, TAMIL NADU. From an album of religious paintings, this maplike view is from South India, ca. 1830 (paper watermarked 1820). For additional details on the other maplike folios in the album, see appendix 17.6, item kk.

Size of the original: 22.6 × 17.6 cm. By permission of the Trustees of the British Museum, London (1962 12-31 013, fol. 1).

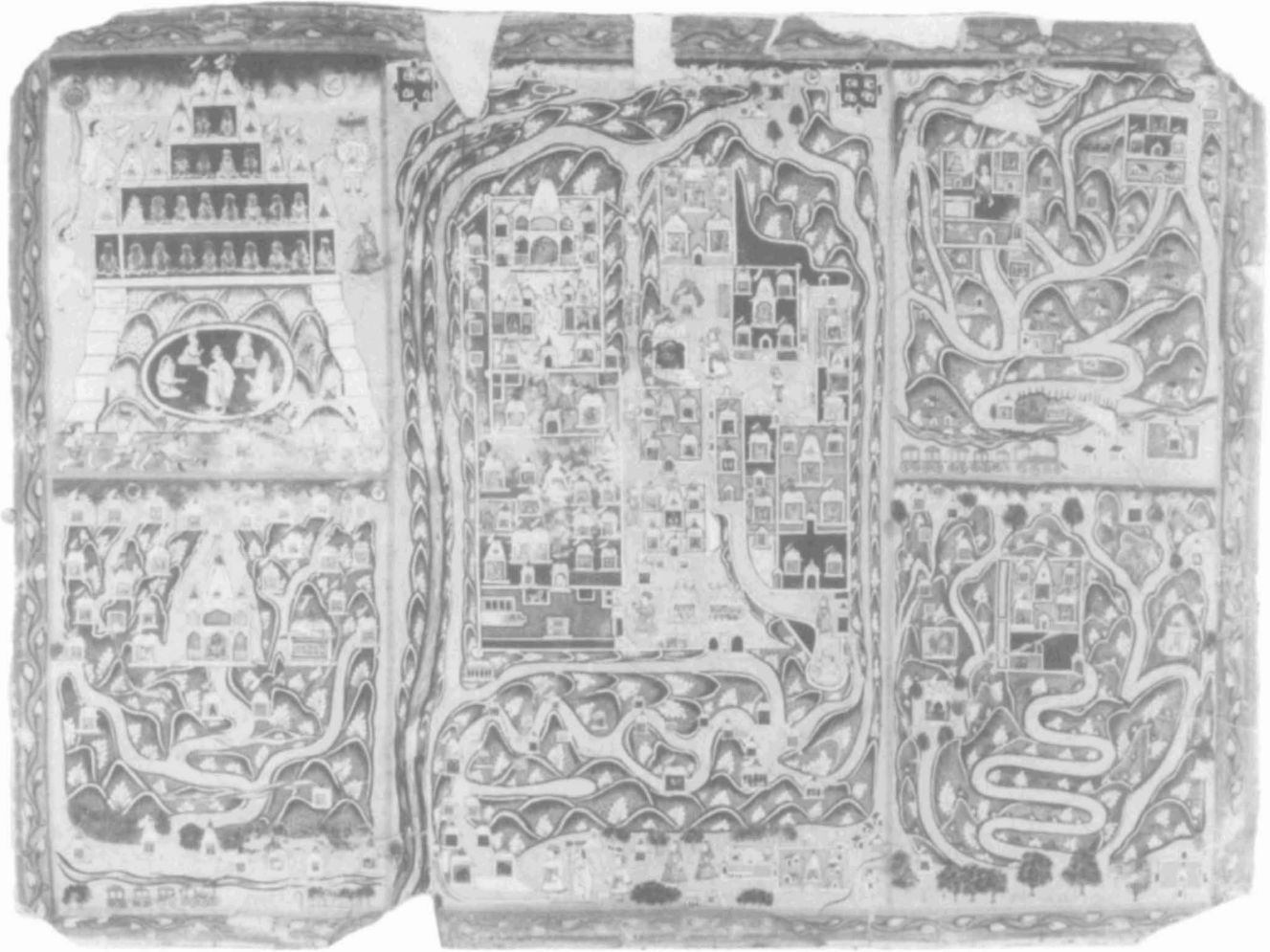


FIG. 17.49. JAIN TRIPTYCH. This work celebrates five of the most sacred places of Jain pilgrimage: Shatrunjaya Hill temple complex at Palitana in Gujarat (*center*), with its eight hundred temples; the ancient site of Prabhasa, also in Gujarat (*upper left*); Parasnath Peak in Bihar (*lower left*); Mount Abu in Rajas-

than (*upper right*); and Mount Girnar, in Gujarat (*lower right*). The triptych is gouache on paper, Gujarat, mid-nineteenth century.

Size of the original: 56.5 × 76 cm. Private collection.

complex of more than nine hundred temples and shrines on Shatrunjaya Hill, rising in the Gir Mountains above the town of Palitana in the Saurashtra region of Gujarat (items u–x in appendix 17.6). Not surprisingly, therefore, it has been for centuries a subject for religious maps. Most of these maps are similar in their more or less oblique perspective, though they tend to take on a planimetric appearance because the steep rise of the hillside puts the surface closer to a right angle with the painter's hypothetical line of sight. Stylistically, however, they vary considerably. The special place that Shatrunjaya holds in the hearts of pious Jains is evident from the central position it is accorded in the unique triptych illustrated in figure 17.49, on which five major Jain *tirthas* are represented.¹⁶⁷

The next illustration of a religious map also relates to the Jain religion and presents a genre unique to that faith. Among the several types of scroll paintings produced by

Jains, those known as *vijñātipatras* were sent by local Jain communities as invitations to pontiffs of their faith requesting that they visit the community during the four months or so of the rainy season to impart instruction and other religious services. The scrolls, of which figure 17.50 is an example, were decorated with illustrations of what a pontiff would see en route to and in the city that was inviting him, seemingly to heighten the attractiveness of the request. Gole has seen and illustrated two such scrolls.¹⁶⁸ At present one can say very little about the cartographic principles, if any, that they embody. It appears, however, that what is shown may vary enor-

167. The present location of the triptych is not known. Talwar and Krishna, *Indian Pigment Paintings*, pp. 82–89 and pls. IX (color) and 86–89 (black-and-white) (note 63), provide detailed descriptions and excellent illustrations of four other large cloth wall hangings depicting Shatrunjaya.

168. Gole, *Indian Maps and Plans*, 54–55 (note 1).



FIG. 17.50. VIJÑAPTIPATRA SCROLL, JAISALMER, RAJASTHAN. This scroll painting (*vijñaptipatra*), 1859, painted on paper, was sent by Jains of Jaisalmer to Jain pontiffs inviting them to visit that city. It depicts places along the route to be followed and shows the city of Jaisalmer in oblique perspective and considerable detail. Size of the original: 887.5 × 24.5 cm. By permission of the Oriental Institute, M.S. University of Baroda (acc. no. 7572).

mously in scale from one part of a scroll to another, so that, for example, a few shops along the pontiff's route may be shown as large as an entire city (e.g., Jaisalmer in the figure). We do not know if the order of objects encountered along a particular route is properly maintained on the scroll, though that seems likely, nor have we any idea what considerations guided the artists' choice of what to show or omit.¹⁶⁹

A survey of appendix 17.6 reveals that a number of religious maps employing traditional modes of presentation date from as recently as the late nineteenth century or even from the twentieth. Obviously this suggests a cultural predisposition for using established semiological traditions in preference to pursuing accuracy as it is understood in modern Western cartography, even when there is no obstacle to attaining the latter goal. Thus, although the first large-scale modern surveyed map of Varanasi was prepared by J. Prinsep in 1822 and published in London three years later,¹⁷⁰ and though subsequent maps by the Survey of India have also portrayed the city in great detail, since 1875 numerous maps have been printed on cloth and on paper that adhere to an altogether different view of the city (e.g., fig. 17.45). This type of view is better suited to the needs of the millions of Indian pilgrims who throng there each year to bathe in the Ganga, obtain religious instruction, and seek redemption from their sins.¹⁷¹ Similar maps exist for numerous other sacred places in India.¹⁷² They are made not only for Hindus and Jains, but even to show the shrines of Muslim saints, despite the abhorrence within orthodox Islam for the use of graven images to represent religious figures.¹⁷³

169. A substantial part of the four relatively small excerpts from *vijñaptipatras* illustrated by Gole (*Indian Maps and Plans*, 54–55 [note 1]) appears not to be cartographic in nature; but seeing the illustrations apart from the larger scroll context, I cannot be certain about this.

170. James Prinsep, *Views and Illustrations at Benares* (London, 1825).

171. Pieper's article on this subject, "Pilgrim's Map of Benares" (note 155), is particularly instructive. See also Pieper, *Die Anglo-Indische Station*, 32 (note 157).

172. I am indebted to H. Daniel Smith of Syracuse University, New York, for making a number of such maps known to me and providing me with color transparencies of them. The places in question (all Hindu shrines) are Allahabad, Ayodhya, Badrinath, Gaya, Hardwar, Kedarnath, Palni, and Puri, all plotted on figure 17.37. Additional recent pilgrim maps of similar style depict the following places: Dwarka, in Gujarat (two maps, sent to me by Arthur Duff on 29 August 1989); Girnar, a Jain *tirtha*, in Gujarat (shown to me by Simon Digby of Rozel, Jersey); Pavagarh, another Jain shrine, in Gujarat (in the Department of Oriental Antiquities, British Museum, London, cat. nos. 1989 2–4.027 [4] and [5]); and the shrine of the new Santoshi Mata Hindu cult in Jodhpur, Rajasthan (published in Michael Brand, "A New Hindu Goddess," *Hemisphere: An Asian-Australian Magazine* 26 [1982]: 380–84, photo on 382).

173. I am indebted to Simon Digby for showing me, among other works, pilgrimage maps for the following Islamic shrines: the tomb of

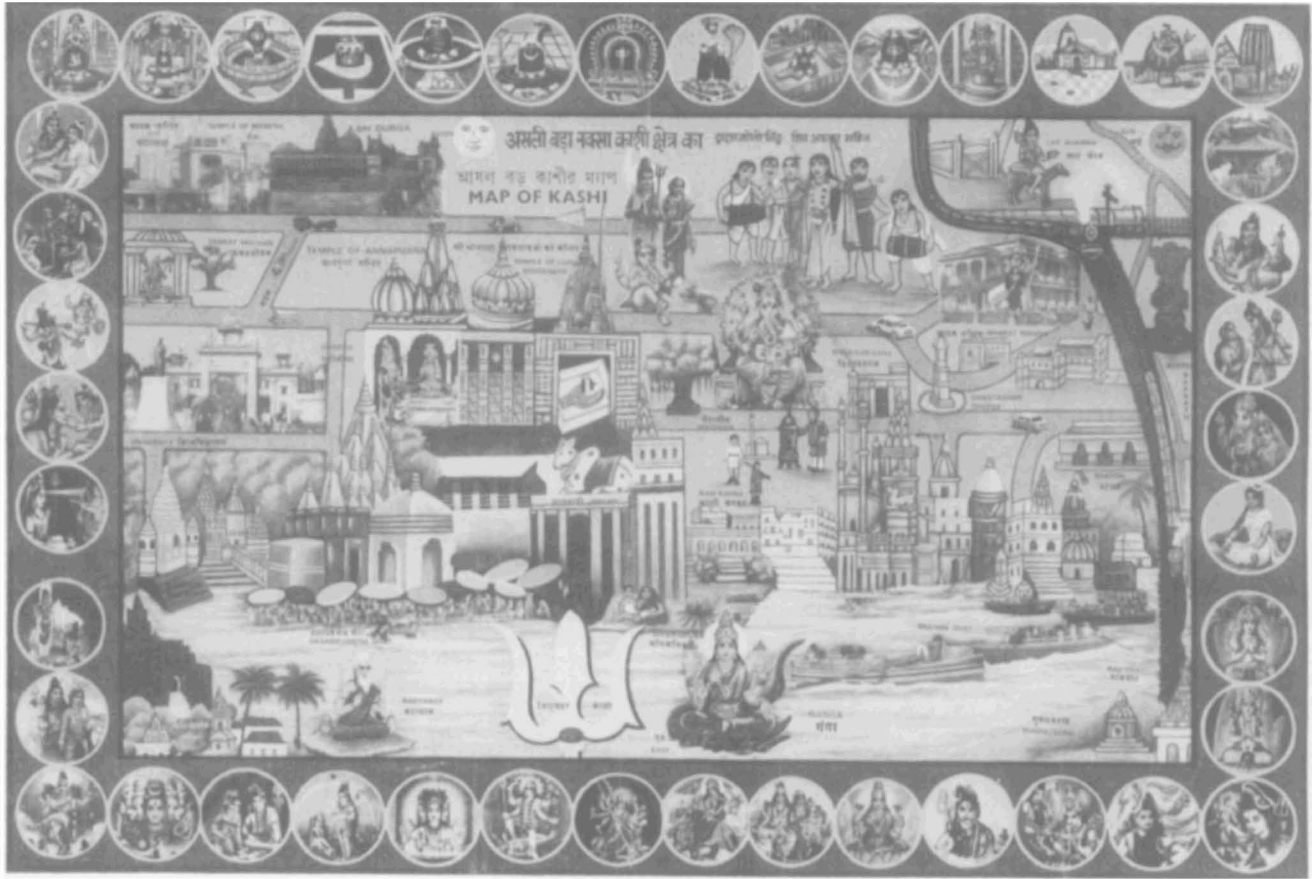


FIG. 17.51. CONTEMPORARY RELIGIOUS MAP OF KĀSHĪ (VARANASI). Cheap printed paper maps such as this one exist for a large number of sacred places in India. Despite the modern technology in their production, the cartographic conventions employed are essentially traditional.

Size of the original: 22 × 33 cm. From collection of Joseph E. Schwartzberg.

The maps currently being produced (e.g., fig. 17.51) are characteristically cheap and vulgar, printed in gaudy colors on poor paper to be sold at prices that range from less than a rupee (roughly ten cents) to no more than a few rupees. The information such maps provide is highly selective. Apart from the major shrines and other religious sites and the routes of some of the more popular pilgrimage circuits in and around the city (e.g., that of the *pāñcha koshi yātrā* in Varanasi), there may also be information on transportation (e.g., railroad and bus stations) and perhaps a few other secular features such as police stations, major public buildings, universities, and possibly even the major bazaar. Along the map borders are typically portrayed the images of a host of major and minor deities and the icons associated with them. Map text is often, if not generally, multilingual and may include not only Hindi and English but the local language of the sacred city (if other than Hindi) and possibly one or more other languages. Figure 17.37 shows cities and shrines for which printed religious maps in an essentially

traditional style are known to exist. Diligent research would undoubtedly reveal a number of others, since the printing of popular religious maps began more than a century ago. (Except for three nineteenth-century maps of Varanasi on cloth, none of the printed maps of Indian religious sites are listed in appendix 17.6.)¹⁷⁴

MAPS OF FORTS

Appendix 17.7 provides information on maps, plans, and

Khwāja Muʿīn al-Dīn Chishtī at Ajmer; the Hill of Hājī Malang at Kalyan, near Bombay; the tomb of Sailāni Shāh at Malkapur, southeast of Bombay; the tomb of Amir Sayyid Husayn Khingsawāi at Taragarh, a hill fort overlooking Ajmer; and (not noted on fig. 17.37) maps printed in India of several sacred places in Palestine and Saudi Arabia.

174. The oldest pilgrimage map printed on paper that I have seen is in the Bayerische Staatsbibliothek (Cod. Hind. 16). It was printed in the late nineteenth or early twentieth century in black and subsequently was partially and crudely hand colored in red and yellow. The printed area measures 48.5 by 61.5 centimeters. In general, the map resembles that in figure 17.45 but is somewhat more detailed.

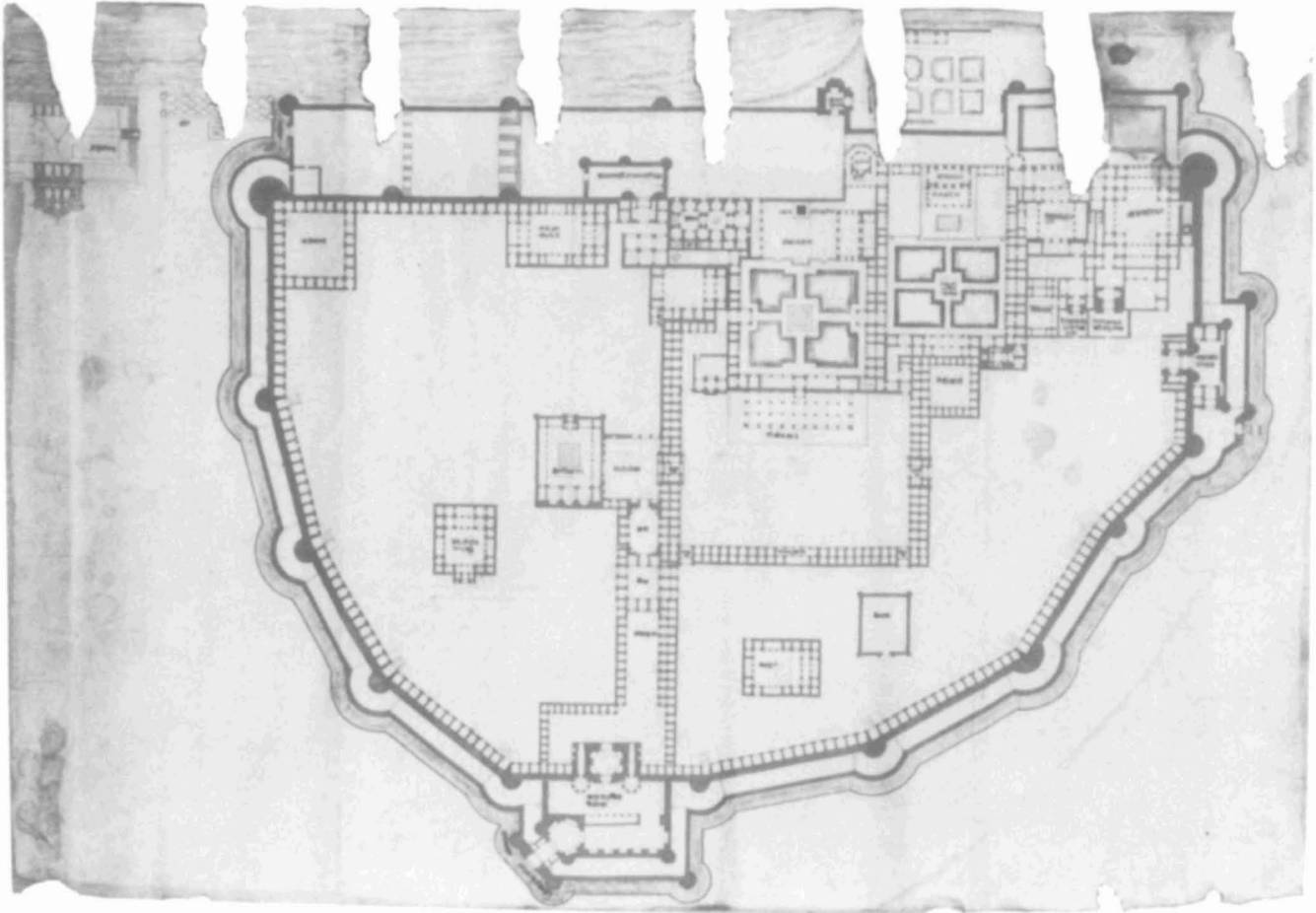


FIG. 17.52. RED FORT, AGRA. This North Indian artifact is dated from the mid-eighteenth century, painted on paper, with text in Hindi.

Size of the original: 83 × 121 cm. Courtesy of the Maharaja Sawai Man Singh II Museum Trust, Jaipur (cat. no. 125). Photograph courtesy of Susan Gole, London.

maplike oblique views of forts. In marked contrast to the religious maps just discussed, these works tend to be both simpler and more exact, as one would expect given their generally utilitarian purposes (see, e.g., fig. 17.52). There are, however, some notable exceptions to these generalizations. Although most of the maps of forts seem to be related to military intelligence, planning, administration, or instruction (e.g., fig. 17.53, item s in appendix 17.7), some were obviously made to commemorate battles and sieges in which the mapmaker had an interest (e.g., fig. 17.55 below and items f [plate 38] and n in appendix 17.7). Still others were undoubtedly decorative and were prepared, sometimes in meticulous detail, for the delectation of the royal patrons of court artists. Among the latter group were carefully executed perspective views much like those noted for various Indian cities or major parts of them (e.g., appendix 17.7, item j).

In most of the indigenous representations of forts that we are considering, an overall planimetric perspective

predominates, at least for the disposition of the major features portrayed, especially the major walls, moats, approaches, interior courtyards, tanks, and so forth. But individual portions of some of those features, especially city walls, may be portrayed as if viewed either from the ground or, less commonly, from an assumed oblique perspective (e.g., fig. 17.54, item m in appendix 17.7). The same is true of specific edifices within the forts, such as residential structures, temples and mosques, command posts, and the like. In this regard indigenous maps of forts scarcely differ from maps of cities. There is, however, much less likelihood that they will be crowded with decorative detail that serves no obvious purpose other than to fill map space. Nevertheless, open water next to coastal forts may still be filled with ships in full sail, and rivers may teem with fish, turtles, and crocodiles.

None of the works listed in appendix 17.7 dates from earlier than 1735 (item m). It seems highly probable, therefore, that European influences have figured in shaping both the style and the content of many of them. The

compass rose on the map of Vijayadurg (fig. 17.53), for example, is surely of European inspiration. Europeans served as advisors to Indian princes in military matters, and many mercenaries were officers in Indian armies,

especially overseeing the use of artillery. Though no record has been found of any such European's imparting cartographic instruction to Indians (as undoubtedly happened beginning in the late eighteenth century, if not



FIG. 17.53. MAP OF VIJAYADURG. This Maratha map, dating from the eighteenth century, is painted on paper backed by cloth, with text in Marathi in both Devanagari and Modi scripts. The map details walls, bastions, gun turrets, other emplacements, water tanks, ammunition dumps, and residential buildings. The nearby terrain features are sketched in, well-drawn

European ships are shown offshore, and a compass rose is depicted in the middle of the fort.

Size of the original: 190.5 × 172.5 cm. By permission of the Prince of Wales Museum of Western India, Bombay (cat. no. 53.102).

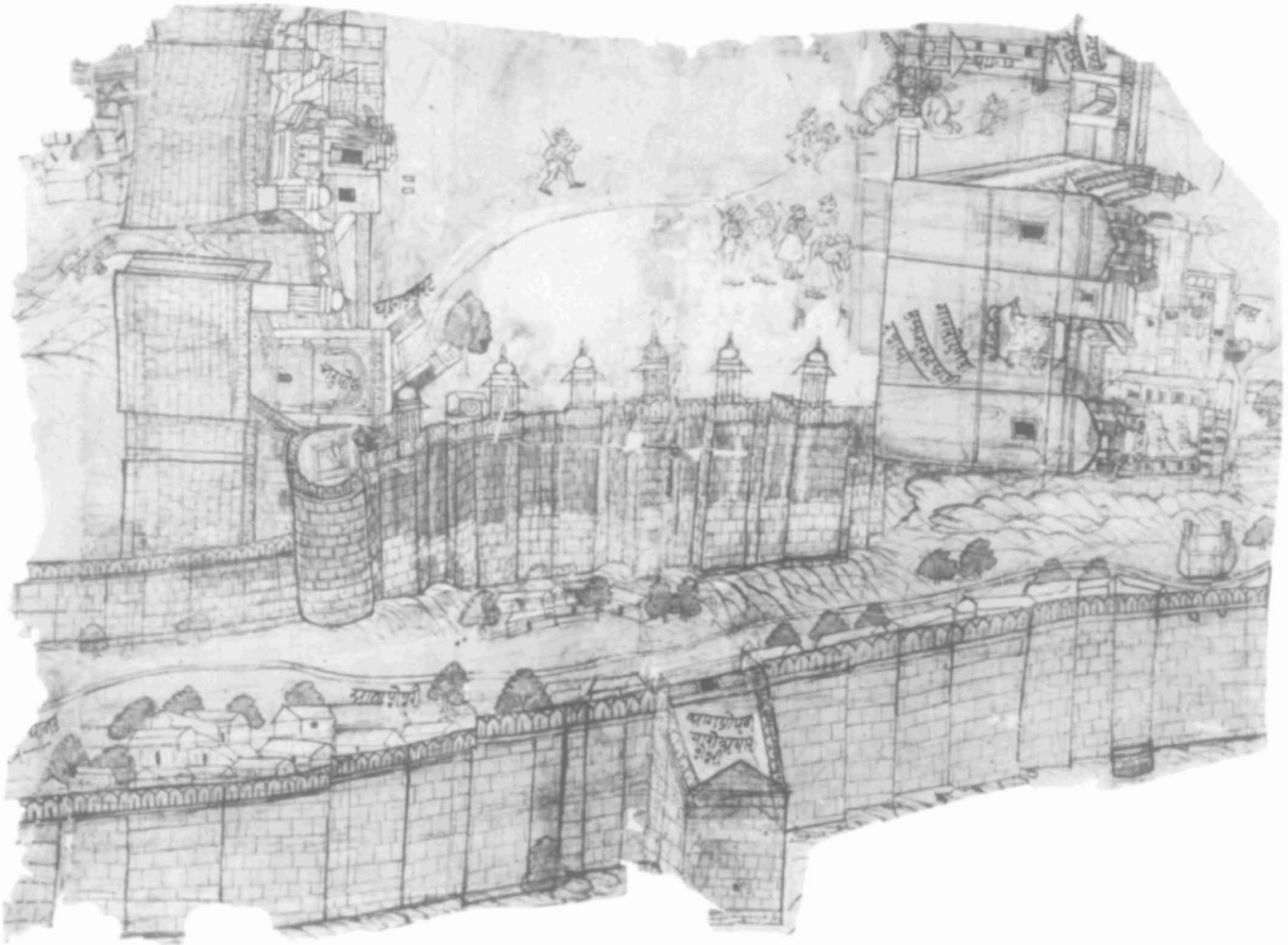


FIG. 17.54. GAGRAUN FORT, KOTAH DISTRICT, RAJASTHAN. From Kotah, Rajasthan, and dated ca. 1735, this depiction of Gagraun fort is painted on paper with text in Rajasthani (?). The painting is a combination of multiple oblique perspectives and planimetric view. The illustration here, the heart of a larger drawing, shows a very detailed view of a portion of the

fortifications. Within the fort, the maharao of Kotah and his officers are watching an elephant fight. Size of the original: ca. 55 × 73 cm. Courtesy of the Arthur M. Sackler Museum, Harvard University, Cambridge (545.1983). Private collection.

sooner, in regard to the preparation of revenue maps for the British), it is hard to imagine that an officer whose advice was sought in one domain would feel constrained not to offer advice in another that was closely related to the art of warfare.

Numerous South Asian maps of forts exist in addition to those listed in appendix 17.7. Not included there, but plotted on the map in figure 17.37, are the sites of half a dozen other relatively sketchy maps, all attributable to the Marathas, who were the dominant military power in India during much of the eighteenth century and remained a major military force until 1819. Not plotted on the map are the sites of eight more mapped forts that have not yet been located.¹⁷⁵

Battle maps of the type found in Western military cartography and history textbooks are not to be found

175. Kale, "Maps and Charts," 62 (note 67), cites the existence of six "groundplans or charts of forts" at the Bharata Itihasa Samshodhaka Mandala in Pune but describes none of them. Of the six, he was able to derive the names of five: Sajjangarh, which I have plotted, plus Adgad, Chandan, Nandgiri, and Vandan, which I was unable to locate. I also saw in that library and plotted a map of Narayangarh fort in Savantvadi (not named, but identified for me by C. D. Deshpande, who assigns the work to the mid-eighteenth century). This work is illustrated in Gole, *India within the Ganges*, 18 (note 74). Deshpande, "Maratha Cartography," 89 (note 67), notes the existence at the Prince of Wales Museum of Western India in Bombay of rough sketch maps of Badami and Janjira. Though neither of these could be traced on visits by Schwartzberg and Gole, the sites have been plotted on figure 17.37. There are two additional maps at that museum: one depicting the fort at Bombay and its environs (cat. no. F/262), "prepared for the Peshwa by the Peshwa's agent in Bombay about 1770," and a second moderately detailed map of an unidentified fort (cat. no. 24/423). Of these, the former is illustrated by Gole, *Indian Maps and Plans*, 144 (note 1), but the latter seems recently to have "disappeared." Finally, at the

in the traditional South Asian corpus; though some maps do identify the combatants and even individual units and commanders in specific engagements (e.g., items f [plate 38], n, and p in appendix 17.7). Additionally, battle plans may have been drawn either to impart tactical instruction or to prepare for specific engagements. I have not included any of these plans in appendix 17.7, but Gole does illustrate one such work. Though meticulously executed, this detailed drawing remains enigmatic in that it has no text to inform readers of its precise purpose and specific place of reference, if any.¹⁷⁶

Paintings of battle scenes, both real and mythical, are popular in Indian art. Most such paintings, one may assume, are based mainly if not entirely on the artist's imagination. Nevertheless, there are a few works that appear to have a genuine concern with showing the actual disposition of the opposing forces and depicting something of the terrain over which the combat took place. Particularly dramatic examples of this type relate to the battles of Sāmūgarh (1658) and Panipat (1739). The former was the climactic struggle near Agra at which Aurangzib defeated his older brother Dārā Shikōh in their contest for succession to the Mughal throne. This remarkably detailed miniature (22.6 × 32.7 cm), held by an anonymous owner, is illustrated and discussed by Milo Beach, according to whom the action in the scene depicted conforms to the eyewitness account of the Venetian traveler Niccolò Manucci.¹⁷⁷ The second painting (fig. 17.55), also a miniature, relates to a battle at which an Islamic alliance led by the Afghan Ahmad Shāh Durrānī decisively defeated the Marathas defending Delhi, which the latter had occupied only a year before. The work was drawn in black, with some color added, on paper (subsequently backed with cloth) and is exceedingly rich in detail. The names of the principal combatants are inscribed in Persian characters, and a portion of a town, presumably Panipat, is shown in the lower left corner of the painting. Although the individuals depicted vary enormously in size depending on their relative importance, one senses in viewing the work that the artist sought to render a faithful view of how the battle lines were arrayed.¹⁷⁸

ARCHITECTURAL DRAWINGS

Here we consider the great diversity of South Asian drawings that relate in various ways to architecture (including landscape architecture). The purposes of these drawings vary greatly. A number were plans made to guide construction projects. Others were meant to record specific accomplishments. At least one served a legal purpose in respect to a deeded property.

We may recall in passing that the oldest of all South

Asian cartographic artifacts to which we can assign an approximate date are a number of inscribed potsherds of the second and first centuries B.C. They were excavated at Nagarjunakonda and Salihundam in Andhra Pradesh and at Kasrawad in Madhya Pradesh and appear to show the ground plans of Buddhist monasteries. Also in Madhya Pradesh are the temple plans engraved in stone, in situ, of a great Shiva temple at Bhojpur, begun in the eleventh century A.D. but unaccountably never finished.

Among surviving architectural drawings, the most impressive, without a doubt, are those contained in a number of recently discovered palm-leaf manuscripts. Four of these are derived from the *Śilpa Prakāśa*, a Sanskrit work by Rāmacandra Kaulācāra, an Orissan temple architect who probably lived in about the twelfth century. The work is a practical guide to temple construction containing numerous illustrations, including floor plans, elevations, details for decorative sculpture, and instruction on building techniques (fig. 15.12 provides some representative examples). Two temples in Orissa have been found, "exactly corresponding to the description of the text."¹⁷⁹ One of these is in the capital city of Bhubaneswar, renowned for the scores of lavish medieval temples within its precincts, and the other is in Caurasī, "a remote village in the Sūrya-Manḍala," presumably the region within the ambit of the great Sun Temple of Konarak.¹⁸⁰ Since it was the custom to recopy palm-leaf manuscripts every hundred years or so and then destroy the older version, there is a possibility that the manuscripts in question vary in some particulars from the original; however, the correspondences among the manuscripts and the match of the temples just cited to the extant texts suggests their overall authenticity. The colophons of three of the manuscripts Boner and Śarmā used in their translation of the text indicate that they were copied in 1731, 1791, and 1793.¹⁸¹ The first of these and a fourth manuscript (not dated and not used in their translation) were found in villages near Puri, Orissa; the other two were in the adjacent state of Andhra Pradesh.¹⁸²

Sarasvati Mahal Library in Thanjavur, Tamil Nadu, there are two very similar plans of the fort and adjacent palace that undoubtedly date from the period of Maratha rule in that city (1676–1855). These too are illustrated by Gole, *Indian Maps and Plans*, 158–59 (note 1).

176. Gole, *Indian Maps and Plans*, 151 (note 1).

177. Milo Cleveland Beach, *The Grand Mogul: Imperial Painting in India, 1600–1660* (Williamstown, Mass.: Sterling and Francine Clark Art Institute, 1978), 167–68.

178. Falk and Archer, *Indian Miniatures*, 150 and 445 (note 140).

179. Rāmacandra Kaulācāra, *Śilpa Prakāśa: Medieval Orissan Sanskrit Text on Temple Architecture*, trans. and annotated Alice Boner and Sadāśiva Rath Śarmā (Leiden: E. J. Brill, 1966), XXIV. I have not been able to locate Caurasī, so it is not plotted on figure 17.37.

180. Rāmacandra Kaulācāra, *Śilpa Prakāśa*, XXIV (note 179).

181. Rāmacandra Kaulācāra, *Śilpa Prakāśa*, XV–XVI (note 179).

182. Rāmacandra Kaulācāra, *Śilpa Prakāśa*, XV and XXII–XXIII (note 179).



FIG. 17.55. THE BATTLE OF PANIPAT, KARNAL DISTRICT, HARYANA. This image is from Faizabad, ca. 1770. It was drawn, with some color added, on paper and backed with cloth, and it includes the names of the principal combatants in this climactic battle fought in 1739. It is inscribed with Persian characters.

Size of the original: 51 × 66 cm. By permission of the India Office Library and Records (British Library), London (Johnson Album 66, no. 3).

Four additional palm-leaf manuscripts found in villages in the vicinity of Puri relate to the magnificent thirteenth-century Padmakeśara temple (popularly known as the Sun Temple) and surrounding shrines in Konarak. One of these, a profusely illustrated work in the Oriya language, consists of twenty-three leaves and is a copy of a report of a survey ordered about A.D. 1610 by the local monarch, Puruṣottama Deva, of the three major temples in his country. The temples in question were at Bhubaneswar, Puri, and Konarak. Illustrated fragments of two other palm-leaf copies of the same report have also been found.¹⁸³ The report provides detailed descriptions and exquisite drawings of all parts of the Sun Temple. These drawings convey a vivid representation of how it

appeared before it fell into disrepair in the seventeenth century after the collapse of one of its main towers. They also include ground plans of the principal structures, an elevation of the nearby Padmakeśara temple, and numerous additional illustrations of various parts of the temple complex. They are accompanied by relevant text on their construction, with an abundance of dimensional notations.¹⁸⁴

183. Alice Boner, Sadāśiva Rath Śarmā, and Rajendra Prasād Dās, eds. and trans., *New Light on the Sun Temple of Konārka: Four Unpublished Manuscripts relating to Construction History and Ritual of This Temple* (Varanasi: Chowkhamba Sanskrit Series Office, 1972), xl–xli.

184. Boner, Śarmā, and Dās, *Sun Temple of Konārka*, pls. 1–5, explanatory note on 275, and translation of text on 1–35 (note 183).

A second manuscript (sixteen leaves), in Sanskrit, also illustrated, explains the religious significance of a small temple within the main temple compound and shows, among other things, how that shrine originally appeared. The largest of the manuscripts (seventy-three leaves) is a “book of accounts and . . . a detailed chronicle of the building operations of all the temples,”¹⁸⁵ and the fourth is a manual of the temple rituals to be performed.¹⁸⁶

As noted, the longest of the four manuscripts provided a detailed chronicle of the building of the temple. Boner, Śarmā, and Dās have prepared as an appendix to the translation of that text a “Tentative Chronology of Dates and Works” that it records, including such processes as “measuring out the ground by Sūtradhara,” “laying out the groundplan of the temple with the thread by Sūtradhara,” making “measurements for the halls for sacrifice,” and many others less germane for a history of cartography per se, but of great interest for the history of architecture.¹⁸⁷ The account suggests that the rules in the sacred *śilpaśāstra* texts on Hindu architecture noted above were indeed by and large followed.

Even older than the Sun Temple at Konarak are some of the five celebrated Jain Dilwara temples atop Mount Abu in southern Rajasthan, the earliest built, according to an inscription, in 1032. Another, also of great artistic merit, dates from 1231. Although I am not aware of any plans of these temples comparable in detail or age to those for various temples in Orissa, there is an undated codex of unknown authorship that does contain a number of watercolor and ink drawings (page size approximately 32 × 20 cm). These were photographed by the late architectural historian Robert MacDougall, who believed they represent specific portions of the Dilwara temples, seen in combinations of floor plans with frontal elevations. The present location of the codex is not known. Also said to be included in the codex are “drawings of ritual objects used in the temples and cosmological diagrams.”¹⁸⁸ More recent plans, probably for a temple in Brindaban—of similar conception, though with less aesthetic appeal—appear in a manual of ritual for the Pushtimarg sect of Krishna worship (date not known) titled *Vallabha Puṣṭi-Prakāśa*.¹⁸⁹ There is no reason to suppose that illustrations of this kind are especially rare, and they are probably still being produced in printed form.

Also from Rajasthan comes a very finely executed side elevation of an unspecified temple drawn in pen and ink on cloth. This late seventeenth-century work, measuring sixty-one by seventy-five centimeters,¹⁹⁰ displays a very high level of craftsmanship, totally independent of any Islamic or European influence. Its appearance suggests great concern for fidelity to scale in rendering the several parts of a very complex structure with many minute architectural and sculptural details.

In the Maharaja Sawai Man Singh II Museum in Jaipur and in the nearby Jaigarh Fort Museum there are a number of detailed architectural drawings, generally drawn on gridded paper, that were clearly intended to guide either the construction or the repair and renovation of major architectural works. Gole reproduces a number of such plans.¹⁹¹ Here I illustrate (fig. 17.56) a plan made to aid in repair of and additions to the temple in Varanasi built by Mirza Rāja Jai Singh of Jaipur in the seventeenth century. The date of the plan is not known, but it is quite likely from the first half of the eighteenth century, since similar, but more elaborate, plans relating to repairs made on the palace at Amber and the nearby fort of Jaigarh date from that period.¹⁹² Additional illustrations are provided by Tillotson.¹⁹³

A set of three drawings in the Victoria and Albert Museum, London, provides abundant architectural detail of the Red Fort in Delhi (Shāhjahānābād) and two important streets leading to it, Chandni Chowk (fig. 17.57) and Faiz Bazār.¹⁹⁴ The painting of the Red Fort has already been considered (appendix 17.7, item i). It is an obvious copy of the work, at the India Office Library and Records,

185. Boner, Śarmā, and Dās, *Sun Temple of Konārka*, vi (of preface) and see also xli–xlvi (of introduction) (note 183).

186. Boner, Śarmā, and Dās, *Sun Temple of Konārka*, xlvi–xlvi (note 183).

187. Boner, Śarmā, and Dās, *Sun Temple of Konārka*, 179–94, quotations on 179 and 193 (note 183). The account is full of human interest, even recording a period when the dissatisfied workmen went on a hunger strike.

188. Letter from Robert D. MacDougall, of Cornell University, 7 August 1985.

189. A copy of one such plan was sent to me by Paul M. Toomey of Fayetteville, North Carolina, in an undated letter received early in April 1988.

190. New Delhi, National Museum, cat. no. 58.49/1.

191. Gole, *Indian Maps and Plans*, 191–206 (note 1).

192. The works illustrated by Gole, *Indian Maps and Plans* (note 1), which do not constitute a complete set of the plans available, are as follows: the palace at Amber (300 × 97 cm) (p. 192), the Chilkatola fort at Jaigarh (125 × 292 cm) (pp. 192–93), a rougher sketch (72 × 57 cm) relating to the construction of a temple in a square called Chandni Chowk (probably in Jaipur) (p. 198), and the Mān Mandir temple and nearby temple grounds in Varanasi (193 × 70 cm) (p. 198) that are reproduced as figure 17.56. The first of these works is in the Jaigarh Fort Museum, near Jaipur, and is uncataloged. The remaining three works, at the Maharaja Sawai Man Singh II Museum, Jaipur, bear the catalog numbers 59, 123, and 130.

193. G. H. R. Tillotson, *The Rajput Palaces: The Development of an Architectural Style, 1450–1750* (New Haven: Yale University Press, 1987), 104 and 172. Two diagrams (p. 104) of Amber show a vertical section through the Ganesh Pol (Elephant Gate) and one of two plans of the Diwan-i-Am courtyard it leads to (Maharaja Sawai Man Singh II Museum, Jaipur, cat. nos. 83 and 77–78). Also shown is a portion of an early design for Jaipur (p. 172) based on a three-by-three grid also kept at the Maharaja Sawai Man Singh II Museum.

194. The maps are cataloged AL 1754, AL 1762, and AL 1763, and respectively measure 75 by 82 centimeters, 31 by 140 centimeters, and 31 by 135 centimeters.

of a Mughal artist, Nidha Mal, but is rendered in what has been designated the “Company style.” If Nidha Mal

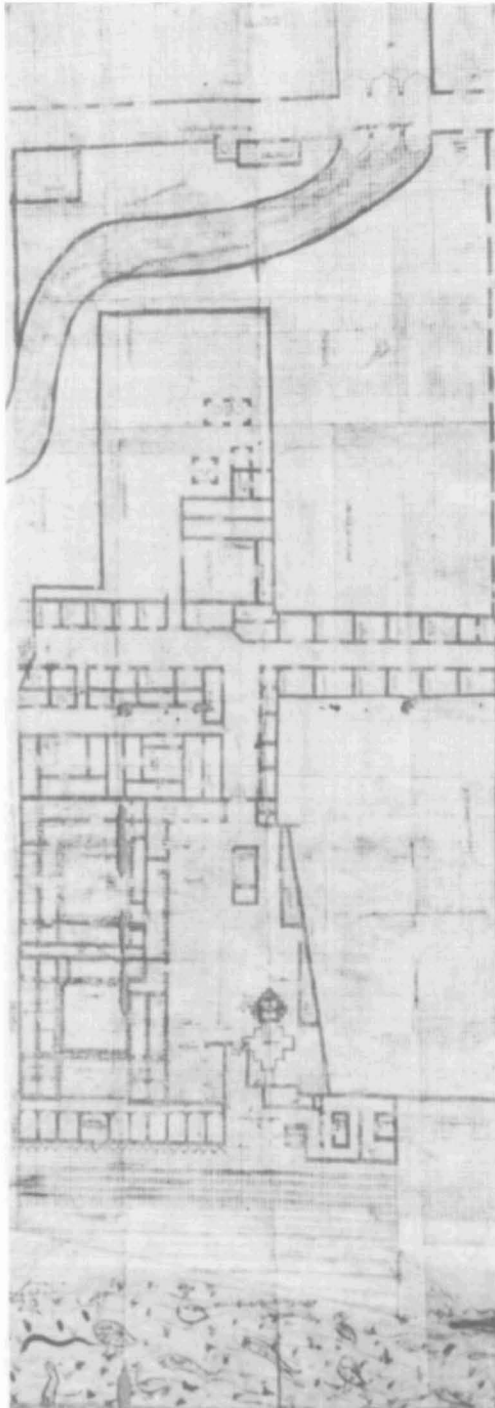


FIG. 17.56. MĀN MANDIR (TEMPLE) AND ADJACENT AREA IN KĀSHĪ (VARANASI), UTTAR PRADESH. This Rajasthani depiction is painted on gridded paper with text in Dhundari and dated to the first half of eighteenth century. Size of the original: 193 × 70 cm. Courtesy of the Maharaja Sawai Man Singh II Museum Trust, Jaipur (cat. no. 130). Photograph courtesy of Susan Gole, London.

also prepared prototypes of the drawings of Chandni Chowk and Faiz Bazār, as seems plausible, there is no record of it. However, that he moved from Delhi to Faizabad or Lucknow about 1760–70, when Colonel Gentil was an adviser to the nawab of that province, suggests that he might have carried with him not one but three paintings, forming the basis for the set now at the Victoria and Albert Museum.¹⁹⁵ Gole has carried out an exceedingly thorough study of the latter three maps and has been able, through archival research, to identify more than fifty individual houses and other architectural features (gates, mosques, baths, and so forth) lining the two streets depicted in addition to the better-known features of the Red Fort. On internal evidence she dates the information on the maps to the period between 1751 and the occupation of Delhi by Ahmad Shāh Durrānī in 1757, but the maps could of course have been drawn (or copied) in Oudh somewhat later.¹⁹⁶

Richly detailed paintings and drawings were also made of many individual buildings, monuments, gardens, and other features of architectural interest. A particularly charming, if not especially accurate, work (fig. 17.58) is the painting of the emperor Akbar’s tomb at Sikandra. Its provenance is Rajasthan, and its date has been given as late eighteenth century.¹⁹⁷ Of a very similar painting, Welch writes:

The painter of this picture created his ideograph of Akbar’s tomb according to projections, employed by “primitive” artists the world over, in which facades, walls, trees, figures, and minarets are seen head-on, in their most characteristic views, while the gardens, courtyards, and watercourses are shown as though viewed by a flying bird. This ancient approach offers certain advantages: it enables us simultaneously to see from the sides and from above, and to gain a much fuller idea of each element in the structure. It also produces a highly appealing picture, with no violation of the surface’s two dimensional harmony, and in this case transforms Akbar’s tomb into a sort of mandala, the Buddhist and Hindu psychocosmogram. On the other hand, it tells us very little either about relative proportions—the gardeners are tall as trees—or of the “feel” of surfaces. It presents the idea instead of the appearance, the spirit rather than the substance.¹⁹⁸

Strikingly similar to the work just discussed is a watercolor painting of the mausoleum of Akbar’s son and suc-

195. For details on Nidha Mal, see Falk and Archer, *Indian Miniatures*, 121–22 and 426 (note 140).

196. Susan Gole, “Three Maps of Shahjahanabad,” *South Asian Studies* 4 (1988): 13–27.

197. Stuart Cary Welch, *Room for Wonder: Indian Painting during the British Period, 1760–1880* (New York: American Federation of Arts, 1978), 134, illustrated on p. 135; also illustrated in *Indian Heritage*, 50 (note 93).

198. Welch, *Room for Wonder*, 134 (note 197).

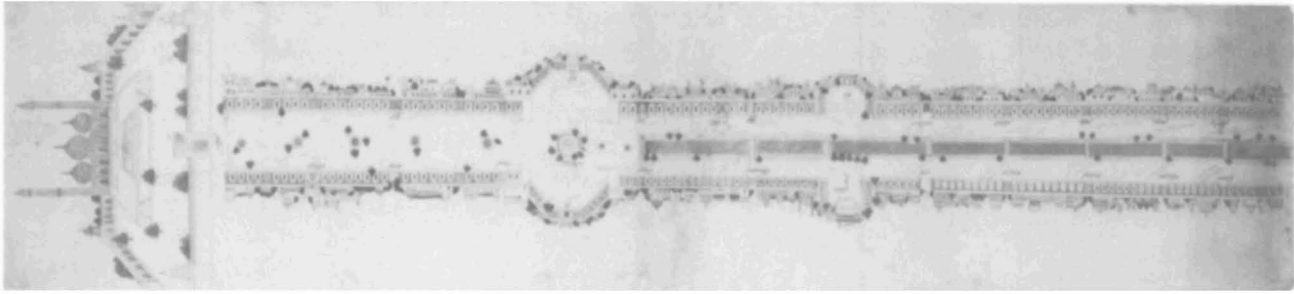


FIG. 17.57. CHANDNI CHOWK, A MAIN STREET OF SHĀHJAHĀNĀBĀD (DELHI). This map is in Company style, from Delhi or Oudh, ca. 1755, in Persian text with some French added. This is one of a set of three architectural drawings relating to the city.

Size of the original: 31 × 140 cm. By permission of the Victoria and Albert Museum, London (A.L. 1762).

cessor, Jahāngīr, at Lahore. It is also dated about 1770 but is attributed to a Mughal rather than a Rajasthani artist. It is inscribed in Persian and makes up for its deficient use of perspective by providing written measurements of the building and identifying its various parts. This painting, 146 by 130 centimeters, is also substantially larger than that of Akbar's tomb. It is on display in the library of the Royal Asiatic Society in London.¹⁹⁹

The use of maps and plans as records of property holding, so commonplace in the West, was relatively rare in traditional South Asia, where exclusively verbal descriptions were the norm. Although additional research will probably reveal additional cases, I am aware of only one detailed plan of a private house. That plan was brought to light by Muhammed Abdulla Chaghatai and forms part of a long paper scroll dated 1057/1657. The scroll records the deed of a house by the mayor of Ahmadabad, Seth Shantidas, to his son Lakhshmi Chand.²⁰⁰ The plans on the scroll relate to different portions of what must have been a very large two-story house and are dispersed throughout the document. Accompanying text provides details of the limits of the property, of where the walls or courtyards met with adjacent properties, and of the construction materials used in different parts of the building. Gole, who illustrates a portion of the scroll, observes that nowhere in Chaghatai's translation of the scroll's text is it suggested that plans of houses were unusual in the seventeenth century; but when and how they originated remains for the time being a mystery.²⁰¹ In passing, let me mention one additional property map from a suburb of Bombay, showing the home and adjoining gardens of Shripada Narayan Sathgar. Though drawn as recently as 1874 and printed in a biography by Sathgar's son, the work is of interest because it retains much that is traditional in the style of depicting vegetation and in its combining of planimetric and frontal perspectives.²⁰²

I close this chapter by noting that many Indian and Nepali artists delighted in providing vivid paintings of

works of architecture as major elements of compositions whose ostensible subject was completely different. In court and religious narrative paintings (e.g., of the stories of the great Indian epics) this tendency was quite common and of long standing. A complete catalog of such works would probably be an impossible undertaking for any individual. The region of Rajasthan is particularly noteworthy for paintings in which architecture figures prominently, and within Rajasthan the state of Mewar stands out. Udaipur, the Mewari capital, has an especially picturesque setting within the mountain knot at the southern end of the Aravalli range, and the palaces, pavilions, and pleasure gardens built in and around Lake Pichola in the heart of that city were favorite subjects for local artists, forming the backdrops for many of their works.²⁰³ Other delightful paintings came from or related to nearby states. I can think of no work more enchanting in its conception and execution than a depiction of the celebration of Diwali (the festival of lights) at the royal palace of the

199. In addition to the architectural paintings we have described, a bound album of sixty drawings, dated mid-nineteenth century and held by the Department of Oriental Antiquities at the British Museum, London (acc. no. 1984.1-24.01 [12]), contains nine architectural presentations, of which two oblique perspective views, of Bādshāhi mosque in Lahore (no. 12) and of Ranjit Singh's tomb (no. 19) (location not specified, but also in Lahore), may be considered maps. The drawings are said to be of the "Sikh school" and are quite similar in execution to the "Company style."

200. Muhammed Abdulla Chaghatai, "A Rare Historical Scroll of Shahjahan's Reign," *Journal of the Asiatic Society of Pakistan* 16 (1971): 63-77, and photos of scroll and map. I am grateful to Irfan Habib for calling this work to my attention.

201. Gole, *Indian Maps and Plans*, 188 (note 1).

202. The work is illustrated in Gole, *Indian Maps and Plans*, 189 (note 1).

203. See, for example, "The Rana's Lake Pavilion," a charming miniature painting (39.4 × 45.7 cm) of the mid-eighteenth century illustrated by Welch in *India: Art and Culture*, 377 (note 145). (The palace depicted is now a luxury hotel.) The painting is part of Welch's personal collection.

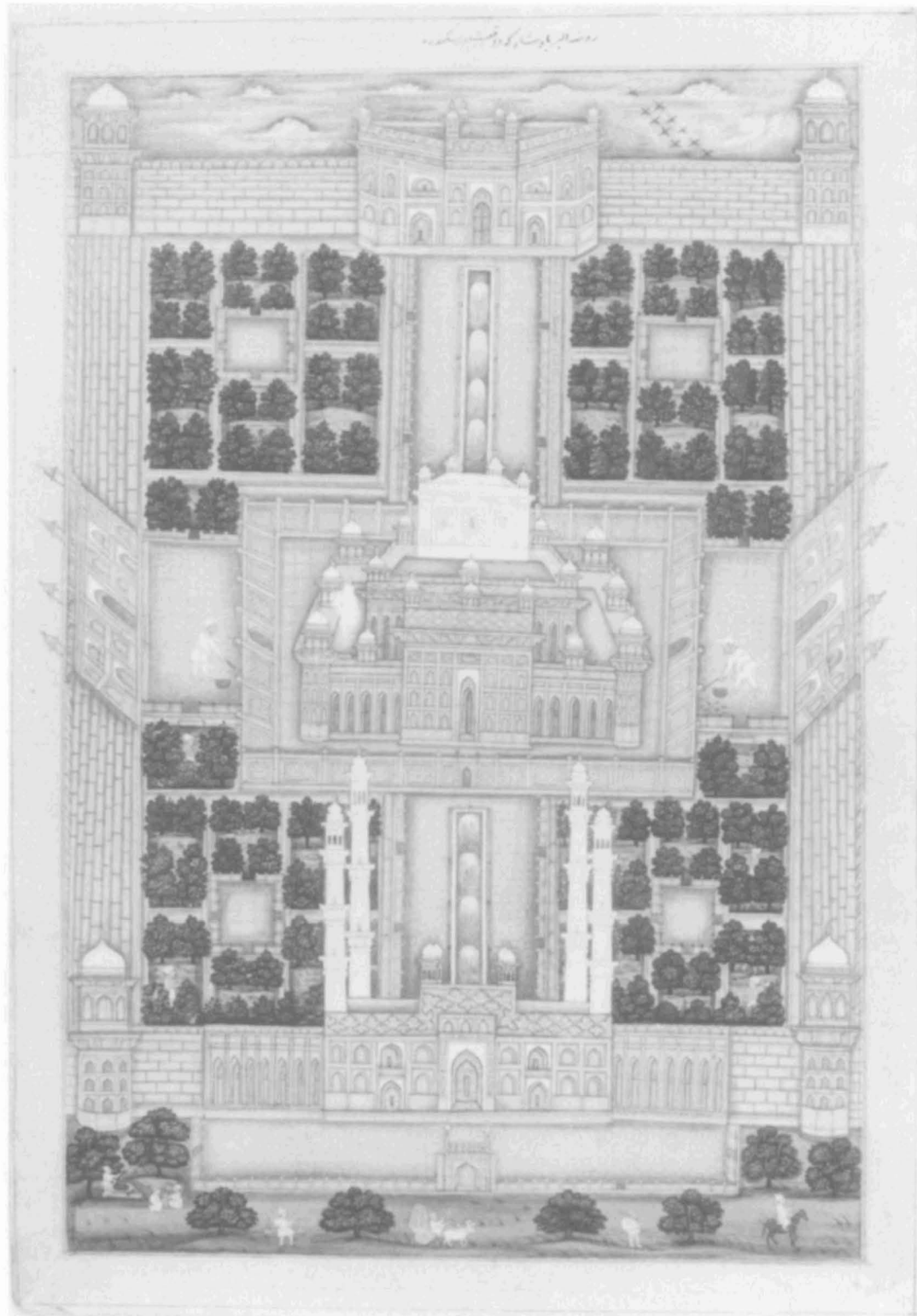


FIG. 17.58. TOMB OF THE EMPEROR AKBAR AT SIKANDRA, AGRA DISTRICT, UTTAR PRADESH. This Rajasthani painting is opaque watercolor on paper and dates from the late eighteenth century. The use of diverse perspectives is particularly effective in enabling viewers to grasp the essential character

of each of the major components of this sublime architectural assemblage.

Size of the original: 48 × 32.5 cm. By permission of the India Office Library and Records (British Library), London (Add. MS. Or. 4202).

state of Kotah (plate 39). Though relating to Kotah, the work is attributed to Udaipur and dated about 1690. Within its small compass (48.5 × 43.4 cm) it manages to depict not only the king among his harem, scores of other happy celebrants, music, fireworks, acrobatics, and animal fights, but also the palace courtyards, the major components of the palace itself, and the nature of the surrounding terrain.²⁰⁴

204. Like most of the Rajasthani court paintings, this work was probably the creation of an anonymous artist of the Sutar (carpenter) caste. The work is in Melbourne, National Gallery of Victoria (cat. no. 52), and is illustrated by Topsfield in *Paintings from Rajasthan*, color plate no. 8, p. 23, with relevant text on pp. 11–12 and 57 (note 136). Topsfield's book contains numerous other figures that richly illustrate the architecture for which Rajasthan is renowned.

APPENDIX 17.1

Place Map Is/Was Held	Provenance and Date	Dimensions (cm) (h × w)	Language
a. Vrindaban, Vrindaban Research Institute (acc. no. 5295)	Braj 19th century (?)	24 × 18	Braj dialect (Gujarati script)
b. Vrindaban, Vrindaban Shudh Sansthan (MS. 4706)	Bengal (?) 19th century (?)	57 × 44	Sanskrit (Bengali dialect)
c. Published in Indian historical text on Braj ^b	Modern	?	Hindi
d. New York, Doris Wiener Gallery	Nathdwara, Rajasthan, early 19th century	275 × 259	Braj dialect (?)
e. Ahmadabad, Calico Museum of Textiles (acc. no. 2062)	Nathdwara, late 19th century	222 × 218	Braj dialect (?)
f. Ahmadabad, Calico Museum of Textiles (acc. no. 1330)	Nathdwara, late 19th or early 20th century	180 × 193	Braj dialect
g. Jaipur, Maharaja Sawai Man Singh II Museum (cat. no. 133)	Braj (?), late 18th century (?)	141 × 79	Braj dialect
h. Baroda, Collection of Rini Dhupal	Modern (earlier than i)	49 × 30	Hindi
i. Minneapolis, Collection of Joseph E. Schwartzberg	Modern, 1970s or 1980s	57 × 38	Braj and Bengali

^aThe citations in this column are: Alan W. Entwistle, *Braj: Centre of Krishna Pilgrimage* (Groningen: Egbert Forsten, 1987); Susan Gole, *Indian Maps and Plans: From Earliest Times to the Advent of Euro-*

pean Surveys (New Delhi: Manohar Publications, 1989); Walter M. Spink, *Krishnamandala: A Devotional Theme in Indian Art*, Special Publications, no. 2 (Ann Arbor: Center for South and Southeast Asian

INDIGENOUS MAPS OF BRAJ

Medium	Orientation	Description	Where Published ^a
Ink (?) on paper	Varies	Fifty-six-petal lotus (see fig. 17.20) from a manuscript	Entwistle, <i>Braj</i> , 441 (pl. 11)
Paint and ink on paper	Varies	Twelve-petal lotus and Yamuna River (see fig. 17.21)	Gole, <i>Indian Maps and Plans</i> , 60 (fig. 19)
Printed on paper	Varies	Twelve-petal lotus, superimposed on base with Yamuna River and pilgrimage route	Gole, <i>Indian Maps and Plans</i> , 60 (fig. 18)
Painted on cloth	North	Nathdwara style (see plate 31)	Spink, <i>Krishnamandala</i> , 9–10 and 118 (fig. 17)
Painted on cloth	North	Nathdwara style	Talwar and Krishna, <i>Indian Pigment Paintings on Cloth</i> , 26 and pl. 23
Painted on cloth	North	Nathdwara style	Talwar and Krishna, <i>Indian Pigment Paintings on Cloth</i> , 27 (no. 17) and pl. 24; Gole, <i>Indian Maps and Plans</i> , 61 (fig. 20)
Painted paper on cloth	North	More realistic representation than any of above, with greater concern for scale; much unpainted map surface	Gole, <i>Indian Maps and Plans</i> , 58–59 (fig. 17)
Printed on paper, multicolored	North	Highly stylized, emphasis on pilgrimage route, little attention to direction or scale, ornamental detail to fill all blank spaces on map	Gole, <i>Indian Maps and Plans</i> , 61 (fig. 21)
Printed on paper, multicolored	North	as h above	

Studies, University of Michigan, 1971); and Kay Talwar and Kalyan Krishna, *Indian Pigment Paintings on Cloth*, Historic Textiles of India at the Calico Museum, vol. 3 (Ahmadabad: B. U. Balseeri on behalf of

Calico Museum of Textiles, 1979).

^bPrabhu Dayal Mital, *Braja ka samskṛtika itihāsa* (in Hindi) [1966–], vol. 1, p. 10.

APPENDIX 17.2 INDIGENOUS MAPS IN THE HODGSON COLLECTION,

Volume	Folios	Number of Maps	Areas of Coverage
3	103	1	“Ilam to Boundary” (eastern Nepal)
7	32, 197–215 (passim)	?	Not determined
55	106	1	?
56	59–60	1	Central Nepal
59	15–16	1	?
59	25–37	8 (?)	Western Nepal
59	38–40	2 (?)	West-central Nepal
59	41–48	4 (?)	Central and east Nepal
59	49–50	1	Easternmost Nepal
59	81–90	2	“Bhota” (Tibet and adjacent Nepali borderland)
59	91–92	1	?
73	111, 117, 142	3	Kosi River drainage basin

APPENDIX 17.3 LARGE-SCALE MAPS

General Area Covered	Place Map Is/Was Held	Provenance and Date	Dimensions (cm) (h × w)	Language
a. Amber, Rajasthan	Jaipur, Maharaja Sawai Man Singh II Museum (cat. no. 75)	Jaipur, mid-18th century (?)	170 × 350	Dhundari
b. Jamwa Mata, Rajasthan	Jaipur, Maharaja Sawai Man Singh II Museum (cat. no. 101)	Jaipur, late 18th or early 19th century	84 × 150	Dhundari
c. Jaigarh, Rajasthan	Near Jaipur, Jaigarh Fort Museum	Jaipur, early 18th century (?)	244 × 103	Rajasthani
d. Khiri, Rajasthan	Jaipur, Maharaja Sawai Man Singh II Museum (cat. nos. 85-87)	Jaipur, 18th century (?)	42 × 58, 75 × 110, 42 × 60	Dhundari
e. Khandela and Lohargarh, Rajasthan	Jaipur, Maharaja Sawai Man Singh II Museum (cat. no. 89)	Jaipur, 18th century (?)	162 × 60	Dhundari
f. Kharda, Maharashtra	Pune, Maratha History Museum, Deccan College	Maharashtra, post-1795	27.5 × 44.5	Marathi
g. Sandh Hill, in Bijapur, Golkonda region (?)	Jaipur, Maharaja Sawai Man Singh II Museum (cat. no. 84)	Jaipur, late 17th or early 18th century (?)	31.5 × 44.5	Dhundari
h. Talegaon, Maharashtra	Pune, Maratha History Museum, Deccan College	Maharashtra, post-1799	44.5 × 27.5	Marathi
i. Tikhandi, Maharashtra	Pune, Peshwe Daftar (?)	Maharashtra, 1820s	?	Marathi
j. Vadhane, Maharashtra	Pune, Peshwe Daftar (?)	Maharashtra, ca. 1784	?	Marathi
k. Udaipurwati, Rajasthan	Jaipur, Maharaja Sawai Man Singh II Museum (cat. no. 82)	Jaipur, mid- or late 19th century	166 × 239	Dhundari

*Susan Gole, *Indian Maps and Plans: From Earliest Times to the Advent of European Surveys* (New Delhi: Manohar Publications, 1989).

INDIA OFFICE LIBRARY AND RECORDS, LONDON

Orientation	Language	Nature of Map(s)/Remarks
North	Limbu(?)	Topographic, distances noted
?	Persian	Ink sketches
North	Nepali	Rivers and four towns (relatively modern in appearance)
North	Nepali	Mainly topographic (see fig. 17.26)
East	Nepali	? (particularly crude sketch)
North	Nepali	Cadastral (see fig. 17.27)
North	Persian	Cadastral
East	Nepali	Cadastral
North	Nepali	Cadastral
North	Tibetan	Routes and settlements, some topography; dated 1824
North	Persian	Topographic
West	Nepali	Topographic (mainly hydrographic)

OF PRIMARILY RURAL LOCALITIES

Medium	Orientation	Purpose and Description	Gole ^a (page)
Painted on paper backed with cloth	?	Shows plans for irrigation works, especially of two dams, humorous topographical details	194 (fig. 107)
Painted on paper		Shows environs of family shrine of Kachwaha Rajputs	
Painted on paper backed with cloth	?	Shows outline and a few details of Jaigarh fort and walls outside fort, plus topography of broad surrounding area	191 (fig. 104)
Painted on paper	?	Three maps, showing Khiri as it was and as it would be if dam were built	202 (figs. 115, 116, and 117)
Painted on paper	?	Shows construction plans for various amenities for pilgrims to Lohargarh	204 (fig. 120)
Ink on paper	East	Sketch showing deployment of forces at battle of Kharda and main features of battle area	147 (fig. 72)
Painted on paper backed with cloth	?	Shows terrain around a South Indian fort captured by Sawai Jai Singh II when in service of the Mughal emperor Aurangzib	203 (fig. 118)
Ink on paper	?	Sketch showing principal features of area of battle of Talegaon	147 (fig. 71)
Ink on paper	?	Identification of land parcels in a village in regard to revenue assessment	
Ink on paper	?	Identification of landholdings within a village in reference to a land dispute (see fig. 17.38)	
Painted on paper	?	Rather naturalistic symbolizations; relatively modern appearance	

APPENDIX 17.4 DETAILED, ESSENTIALLY PLANIMETRIC

City or Town Represented	Place Map Is/Was Held	Provenance and Date	Dimensions (cm) (h × w)
a. Agra	Jaipur, Maharaja Sawai Man Singh II Museum (cat. no. 126)	Rajasthan, eighteenth century	272 × 292
b. Amber	New Delhi, National Museum (cat. no. 56.92.4)	Rajasthan, 1711	661 × 645
c. Bijapur	Bijapur, Archaeological Museum, Gol Gumbaz	Deccani Muslim, late 17th century	149 × 102
d. Bijapur	Hyderabad, Andhra Pradesh State Archives	Deccani Muslim, late 17th century (may be later copies)	90 × 71 and 60 × 43
e. Delhi (Shah-jahanābād)	London, India Office Library and Records (cat. no. x/1659)	Probably European, but possibly late Mughal or hybrid, 19th century	114 × 104
f. Hyderabad	Hyderabad, Idara Adabiyat-e-Urdu	Hyderabad, 1772	215 × 275
g. Jaipur (including Amber) to Sanganer	Jaipur, Maharaja Sawai Man Singh II Museum (cat. no. 16)	Rajasthan, late 18th century	127 × 64
h. Jammu	New Delhi, National Museum (cat. no. 58.33/4)	Jammu (?) probably mid- or late-19th century	121 × 198
i. Jodhpur	Jaipur, Maharaja Sawai Man Singh II Museum (cat. no. 121)	Rajasthan, 19th century (?)	109 × 126
j. Nasik	Pune, Peshwe Daftar	Maharashtra, probably early 19th century	307 × 314
k. Navsari (?)	New Delhi, National Museum (cat. no. 58.13169)	Gujarat, probably mid-18th century	24.5 × 13
l. Sanganer	Jaipur, Maharaja Sawai Man Singh II Museum (cat. no. 114)	Rajasthan, late 18th or early 19th century	124 × 165

^aThe citations in this column are: Susan Gole, *Indian Maps and Plans: From Earliest Times to the Advent of European Surveys* (New Delhi: Manohar Publications, 1989); Sadashiv Gorakshkar, "An Illus-

trated *Anis al-Haj* in the Prince of Wales Museum, Bombay," in *Facets of Indian Art: A Symposium Held at the Victoria and Albert Museum on 26, 27, 28 April and 1 May 1982*, ed. Robert Skelton et al. (London:

SECULAR MAPS OF CITIES AND TOWNS

Language	Medium	Purpose and Description	Where Published ^a
Dhundari	Painted on cloth	Used to guide construction and repairs. Emphasizes specific features requiring work, major monuments (e.g., Taj Mahal), and properties of prominent persons. Remainder of map is sketchy.	Gole, <i>Indian Maps and Plans</i> , 200–201 (fig. 114); Singh, “City Maps on Cloth,” 190–92 (figs. 7 and 8)
Rajasthani	Painted on cloth	See figure 17.39.	Gole, <i>Indian Maps and Plans</i> , 170–71 (fig. 91)
Persian	Painted on paper backed with cloth	See figure 17.40.	Gole, <i>Indian Maps and Plans</i> , 160–61 (fig. 83)
Persian	Painted on paper	Two maps, both slight variants of the foregoing.	Gole, <i>Indian Maps and Plans</i> , 160–61 (figs. 84 and 85)
Persian	Ink and paint on paper	Exceedingly detailed, with complete street plan and decidedly European look, but text exclusively in Persian. Printed scale to right of map.	Gole, <i>Indian Maps and Plans</i> , 177 (fig. 96)
Persian	Painted on cloth	Virtual absence of text makes purpose unclear, but map appears to show every house on every street. Multistory houses are shown as such. Streets full of people engaged in various activities.	Gole, <i>Indian Maps and Plans</i> , 190 (fig. 103)
Dhundari	Painted on paper	Possibly used for planning a proposed canal and other engineering works. City of Jaipur mapped in great detail and with seeming accuracy, but countryside leading south to Sanganer is greatly foreshortened, and Sanganer is simplified. Depiction of countryside similar to style used from maps a–d and f of appendix 17.3.	Gole, <i>Indian Maps and Plans</i> , 195 (fig. 108)
Hindustani in Arabic script in a Persian style	Painted on paper backed with cloth	Rather detailed, seemingly accurate and relatively modern work, though retaining many traditional elements. Many map notes on uses of various buildings and structures. Probable European influence. Map has neat line.	Gole, <i>Indian Maps and Plans</i> , 166 (fig. 88)
Marwari	Painted on paper backed with cloth	See plate 34.	Gole, <i>Indian Maps and Plans</i> , 186–87 (fig. 100)
Marathi	Painted on paper backed with cloth	Among the most detailed and seemingly accurate of all Indian city plans. Abundant text explaining individual map features. Particular attention given to temples and ghats on Godavari River.	Gole, <i>Indian Maps and Plans</i> , 168–69 (fig. 90)
no text	Painted on paper	Nearly one-fourth of painting is of a Muslim prince or governor granting an audience to a group of Parsis, suggesting that the port city mapped could be Navsari, an important Parsi center. Details of city highly stylized; bazaar streets and port, wall, and major edifices prominently shown.	Gole, <i>Indian Maps and Plans</i> , 185 (fig. 99)
Dhundari	Painted on paper	See figure 17.41.	Gole, <i>Indian Maps and Plans</i> , 206 (fig. 122)

Victoria and Albert Museum, 1986), 158–67; John Irwin, *The Kashmir Shawl* (London: Her Majesty's Stationery Office, 1973); Chandramani Singh, “Early 18th-Century Painted City Maps on Cloth,” in *Facets of*

Indian Art: A Symposium Held at the Victoria and Albert Museum on 26, 27, 28 April and 1 May 1982, ed. Robert Skelton et al. (London: Victoria and Albert Museum, 1986), 185–92.

APPENDIX 17.4—*continued*

City or Town Represented	Place Map Is/Was Held	Provenance and Date	Dimensions (cm) (h × w)
m. Sawai Madhopur	Jaipur, Maharaja Sawai Man Singh II Museum (cat. no. 96)	Rajasthan, late 18th century	91 × 122
n. Srinagar	Srinagar, Sri Pratrapp Singh Museum (cat. no. 191)	Kashmir, 1819–56	ca. 180 × 150
o. Srinagar	London, Victoria and Albert Museum (I.S.31.1970)	Kashmir, third quarter of 19th century	ca. 230 × 195
p. Srinagar, environs	Srinagar, Sri Pratrapp Singh Museum (cat. no. 2063)	Kashmir, late 19th century (?)	68 × 37
q. Surat	Bombay, Prince of Wales Museum of Western India	Mughal, late 17th century	ca. 40 × 24
r. Surat	Jaipur, Maharaja Sawai Man Singh II Museum (cat. no. 118)	Gujarat (?), early 18th century	210 × 186
s. Tonk	Jaipur, Maharaja Sawai Man Singh II Museum (cat. no. 107)	Rajasthan, second quarter of 18th century	81 × 119
t. Udgir	Hyderabad, Andhra Pradesh State Archives	Deccani Muslim, early 19th century (?)	Roughly circular, diam. 67

Language	Medium	Purpose and Description	Where Published ^a
Dhundari	Painted on paper	Map relates to drainage projects to protect newly built town from monsoon flooding. Town walls and prominent buildings carefully depicted. Not all the town included.	Gole, <i>Indian Maps and Plans</i> , 205 (fig. 121)
Persian	Embroidered in silk on cloth	Said to have been embroidered by Ghullam Muhammad Kulu over a thirty-seven-year period as a gift to Sikh king, Ranjit Singh. Very detailed. Text identifies all key structures and gardens. Poorly displayed and hard to study (cf. map o below).	Gole, <i>Indian Maps and Plans</i> , 127–28 (fig. 56)
Persian	Embroidered in fine wool on cloth	See plate 33.	Gole, <i>Indian Maps and Plans</i> , 129 (fig. 57); Irwin, <i>Kashmir Shawl</i> , 55 and pl. 42
Hindi (?)	Painted on paper	Highly simplified and stylized representation of relatively few key features; Hari Parbat fort prominently shown.	Gole, <i>Indian Maps and Plans</i> , 127–28 (fig. 54)
Persian	Painted on paper	One of several plans of cities from a manuscript describing the pilgrimage to Mecca (Surat was an important port of embarkation for Indians; plans of Mecca and other places not here described). A highly simplified and stylized view, emphasizing the port, city wall, and a few key buildings.	Gole, <i>Indian Maps and Plans</i> , 162 (fig. 86); Gorakshkar, “ <i>Anis al-Haj</i> ,” 160–61 (fig. 2)
Persian with later addition of Rajasthani	Painted on cloth	Simplified street pattern with emphasis on key edifices, inner and outer city walls, berths, and warehouses for European trading companies (identifiable by flags), customs house, and fort. Gardens between city walls and palm groves prominently shown. Nearby villages named along edge of map.	Gole, <i>Indian Maps and Plans</i> , 164–65 (fig. 87); Singh, “City Maps on Cloth,” 190–92 (fig. 9)
Dhundari	Painted on paper	Layout of town and its environs, with details provided to aid new construction and notes on work in progress. Generally similar to maps a–d of appendix 17.3 and map q above.	Gole, <i>Indian Maps and Plans</i> , 203 (fig. 119)
Persian	Painted on paper	Detailed rendering of city’s inner and outer walls and other defenses. Relatively few interior structures are identified, and many of those are said to be in ruins (probably from the Maratha seizure of the fort in 1760).	Gole, <i>Indian Maps and Plans</i> , 167 (fig. 89)

APPENDIX 17.5 DETAILED OBLIQUE, SECULAR

City or Town Represented	Place Representation Is/Was Held	Provenance and Date	Dimensions (cm) (h × w)
a. Ajmer, Rajasthan	Windsor Castle, <i>Pādshāhnāmāh</i> (MS., fol. 205v)	Mughal, mid-18th century	?
b. Bust (Kala Bist) (?), Afghanistan	Paris, Musée Guimet	Mughal, ca. 1646	34 × 24.2 (image) 48 × 31.5 (folio)
c. Delhi	Kotah, Rao Madho Singh Museum Trust, City Palace	Kotah, Rajasthan, mid-19th century	452.1 × 259.1
d. Daulatabad, Maharashtra	Windsor Castle, <i>Pādshāhnāmāh</i> (MS., fol. 144r)	Mughal, mid-17th century	?
e. Faizabad (?) Uttar Pradesh	Private collection	Oudh (Awadh), Mughal, ca. 1765	50.3 × 69.2
f. Golkonda, Andhra Pradesh	Oxford, Bodleian Library (Douce Or. B3, fol. 25)	Deccan, ca. 1750	28 × 33
g. Gurkha, Nepal	Museum in Bhaktapur, Nepal	Newari, early 19th century	?
h. Kangra, small town in Himachal Pradesh	Boston, Museum of Fine Arts, Ross-Coomaraswamy Collection (CCCCLVII. 17.2627)	Pahari, Kangra, early 19th century	22.5 × 33.1
i. Kumbhalgarh, Rajasthan	Collection of Gajendra Kumar Singh	Mewari, 18th century	?
j. Lahore, Punjab, Pakistan	Amritsar, Maharaja Ranjit Singh Museum, Rambagh Palace	Pahari style, early or mid- 19th century	154 × 124
k. Lucknow, Uttar Pradesh	Private collection	Mughal, mid-19th century	54.3 × 95.2
l. Rampur, Himachal Pradesh	London, British Museum, Oriental Collections (1960 2-13 04)	Pahari school, Kangra style, ca. 1840	51.5 × 120
m. Udaipur, Rajasthan	Collection of Mr. and Mrs. William P. Wood	Mewari, ca. 1750	60 × 47.6

^aThe citations in this column are: M. R. A. [Mulraj Anand], "Architecture," *Mārg* [34, no. 1], *Appreciation of Creative Arts under Maharaja Ranjit Singh*, 27–33 (see also pp. 12–13 in the same journal); Wayne E. Begley and Z. A. Desai, eds., *The Shah Jahan Nama of Inayat Khan (An Abridged History of the Mughal Emperor Shah Jahan, Compiled by His Royal Librarian)* (Delhi: Oxford University Press, 1990); Ananda

Kentish Coomaraswamy, *Catalogue of the Indian Collections in the Museum of Fine Arts, Boston* (Boston: Museum of Fine Arts, 1923–30), pt. 5, Rājput Painting (1926); *In the Image of Man: The Indian Perception of the Universe through 2000 Years of Painting and Sculpture*, catalog of exhibit, Hayward Gallery, London, 25 March–13 June, 1982 (New York: Alpine Fine Arts Collection, 1982); Stella Kamriscch,

REPRESENTATIONS OF CITIES AND TOWNS

Medium	Purpose and Description	Where Published ^a
Gouache on paper	The emperor Shāh Jahān with his entourage is shown encountering an allegorical figure of a Sufi saint in the vicinity of the walled city of Ajmer that occupies the middle ground of the painting. Outlying settlements are also shown along the Aravalli range in the background.	Begley and Desai, eds., <i>Shah Jahan Nama</i> , pl. 10
Gouache on paper	See figure 17.42.	Welch, <i>India: Art and Culture</i> , 247–48 (fig. 162a)
Painted, on cloth	Commemorates Maharao Ram Singh's state visit to Delhi in 1842. The city of Shāhjahānābād, the Red Fort, the Jāma Masjid (great mosque), the Chandni Chowk bazaar and other urban features are painted with great clarity, along with innumerable human figures, domestic animals, and other interesting details.	Singh, <i>Kingdom That Was Kotah</i> , 20 and fig. 40
Gouache on paper	Scene depicting Mughal conquest of Daulatabad; clearly shown are the hilltop fort atop a high steep escarpment, a moat below the escarpment, and a lower city with three concentric encompassing walls.	Begley and Desai, eds., <i>Shah Jahan Nama</i> , pl. 4
Painted, on paper (?)	Titled "Entertainment in a Harem Garden," the scene also portrays "a great late Mughal palace complex," ^b which may or may not be modeled on the Awadhi capital of Faizabad. Strong European influence.	Patnaik, <i>Second Paradise</i> , 69 and 180–81 (pl. 14)
Painted on paper (?)	Miniature depicting royal procession entering the walled city via successive gates. Abundant detail of buildings within the city walls.	<i>In the Image of Man</i> , 133 (fig. 127)
Painted on paper	Royal palace and surrounding area at Gurkha, Nepal; rendered in a charming primitive style. Animals and trees very large. Probably little concern for accuracy of detail portrayed.	<i>Les royaumes de l'Himālaya</i> , 202–3 (fig. 30)
Painted on paper (?)	Unnamed town on both sides of a steep-banked river. Houses, temples, watermills, etc., realistically rendered.	Coomaraswamy, <i>Indian Collections</i> , 214 and pl. CXII
Painted on paper	View of walled city and fort, with some details of surrounding countryside.	Nath and Wacziarg, <i>Arts and Crafts</i> , 162–63 (far left)
Painted on cloth	See figure 17.43.	Anand, "Architecture," 28–30 (figs. 1–3)
Painted on cloth	Centers on Kaiserbagh palace, with some detail of adjacent parts of city of Lucknow. Painting full of people in various activities and very rich in architectural detail. Strong European influence.	Patnaik, <i>Second Paradise</i> , 83–85 and 181–82 (pl. 23)
Painted on paper	Panoramic view of town (in frontal perspective) and fort (in oblique perspective) with some details also planimetrically shown. Much attention to terrain and vegetation.	
Gouache with gold and silver leaf on paper	Water pavilions in Lake Pichola. Full of details reflecting the life of the Mewari court: singing and dancing girls, boating, gardening, watching buffalo fights, listening to music, etc.	Kramrisch, <i>Painted Delight</i> , 75 and 172 (pl. 68)

Painted Delight: Indian Paintings from Philadelphia Collections, exhibition catalog (Philadelphia: Philadelphia Museum of Art, 1986); Aman Nath and Francis Wacziarg, *Arts and Crafts of Rajasthan* (London: Thames and Hudson; New York: Mapin International, 1987); Naveen Patnaik, *A Second Paradise: Indian Courtly Life, 1590–1947* (New York: Doubleday, 1985); *Les royaumes de l'Himālaya: Histoire et civ-*

ilisation. Le Ladakh, le Bhoutan, le Sikkim, le Népal, présenté par Alexander W. Macdonald (Paris: Imprimerie Nationale, 1982); M. K. Brijraj Singh, *The Kingdom That Was Kotah: Paintings from Kotah* (New Delhi: Lalit Kalā Akademi, 1985); and Stuart Cary Welch, *India: Art and Culture, 1300–1900* (New York: Metropolitan Museum of Art and Holt, Rinehart and Winston, 1985).

^bPatnaik, *Second Paradise*, 180 (note a).

APPENDIX 17.6 MAPS, PLANS, AND MAPLIKE OBLIQUE

Place Represented	Place Representation Is/Was Held	Provenance and Date	Dimensions (cm) (h × w)
a. Abu, Mount (see x below)			
b. Amarnath, Jammu, and Kashmir	Hyderabad, Jagdish and Kamla Mittal Museum of Indian Art (a fully painted version is in the collection of N. P. Sen, Hyderabad)	Guler, Himachal Pradesh, ca. 1830	35.6 × 27.7
c. Amarnath, Jammu, and Kashmir	Srinagar, Sri Pratap Singh Museum (cat. no. 4025)	Kashmir, late 19th century (?)	23 × 19
d. Amritsar, Punjab, India	Not known	Probably Punjabi, date unknown	Not known
e. Amritsar, Punjab, India	Not known	Probably Punjabi, but definitely later than d above	Not known
f. Bhaktapur, Nepal	Ichu, Bhaktapur, property of Pandit Ratnaraj Sharma	Bhaktapur, ca. 1925 (from an older model)	Not known
g. Chamba, Himachal Pradesh	Chandigarh, Government Museum and Art Gallery (3955)	Pahari, early 19th century	Not known
h. Dwarka, Gujarat	Baroda, Museum and Picture Gallery (P.G.5a.62)	Marwari, mid-18th century	25.5 × ca. 32
i. Dwarka, Gujarat	Bombay, Prince of Wales Museum of Western India (acc. no. 70.4)	Rajasthan, 1773	25.2 × 32.5
j. Dwarka, Gujarat	Jaipur, Maharaja Sawai Man Singh II Museum (acc. no. 139)	Jaipuri, mid-18th century (“drawn by Saligram, son of Gajadhar,” a court painter) ^b	175 × 178

^aThe citations in this column are: Amit Ambalal, *Krishna as Shrinathji: Rajasthani Paintings from Nathdvara* (Ahmadabad: Mapin, 1987); *Baroda Museum Bulletin*, n.d.; Adolf Bastian, *Ideale Welten nach uranographischen Provinzen in Wort und Bild: Ethnologische Zeit- und Streitfragen, nach Gesichtspunkten der indischen Völkerkunde*, 3 vols. (Berlin: Emil Felber, 1892); J. P. Das, *Puri Paintings: The Chitrakāra and His Work* (New Delhi: Arnold Heinemann, 1982); O. C. Gangoly, *Critical Catalogue of Miniature Paintings in the Baroda Museum* (Baroda: Government Press, 1961); Helmuth von Glasenapp, *Heilige Stätten Indiens: Die Wallfahrtsorte der Hindus, Jainas und*

Buddhisten, Ihre Legenden und Ihr Kultus (Munich: Georg Müller, 1928); Susan Gole, *Indian Maps and Plans: From Earliest Times to the Advent of European Surveys* (New Delhi: Manohar Publications, 1989); *In the Image of Man: The Indian Perception of the Universe through 2000 Years of Painting and Sculpture*, catalog of exhibit, Hayward Gallery, London, 25 March–13 June 1982 (New York: Alpine Fine Arts Collection, 1982); Bernhard Kölver, “A Ritual Map from Nepal,” in *Folia rara: Wolfgang Voigt LXV. Diem natalem celebranti*, ed. Herbert Franke, Walther Heissig, and Wolfgang Treue, *Verzeichnis der Orientalischen Handschriften in Deutschland*, supplement 19 (Wies-

VIEWS OF SACRED PLACES OR SERVING RELIGIOUS PURPOSES

Language	Medium	Purpose and Description (all essentially planimetric, unless otherwise specified)	Where Published ^a
No text	Black line and color on paper	Oblique view of landscape showing town, temple, and tank en route to sacred Amarnath cave. Rendered in "Company style" with lingering Pahari touches.	Welch, <i>Indian Drawings</i> , 138–39 (pl. 80)
Not known	Painted on paper	Shows the route to Amarnath cave and shrines and physical features along the way. Oblique perspective.	
Punjabi, Gurumukhi text (?)	Not known	Depicts compound including the Sikh Golden Temple. Overall planimetric layout, with facades seen in frontal perspective.	Von Glasenapp, <i>Heilige Stätten Indiens</i> , fig. 68
No text	Not known	Similar to d above, but more detailed and more realistic.	Von Glasenapp, <i>Heilige Stätten Indiens</i> , fig. 69
Newari (?) (title only)	Painted on paper (?)	See figure 17.46.	Kölver, "Ritual Map from Nepal," pl. 1; Pieper, <i>Die Anglo-Indische Station</i> , 106 (fig. 69)
No text	Painted on paper	Shows the route to and the mountainous landscape around an unnamed shrine typical of those in Chamba. Oblique perspective.	<i>In the Image of Man</i> , 166 (fig. 247)
No text (?)	Painted on paper (?)	Depicts old temple (built before erection, in early 17th century, of present temple), possibly based on an earlier plan.	Gangoly, <i>Critical Catalogue</i> , 75 (no. 35), pl. XX (fig. B)
Rajasthani	Painted on paper	Similar to h above, also showing old temple, but including larger area of island of Sankhodar Bet (see fig. 17.44).	Gole, <i>Indian Maps and Plans</i> , 69 (fig. 30)
Rajasthani	Painted on cloth	Shows all of Sankhodar Bet (see i above) and larger adjacent island, with many important features of religious landscape of Krishna's home (following his departure from Mathura) shown in oblique perspective. Very delicately rendered pictorial detail of architecture (including a temple under the sea), pilgrims, boats, sea creatures, vegetation, etc.	Gole, <i>Indian Maps and Plans</i> , 70–71 (fig. 31); Singh "City Maps on Cloth," 188 (fig. 3)

baden: Franz Steiner, 1976); Richard Lannoy, *The Speaking Tree: A Study of Indian Culture and Society* (London: Oxford University Press, 1971); Armand Neven, *Le Jainisme: Religion et culture de l'Inde: Art et iconographie* (Brussels: Association Art Indien, 1976); Armand Neven, *Peintures des Indes: Mythologies et légendes* (Brussels: Crédit Communal de Belgique, 1976); Jan Pieper, *Die Anglo-Indische Station: Oder die Kolonialisierung des Götterberges*, *Antiquitates Orientales*, ser B, vol. 1 (Bonn: Rudolf Habelt Verlag, 1977); Jan Pieper, "A Pilgrim's Map of Benares: Notes on Codification in Hindu Cartography," *GeoJournal* 3 (1979): 215–18; Chandramani Singh, "Early 18th-Century Painted City Maps on Cloth," in *Facets of Indian Art: A Symposium*

Held at the Victoria and Albert Museum on 26, 27, 28 April and 1 May 1982, ed. Robert Skelton et al. (London: Victoria and Albert Museum, 1986), 185–92; Kay Talwar and Kalyan Krishna, *Indian Pigment Paintings on Cloth*, *Historic Textiles of India at the Calico Museum*, vol. 3 (Ahmadabad: B. U. Balsari on behalf of Calico Museum of Textiles, 1979); Stuart Cary Welch, *Indian Drawings and Painted Sketches: 16th through 19th Centuries* (New York: Asia Society in association with John Weatherhill, 1976).

^bThis is the inscription at the bottom right of map according to Gole, *Indian Maps and Plans*, 70 (note a).

APPENDIX 17.6—*continued*

Place Represented	Place Representation Is/Was Held	Provenance and Date	Dimensions (cm) (h × w)
k. Dwarka, Gujarat	Ahmadabad, Calico Museum of Textiles (acc. no. not available)	Kathiawar peninsula, Gujarat, early 19th century	Not known
l. Girnar (see x below)			
m. Jaisalmer, Rajasthan	Baroda, M.S. University of Baroda, Oriental Institute (acc. no. 7572)	Jaisalmer, Rajasthan, 1859	887.5 × 24.5
n. Kankroli, Rajasthan	Ahmadabad, Calico Museum of Textiles (P 300)	Nathdwara, Rajasthan, date unknown	121 × 179
o. Kashmir (numerous pilgrimage places), Set A, 166 sheets; set B, 72 sheets	Srinagar, Sri Pratap Singh Museum (set A, 2063; set B, 2066)	Kashmir, mid-19th century (probably prepared by a group of pandits led by Pandit Sahibram)	Set A, approx. 36.5 × 32; set B, approx. 35 × 21
p. Kathmandu, Nepal	Bhaktapur, National Art Gallery	Nepal, late 19th century (probably from an older model)	35 × 25
q. Madurai (see kk below)			
r. Nathdwara, Rajasthan	Ahmadabad, personal collection of Amit Ambalal	Nathdwara, Rajasthan, late 19th century	49 × 67
s. Nathdwara, Rajasthan	Ahmadabad, Calico Museum of Textiles (acc. no. not available)	Nathdwara, Rajasthan, late 19th or early 20th century	Not known
t. Nathdwara, Rajasthan	Ahmadabad, Calico Museum of Textiles (acc. no. 1561)	Nathdwara, Rajasthan, 20th century	169 × 119
u. Palitana, Gujarat (four examples, listed as i–iv)	Ahmadabad, Calico Museum of Textiles i (acc. no. 1043), ii (3056), iii (1137), iv (1095)	i and ii from Rajasthan or Gujarat; 18th century; iii from Kishangarh, Rajasthan, early 19th century (repainted, 1885); iv from Gujarat, 19th century	i, 271 × 180; ii, 172 × 115; iii, 238 × 177; iv, 180 × 154

Language	Medium	Purpose and Description (all essentially planimetric, unless otherwise specified)	Where Published ^a
Gujarati (?)	Painted and printed on cloth	Mostly given over to the walled bastion containing the principal and secondary temples. Numerous adjacent shrines, chhatris (cenotaphs), wells, and other sacred sites depicted. Water (either sea or river) along one edge of map. Map must be viewed from all four sides to be clearly read.	
Sanskrit and Gujarati	Painted on paper	See figure 17.50.	Gole, <i>Indian Maps and Plans</i> , 54–55 (fig. 13)
Hindi	Painted on cloth	Painting of local temple complex of the Vallabhacharya sect of Krishna devotees. (See items r and s below for similar works.)	Gole, <i>Indian Maps and Plans</i> , 56–57 (fig. 15)
Various: Sanskrit, Persian, Hindi, Nepali, and Bengali	Set A, painted on paper; set B, pencil and ink on paper	Believed to be parts of a never-completed work commissioned by Maharaja Ranjit Singh to provide a descriptive survey of all the pilgrimage places (<i>tirthas</i>) of Kashmir (see plate 37).	Gole, <i>Indian Maps and Plans</i> , 129–31 (figs. 58 and 59)
Newari (?)	Painted on paper	A highly abstract view of Kathmandu compressed into the shape of a sword. Along the edges of the sword's blade are ranged thirty-three gates, each with the name of a particular section of the city. Curiously, what seem to be compass roses appear in two corners of the "map."	Pieper, <i>Die Anglo-Indische Station</i> , 114 (fig. 76)
No text	Painted on paper	Painting of the Shrinathji temple complex of the Vallabhacharya sect of Krishna devotees at Nathdwara (see plate 35).	Ambalal, <i>Krishna</i> , 138–39 and map key on 165–66
Rajasthani	Painted on paper (?)	<i>Pichhvāi</i> (painting to be hung at back of temple) depicting the Shrinathji temple complex, as noted above.	Talwar and Krishna, <i>Indian Pigment Paintings on Cloth</i> , 7–8 and pl. 3 (with overlay)
Rajasthani	Painted on cloth	This painting is even more detailed and full of human interest than s above; but it is now quite patched (see fig. 17.47).	Gole, <i>Indian Maps and Plans</i> , 56–58 (fig. 16); Talwar and Krishna, <i>Indian Pigment Paintings on Cloth</i> , 36–37 and 43 (no. 42), and pls. IV (color) and 45
Not noted (if any)	Painted on cloth	<i>Patās</i> (wall hangings), showing the Jain Shatrunjaya temple complex on Mount Girnar in Gujarat, with routes up the mountain commencing from the town of Palitana. Rendered in varying degrees of detail, though none shows more than a few score of the roughly nine hundred temples and shrines that cover the mountain. Profuse detail of vegetation, animals, birds, rocky terrain, etc., with numerous pilgrims shown along roads and elsewhere. Most detailed view is i; most naturalistic (reflecting the "Company style") is iii; simplest is iv.	Talwar and Krishna, <i>Indian Pigment Paintings on Cloth</i> , 82–89 (nos. 99–102), and pls. IX (color) and 86–89

APPENDIX 17.6—*continued*

Place Represented	Place Representation Is/Was Held	Provenance and Date	Dimensions (cm) (h × w)
v. Palitana, Gujarat	New York, Navin Kumar Gallery	Mewar, Rajasthan, ca. 1800	129 × 102
w. Palitana, Gujarat	Ahmadabad, Sheth Anandji Kalyanjipedhi	Ahmadabad, Gujarat, 1971	318 × 249
x. Palitana (Shatrunjaya Hill temple complex), Girnar, and Prabhasa, Gujarat; Parasnath Peak, Bihar; and Mount Abu, Rajasthan	Private collection	Gujarat, mid-19th century	56.5 × 76
y. Parasnath Peak (Bihar)	Not known (catalog does not list sources individually)	Rajasthan, 19th century	113 × 176
z. Parasnath Peak (Bihar)	Copied from a <i>Bilderbogen</i> (picture album)	Provenance not known; late 19th century	27.5 × 21.5 (copy)
aa. Parasnath Peak (see x)			
bb. Puri, Orissa	Paris, Bibliothèque Nationale, Département des Manuscrits, Division Orientale (Suppl. Ind. 1041)	Bir Raghuraypur village, near Puri, Orissa, 19th century	150 × 270
cc. Puri, Orissa	London, British Library (MS. Or. 13938)	Puri district, Orissa, early 19th century	59 × 80.5
dd. Puri, Orissa	New Delhi, National Museum (acc. no. 56.59/59)	Puri district, Orissa, late 19th century	96.5 × 147.6
ee. Puri, Orissa	Baroda, Museum and Picture Gallery	Puri district, Orissa, date not known	85 × 147
ff. Puri, Orissa	Not known	Probably Puri district, Orissa, date not known	Not known
gg. Puri, Orissa	Ahmadabad, Calico Museum of Textiles (acc. no. 401)	Puri district, Orissa, mid-20th century	164 × 226
hh. Rameswaram (see kk below)			
ii. Somnath (see x above)			
jj. Srirangam, Tamil Nadu	Not known	Not known	Not known

Language	Medium	Purpose and Description (all essentially planimetric, unless otherwise specified)	Where Published ^a
No text	Painted on cloth	Most resembles map ii of u above.	
No text except title	Oil paint on cloth	Subject as in u above, but rendered in a naturalistic style, with attempt at providing a modern oblique perspective.	
No text	Painted on paper	Unique triptych illustrating five principal Jain shrines. Details similar to those noted for u above (see fig. 17.49).	Neven, <i>Le Jainisme</i> , 32 and fig. 72
No text	Painted on cloth	Wall hanging showing great detail of routes connecting numerous Jain shrines on Parasnath Peak. Shrines shown in combined planimetric and frontal perspectives. Abundant detail of terrain, rivers, vegetation, etc.	Neven, <i>Peintures des Indes</i> , 68 (fig. 8)
Hindi	Original not known (copy in black ink)	Bastian's copy of a very detailed original drawing, similar to y above but more modern in appearance. Abundant text identifying shrines and other features of map.	Bastian, <i>Ideale Welten</i> , 1:288-89 and pl. 9 (frontispiece)
No text	Painted on cloth, lacquered surface	See plate 36.	Das, <i>Puri Paintings</i> , fig. 30; Gole, <i>Indian Maps and Plans</i> , 63
No text	Painted on cloth	Similar to bb above, but showing a somewhat smaller area outside the main temple.	
No text	Painted on cloth	Similar to bb and cc above, with still smaller area outside the main temple.	
No text	Painted on cloth	Not seen, but presumably like bb above.	<i>Baroda Museum Bulletin</i> , n.d.
No text	Probably painted on cloth	Essentially as bb above. Since only a black-and-white photograph is available, statement on color is uncertain.	Von Glasenapp, <i>Heilige Stätten Indiens</i> , pls. 198-203
Oriya (?), Devanagari script	Painted on cloth (?)	Essentially as t or bb above.	Talwar and Krishna, <i>Indian Pigment Paintings on Cloth</i> , 110-12 (no. 130) and pl. 109
No text	Not known	Depicts layout of major Vishnu temple on island in Kaveri River.	Von Glasenapp, <i>Heilige Stätten Indiens</i> , pl. 159

APPENDIX 17.6—*continued*

Place Represented	Place Representation Is/Was Held	Provenance and Date	Dimensions (cm) (h × w)
kk. Srirangam, Madurai, and Rameswaram, Tamil Nadu	London, British Museum, Oriental Collections (1962 12-31 013)	South India, ca. 1830 (paper watermarked 1820)	four folios (of total of ninety-one), each 22.6 × 17.6
ll. Srirangam (?), Tamil Nadu	New Delhi, collection of K. N. Goyal	Not known, possibly Rajasthani, mid-19th century (?)	122 × 63.5
mm. Tarn Taran, Punjab, India	Not known	Not known	Not known
nn. Tirupati, Andhra Pradesh	Hyderabad, Andhra Pradesh State Archives (B.P. Press no. 28 February 1874)	Andhra Pradesh 1873 (by Alim Sher Ahmed)	68 × 87
oo. Udaipur, Rajasthan	Bikaner, Abhaya Jain Granth Bhandara	Udaipur, Rajasthan, 1840	23 × ?
pp. Ujjain, Madhya Pradesh	New Delhi, National Museum (acc. no. 59.1284/7)	Scindia branch of Marathos, early 19th century (?)	24 × 32.5
qq. Varanasi, Uttar Pradesh	New Delhi, National Museum (acc. no. 61.935)	North Indian, late 19th century	234 × 330
rr. Varanasi, Uttar Pradesh	Berlin, in personal possession of Jan Pieper	Varanasi, 1875	79 × 92
ss. Varanasi, Uttar Pradesh	Varanasi, Bharat Kala Bhavan (4/12129)	Varanasi, 1887	ca. 100 × 86
tt. Varanasi	Private collection of Richard Lannoy	North India, late 19th or early 20th century	Not known

Language	Medium	Purpose and Description (all essentially planimetric, unless otherwise specified)	Where Published ^a
Telugu	Painted on European paper	Maplike views from a bound album of religious paintings. Fol. 1, of the temple at Srirangam, is very much like jj above. Fol. 59, of Rameswaram temple, is the most stylized of the group showing nested courtyards lined with Shiva <i>lingams</i> and black squares presumably signifying four main temple gates and towers (<i>gopurams</i>). Fol. 69, of Minakshi temple in Madurai, is in a style similar to that of fol. 1 and focuses on shrines to Shiva and Parvati. Fol. 71, very similar to fol. 69, is of Jambukeswaram temple at Srirangam and also focuses on shrines to Shiva and Parvati (see fig. 17.48).	
No text	Painted on paper backed with cloth	Depicts a Shiva temple on an island. Might be Jambukeswaram temple, half a mile east of kk above. Also shows nearby roads lined with shops.	Gole, <i>Indian Maps and Plans</i> , 67 (fig. 28)
No text	Not known	Depicts compound and Sikh temple complex built around sacred tank in late eighteenth century.	Von Glasenapp, <i>Heilige Stätten Indiens</i> , pl. 76
Telugu, with later English additions	Painted on paper	Though map depicts Sri Venkateswara temple complex, that it was drafted by a Muslim makes it clear that its purpose was not religious. Gole presents evidence that it may have been drawn as part of an enquiry into a murder case.	Gole, <i>Indian Maps and Plans</i> , 139 (fig. 65)
Hindi	Painted on paper	Scroll painting of same genre as m above. Small portion depicted by Gole depicts types of shops that Jain monks would pass on entering the city of Udaipur.	Gole, <i>Indian Maps and Plans</i> , 54 (fig. 12)
No text	Painted on paper	Highly stylized map showing city wall, major temples and other prominent edifices, tanks outside the city, and the winding Sipra River. Much charming pictorial detail of people, architecture, and vegetation.	Gole, <i>Indian Maps and Plans</i> , 64 (fig. 24)
Sanskrit	Painted on cloth	Centered on Visvanath temple in heart of city, map shows routes for circumambulations for pilgrims: (a) immediately around the temple; (b) and (c) an inner- and outer-city ring; and (d) an exterior ring beyond the city. Hundreds of pilgrims are painted along these rings. Bathing ghats, boats and fish in the Ganga, temples, Aurangzibi mosques, other major buildings, tanks, wells, gardens, animals, trees, etc., adorn all portions of map. Faded colors and poor state of repair suggest that map was much used.	
Sanskrit	Lithographic printing on cloth	See figure 17.45	Pieper, "Pilgrim's Map," 215–18 (fig. 1)
Sanskrit	Lithographic printing on cloth	Similar, but not identical, to oo above.	
Sanskrit and Bengali (?)	Woodcut on paper (?)	Similar, but not identical, to rr above.	Lannoy, <i>Speaking Tree</i> , xi and fig. 42

APPENDIX 17.6—continued

Place Represented	Place Representation Is/Was Held	Provenance and Date	Dimensions (cm) (h × w)
uu. Varanasi, Uttar Pradesh	Paris, private collection	North Indian, 20th century (?)	76 × 72

APPENDIX 17.7 DETAILED MAPS, PLANS, AND

Place Represented	Place Representation Is/Was Held	Provenance and Date	Dimensions (cm) (h × w)
a. Agra, Uttar Pradesh (Red Fort)	Jaipur, Maharaja Sawai Man Singh II Museum (cat. no. 125)	Agra (?), mid-18th century	83 × 121
b. Agra, Uttar Pradesh (Red Fort)	London, India Office Library and Records (Persian inv. 11)	Agra (?), ca. 1750	27 × 29.5
c. Agra, Uttar Pradesh (Red Fort)	London, India Office Library and Records (Add. MS. Or. 4392)	Agra, ca. 1810, by Shaykh Ghulam Ahmad	?
d. Amritsar, Punjab, India (Govindgarh fort)	Patiala, Punjab State Archives	Punjab (?), 19th century	?
e. Baghor, Rajasthan	Jaipur, Maharaja Sawai Man Singh II Museum (cat. no. 112)	Rajasthan, early 19th century	118 × 160
f. Bhiwai, Rajasthan (near Baghor)	Jaipur, Maharaja Sawai Man Singh II Museum (cat. no. 48)	Rajasthan, early 19th century	168 × 123
g. Bhudargad, Maharashtra	Bombay, Prince of Wales Museum of Western India (15.430) (now not traceable)	Maratha, 19th century	?
h. Delhi (Red Fort)	London, India Office Library and Records (Add. MS. Or. 1790)	Mughal (by Nidhamal), ca. 1750	80 × 73.5
i. Delhi (Red Fort)	London, Victoria and Albert Museum (AL 1754)	Company style, ca. 1755 (probably a copy)	82 × 75
j. Delhi (Red Fort)	Jaipur, Maharaja Sawai Man Singh II Museum (cat. no. 122)	Rajasthani, late 18th century	64 × 137
k. Delhi (Red Fort)	London, India Office Library and Records (Add. MS. Or. 948)	Lucknow, ca. 1785	29.2 × 41.5

^aThe citations in this column are: Mulk Raj Anand, "Transformation of Folk Impulses into Awareness of Beauty in Art Expression," *Mārg* [34, no. 1], *Appreciation of Creative Arts under Maharaja Ranjit Singh*, 8–26; Bhalchandra Krishna Apte, *A History of the Maratha Navy and Merchantships* (Bombay: State Board for Literature and Culture, 1973);

K. N. Chitnis, "Glimpses of Dharwar during the Peshwa Period," in *Studies in Indian History and Culture: Volume Presented to Dr. P. B. Desai*, ed. Shrinivas Ritti and B. R. Gopal (Dharwar: Karnatak University, 1971), 262–69; C. D. Deshpande, "A Note on Maratha Cartography," *Indian Archives* 7 (1953): 87–94; Toby Falk and Mildred

Language	Medium	Purpose and Description (all essentially planimetric, unless otherwise specified)	Where Published ^a
Sanskrit	Painted on paper	A relatively simple map emphasizing the Ganga, its tributaries (Varuna and Asi), and the major shrines to be visited on the five-kos pilgrimage, one of the circuits noted above.	Gole, <i>Indian Maps and Plans</i> , 66 (fig. 27)

MAPLIKE OBLIQUE VIEWS OF FORTS

Language	Medium	Purpose and Description (all essentially planimetric, unless otherwise specified)	Where Published ^a
Hindi	Painted on paper	Carefully executed plan on gridded paper (see fig. 17.52).	Gole, <i>Indian Maps and Plans</i> , 175 (fig. 94)
No text	Painted on paper	Miniature painting, oblique perspective, seen from east with Yamuna River in foreground.	Falk and Archer, <i>Indian Miniatures</i> , 122 (pl. 191) (description only)
Persian (?)	Ink and watercolor on silk	Walls, gateways, and palace facades rendered in frontal elevation, other structures planimetrically. Very carefully executed on gridded field.	
No text	Painted, on paper	Detailed oblique perspective (view presented by Anand seems to be cut out from larger composition).	Anand, "Folk Impulses," 15 (fig. 5)
Dhundari	Painted on paper backed with cloth	Shows fort in larger setting of cultivated fields and nearby Bhiwai fort. Distances between bastions of outer wall of fort are noted.	Gole, <i>Indian Maps and Plans</i> , 150 (fig. 75)
Dhundari	Painted on paper backed with cloth	See plate 38.	Gole, <i>Indian Maps and Plans</i> , 149 (fig. 74)
Marathi (Modi and Devanagari script)	Ink on paper	Detailed legends on components of fort, conventional symbol to show scarps. Distances to nearby villages and forts noted on edge of map.	Deshpande, "Maratha Cartography," 89 (description only)
Urdu (with English added)	Painted on paper	Emphasis is on wall and gates of fort and nearby moat and river. No detail of interior, but considerable detail of fort's surroundings.	Falk and Archer, <i>Indian Miniatures</i> , 121–22 and 426 (pl. 190)
Persian (with French added)	Painted on paper	Similar to h above.	Gole, "Three Maps" (figs. 3a–3b), and Gole, <i>Indian Maps and Plans</i> , 178–79 (fig. 97.2)
Rajasthani	Paint and pencil on paper	Very detailed, carefully drafted plan. Includes plan, in pencil, of house of Ghadzi Khan (identity not established) to right of plan of city.	Gole, <i>Indian Maps and Plans</i> , 176 (fig. 95)
No text	Gouache and gold on paper	Very detailed oblique perspective, seen from the east. Careful attention to perspective (one-point). Many people drawn in interior courtyards.	Falk and Archer, <i>Indian Miniatures</i> , 160 and 446 (pl. 343)

Archer, *Indian Miniatures in the Indian Office Library* (London: Sotheby Parke Bernet, 1981); Susan Gole, *Indian Maps and Plans: From Earliest Times to the Advent of European Surveys* (New Delhi: Manohar Publications, 1989); Susan Gole, "Three Maps of Shahjahanabad," *South Asian Studies* 4 (1988): 13–27; Naveen Patnaik, *A Second Par-*

adise: Indian Courtly Life, 1590–1947 (New York: Doubleday, 1985); S. R. Tikekar, "The Battle for Janjira," *Illustrated Weekly of India*, 20 March 1949; Stuart Cary Welch, *Indian Drawings and Painted Sketches: 16th through 19th Centuries* (New York: Asia Society in association with John Weatherhill, 1976).

APPENDIX 17.7—*continued*

Place Represented	Place Representation Is/Was Held	Provenance and Date	Dimensions (cm) (h × w)
l. Dharwar, Karnataka	Pune, Maratha History Museum, Deccan College	Maratha (Visaji Narayan Vadadekar had it drawn up), probably 1791	Irregular, 80 × 110
m. Gagraun, Rajasthan	Cambridge, Arthur M. Sackler Museum, Harvard University (545.1983) (private collection)	Kotah, Rajasthan, ca. 1735	ca. 55 × 73
n. Janjira, Maharashtra	Pune, Raja Dinkar Kelkar Museum	Maratha, late 18th century	70 × 95
o. Multan, Punjab, Pakistan	London, India Office Library and Records (acc. no. 1985)	Rajasthani (?), ca. 1849	41.5 × 80
p. Panhala, Maharashtra	Jaipur, Maharaja Sawai Man Singh II Museum (cat. no. 47)	Rajasthani, 18th century	160 × 110
q. Seringapatam, Karnataka	Bombay, Prince of Wales Museum of Western India (not now traceable)	Maratha, ca. 1799	?
r. Srinagar (Hari Parbat Fort)	Srinagar, Sri Pratap Singh Museum (2063)	North Indian	68 × 37
s. Vijayadurg, Maharashtra	Bombay, Prince of Wales Museum of Western India (cat. no. 53.102)	Maratha, 18th century	190.5 × 172.5
t. Two unidentified, presumably Maratha, forts	Bombay, Prince of Wales Museum of Western India: i (53.101) and ii (53.104) (not now traceable)	Maratha, 18th or early 19th century	i, 173 × 205; ii, 121 × 161
u. An unidentified fort (map titled "Siege of a Fort")	Delhi, Red Fort Museum	Provenance not known, 18th century	Ca. 50 × 63

Language	Medium	Purpose and Description (all essentially planimetric, unless otherwise specified)	Where Published ^a
Marathi	Painted on paper	Bastions and walls of fort shown in great detail. Interior of structures partially depicted in frontal perspective. Attached panels on three sides sketchily depict unspecified localities.	Chitnis, "Glimpses," 267 and pl. XLla and b; Gole, <i>Indian Maps and Plans</i> , 148 (fig. 73)
Rajasthani (?)	Painted on paper	See figure 17.54.	Patnaik, <i>Second Paradise</i> , 112 and 183–84 (pl. 40); Welch, <i>Indian Drawings</i> , 95–96 (pl. 49)
Marathi (Modi script)	Painted on paper backed with cloth	Exceedingly vivid representation of a naval engagement between Marathas and the small Sidi coastal state whose main fort was on the island of Janjira. Abundant detail of Janjira fort, nearby forts and military installations on mainland, and ships surrounding island.	Tikekar, "Janjira," 36–37; Gole, <i>Indian Maps and Plans</i> , 153 (fig. 79)
Hindi	Ink (?) on paper	Presumably made at or shortly after British capture of Multan in 1849 by a native (Rajasthani?) artist in their employ. Details are mainly, but not exclusively, of military interest.	Gole, <i>Indian Maps and Plans</i> , 151 (fig. 76)
Dhundari	Painted on paper	Siege of a Maratha fort involving Rajput forces in army of Mughal emperor. Headquarters of nine separate besieging units are shown in great detail, along with unit flags. Earthworks, battlements of fort, and some details of terrain and vegetation also shown.	Gole, <i>Indian Maps and Plans</i> , 152 (fig. 78)
Marathi (Modi script)	Ink on paper	Detailed map of major fort of Tipu sultan, presumably made on eve of its siege by Maratha forces. Major buildings and their occupants named. Channels of and canals from Kaveri River rather accurately delineated. Attempt to show relief by crude contourlike lines and by identifying text.	Deshpande, "Maratha Cartography," 89–90 (description only)
Hindi	Painted on paper	Details not only of fort but of adjacent portion of Srinagar. Highly decorative style suggests that map was not drawn for any military purpose.	Gole, <i>Indian Maps and Plans</i> , 127–28 (fig. 54)
Marathi (Devanagari and Modi scripts)	Painted on paper backed with cloth	See figure 17.53.	Apte, <i>Maratha Navy</i> , 21–24 (fig. 7), including full translation; Deshpande, "Maratha Cartography," 88–89 and pl. I; Gole, <i>Indian Maps and Plans</i> , 137 (fig. 63)
Marathi (Modi script)	Painted on paper backed with cloth	i, Style and nature of detail similar to s above (although this is an inland fort on a river); ii, Details similar to above, but style is more decorative. Vegetation abundantly depicted.	
Not known (possibly Marathi in Modi script)	Painted on paper	Hilltop fort near a river, with moat at base of hill. Fort is under siege by large force, largely cavalry with some elephants and one camel. Metal siege machines, trench leading to mine, and palisades depicted; abundant explanatory text on map.	