

18 • Southeast Asian Geographical Maps

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INTRODUCTION

Surviving noncosmographic maps from Southeast Asia assume a wide variety of forms, ranging from cryptic, preliterate representations of very localized microenvironments by West Malaysian aborigines to small-scale Burmese maps covering areas of over a million square kilometers and a less detailed Thai map of the greater part of Asia. No extant map, so far as I am aware, dates from before the sixteenth century. The distribution of known maps by areas of provenance is very uneven. Burma (Myanmar) is the source of by far the largest corpus, though many of the maps from that country were drawn by individuals who were ethnically Shans rather than Burmans. (Vietnam may account for even more surviving maps than Burma, but for purposes of this history it is treated as part of the Sinic cultural realm rather than of Southeast Asia; see chapter 12.) Maps from Thailand and the Malay world are, by contrast, very few. Within mainland Southeast Asia, I know of not a single surviving noncosmographic map from Cambodia or Laos. Similarly, not a single surviving traditional map has been reported in the scholarship on Philippine cartography.¹ Elsewhere in the Malay world, only West Malaysia, Java, and Borneo (Kalimantan) have yielded any cartographic artifacts. Sulawesi (Celebes) may be added to the list if we also consider nautical charts, but they are the subject of the following chapter.

The materials considered here do not lend themselves to any neat mode of analysis or compellingly logical succession of topics. My general organizational plan is to proceed from maps of large areas through those of ever-decreasing coverage. I shall first consider the single Thai map (though known from more than one manuscript) of near continental coverage. Next I shall examine regional maps relating to rather extensive areas at the scale of an entire country or a major region, dealing first with mainland and then with insular Southeast Asia. I shall then turn successively to route maps that also relate to extensive areas, to large-scale maps of relatively small rural localities (those where all parts might be reached within a day or so from some central location), large-scale maps of cities, and finally, architectural plans at a still larger scale.

A MAP OF THE GREATER PART OF ASIA

As noted in chapter 17 on Southeast Asian cosmography, the places depicted in the richly illustrated Thai *Trai phum* (Story of three worlds), while mostly belonging to the realm of sacred myth, do merge gradually into the physical world as known to Thais when the various recensions of that sacred text were written. Thus we find rivers flowing out of a rather mythologized India into what is recognizably the north of the area that is now Thailand and thence, as Thai rivers actually do, south to the Gulf of Thailand. The several intervening mountain ranges, of which the Thais could not have been wholly ignorant, are simply forgotten in creating such a view. The artists' seeming willingness to ignore geographic facts shows up in other respects, notably in the *Trai phum*'s depicting at least one river flowing south past the northern head of the gulf down the Malay Peninsula to the area of Pattani, near the border of modern Malaysia. This suggests a convention of using rivers as visual linking devices in telling a story about places. If such was in fact the case, the apparent map errors could not be properly regarded as a sign of geographic ignorance or cartographic ineptitude; and it seems likely that persons viewing the maps in the more geographic portions of the illuminated manuscript would have known enough not to take them too literally.

With the information now at my disposal, I am unable to say whether any of the recensions of the *Trai phum* that preceded the two Thonburi manuscripts of 1776 contained geographical maps. Nor can I specify the precise number of folios with such maps in the Thonburi manuscripts in Bangkok and Berlin and in later examples in other places.² Of those folios, as the previous paragraph indicates, some relate mainly to the area that is now Thailand, while others are more sweeping in their coverage. The best example of the latter is illustrated in plate 36.³ The area depicted extends from the Arabian

1. Carlos Quirino, *Philippine Cartography (1320-1899)*, 2d rev. ed. (Amsterdam: Nico Israel, 1963). None of the pre-European maps cited in this work are of Filipino provenance.

2. The dates and locations of the several known manuscripts of the *Trai phum* are provided in note 58 of chapter 17.

3. Klaus Wenk illustrates the entire work in black and white in "Zu einer 'Landkarte' Sued- und Ostasiens," in *Felicitation Volumes of*

Sea (on the right) past India (the first large peninsula), the Bay of Bengal, the Indochinese peninsula (with the Gulf of Martaban recognizable but not, curiously, the narrow projection of the Malay Peninsula), and eastern China to Korea (on the farthest left of the mainland). Off the coast on the left half of the map are a multitude of islands—mainly nebulously shaped—that collectively suggest the Malay Archipelago (including the Philippines) and Japan. In the first panel on the right the large, roughly triangular island is undoubtedly Sri Lanka, and the two islands along the right border presumably represent the Maldives and Laccadives. Also near the right border is a large peninsula that is almost certainly Kathiawar, in the present Indian state of Gujarat. The map, broadly conceived, may be said to be oriented toward the south on the right half and toward the east on the left.

Named along the several blue-green rimmed coasts are numerous cities and several provinces. Eleven cities in Thailand are specifically identified, as are the mouths of the Mae Klong and Tha Chin rivers. Oddly, the contemporary capital, Thonburi, is not named, but the recently destroyed previous capital of Ayutthaya is. Few of the many islands named could be identified by Wenk (on whose description this account is partially based), but among those few are Sri Lanka, Java, and the four islands composing Japan. Almost all the islands on the left half of the map are virtually identical in size, shape, and north-south orientation, but one prominent exception, possibly Java, shows a deep embayment on its northern shore. All the islands are colored yellow, recalling the ancient Indian characterization of Southeast Asia as *Suvarṇadvīpa* (Islands of Gold, which for Ptolemy became the Golden Chersonese). A number of the cities and islands are linked by fine ochre lines along which are given distances from place to place, expressed in *yojanas*. Since Wenk was unable to identify several of the places named, his efforts to test the accuracy of the measurements proved inconclusive.⁴ One might suppose from the presentation of so many distances that the map was intended as an aid to navigation. But given the lack of a strong Thai maritime tradition, such an inference appears unwarranted. Moreover, the map bears little resemblance to any of the nautical maps from various parts of Asia that are described in this work or in volume 2, book 1 of *The History of Cartography*. Further, the inclusion of the map within a cosmographic manuscript, the already-discussed *Traiphum*, does not support a belief that it was meant as an aid to navigators. Finally, the map's indication of distances to places (mainly islands) that appear to be mythical, a practice not uncommon on cosmographic maps, also supports the conclusion that it was not made for sailors.

Prominently drawn on the right and middle folios of the map are mermaids and other fabulous sea creatures,

a European sailing ship (with a crew member in the bow looking through a telescope), and in the Yellow Sea, a Chinese junk. These features underscore the fact that contacts with both Europe and China were instrumental in altering the Thai view of the world during the period when the map was drawn. Further, they, along with other considerations, raise the question whether either a European or a Chinese map might have provided a model for the Thai painter(s) of this map. Since there is no evidence of independently derived Thai knowledge of most of the areas depicted, and since there is no apparent attempt to make the configuration of the coast conform to what is shown in much greater detail on other folios of the *Traiphum*, an exogenous source appears almost certain. Since very few features away from the coasts are shown, the most likely model for the map would have been a sea chart. European sea charts of the area were already numerous by 1776, when the map was painted, and some might well have been available to the artist(s), though probably not during the period after 1688 when virtually all Westerners were expelled from the country, an event noted in chapter 16. Western presence was not to be significantly felt again until the nineteenth century. For works of the pre-1688 period, I know of no chart that configures the coasts of Asia in the manner of this map. The large number of islands in a continuous chain over the center and left portions of the work, however, does recall a similar depiction on the easternmost of the twelve sheets of the so-called Catalan atlas of about 1375, attributed to Abraham Cresques.⁵ Wenk, who also considers

Southeast-Asian Studies Presented to His Highness Prince Dhaninivat Kromamun Bidyalabh Bridhyakorn . . . on the Occasion of His Eightieth Birthday, 2 vols. (Bangkok: Siam Society, 1965), 1:119–22, with one plate. He also provides a large two-page color illustration of the same area as plate 36 in *Thailändische Miniaturmalereien nach einer Handschrift der indischen Kunstabteilung der Staatlichen Museen Berlin* (Wiesbaden: Franz Steiner, 1965), pl. XI and text on 64. In neither of these accounts does Wenk cite any example of maps before those of the Thonburi-period manuscripts, and he does not recognize as “maps” the numerous “geographische, kosmographische, und mythologische Vorstellungen [representations]” of the manuscript that accompany the view that I have illustrated. Nor are any such maps acknowledged in two articles on the cartography of Thailand by the geographer Ulrich Freitag: “Zur Periodisierung der Geschichte der Kartographie Thailands,” in *Kartenhistorisches Colloquium Bayreuth '82*, 18.–20. März 1982: *Vorträge und Berichte*, ed. Wolfgang Scharfe, Hans Vollet, and Erwin Herrmann (Berlin: Dietrich Reimer, 1983), 213–27; and “Geschichte der Kartographie von Thailand,” in *Forschungsbeiträge zur Landeskunde Süd- und Südostasiens*, Festschrift für Harald Uhlig zu seinem 60. Geburtstag, vol. 1, ed. E. Meynen and E. Plewe (Wiesbaden: Franz Steiner, 1982), 213–32. Whether Freitag was personally aware of their existence is not clear from the articles cited.

4. Wenk, “Zu einer ‘Landkarte’ Sued- und Ostasiens,” 121 (note 3).

5. Bibliothèque Nationale, Paris (MS. Esp. 30); this map is illustrated, among others, in Kenneth Nebenzahl, *Atlas of Columbus and the Great Discoveries* (Chicago: Rand McNally, 1990), 6–7, with detail on the eastern islands on 8.

the map's likely source, is of the opinion that it was most likely a Chinese prototype, possibly similar to one of the *Wubei zhi* charts.⁶

Several prominent features on the left half of the map may be cited in support of a Chinese prototype. First, there are a number of small, distinctively drawn rocky islands surrounding the junk in the South China Sea that could represent Hainan and the shoals and reefs of the Paracel Islands and Spratly Islands (compare the two dark islands to the left of Sri Lanka, which could be the Andaman Islands and Nicobar Islands). Second, of all the rectangles on the map that signify ports, the largest, depicted within a unique rectangular embayment, is situated where the Indochinese peninsula gives way to the eastward bulge of southern China proper. This could represent the then prominent port of Guangzhou (Canton), not so distant from this bend in the Asian coast. Third, there is a prominent (though unidentified) inland mountain feature to the left of that port for which there is no parallel on the rest of the map. Most persuasive, perhaps, is the very large river (with two interior towns on its banks) that I judge to be the Yangtze, virtually bisecting China proper, again with no parallel feature elsewhere on the map. No river in India, Thailand, or other parts of the Indochinese peninsula is explicitly shown inland from its mouth. Finally, the conventionalized style in which the ocean is rendered also characterizes a number of Chinese maps. As for the seemingly conflicting evidence that points to the Catalan atlas or a similar Western work as a model, we must recall that an important source for that atlas was the account of Marco Polo, who reported that a large chain of islands lay off the eastern coast of Asia. Since Polo would only have been repeating received Chinese knowledge, there is, in fact, no conflict between the two conceptions.⁷

Although the foregoing description relates to the map of Asia in the Berlin manuscript of the Thonburi version of the *Trai phum*, it also broadly applies to the manuscript in the National Library at Bangkok, the left half of which is illustrated by Coedès.⁸ Numerous differences of detail may be cited, however: the size of the Chinese ship in the South China Sea (more modest than in the Berlin manuscript), the greater number and variety of features shown in the seas to the east of China (providing further support for believing in a Chinese progenitor for the map), the number and alignment of islands (though not their general shape), the shape of the mountain feature in the interior of China, and the number of ports and other coastal features depicted.

MAPS OF COUNTRIES AND REGIONS

MAPS OF BURMESE PROVENANCE

Thanks to the efforts of four British officials, Henry Burney (1792–1845), Francis Hamilton (1762–1829), Arthur Purves Phayre (1812–85), and James George Scott (1851–1935) (the activities of Burney, Hamilton, and Scott in Burma were noted in chapter 16), we are fortunate in having available to us a substantial corpus of Burmese regional maps dating from the late eighteenth and the nineteenth centuries. To these are added several others that have been preserved through the efforts of U Maung Maung Tin and Than Tun of the Burmese Historical Commission.⁹ Since it is not practicable to deal with all of these in detail, I have selected a representative sample to illustrate and discuss and will treat the others summarily in appendixes 18.1 and 18.2. In discussing Burmese maps I will need to allude frequently to places that are not generally familiar to nonspecialists on Southeast Asia. The locations of the more important ones are provided in figure 18.1.

Maps Collected by Francis Hamilton

Figures 18.2 to 18.6 are copies of maps from among the dozens that were drawn for Hamilton (see also appendix 18.1) during his eight-month sojourn in Burma in 1795, serving as an aide to Captain Michael Symes, the first British ambassador to that country. Although Hamilton viewed these maps as “very deficient in accuracy,” he also stated that those who drew them were “wonderfully quick in comprehending the nature of our maps; and some of them, to whom I could render the occupation advantageous, very soon improved their plans, and produced drawings, which have tended to throw much light on the geography of what . . . is called the *Farther Peninsula of India*.”¹⁰ Although no earlier precisely datable geographical maps are known, one may argue that the Burmese engaged in mapmaking before the Symes mission. If they were as adept in learning from European

6. Wenk, “Zu einer ‘Landkarte’ Sued- und Ostasiens,” 122 (note 3); on the *Wubei zhi* charts, see pp. 52–55.

7. The numerous islands to the south of Jambudipa on the Burmese cosmographic map illustrated in figure 17.22 above (from Richard C. Temple, *The Thirty-seven Nats: A Phase of Spirit-Worship Prevailing in Burma* [London: W. Griggs, 1906], facing p. 8) suggest a similar conceptual derivation.

8. George Coedès, *The Vajirañña National Library of Siam* (Bangkok: Bangkok Times Press, 1924), pl. XIX.

9. I have not been able to ascertain from Than Tun which specific maps are or were in his possession.

10. Francis Hamilton (formerly Francis Buchanan), “An Account of a Map of the Countries Subject to the King of Ava, Drawn by a Slave of the King's Eldest Son,” *Edinburgh Philosophical Journal* 2 (1820): 89–95, 262–71, and pl. X; quotation on 90.



FIG. 18.1. REFERENCE MAP OF MAINLAND SOUTHEAST ASIA. This map shows the locations of most of the places, physical features, and ethnic groups mentioned in this chapter. Those not shown here may be found on figure 16.1 or on more narrowly focused regional maps later in this chapter.

maps as Hamilton avers, they should have been no less adept at learning from examples they might have encountered in their extensive intercourse with China, which long antedated their dealings with Europeans. Moreover, the extent of detail and the cartographic idiosyncrasies of the maps drawn for Hamilton could in no way be attributed to whatever guidance he may have provided.

Hamilton published engraved copies of fourteen of the maps he collected in the *Edinburgh Philosophical Journal*, in twelve articles over the period 1820–24, and its successor, the *Edinburgh Journal of Science*, in two articles in 1824. Anticipating this series of publications, Hamilton stated, “I think it may be interesting to publish some of the original maps, exactly as drawn by the natives, but reduced to as small a scale as can be done consistent with exactness.”¹¹ The discussion below of the maps in question is based primarily on the author’s commentaries on these works. Scholars, however, will be able to pursue inquiries on Burmese cartography in much greater detail by referring to the many unpublished volumes of Hamilton’s journals that are in the Oriental and India Office Collections, British Library, London.

So far as I am aware, the original maps are not to be found with the journals, and it is not known whether any survive. Several reasonably faithful copies appear to have been made, however, with the original Burmese text translated or transliterated into English. On some of these copies annotations have subsequently been made, in ink or pencil, that help one interpret what is being portrayed. One set of copies was sent to Europe, while another, communicated to the then governor-general of India, was used by Alexander Dalrymple as source material for some of his own maps of Southeast Asia. I do not know whether these latter copies are the same as the copies held in the Hamilton Collection at the National Archives of India, New Delhi. Nor do I know whether the maps at the National Archives are identical in size to the Burmese originals or where any copy still exists of several of the maps discussed in the publications by Hamilton that are not held by the National Archives. Thus, without access to his journals, I cannot provide the exact number of maps he collected over his remarkably active eight-month sojourn in Burma. Apart from those discussed in the text that follows, some particulars of the others I have some definite knowledge about are provided in the appendixes to this chapter, especially appendix 18.1.

Figure 18.2 is the published version of a map, ostensibly of the “Dominions of the King of Ava,” as Burma was often formerly designated; but in fact it also includes large, vaguely limned areas to the east. This work is one of a number procured by Hamilton

from a man in great poverty, who said, that . . . he was a slave of . . . the heir-apparent of the kingdom,

and who probably had been reduced to the servile state by debt, as his intelligence and manners denoted a person who had held considerable rank, and received a good education. Before he succeeded so far as he has done, he made several attempts, with less success; and the nature of our maps, together with the manner of laying down places by bearing and distance, had been repeatedly explained to him.¹²

Hamilton does not report the slave’s ethnic identity, but I am inclined to think he was a Shan, since several of the other maps he drew relate to areas then tributary to the court of Ava, which are at present in the areas occupied by Shans and kindred Tai populations in what now comprises Myanmar, Thailand, and China. He seemed to know these areas in some detail, whereas he expressed little confidence in a map that he drew of the former kingdom of Pegu in southern Burma, relatively remote from the main area of Shan occupancy.

Hamilton’s general characterization of the map is admirably succinct:

In this map, the then boundary of the empire of Ava is marked by interrupted lines, while the country properly belonging to each subjected nation is distinguished by dotted lines. Mountains are represented by a straight line, like the plain on which they stand, while a waved line represents their summits. This map is chiefly useful, as showing the connection and relative position of the different nations occupying the peninsula; for the outline has many great defects. The extent from east to west is much too great in proportion to the length from north to south; and the peninsulas projecting to the south especially, are very much curtailed, the Gulf of Siam and the Malaya peninsula being altogether omitted. [The virtual omission of the Malay Peninsula occurs repeatedly on Burmese maps as well as, more curiously, on the Thai map illustrated in plate 36.] The former omission especially occasions a most enormous distortion, making the course of the Cambodia [Mekong] river shorter than that of Siam [Mae Nam]. The [Shan] countries, again, to the north of the capital, are too much extended. . . .

Cities in this map are denoted by squares, those which have been the seat of empire having within a smaller square or dot, and those which are the seat of tributary princes having within a cross.¹³

Hamilton makes no mention of having suggested to the slave any of the conventions cited in the quoted passages. With respect to cities, he notes that space limitations in the reduced-scale published version precluded

11. Hamilton, “Map of the Countries Subject to the King of Ava,” 90 (note 10).

12. Hamilton, “Map of the Countries Subject to the King of Ava,” 93–94 (note 10).

13. Hamilton, “Map of the Countries Subject to the King of Ava,” 94 (note 10).



FIG. 18.2. MAP OF THE KINGDOM OF AVA AND LANDS TO THE EAST. The Salween River running north-south for virtually the entire length of the map is a rough approximation of the eastern limit of Ava except in the far south, where "Breit Country" signifies the southern extension of Burma down the Tenasserim coast. As in plate 36, the Malay Peninsula is effectively excluded. The area to the east of the Salween, including

the Mae Nam and Mekong rivers, provides a sketchy view of the non-Burmese portion of the Indo-Pacific peninsula. Size of the published map: 25.6 × 19.8 cm. From Francis Hamilton, "An Account of a Map of the Countries Subject to the King of Ava, Drawn by a Slave of the King's Eldest Son," *Edinburgh Philosophical Journal* 2 (1820), pl. X.

inserting the names; but he provides lists keyed to the seventy-eight numbers on the map, nine for the country of the Kasi Chan or Shan (the Kachin tribal region), fifteen for the Country of the Mranmas (Burman) territory north of Ava (actually, the then nearby capital of Amarapura, sometimes referred to as New Ava), thirty-four for the Burman territory south of Ava, and twenty in the Country of the Mrelap Shan or Shanwa (more or less equivalent to the present Shan States).¹⁴

The eastern half of the map includes the Country of the Tarout (China), various areas dominated by mountain tribes (Wild Kakhion and Wild Lawa), and other territories of a number of Tai peoples. The term “Shan” appears to be used here as a generic designation for a host of non-Burman peoples, including the Kasi Shan (west of whom lie the Kasis or Manipuris), Lowa Shan, Tarout Shan, Jun Shan (with their capital at Zaenmae, or Chiang Mai), Judara (Ayutthaya) Country (Siam proper), and Lanzaen Shan (Laos). East of these are the Country of the Judara Shan (Cambodia, which was then tributary to Siam) and the Country of the Kiokachin Shan (Cochin China), within which the Wild Lawa Hills, a perplexing toponym, suggest the Annamite Cordillera. Beyond lies the South China Sea. In the southwest, Rakhain Country represents Arakan on the Bay of Bengal, while toward the northwest Jo or Yo Country and Wild Khiaen signify Chin tribal regions between Burma proper and India. In the south the Malay Peninsula, as noted, is virtually absent, but a suggestion of it is provided by the Breit Country in which two towns, Dawae and Breit, represent the towns of Tavoy and Mergui, respectively. The northernmost point signified on the map is the Kasi Shan town of Main Ghain (no. 1 on the map), which I take to be the present-day town of Maingkwan.

If all these identifications are correct, the overall extent of the map would be from about 12° to 27° north latitude and from about 92° to 108° east longitude. That any one individual could have knowledge of so vast an area in 1795, rudimentary as that knowledge undoubtedly was for much of the area depicted, indicates a Shan or Burman tradition in which geographic knowledge was remarkably well developed and, most likely, the existence of an accompanying capacity for, if not quite an active tradition of, geographical cartography of which only meager evidence survives for the period before 1795. It is noteworthy in this context that the slave’s map, showing the Kasi Shan territory as tributary to Burma, was taken by the British, on the recommendation of Henry Burney, British ambassador to the court of Ava, as sufficiently authoritative to support the restoration to Burma in 1832 of certain territory annexed to Manipur by the Treaty of Yandabo (1826) concluding the first Anglo-Burmese War.¹⁵

Figure 18.3, Hamilton’s reduced-scale copy of a map

of northern Burma drawn for him at Amarapura by “a native of Taunu” (Toungoo) who was related to a highly placed servant of the Burmese government, gives further evidence of an indigenous cartographic tradition in that the manner of depicting hill ranges by wavy lines and vegetation by diversely rendered arboreal forms and grass signs is so totally unlike anything that might have come from either a European or a Chinese source.¹⁶ It does, however, find echoes, as we shall see, in many later maps of Burmese provenance. That Toungoo, the mapmaker’s home city, is situated on the Sittang River in Lower Burma, hundreds of miles south of the large areas depicted, attests additionally to the gathering and internalization of geographic knowledge so it could be depicted on a map accurately enough to be immediately recognized by one familiar with the geography of the area portrayed.

In Hamilton’s view, the mapmaker “was not so intelligent and quick as the slave who gave me the general map” (fig. 18.2). That the mapmaker was not himself an experienced cartographer is suggested by the description of the way the map was drawn:

This person’s first attempts, as might be expected, were very rude. He began at a given place, . . . and, going on in a certain direction, he laid down the places occurring, until his paper afforded no more room. He then twisted round his line, until he completed the route with which he had commenced. Then he returned to the first point, and commencing with a second route, proceeded in the same manner, and continued so on until he traced the whole of what he intended. The remote parts were thus distorted in a most extraordinary degree. After some pains, however, he improved much, and produced the map, now published.¹⁷

The general frame to which most of the map features can be related is that provided by the river system, various components of which can be discerned on a modern map. The most prominent of these are, of course, the Irrawaddy itself and its principal right-bank tributary, the Chindwin (“Khiaenduaen”). The former has been bent toward the northeast (instead of continuing north) to obtain space for introducing the town of Khandi (upper left), whose modern equivalent is not evident—perhaps Myitkyina. Other prominent features of the map include the two lakes to the west of the Irrawaddy, greatly exag-

14. Hamilton, “Map of the Countries Subject to the King of Ava,” 95 (note 10).

15. W. S. Desai, “A Map of Burma (1795) by a Burmese Slave,” *Journal of the Burma Research Society* 26, no. 3 (1936): 147–52.

16. The published account of this map and its origins is in Francis Hamilton, “Account of a Map of the Country North from Ava,” *Edinburgh Philosophical Journal* 4 (1820–21): 76–87 and pl. II, esp. 76.

17. Hamilton, “Map of the Country North from Ava,” 76 (note 16).

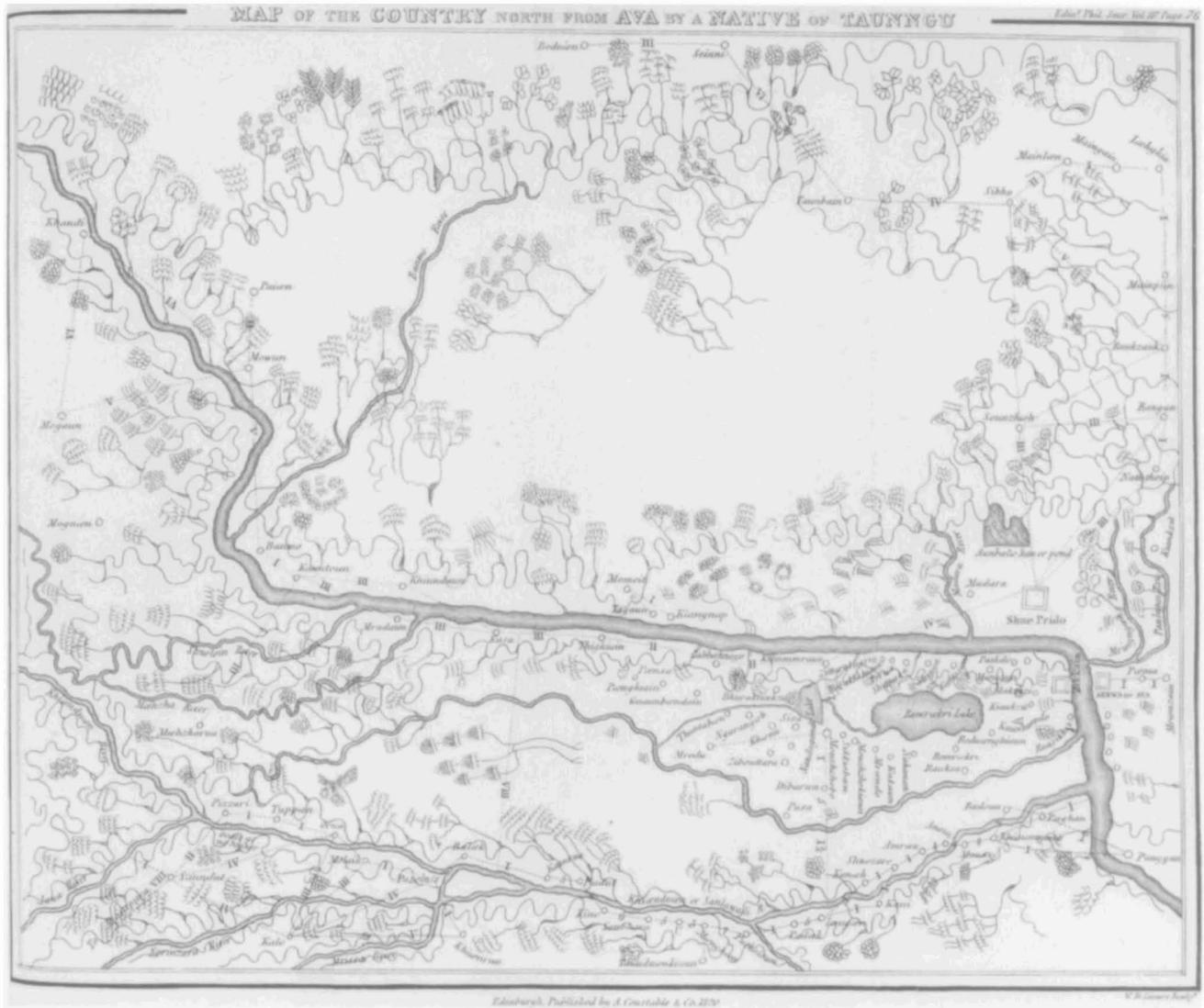


FIG. 18.3. MAP OF THE COUNTRY NORTH FROM AVA. East is at the top of the map, and the then capital, (New) Ava, actually Amarapura, not far from what is now Mandalay, is near the bend in the Irrawaddy close to the map's right margin. The most characteristic feature of this map, as of so many others

of Burmese provenance, is the lavish detail with which vegetation is depicted.

Size of the published map: 19.3 × 23.8 cm. From Francis Hamilton, "Account of a Map of the Country North from Ava," *Edinburgh Philosophical Journal* 4 (1820–21), pl. II.

generated in size but easily found on modern large-scale maps; Aunbælæ Kun, a pond in which lotus plants are depicted, to the east of Shue (Shwe) Prido (Amarapura); and a cluster of present and former capitals, each marked by a double square, including Shue Prido, Ava, and Zikain (Sagaing). All other settlements are marked by small circles. The interpretation of the vegetation signs is problematic. Hamilton says he has "reason to think, that . . . [the mapmaker] has given to each kind a sort of appropriate form, although the resemblance is by no means striking to a botanist. . . . Some forms were, however, pointed out, especially one representing the tea-tree, which grows spontaneously in many parts of the penin-

sula."¹⁸ (It is not clear to me, however, which of the several types of vegetation shown represents the tea tree.)

An important feature of the map, as with most of the other maps Hamilton collected, is its inclusion of distances between named places, expressed either in days of travel (indicated by roman numerals) or, for shorter distances, in Burmese leagues (*dain*), each the equivalent of 2.2 British miles, indicated by arabic numerals.¹⁹ By comparing linear distances on the map with travel times,

18. Hamilton, "Map of the Country North from Ava," 76–77 (note 16).

19. Hamilton, "Map of the Country North from Ava," 77 (note 16).

one can derive some idea of the varying degree of scale distortion from one part of the map to another. In general, the scale tends to decrease with distance from Amrapura. No attempt is made to trace the actual routes between places; rather, the connections are shown by ruled dashed lines, which are obviously the work not of the mapmaker, but of Hamilton himself. This raises the question of how else and how frequently he may have intervened in the mapmaking and underscores the need for caution in interpreting all the maps that reach us because of his efforts.

It is clear that Hamilton's influence was brought to bear significantly when the author of the map just discussed rendered for him a map of Burma to the south of Amrapura, complementing the one just discussed. The map of the South, says Hamilton, differs from that of the North "in style chiefly, by the compiler having omitted the imitations of trees, which were mentioned to him as rather an encumbrance than an ornament."²⁰ (We may therefore perhaps infer that the absence or paucity of vegetation on maps subsequently made for Hamilton runs counter to the propensity of Burmese map compilers to include that important element of the landscape and reflects instead the British collector's eagerness to obtain a useful map in what to him appeared the most expeditious way possible.) Although this map will not be illustrated or discussed in detail, let me point out one statement in Hamilton's description of it that reflects what appears to be a fairly common European misconception in regard to the drainage courses of many Southeast Asian rivers:

One of the most remarkable features of the country represented in this Map is, that although it is far from level, consisting chiefly of swelling grounds, many of which contain rock; and although in many places these rise even to hills disposed in ridges of considerable length, though of no great elevation, yet the rivers anastomose almost as much as in the low lands of Bengal, where there is not the slightest trace of rock, stone, or eminence.²¹

Hamilton is correct in stating that the map he has copied and published, like others he has presented, does show anastomosis to a remarkable degree. He errs, however, in supposing that the apparent drainage pattern of the map, as presented, is reasonably reliable. Although in the Irrawaddy delta, of which he had some firsthand information, anastomosis is indeed common, he is badly mistaken in giving credence to the numerous links shown on the map between the Irrawaddy and the Sittang to its east and between both the middle Irrawaddy and the Sittang and the Salween, still farther east and beyond an intervening mountain range. It appears that the map compiler, in depicting the largely riverine routes between

places in two different river basins, maintained the double line for a river in showing the route beyond a stretch near its headwaters, carrying it over a divide and then down to another stretch of the route near the headwaters of another river on the far side of that divide. This seems to be the identical process employed by native Americans in making certain of their maps, as described by Lewis.²² I shall refer to this misunderstood Burmese mapping convention again in reference to several other regional maps, including some made late in the nineteenth century.

How far Hamilton could influence the final appearance of a Burmese or, more properly in this case, a Shan map may be seen by comparing figures 18.4 and 18.5, both of which are meant to portray the country of a people called the Jun Shan, focusing on Chiang Mai in what is now northern Thailand and adjacent areas of the Burmese Shan States and Laos, an area at the time tributary to Burma and estimated by Hamilton as being some 46,000 square miles in extent. The topological correspondence among many elements of the two is immediately obvious, though the relative distances and areas involved vary considerably. The first of the two maps under review was obtained soon after the receipt of the general map; but "as this contained no distances, he [the slave], at my request, made out the second map, in which these are given; and the manner of delineating the country is altered."²³

Most of the alterations, including the reorientation of the map from east to north, the omission of all depiction of vegetation, and the suppression of the three prominently drawn temples (including the famous Shue Daun [Temple of Seven Pagodas]), are too obvious to require much comment; but it is worth noting that numerous towns that appear on the first map (toward the Salween River in the west, toward the frontiers of Siam and Kiainrourngri [modern equivalent unknown], and east of the Mekong ["Maekhaun"]) are omitted on the second because the compiler could not recall the distances to or between them. Although an obvious attempt has been made in the second map to maintain a greater consistency of scale, the compiler's success was not remarkable. Thus Sinhoun (Lamphun), which is allegedly only six leagues (roughly 20 km) from Chiang Mai, is placed farther from

20. Francis Hamilton, "Account of a Map Constructed by a Native of Taunu, of the Country South of Ava," *Edinburgh Philosophical Journal* 5 (1821): 75-84 and pl. V; quotation on 75.

21. Hamilton, "Map Constructed by a Native of Taunu," 75 (note 20).

22. G. Malcolm Lewis, "Indian Maps," in *Old Trails and New Directions: Papers of the Third North American Fur Trade Conference*, ed. Carol M. Judd and Arthur J. Ray (Toronto: University of Toronto Press, 1980), 9-23, esp. 19.

23. Francis Hamilton, "Account of Two Maps of Zaenmae or Yan-goma," *Edinburgh Philosophical Journal* 10 (1823-24): 59-67 and pl. III; quotation on 59.

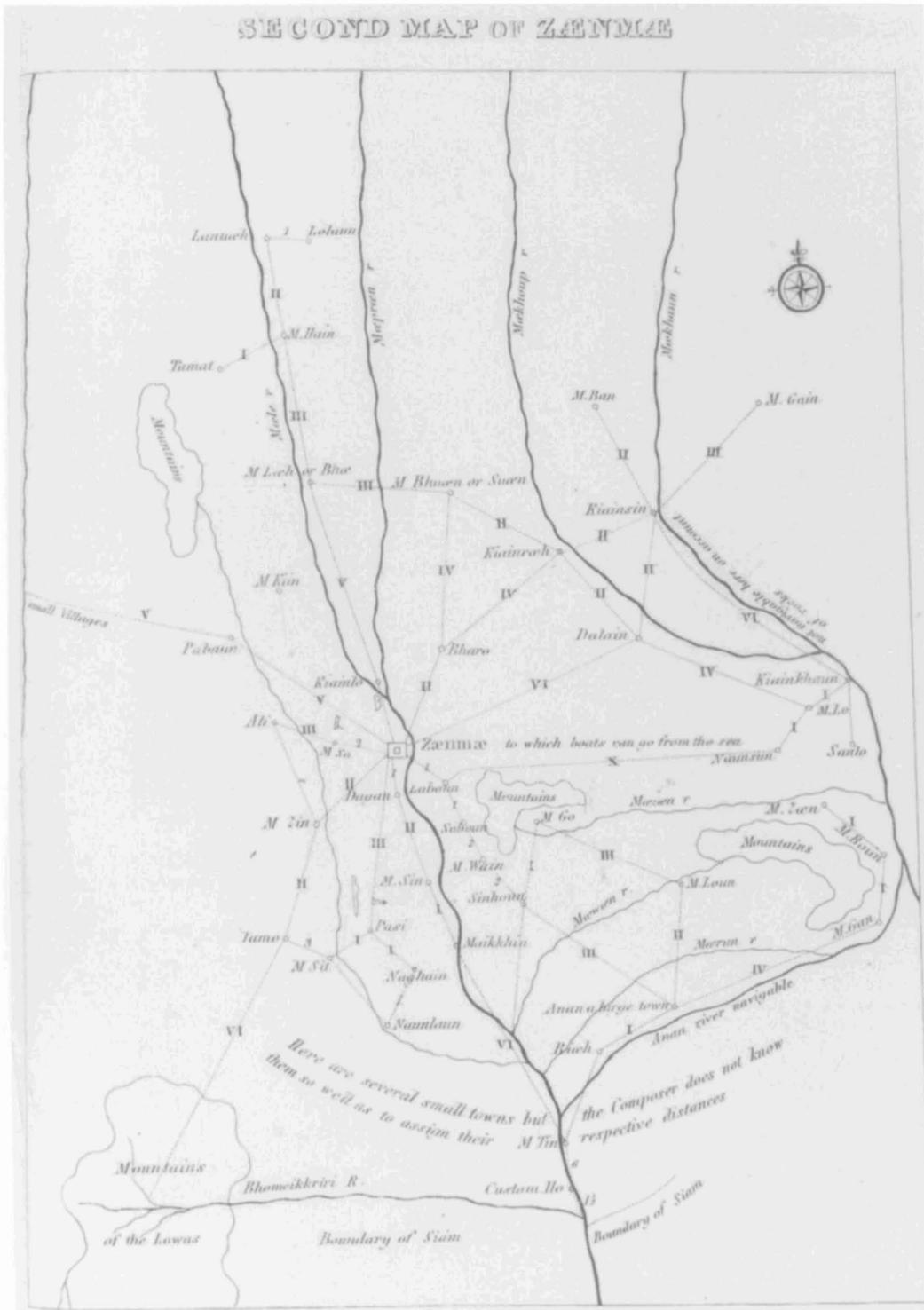


FIG. 18.5. REVISION OF THE MAP CENTERED ON CHIANG MAI [ZAENMAE]. This is the map shown in figure 18.4 as it was redrawn after critical review of the initial effort. Added to this version are lines along which are indicated the traveling time, in days, between pairs of named localities. The "Mountains of the Lowas" (Lawas), a mountain tribe, are shown in the southwest corner of both maps. The Mekong runs more

or less parallel to the other rivers and appears to be linked to the Maepraen (Mae Nam Ping, a northwestern extension of the Mae Nam) by the Anan (Mae Nam Nan), which is not actually the case. Size of the published map: 16.6 × 12.2 cm. From Francis Hamilton, "Account of Two Maps of Zaenmae or Yangoma," *Edinburgh Philosophical Journal* 10 (1823-24), pl. III.

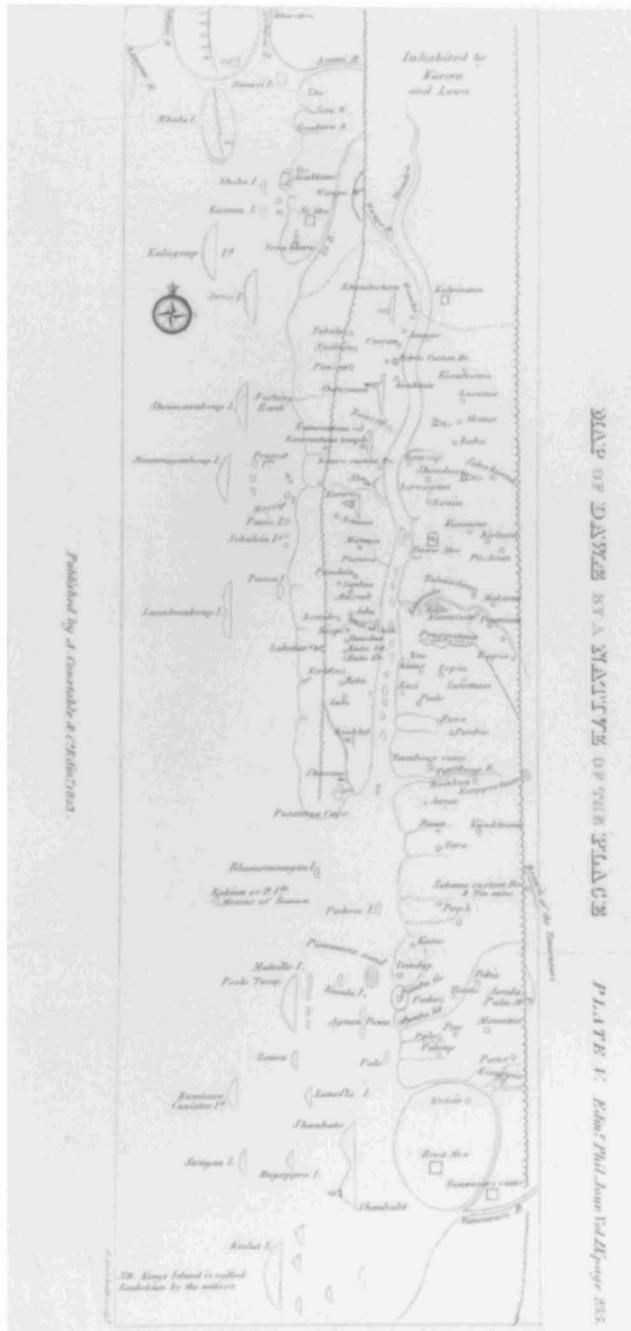


FIG. 18.6. MAP OF A PORTION OF THE TENASSERIM COAST OF AVA. Originally drawn by a native of Dawae (Tavoy), with a steatite pencil on indigenous paper, for Francis Hamilton. The north-south extent of the area depicted, from the Mouttama (Martaban) in the north to Breit (Mergui) and King Island in the south, is not quite 475 kilometers. A characteristic feature of this map, shared by many others from Burma, is the depiction of elevated features, such as mountains and pagodas, pointing away from the viewer as they would most usually be seen.

Size of the published map: 24.3 × 7.6 cm. From Francis Hamilton, "Account of a Map Drawn by a Native of Dawae or Tavay," *Edinburgh Philosophical Journal* 9 (1823), pl. V.

written as if the map was meant to have an orientation toward the north, that tells us nothing about the mapmaker's intention because the original draft was transferred by "a Mahommedan painter" from the black Burmese paper, on which it was initially drawn with a steatite pencil, to European paper. The names were added in roman script by Hamilton himself "as the man read them from his black book."²⁵ Names aside, many features are shown in simplified frontal elevation, pointing away from the direction from which they are most likely to be seen by a resident of the region. Thus the summits of the long hill range near the eastern edge of the map that forms the spine of Tenasserim and the frontier with Siam point toward the east, while the summits of the hills running through the large peninsula in the northern two-thirds of the map point westward, away from the town of Dawae, a bit north of center, as do the islands seen in profile as from the mainland looking toward the Gulf of Martaban. Pagodas—often, though not necessarily, built on hilltops—also point toward the east or west away from the central axis of the map. Considerable detail in regard to settlement is provided and, as on many other Burmese maps, towns, shown by squares, are differentiated from villages, shown by circles. Rounding out the content of the map are a sketchy indication of the drainage pattern and miscellaneous bits of useful intelligence, such as the location of a customs house and a tin mine on the Siamese border, indications of the locales of non-Burmese ethnic groups, and a few details of coastal hydrography.

Burmese and Shan Regional Maps Predating the British Annexation of Upper Burma

Of all the traditional Burmese maps known to exist, the largest, and conceivably the oldest, relates to one of several military campaigns that King Alaungpaya launched against Manipur during his turbulent reign from 1752 to 1760—almost certainly the campaign of 1758–59, which the king personally commanded. This detailed map covers the whole of the Vale of Manipur, together with the surrounding region of northeastern India and northern Burma (plate 37). It is on two pieces of cloth (probably Indian muslin) sewn together and was given to the Royal Geographical Society, London, in 1928 by G. U. Yule of St. John's College of Cambridge University. He discovered it among some family possessions and supposed it could have been obtained by his uncle, Sir Henry Yule, when he accompanied the British mission to the court

25. Francis Hamilton, "Account of a Map Drawn by a Native of Dawae or Tavay," *Edinburgh Philosophical Journal* 9 (1823): 228–36 and pl. V; quotation on 228.

of Ava in 1855.²⁶ At G. U. Yule's request, the map was examined by A. G. Cooke, a lecturer in Burmese (presumably at Cambridge), who sought, with mixed success, to establish correspondences between the places and rivers named on the map and those shown on maps by the Survey of India. Cooke suggested that the person who drew the map was probably not on the expedition it depicted, since he would then have known that the border town of Tammu (modern Tamu), from which the actual penetration of Manipur would have begun, lay on the Yu Yabwe River, not below the junction of that river with the Chindwin, as in Cooke's view it is shown on the map. He concludes that the artist "probably worked by hearsay and trusted for the rest to intuition."²⁷ The Chindwin is nowhere named, however, and Cooke very likely is wrong in equating it with the Nan-twee (variously spelled). Cooke's expertise may also be called into question in that he states that the "route is that actually taken by the king [Alaungpaya] . . . (1750 circa)," a date that is two years before Alaungpaya gained the throne and eight years before the expedition he led.²⁸

A second map of the same area, in the same Burmese style and with the same matter relating to the Burmese invasion but with map text entirely in English, forms part of the Burney Collection of the Royal Commonwealth Society, London (a detail is shown in fig. 18.7). (In the rest of this discussion the maps will be referred to as the RGS and the RCS maps, respectively.) In 1984 the content of the RCS map had not been properly determined, and an appended note erroneously suggested that it might be of an area on the Salween River, which in fact lies far to the east of Manipur. The RCS map, acquired with the rest of Burney's Burma collection in 1921, is drawn on paper and is far smaller than its RGS counterpart, from which it was presumably copied. Since Burney could have obtained it only during his sojourn in Burma as British ambassador, from 1829 to 1837, we have the dates 1759 and 1837 as the terminus a quo and terminus ad quem for the RGS map and, most likely, 1829 and 1837 for the RCS map.

It is not known whether there was an earlier map, possibly made in the field, that might have served as a prototype for the maps under review; but given the long-standing relationship between Burma and Manipur, its former tributary, and the existence before the first Anglo-Burmese War of some form of Burmese military maps (discussed below), that is entirely possible. Moreover, the Burmese had a long history of systematically gathering geographic intelligence, in connection with revenue surveys and census operations, from which mapmaking would have been relatively easy. For example, shortly after his accession in 1781, King Bodawpaya ordered a general revenue inquest whose results have been characterized as the "Burmese Domesday Book."²⁹

With specific reference to their disputed northwestern frontier, it is noteworthy that between 1829, when Burney first arrived in Ava (restored as Burma's capital in 1823 and remaining as such until 1837), and 1832 there was extensive diplomatic correspondence on the subject.³⁰ Within this correspondence the Burmese made many references to maps, revenue surveys, and other documents supporting their position. These records went as far back as the reign of the Burmese king Minkhaung II (1481–1502), when a Shan chronicle was allegedly compiled fixing the boundaries and, in considerable detail, the territorial constituents of Manipur in nine directions, by which was probably meant "4 cardinal points and 4 half-cardinal points of the compass plus the central point."³¹ Regrettably, however, none of the maps mentioned in the Burmese texts appears to have been dated or described in sufficient detail to permit their being unambiguously related to the two under consideration. Of note in this context are Burmese protestations about the "overconfidence" the British placed in their own map of the border region (as of 1829); their assertion that "it is our practice to draw big bold lines in our maps to represent rivers, and thinner lines to indicate streams"; their reference to the powers long since delegated by the Burmese to *myetaings* (surveyors of land for revenue assessments) in the border regions; their recognition of the "unfortunate" fact that a map the Burmese sent to Calcutta in support of their claims "fails to show the course of [a disputed river] with exactitude, due to the fault of our cartographer"; their reference to revenue surveys carried out in the border region in the years 1126 and 1145 B.E. (A.D. 1764 and 1783); their inclusion in one missive of a rough map of the route between Burma and India over the An Pass; and the existence of a disputed stream, the Nantwee, which appeared on Burmese maps but which the British believed to be fictitious.³² Among maps that so showed the "Nantwee" are the RGS and RCS maps; and, whatever the present name for that stream might be, that river is only one among several between the Chindwin and the modern border with

26. Letter from G. U. Yule to the Secretary, Royal Geographical Society, 30 January 1928.

27. Handwritten note by A. G. Cooke, dated 29.1.28.

28. Cooke, handwritten note. Cooke could have been influenced in rendering his judgment by knowledge of an Anglo-Burmese diplomatic dispute relative to river courses in the area. I shall refer to that dispute below.

29. Daniel George Edward Hall, *A History of South-east Asia*, 3d ed. (New York: St. Martin's Press, 1968), 585.

30. Much of the Burmese correspondence is translated and discussed by Thaug Blackmore, *Catalogue of the Burney Parabaiks in the India Office Library* (London: British Library, 1985).

31. Blackmore, *Burney Parabaiks*, 69 n. 3 (note 30).

32. Blackmore, *Burney Parabaiks*, 61, 62, 68, 82, 85, and 89 (note 30).

Manipur. One such map (probably not the one illustrated in plate 37), brought to a British post on the Chindwin River in March 1828, showed “a large river called the Ningtee running to the west of the Kabaw Valley and this, they claimed, was the true boundary between Burma and Manipur”; but a Lieutenant Pemberton, the resident British officer, who had himself surveyed the region, pronounced the Burmese map a fake, asserting that the Ningtee was the local name for the Chindwin.³³ In any event, in 1832, at Burney’s urging, the British restored the Kabaw Valley to Burma from Manipur. On balance, in light of the intense interest in the area from 1826 to 1832, it seems most likely that that was the period when the RGS map of Manipur was drawn and that Burney’s (the RCS) map was probably made between 1829 and 1832, though possibly as late as 1837.

The style of the two maps is distinctly non-European. Though the RCS map was almost surely copied from the RGS map (unless both were taken from a third source), it underwent some slight simplification in the copying. Mountain and hill ranges in the RGS map are rather naturalistically rendered, in black and mauve. On the RCS version they are painted in a blue wash and several of them, all minor, have been omitted, probably for want of space. On both maps summits generally point westward, away from Burma, but there is no consistency in this matter. Virtually all the ranges are capped with tree signs, suggesting forests. These are depicted in pale gray on the RGS map and by much bolder stylized green forms on the RCS copy. Both maps emphasize lakes and streams. These are shown in blue with a basket-weave pattern, but the somewhat simplified shapes of lakes in the RCS map do not faithfully reflect those of the RGS version. On the larger RGS map, space permits naming rivers and lakes within oval cartouches, often several times per river. A peculiarity of the rivers is that none is shown draining out of the Vale of Manipur (the western two-thirds of the map). Moreover, what must be the Manipur River, running from the mountains of the north to those of the south, is not linked with the large lake “Loup Tait” (Laktak), as shown on modern maps, and its actual southern egress from the Vale is, at best, hinted rather than clearly shown. In the north-central part of the map are two nebulous patches, identified as areas of rice cultivation; these are rendered in tan on the RGS map and in aqua on the RCS map.

Settlement is similarly indicated on both maps. It is clear that a hierarchy of places is intended. All settlements (and many other features as well) are outlined in red ink on the RCS map. Two important places near the border (one, the town of Tammu, is labeled a stockade) are shown by double squares; eight others, all *myo* (towns, six in Burma and two in Manipur) are rendered by squares with openings on four sides suggesting gates; and all other

settlements (122 in Manipur and 47 in Burma on the RCS map) are shown by small squares or rectangles. On both maps Burmese settlements are shown in yellow, whereas those in Manipur are shown in either lavender or tan on the RGS map and in red only on the RCS map. Although on the former the two colors in Manipur are partially interspersed, the places shown in lavender are possibly villages or towns inhabited by Hinduized Manipuris, and those in tan may be occupied by the not yet converted Naga tribes, who are also locally prominent. Within Burma, more than two dozen pagodas are shown in frontal elevation, all with spires pointing west. This is in striking contrast with Manipur, where only a single Hindu temple, at the capital, Imphal (here called “Munipura Myo”), is depicted.

Some of the signs for pagodas in Burma are accompanied by a staff topped by a waving pennant whose symbolic significance is not evident. On later Burmese maps this is the sign for a military post, but the association with pagodas suggests a different meaning here. On the other hand, both pagodas and military posts would likely be found in settlements of consequence.

The focal aspect of both maps is Alaungpaya’s military campaign, the key portion of which is shown in figure 18.7. The invasion route is marked by a dotted yellow line. Not far within Manipur, the battle alignments of the two opposing forces are shown by straight parallel lines. Those of Burma are, like all other Burmese features, in yellow and are labeled, on the RCS map, “Alaungphra’s use of great mud defences.” Those of Manipur, lavender on the RGS map and red on the RCS map, also consistent with the color-coding of settlement, are labeled “Kelzein Munipore mud defences.” The invasion route continues past the latter defense line and terminates at the Manipuri capital, suggesting not only success in battle but subsequent military occupation of the enemy’s territory. All of these map features, it appears, were intended to legitimize Burmese claims to Manipur.

I cannot say whether the map under consideration is an attempt to render a reasonably objective picture of the area and events depicted or whether parts of it were concocted to vindicate the Burmese position in diplomatic dealings with the British. Like Cooke in 1928, I have tried with mixed success to relate the content of the map to what is shown on modern maps of the area, concentrating perforce on elements of topography. In broad terms, the map conveys a good sense of the region: the depiction of Manipur as a mountain-girt vale; the forested mountain crests; the presence within the Vale of numerous lakes, with Laktak to the southwest and

33. Daniel George Edward Hall, *Henry Burney: A Political Biography* (London: Oxford University Press, 1974), 186; additional particulars on 214.

several smaller lakes to the northeast; and a rather complex drainage pattern with a dominant roughly north-south alignment are all consistent with reality. But in trying to trace individual river courses one quickly runs into difficulty, and the inability to match the Burmese or Shan toponyms of the map with the Manipuri, Naga, and Chin names found on modern maps poses insurmountable problems for the nonspecialist. It is easy to see why a British observer in the early nineteenth century might have labeled such a map a fake, even if it was made totally in good faith. A similar harsh judgment might have been made about many of the maps prepared for Hamilton, which clearly were (in most cases) good-faith efforts. In any event, as my description makes evident, there is much about the Manipur map, especially in regard to cartographic signs including the use of color, that is relatively sophisticated in comparison to the earlier military map illustrated in figure 18.38 below. Hence it may be viewed as paradigmatic in the study of Burmese cartography. Accordingly, this discussion largely reduces the need for equally detailed analysis of many other similar cartographic productions of Burmese provenance collected during the course of the nineteenth century.

Although it is clear that Henry Burney took a keen interest in Burmese maps, we have no definitive record of all that he saw and used. Even before his posting as ambassador to the court of Ava, he drew up a "Large Map of the Empires of Ava, Siam and Cochin-China compiled by collating the personal knowledge of the Principal Members of a Burman Embassy to the King of Cochin China, with the best European authorities." That map, which almost certainly incorporated material from the various works prepared for Hamilton, among other sources, was dated Calcutta, 22 October 1824. Burney also prepared a sketch map of the routes between Martaban, Tavoy, and Bangkok, to which he appended a note, "This sketch is taken from several sketches & descriptions furnished by native Christian Burmese & Siamese travellers." Additionally, there are in the library of the Royal Commonwealth Society in London two other maps, clearly Burmese in style, that Burney copied from originals, presumably no longer extant, he received at Ava.³⁴ For these maps, as well as the others discussed in this section, see also appendix 18.2.

Among surviving Burmese regional maps, there is one bearing a date, 1183 B.E. (A.D. 1821), that precedes Burney's arrival at Ava. This painted cloth map is the earliest of three maps of Shan territories that were acquired by the Oriental and India Office Collections. The letter of transmittal, by L. A. Goss, dated 26 February 1907, states that all three were drawn for the Burmese government, and that they were acquired by the British before their occupation of Upper Burma in 1885.³⁵ The 1821 map relates to two of the many tributary Shan *sawbwas* (chief-



FIG. 18.7. THE FIELD OF BATTLE BETWEEN THE BURMESE AND THE MANIPURIS AND THE SUBSEQUENT BURMESE ROUTE OF INVASION TO IMPHAL IN 1759. The area shown here is a small part of a map that appears to have been copied from the one illustrated in plate 37, but painted on paper and at a much smaller scale. The copy, which maintains a traditional Burmese style but has a text entirely in English, presumably dates from the period 1829–37 and was very likely made for intelligence purposes at the behest of Henry Burney, the then British ambassador to Burma. On the whole, the copy is remarkably faithful to the original, though slightly less detailed. We have here retained the eastern orientation employed for plate 37. Like its prototype, this map maintains a consistent distinction, by color, of features associated with the Burmese (in yellow) and those associated with Manipur (in red). The invasion route of the Burmese is shown by a dotted yellow line, which has no counterpart in respect to the movement of the forces opposing them; the battle lines of the two armies, however, are shown in the appropriate colors. Size of the entire original: 34 × 47 cm; this detail: ca. 15 × 14 cm. By permission of the Burney Collection, Royal Commonwealth Society, London (box XV, fol. 9, map C).

doms), Maing Tsait (Mōng Sit) and Maing Pone (Mōng Pawn), over which Burma was at the time seeking to maintain control. The map was rich in detail relating to

34. All four maps are listed in the appendix of Burney papers at the Royal Commonwealth Society, by Evans Lewis, Patricia Herbert, and D. K. Wyatt, in Blackmore, *Burney Parabaiks*, 101–18, esp. 104 and 117 (note 30).

35. I am greatly indebted to Patricia Herbert of the Oriental and India Office Collections of the British Library for assisting me with the interpretation of these three maps, and also with those of the Burney Collection, noted above, by reading for me enough map text to let me place them in their proper geographic contexts and render brief summaries of their content.

settlement and drainage and was in many respects similar to the map of Manipur—for example, in showing all hill ranges parallel to the four edges of the cloth it was drawn on and in the colors and types of cartographic signs it employed.

About the military significance of the two later maps in the Oriental and India Office Collections, however, there can be no doubt. One of these, datable to the 1850s or 1860s, covers a large region between the Salween and Mekong rivers in what is now eastern Myanmar and northern Thailand. It is rich in detail relating to routes (shown by dotted lines), settlements, drainage, and hill features. Many of the villages named within ovals are identified as (military) “camps,” including the name of a specific *sawbwa*, while within a number of squares the word “army” appears, also with the accompanying name of a *sawbwa*. These appear to relate to Shan forces under Burmese command in an attempt to wrest the northern cities of Chiang Rai and Chiang Mai, both included on the map, from Siamese control, those areas having long been contested between the two neighboring powers. Unlike the other two maps, which have Burmese text, on this one the text is Shan, written in the Burmese script. Visually the map, rendered entirely in black ink, is the most distinctive of the three. Of particular note is its manner of depicting hills by undulating ink lines on which deep and shallow waves alternate with some regularity. Rather than drawing in vegetation, differentiated by type, as is so common on Burmese maps, the mapmaker merely suggested forests by closely spaced ciliate lines along the undulations.

The third regional map in the Oriental and India Office Collections is dated 1223 B.E. (A.D. 1861). It covers a large area astride the Salween River, largely overlapping that of the map just discussed but extending less far to the east and somewhat farther to the west. A very small part of this map is illustrated in figure 18.8. The map’s most striking characteristic is the care lavished on depicting hill ranges in a highly stylized Sinic style and the even greater care in depicting forest, both on the hills and in groves separate from them. The vegetation differs so much from one part of this large map to another (not evident in the area excerpted) that one wonders whether it was all drawn by a single artist. An equally plausible explanation, of course, is that the variations reflect fundamentally different vegetation types. Notes on the map in various otherwise blank areas read, in Burmese, “woodcutting forest” and “woodmaking forest,” signifying stands that are mature enough to cut and others that are not. Elsewhere, where forest signs are painted, notes indicate that the forest is to be cut by persons coming from such-and-such a town. On both this map and the one previously discussed, the method of aligning hills differs from that of the 1821 map in that they do

not have simple north-south or east-west trends parallel to the edges of the map itself, but presumably follow their actual orientations. In this and other ways there appears to have been a significant development in cartographic expertise. As on many Burmese maps, large rivers are here generically differentiated from smaller streams. Distinctions are also made in giving distances along roads, using two different units of measurement.

Not dated, but presumably of roughly the same period as the two maps of the Shan territories just discussed, are three smaller and simpler Burmese works in the British Library. These works, none of them of particular interest for this history, form part of the collection of Arthur Purves Phayre, who served in various parts of Burma for most of the period from 1834 to 1867.

From Moulmein, which passed to British rule in 1824, come two additional maps now in the National Archives of India, New Delhi, one dated 1871 and the other 1871(?), that relate to the interest the new rulers had, in the interim, developed in the area to the northeast, which they looked on both as a source of high quality timber and as a potential trading route (never actually realized) to China via Chiang Mai. Although both maps were made by Burmese foresters at the behest of the British, there can be little doubt that the mapmakers were tapping cartographic traditions that were essentially indigenous.

The reign of the Burmese king Mindon (1853–78) was for the most part peaceful; but toward its end relations with the British had begun to deteriorate, in part because Burma developed diplomatic relations with France and other European powers whom the British viewed as potential rivals in what they had come to regard as their own sphere of influence. The regnal period of Mindon’s less prudent successor, Thibaw, Burma’s last monarch, was marked by a progressive deterioration of Anglo-British relations and by the looming threat, ultimately realized in 1885, of renewed hostilities. Thus it is not surprising that among the regional maps that can be assigned to this general period are several that are clearly military in nature.³⁶ The first of these three maps, all assumed to date from between 1870 (when Burma, with subsequent British diplomatic opposition, occupied the area of the Red Karens to which it relates in part) and 1885, covers an extensive north-south stretch of territory straddling a part of the border between British and Upper

36. Photographs of all three maps (items m, n, and o in appendix 18.2), map legends, and other relevant notes were provided by Tin Maung Oo, a former student of U Maung Maung Tin of the Burmese Historical Commission, both of Mandalay. The latter possesses a large collection of Burmese maps, originals or copies, to which I make frequent reference in appendixes 18.2 to 18.5. Hereafter, wherever I refer to works in that collection, the assistance of Tin Maung Oo in making them accessible through correspondence with me since our meeting in Mandalay in 1984 is gratefully acknowledged.

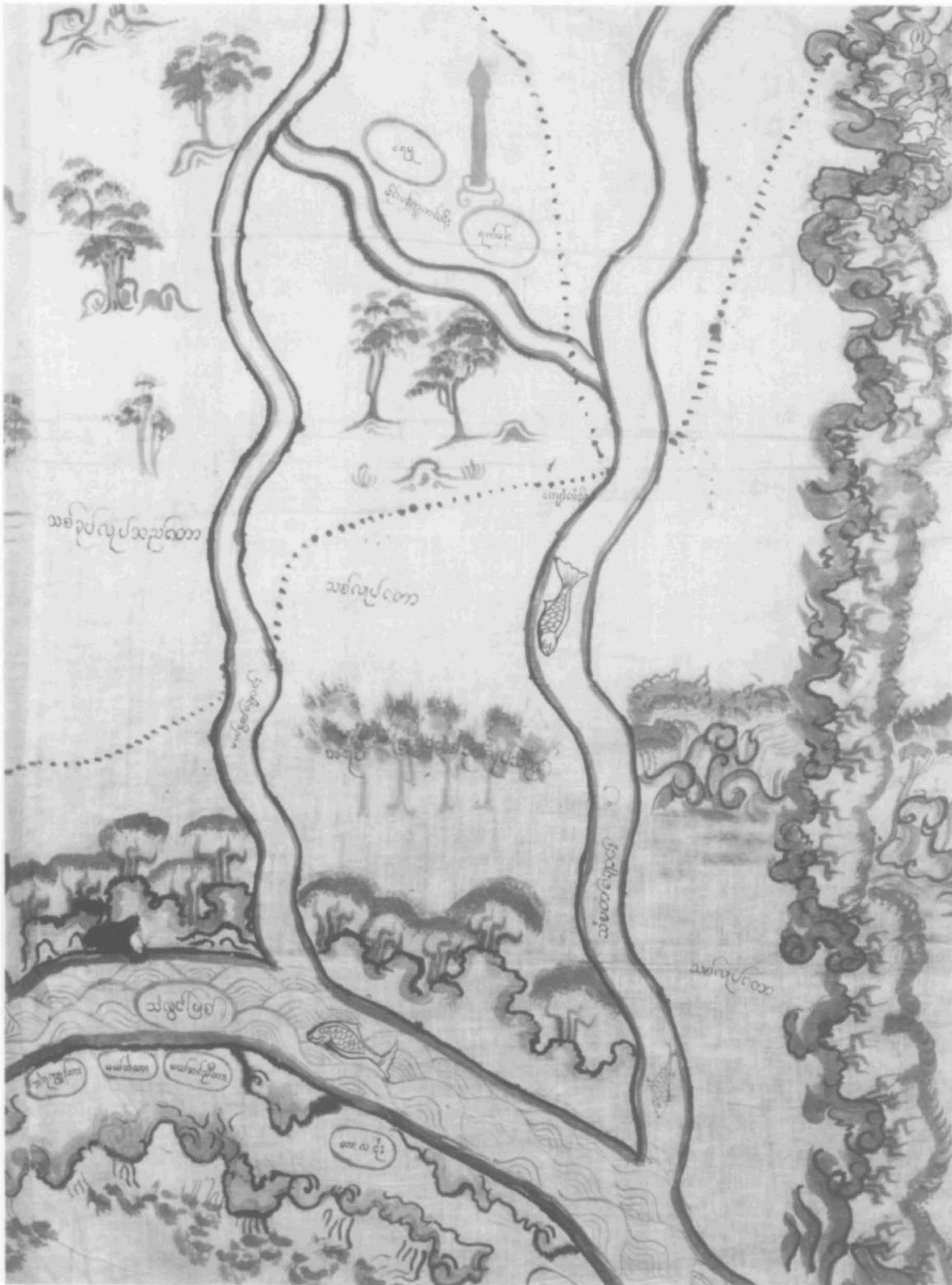


FIG. 18.8. SMALL EXCERPT FROM A LARGE BURMESE MAP OF MUCH OF THE EASTERN SHAN STATES. This large painted cloth map, dated 1861, covers an extensive area astride the Salween River in what are now Myanmar and Thailand. The specific locale covered by this excerpt has not been identified. The map provides a wealth of detail on settlements,

routes, and drainage, but its most distinctive characteristic is the opulence and variety with which it depicts vegetation and, to a somewhat less marked degree, hill ranges. Size of the entire original: 299 × 275 cm. By permission of the Oriental and India Office Collections, British Library, London.

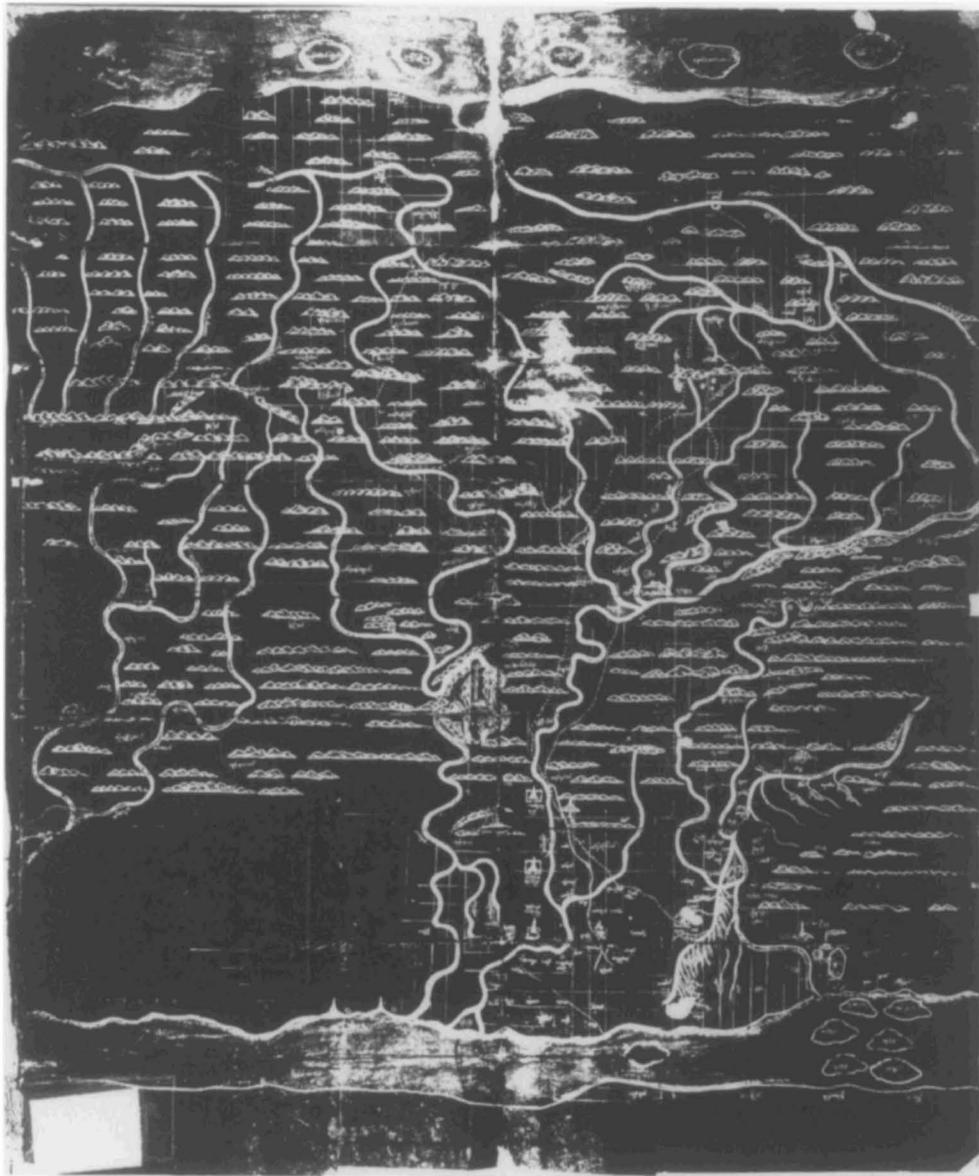


FIG. 18.9. MILITARY MAP OF AN AREA BETWEEN THE BAY OF BENGAL AND THE IRRAWADDY RIVER. This map presumably dates from the period 1870–85 but could be based in large measure on surveys carried out by the Burmese roughly one century earlier, of an area that largely passed into British hands in 1824. That area, Arakan, was one of intermittent Burmese control and was last subdued by Burma after an elaborately planned multipronged invasion in 1784. The original is a black *parabaik* (indigenous paper) map. Perhaps the most striking feature of the original map is its depiction of what appear to be literally scores of discrete hill ranges. In fact, the region has only one noteworthy mountain range, the Arakan Yoma. The multiplicity of small hill ranges, then, must be interpreted to signify simply that much of the area shown was continuously hilly. Also noteworthy are several dotted routes (which could have been those used in the 1784 invasion and intended for a reconquest a century later).

Of particular note is the depiction of what appears to be an all-water route between the Bay of Bengal and the Irrawaddy, across the Arakan Yoma. In fact, no such route exists; rather,

the land route through An Pass was shown no differently from the largely riverine route of which it formed an important segment (a usage similar to that along the Anan route, noted on fig. 18.5), one of two traditional overland routes between central Burma and Arakan. Many topographic eminences on this map, presumably landmarks, are singled out for special notice (not apparent at the scale of this reproduction). These are shown by variously colored circles whose meaning is not clear. Color-coding is also clearly evident, however, in the depiction of military posts, those of the British and the Burmese being shown by red and yellow flags, respectively. Towns are represented by squares and villages by smaller circles. Pagodas are also abundantly shown. A final noteworthy map feature is its rectangular grid (ruled in yellow). Such grids are common on Burmese *parabaik* maps. Such a feature should not be regarded, however, as a modern military grid. Rather, it helped in copying maps from preliminary sketches, usually with an increase in scale. Size of the original: 131 × 109 cm. Collection of U Maung Maung Tin, Mandalay.



FIG. 18.10. THE PRINCIPAL FEATURES SHOWN IN FIGURE 18.9. This is adapted from an annotated sketch made of the map by Tin Maung Oo in 1984. Names in brackets are not on the map.

Burma. Although both British and Burmese military posts and garrisons (each in its distinctive color), as well as border posts, figure prominently in this very detailed map, it is noteworthy that, as in most other Burmese military maps, religious features such as pagodas, reliquaries, and spirit houses also are abundantly depicted. Partially overlapping the area of the previously noted map is another, extending east-west along the entire central portion of the then Anglo-Burmese frontier. This much simpler work was described as a “map for putting [military] outposts between the . . . Western Yoma [Arakan range] and the Red Karen Area.” In depicting its military features the same set of signs was used as for the foregoing production.

The third military map (fig. 18.9), tentatively assigned to 1870–85 despite a suggestion that it belonged to the period before the first Anglo-Burmese War in 1824, depicts an area from Arakan, on the Bay of Bengal, and a portion of the central Irrawaddy basin.³⁷ The probable reason for suggesting a pre-1824 date is the map’s inclusion of a large area, Arakan, that passed from Burma to the British in that year, although most of the territory included, as on the two previously noted works, was in Burma. My own suggested date is based on the similarity of this map, in both purpose and style, to the first of those described in the previous paragraph. Stylistically,

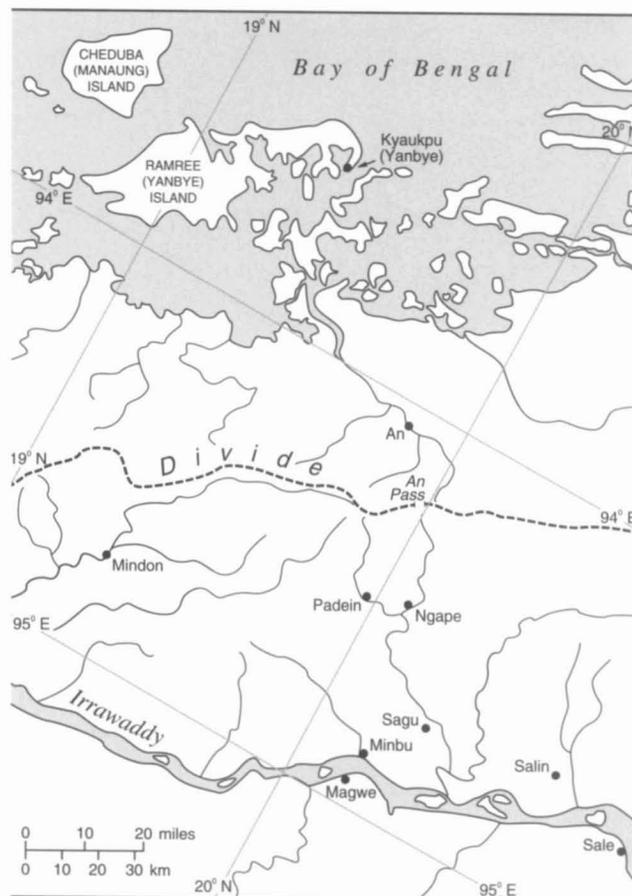


FIG. 18.11. MODERN MAP OF THE REGION SHOWN IN FIGURES 18.9 AND 18.10.

both seem to have evolved considerably from maps that can unambiguously be assigned to a period before the second Anglo-Burmese War (1855). Although Burma was not in a position to map Arakan directly from the field after 1824, it did prepare a map of the region noted by Burney, and it amassed a great deal of information on it between 1784, when it was annexed following a carefully planned, multipronged invasion, and the hostilities with Britain that led to its loss. Moreover, since no fewer than twenty thousand Arakanese were deported to Burma proper in 1785, there would have been no dearth of sources for the intelligence on the region needed to prepare the subject map.³⁸ Figures 18.10 and 18.11 highlight the more important features shown in figure 18.9.

Post-1885 Maps of the Cambridge Scott Collection

After annexing Upper Burma in 1886, the British assumed

37. The suggestion was made in the notes on the map by Tin Maung Oo.

38. Hall, *History of South-east Asia*, 585 (note 29).

that they thereby became the legal inheritors of Burmese suzerainty over the roughly three dozen Shan states lying to the east. Making that suzerainty effective, however, engaged the British continuously until 1890, and the task of doing so with a minimum of bloodshed fell largely to James George Scott, whose career in Burma had begun in 1879. Scott was appointed resident for the Northern Shan States in 1891 and spent most of the rest of his service in the region, retiring in 1910 as superintendent for all of the Shan States. In the interim he served as a member of the three boundary commissions, which delimited Burma's borders with Siam, French Indochina, and China during 1889–1900. In his various official capacities he collected a wealth of manuscripts on Burma, which were passed on to his brother, Robert Forsyth Scott, Master of St. John's College, Cambridge, and bequeathed to the university by Sir Robert's widow in 1933.³⁹

Among Scott's manuscripts was a remarkable collection of forty-seven maps, most obtained in the Shan States and the rest in Upper Burma. These maps have been cataloged by Andrew Dalby of the Cambridge University Library with the assistance of Sao Saimöng Mangrai, a Shan historian who was invited to Cambridge in 1984 expressly to help with the ordering and analysis of the Scott Collection. Dalby notes that most if not all of the maps in the collection "were drawn at the orders of Scott himself or of one of his colleagues in the British administration." Of the seven maps of Upper Burma, all seem to have been drawn by Burmese clerks, often recruited from the previous Burmese administration, who accompanied the newly appointed British district officers as they familiarized themselves with their districts by personal inspection. Of the maps of the Shan States, at least seven are characterized as general orientation maps of extensive areas. The language of these maps is Burmese, "indicating that they date from the early years of the annexation when communication with British officers was only possible in the presence both of a Burmese-speaking Shan and an English-speaking Burmese." On these maps the representation of the extensive areas to the east of the Salween River, an area little known even to the Burmese, was judged very inaccurate. Another seven maps are of individual states. These maps emphasize internal communications, state borders, or both, even though the concept of a linear territorial boundary was alien in the ethnically mixed tribal territories dominated by the Shans (who constituted only about half the total population in the region that bears their name). Of these maps four were in Burmese and one each in Shan, Khün, and Lü (all tribal languages). The last three maps, in Dalby's view, "show less European influence than any of the others." Of the remaining twenty-six maps, seven are said to relate to British expeditions, three to interstate disputes, eleven

to external frontiers, one to a road transport scheme, and one to "an application for the post of village headman." The purpose of the remaining three maps is unclear. In all, there are twelve maps in Shan, one "mostly in Chinese Shan," one in Khün, one in Lü, and thirty-two in Burmese.⁴⁰

Physically, the maps vary substantially. The more elaborate ones, including most of the general topographic ones we are principally concerned with here (brief notes on other types of maps will be provided in subsequent sections of this chapter), were drawn on white calico. Most of the others were on "full-size sheets of the strong, durable, cream-coloured Shan paper, locally made from shredded bark," and one was on the thicker paper used for *parabaiks*, which are the Burmese equivalents of the *samud khoi* documents previously described for Siam. In size, the maps range from as little as 21.8 by 30.8 centimeters (actual map area) to as much as 172 by 255 centimeters and 164 by 269 centimeters.

Stylistically, too, there is considerable variation. The maps of Upper Burma were rendered in black ink and several bright painted colors. "Clearly they were drawn in an office at leisure and display the almost obsessive neatness for which Burmese manuscripts of all types are noted." The less elaborate maps were always on paper, drawn with a European pencil and sometimes one or two added colors of ink. On some of the maps scribbled pencil notes, often transliterated names and occasionally titles (not always accurate), were added by Scott himself. On the whole, the Shan maps (with one major exception, to be discussed below) are of a simpler style and, in Dalby's view, less aesthetic. Of maps that he judges to be of a "pure Shan cartographic style," he observes:

In their depiction of mountains, rivers and most noticeably towns—large, sometimes decorated circles, with names and other details written inside the symbol—these maps resemble one another much more than they resemble any European map that might have been shown to the artist as a model. Yet having been acquired on different missions, quite widely separated in time and space, it is difficult to believe that they influenced one another. Indeed, to judge from the condition of the maps in the collection, none of them . . . [with one cited exception] can have remained long enough in the Shan States to make it likely that there

39. *Dictionary of National Biography*, suppl. 1931–40 (London: Oxford University Press, 1949), 797–99; and Andrew Dalby and Sao Saimöng Mangrai, "Shan and Burmese Manuscript Maps in the Scott Collection, Cambridge University Library," unpublished manuscript, n.d. (ca. 1984), 15 pages, followed by a 47-page illustrated catalog (39 figs. and 8 pls.).

40. Dalby and Saimöng, "Shan and Burmese Manuscript Maps," introduction (pages not numbered) (note 39). All subsequent quotations relating to maps in the Scott Collection, except where otherwise noted, are from this six-page introduction.

was much stylistic interchange among them. . . . This suggests to us that there was a pre-European Shan-Khün-Lü style of cartography, from which each artist who has contributed to the collection deviates to his own degree under the influence of the Europeans for whom these maps were drawn.

When Dalby wrote the remarks above he had not, I gather, seen any of the pre-1885 Shan maps that are discussed here and listed in appendix 18.2. His observations, however, confirm my own views on the existence of what might be considered a distinctive Shan cartographic style and, I would hypothesize, a Shan tradition of cartography that predated Hamilton's 1795 visit to India and enabled the remarkable works prepared for him by the (probably Shan) slave of the Burmese crown prince.

Dalby notes that the maps in the Scott Collection are generally oriented toward the east, although some lacked any consistent orientation in respect to lettering and pictographic symbols. The Burmese words for the four cardinal directions were often written along the appropriate map edges. Vegetation is depicted abundantly and in considerable variety. Towns are generally shown by squares on Burmese maps and by circles on Shan maps. Pagodas frequently serve as landmarks. Roads are usually rendered by dotted lines, often in red. Other signs relate to weirs, irrigation channels, bunds, tanks, and bridges. Boundaries were only rarely shown, and even more rare—on three maps only—was the use of a color wash to differentiate territories subject to two different political jurisdictions. Textual notes referring to administrative jurisdiction, on the other hand, are common. Most map scales appear to be large, though inconsistent. Many maps have notations relating to stages ("posts") between settlements. A few note that a certain number of posts equal one "thumb" (ca. one inch) on the map and state the number of English miles to the thumb. On at least one map, distances between places are given as so many "nights" spent en route, the number being as high as fifteen in at least one instance. Pencil grids, such as were noted on many pre-1885 Burmese maps, are common.⁴¹

I have singled out for illustration only two regional maps from the Scott Collection. (Several other maps of localities will be discussed later in this chapter.) Figure 18.12 is an excerpt from a relatively simple map of a frontier area that appears to be the oldest of the group, since it bears a note stating that it was received at Cambridge on 17 August 1890. The text is in Burmese. Much more elaborate than figure 18.12, and possibly the latest in the collection, is the map of Kengtung (fig. 18.13), the largest (approximately 31,000 square km) of all the Shan states. The area depicted extends from the Salween in the west (top of the map) to the Mekong in the east. Both of those rivers are painted in a singular fashion that largely makes them appear to flow just above, rather than



FIG. 18.12. EXCERPT FROM A BURMESE MAP OF MÔNG MAU AND MÊ HSA KUN, TWO TRANS-SALWEEN SHAN STATES. This view represents about a fourth of the total map, which probably dates from the investigation of that area by a boundary commission in 1888–89. The entire map, drawn in pencil on rice paper, is judged to cover an area of approximately 40 by 40 kilometers mainly lying just within the present border with Thailand in the southernmost part of what is now the Shan state of Myanmar. The map text is in Burmese. Size of the entire map: 52 × 52 cm. By permission of the Syndics of Cambridge University Library (Scott LL. 9.92).

on, the neighboring land surface. Smaller rivers appear as thin single lines. Filling most of the area of the map are more or less naturalistically depicted mountains, painted mainly in various shades of gray. The area of what today is mainly Laos is left blank, and very little detail (and no settlement) is depicted in areas of Shan states other than Kengtung, the areas being rendered in a blue or purple wash.⁴²

41. The observations in this paragraph are largely my own, and the terms quoted are from my own notes of 1984.

42. For a fuller description see Dalby and Saimöng, "Shan and Burmese Manuscript Maps" (note 39).

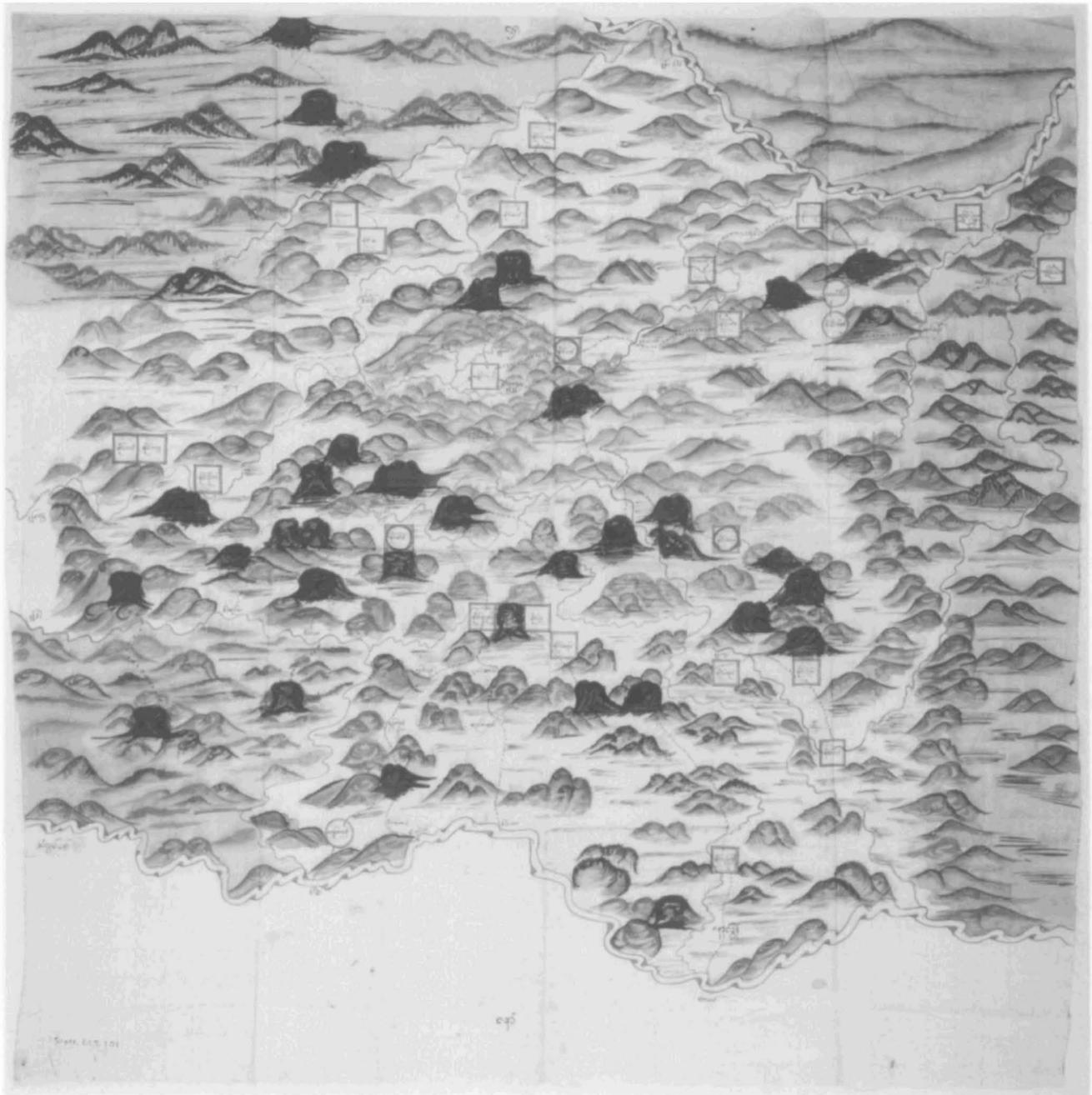


FIG. 18.13. MAP OF KENGTUNG. This map, painted in six colors and black ink on a large pencil-gridded sheet of calico, dates from sometime after 1896. The Burmese text suggests that the artist was a Burmese commissioned by the *sawbwa* (Shan chief) to execute the work, perhaps for Scott, to whom it was presented. Kengtung State extended from the Salween River in the west (top of the map) to the Mekong in the east. The significance of the various shapes and colors used to depict

mountains on this map has not been determined. Nor is it known why different signs are used for the twenty-six settled places that are shown, though either an ethnic or an administrative meaning seems plausible. Trails are shown by red dotted lines.

Size of the original: 90 × 91 cm. By permission of the Syndics of Cambridge University Library (Scott LL. 9.101).

SIAMESE MAPS

In contrast to the substantial number of Burmese regional maps, the dearth of such maps from what was historically included within the state of Siam⁴³ is remarkable, especially when one considers the extent of intercourse—admittedly often hostile—between the two countries and the fact that a significant proportion of the maps I have included among the group from Burma were actually drawn by Shans, an ethnic group closely affiliated with the Siamese. The probable explanation for this anomaly in terms of the Siamese institution of *chamra*, the periodic bureaucratic purging of outdated documents, was provided above (pp. 698–99). In any event, not counting the small portion of the essentially cosmographic *Traiphum* that one may consider geographic, we can point to only a handful of Siamese maps, of which only two can be regarded as regional.

Of these regional maps, the older, dubbed sometime after 1910 “A Logistics Map from the Reign of Phra Bat Somdet Phra Ramathibodi I,” is by far the more detailed and accurate. It is also, fortunately, the subject of an exceptionally thorough and well-informed study by Kennedy. The map he discusses, however, is not the original, allegedly dating from the reign of Rama I (A.D. 1782–1809), but rather a twentieth-century reproduction of a map that, despite the assertion in the title, could be either a revision of the original, assignable by internal evidence to the period between 1809 and 1834,⁴⁴ or more likely an essentially new work (fig. 18.14). If the latter, it was “compiled from intelligence reports taken during the campaign of 1827 [against Laotian forces in the Korat Plateau] and the form it takes [was] shaped by the quality of those reports and the routes the armies took.” In either case, the latest date of 1834 would still apply. Regrettably, we know the present location of neither the assumed late eighteenth-century original nor the nineteenth-century version. Older maps do, however, appear to have been consulted in making the map, and corrections of the information they presented, especially in regard to river systems, seem to have been incorporated in it.⁴⁵

By and large, the map compares favorably with the Burmese regional maps I have examined. This provides strong support for the notion that a now forgotten Thai tradition of cartography may have existed, comparable in age and development to that of Burma. On the whole, the map works well as a guide to the routes between the places it depicts and within any single region of Siam (see figs. 18.15 and 18.16). The scale and directional relationships among places are usually fairly consistent. However, Kennedy observes,

Links between neighbouring regions are often poorly made. Towns on either side of a mountain range, such

as the one that separates the Pa Sak Valley proper from the hilly northwest Khorat plateau, are not in correct mutual relationship, and the same can be said for any pair of adjacent regions that are separated by a barrier that is not frequently crossed. Under such circumstances, scales change suddenly and true directions of travel cannot be read from the map.⁴⁶

Two regions on the map are shown with less than usual internal consistency. The first, surprisingly, is the central riverine portion of Siam, “presumably for the simple reason that it was too well known to require being drawn as carefully as the other regions.”⁴⁷ The other, a relatively remote region illustrated in figure 18.17, is on the Mekong River near Vientiane. There the “local scale varies from around 1:8,000,000 in the north-south direction to 1:2,500,000 in the other.” In the same general area, directions and other details become badly distorted, so that a geographic grid Kennedy fitted to the map as an aid to its analysis shows that “between Phan Na and Vientiane the latitude grid line becomes parallel to longitude lines a little further west. [Furthermore,] a route from Phan Na to Nong Han is drawn through a range of mountains . . . when what the road crosses is in fact paddy fields.”⁴⁸

Despite its lack of accuracy, the image in the area illustrated in figure 18.17 does convey some sense of the highly pictographic symbolization employed on the map. Cartographic signs are for the most part self-explanatory and in many respects (e.g., the manner of depicting rivers) similar to those employed on many Burmese and Chinese maps. Oddly, none of the main rivers are named, though

43. I use the words “Siam” and “Siamese” here in preference to “Thailand” and “Thai.” As a political designation, the latter would be anachronistic for the time period under consideration, and as an ethnolinguistic designation, Thai or Tai would be confusing in that the cartography of the Shans, a Thai people, has already been discussed along with that of other peoples resident in or politically subject to Burma.

44. Victor Kennedy, “An Indigenous Early Nineteenth Century Map of Central and Northeast Thailand,” in *In Memoriam Phya Anuman Rajadhon: Contributions in Memory of the Late President of the Siam Society*, ed. Tej Bunnag and Michael Smithies (Bangkok: Siam Society, 1970), 315–48 and 11 appended map plates; see esp. 315–16 and 322–23.

45. Kennedy, “Nineteenth Century Map,” esp. 348 (note 44).

46. Kennedy, “Nineteenth Century Map,” 322 (note 44). Although I have not checked any of the Burmese regional maps as diligently as Kennedy has studied the map under review, it is my impression that the criticism conveyed by the quoted passage would apply equally to them.

47. Kennedy, “Nineteenth Century Map,” 322 (note 44). For analysis, Kennedy divides the area covered by the map into sixteen naturally defined regions and devotes the greater part of his paper (pp. 324–43) to discussing the content and accuracy of the map in respect to each of them.

48. Kennedy, “Nineteenth Century Map,” 343 n. 45 (note 44).

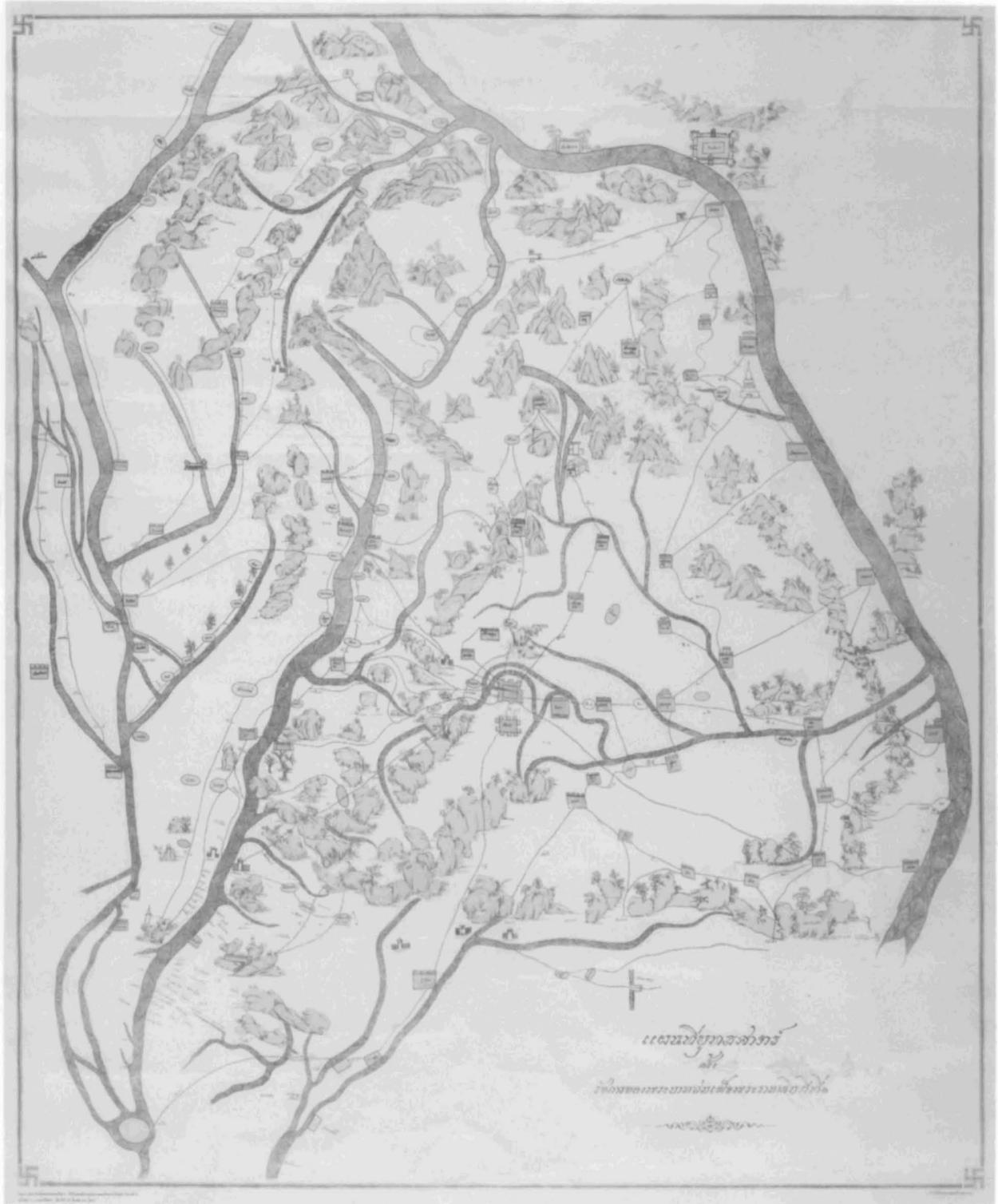


FIG. 18.14. MILITARY MAP OF THE KORAT PLATEAU AND ADJOINING AREAS OF SIAM. This figure depicts a twentieth-century reproduction of a map allegedly dating from the reign of the Siamese monarch Rama I (1782–1809), but apparently either revised or completely redrawn sometime before 1834. In its present form the map seems to incorporate

intelligence gathered during a military campaign in the region in 1827. This copy is drawn in black ink on paper. The size, media, and location of the original from which this copy was made are not known. See also figures 18.15 to 18.17. Size of this facsimile: 101.5 × 84.5 cm. By permission of the Royal Thai Survey, Bangkok.



FIG. 18.15. MILITARY MAP OF THE KORAT PLATEAU WITH TRANSLITERATION OF NAMES OF SELECTED FEATURES. Compare figure 18.16.



FIG. 18.17. EXCERPT FROM A MILITARY MAP OF THE KORAT PLATEAU. This view is only a small portion of the facsimile depicted in figure 18.14, including an area in the far northeast of what is now Thailand and an adjacent area across the Mekong in Laos. Although there is no way to determine the fact by casual visual inspection, the area shown is probably the least accurately portrayed portion of the entire map. For example, the route traversing a range of hills in the lower central portion actually runs through a lowland area of paddy fields. Nevertheless, on the whole the map obviously embodies a great deal of detailed and apparently reliable data about settlement, roads, and terrain. Size of the detail: ca. 30 × 30 cm. By permission of the Royal Thai Survey, Bangkok.

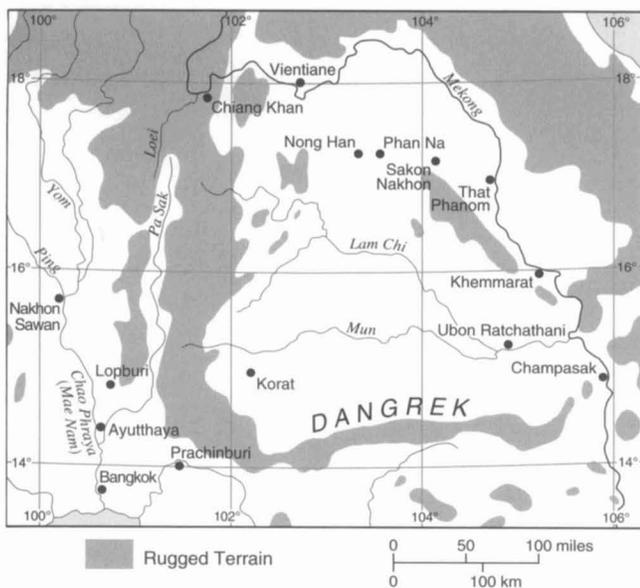


FIG. 18.16. MODERN MAP OF THE KORAT PLATEAU AND ADJOINING AREAS OF SIAM. On this map are identified most of the features shown in figure 18.15.

some of the lesser streams are.⁴⁹ Also noteworthy is the existence of a settlement hierarchy (as in many Burmese maps), with towns indicated by squares, here almost always surmounted by battlements, and selected villages shown by ovals. A striking feature of the map is the great attention given to areas of rugged terrain, shown in a variety of forms and with considerable exaggeration of vertical scale. Vegetation is also shown in considerable variety, though with less prominence than on most Burmese maps. To what extent the variation in the manner of depicting landforms and vegetation represents an attempt at symbolic differentiation of recognized types actually existing in nature is not known.

According to Constance Wilson, a historian who has done extensive archival research in Thailand, among the ten to twenty thousand *samud khoi* manuscripts in the National Library of Thailand only five or six include maps.⁵⁰ Among those maps, the nature of only one is

49. Kennedy, "Nineteenth Century Map," 316 (note 44).

50. Conversation with Constance Wilson, Northern Illinois University, DeKalb, March 1984.

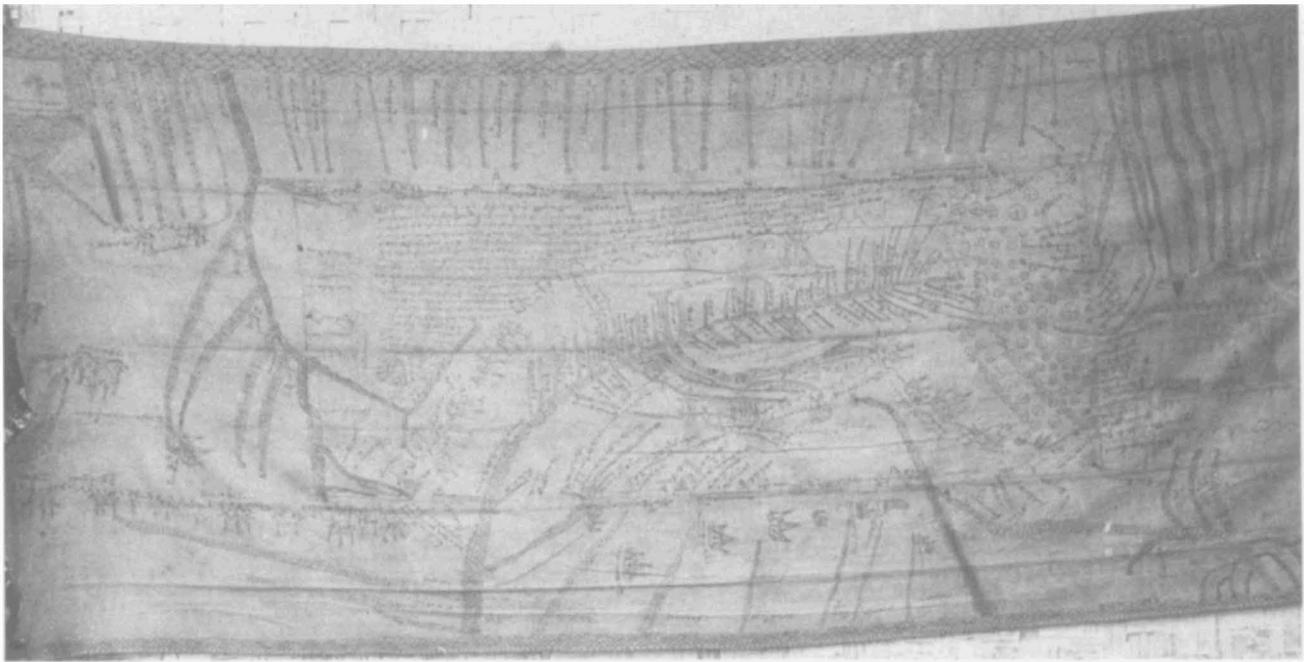


FIG. 18.18. SACRED MAP OF THE SUNDANESE CHIEFDOM OF TIMBANGANTEN, LATE SIXTEENTH CENTURY. This large and exceedingly detailed cloth map is drawn in ink, oriented with south at the top, and covers virtually all of the western third of Java. The large rectangle in the middle of the map is the former chiefdom of Timbanganten, depicted at a greatly exaggerated scale, within which lay the village of Ciela, where the map is still held and venerated as a sacred relic. Within the rectangle is a lengthy inscription in Sundanese indicating when, why, by whom, and for whom the map was drawn

(though the era cannot be stated with certainty), noting that its purpose was to identify the lands that belonged to the *sunan* (prince) who commissioned it and who proclaims himself a good Muslim. The map is especially noteworthy for the originality of its cartographic signs, incorporating as it does some signs that are notably different from any seen on other maps from Southeast Asia.

Size of the original: 91 × 223 cm. Photograph courtesy of Joseph E. Schwartzberg.

known to me. That unprepossessing work forms the second of the known Siamese regional maps. The map is drawn in white chalk on heavy charcoal-coated bark paper in eight folding panels and is dated 1867. The orientation is roughly toward the south. The area covered is bounded on the south mainly by the Mae Nam Mun River and on the east by the Mekong, into which the Mun flows. The scale appears to be considerably compressed in the west so as to extend the map to the town of Korat (Nakhon Ratchasima), one of only a few named places lying to the south of the Mun. In all, then, the mapped area extends approximately 400 kilometers east-west. The northern margin is indeterminate but probably does not extend more than 150 kilometers north of the Mun. There is also some north-south compression to accommodate the stretch of the Mekong to the north of the Mun confluence; and given the strip format of the map, it was necessary to bend the Mekong's course counterclockwise, making the two rivers appear to flow almost parallel to one another rather than roughly at right angles as they actually do. The map appears to have been hastily drawn. In addition to showing five rivers (by double lines

with a crude wave pattern in between), it identifies seventeen locales. Ten are shown within rectangles (nine *muangs*, or towns, and one *ban*, or village), five within ovals (the town of Korat, two places cryptically designated "Royal Field," and two *bans*), and two more by circles (one a *ban* and one not identified). All but seven of these places are shown connected by roads, drawn as thin white lines, and all but one (a *ban*) lie on either a road or a river. Two administrative districts, Ubon (modern Ubon Ratchathani) and Suwannaphum, are named, but neither is bounded. I assume that the map relates to local administration.⁵¹

MALAY MAPS

The few known surviving regional maps from the Malay

51. The manuscript in which the map appears is at the National Library of Thailand, Bangkok, C.S. 1229/161 (ca. 24 × 61 cm) and is titled *Chotmai het Ratchakan thi 4*. Wilson was kind enough to send me a photocopy of the map, to translate almost all the text on it, and to provide some useful explanatory notes (correspondence 10 April 1984).

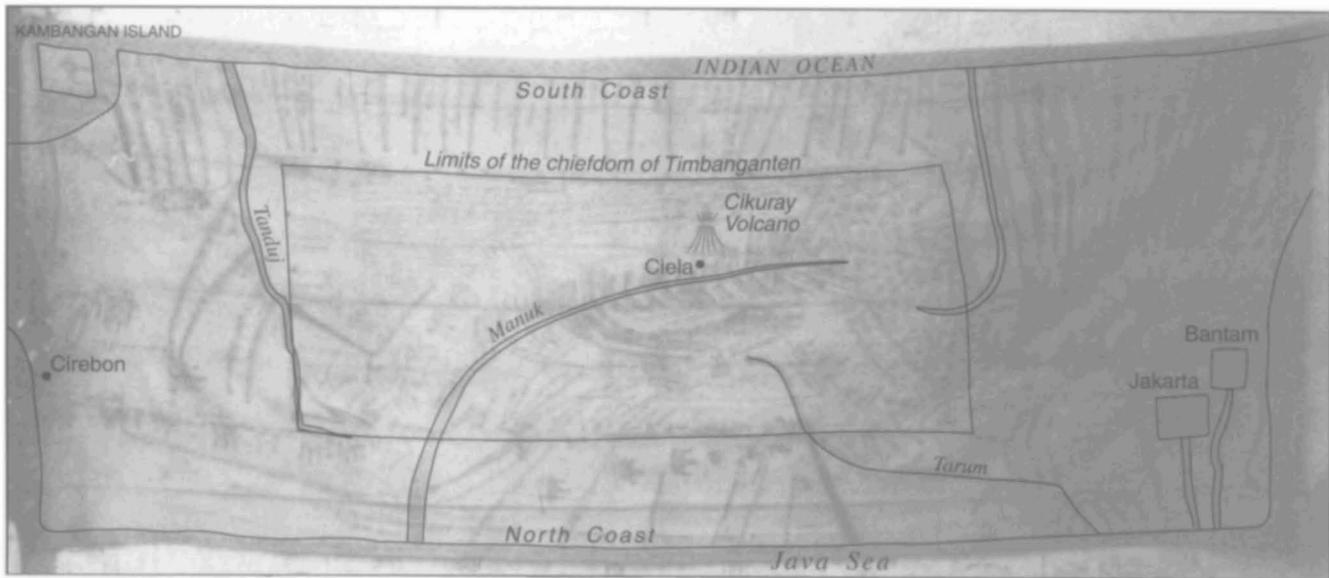


FIG. 18.19. THE PRINCIPAL FEATURES ON FIGURE 18.18.

world form a remarkably disparate group. In all, there are one map of western Javanese provenance, presumably of the late sixteenth century; another enigmatic and undatable batik map from either eastern Java or Bali; a third map from east-central Java, probably drawn in the mid-nineteenth century; and finally, a map from western Borneo tentatively dated 1826. There is no indication that any two of these were informed by a common cartographic tradition. In addition, there are a number of works that may best be discussed as nautical charts. I shall here consider only the four regional maps, in the order given above.

Figure 18.18 and plate 38 present, respectively, a comprehensive view and a detail from the western Javanese map, a large and very detailed work on cloth. The map, which is held to be a *pusaka* (sacred relic), is carefully preserved in the village of Ciela in the Garut District in the Sundanese region of Java, where it is periodically worshiped. Ciela is about sixty-five kilometers southeast of Bandung at the foot of Cikuray volcano, which the map shows very prominently. There, in 1976, the map was discovered (actually, as we shall soon see, rediscovered) by Rachmat Kusmiadi, an Indonesian geologist on duty with the country's Geological Survey. Kusmiadi brought the map to light the following year in a paper presented at the Seventh International Conference on the History of Cartography.⁵² It was subsequently illustrated and briefly discussed by Harvey, who stated that it "has the appearance of being, like the Early Han maps from China, on the borderline between symbol-map and picture-map."⁵³ I was able to inspect the map personally in Java in 1984. Only then did I learn that it had been previously discovered in 1858 by a Dutch official, J. C. Lam-

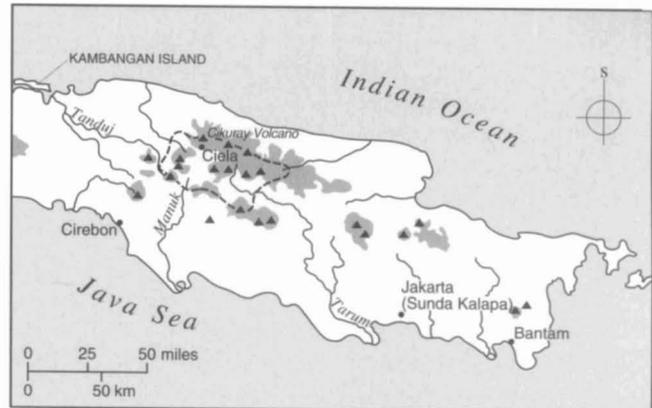


FIG. 18.20. MODERN MAP OF THE REGION DEPICTED IN FIGURES 18.18 AND 18.19. South is at the top.

mers van Toorenburg (aided by a Javanese informant), and that after some fruitless attempts by others to interpret it the task was assigned to a philologist, K. F. Holle, who studied it at length in 1862, made two copies, and published an article on it, including a detailed reduced-scale drawing, in 1877.⁵⁴ In 1990 the map was promi-

52. Rachmat Kusmiadi, "A Brief History of Cartography in Indonesia," paper presented at the Seventh International Conference on the History of Cartography, Washington D.C., 7–11 August 1977.

53. P. D. A. Harvey, *The History of Topographical Maps: Symbols, Pictures and Surveys* (London: Thames and Hudson, 1980), 114.

54. K. F. Holle, "De kaart van Tjiela of Timbangantèn," *Tijdschrift voor Indische Taal-, Land- en Volkenkunde* 24 (1877): 168–76 and endcover folding map (this article was translated for me by L. Ruyter

nently featured in the television documentary “The Shape of the World.”⁵⁵

The village of Ciela was at one time the seat of a minor chiefdom called Timbanganten, one of many petty states formed on the conquest and breakup in the late 1570s of the interior Sundanese Hindu kingdom of Pajajaran (whose capital was at Pakuan, near modern Bogor) by the sultan of Bantam, which had accepted Islam only half a century earlier. The local magnates were then forcibly converted to Islam.⁵⁶ The chief of Timbanganten, named on the map and identified as a Muslim, was possibly among those converts. But whether it was that chief or one of his forebears who adopted the new faith, Kusmiadi’s assertion that the map dates from the fifteenth century is clearly untenable, since no part of Java had accepted Islam before 1525.⁵⁷ The Indonesian museum label for one of Holle’s copies, now on display in the Jakarta City Museum, states that “it is estimated that the age [of the map] is more than 300 years.”⁵⁸ In any event, in the long inscription within the map, said to be in “corrupt old Javanese,” the mapmaker identifies himself as Masjaya and states that his *sunan* (prince) Lawas Jaya (otherwise unknown to history), a Muslim, ordered the map to be made to establish the limits of his domain. That Lawas Jaya’s original name was Was Jaya Cacandran suggests that it was indeed he who converted and that he changed his name at that time.⁵⁹ The map text lists, based on a census, seventy-eight *kampongs* (villages) included within the chiefdom and states that Lawas Jaya “divided the region [realm] into three sections, which were in turn subdivided” and that this was done on “Friday, the 14th, the month of Muharam, the year of Alip.”⁶⁰ Alip, the first letter of the Arabic alphabet, here would signify the year 1, indicating that the *sunan* was inaugurating a new era in his realm. Prominently shown on the map are a number of what appear to be boundary markers along what I take to be the rectangular boundary of the entire domain. Although internal divisions are not evident, Holle states, in seeming contradiction to the museum caption, that Timbanganten was partitioned in two parts by the river Manuk, which runs in an arcuate course to the north of Cikuray volcano.⁶¹

Both the museum copy and the published version of the map carry very detailed (and, it appears, identical) sets of numerical and alphabetical keys to the map. Portions of the text are identified by roman numerals I to III, and at least 250 map features are identified by Arabic numerals, upper- and lowercase letters, and upper- and lowercase letters followed by prime signs. No mention of the key, presumably made by Holle, appears in his article, however, and my attempts to find the key at the Jakarta City Museum proved fruitless. Nor does Holle dwell at length in his article on the geographic content of the map.

Without the map key, attempts by nonspecialists to

make sense of the map will necessarily be speculative. A few important matters, however, are certain. First, the orientation of the map, though not uniform, is, as with most maps of Islamic provenance, dominantly toward the south. Second, the area covered (see figs. 18.19 and 18.20) is virtually the whole of Java to the west of Cirebon (not itself shown), except for the far western tip of the island,

in June 1984). The published map is unusually large, 29.7 by 78.7 centimeters, and will reward detailed study, especially by scholars with the requisite linguistic competence. The example I procured in the Netherlands, however, was on rather brittle paper and in poor condition. On one corner of the original map (not shown on the reproduction) Holle inscribed the sentence “Den 1 Daag 1862 een copy genomen door K. F. Holle.” This appears not to have been noticed by Kusmiadi. Whether Lammers was the first European to see the map is itself open to doubt, since a Mr. Netscher reported that an anonymous German scholar already had examined the map some time earlier. Netscher (as cited by Holle) observed that the scholar’s research received no general publicity (p. 172), by which one may assume that it never was published, and nothing more is known of him.

55. The map was discussed in the introductory and final episodes of the six-part series produced by Granada Television Limited, England.

56. Hall, *History of South-east Asia*, 215 (note 29).

57. Kusmiadi, “Cartography in Indonesia,” 1–2 (note 52). Kusmiadi was unaware that the map had been studied by Holle a century earlier and did not know of the museum copy in Jakarta. Harvey, *Topographical Maps*, 114 (note 53), following Kusmiadi, also stated that the map was from the fifteenth century.

58. The label was translated for me in full by Alan Feinstein in Jakarta in March 1984; his assistance is gratefully acknowledged. Another part of the label states that the age was “300,” not “more than 300,” years. The date when the label was written, however, is not known. It could be an Indonesian translation of an initial inscription written in Dutch by Holle or a colleague as much as a century before I copied it, with no alteration of the original text. If the date when the map was made immediately followed the conversion of the ruler in the 1570s, and if the label (not dated) was written about 1877 when Holle wrote his article on the map, either statement would be reasonable. Holle, “De kaart,” 174 (note 54), stated that the map was just under three hundred years old. One bit of internal evidence in support of a date in the late sixteenth century is the map’s designation of Jacatra (Jakarta) by its old name, Sunda Kalapa. Although the name had been changed on its conquest by Bantam about 1525, the new designation might have taken some time to be recognized. But the probability of designating the place as Jacatra would have steadily increased with time.

59. The introductory portion of the map inscription, translated in the museum label, is somewhat perplexing. As translated for me by Feinstein, it reads: “This is the assignment, or affair, of the ruler in the region of Timbanganten, that is Susunan Cantayam. But all of this [land?] is the inheritance, or estate of Maharaja Tunggal, who held the title Maharaja Sukma, and who was the son-in-law of Ratu Tunggal, who was called Tuwinis.” Feinstein calls attention to the ambiguity of the relative pronoun “who” in the previous sentence. Also ambiguous in my mind is the relationship of Susunan Cantayam and Maharaja Tunggal to Lawas Jaya. It seems likely that we are dealing here with several levels of political authority in a more or less feudal system. I surmise that a *susunan*, to cite the title of Cantayam, is higher than a *sunan*, the title enjoyed by Lawas Jaya, but lower than a maharaja. But why maharaja, rather than sultan, was used after conversion is not clear.

60. Holle, “De kaart,” 174–75 (note 54).

61. Holle, “De kaart,” 175 (note 54).

an area of roughly 40,000 square kilometers, including all of the traditionally Sundanese territories. Third, within that area the chiefdom of Timbanganten, represented by the rectangle in the center of the map, is shown at a greatly exaggerated scale, occupying slightly more than a fourth of the entire map surface and nearly three-tenths of its land surface, when in actuality it would probably have accounted for a rather small though indeterminate fraction of that amount. Fourth, despite this exaggeration and the absence of a key, one can relate the drainage features and topography on the map, as well as those few features that Holle's article identifies, to the known contemporary geography of Java well enough to recognize the work as a remarkable cartographic achievement.

The cartographic signs used on the Timbanganten map are highly distinctive. Among the most expressively rendered features is Cikuray volcano (see plate 38). Other mountains assume a variety of forms, but it is not clear in any instance which of them are volcanic. Well over a hundred rivers and tributary streams are shown, all characteristically vermicular in appearance. Many issue from what appear to be springs, shown by a roseate line pattern, especially on the south side of Timbanganten, that suggests the karstic topography of that region.⁶² The principal river systems are those of the Manuk, which virtually bisects the chiefdom, and the Tarum, with its large delta near the northwest corner of the map (lower right in fig. 18.18). It appears that the mapmaker recognized, while drawing the map, that the course of the latter river was not being carried nearly far enough to the west and felt it necessary to correct this error. One can see (on the original, but not on Holle's published reproduction) the darkening out of the original more easterly route and the crossing of the tributaries of the new route with those of the old (in each case three to the south and one to the north), which could not be adequately effaced. A third river system, which I cannot identify positively, runs in part along the eastern edge of the chiefdom, and it seems clear that the chiefdom's northeastern corner, and perhaps the southeastern as well, is defined in terms of that river. Along the northern border of the chiefdom appear four rectangles. A wavy pattern in two of the rectangles suggests that they are lakes or artificial tanks; the others are empty. Elsewhere along the border are nine triangular features, presumably distinctive mountain peaks (six in the north and three in the south) that also appear to serve as boundary markers. Around most of the map perimeter a scalloped pattern represents the sea. In Ciela it was suggested to me that the circles with plus signs inside, clustered near the source of the Manuk, represented broadleaf forest. Vegetation signs elsewhere are generally small, scattered, and not easy to distinguish at the scale of our illustrations. The most prominent is a palm tree on the square island in Penanjung Bay in the far southeast

of the map; others appear to be boundary markers along the rectangular perimeter of the chiefdom, especially at its northwest and southwest corners.

Conspicuously absent on the map is any distinctive sign for a town or village. One reason may be that rural settlement in this part of Java was not and still is not highly nucleated. But the abundance of map text makes it highly likely that all seventy-eight *kampongs* within Timbanganten, and possibly others as well, were named in their appropriate places. The two large squares near the northwest corner of the map have been identified by Holle as Sunda Kalapa, an old name for Jakarta (as mentioned above, an anachronistic usage), and Bantam (Banten)—or more precisely, given their connections to the sea, their harbors. Within the area of Bantam harbor are a number of houses, probably representing the coastal dwellings on piles that are common in the region. (The considerable distance of both places from the sea is puzzling.) A third town, Indramayu, where the Manuk River enters the Java Sea, is indicated by a crudely drawn square enclosure. There is no sign at any of these coastal locations, or for that matter anywhere else on the map, of European presence, which commenced in a modest way in western Java in 1522, though no factory (trading post governed by a factor) was established in the region until 1611 or 1612.

As I noted at the outset, the map of Timbanganten is regarded as a sacred relic. Along with other *pusakas* in Ciela, it is kept in the care of a *kuncen*, a hereditary officeholder in the village who commands great respect. When Holle visited Ciela, the *kuncen* was an elderly woman; during my own visit it was a middle-aged man. The other *pusakas* included a kris (a Javanese dagger), a javelin, the barrel of a small brass cannon, a ring stone, and a cloth pennant bearing an image of a kris with two separate blades.⁶³ The last was presumably the emblem of the state and possibly represented its division north and south of the Manuk River. All these objects are kept in two *karpeks* (black wooden reliquaries). Among them, the map appears to possess particular sanctity. Holle writes:

That this map is greatly revered can be seen on Friday eve. Then, the *kuncen* unwraps it so that the population can view it. Then, a brazier is lighted with

62. See the geological map of Java in Charles A. Fisher, *South-east Asia: A Social, Economic and Political Geography* (London: Methuen, 1964), 226–27 and relevant text on 228–29.

63. Keeping *pusakas*, especially crises, as protective relics is a characteristic feature of popular religion in Java, notwithstanding the island's universal adherence to Islam, in which the veneration of such objects is theoretically anathema. The people of Ciela nevertheless thought of themselves as good Muslims and proudly showed me their village mosque and the adjoining *madrassah* (religious school). Of the objects named, based in part on Kusmiadi's description, I did not personally see the javelin or the ring stone.

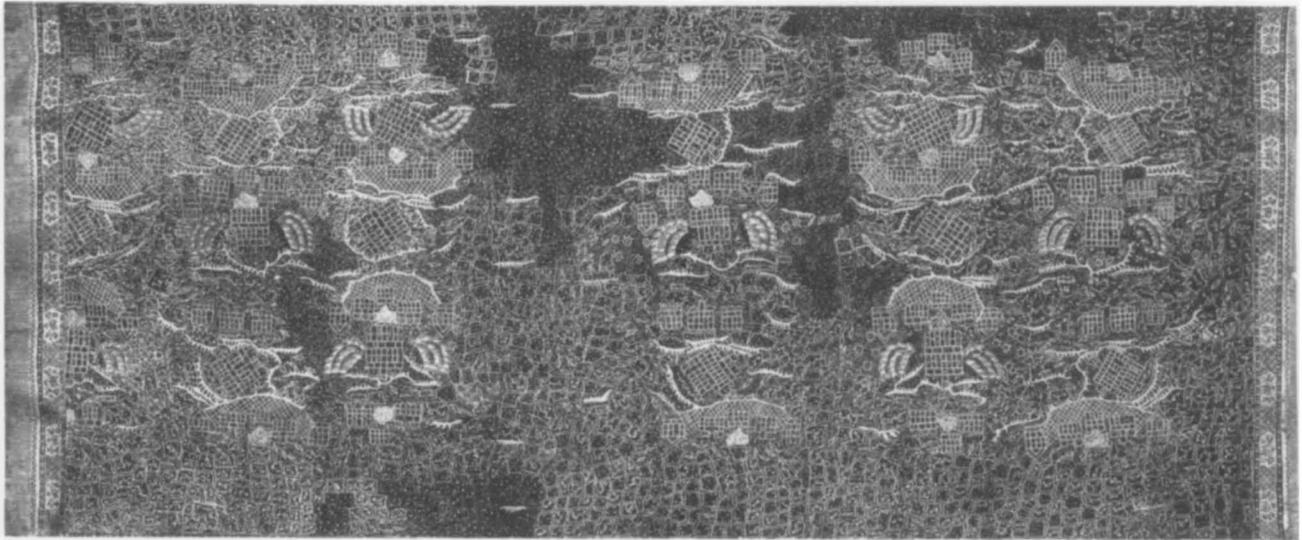


FIG. 18.21. BATIK MAP OF AN UNKNOWN LOCALITY FROM EITHER EASTERN JAVA OR BALI. This exquisite work was executed at an unknown date on a large *slëndang* (shawl). The basic batik pattern has been printed in pale blue and orange against a dark indigo field, while *prada* work (application of gold foil) highlights particular features. The total absence of map text makes interpretation of the work difficult;

and it is not certain whether it refers to a real or imagined area, or perhaps combines geographic and cosmographic elements. There can be no doubt, however, that it incorporates various signs suggestive of the intensively cultivated landscape of either eastern Java or Bali. See also figure 18.22. Size of the original: 93 × 233 cm. By permission of the Collection Royal Tropical Institute Tropenmuseum, Amsterdam.

incense, and the *kuncen* mutters an Arabic prayer, which only she is allowed to pray, and which she repeats continuously. The population lingers around the house, taking in eagerly the sounds of prayer, although it is inaudible to them, and watch with equal respect the sacred cloth which is equally obscure to them. The thought that it once belonged to one of their former rulers, and that it even was made by a powerful *dalem* [ruler], leaves them in their worshipful mood.⁶⁴

Previously, however, the local population held back their curiosity to see the *pusakas*, since the *kuncen* threatened them with all manner of dire consequences if they did. On the occasion of a visit by Lammers, however, several prominent villagers found the courage to enter the *kuncen*'s house in his company to view the relics.⁶⁵ During my own visit the relics were revealed to me by the *kuncen* only after appropriate ceremony, including several offerings of fruit and coffee to the spirits of the relics and a prayer by the *kuncen*, who faced south toward Cikuray volcano rather than west toward Mecca as he recited his decidedly un-Islamic invocation.⁶⁶ Unfortunately, I did not ascertain how frequently the relics are now viewed by the villagers.

Although the second (possibly) Javanese map I shall consider is no less traditional than the one of Timbangan, the contrast between the two is dramatic. The latter (figs. 18.21 and 18.22), acquired by the Koninklijk Koloniaal Instituut in Amsterdam in 1933, is in the form

of a large and elaborate batik *slëndang* (shawl). It is ascribed to either eastern Java or Bali, but no informed opinion as to its age or the specific area it depicts has yet been offered. Interpretation is rendered particularly difficult because the map bears not a single word of text. One cannot even state with certainty that it refers to a specific area as opposed to one or more generic landscape types. There seems to be little doubt, however, that this very well preserved map was made for persons retaining some aspects of Hindu culture, because of the number of motifs from that religion that it embodies. This alone would tell us little about the date if the map was from the still Hindu area of Bali; but if the area of provenance was eastern Java, that would suggest a date not much later than 1800, and more likely earlier, since Mataram, the region's (and Java's) last Hindu state, did not accept Islam until the late eighteenth century.⁶⁷ A detailed description of the map with a tentative attempt at analysis was published in 1934 and forms the basis for most of the discussion that follows.⁶⁸

64. Holle, "De kaart," 171–72 (note 54).

65. Holle, "De kaart," 172 (note 54).

66. The ceremonial aspect of viewing the map may be seen on the Granada Television series (note 55).

67. Hall, *History of South-east Asia*, 215 (note 29).

68. Koninklijk Instituut voor de Tropen, *Aanwinsten op ethnografisch en anthropologisch gebied van de Afdeling Volkenkunde van het Koloniaal Instituut over 1933*, Afdeling Volkenkunde 6 (Amsterdam, 1934), 24–26. I am greatly indebted to Tjeerd R. Tichelaar, formerly

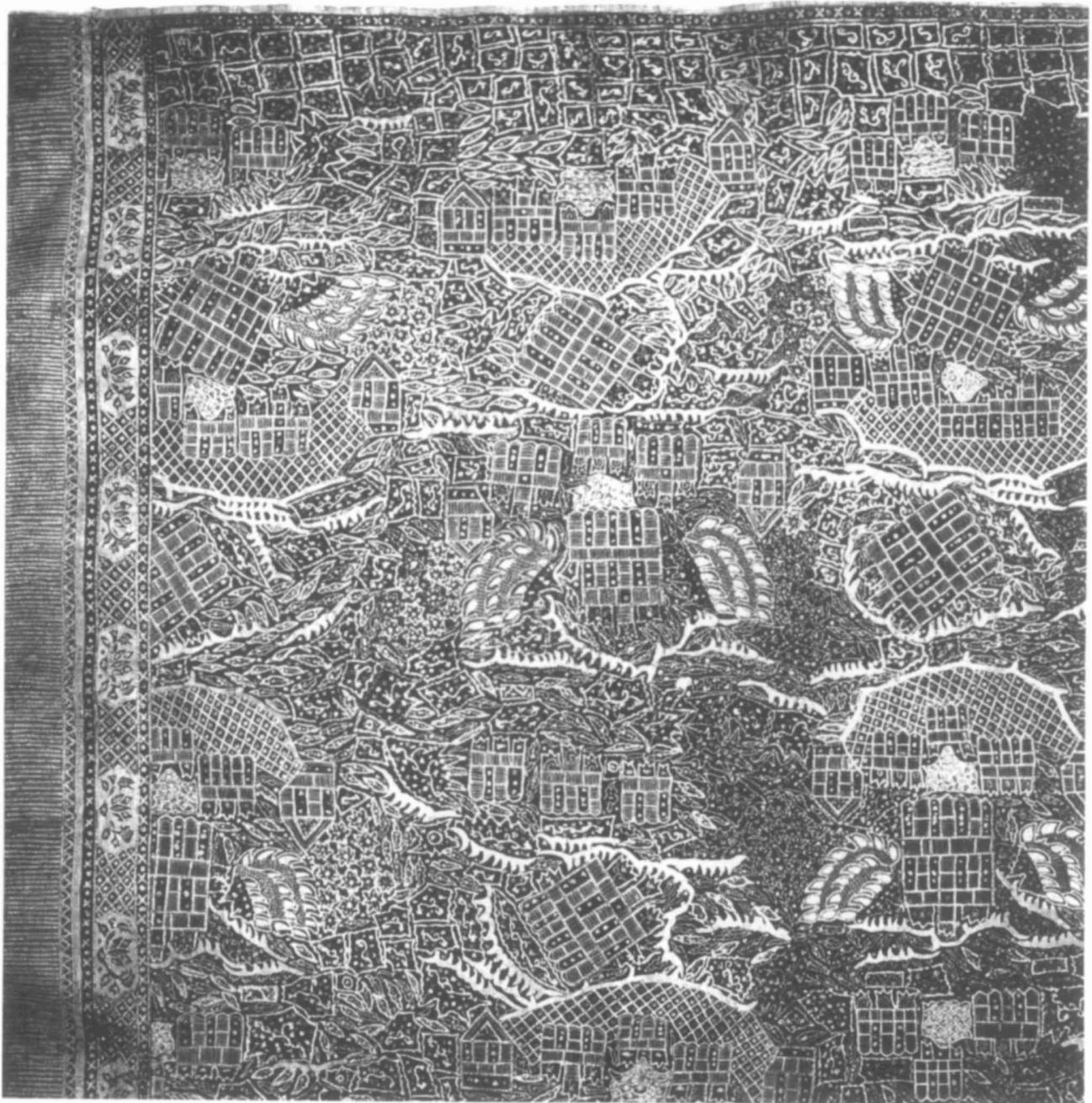


FIG. 18.22. DETAIL OF BATIK MAP FROM EITHER EASTERN JAVA OR BALI. Although the total absence of text makes it impossible to assign a precise time, place, or purpose of the map, which is here illustrated in part (see fig. 18.21 for the entire work), the lavish execution and the motifs included clearly indicate that it was made for persons of substantial means retaining some aspect of Hindu culture. The most prominent among such motifs are the so-called Puri gates, the winged ornamental

entrances symbolizing the portals to heaven. These were characteristic features of Javanese Hindu temples. If, as believed, the map's provenance is eastern Java, which did not embrace Islam until the late eighteenth century, its likely date would be not much later than 1800.

By permission of the Collection Royal Tropical Institute Tropenmuseum, Amsterdam.

The sumptuous batik pattern of the map is printed in pale blue and orange, with *prada* work (gold foil) highlights, set against a dark indigo field covering the entire surface of the shawl except its border. The border is

of the Geografisch Instituut, Rijksuniversiteit Utrecht, for translating this description and analysis for me. A photograph of a portion of the shawl and a brief description appear in H. Paulides, "Oude en nieuwe kunst op Bali, tegen den achtergrond van het Westen," *Cultureel Indië* 2 (1940): 169–85, esp. 174 and 180.

relatively simple and narrow (perhaps 2 cm wide) along the length of the map and wider (10.5 cm) and much more ornate at both ends. The map pattern itself is exceedingly dense; thus there appears to be no place where one could lay a coin seven millimeters in diameter without obscuring a bit of the design. The map comprises a left complex and a right complex, covering respectively roughly one-third and two-thirds of the total area. Within each, certain basic design motifs are repeated in a somewhat, but far from perfectly, symmetrical manner.

The dominant motif in both complexes is a square area divided into rectangular compartments crowned with three-pointed roofs and flanked on both sides by large wings. There are four of these arranged in the form of a diamond on the right and five, arranged as on the points and center of a large X, on the left. No two are quite alike, however, and some face the top of the map (as presented) while others face the bottom. This key motif is taken to be the traditional so-called Puri gates of Javanese Hindu temples, which symbolize the portals of heaven on the sacred mountain (*gunung*, i.e., Meru); but the rectangles within each square are thought to signify *kampongs*. Just below each square are pentagonal areas marked by wave patterns that are thought to symbolize either the world ocean or the lake surrounding Mount Meru. Adjacent to each such gatelike assemblage are smaller houses with single gabled roofs and areas of a small diagonal checkerboard pattern believed to represent gardens.

A second major motif is a square, much like that of the dominant motif, but without the flanking wings and with the other adjacent features slightly differently disposed in respect to it. These are interspersed with the first motif like a large X in the right complex and like a diamond in the left complex (the opposite pattern from the first motif).

Most of the map not occupied by these motifs is filled with seemingly randomly arranged, more or less square shapes that are taken to represent *sawah* (wet rice) fields. Also scattered about are leafy and branching forms thought to indicate woods and brushy vegetation and starry floral shapes that probably connote *tamans* (pleasure gardens), as well as several other patterns. Conspicuously distributed throughout the map are horizontally disposed serrated lines of varying length, thought to represent riverbanks, ravines, and artificial embankments. Many of these suggest terraces, a characteristic feature of areas of intensive agriculture in Java. Most of the serrations point toward the bottom of the map (as shown in the illustration), implying a general, though not uniform, slope of the land in that direction; and the concentration of *sawah* lands in the lower part of the map, especially the lower right, is consistent with the implied general flow of water that way.

Although the purpose for which the batik map was drawn is not known, it has been suggested that the ensemble was intended to depict “twin cities,” each consisting of a group of *kampongs* arranged in a traditional Hindu-Javanese pattern known as *Moncâ-pat*.⁶⁹ Writing of this pattern in 1918, van Ossenbruggen observed:

Moncâ-pat [*Montjâ-pat* in Dutch orthography] in Middle Java points to a unit of a *desa* [locality] with its four neighboring *desas*, which one should think of as being arranged according to the four cardinal points. This unity of *desas* extends further, including even more distant areas, and is connected with the old Javanese system of unity of which, even today, traces can be found in the law of the princely states.⁷⁰

The continuation into the twentieth century of adherence to this system appears to have been limited to the responsibilities of various villages in dealing with crimes in a particular area and their obligation to assist one another in maintaining order and peace and apprehending criminals. In preceding centuries the system would have had much wider applicability. Within it, the bonds of one's village with those in the cardinal directions from it were taken to be stronger than those with villages in the intermediate directions.⁷¹ Hence it may well have been regarded as necessary to assign to all settlements outward from a specific point of reference, say a capital, an unambiguous directional designation so as to know what the mutual obligations were. If this supposition is correct, one can understand why the maker of the batik map might have imposed a greater regularity in the spacing of signs representing settlement than in respect to other features of the map to which the schema did not apply, such as *sawah* lands, garden plots, ravines, and terraces, all of which appear to be more naturalistically disposed over the map surface. This, then, would account for the previously noted symmetrical regularity of the two dominant map motifs.

As to the places depicted—assuming they are not mythical—I am inclined to believe that, rather than Bali, the map relates to the neighboring principalities of Yogyakarta and Surakarta in south-central Java (within the eastern half of the island). I suggest further, counter to the

69. *Aanwinsten op ethnografisch en anthropologisch gebied*, 25–26 (note 68).

70. F. D. E. van Ossenbruggen, “De oorsprong van het Javaansche begrip Montjâ-pat, in verband met primitieve classificaties” (The origins of the Javanese concept of *Moncâ-pat* in connection with primitive classifications), *Verslagen en Mededeelingen der Koninklijke Akademie van Wetenschappen, Afdeling Letterkunde*, 5th ser., pt. 3 (1918): 6–44, esp. 6. I am indebted to Marcus Vink, a doctoral student in history at the University of Minnesota, for translating key portions of this important text.

71. Van Ossenbruggen, “De oorsprong van het Javaansche begrip Montjâ-pat,” 7 (note 70).

idea put forward above that the map relates mainly to “twin cities,” that two associated “states” were meant to be shown, including a network of places associated with their respective capitals of the same name. Since the *Moncā-pat* relationship among places was based on spatial considerations rather than size of settlement, the absence on the map of any apparent hierarchy among the places shown would not be unreasonable. Yogyakarta and Surakarta, the successors to the kingdom of Mataram after its dissolution in 1755, were the only two states to survive under nominal indigenous rule after 1830, by which time the Dutch had assumed power over the rest of the island. Both areas had vigorous traditions of batik manufacture and would have been able to provide the type of royal patronage needed to support a work as splendid as the one under consideration. The winged Puri gates that appear so prominently on the map are a conspicuous architectural feature of the region; and these, along with the inferred *Moncā-pat* pattern of *desas*, also argue more for a Javanese than a Balinese provenance. On the other hand, the liberal use of *prada* work is more characteristic of Balinese textiles.⁷²

An examination of the pattern of terrain on the map also argues for situating it in Java. One important visual aspect is the lack of any feature suggesting a volcano. For Java as a whole (no less than for Bali) volcanoes dominate the landscape, and one would expect to find them shown somehow (as they are on the other Javanese maps examined in this chapter) if any were present in the region depicted. In the area of predominately *sawah* landscape directly between Yogyakarta and Surakarta, however, a distance of approximately sixty kilometers, there are no volcanoes, although there is a lobe of talus slope on the southeastern flank of Mount Merapi that might be signified by the area with little *sawah* land in the upper middle portion of the map as shown in figure 18.21. Further, the more or less parallel southwest-northeast trend of ravines on the map, roughly in line with its long axis, is reasonably consistent with the pattern of drainage in the region suggested. On Bali the drainage pattern is more or less radial, and there is no area without volcanoes that is comparable in size to that just noted for Java.⁷³ But if the suggestion that the map relates to Yogyakarta and Surakarta is correct, it would appear to relate not to the whole of those two principalities, since both reached the south coast of Java and there is no indication of the sea on the map. Rather, the abundance of *sawah* land depicted suggests that the area covered would be the fertile corridor between and around those two cities, in which that landscape predominates.

The third of the three known Javanese regional maps (plate 39) is cataloged at the Bibliothèque Nationale as “Carte javanaise ms. en couleurs à identifier (S.l., n.d.) [without place or date].” The map was part of a lot of

thirty-six documents given to the library in 1878. Its language and script are Javanese. (The Javanese script is no longer in use, and few Javanese can still read it.) With the assistance of a Javanese journalist I have been able to identify the region the map relates to, an area of central Java mainly to the east of the two features most prominently shown on it, the volcanoes Merbabu (3,142 m) and Telomoyo (1,894 m), and to determine that the orientation is to the south. The map has a relatively modern look, particularly in its depiction of roads (one main artery and two secondary routes) and drainage, and was probably prepared not long before its acquisition by the Bibliothèque Nationale. The routes indicated can be found on a modern large-scale map of Java, but I have not determined the date of their construction. The main route shown is the one that links the port of Semarang to the north with the old princely state capital of Surakarta to the southeast. The area of coverage may be estimated as approximately thirty-five kilometers north-south by fifty kilometers east-west.

I have not determined at whose behest the map was made, or the purpose it was intended to serve. One striking feature of the map, which covers a portion of one of the most productive and densely settled regions of Java, is its depiction of settlement. Approximately 230 *kampongs* are shown. Their names appear within more or less ovoid forms, which often run into one another. These forms are bounded by rings of dots of varying colors, generally a darker hue of the color of the surrounding field. Those background colors—yellow, orange, red, blue, light and dark green, and light and dark gray—form fourteen blocks of territory set off from one another by thin boundary lines, by streams, or, over one short stretch, by the main road. I take these blocks to be low-order administrative subdivisions or areas within which revenue assessments were levied. The blocks vary substantially in size and include anywhere from one to fifty-one *kampongs* each (in the portion of their total territory within the map; it is conceivable that the territory with only one *kampong* is an exclave of another of the same color nearby). Only the lone area in light gray, stretching between the two volcanoes but lying mainly to the south of Mount Merbabu, contains no settlement. Settlement is sparse in the southern portion (top) of the map, especially in the southeast corner. There is no obvious reason this should be so, but it is conceivable that the southeast corner fell wholly or partially within the jurisdiction of the sultan of Surakarta. That

72. *Aanwinsten op ethnografisch en anthropologisch gebied*, 26 (note 68).

73. For relevant maps see *Atlas van Tropisch Nederland* (Batavia: Koninklijk Nederlandsch Aardrijkskundig Genootschap, 1938), maps 16.a and b, 17.a, 19.d, 21, and 22.

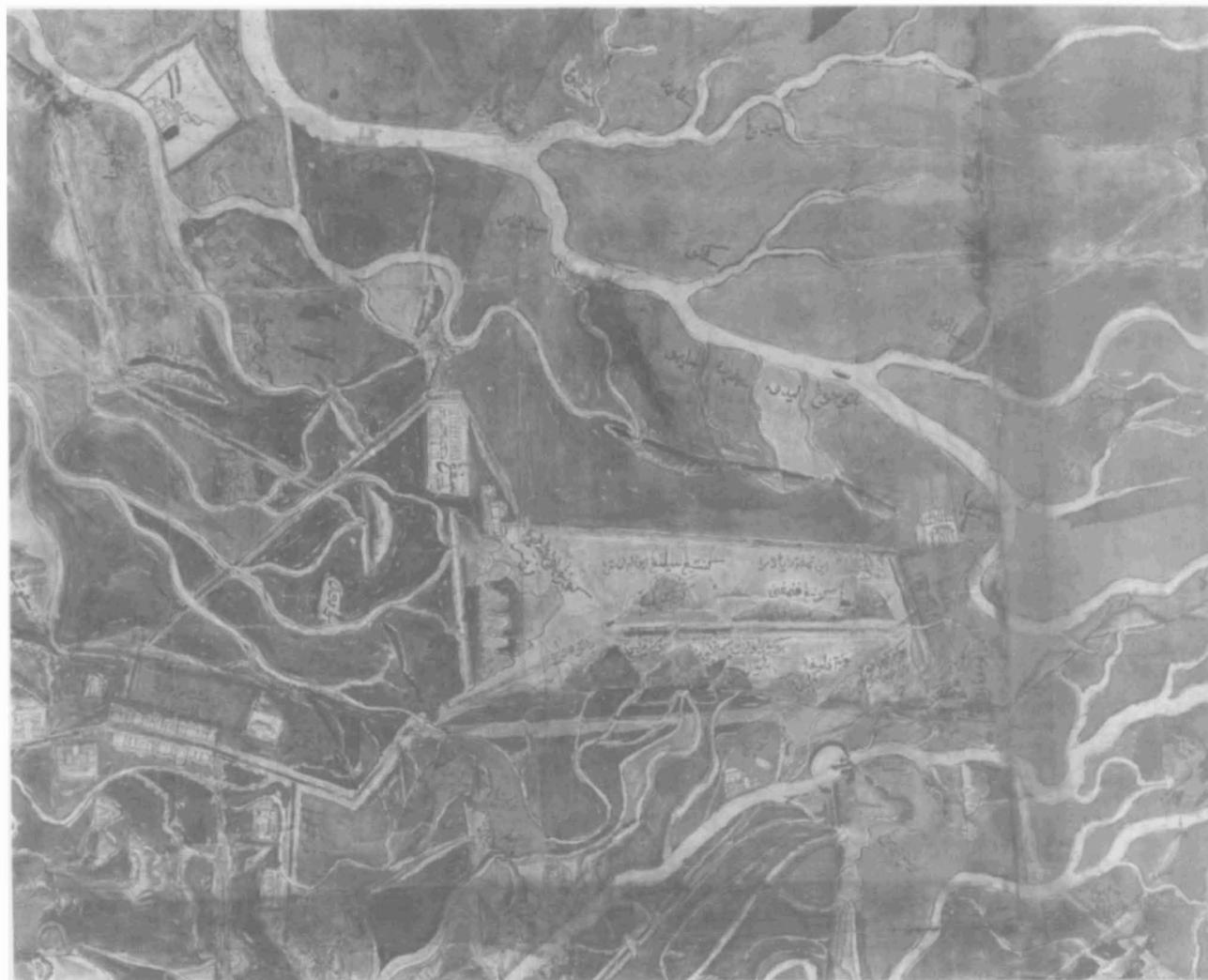


FIG. 18.23. DETAIL FROM A LARGE MAP OF THE FORMER SULTANATE OF PONTIANAK IN KALIMANTAN (BORNEO). This map is drawn in black ink and yellow, brown, blue, and red watercolor on European paper. It is believed to have been made in 1826. The orientation is to the south, and it depicts a portion of the deep interior of Kalimantan, of which the Dutch presumably then had no firsthand

knowledge. It is noteworthy for the degree of topographic detail it incorporates and the depiction of streams issuing from what appear to be springs in the mountain wall in the lower portion of the photograph.

Size of the entire original: 92.7 × 83.1 cm. By permission of the Kaartenverzameling, Geografisch Instituut, Rijksuniversiteit te Utrecht (acc. no. VIII.C.d.1).

the areas of color extend to the very edge of the map, and that four *kampongs* lie directly on the map border, suggests that the map formed part of a series, all drawn for the same purpose.

Given the prominence of streams on the map and the local importance of irrigation, one might suppose that the map was tied to water management. However, the lack of any logical disposition of the territories mapped with respect to watercourses makes that unlikely. Both streams and roads are shown in white and outlined in black. On the main road are seven bridges depicted in two different styles and one gate, conceivably a check-point or a toll station. The two volcanoes are shown by

circles and colored in the same tone of dark gray as much of the territory adjoining them. The absence of streams flowing from their western flanks and to the south of Merbabu and the dearth of *kampongs* in that portion of the map suggest that part of the area covered were essentially beyond the mapmaker's purview.

Though relatively modern in appearance, the map certainly does not look Dutch, even after we make allowances for the Javanese text. Nevertheless, despite the map's orientation to the south, I surmise that it was made at the behest of the Dutch as they sought to regularize their administrative control over the area. I surmise further that, lacking sufficient Dutch surveyors at the time,

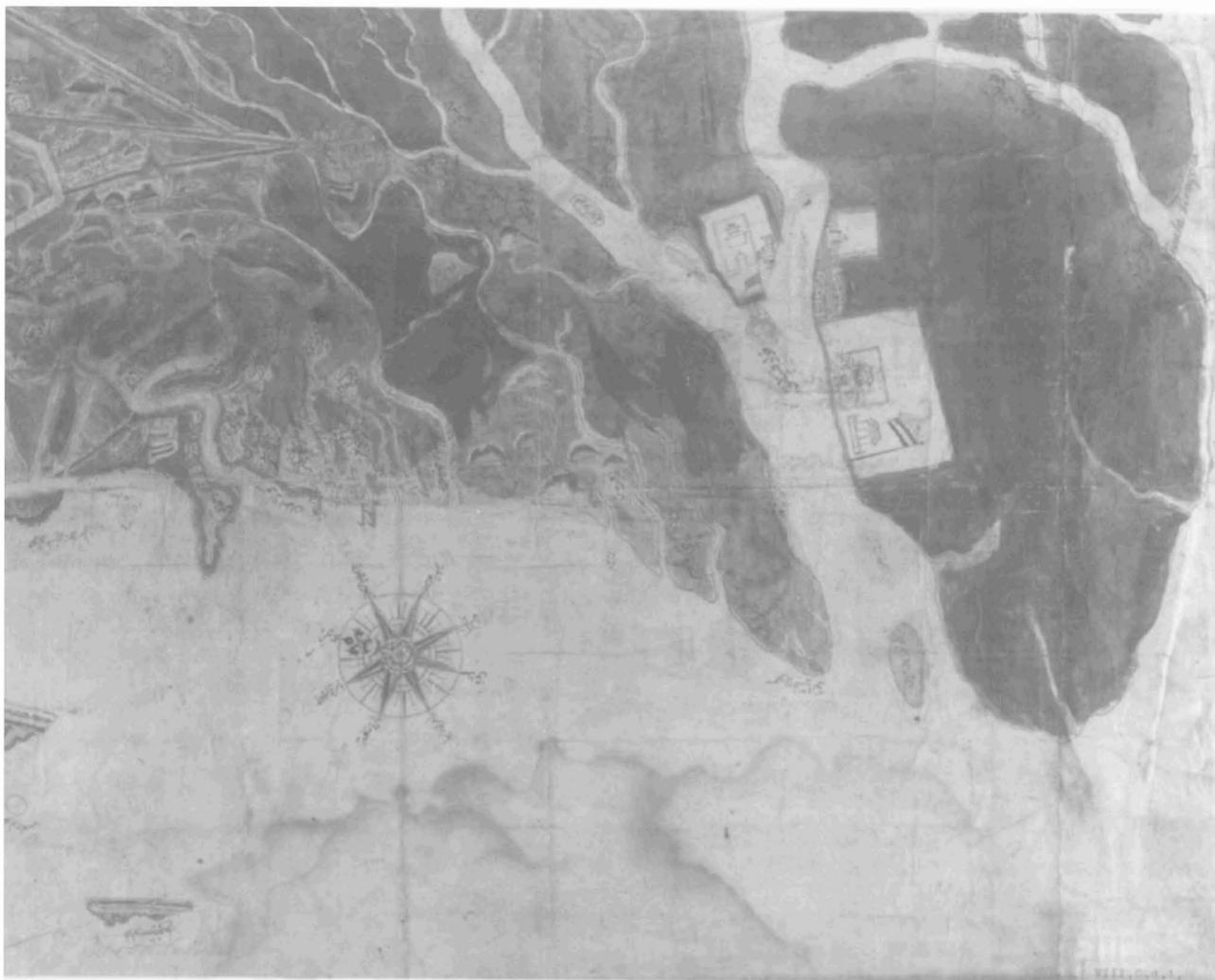


FIG. 18.24. ANOTHER DETAIL OF THE MAP OF PONTIANAK IN FIGURE 18.23. This detail shows what is unmistakably a delta at the mouth of the Kapuas River and includes the sultan's *kraton* (palace) and the nearby "Residentie," the seat of the Dutch resident administrator. European influence is apparent in the inclusion here of a compass rose and also (out-

side the area depicted) an ornate cartouche that seems to represent the sultan's coat of arms.

Size of the entire original: 92.7 × 83.1 cm. By permission of the Kaartenverzameling, Geografisch Instituut, Rijksuniversiteit te Utrecht (acc. no. VIII.C.d.1).

they fell back on locally recruited staff, utilizing wherever possible those known or presumed to have the requisite cartographic aptitude, more or less as the British appear to have done in similar circumstances in Burma. Further research on this question is obviously needed.

The final regional map (figs. 18.23 and 18.24) from what is now Indonesia focuses on the area of Pontianak in the west of Borneo (Kalimantan). This map is assigned the date "1826?" The language used to show several hundred toponyms and for related notes is Malay, written in Arabic script. Many later additions of both toponyms and notes (running to several lines) were made in the Roman script in pencil, but these are faded and now illegible. A few additional names and notes appear in ink. Accompanying the map is a modern pen-and-ink sketch

of the area covered, which extends from the large delta of the Kapuas River in the south more than three hundred kilometers northward, approximately to what is now the border with Sarawak. The map appears to be greatly compressed in its east-west dimension, which measures less than that from north to south, but it may in fact extend all the way to the Müller Mountains, more than five hundred kilometers from the coast.

If the suggested date of 1826 is correct, the map was made only a short time after the Dutch established their control over Pontianak, in 1822. Their knowledge of the interior of Borneo in that period would have been negligible at best. Thus, practically all of the details away from the coast could have come only from indigenous informants; and it seems likely that such individuals

actually drew the map, though with some supervision from the Dutch. Although the map bears a compass rose with thirty-two marked and eight named directions, of which north is the most prominent, the map text, including that on a fairly elaborate cartouche, probably bearing the local sultan's coat of arms, indicates a primary orientation toward the south, as was true of both of the maps from Java.

Apart from the abundance of named settlements, the map abounds in details relating to topography. Hills and mountains are drawn rather naturalistically in frontal elevation, usually in blue, with some shading along the edges. Although they are variously oriented, there is some tendency for them to be shown trending parallel to the edges of the map. What I assume to be the Müller range of central Borneo, the eastern limit of the Kapuas drainage basin, is shown in profile against the sky near the eastern edge of the map, with no land beyond. Rivers of varying thickness are shown in white, also fairly naturalistically. The Kapuas Delta is unmistakably shown as such (fig. 18.24). Some streams seem to be emerging over mountain crests, between two peaks. Many other streams are shown issuing from a hole drawn in the front of a mountain, well above its base, reminiscent of the special attention given to springs on the map of Timbanganten.

A distinctive feature about the text for various places is that it takes the form of complete sentences, for example, "This mountain is Pandang" or "This place is called Daya [place of the people of] Lava."⁷⁴ This longhand didactic form suggests that the map was intended for the elucidation of strangers to the region, namely the Dutch.

Settlement is generally shown by white houses drawn in frontal elevation, also variously oriented, but here and there one finds planimetric views of enclosures. Among these are the *kraton* (palace) of the sultan, shown within a red wall, and a nearby yellow rectangle, labeled "Residentie," indicating the seat of the presiding Dutch resident. In this and two other yellow enclosures are Dutch flags. It is not clear whether some red lines outside these several enclosures represent walls or roads. Background color for the map is predominantly a light brown wash, presumably indicating the sultan's domains, while some small coastal areas, shown by a yellow wash, appear to be the then limited holdings of the Dutch. In the northern part of the map what appears to be the word "London" (in Malay) is written on a mountain, which may signify that the area beyond was controlled by the English. The area in question could have been the sultanate of Sambas, just south of Sarawak, an area that came under British control in 1813 and was taken over by the Dutch sometime between 1824 and 1830, or possibly Sarawak itself, ceded by the sultan of Brunei to Rupert Brooke in 1841. In the latter case, the proposed map date of 1826 would not be tenable.⁷⁵

A clue to how and when the Pontianak map came to be drawn is provided in an article by Le Roux that deals primarily with Malay nautical charts. He notes that early in the nineteenth century "a sketch map of South Celebes was produced by someone by the name Daeng Mamangung . . . at the request of the Dutch government." In recognition of the quality of that map, the author was awarded an official certificate in Dutch and Buginese, dated 25 August 1824, stating that the map "deserves the highest praise" and encouraging the mapmaker "to continue through all times, with renewed zest and diligence on this path that he has started so honorably."⁷⁶ If in the 1820s the Dutch would have deemed it expedient to induce a learned Bugi to make a map of his home, they would have had no less a reason to do the same in Pontianak and, for that matter, in other areas into which they had projected their power. In the case of Pontianak, which was in an area the British had also shown an interest in, the case for locally grounded intelligence would in fact have been even more compelling. Le Roux expressed the opinion that the Celebes map might be found in one of the archives in Bogor, Jakarta (Batavia), or Bandung, and that he intended to explore the matter further; but no more information about the matter is available to me.

ROUTE MAPS

Some of the maps designated route maps for purposes of analysis will not, at first glance, be recognizably very different from those classified as regional maps, especially some of those brought to light by Francis Hamilton. The criterion used in setting aside a certain group as route maps is that their emphasis is primarily on delineating the course of some type of feature, whether roads, pilgrimage paths, rivers, or even in one instance a telegraph line, and according little or no attention to other features, except perhaps in the immediate vicinity of the routes of principal concern. Some route maps have a strip form, which is particularly well suited to their purpose, but most do not. The discussion that follows is divided into two parts, the first relating to maps that are believed to relate to

74. These and a few other readings from the text on not particularly clear slides of portions of the map were made for me by Mohammed Radzi Haji Othman, a student from Malaysia at the University of Minnesota. I extend my thanks for his assistance.

75. In Othman's reading "London," it was not made clear to me where the mountain stood in relation to the Sambas River, which would have suggested (assuming his reading was correct) which of the two boundary hypotheses was the more likely.

76. C. C. F. M. Le Roux, "Boegineesche zeekaarten van den Indischen Archipel," *Tijdschrift van het Koninklijk Nederlandsch Aardrijkskundig Genootschap*, 2d ser., 52 (1935): 687-714 and folding map; quotations on 701. This article was translated for me in its entirety by L. Ruyter, whom I thank.

Buddhist pilgrimage and the second to maps of a secular nature.

PUTATIVE ROUTE MAPS RELATING TO THE
SACRED PLACES OF BUDDHISM

In each of two nineteenth-century Burmese cosmographic manuscripts in the British Library is a chart depicting the Buddha in the center of an array of sixteen panels, arranged along twelve spokes, each panel indicating a specific place associated with his life on earth, its general direction from Bodh Gaya (the place in north-eastern India where he attained enlightenment), and the time required to reach those places from Bodh Gaya.⁷⁷ Though one chart is on palm leaf and the other on paper, they are otherwise very similar. Each indicates the cardinal and intermediate directions along the spokes emanating from Bodh Gaya, the sacred center of Buddhism. The sequence seemingly begins at the top with Mithilā, which is said to lie to the east, though its true azimuth from Bodh Gaya is only twenty-five degrees. The directions of other places are also improperly given, often with comparable or even larger errors. The distances cited range from five days to a month and are also far from reliable.

To call such diagrams “route maps” would perhaps be stretching a point; but it is appropriate to discuss them here because of their apparent relation to figure 18.25, to be taken up shortly, which is without question a route map. Despite their geographic inaccuracy, the layouts are clearly not arbitrary but rather appear to follow some untranslated prescription in the manuscripts of which each forms a part.⁷⁸ A possible use for the diagrams, simple though they are, was as initial guides to pilgrims who wished to visit the most sacred shrines of Buddhism in India; but if so, they would serve that purpose poorly. More likely, they had some didactic function in instructing the faithful about the life and partially mythologized travels of the Buddha.

Also dealing largely with the places sacred to Buddhism are two diagrams that appear in a forty-eight-page *samud khot* manuscript (twenty-four folios, with text on a total of thirty-nine pages), mainly in the Lanna Thai script, from somewhere in the vicinity of Chiang Mai in northern Thailand. Given its relatively well preserved condition, the undated manuscript probably dates, in the opinion of Wyatt, from the early twentieth century, but it could have been copied in whole or in part from a much older work. The manuscript was studied in 1978 by a Thai scholar, Sommāi Prēmchit, and discussed by him in a work in Thai on the stupas of northern Thailand.⁷⁹ It tells, among other things, how to go about building a *chedi* (stupa) in the style of the Mahābodhi Temple at Bodh Gaya in India.

One of the diagrams contained in this manuscript is of a type that indicates the main holy places in and around the stupa at Bodh Gaya. This diagram, a *yantra* (sacred visual charm) on folio 21 of the manuscript, was allegedly devised by a powerful monk, Upaguttathera (Upagupta in Sanskrit, Phra Uppakhuṭ in Thai), who was supposed to have lived in northern India in the time of Aśoka (third century B.C.).⁸⁰ It was to be inscribed on a silver plate and then, with appropriate ceremonies, placed within the pinnacle of the stupa to protect it from subsequent harm. Which *chedi* its Lanna Thai version was originally prepared for is not known and there is no reason why the diagram could not have been used for more than one stupa. There are at least four *chedis* in Burma and northern Thailand modeled on the prototype at Bodh Gaya.⁸¹

The diagram consists of a square made up of nine smaller squares (three by three). Of the nine squares, the middle one, represented as the “Buddha’s throne” (at Bodh Gaya), is said to be the “centre of all cities in the

77. The two diagrams form parts of the manuscripts illustrated in figures 17.14, 17.20, and plate 35 above.

78. For translating the text of one of the two charts discussed here, I am indebted to Patricia Herbert of the British Library. That chart is illustrated in Heinz Bechert, “‘To Be a Burmese Is to Be a Buddhist’: Buddhism in Burma,” in *The World of Buddhism: Buddhist Monks and Nuns in Society and Culture*, ed. Heinz Bechert and Richard Gombrich (London: Thames and Hudson, 1984), 147–58, esp. 155. Several possibilities suggest themselves in regard to there being twelve spokes. They may indicate months when a visit to the places named along a particular spoke would be particularly auspicious or the sequence of months in which visits to particular sites ought ideally to be made. Alternatively, the spokes may relate to the twelve-year cycle of the Chinese calendar and indicate places of pilgrimage to be visited by persons born in a particular year of that cycle. For a discussion of a prescribed list of pilgrimage places for northern Thai Buddhists based on year of birth, see Charles F. Keyes, “Buddhist Pilgrimage Centers and the Twelve-Year Cycle: Northern Thai Moral Orders in Space and Time,” *History of Religions* 15 (1975): 71–89.

79. Sommāi Prēmchit, Kamon Siwichainan, and Surasingsamrūam Chimphaneo, *Phraḥhēdī nai Lānnā Thai* (Stupas in Lanna Thai) (Chiang Mai: Khrongkan Suksā Wichai Sinlapa Sathapattayakam Lānnā, Mahāwitthayalai Chiang Mai, 1981), 89–90 and 104–5 (in Thai).

80. Despite the widespread belief of his association with Aśoka, Upaguttathera’s historical existence may have been anytime between the third century B.C. and the first century A.D. A very popular cult venerating him has arisen in mainland Southeast Asia. It is explored in John S. Strong, *The Legend and Cult of Upagupta: Sanskrit Buddhism in North India and Southeast Asia* (Princeton: Princeton University Press, 1992). A thorough study of this work may shed light on the maps discussed in this section.

81. The first of these was built in Pagan in Burma in the thirteenth century; three others, one in Pegu (Burma) and the two Thai examples, one each in Chiang Mai and Chiang Rai, date from the fifteenth century. Both of the Thai structures go by the name Wat Jed Yod (Temple of Seven Stupas). Details on the history of these edifices and on contacts between Southeast Asia and India that led to their construction are provided by Robert L. Brown, “Bodhgaya and South-east Asia,” in *Bodhgaya: The Site of Enlightenment*, ed. Janice Leoshko (Bombay: Marg Publications, 1988), 101–24.

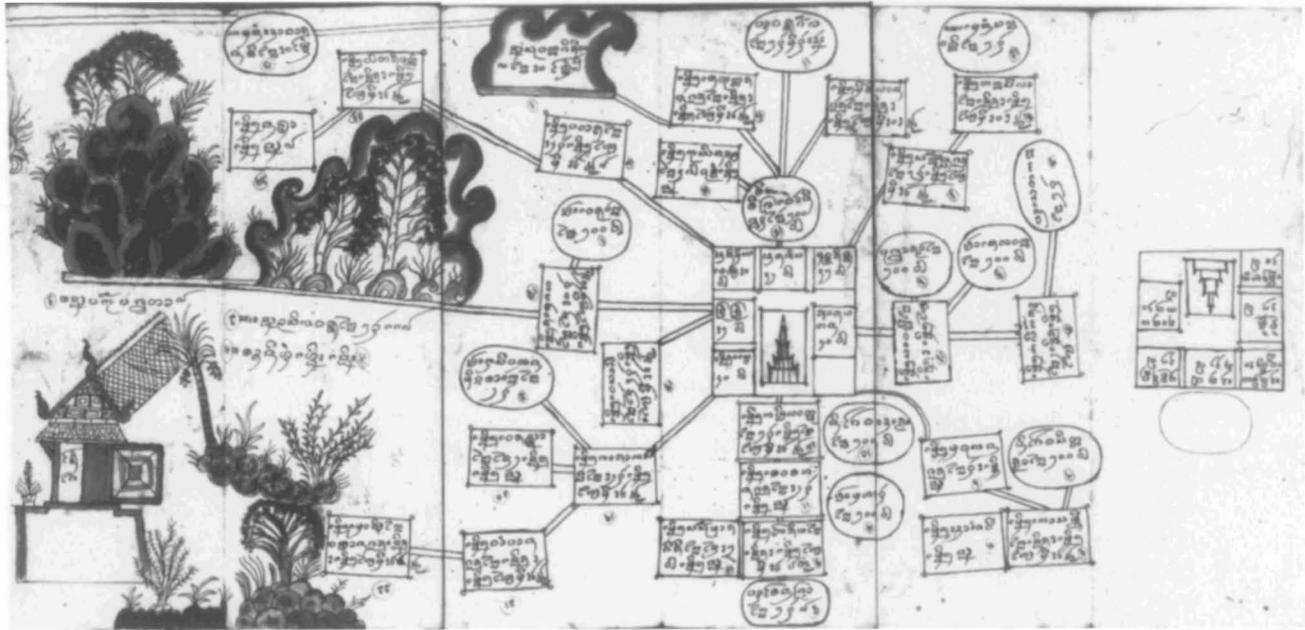


FIG. 18.25. PORTION OF A LANNA THAI MAP BELIEVED TO RELATE TO PLACES OF PILGRIMAGE VISITED BY A LONG-RESIDENT THAI PILGRIM IN INDIA. This enigmatic northern Thai map, of unspecified date, forms part of a forty-eight-page *samud khoi* manuscript, essentially cosmographic, said to have been placed in a stupa—possibly near the town of Chiang Rai—to protect the structure from harm. The manuscript was acquired for the Echols Collection on Southeast Asia sometime before 1981 by Donna Markham (then a graduate student there) and has yet to be cataloged or fully trans-

lated. The map shows a number of cities, villages, sacred places, and natural features in some sort of relation to Bodh Gaya and its precincts. Of forty-one additional places shown, those that could be identified all relate to sites significant in the lifetime of the Buddha or known to have been important in the centuries following his death.

Size of the entire map: 36.5 × 277 cm. By permission of Cornell University Libraries, Ithaca, New York, Echols Collection (the map portion shown here comprises all or parts of fols. 23–26).

TABLE 18.1 Key to Places Shown in Figure 18.25

Key Number/ Letter (folio) ^a	Text in Translation ^b	Remarks
0 (24)	No text (illustration shows temple of Bodh Gaya)	Place where the Buddha attained enlightenment
0.a (24)	Ratana-gbara (Ruenkaeo), 40 <i>wās</i>	Sites 0.a (24) to 0.f (24) are in the immediate vicinity of Bodh Gaya and are associated with specific events in the Buddha's quest for enlightenment
0.b (24)	Cankama (Conkrem), 15 <i>wās</i>	
0.c (24)	Animissa Cetiya, 10 <i>wās</i>	
0.d (24)	Ajapāla, 32 <i>wās</i>	
0.e (24)	Muccalinda, 35 <i>wās</i>	
0.f (24)	Rajāyatana, 40 <i>wās</i>	
1.1.a (24)	Rājagaha, 10 days distant, big city with 16 gates	Site of first Buddhist Council, early fifth century B.C.
1.1.b (24)	Veluvana, forest, 500 <i>wās</i>	Close to 1.1.a
1.2 (25)	Usila-dhajja, mountain, 2 days distant; this way is to the north	Not identified

^aSee figure 18.26 for key to locations.

^bCourtesy of Phramaha Wan Surote and David Wyatt; words in square brackets were added by me.

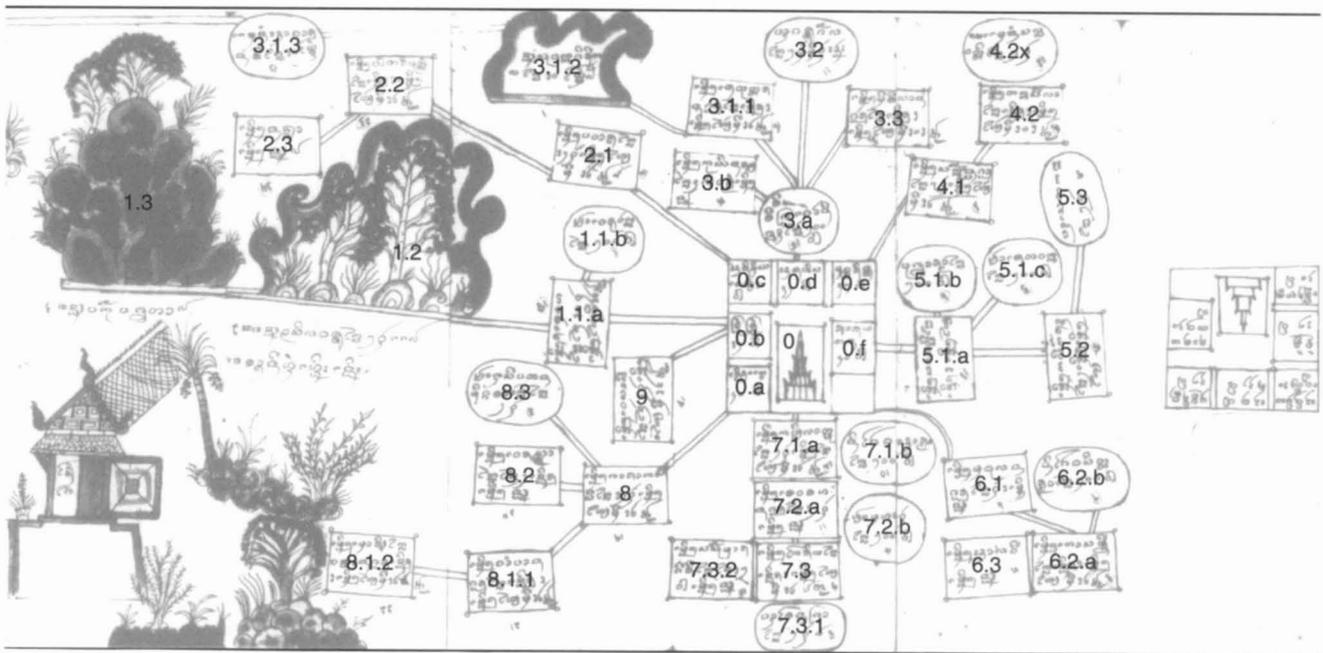


FIG. 18.26. KEY TO PLACES SHOWN ON FIGURE 18.25. All toponyms are indicated by key numbers and letters that are ordered clockwise and listed (first digits 1–9) according to the point of departure from Bodh Gaya of the map path on which they lie. Along any given path, numbers (second or third digits) ascend away from the node of origin. Letter *a*, *b*, or *c* following a given number signifies that all places with that number lie

close to one another (within 2 km). The letter *x* following a number signifies that the place in question is somehow connected to another place with the same number, but at an indeterminate distance, and is not linked to it by a map path. The translated map text is given in table 18.1, as provided to me, but with minor editing for consistency.

TABLE 18.1 (continued)

Key Number/ Letter (folio) ^a	Text in Translation ^b	Remarks
1.3 (25)	Panku-paeenta, mountain(s)	Not identified
2.1 (24)	Padmāvati (Pavāra), 12 days distant; big city with 16 gates	Modern Pawaya
2.2 (24)	Pātaliputta, 1 mountain distant; big city with 16 gates	Capital of Mauryan empire, modern Patna
2.3 (24)	Nāḷa, small city	Nālandā, site of major Buddhist university
3.a (24)	Where the lord attained nirvana, 500 <i>wās</i> distant	Close to 3.b
3.b (24)	Kusinārā, 3 <i>gāvuddhas</i> distant; small city	See 3.a; <i>gāvuddha</i> is a unit of distance
3.1.1 (24)	Jetuttanagara, 1 month distant; big city with 16 gates	Also called Madhyamikā
3.1.2 (24)	Suvannagiritala Mountain(s), 10 <i>yojanas</i> distant	Name signifies “golden mountain”; adjoins modern south Indian city of Gooty
3.1.3 (25)	Ācāra-nadi [river], 10 <i>yojanas</i>	Not identified
3.1.4 (26)	Cetarabba, city otherwise called Maddava, 10 <i>yojanas</i>	Not identified, off figure 18.25 to left

TABLE 18.1 (*continued*)

Key Number/ Letter (folio) ^a	Text in Translation ^b	Remarks
3.1.4.x (26)	Palileyyaka, very big elephant forest	Not identified, off figure 18.25 to left
3.1.5 (26)	Ketumati-nadi [river], 10 <i>yojanas</i> distant	Not identified, off figure 18.25 to left
3.2 (24)	Gajjangala, village, 5 days distant to the east	Presumably Kajaṅgala
3.3 (23, 24)	Mithilanagara, 1 month distant; big city with 101 gates	Mithilā; site of second and third Buddhist Councils in early fourth and mid-third centuries B.C., respectively
4.1 (23)	Sankassanagara, 7 days distant; big city with 16 gates	Saṅkissa
4.2 (23)	Takkasilā, 1 month distant; big city with 101 gates	Takṣaśilā, site of major Buddhist university and stupa, in northwest Pakistan
4.2.x (23)	Sallavatti, river, 5 days distant	Salalavatī River; location problematic
5.1.a (23)	Sāvatti, 1 month distant; big city	Modern Set Mahet
5.1.b (23)	Pubbarama [monastery], 500 <i>wās</i> distant	Close to 5.1.a
5.1.c (23)	Jetavana forest, 500 <i>wās</i> distant	Close to 5.1.a. Grove serving as frequent retreat of Buddha
5.2 (23)	Kalingaraja, 2 months distant; big city	Assumed to be Kaliṅganagara, capital of an ancient state
5.3 (23)	Setakanna village, 5 days distant	Not identified
6.1 (23)	Madhulanagara, 1 day distant; small city	Not identified
6.2.a (23)	Kosambi, 1 month distant; big city with 16 gates	Site of monastery and stupa
6.2.b (23)	Nigodhasitārāim monastery, 700 [400?] <i>wās</i> distant	Close to 6.2.a
6.3 (24)	Ālovi, small city	Not identified
7.1.a (23)	Kapilavāṛthu, 5 days distant; big city with 16 gates	Place of the Buddha's renunciation
7.1.b (23, 24)	Nigodhārām monastery, 500 <i>wās</i> distant	Close to 7.1.a
7.2.a (24)	Devadahanagara, 12 days distant; small city	Devapaṭṭana, visited by Mauryan emperor Aśoka
7.2.b (23, 24)	Mahāvana forest, 500 <i>wās</i> distant	Close to 7.2.a; means "great grove"
7.3 (24)	Koliya, 1 month distant; big city with 16 gates	Koliya was a republican city-state in time of Buddha; the location of its capital, Rāmagama, is problematic
7.3.1 (24)	Donabrahma village, 5 days distant	Not identified
7.3.2 (24)	Sumsumāragiri, 15 <i>wās</i> distant; small city	Location is problematic; 15 <i>wās</i> is assumed to be a mistake (of either mapmaker or copyist); 12 days may be intended
8 (24)	Bārānāsī, 12 days distant; big city with 16 gates	Varanasi/Benares
8.1.1 (24)	Campanagara, 1 month distant; big city with 16 gates	Campā
8.1.2 (25)	Moriya, 1 month distant from Campanagara; big city with 16 gates	Republican city-state in the time of Buddha; capital was Pippalivana
8.2 (24)	Verañjā, 2 months distant; small city	Also called Adarañjiya
8.3 (24)	Isipatana-migadayavana, 2 days distant	Sarnath, place of Buddha's first sermon; close to Verañjā
9 (24)	Vesāli, 3 days distant; big city with 16 gates	Vaisālī, capital of ancient Licchavi confederacy of city-states

universe,” while six others (all but the lower-center and lower-right squares, which show nothing but “sacred words”) include the names, within triangles, of the other principal sacred places in Champu Dipa (Jambūdvīpa, here roughly India) associated with the Buddha in their (spatial?) relationship to Bodh Gaya.⁸² Though the few details just provided differ in some respects from those that relate to the Burmese twelve-spoked charts discussed above, the similarities are sufficient to suggest a genre of Buddhist religious mapping that warrants further investigation.

More interesting than the *yantra* however, is a much more complex diagram extending across folios 23–27, a portion of which is reproduced as figure 18.25. A partial guide to its contents is presented in figure 18.26 and table 18.1. The focal feature is a square (in folio 24) including a stylized representation of the Mahābodhi Temple at Bodh Gaya and six named holy sites in its immediate vicinity. The arrangement of these sites reflects that of the *yantra* described above, though with an obvious difference in the scale of the area of reference. From the square emanate what look like nine routes, some with two or more branches, that connect or closely approach twenty-four rectangles, each bearing the name of a city; fourteen ovals, each containing the name of a village, monastery, forest (grove), river, or other holy place; and three pictorially rendered mountains. Brief descriptive comments follow the place-names. Although all forty-one names along these presumed routes were transliterated for me, I have thus far been able to identify only twenty-seven of the toponyms.⁸³ In each case the name relates to a place in India that was important in the lifetime of the Buddha or in the few centuries immediately following. A representative entry (in the rectangle numbered 7.1.a on fig. 18.26) reads as follows: “Kapilavāthu, five days distant, big city with sixteen gates.” The place referred to (Sanskrit Kapilavastu) is where the Buddha renounced the pursuit of worldly goals.

Of the twenty-four cities named, numbers 3.3 and 4.2, Mithilanagara and Takkasilā (ancient Takṣaṣilā; modern Taxila), are described as big cities with 101 gates; another twelve are said to be big cities with 16 gates; two big cities, with no specification of gates; seven small cities; and one (3.1.4) merely as a city, with no size specification. (The rationale behind the assigning of city size is often not clear, nor is that relating to the numbers of gates, 16 or 101, which are obviously conventional.) Of the fourteen toponyms within ovals, three refer to villages, three to monasteries, one to a sacred site adjacent to a city, three to rivers, and four to *vanas* (forests or sacred groves). Apart from the three pictorially rendered mountains along the routes from Bodh Gaya, there are six other pictorially rendered features on folios 25–27 (to the left of what is shown on fig. 18.25): a building simply labeled

“kitchen”; Acutta, a “hermit’s cottage”; “the hunter’s son’s residence”; Palileyyaka, an elephant forest; Mucalinda Pond (where a blind serpent sheltered the Buddha under its hood during a week of rain); and Gandhamadana Mountain (a name formerly applied to the eastern Himalayas).

The topological logic of the map is far from clear. With respect to distances from Bodh Gaya, there is no correlation between the straight-line or route distances of the places named and the straight-line or inferred route distances of the identifiable places as measured on a modern map of India. One point of consistency, however, is the close spatial association of place-names in ovals with the nearest place-names in rectangles. Otherwise the sequence of places along particular routes seems, in a number of instances, to make little sense. The route from Bodh Gaya to cities 8 (Bārānāsī/Varanasi), 8.1.1 (Campanagara/Campā), and 8.1.2 (Moriya/Pipphalivana), which we can examine by comparing figures 18.26 and 18.27, will illustrate the point. The first stage to Bārānāsī, said to be twelve days from Bodh Gaya, takes one 190 kilometers to the west-northwest. The second, said to be one month distant, presumably from Bārānāsī, takes one to a town on the Ganga 205 kilometers to the east-northeast of Bodh Gaya. The third and final stage, another month distant, takes one to the capital of an ancient republican city-state 290 kilometers northwest of Bodh Gaya.⁸⁴ In light of these locations, it becomes obvious

82. The foregoing remarks are based on readings of Sommai Prēm-chit’s text by Thong-chai Winichakul, University of Wisconsin, and David Wyatt, Cornell University. The latter provided me with a written translation of one key paragraph. Their assistance is acknowledged with gratitude.

83. The transliteration of names and translation of ancillary text were provided for me by Phramaha Wan Surote, a northern Thai monk, and an anonymous Thai layman at the Thai Buddhist monastery in Silver Spring, Maryland. They were subsequently confirmed and slightly augmented by David Wyatt. I am most indebted to all of them for their assistance. All but one of the places identified appear on maps or photographs in Joseph E. Schwartzberg, ed., *A Historical Atlas of South Asia* (Chicago: University of Chicago Press, 1978), 16, 19, 21, and 23, and may be found by referring to the atlas index. Devadahanagara, the one exception, was identified in *The Geographical Encyclopaedia of Ancient and Medieval India*, ed. K. D. Bajpai (Varanasi: Indic Academy, 1967–), 1:107, s.v. “Devadaha.”

84. It is noteworthy that the only place on the entire map where it is specified that the distance is from the previously named place along a given route is between Campanagara and Moriya. I do not know whether this is significant. The routes shown in figure 18.27 generally follow those known to have existed in Mughal times (seventeenth century) as shown in Irfan Habib, *An Atlas of the Mughal Empire: Political and Economic Maps with Detailed Notes, Bibliography and Index* (Delhi: Oxford University Press, 1982). Although no reference period for the Lanna Thai map is available, I assume that the routes I have depicted would provide a reasonably good approximation of those most likely followed by the presumed original pilgrim to whose travels the map relates.

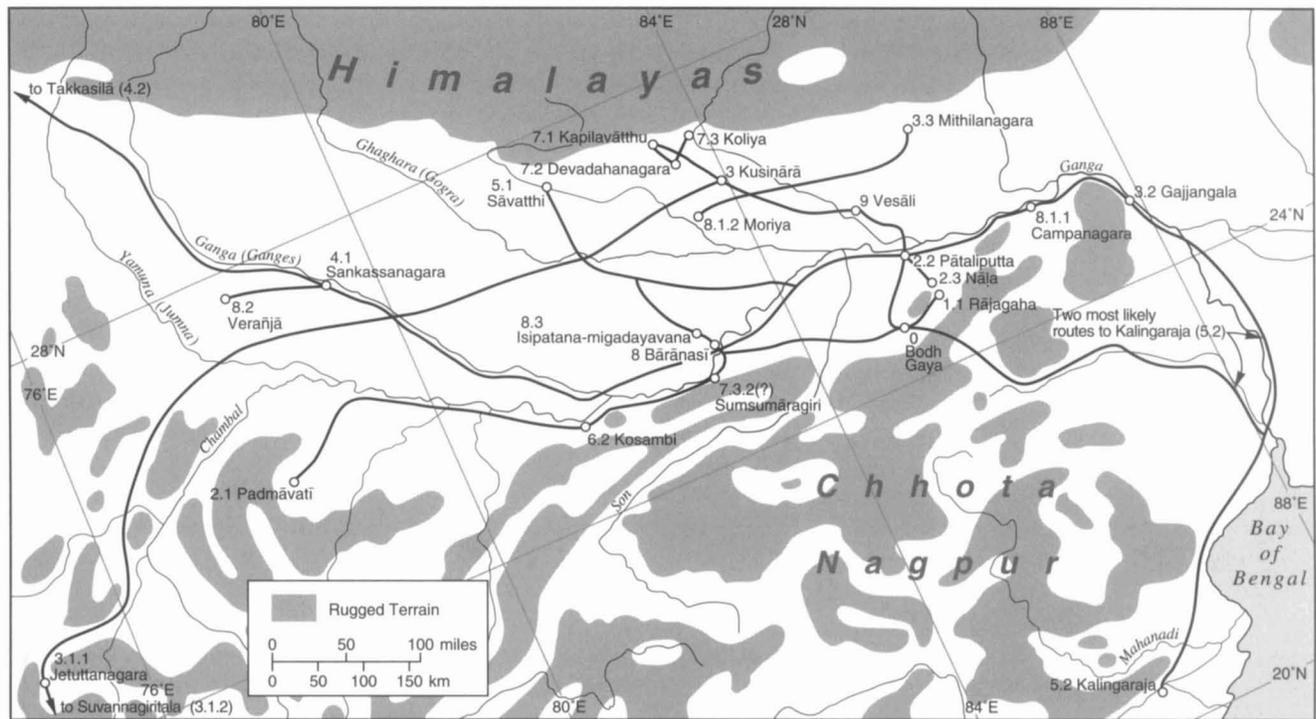


FIG. 18.27. HYPOTHETICAL RECONSTRUCTION OF SELECTED ROUTES SHOWN IN FIGURE 18.25. The routes shown are those along paths between places that could be identified. The key numbers (without attached letters) and names of such places match those of figure 18.26 and table 18.1. Not shown directly on this map are Takkasilā, which lies well to

the northwest (near the modern Pakistani city of Rawalpindi), and Suvannagiritā (modern Gooty in the south Indian state of Andhra Pradesh). A sojourn in India of at least several years would have been required for a single premodern pilgrim to cover all the routes (including the implied routes to the two most distant locales just noted).

that the orientation of the original map cannot be specified. Nor can an approximate scale be given. Nor is there is any apparent connection between the actual geographic directions of identified places either from Bodh Gaya or from one another and the directions shown on the map.

The verbally indicated distances that accompany the toponyms on the map do, however, provide a more meaningful set of relationships. Distances are specified in either linear or temporal units. Generally these appear to refer to the previous place on a particular route rather than the cumulative time or distance from Bodh Gaya, the place from which all routes originate, though in the case of the route from Bodh Gaya to Kapilavāthū, Devadahanagara, and Koliya (7.1, 7.2, and 7.3) the latter possibility would make more sense. Long distances are normally specified in months (two months in the case of the route from Sāvaththi to Kalingaraja [5.1 to 5.2] and from Bārānāsī to Verāñjā [8 to 8.2], and one month in the case of connections to nine other cities) or *yojanas*. (Presumably a “month” in the context of this map might mean anything from fifteen to forty-five days.) A slightly more common specification, accounting for twelve cases, is in days (ranging from two to twelve days). Linear distances are given in *yojanas* (a variable measure, the often-cited

specification for which—about sixteen kilometers—is here clearly much too short); *gāvuddhas* (in only one instance; equivalency also not determined), and *wās* (approximately 2 m). The only route in which *yojanas* figure is from 3.1.1 to 3.1.5, each place being said to be ten *yojanas* from the place preceding it). *Wās* figure in seven cases (five of five hundred *wās*, one of seven hundred *wās*, and one—almost certainly a misinterpretation—of only 15 *wās*). Distances to places named in ovals are invariably given either in days or in *wās* and are always less than those given for the toponyms in the rectangles they are adjacent to. This suggests that the places named (a number of which have yet to be identified) were somehow associated with the nearby city. In some cases an association is historically verifiable.

For the eighteen pairs of connected cities for which verbal time-distances are provided, I have checked the times stipulated against measured geographic route distances to test their plausibility. In fifteen cases a person could cover the distance via the hypothetical routes indicated on figure 18.27 within the time indicated at speeds of less than forty kilometers a day or, in eleven cases, less than twenty-five kilometers a day. In three cases, however, the stated travel time is not credible. In the

most extreme such case, the route from Bodh Gaya to Sankassanagara, for which “seven days distant” is indicated, one would have to travel more than 85 kilometers a day to cover the distance. Here, and perhaps elsewhere, there may have been an error either in the original map, in copying from one manuscript to another, or in the translation of the map text. Of the times given, several are far more than required for a particular geographic distance; for example, ten days for the route from Bodh Gaya to Rājagaha (locale no. 1), which is only about seventy kilometers distant. But if the time specified is taken not as the minimum required to make a particular transit but the time actually taken by a devout pilgrim making many stops en route (and possibly also considering the time at a given site in addition to the travel time), this seeming difficulty in interpreting the map disappears.

The original author of the map was almost certainly from northern Thailand. He was probably either a monk recording his own pilgrimage to the holy places of Buddhism in India, during a sojourn that would necessarily have lasted several years, or the transcriber of an account of the earlier travels of some other individual or group. I am inclined to believe that the map relates to the travels of an individual monk. (I have called attention elsewhere to other cases of pilgrims’ recording their travels in cartographic form.)⁸⁵ If this hypothesis is correct, each of the nine routes radiating out from Bodh Gaya might represent a single period of travel (perhaps that of a specific year) from the monk’s base in that most holy place, without any indication of closure on returning to Bodh Gaya. At first glance, the sequence of identified places along any given route may appear rather arbitrary. But when one considers that convenience and optimizing on time spent in travel are not major concerns for devout pilgrims, and that any route would be in part contingent on weather, on the astrological auspiciousness of traveling in particular directions during particular months, and on the interpretation of various unpredictable omens, seemingly quixotic routes may become understandable. (By way of example, the reconstructed paths of some of the early Chinese Buddhist pilgrims in India were often rather tortuous.)⁸⁶

The map provides no clear clues to when it was originally drawn. The absence of any features suggestive of Islamic or British rule in the area covered, the former dating from the late twelfth century, proves nothing, since the author’s concerns were exclusively with places sacred to Buddhists. A likely time for his Indian sojourn would be the fifteenth century during the reign of the devout Lanna Thai monarch Tiloka, who is presumed to have sent monks to Bodh Gaya (as did a contemporary Burmese monarch) to make plans of the temple there to enable copies of it to be rebuilt in Thailand (see above).⁸⁷

Assuming, then, that the map was recopied repeatedly from that date, copyists’ errors could easily explain some of the puzzling features I have noted.

If, as supposed, each of the nine routes emanating from Bodh Gaya represents a single trip away from that center, the sequence of those trips requires consideration, since it could explain the logic of the map. Although it is possible that the arrangement is wholly arbitrary, I am inclined to think they follow a temporal order clockwise from the route to Rājagaha (shown as site 1 on fig. 18.26). The sanctity of the latter place and its proximity to Bodh Gaya would have made it a likely candidate for a first sortie away from that center. Although I have not succeeded in identifying them, two large pictorially depicted mountains to the left of Rājagaha may be among the five hills surrounding that town that are identified in the *Mahābhārata* and in the Pali annals.⁸⁸ Other pictorial details of folios 25–27 may also be among the many sacred sites associated with the region. The prominence of the features on the left portion of the map seems to give it a position of primacy in the author’s view of the religious geography of India.⁸⁹ The reason for hypothesizing a clockwise sequence is that in circumambulating (*padakkina*) a sacred site, Buddhists always proceed to the right. What the map might then be intended to convey is the author’s circuit of pilgrimages from Bodh Gaya, irrespective of their true direction, as if they formed a visual *padakkina*, the temporal dimension of which was given priority over the spatial.

Several alternative hypotheses may also be suggested. First, the map could have been made as a guide for prospective pilgrims but, being based on hearsay, might represent little more than a garbled version of the actual facts. The idiosyncratic nature of the routes, however, is

85. See, for example, the Jain pilgrimage map discussed in Joseph E. Schwartzberg, “Geographical Mapping,” in *The History of Cartography*, ed. J. B. Harley and David Woodward (Chicago: University of Chicago Press, 1987–), vol. 2.1 (1992), 388–493, esp. 440–42; or the Nepali map commissioned by a certain Cikhidi described on pp. 649–50 above.

86. These are mapped in Schwartzberg, *Historical Atlas of South Asia*, 28 (note 83).

87. The Chiang Rai Temple was probably destroyed during the Burmese occupation of the area dating from the mid-sixteenth century. It has been partially restored since 1844. See Brown, “Bodhgaya and South-east Asia,” 111 (note 81).

88. The many holy places near Rājagaha are described in Bimala Churn Law, *Rājagriha in Ancient Literature*, Memoirs of the Archaeological Survey of India, no. 58 (Delhi: Manager of Publications, 1938).

89. Lending support to the supposition that the map area to the left of Bodh Gaya is meant to be given special prominence, the artist initially drew the focal square of Bodh Gaya on folio 23, upside down with respect to its position on folio 24, so that there was minimal space to the left of it before running into the text of folio 22. Hence the prominent features drawn to the left of Rājagaha could not be accommodated, and a new start appears to have been made.

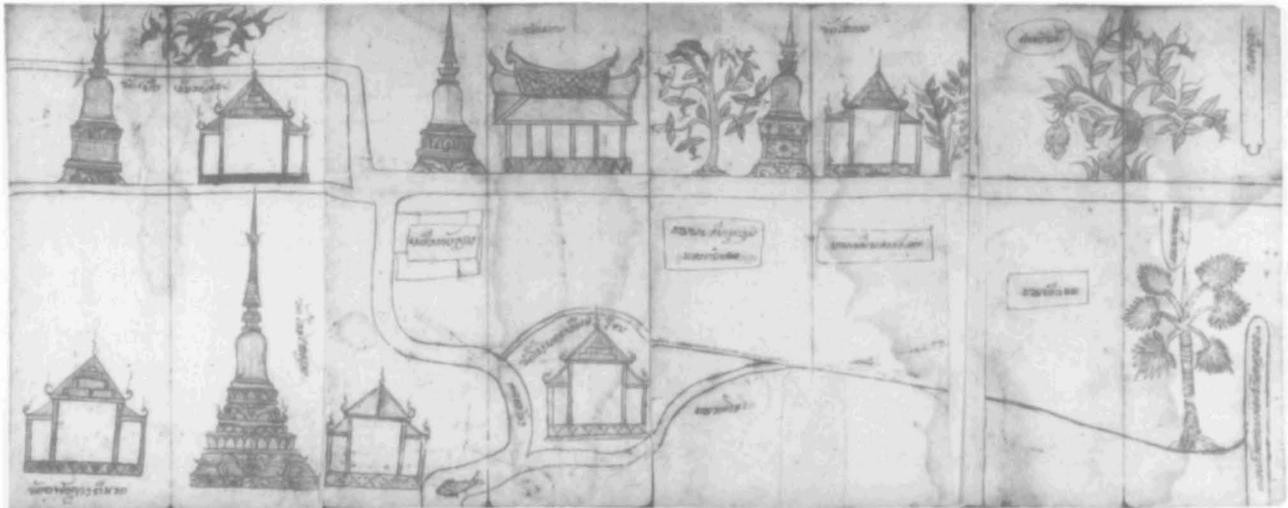


FIG. 18.28. SMALL PORTION OF A VERY LONG THAI ROUTE MAP OF AN AREA BETWEEN NAKHON SI THAMMARAT AND SONGKHLA ON THE MALAY PENINSULA. This accordion-style *samud khoi* map, painted on indigenous Thai paper, dates from the late seventeenth or early eighteenth century and is the oldest known geographical map from mainland Southeast Asia. It forms an addition to an older (1615) manuscript that deals with the lands tributary to a certain temple, Wat Phra Kho, and its tributary temples, as well as

those falling within the civil domain. The most distinctive attributes of this map are the prominence with which it depicts religious edifices, the concomitant subordination of the signs for settlement in general, and the richness of detail relating to plants and animals.

Size of the entire original: perhaps 40 × 1,200 cm. National Library of Thailand, Bangkok. Photograph courtesy of Cornell University Libraries, Ithaca, New York, Echols Collection (Wason film 4309).

such that it is hard to imagine that, even in garbled form, they would recommend a prescription for pilgrims in general. Second, the map may be a largely mythologized representation of the travels of the monk Upaguttathera. Finally, it may be a mythologized itinerary of the Buddha himself.⁹⁰ At present, none of the suggested hypotheses is susceptible of proof.⁹¹

SECULAR ROUTE MAPS

A short segment of the oldest Southeast Asian secular route map I have any knowledge of is illustrated in figure 18.28. That work, misleadingly identified as “Map of Nakhon Si Thammarat” (the name of a town near, but not actually within, the area of the map), dates from the late seventeenth or early eighteenth century.⁹² It is part of a historical text relating to an area of southern Thailand on the Malay Peninsula. The manuscript is of the accordion-style *samud khoi* variety, and the map portion, when photographed, consisted of forty folios. The orientation of the map is toward the east, that is, toward the Gulf of Thailand. There almost surely was more to the map at one time, since there is clear evidence that the manuscript, which is badly damaged in places, had been torn into several parts and that in putting it back together a considerable lacuna was left between what are now folios 33 and 34 (numbers assigned by the National Library). A lesser gap exists between folios 35 and 36.

Although folio 39 does appear to be the true southern end of the map, it has not been established that folio 1

90. Although a number of the places shown could not possibly have been visited by the Buddha in his historically verified existence, myths that arose after his death have entailed visits by him to many places in India and elsewhere for which there is no historical evidence. His leaving his footprint on Adam’s Peak in Sri Lanka (see fig. 17.23) is a case in point.

91. Sommāi Prēmchit observes that in his study of Lanna Thai manuscripts beginning in 1973 he has never come across any map comparable to the one I have discussed here (Sommāi, Kamon, and Surasingamrūam, *Phračhēdi nai Lānnā Thai*, 105 [note 79]). Hence there is no other known model against which to test the ideas I have advanced in this chapter.

92. The work is at present in the manuscript collection of the National Library of Thailand, Bangkok, where it has been dated *Chulasakarat* 977 (1615). A microfilm copy (Wason film 4309) made by David Wyatt, who owns the negatives, is in the Cornell University Library, Ithaca, New York. This map was brought to my attention in 1984 by Lorraine Gesick, at the time a visiting scholar at Cornell University and now of the University of Nebraska, Omaha. On 15 April 1985 she sent me a microfilm printout of the entire work. Much of the account here is based on relevant information she provided, for which I am most grateful.

A monograph on the work, including a nearly complete facsimile (one and half folios are missing) at a reduced scale, has since been published: Suthiwong Phongphaibūn, *Phutthasāsanā Thāp Lum Thalēsāp Songkhla Fang Tawan’ōk samai Krung Si ‘Ayutthaya: Rāingān kanwičhāi* (Report on the research on the Buddhist religion around the Thale Sap basin on the eastern shore in the Ayutthaya period) (Songkhla, 1980).

represents the original northern end. The extant part of the map depicts the Sathing Phra peninsula (essentially a coastal sandbar, approximately 70 km from north to south and nowhere more than 10 km wide). Within the area shown is a combined land and water route, part road and part coastal backwater, leading from Songkhla northward toward Nakhon Si Thammarat. The dimensions of the original map are not available, but what remains is thought to be more than twelve meters long and about thirty-five to forty centimeters or so in width. Accepting the figures above as reasonable, I derive an average north-south scale for the map of roughly 1:6,000.

The initial portion of the manuscript includes a copy of a royal decree dated to a year equivalent to 1610 as well as a local history, immediately following folio 39, that ends about 1700, which is thought to be the approximate date of the map. The map focuses on a prominent temple, Wat Phra Kho (shown in folio 26), and designates numerous other wats as *khyn* (subordinate to) that temple. An important purpose of the map was to show which rice fields were tributary to the temple and which fell within the civil domain. Though not to a uniform scale, the map is said to be “otherwise very accurate, [presumably] indicating local authorship,” as does the southern Thai style of orthography.⁹³ The most prominent among the roughly 250 features shown on the map appear to be temples, *chedis*, and other (religious?) edifices. But throughout the map, more modestly presented, are scores of rectangles and ovals, with names written in them, that presumably represent large and small settlements, respectively, or perhaps the fields belonging to those settlements. Most of these lie on or close to what seem to be roads. But many, possibly most, of those apparent roads, especially in the northern portion of the map, are in fact canals, backwaters, and streams, as is evinced by the occasional fish, crocodile, or crayfish depicted. Such features, singly or in parallel paths, extend the entire length of the map, which, along with the strip format, provides the rationale for classifying the work as a route map. It appears that, as on some Burmese maps, no clear differentiation is made between the water and the land stretches of certain routes. Thus, without being able to read the text or having local knowledge of the area depicted, one frequently cannot ascertain which is which.

A puzzling feature of the map is the attention it lavishes on fauna and flora. As on so many Burmese maps, vegetation figures very conspicuously. A dozen or so types of trees are depicted (most of them numerous times). Almost all are shown individually, rather than as groves or forests. These trees are often laden with fruit, and in some are found birds, monkeys, and other animals. Only on the several rocky hills, which seem to anchor the southern tip of the sandbar forming the Sathing Phra peninsula, and across the narrow strait toward Songkhla

does one see what looks like a forest. Within the forest, what appears to be a tiger chases a deer. The strait between the peninsula and Songkhla is indicated by a narrow, sweeping arc within which a wave pattern is drawn. Such a pattern also appears on the margins of other portions of the map, reflecting their littoral location. Within these bands of sea appear numerous forms of marine life, the most curious being a swimming elephant (similar to the creature depicted in the assembly of fish described in chapter 17 in respect to one of the panels of the *Trai phum*).

Appendix 18.3 provides basic data on nine maps of Burmese provenance that I have chosen to designate as route maps. The oldest three of these are among the large group of maps that Francis Hamilton procured during his sojourn in Burma (1795). Three others relate to the courses of rivers: one of the lower Irrawaddy, presumably made before the British annexed that area in 1852, and two, drawn sometime before 1867, of which one shows a stretch of the middle Irrawaddy south of Pagan and the other a tract along the Shweli, which flows out of China and joins the Irrawaddy in Upper Burma. The remaining three, all drawn between the second and third Anglo-Burmese Wars, include a map drawn by a forester at the behest of British interested in exploiting trading opportunities with northern Siam; a large map showing the main routes between Siam and Cochin China; and a long *parabaik* showing the route of the telegraph line linking the then British border in Lower Burma with Mandalay. Several of these maps warrant discussion in addition to the brief notes provided in the appendix.

Of the three maps procured by Hamilton, only one calls for special comment. Despite its simplicity, this map is of more than passing historical interest in that it relates to a tribute mission, sent in some unspecified year, by the Burmese king to the Chinese emperor. The original work (which may no longer survive) was probably drawn by the *zabua* (governor) of the frontier city of Bhamo at the request of Hamilton, who says it was

one of the rudest, which I procured; but . . . important as tending to settle, by high and perfectly informed authority, many most interesting points respecting the rivers which enter the farther peninsula of India [i.e., the Indo-Pacific peninsula] from Thibet and China, and thus enabling us to decide with more confidence on the relative situations of different places [in China] in other maps.⁹⁴

The map covers the route all the way from the then

93. Lorraine Gesick correspondence (1985).

94. Francis Hamilton, “Account of a Map of the Route between Tartary and Amrapura, by an Ambassador from the Court of Ava to the Emperor of China,” *Edinburgh Philosophical Journal* 3 (1820): 32–42 and pl. I; quotation on 32.

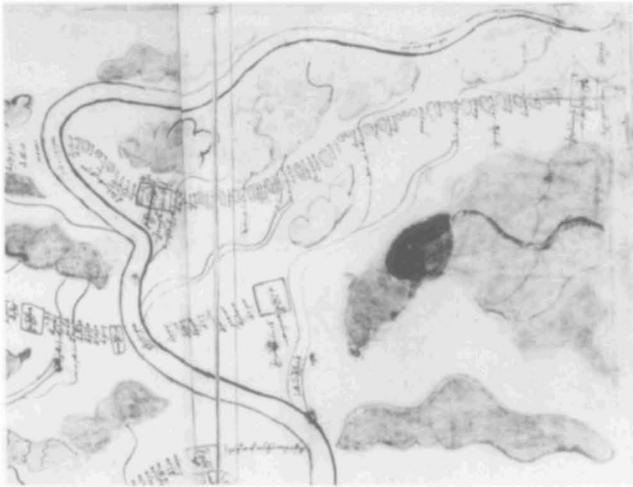


FIG. 18.29. DETAIL FROM A BURMESE MAP OF THE "ROUTES BY SHANS FROM COCHIN CHINA YAHME." This map covers a very large part of mainland Southeast Asia. Although it is precisely dated, to its very day in 1871, and although the name of the artist, U Yit, is specified, much about this large, crude, yet detailed work is cryptic, including the cited descriptive title assigned to it at the archives where it is now held. The map was drawn in ink and watercolor on European paper. The portion shown here indicates a grossly distorted course of the Mekong River, parts of the Annamite Cordillera (the dark, undulating shapes in the right portion of the photograph), and the initial parts of two of three routes presented on the map—the upper route, commencing at what may be the city of Hue (the square in the upper-right corner), and a middle route, commencing at what is almost certainly Saigon (the square near the center of the map). See figures 18.30 and 18.31. Size of the entire original: 64.5 × 122.5 cm. By permission of the National Archives of India, New Delhi (Historical map fol. 91, no. 14).

capital at Amarapura (called "Shue Prido," or Golden City) not only to Beijing ("Udhn Pri"), the Chinese capital, but on to Jehol ("Taraek Pri"; Chengde) in Manchuria, the seat of the emperor's hunting lodge, to which the mission was obliged to proceed. About three-fifths of the map's length was devoted to showing in some detail the portion of the itinerary in Burma, which took the mission only 14 days to negotiate, and the remaining two-fifths covered the portion in China, traversed in 121 days. The number of travel days required for each stage of the journey is indicated between the named towns and cities in much the same way as on other maps prepared for Hamilton.

Within China the route is shown by a double line along part of which appears a note, "ten days by canal," and then, farther north, "carriage road"; but otherwise no symbolic differentiation enables us to distinguish one such part of the route from another. Few details not directly relating to travel appear on the map, especially within its Chinese portion.

Another Burmese route map focusing on routes beyond that nation's frontiers covers the area between Siam in the west and Cochin China in the east. A small portion of this map is illustrated in figure 18.29. Its author is identified as U Yit, and its date is precisely given as the "8th day of waxing of the eleventh [lunar] month, 1232 B.E.," equivalent to 28 January 1871.⁹⁵ This large and detailed map was rather crudely executed in brown ink and brown, blue, and yellow watercolors on four pieces of paper pasted together. Much about the work is very puzzling. But before attempting to unravel its several mysteries, it is necessary to specify as much about its content as is at present feasible.

Basically the map relates to three routes between the Mae Nam Ping Valley of Siam proper and what appear to be Phnom Penh, Saigon, and another city to the north of Saigon, very likely Hue. Although the routes converge in the west at a point in the Ping Valley that does not appear to have any special importance (see figs. 18.30 and 18.31, which provide a provisional abstract of the entire map and the location of the features shown there on a modern map), the three eastern or southeastern termini are not directly linked. Along the northernmost of the three routes appear approximately 105 place-names (not counting the names of eleven rivers crossed), six of which appear within squares, presumably signifying towns; on the middle route approximately seventy more place-names (plus five river crossings), of which four are written in squares; and on the south approximately eighty names (plus thirteen river crossings), of which three are in squares. Additionally, four place-names within circles that lie to the south of the middle route are joined to the route by thin lines that seem to be roads. The places within squares and circles are bounded in brown, and some are emphasized by an additional yellow outline or yellow wash.

The map shows numerous rivers, some by variously spaced double brown lines and others by single lines.

95. I have seen no published reference to this map. My initial attempts to identify places on it were greatly assisted by Patricia Herbert of the British Library, for which I am most grateful. Translating from my own handwritten copies of the date and what I took to be the more important place-names, Herbert was able to positively identify some features and provide tentative identifications of several others. From that base I was able to identify tentatively a few additional features. Full-scale, but not particularly legible, photocopies of my own photocopy of the map (in six parts spliced together) were then sent to Michael Aung-Thwin on 13 January 1992, with the request that he transliterate a number of strategically selected toponyms. His reply, dated 30 January, provided the requested transliterations where the map was sufficiently legible, but few of these Burmese names could be matched unambiguously with their modern Thai equivalents. Additionally, Aung-Thwin's letter and a long telephone conversation on 4 February confirmed some of my own thinking about the map. For any shortcomings that remain in the balance of this analysis, the responsibility is mine.

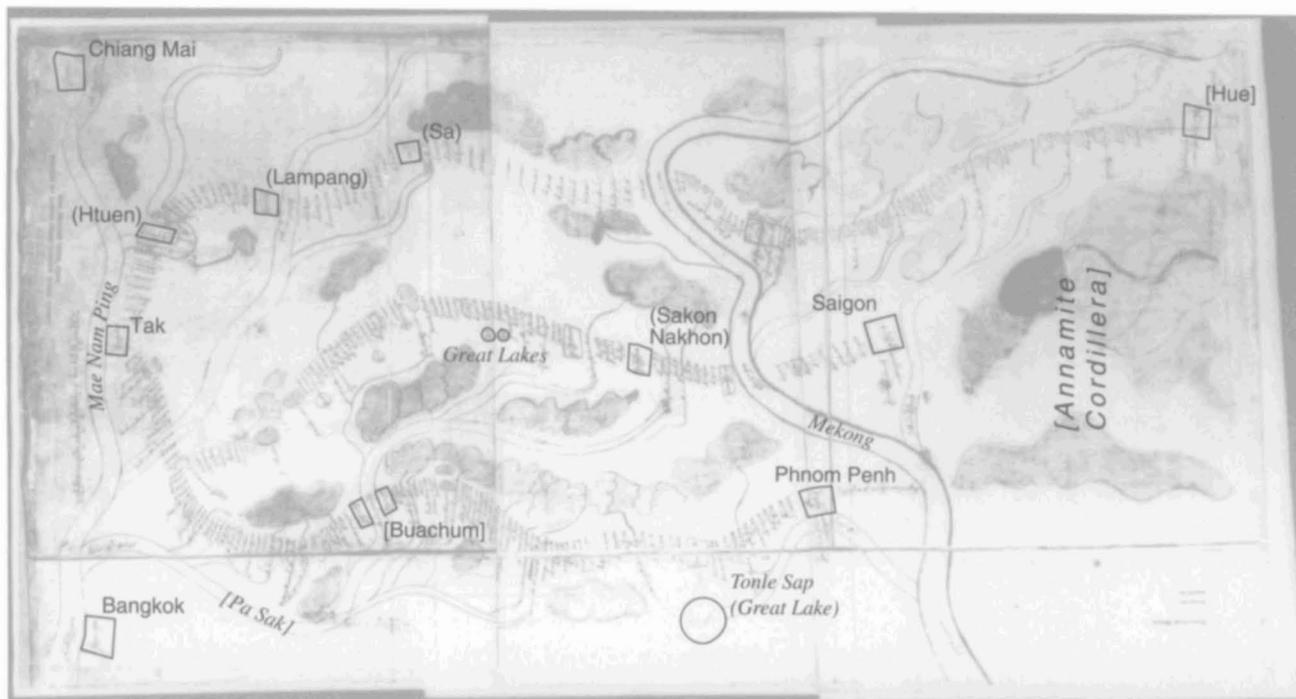


FIG. 18.30. BURMESE MAP OF THE “ROUTES BY SHANS FROM COCHIN CHINA YAHME.” This is a reproduction

of the entire map shown in figure 18.29, with tentative identifications of various features (see legend to fig. 18.31).

Not infrequently, a single line becomes a double line downstream from the point where a stream crosses one of the three routes. The principal rivers on the map have been identified as the Mekong and the Ping, the former reinforced by a band of brown wash. The Bassac, leading from the Tonle Sap, the great lake of Cambodia, may also be considered positively identified; but the identification of all other streams is conjectural, and one can place no trust in the apparent direction of their flow. Conspicuously absent is the South China Sea, which ought to appear both adjacent to Hue (in the upper right) and in the large blank space to the southeast of Saigon (lower right). Mountains and hills are crudely represented in blue wash, outlined with brown, occasionally reinforced by an additional band of yellow. Most such areas include amorphous shapes, some of them quite large,

appearing either singly or in linear clusters. One gets the impression that the cartographer made little attempt to portray their proper orientation, but rather tried only to show that they lay between other map features or to the

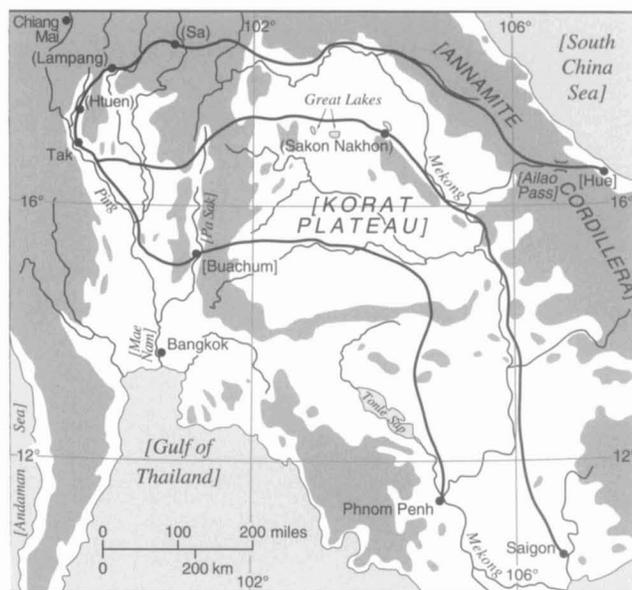


FIG. 18.31. A HYPOTHETICAL RECONSTRUCTION ON A MODERN BASE MAP OF THE THREE ROUTES DEPICTED IN FIGURE 18.30. The supposition underlying this reconstruction is that the routes taken formed parts of a coordinated diplomatic mission of Vietnamese and Cambodians (not “Shans,” as misleadingly stated) that was aimed at seeking Burmese assistance against the takeover of Indochina by the French, which was then progressing rapidly. Since the routes of the three groups of envoys converged in western Thailand and they appear never to have actually reached their presumed destination in Burma, we may infer that the envoys were intercepted and advised not to proceed with their mission.

- Chiang Mai (Lampang) Fairly certain identifications of Burmese names on original map
- (Sa) Probable identifications based on pronunciation of toponyms
- [Buachum] Inferred identifications based on various contextual considerations and names of major physical features not noted on original map
- Hypothesized routes
- Areas of rugged terrain, irrespective of altitude

left or right of one of the three routes on the map. Along all three routes, but mainly the northern one, are many features that resemble small billowy clouds inserted between successively named settlements. I judge that each such sign specifies a crest to be crossed. There are twenty-nine of these on the northern route between the Mekong River and the route's eastern terminus, suggesting that the route followed a rather long path through the Annamite Cordillera, which extends to within a few miles of the South China Sea at Hue, the presumed northern terminus. Elsewhere on the map there are only a half dozen such features on the route itself, apart from four other places where the route is shown running between a pair of such signs, presumably to suggest a pass.

The title of the map has been translated (it is not known by whom) as "Asia beyond India, Siam, Routes by Shans from Cochin China Yahme." The title itself raises several questions. The word Yahme, for example, is one to which I and several specialists I consulted can attach no meaning. As for the name Cochin China, bear in mind that that term used to have a much more inclusive connotation than when it referred to one of the five constituent units of French Indochina. Previously it included the whole of Annam.⁹⁶ The word "Shan," referring to the travelers whose routes the map depicts, should not I believe be taken to refer to any ethnic group that would today be recognized as Shan, or even to any other ethnically Thai people. If the Shans in question were such a group, the title would, from a Burmese perspective, logically have been worded "to Cochin China Yahme," not "from" that place. In my examination of several of the maps prepared for Hamilton I noted that a number of groups who were not ethnic Burmans were designated there as Shan, with one or another prefixed modifier. On the map of Ava and nearby countries (fig. 18.2), for example, the "Country of the Judara Shan" and the "Country of the Kiokachin Shan" obviously can only refer to Cambodia and to Cochin China, respectively, neither being an area of Thai peoples. This suggests that in certain contexts the word "Shan" formerly had, for Burmans, the generic connotation of foreigner. If this reasoning is correct (and assuming that the map title is accurately translated), the map we are dealing with may show routes taken by certain non-Burmans from three separate places in what was loosely designated Cochin China to the central Ping Valley of Siam. Supporting the idea that the origins of the three routes were in the east rather than in Siam, the eastern half of the map seems to be drawn at a considerably larger scale than the western half, with the Mekong and the Annamite Cordillera given particular prominence. It is noteworthy that neither Bangkok nor Chiang Mai is reached by any of the three routes shown. The appearance of both in the corners of the map suggests that they were intended as important locational

referents to help place the terminal portion of the routes. It is not known whether the routes depicted were traversed only once or repeatedly. The former seems more likely, since the routes are highly idiosyncratic and would hardly have served as regular arteries of trade.

It appears, then, that neither Bangkok nor Chiang Mai, the two most important places in the western portion of the map, was the object of the travelers along the three routes shown. What, then, might have been the point of three such long and arduous journeys? The motive of both the travelers and the mapmaker was, I believe, political or military, or both. Yet no Siamese destination of obvious political importance appears along the route. One possibility is that the travelers' missions were never completed, and that they had left their respective starting places with the intention of proceeding to the Ping Valley and then meeting in that general region at whatever points the various groups would reach, given their differing rates of march. The political context of the time in Cambodia and Annam suggests a plausible motive. Saigon had been occupied by the French in 1859; Cambodia had become a French protectorate in 1863; Cochin China (in the narrow sense of southern Annam) had been annexed by the French in stages between 1862 and 1867; and the French were poised to assume control over the rest of the country. Given that threat, and assuming latent opposition to French rule in the areas already taken over, delegations from Saigon, Phnom Penh, and Hue to Siam and Burma to solicit support to stop the spread of French rule, or even to throw it off completely, would have made sense. So too would the departure of multiple embassies, since the likelihood that one or more would be intercepted by the French would surely have to be considered.

If one accepts this admittedly speculative hypothesis, one must still explain why the map is in Burmese, not Siamese, Khmer, or Vietnamese, even though there is no indication that any of the three groups ever reached Burma. One plausible explanation is that the Burmese (not necessarily to the exclusion of the Thais) had somehow been given advance notice that the embassies would be dispatched as of a certain date (or dates). If the desirability of coming to the aid of the Annamese and Cambodians was discussed in Mandalay and a negative decision reached, a Burmese, possibly the map author, U Yit, might have been sent to Siam to intercept the embassies, dissuade them from continuing to Mandalay (lest the French be needlessly offended), and obtain from the travelers as much information as they could recall about the

96. On Cochin 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*, 2d ed., ed. William Crooke (1903; Delhi: Munshiram Manoharlal, 1968), 226–27.

routes they had taken, for use in case the Burmese decision on intervention might be changed at some later date.⁹⁷ That the map was probably made hastily in the field, at a place where artist's supplies were not abundantly available, is suggested by the uncharacteristic crudeness of the map's execution and the limited three-color palette, in contrast to the half dozen or more colors in which many of the Burmese maps we have examined were rendered.

If, then, as supposed, the map was made as a Burmese intelligence document, it would have been carefully stored at the Burmese capital, Mandalay. That it was subsequently acquired by the British is obvious from its now being held by the National Archives of India, New Delhi, which presumably received it from its most likely former storage place in the Survey of India Archives in Calcutta. Finally, it seems likely that whatever notes the English may have made on the map, apart from providing an English title, were lost during one of its several transfers.⁹⁸

In striking contrast to the enigmatic map I have just discussed is a map showing the plan for the route of the telegraph line built from Nyaungu on the border of British Burma to Mandalay, built sometime between 1860 and 1880 (fig. 18.32). This map is labeled "Parabaik no. 191."⁹⁹ It is drawn in white ink and red chalk on a folding black *parabaik*. The map is sufficiently self-explanatory to require little comment. Nevertheless, it is noteworthy that it includes abundant detail that seems to have no direct connection to the matter of telegraphy, including, as do so many Burmese maps, pagodas and other prominent buildings.

Before closing this discussion of route maps, let me call attention to the single unambiguous indication I have come across that Laotians, like other peoples of mainland Southeast Asia, also made maps. My authority for this assumption is the German adaptation of an account by a French traveler, "Dr. Harmand," of a journey he made from Khemmerat on the Mekong River to the Annamese city of Hue over the period from February to August 1877.¹⁰⁰ This serialized, more or less popularly written account, presented in the general form of a log but in the third person, indicates that on 19 June a local official in a small Lao village drew Harmand a map of the course of the Se Bang Hieng, along which his party was traveling. Of this route map, a black-and-white copy of which accompanies the published narrative, Harmand observed:

[It] was drawn with white chalk on a black lacquered tablet, which one used there for the drawing up of documents. This same sketch was later etched with a stylus onto a palm leaf and then the characters were rubbed in with a mixture of oil and lamp black, so that they emerged distinctly and indelibly in black.¹⁰¹

The map (assuming the fidelity of the copy to the original) was rather simple. It showed the Se Bang Hieng emerging from an area of squiggly lines that presumably represented the Annamite Cordillera and flowing in a single sweeping curve to the Mekong. On each of its banks the mouths of four tributaries are shown. Although the tributaries on each bank appear in their correct sequence, their order is not correct if one considers both banks together. For example, it is said that the Se Pahom (modern equivalent not identified), a left-bank tributary, actually enters the Se Bang Hieng to the east of the Se Tamouk (modern Se Thamouk), a right-bank tributary, but it is shown entering considerably to the west of the latter stream. Obviously one cannot say how representative this single, hastily made example might be of Laotian cartography.

MAPS OF PRIMARILY RURAL LOCALITIES

Known relatively large-scale maps of Southeast Asia are mainly of Burmese provenance. Notes on thirteen pre-1885 Burmese examples are provided in appendix 18.4,

97. At the time the map was made, Mindon, the reigning Burmese monarch, was purposefully cultivating cordial relations with several European powers, most notably France and Italy, as a counterpoise to the British, who were the principal threat facing his own kingdom. This issue is discussed in Hall, *History of South-east Asia*, 626 and 628 (note 29). It is noteworthy that the hypothesized embassies to Burma had something of a reverse counterpart when, in 1823–24, a diplomatic mission consisting of two Burmese officers and an Anglo-Indian named Gibson was sent to Cochin China "bearing presents and a royal letter in which it was suggested that the two countries co-operate in conquering Thailand and partitioning that country" (B. R. Pearn, "The Burmese Embassy to Vietnam, 1823–24," *Journal of the Burma Research Society* 47, no. 1 [1964]: 149–57, esp. 149). Obviously, given the nature of the mission, it was sent by sea, rather than overland.

For an excellent discussion of the type of diplomacy practiced by both Burma and Vietnam in the final years of their struggles to remain independent, see Paul J. Bennett, "Two Southeast Asian Ministers and Reactions to European Conquest: The Kinwun Mingyi and Phan-thanh-Gian," in *Conference under the Tamarind Tree: Three Essays in Burmese History* (New Haven: Yale University Southeast Asia Studies, 1971), 103–42. I am indebted to Aung-Thwin for this reference.

98. The loss and distortion of information over time may be seen in that Sri Nandan Prasad, ed., *Catalogue of the Historical Maps of the Survey of India (1700–1900)* (New Delhi: National Archives of India, ca. 1975), 220, states that this map is not dated, despite its being precisely dated, and says that the title refers to routes from "Cochin China Yahune," not "Cochin China Yahme."

99. Photographs of this map and various relevant particulars were provided to me by Tin Maung Oo, a student of U Maung Maung Tin (who now has the map), in 1985 (undated dispatch). His authority for dating the map between 1860 and 1880 was not stated, but the map could not be later than 1885, when the British annexed Upper Burma.

100. "Im Innern von Hinterindien (nach dem Französischen des Dr. Harmand)," *Globus* 38, no. 14 (1880): 209–15.

101. "Im Innern von Hinterindien," 213; the copy of the map appears on 212 (note 100).

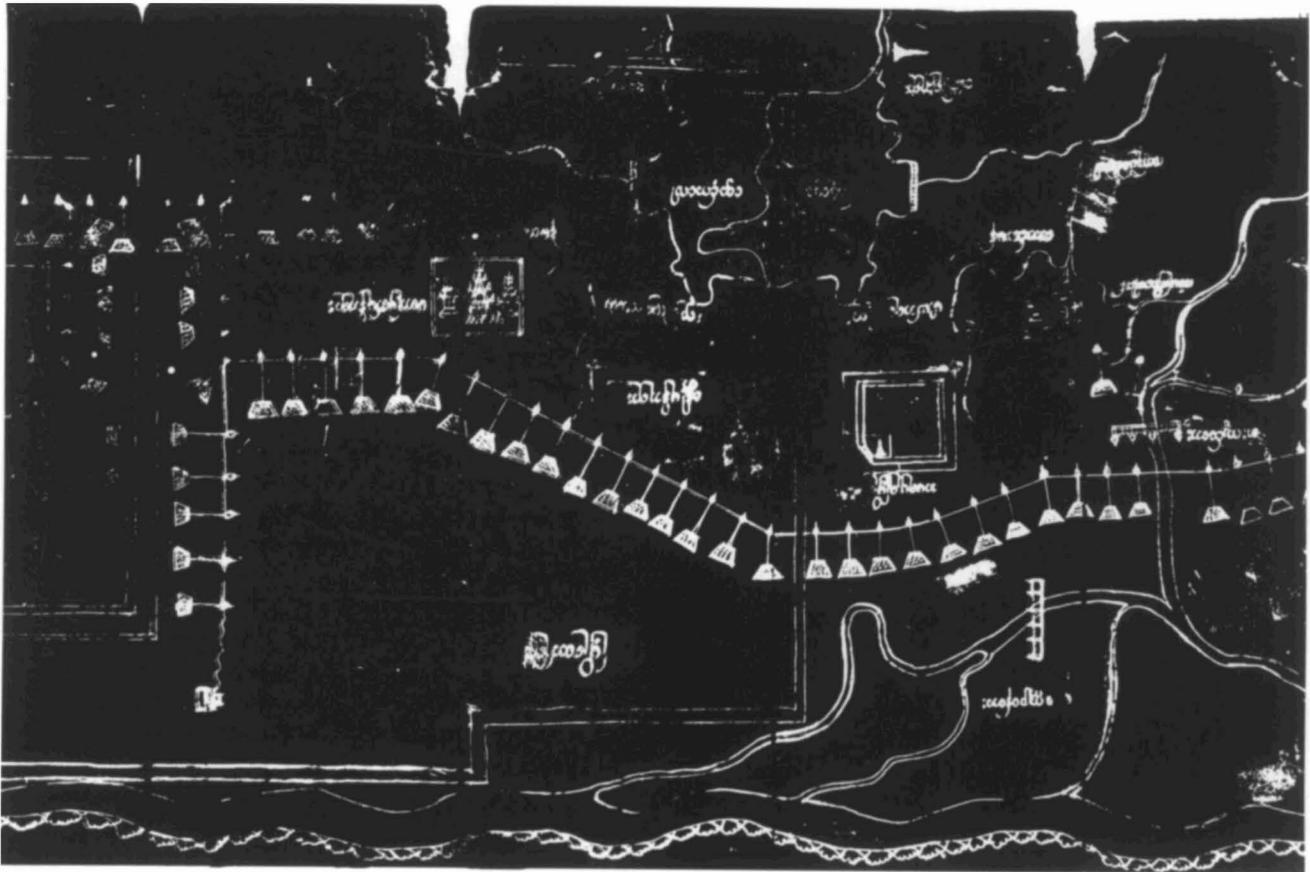


FIG. 18.32. SMALL PORTION OF A MAP OF THE TELEGRAPH LINE FROM THE THEN BORDER OF BRITISH BURMA TO MANDALAY. This map was drawn between 1860 and 1880 in white ink and red chalk on a folding black *parabaik* of at least thirty-one panels. Although most of the information

relates to telegraphy, considerable ancillary detail is also provided.

Size of each panel: 37.5 × 12.8 cm. Collection of U Maung Maung Tin, Mandalay.

where the maps are ordered by known or presumed date. Excluded from that listing are a certain number of later works that form part of the Scott Collection at Cambridge University, for which a comprehensive but unpublished catalog was prepared about 1985.¹⁰² Apart from the Burmese works, I am aware of only one locality map of Siamese provenance, and a remarkable group from the aboriginal Sakai tribe of West Malaysia.¹⁰³ Discussed below are, first, a small sample of the Burmese maps and then, in the order indicated, the Siamese and Malay maps.

Figure 18.33 is the first of four essentially cadastral maps that relate to lands in several villages inherited by a royal minister, Mahamingyaw Raza, who presumably ordered the survey by which the maps were made.¹⁰⁴ I have been able to determine neither the location of the area depicted nor the date of the maps, but I judge that they relate to a part of Upper Burma not very distant from Mandalay and to a time shortly before 1885. Since the fourth map of the group is clearly not finished and the *parabaik* the maps appear in has six empty pleats, one might infer from the ratio of utilized to empty space

in the manuscript that the survey was less than three-fourths complete. Notations on the map state which parcels of land belonged to the minister and which to other persons, including the minister's steward and grandmother. Numbers written in most of the fields indicate how many bundles of rice could be transplanted there, while other fields are identified as seedling nurseries. Fallow rice fields have no number. Uncultivated fields are shown in brown. Field boundaries are prominently depicted in green, but notes in some of the larger fields state that individual divisions are not shown. Fields

102. Dalby and Saimong, "Shan and Burmese Manuscript Maps" (note 39).

103. Omitted from the following discussion is any analysis of the several maplike depictions of rural localities in bas-relief on stone that appear on the friezes of old Hindu temples in central Bali. These were noted in chapter 16, but particulars relative to the places they represent are not available.

104. For assistance in interpreting this map I am indebted to U Nyunt Maung, director of the Manuscripts Section, and May Kyi Win, assistant librarian, University of Rangoon Library.

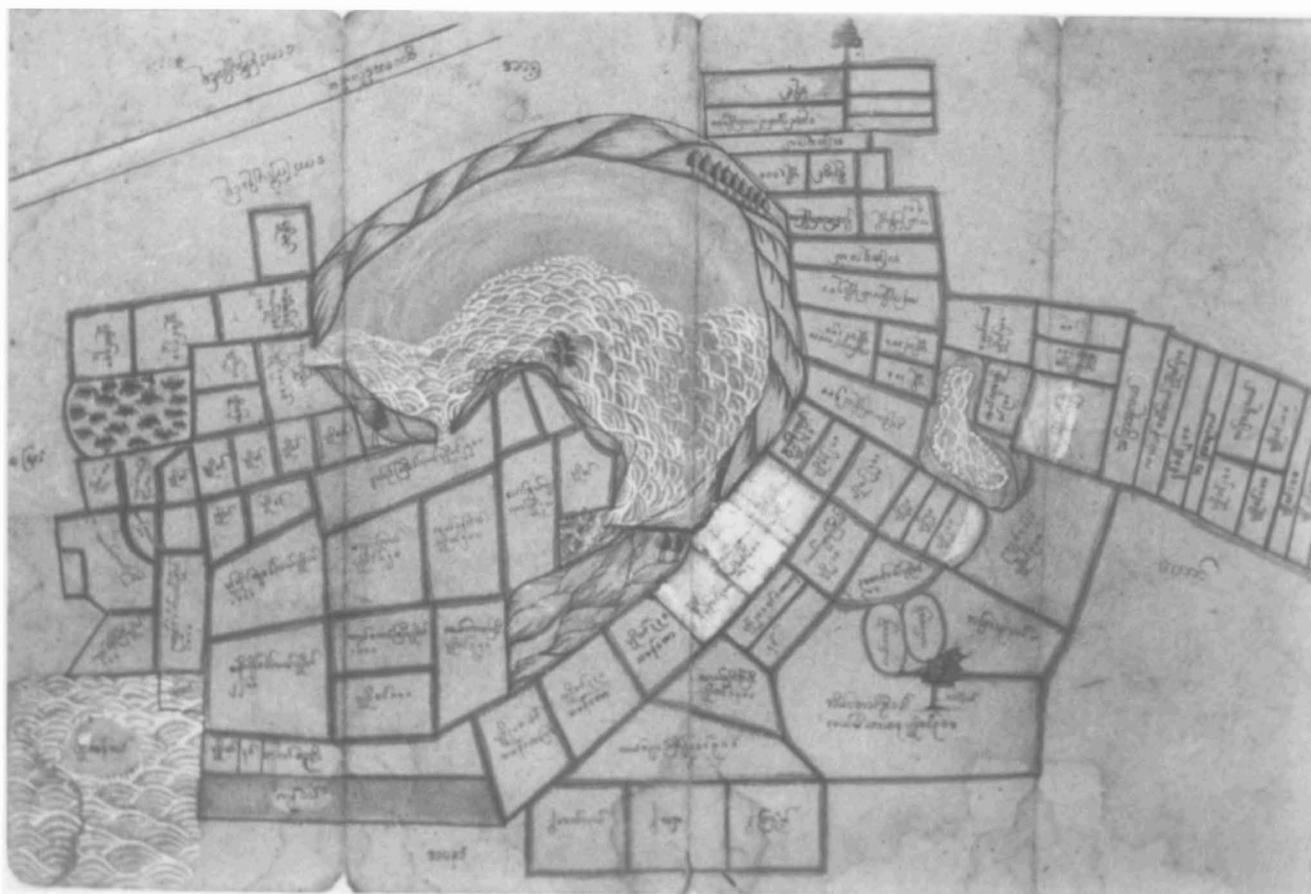


FIG. 18.33. CADASTRAL MAP, PRESUMABLY OF AN AREA IN CENTRAL BURMA. This mid- or late nineteenth-century map is one of a set of four that relate to lands in several villages inherited by a royal minister who presumably ordered the survey from which the maps were made. Notations on the map state which of the parcels of land depicted belonged to

the minister and which to other persons, while numbers specify how many bundles of rice could be transplanted in various fields. Details are also provided about fields set aside for more specialized uses.

Size of the original: 52 × 81.6 cm. Rangoon University Library (MS. 9108). Photograph courtesy of Joseph E. Schwartzberg.

devoted to crops other than rice are noted. Palms and various broadleaf trees are individually and naturalistically depicted, as are clumps of high herbaceous vegetation, all in various shades of green and blue. Distinctive signs exist for earth embankments, tanks and ponds (marked by a scalloped wave pattern), roads, and so forth. On maps other than the one illustrated, built-up areas of villages are indicated by a few houses, which are drawn more or less realistically in an oblique view, as if either from ground level or from an elevated perspective. On the northern margin of the third map a hill range is shown naturalistically in shades of blue and brown. The cardinal directions are noted on the edges of all four maps. Three of the maps are oriented toward the east. The lone exception, with a northern orientation, may be explained by the fact that the oblong shape of the village did not lend itself to the usual orientation within the *parabaik* mode of presentation.

The rest of the Burmese maps I shall consider are from

the Scott Collection. The most painstakingly and sensitively drawn map of these (and perhaps of the collection as a whole) is one of the environs, mainly to the south, of the town of Meiktila, situated in the Irrawaddy Plain about 115 kilometers south-southwest of Mandalay.¹⁰⁵ Figure 18.34 presents a partial view of this work. The focus of this excerpt is the town itself (1891 population 4,155) and its adjacent lake. The town, states the *Imperial Gazetteer*, “stands on the margin of a large artificial lake, with an irregular indented margin. The lake is practically divided into two bodies of water, the north and the south lake. Over the strip of water uniting the two . . . [runs] a narrow wooden bridge,” which is visible on the map.¹⁰⁶ The map brims with local detail. Much of it relates to

105. Dalby and Saimōng, “Shan and Burmese Manuscript Maps” (note 39).

106. *Imperial Gazetteer of India*, new ed., 26 vols. (Oxford: Clarendon Press, 1907–9), 17:287.



FIG. 18.34. DETAIL FROM A LARGE-SCALE LAND-USE MAP OF THE ENVIRONS OF MEIKTILA IN CENTRAL BURMA. This late nineteenth-century map is painted in nine colors and black ink on two pencil-gridded calico sheets sewn together. It focuses on the town of Meiktila, indicated by the square on the margin of a large artificial reservoir, and shows,

seemingly with considerable accuracy, an abundance of detail relating to irrigation, land use, and settlement but, curiously, not to roads.

Size of the entire original: 255 × 178 cm (sewn together). By permission of the Syndics of Cambridge University Library (Scott LR. 13.25).

the irrigation for which Meiktila was well known. Channels feed the lake from the west, and embankments are clearly depicted on the lake's eastern margins. Judging from the colors, two types of distributaries flow eastward beyond these embankments. Some of them feed into an irregularly shaped area outlined by a thick band of color containing the sign of a plant (presumably irrigated rice). Several other plant signs, some apparently representing other types of cultivation and some groves of trees, are scattered over the map. A pair of tree-topped hilly eminences are shown to the north of the town. Settlements are shown by yellow squares and circles, rimmed by various colors to indicate the political divisions they belong to. Surprisingly, no roads are shown. The map is seriously stained and damaged by mildew, which might be mistaken for an intentional stippled pattern.

There is yet another map in the Scott Collection relating to Meiktila District, in this case to the single township

of Taungbo, which is rendered at a very large scale (fig. 18.35).¹⁰⁷ This map is also painted in many colors on cloth and relates to many of the same features as the map just discussed.

Figure 18.36 presents a rather simple map of the environs of Kang Hung (modern Jinghong), just west of the Mekong in what is now the Chinese province of Yunnan.¹⁰⁸ The style may be characterized as pure Shan. Text is in the Khün dialect, a variant form of Shan, with Burmese translations subsequently added. This map, presumably drawn during Scott's visit to the area in March 1891, reached Cambridge on 18 January 1892. It obviously relates mainly to settlement, shown by the forty-three

107. Dalby and Saimōng, "Shan and Burmese Manuscript Maps" (note 39).

108. Dalby and Saimōng, "Shan and Burmese Manuscript Maps" (note 39).

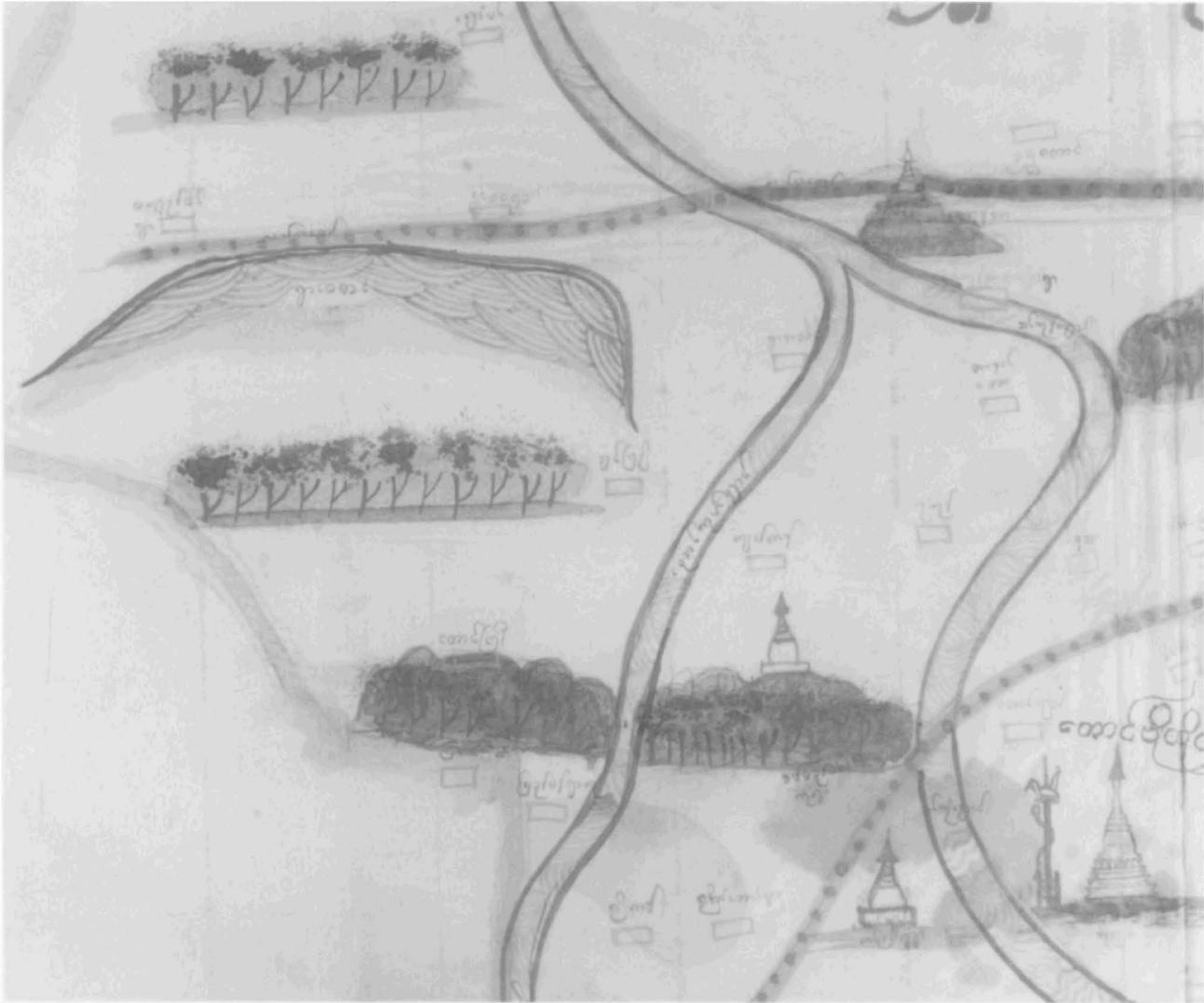


FIG. 18.35. DETAIL FROM A LARGE-SCALE MAP OF TAUNGBO TOWNSHIP IN MEIKTILA DISTRICT OF CENTRAL BURMA. The principal difference between this painted cloth map and that illustrated by figure 18.34 is that here many features are individually and distinctively drawn in frontal per-

spective. For example, no two pagodas look quite the same. Roads are also shown.

Size of the original: unknown. By permission of the Syndics of Cambridge University Library (Scott LR. 13.32).

circular signs. These circles, however, appear to be consciously differentiated; the circumference of some is a single line, of others a double line, and of still others a scalloped band with the scallops sometimes facing out and sometimes facing in. To a certain extent they appear to be regionally clustered. Since the area is one where numerous tribal groups live close to one another, one might surmise that the three or four types of circles connoted different ethnic groups. The circles are also differentiated by size, perhaps to make them roughly proportional to population. If so, we have here a unique Southeast Asian case of a graduated circle map. It is not clear what is indicated by the lone doubly bounded rect-

angle, but if my surmise about ethnic affiliations is correct, it might be a settlement exercising administrative oversight over the set of associated villages shown by simple double circles. These are certainly matters in which Scott would have taken an interest.

The prominent depiction of rivers on the map does not call for comment, but the faint indications of river crossings are noteworthy, as is the equally faint rendering of certain trails. Finally, there is an exceptionally stylized and rather faded rendering of what seem to be forested hills running around virtually the entire map, enclosing all but one of the villages depicted. This suggests that the map relates to a small settled vale. One such vale,

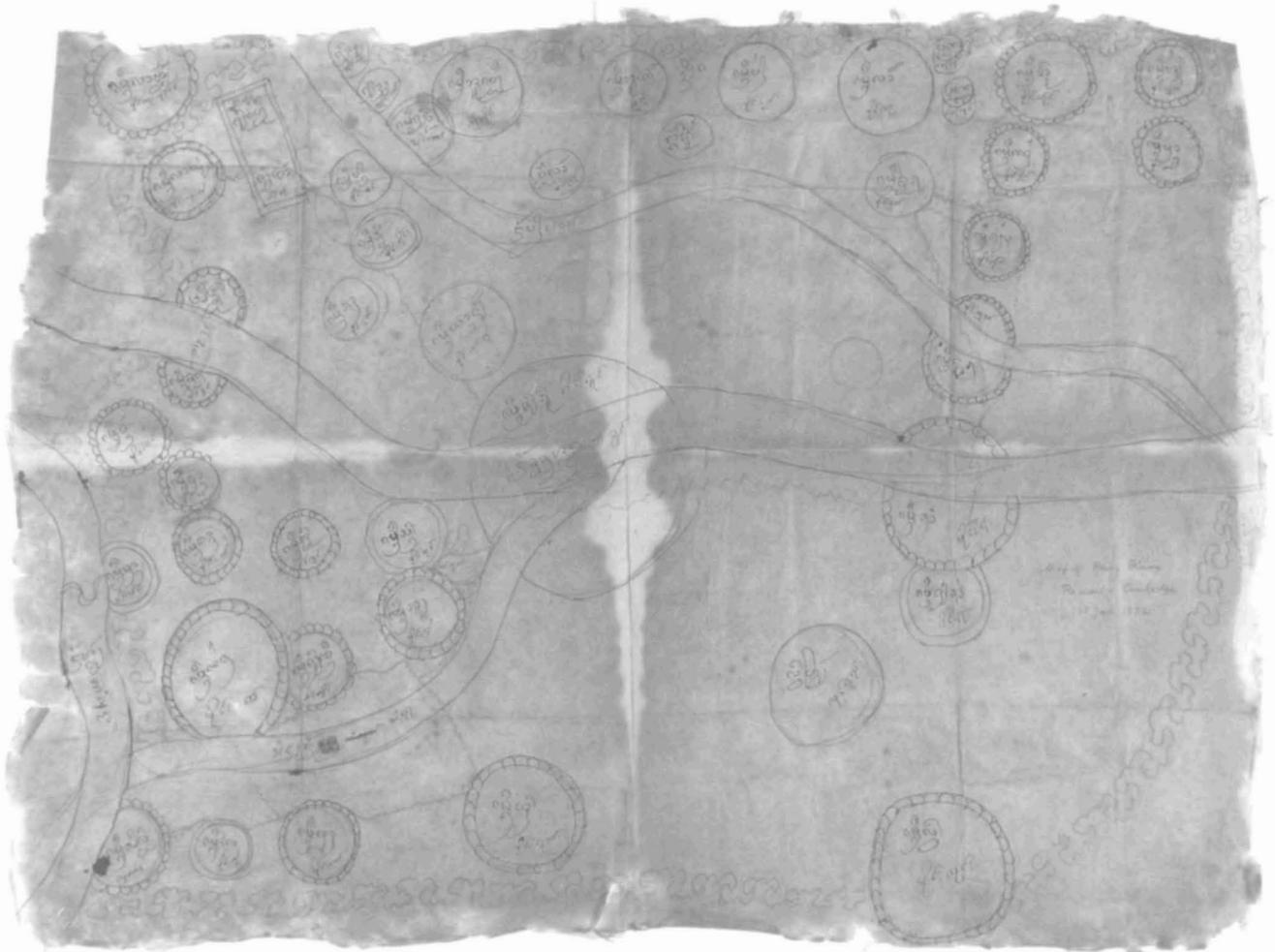


FIG. 18.36. SHAN MAP OF THE ENVIRONS OF KANG HUNG (MODERN JINGHONG). Drawn in black ink and pencil on paper, this map relates mainly to settlement and was probably drawn for James George Scott when he visited in 1891. Since the area depicted is one of considerable tribal admixture, it seems plausible that the differentiation of the patterns along the circumferences of the forty-three circles shown was

intended to signify villages dominated by different tribal groups, and that the variations in circle size were meant to convey some idea of their populations. If so, this use of graduated circles would represent a rather sophisticated cartographic achievement by a supposedly "primitive" people.

Size of the original: 79 × 57 cm. By permission of the Syndics of Cambridge University Library (Scott LR. 13.36).

including Kang Hung, can be discerned on some modern maps of India.¹⁰⁹

Another rather sophisticated work from the Scott Collection is shown in plate 40.¹¹⁰ This map covers an area extending perhaps fifteen miles in a west-southwest to east-northeast direction on each side of the Nam Mao River (Burmese Shweli), along the then disputed Sino-Burmese border. The text is in Chinese Shan, though Burmese notes have been added in pencil. The northern part of the map (on the side of the river without the parallel mountains), situated in China, is colored yellow and labeled in Shan, "All this is Mōng Māo territory." The southern part, in Burma, bears the label, "The red is all Namkham territory." The bright tempera colors used to denote territorial possession were, of course, added at the behest of the concerned British authorities.

A black enclave in the east is identified as Sèlan (modern equivalent not identified). The level of accuracy of the map is remarkably high. One can easily pick out the individual meanders of the Nam Mao on a modern map. In addition to showing the river system, the map names and depicts more than eighty villages, the town of Namkhan (the irregularly bounded shape toward the western portion of the Burmese side), and, in various shades of blue and purple, stylized mountains.

Dalby quotes from the diary of H. Daly, the superin-

109. See, for example, the hachured 1:1,000,000 sheet 102 of the Survey of India's *Imperial Atlas of India* (surveyed in 1904 and updated in 1910).

110. Dalby and Saimōng, "Shan and Burmese Manuscript Maps" (note 39).

tendent for the Northern Shan States, a passage that very likely relates to this map (suggesting that it is one of the few—possibly the only one—among the Scott Collection for which Scott was not personally responsible):

15th [of May, 1889], Selan. The whole valley is full of villages and hamlets, but those belonging to Meungmow [Mōng Māo in China] and those subject to Theinni [Hsinwi? in Burma] are much intermixed, in explanation of which it is stated that the course of the river has changed in recent years. I have had maps prepared by local men showing the villages which belong to each state and circle.¹¹¹

The sole rural locality map of Siamese provenance is from the Burney Collection. Like figure 18.33, it appears to relate primarily to land use, though not necessarily to revenue assessment. Because many of the features shown run to the edge of the page the map was drawn on, it may be regarded as a fragment of a larger whole for which no identifying information is now available. The style of writing suggests that the map dates from the early nineteenth century, and since Henry Burney's sojourn in Thailand lasted from 1825 to 1827, the map can scarcely date from a later period.¹¹² It is conceivable that the map was made at Burney's request, but since it has no annotation in English and deals with no subject or place of obvious importance, it is hard to imagine why he would have had it made. The map is obviously of a rather small area, but none of the three place-names on it are recognizable. It is completely planimetric and totally devoid of pictographic symbols. The map shows all or parts of forty-seven bounded areas, varying considerably in size and separated by sinuous dividers. These appear in some instances to be canals or streams and in others to be roads or, perhaps, roads running alongside watercourses. Which is which is not visually apparent and must be inferred largely by the map context. Only one roadway is explicitly identified as such. Almost all the field separations are shown by double black ink lines, reinforced with a yellow wash. Every field and outlined area but one is labeled as to its nature or use, in some cases with more than one designation. The translated designations include eleven parcels, all fairly small, labeled "island"; two swamps, one creek, and one curiously shaped area called "canal mouth"; various types of fields (six for rice, one "open," one "grassy," two for keeping water buffalo, and one for elephants); areas designated as various types of forest or simply as "forests"; one hill and one "mound hill"; several hamlets, not all named; two pagodas; two temples in disrepair; and a cremation ground, as well as a separate "burial ground for spirits."

The only artifacts from the Malay world that appear to fit under the rubric I have designated as maps of rural localities are a set of images on bamboo that form part

of a group of about 1,500 late nineteenth-century artifacts obtained by Hrolf Vaughan Stevens from several Negrito tribes in what is now West Malaysia. A large number of the artifacts in this collection were engraved designs on bamboo, perhaps ten of which may be interpreted as incorporating maplike components (one example is illustrated in fig. 18.37).¹¹³

All the designs of interest to us came from a single tribal group, the Sakais, who lived mainly by hunting, fishing, and gathering, with some supplemental slash-and-burn cultivation. The designs were executed as "magical designs" on musical instruments called *tuang-tuang*, employed in ceremonies intended to ward off specific types of harm that Sakais were likely to encounter or, less frequently, to help realize some practical goal such as inducing rain or finding suitable house-building materials. Two such instruments were generally used together, one in each hand, and were struck on the ground to produce musical notes to achieve the desired end.¹¹⁴ The cartographic elements within the engraved designs are often highly abstract and far from obvious in meaning to an outsider. They were meant to indicate important features of specific localities within the territory where the Sakais lived. Among the features shown are nipa swamps, agricultural clearings, areas planted in specific crops, areas with fish traps, anthills, places infested with deadly snakes, house sites, and so forth. The legend for the example illustrated here points out the symbolism

111. Quoted in Dalby and Saimōng, "Shan and Burmese Manuscript Maps" (note 39).

112. Royal Commonwealth Society, London (ser. E, box III, no. VIII), measuring 29.8 by 32.3 centimeters. I am indebted to Henry Ginsburg of the Oriental and India Office Collections, British Library, for his painstaking translation of the map text.

113. The collection was presented to and remains with the Berlin Museum für Völkerkunde. The works of particular interest here are discussed in Hrolf Vaughan Stevens, "Die Zaubermuster der Órang hütan," pt. 2, "Die 'Toon-tong'-Ceremonie," *Zeitschrift für Ethnologie* 26 (1894): 141–88 and pls. IX and X. Stevens's theories in regard to the interpretation of the art of the several Negrito tribes were subjected to severe criticism by Walter William Skeat and Charles Otto Blagden, *Pagan Races of the Malay Peninsula*, 2 vols. (London: Macmillan, 1906), 1:395–401. Much of the criticism hinged on the fact that Stevens's research was carried out through the medium of Malay, a language foreign to both him and his informants, which led to certain fundamental misunderstandings. Nevertheless, Skeat and Blagden acknowledged the pioneering nature of the work, which they then presented (401–92) in almost as much detail as the German original, quoting large portions of the original text in translation yet leaving out the "obvious mistakes" (401). With respect to those artifacts that most concern us, Skeat and Blagden have raised no basic objections. The account here relies primarily on their recapitulation of Stevens's interpretations. The illustrations in Stevens's article are completely duplicated in Skeat and Blagden, including all with maplike elements. Their discussions are also fuller than those I can provide here.

114. Skeat and Blagden, *Pagan Races*, 1:471–72 (note 113).



FIG. 18.37. ONE EXAMPLE OF INCISED BAMBOO TUANG-TUANG OF THE SAKAI TRIBE OF WEST MALAYSIA INCORPORATING CARTOGRAPHIC ELEMENTS. This late nineteenth-century charm (and others like it) bears drawings that are intended to protect the owner from specific types of harm or to help bring about some needed event. To make the charm effective the *tuang-tuang* had to be beaten on the ground to produce a musical tone. This example is a charm to protect growing crops near a house from damage by animals. The patterns in the lowest third of the picture represent a house, with a ladderlike pattern at its upper-right corner to show the steps leading up to it, and a field planted with sweet potatoes, part of which, signified by the more compact cluster at the bottom, is on a hill. Within the central division various crops are depicted between dead trees, shown by simple vertical lines. From right to left these include: maize and yams, tapioca, sugarcane (three stalks), maize again, tapioca, banana (lower plant), and another type of yam (above). The dots around these plants denote grass. A diverse group of animals against which the charm is directed is shown in the upper portion of the drawing. This is a photograph of an exact copy—made in situ—of an original that the owner was unwilling to part with. Size of the original: height 24 cm. By permission of the Museum für Völkerkunde, Staatliche Museen zu Berlin—Preussischer Kulturbesitz.

employed and its relation to the purpose for which the *tuang-tuang* were made.

I am unaware of preliterate tribal groups in Southeast Asia, other than the Sakais, who produce (or formerly produced) comparable maps relating to real-world localities. But many small, relatively isolated, and scarcely studied groups live in the region, and there is no reason to assume that the Sakai case is unique. This issue calls for further research.¹¹⁵

MAPS OF PRIMARILY URBAN LOCALITIES

Although cities figure prominently on a number of the regional maps I have considered and are in some instances shown with an attempt at differentiation of their internal structure, the known corpus of maps that relate primarily or wholly to urban places is meager and limited almost entirely to Burma.¹¹⁶ There is no reason, however, to suppose that further research will not uncover additional examples, not only from that country but from others as well. Sixteen known maps from Burma are noted and briefly described in appendix 18.5. These maps focus exclusively on former capitals, not only of Burma, but also of neighboring countries. Mandalay is represented by eleven examples, of which seven cover only part of the city. The adjacent and previous capital at Amarapura is the focus of two maps, but it is also shown, along with other nearby former capitals at Ava and Sagaing, on some of the maps of Mandalay. A single map relates to the former Thai capital of Ayutthaya, which the Burmese sacked in 1767. Finally, “Zimmay” (Chiang Mai), capital of the northern Thai kingdom of Lanna, which was intermittently subject to Burma, is depicted on a very simple sketch that appears to have been drawn by a Burmese

115. It is appropriate to call attention to a rather sophisticated anthropological study of the cognitive mapping process among the nearly extinct Onge tribe, an exceedingly primitive group in terms of material culture, as elicited through fieldwork conducted on the island of Little Andaman in 1983–84. This work is detailed in Vishvajit Pandya, “Movement and Space: Andamanese Cartography,” *American Ethnologist* 17 (1990): 775–97. Although the Andaman Islands, which belong to India, lie just outside Southeast Asia as defined for this volume, they are culturally more akin to Southeast than to South Asia. Nevertheless, because the Andamanese maps illustrated in Pandya’s article were produced under rather artificial experimental conditions and are not indicative of what sort of maps, if any, the Onges might have drawn in the absence of foreign investigators, I have chosen not to illustrate them in this chapter.

116. The only example I can cite of a traditional non-Burmese map of a town or city from Southeast Asia is a fairly simple drawing (55 × 75 cm) in pencil and ink on European paper of the southern Thai town of Ligor (modern Nakhon Si Thammarat) drawn by a local artist, an acculturated ethnic Chinese named Bun Khong, for Captain James Low about 1825, when Low was on a diplomatic mission to that city. This diagram is one of a series of drawings made for Low that is held by the Royal Asiatic Society of London (RAS 340).

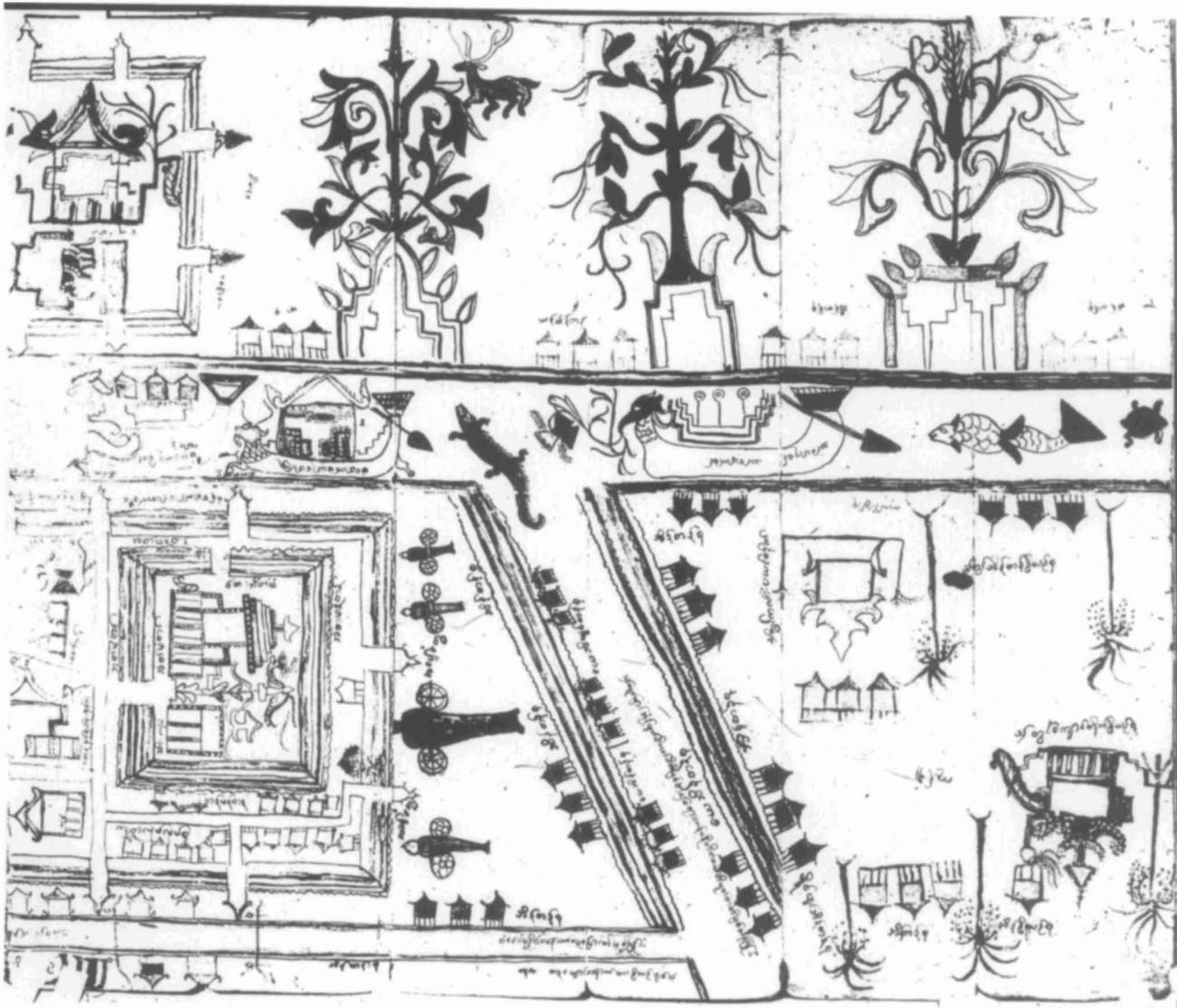


FIG. 18.38. DETAIL FROM A LARGE BURMESE MILITARY INTELLIGENCE MAP. The map, of which the portion shown here forms only a very small fraction, relates to the successful campaign by the Burmese against the then Siamese capital of Ayutthaya in 1767. It appears to have been based on intelligence reports gathered before the campaign, since the city was razed during the conflict. The size of the entire map is not known, and parts of it may be lost. The map was painted on at least

forty-eight folding panels of white *parabaik*. A striking feature of the map is its combining details of obvious military significance—such as artillery emplacements—with others relating to fauna, flora, and religious edifices that presumably are irrelevant militarily.

Size of each panel: 87.6 × 17.8 cm. National Archives, Rangoon. Photograph courtesy of Joseph E. Schwartzberg.

Shan. I shall here describe only three of the maps just cited (that of Ayutthaya, one of the two of Amarapura, and one of Mandalay) and shall illustrate the first two. Several essentially architectural plans will also be discussed.

The Burmese map of Ayutthaya (a small part of which is shown in fig. 18.38) is said to have been made for military intelligence just before and in anticipation of the campaign directed toward that city in 1767. Not counting cosmographies, this makes it the oldest of all known surviving Burmese maps. The map, on white *parabaik*,

appears to have been torn in a number of places, and the panels cannot be put together to form a continuous image. At a minimum, one can say that the map area was approximately 7.5 square meters.¹¹⁷ Whether the *para-*

117. I have not personally seen this important work and know it only from one 19 by 24 centimeter color photograph, showing many of the panels laid out (often discontinuously) in four rows, and three black-and-white larger-scale photographs of a much smaller portion of the whole that were sent to me along with a page of relevant notes. The color photograph was supplied by Andrew Dalby, then on the staff of the library of Cambridge University, and the other materials by Tin

baik was intended to be read continuously as one long strip presentation or as several parallel strips laid side by side is not clear. The latter would better suit the purpose of the map, to provide military intelligence, given the nonlinear area it related to; but I know of no other case of a *parabaik*—as opposed to a map on cloth or a large piece of paper, or several pieces pasted together in a nonaccordion fashion—that was so used.

How the map was prepared is not known. Since it related to the capital city of what was at the time Burma's principal enemy, I assume it was made by a spy. In that event it would probably have had to be drawn from notes taken as the spy roamed the streets and canals of Ayutthaya, presumably being put together in its present form only after he returned to the safety of his own country. Figure 18.38 depicts one of numerous compounds, almost twenty of which may be dimly discerned. Although the map shows considerable detail about the interiors of these compounds, which have the look of enclosing important structures such as government offices, temples, and perhaps the residences of high officials, the interior of the largest compound, which I take to be the royal palace (at the terminus of the canal shown in the figure), is relatively empty.¹¹⁸ This suggests that the presumed spy was more successful in obtaining information about, and possibly even direct access to, the other important places depicted. Annotations in black ink, generally rather terse and probably running into the hundreds, appear on all parts of the map. A note sent to me from Burma states that the map "describes the location of houses, wooden stockades, granaries, cannons, monasteries, and guards."¹¹⁹ In the illustration one sees one large and three small cannons, their wheels splayed sideways so that there is no doubt what is depicted.

The map is remarkably ornate in style, and its palette is extraordinarily vivid. Houses are painted in blue, blue-green, green, yellow, red, black, and white; trees in blue-green, yellow, red, and brown; roads in black and five other colors; barges in four colors; and so forth. As on so many Burmese maps, vegetation is shown very prominently and in many different, though perhaps conventionalized, forms. Animals too loom large on the map. The canals teem with fish, crocodiles, and an occasional crane or tortoise. Elsewhere appear at least one elephant, deer, monkey, pig, and bird. All of this exuberance may seem counter to the alleged purpose of the map; but taking into consideration the likelihood that it was to be presented directly to the king and that time would not have been of the essence in making it ready for so august a personage, the seeming contradiction is readily explained.

Compared with the map of Ayutthaya, that of Amarapura and its environs, made about 1850, has a much more modern look. The original map was a four-panel *para-*

baik whose dimensions are unknown. The description that follows is based on what was said to be a faithful copy, made in the 1970s on European paper by six monks at the Taung Lay None monastery at Amarapura in the 1970s (fig. 18.39).¹²⁰ Despite the alleged fidelity of the copy, it is questionable whether its rather intense colors (applied using modern felt-tipped pens) closely resemble those of the original work; but in general the style of the map conforms well to other Burmese works of the mid-nineteenth century. Among the features shown on the map are the old royal walled city, its internal street pattern, the wards and hamlets lying outside the royal enclosure, monasteries, pagodas, canals, ditches, periodically inundated areas, two wooden causeways over such areas, various forms of vegetation (rendered more or less naturalistically), and across the Irrawaddy, the forested range of the Sagaing Hills, shown in frontal elevation near the top of the map with the sky beyond punctuated by conventionally rendered clouds somewhat similar to those on certain Tibetan maps. A feature that distinguishes this map from most others of Burmese provenance is its orientation toward the west.

Of Mandalay, as noted, there are at least eleven surviving maps that predate the British occupation of that city. All of these maps are believed to date from the early 1850s to 1885, the date of the British occupation. The earliest is the map King Mindon ordered to guide the construction of his proposed new capital. This work, now very faded and worn, was found in 1954 in the Shwenandaw monastery in Mandalay, where it had been kept at least since 1886. It is at present on display in the museum of the Burmese Department of the University of Mandalay. The work has been described as "probably the best surviving example of Burmese surveying practise of more than a century ago," and it has been suggested that the plan, motivated by the king's desire to shift the capital away from the unsanitary and crowded site at Amarapura, was commenced in 1853 and completed in

Maung Oo. All the photographs were taken at the home of U Maung Maung Tin in Mandalay. The color photograph is itself of a set of color photographs taken before the map was turned over to the National Archives in Rangoon. I was not able to see the map or to determine its accession number at that institution. I extend my deep appreciation for the help rendered by all three. Much of the discussion of the map is based on the notes provided by Tin Maung Oo.

118. The layout conforms to my own recollections of the remains of Ayutthaya from a visit there in 1980.

119. Notes by Tin Maung Oo, undated, in dispatch sent in 1985.

120. I saw and photographed this map at the monastery on 4 March 1984. I am grateful to U Ba Khet of Mandalay for guiding me to the place on the outskirts of Amarapura and for interpreting for me with the resident monks. I am also grateful to U Pyin Nya Zaw Ta, the head monk, for permitting me to study the map, the original of which was in the possession of Than Tun of the Burmese Historical Commission, then resident in Japan.

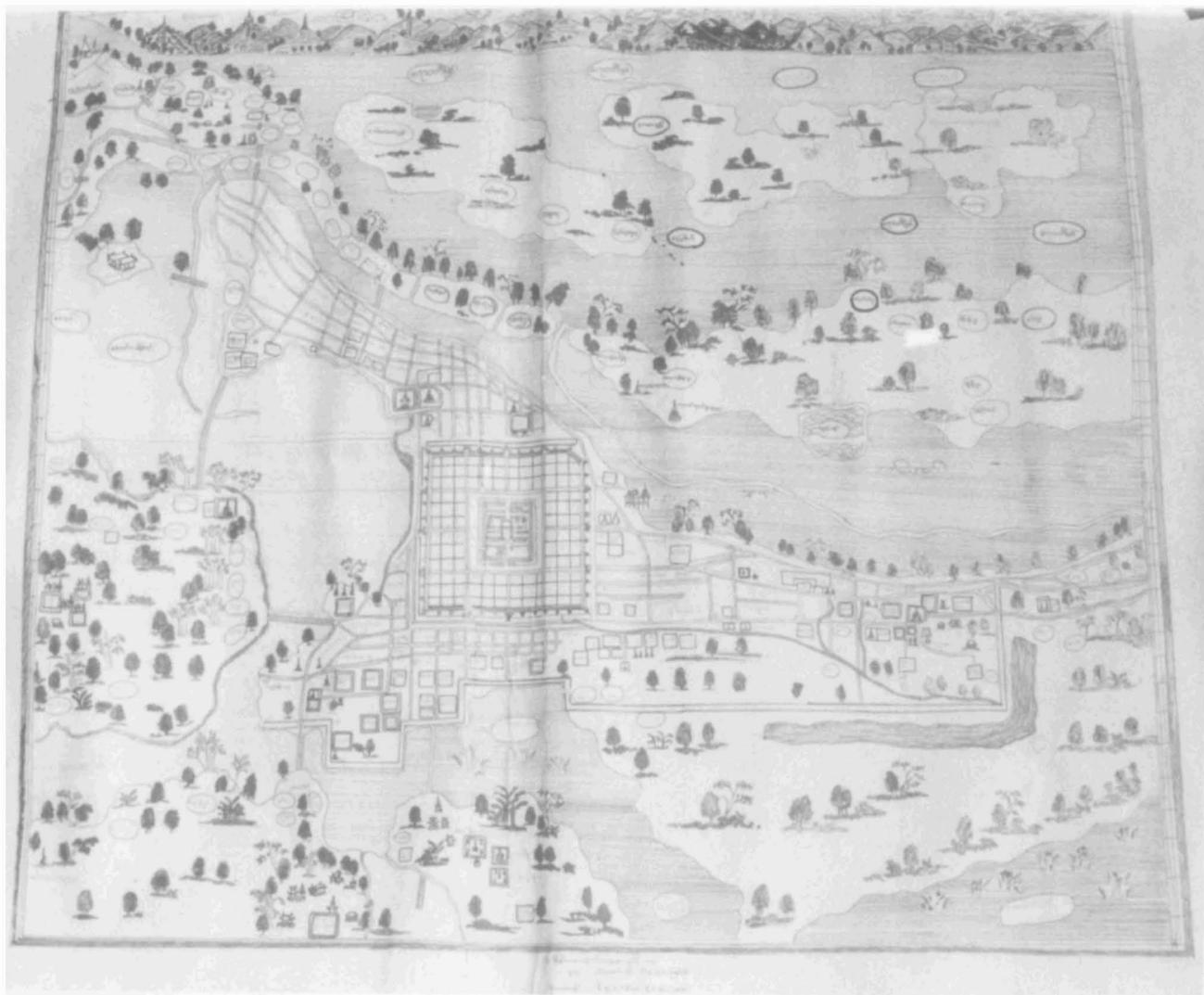


FIG. 18.39. MAP OF AMARAPURA, CAPITAL OF BURMA BEFORE THE FOUNDING OF MANDALAY. This is a modern copy, executed by Burmese monks at the Taung Lay None monastery in Amarapura, where it is now held, of a mid-nineteenth-century original. Although drawn with felt-tipped pens,

the map was said to adhere closely to the style of the original four-panel *parabaik*.

Size of this copy: 93.7 × 105.7 cm. Photograph courtesy of Joseph E. Schwartzberg.

1855.¹²¹ The surveyors and engineers charged with laying out the framework for constructing the new capital apparently did not include the mapmaker, though the names of none of those individuals is recorded on the map itself. There is no evidence that any European was directly involved in devising the plan, but those who did so “could not have been entirely ignorant of the effects which were being produced by Captain Fraser’s town planning in Rangoon.”¹²² It is noteworthy that the plan does not tally completely with what exists on the ground. The construction of Mandalay did not begin until 1857, and departures from the initial plan were sanctioned for a variety of reasons. For example, it was originally intended to make the eastern and western walls of the

royal compound somewhat longer than those on the north and south; but ultimately a perfect square was decided on, each side being 600 *tas* (a Burmese yard) in length, so that the total number of *tas* in the perimeter would be 2,400 (roughly 2.06 km), equal to the number of years elapsed since the Buddha attained nirvana. Other changes were made to ensure an adequate water supply

121. U Maung Maung Tin and Thomas Owen Morris, “Mindon Min’s Development Plan for the Mandalay Area,” *Journal of the Burma Research Society* 49, no. 1 (1966): 29–34 and two maps; quotation on 29.

122. Maung Maung Tin and Morris, “Development Plan,” 30 (note 121).

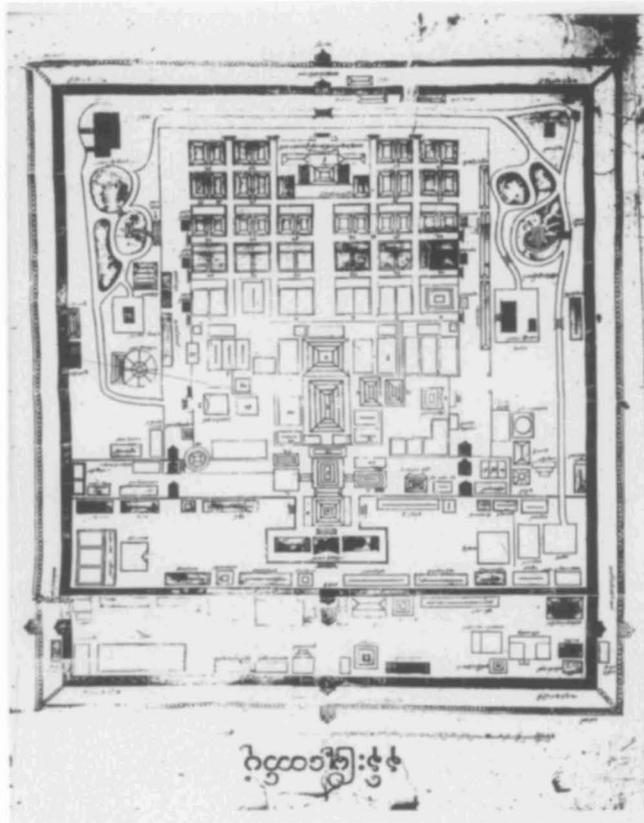


FIG. 18.40. PLAN OF THE KING'S APARTMENTS, ROYAL PALACE, MANDALAY, CA. 1870. This faithful modern copy of the original white *parabaik* plan was made by U Maung Maung Tin and appears to be drawn in black ink on European paper. The buildings within the palace enclosure are rendered in great detail and, it seems, with considerable fidelity in both scale and internal differentiation.

Size of this copy: ca. 76 × 56 cm. Photograph courtesy of Joseph E. Schwartzberg.

to the new city and to stiffen its defenses.¹²³

The plan, drawn in five colors on a large sheet of gridded black *parabaik* approximately 229 by 145 centimeters, covers the Mandalay Plain from the mountains to the east to the banks of the Irrawaddy on the west and extends over a somewhat greater distance from north to south. Each grid square on the map measures 3.18 centimeters on a side, which was calculated to represent approximately 893 meters. Curiously, the point of origin of the grid is not within the proposed palace, but at a particular spot on an embankment some distance away. "The orientation arrow [not a traditional feature of Burmese maps], however, is drawn through the exact centre of the area designed for the Shwemyodaw [royal compound]."¹²⁴ The alignments for the boundaries of the Shwemyodaw and the city's defensive ditches and ramparts were all demarcated parallel to the grid lines and were subsequently so constructed. The coordinates, however, rather than running exactly along cardinal direc-

tions, are actually about three and a half degrees in error. Although no scale appears on the plan, it is clear from comparing actual distances in Mandalay against map distances that the map, at least in its central portion, was drawn to a scale that works out to be 2.253 inches to the mile (1:28,123).¹²⁵ Away from the city itself, however, one notes appreciable differences in the location of actual constructions and their implied places on the plan, though these are said to be "not unreasonably large when one considers the rudimentary methods and materials available to the surveyors and to the draftsman." The method of surveying is explained in the following passage:

A certain amount of rough triangulation must have been employed to fix the positions of the islands and the villages in the Irrawaddy, and of its right bank. Otherwise all the control seems to have been by measurements along and offsets from the lines of the grid. If all the grid lines shown on the plan were completely traversed to fix the positions of the villages, canals, rivers, lakes, and the mountain foot, it would mean that considerably more than 1600 miles of line were measured, recorded, and plotted during the survey.¹²⁶

From the grand scale of the proposed new city it seems clear that it was envisaged as a long-term capital for the kingdom of Burma. The associated water supply, flood protection, and drainage systems that appear on the plan (including numerous new and enlarged embankments and canals and an artificial lake approximately 15 km long and 4 km wide) indicate a degree of engineering sophistication remarkable for its day. How much additional progress the Burmese might have made in surveying, mapping, and engineering had the third and final Anglo-Burmese War not set the country on a completely new course is a question we shall never be able to answer.

At least five of the remaining maps of Mandalay, one of the entire city and four relating to particular portions of it, appear to have been drawn to aid planning and engineering operations. One map of the entire city, whose purpose is not clear, provides a detailed layout of streets noting the residences of the local dignitaries, while another, including extensive surrounding areas, obviously serves a cadastral function. Three maps of relatively small areas are particularly rich in architectural detail. It is not always clear whether these maps were prepared before or after the structures shown on them were built (for

123. Maung Maung Tin and Morris, "Development Plan," 30–31 (note 121).

124. Maung Maung Tin and Morris, "Development Plan," 31 (note 121).

125. Maung Maung Tin and Morris, "Development Plan," 31 (note 121).

126. Maung Maung Tin and Morris, "Development Plan," 31–32 (note 121).

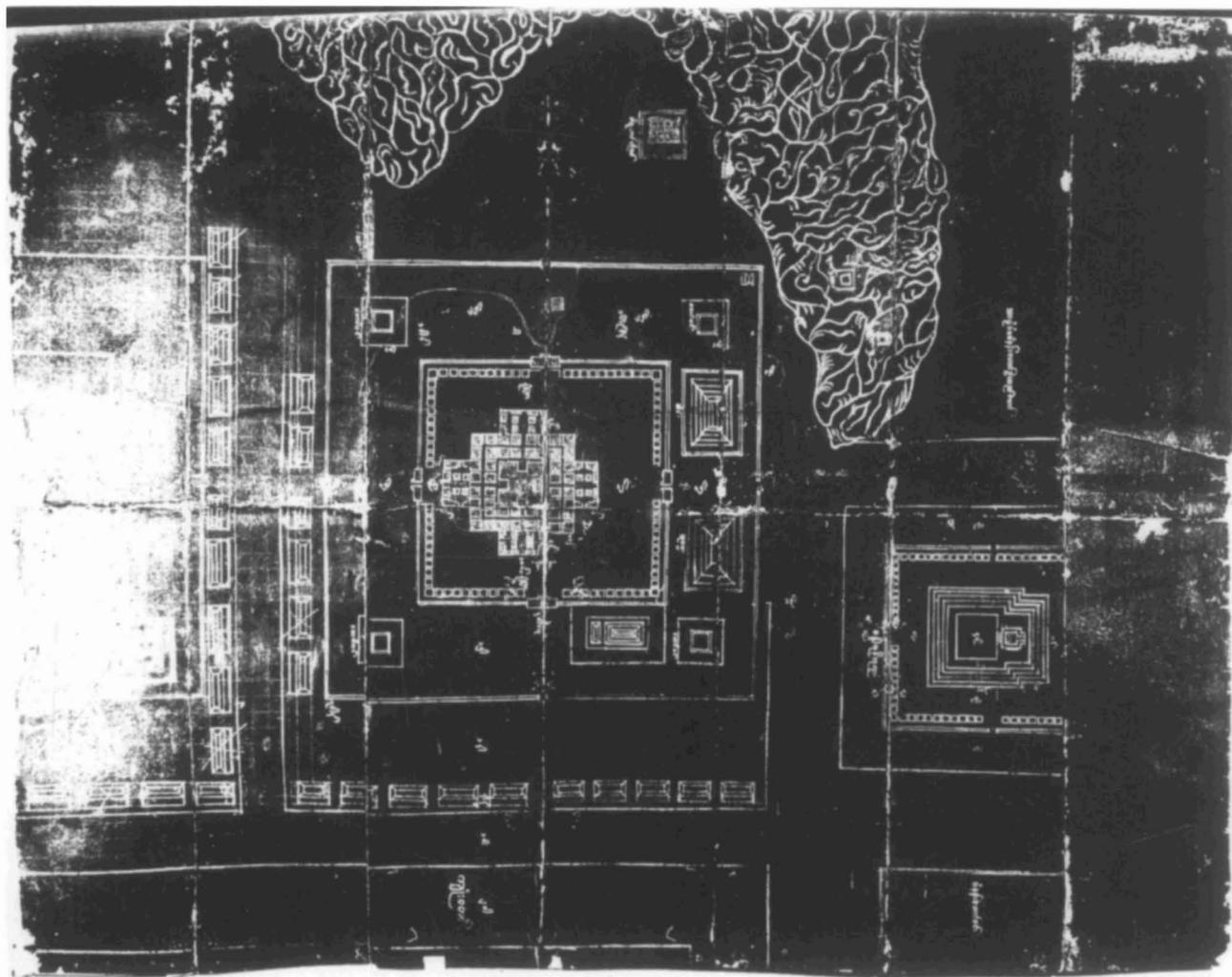


FIG. 18.41. ROYAL TEMPLE COMPLEX AT THE FOOT OF MANDALAY HILL, CA. 1875. This view includes a substantial portion of a rather detailed large-scale architectural plan of a cluster of temples and associated edifices (ordination hall, rest houses, library, and such) built sometime after 1857 but destroyed about 1890. Drawn with white chalk on black *para-*

baik, with six pleats and one longitudinal fold, the entire plan covers an area of about 1.3 by 0.5 kilometers and is oriented to the east.

Size of the original: ca. 114 × 61 cm. Collection of U Maung Maung Tin, Mandalay.

more on these maps, see appendix 18.5, items g, h, i, o, and p).

Figure 18.40 depicts the king's apartments (bounded, I would judge, by the thin black line that forms the nearly perfect 2,400 *ta* square noted in the discussion of the Mandalay planning map) situated within the wooden stockade inside the Mandalay fort. The nature of the detail depicted suggests that this was not a planning map but was made as a historical record. In addition to the buildings identified as the royal apartments, the plan shows apartments for officials, a mint, a place for storing presents, a clock tower, servants' quarters, a kitchen, gardens, a swimming bath, and a "water palace." Religious structures include a monastery, a rest house for *nats* (Burmese demigods), and a tower for keeping the relic of the

Buddha's tooth. Military features include the wooden stockade (the plan's outermost perimeter), guard posts, barracks, an armory, and sheds for carriages and elephants.¹²⁷

My final example of a map of a small urban locality (fig. 18.41) depicts a plan of the royal temple complex at the base of Mandalay Hill. This plan may well have preceded the actual construction of the buildings shown, which include the Sandamuni Pagoda, at the top of the

127. The original is in the possession of U Maung Maung Kyaw (whom I am unable to identify). The description given here is based on information provided by Tin Maung Oo. Regrettably, he did not indicate which features on the plan corresponded to each of the items noted in my description, though some of them are obvious.

plan, between an area named as the royal garden and the temporary palace grounds; the larger Kyauktawgyi Pagoda, in the center of the plan; a library (the small building to the left); and a number of rest houses, shown by a set of similar small rectangular structures. The squares at each of the four corners of the larger pagoda are identified as the sites of sacred bodhi trees (*Ficus religiosa*). The structure near the upper left corner of the

pagoda compound is the Pathana Sima, an ordination hall. The very large bounded area that is barely visible at the base of the map has not been identified.¹²⁸

128. Description based primarily on information supplied by Tin Maung Oo, with some additional historical details from Andrew Dalby (letter dated 10 December 1984).

APPENDIX 18.1 REGIONAL MAPS OF VARIOUS PARTS OF SOUTHEAST ASIA

Area Covered	Place Where Map Is Held, Accession Number	Provenance and Date	Dimensions (cm) (h × w)
a. The whole of Burma as of 1795 and extensive, though indeterminate surrounding areas, especially to the east	National Archives of India, New Delhi, Historical Map Folio ¹ 157, no. 13	Originally drawn in Amarapura in 1795 by a slave of the crown prince of Burma	60 × 47.1 ²
b1 and b2. Northern Burma, from Amarapura (near present Mandalay) to vicinity of Mogaung, approximately 400 km to north	NAI, HMF 157, nos. 14 and 16	Amarapura, 1795; drawn by a native of Toungoo, which is on the Sittang River in Lower Burma	Two maps, each 47.5 × 60, of almost the identical area
c. Southern Burma, from Amarapura south to the Gulf of Martaban, a north-south distance of about 700 km (a southern continuation, in effect, of b)	Was presumably held by the National Archives of India but not seen during visit to same	Amarapura, 1795; drawn by same native noted for b above	Not available; published version measures 24.5 × 19.8. Original presumably same as b.
d. The region of Upper Burma between the Irrawaddy and the Chindwin (“Khaenduaen”) rivers from their confluence north to the Chinese frontier	Location of original not known; copy may be at the National Archives of India	Originally drawn at Amarapura in 1795 by the same slave as noted for a	Original presumably 39.6 × 23.8, based on statement by Hamilton that the printed version is at half the scale of the original

1. Hereafter abbreviated NAI, HMF.

2. Unless otherwise specified, dimensions refer to copies at the National Archives of India, New Delhi.

DRAWN FOR FRANCIS HAMILTON DURING HIS SOJOURN IN BURMA IN 1795

Orientation	Medium	Description (unless otherwise noted, maps are translated from Burmese into English)	Published Accounts
North	Black ink and gray and orange wash on European paper, now cloth backed and laminated	See text and figure 18.2	Francis Hamilton, "An Account of a Map of the Countries Subject to the King of Ava, Drawn by a Slave of the King's Eldest Son," <i>Edinburgh Philosophical Journal</i> ³ 2 (1820): 89-95, 262-71, and pl. X; W. S. Desai, "A Map of Burma (1795) by a Burmese Slave," <i>Journal of the Burma Research Society</i> 26, no. 3 (1936): 147-52.
East	Black ink with added pencil notes, now cloth backed and laminated	See text and figure 18.3. One map (sheet no. 14, map b1) is much richer in detail than the other (sheet no. 16, map b2), presumably because Hamilton sought in the latter a less cluttered version, as in the case of c (below).	Hamilton, "Account of a Map of the Country North from Ava," <i>EPJ</i> 4 (1820-21): 76-87 and pl. II.
North	Original presumably same as b	Similar to b, but without the depiction of vegetation. For note on anastomosis of rivers, see text.	Hamilton, "Account of a Map Constructed by a Native of Taunu, of the Country South from Ava," <i>EPJ</i> 5 (1821): 75-84 and pl. V.
North	Presumably ink on European paper	Emphasis is on showing travel times, in days or Burmese leagues (2.2 miles), in a network of twenty-six named places, all indicated by circles. Rivers shown, according to importance, by double or single lines. Yemyet Lake, north of Amarapura, is greatly exaggerated in size. Several hill ranges are suggested by wavy lines. Scale toward the northwest is greatly contracted.	Hamilton, "Account of a Map of the Country between the Erawadi and Khaenduaen Rivers," <i>EPJ</i> 6 (1821-22): 107-11 and pl. IV.

3. Hereafter abbreviated *EPJ*.

Area Covered	Place Where Map Is Held, Accession Number	Provenance and Date	Dimensions (cm) (h × w)
e. An area to the east of the Irrawaddy from Amarapura south to Prome in the west to just beyond Toungoo in the east	As for d	As for d	Not known for original; 19.8 × 11.6 for published version
f. An indeterminate area in the south-central portion of what is now Yunnan Province, northwest Tonkin, and northern Laos	NAI, HMF 157, no. 38	Same as for a	27 × 38
g. An area of central Burma focusing on Pagan	NAI, HMF 157, no. 25	Original drawn by the town clerk of Pagan in 1795 (after having been shown a number of European maps by Hamilton)	39 × 31
h. The Tenasserim coast from the vicinity of Tenasserim in the south to that of Martaban in the north; a distance of roughly 525 km	Location of original or of copy not known	Amarapura, 1795, by a native of Tavoy (in Tenasserim)	Not known for original; 24.3 × 7.6 in published version
i. The north of what is now Thailand, known then to the Burmese as the country of the Jun Shan, and an adjacent area of Laos	As for h	As for a	12.2 × 16.8 in published form
j. Essentially the same as i	NAI, HMF 157, no. 22	As for a	52 × 38
k. A large area of Shan territory between the Irrawaddy and the Salween River from about 19°N to 25°N	As for h	As for a	17.3 × 7.6 in published form

(continued)

Orientation	Medium	Description (unless otherwise noted, maps are translated from Burmese into English)	Published Accounts
North	As for d	Essentially the same as for d. However, map distortion is greater toward the south, and the western edge of the Shan Plateau is naturalistically depicted as a hill range running north-south for the entire length of the map and forming, in effect, its eastern limit.	Hamilton, "Account of a Map by a Slave to the Heir-Apparent of Ava," <i>EPJ</i> 6 (1821-22): 270-73 and pl. IX.
North	Black ink on European paper	A simple map with the Mekong River flowing near the western edge and the Mainmain Kiaung (apparently the Song-koi or Red River flowing into Tonkin), with two tributaries, flowing through the center of the map. Boundaries of several tribal areas with one another and with China, Tonkin, and Burma shown by dashed lines. Twelve radiating dashed lines connect the central town of Kiaunroungye (not identified) and fifteen surrounding towns with travel time to same indicated along each line (ranging from three to twelve days).	Hamilton, "Account of a Map of the Tarout Shan Territory," <i>EPJ</i> 7 (1822): 71-75 and pl. III.
Northwest	Ink on European paper	A rather simple map of an area within several days' travel time from Pagan. Pagan shown by rectangle and seventeen other towns by circles. Irrawaddy River and several tributary streams delineated. Two hill ranges and two isolated hills pictorially shown, as are six temples at varying distances from Pagan.	Hamilton, "An Account of a Map of the Vicinity of Paukgan, or Pagan," <i>EPJ</i> 7 (1822): 230-39 and pl. IV.
Varies	Originally drawn on black (Burmese) paper with a steatite pencil, then copied onto European paper by a "Mahomedan painter"	See text and figure 18.6	Hamilton, "Account of a Map Drawn by a Native of Dawae or Tavay," <i>EPJ</i> 9 (1823): 228-36 and pl. V.
East	As for a	See text and figure 18.4	Hamilton, "Account of Two Maps of Zaenmae or Yangoma," <i>EPJ</i> 10 (1823-24): 59-67 and pl. III.
North	As for a	See text and figure 18.5	Hamilton, "Account of Two Maps of Zaenmae or Yangoma."
North	As for a	Shows the two cited rivers by single lines, a line of hills marking the western escarpment of the Shan Plateau, Amarapura (near western edge of map) by a double circle, and twenty-five other towns by circles. Distances between places are shown as in b.	Hamilton, "An Account of a Map of Koshanpri," <i>EPJ</i> 10 (1823-24): 246-50 and pl. VIII.

Area Covered	Place Where Map Is Held, Accession Number	Provenance and Date	Dimensions (cm) (h × w)
l. An area focusing on Kengtung in what is now the eastern part of the Shan States plus a small part of Laos	NAI, HMF 157, no. 27	As for a	27 × 38
m. Much of southern Burma, comprising the former kingdom of Pegu	Location of original not known	As for a	Not known for original; published map is 10.1 × 12.3
n. A very large part of Burma from the Gulf of Martaban to somewhat north of Bhamo	NAI, HMF 157, no. 12	Burma, 1795	120 × 49
o. A portion of Lower Burma from Toungoo in the north to Tavoy (on the Tenasserim coast) in the south	NAI, HMF 157, no. 15	Burma, 1795, apparently by the same native of Taungoo as did b and c	59.8 × 47.5
p. The coast of Burma from Arakan to the Gulf of Martaban	NAI, HMF 157, no. 18	Burma, 1795, by a native of Tavoy on the Tenasserim coast	62.4 × 53.2

(continued)

Orientation	Medium	Description (unless otherwise noted, maps are translated from Burmese into English)	Published Accounts
East	As for a	“Kiaintoun” (Kengtung) town, shown by double square, twelve other towns by single squares, and twelve other settlements by circles; all but four places are linked to Kiaintoun by fifteen straight dashed lines radiating from that place, with travel times to same (up to twelve days) indicated as on b. About ten ranges of hills are more or less naturalistically depicted in frontal elevation.	Hamilton, “Account of a Map of Upper Laos, or the Territory of the Lowa Shan,” <i>Edinburgh Journal of Science</i> 1 (1824): 71–73 and pl. II.
North	As for a	Irrawaddy and deltaic distributaries and associated lakes shown in some detail; Salween shown near eastern border of map; two sandy coastal forelands indicated; several hill ranges depicted in manner of map a. Fourteen named settlements shown by small circles, eight other named places by an <i>x</i> , and seven named pagodas by drawings in frontal elevation. Hamilton comments that the map author’s reliability for this area is much less than for areas to the north.	Hamilton, “Account of a Map of the Kingdom of Pegu,” <i>Edinburgh Journal of Science</i> 1 (1824): 267–74 and pl. X.
North	Black ink on European paper	Very detailed map. Emphasis is on travel time (in days) or distance (in leagues) between settlements, shown in a three-tier hierarchy (double squares, single squares, and circles). Pagodas, rivers, and hill and mountain ranges are also depicted.	None known
West (?)	Black ink on paper, with added pencil notes. Now backed by cloth and laminated.	Very similar in conception to b1, described in text. Depiction of vegetation is especially rich, and in three places the words “teak woods” are added.	None; but discussed in Hamilton’s journal (note on map reads “no. 22, Journal p. 173”). ⁴
North	Black ink on paper	Details suggest an attempt to provide the sort of information needed for a hydrographic chart. Features recognizable by special signs include rocks (coasts?), shoals, an anchorage, a customs house, and a few pagodas. Estuarine indentations are shown in exaggerated size, and places are identified by the creeks on which they are situated. The eastern half of a crude compass rose is shown along the left margin of the map. Rivers are shown by wavy double lines and the Arakan range, parallel to the coast of the same name, by a thin zigzag line. Settlements are sometimes shown by circles and sometimes with no sign next to name. Relatively few inland features are plotted. Map is translated from Burmese into English, with six Burmese words in the upper right corner.	None, but discussed in Hamilton’s journal (note on map reads “no. 27. See Journal p. 257”).

4. The many volumes of Hamilton’s journals are held at the Oriental and India Office Collections, British Library, London. Those that relate to his time in Burma form two volumes.

Area Covered	Place Where Map Is Held, Accession Number	Provenance and Date	Dimensions (cm) (h × w)
q. Coastal regions of Burma to north and northeast of the Gulf of Martaban	NAI, HMF 157, no. 19	Burma, 1795	60 × 48
r. An area of Burma with Amarapura at the north, Prome in the southwest, and Taungoo in the southeast	NAI, HMF 157, no. 20	Burma, 1795	75 × 27.5
s. “Lawa Yain or Wild Lawa,” an area of the Eastern Shan States and/or northern Thailand	NAI, HMF 157, no. 23	Burma, 1795	38 × 27
t. An area of Burma focusing on, but mainly to the northeast of, Amarapura	NAI, HMF 157, no. 26	Burma, 1795	46.5 × 34.5
u. An area of the Shan States to the east of Amarapura	NAI, HMF 157, no. 28	Burma, 1795	37 × 27
v. Area of Burma and Thailand from Cape Negrais in the southwest to “Saymmay” (Chiang Mai) in the northeast	NAI, HMF 157, no. 29	Burma, 1795	38 × 54.5
w. Area around Gulf of Martaban, including whole of Irrawaddy delta and Tenasserim coast south to “Breit” (Margui)	NAI, HMF 157, no. 30	Burma, 1795	54.5 × 38
x. Most of what is now Thailand and some adjacent areas, seemingly including much of Laos and Cambodia	NAI, HMF 157, no. 35	Burma, 1795, with annotations, most likely by Hamilton	37 × 27
y. An area centering on the Mekong River in Cambodia, Laos, and Thailand, and seemingly extending southeast to Saigon (“Sagun”)	NAI, HMF 157, no. 36	Burma, 1795	37 × 27

(continued)

Orientation	Medium	Description (unless otherwise noted, maps are translated from Burmese into English)	Published Accounts
North	Black ink on European paper	Similar to p but with more detail on inland villages and some variations in style and cartographic signs.	None known
North	Black ink on European paper	Shows mainly settlement, arranged in a four-tier hierarchy from "Royal City" (Amarapura), to small villages, with travel times (in days) or distances (in leagues) along dashed lines connecting settlements	None known
North	Black ink on European paper	Sixty-nine settlements and/or pagodas are depicted and named. Settlements are shown by squares and circles, pagodas are distinctively drawn in frontal elevation. Several north-south trending mountain ranges are more or less naturalistically depicted, but in a style that is neither obviously Burman nor European.	None known
North	Black ink on European paper	Very similar to j	None known
North	Black ink on European paper	Very similar to t, but at a larger scale	None known
North	Black ink on European paper	Similar to j but very sketchily and crudely drawn, especially in its eastern third. Malay Peninsula omitted.	None known
North	Black ink and gray wash on paper	Emphasis is on waterways, those that are presumed to be navigable being emphasized by a gray wash. Approximately fifty towns, six pagodas, and several mountain ranges are also shown.	None known
North	Black ink on European paper	Map covers a very large area and provides names of numerous countries, regions (e.g., Korat), and towns. Although the Mekong is not shown, what might be the Annamite Cordillera is. Many travel times (in days) between named places are given. An added note reads, "A boat from Sammay [Chiang Mai] to Siam [Ayutthaya] 7 days."	None known, but described in Hamilton's journal (note on map reads "no. 114, Journal p. 169").
North	Black ink on European paper	Shows Mekong and some tributary streams including the Bassac, providing a connection to Tonle Sap. Towns are differentiated by size, the largest being Zandapure (in the center of the map, probably Phnom Penh), Sagun (presumably Saigon), and Mainlaung (in the north, not identified). Numerous notations of travel time (in days) between principal places. Zandapure is said to be thirty-three days from Saymmay (Chiang Mai) in the northwest. A vaguely depicted boundary of Zandapure (Cambodia) is indicated.	None known

Area Covered	Place Where Map Is Held, Accession Number	Provenance and Date	Dimensions (cm) (h × w)
z. Cambodia and southern Vietnam	NAI, HMF 157, no. 37	Burma, 1795, with annotations by Hamilton	37 × 27

APPENDIX 18.2 BURMESE AND SHAN REGIONAL

Area Covered	Place Where Map Is Held, Accession Number	Provenance and Date	Dimensions (cm) (h × w)
a. Manipur, India, and an adjacent area of Burma	Royal Geographical Society, London, Burma S. 59	Burma, between 1759 and 1837	Approximately 203 × 284
b. “Maing Tsait and Maing Pone”; Maing Pone appears to be Mông Pawn, on the Pawn River in the Southern Shan States	Oriental and India Office Collections, ¹ British Library, London, acquired in 1907 (with f and g below)	Shan States, 1183 B.E. (A.D. 1821)	173 × 133
c. Almost identical to a	Royal Commonwealth Society Library, ² London, box XV, fol. 9, map C	Burma, presumably copied from map a between 1829 and 1837	34 × 47
d. Eastern Shan States (?)	RCSL, box XV, fol. 9, map iv	Burma, probably early nineteenth century (for original); copied between 1829 and 1832	Original “12 feet by 7 feet”; Burney’s copy 74.9 × 50.2
e. “Territory to East of Karenni”	RCSL, box XV, fol. 9, map v	Ava or northern Thailand, for original, presumably early nineteenth century; copied between 1831 and 1837 at Ava	Dimensions of original not known; copy is 38 × 49

1. Hereafter abbreviated OIOC.

2. Hereafter abbreviated RCSL.

(continued)

Orientation	Medium	Description (unless otherwise noted, maps are translated from Burmese into English)	Published Accounts
North	Black ink on European paper	Among the features shown are the South China Sea ("Kio Bain"), the Annamite Cordillera (graphically rendered along the Vietnamese coast, but not named), a hill range in the southwest (Elephant range?), and what appear to be Saigon ("Sankaung") and Phnom Penh ("Pyayn Zouk"). Notations relative to travel as in <i>γ</i> . Travel time from "Siam or Yoodnya" (Ayutthaya) to Phnom Penh totals nineteen days.	None known

MAPS OF THE PERIOD UP TO 1885

Orientation	Medium	Language and Script, with Description	Published Accounts
Varies	Painted in numerous colors on cloth	Burmese with some Shan toponyms. See text and plate 37.	None known
Varies	Ink and watercolor (more than five colors) on cloth	Shan in Burmese script. Similar in style to <i>f</i> . Area apparently covers two Shan chiefdoms. Two towns, approximately ninety villages, and seven pagodas are shown. All hill ranges are shown parallel to edge of map as in <i>a</i> .	None known
Varies	Black and red ink, plus wash in several colors, on European paper. Original painted on cloth.	Burmese and Shan translated into English. See text and figure 18.7.	Thaung Blackmore, <i>Catalogue of the Burney Parabaiks in the India Office Library</i> (London: British Library, 1985), 117.
Not known	Copy is in ink on European paper; original presumably on cloth	In English, copied from Burmese or Shan original. Described as a large sketch map, the map bears a note that it was "copied from a large map secretly brought to Lt. Col. Burney from the Palace of the King of Ava."	Blackmore, <i>Burney Parabaiks</i> , 117.
Not known	Ink on European paper	Shan (presumably), translated into English. Map bears note, "From a Map belonging to a Widow of King Mrudaragye, a native of Zenmay [Chiang Mai] said to be 42 years of age. Ava, 30 Jan 1831." No other details are available.	Blackmore, <i>Burney Parabaiks</i> , 117.

Area Covered	Place Where Map Is Held, Accession Number	Provenance and Date	Dimensions (cm) (h × w)
f. Area between Salween and Mekong rivers in Eastern Shan States and northern Thailand, from about 18°30' to 21°N and from about 98°30' to 100°15'E	OIOC, Map Division, R & L 196/07, acquired in 1907 (with b and g)	Shan States, 1850s or 1860s; acquired by British before 1887 and transmitted to OIOC in 1907	292 × 172
g. Large area astride Salween River in Shan States of Burma and northern Thailand from about 18°90' to 20°20'N and from about 98° to 99°45'E	OIOC, acquired in 1907 (with b and f above)	Shan States, 1223 B.E. (A.D. 1861)	299 × 275
h. Area of Burma to east of Mandalay, between Irrawaddy and Salween Rivers; north-south extent not determined	British Library, London (Or. T.C.I.d), Or. 3478, no. 1, part of Phayre Collection	Burma, pre-1867	147 × 165
i. Roughly the same area as g	British Library (Or. T.C.I.d), Or. 3478, no. 2, part of Phayre Collection	Burma, pre-1867	95 × 91
j. Roughly the same area as g	British Library (Or. T.C.I.d), Or. 3478, no. 6, part of Phayre Collection	Burma, pre-1867	93 × 63
k. Country between the Moulmein on the Tenasserim coast of Burma and Chiang Mai in northwestern Thailand	National Archives of India, New Delhi, Historical Map Folio ³ 90, no. 20	Burma, probably Moulmein, 1871. Authors are identified as Tsayafa and Ko Shong Kho.	112.5 × 71.5
l. Country between Moulmein or Tenasserim coast of Burma and "Zinmay" (Chiang Mai) in northwest Thailand	NAI, HMF 90, no. 19	Moulmein, Burma, "1871?"	40.8 × 34.3

3. Hereafter abbreviated NAI, HMF.

(continued)

Orientation	Medium	Language and Script, with Description	Published Accounts
Varies	Black ink on white paper	Shan, written in Burmese script. See text.	None known
Varies	Painted in various watercolors on cloth	Burmese. See text and figure 18.8.	None known
East	Painted in numerous colors on European paper	Burmese. Similar to f and g but more crudely executed. Mountains shown mainly in parallel rows, rivers by double wavy lines. Two-level settlement hierarchy, forts, pagodas, and roads depicted.	None known
East	Painted in red, green, and black on European paper	Burmese. Similar to h, but with a somewhat more European appearance. Settlement hierarchy in three levels	None known
East	Black ink on European paper	Burmese. A simple sketch map. Rivers shown by single lines, roads by dotted lines, settlements by small circles, mountains by rows of commas (sometimes joined by a line)	None known
North	Red, brown, and blue ink and blue, brown, and yellow watercolor on paper	Burmese with English translations added. English title added to map reads, "Map composed by Tsaya Pai & Ko Shong Kho of the District between Moulmein and Zimmay (Original)." Rivers outlined in blue ink, with blue watercolor between banks. Mountains outlined with caterpillar hatch marks. Very detailed settlement hierarchy, with gates and walls of towns shown, all in brown ink. Villages shown by circles with the word <i>ywa</i> (village) therein and no name. Roads are in heavy solid brown lines. Although this map was obviously made at the behest of the British, it retains enough of a Burmese flavor to warrant notice.	None known
East (?)	Red ink and black pencil on paper	Burmese with English translations added in pencil. Though this map appears to have been made at the behest of British interested in prospects for forestry, the style is Burmese. Rivers are shown by double lines, trails by dotted lines, about a dozen settlements by squares, all with the word <i>ywa</i> (village) therein, and what are probably meant to signify forests by wispy lines in pencil. This may be a much simplified adaptation of k.	None known

Area Covered	Place Where Map Is Held, Accession Number	Provenance and Date	Dimensions (cm) (h × w)
m. Toungoo and Yamethin districts of Burma, an area approximately 130 km north-south × 65 km east-west, astride the border established following the second Anglo-Burmese War	Collection of U Maung Maung Tin, Mandalay	Burma, nineteenth century, assumed to be between 1870 and 1885	Approximately 75 × 160
n. An east-west strip across Burma between the Arakan range and the Red Karen tribal area, an area approximately 122 km east-west × 25 km north-south	Collection of U Maung Maung Tin, Mandalay; obtained from Yethaphan monastery	Burma, between 1857 and 1885	Approximately 140 × 55.5
o. Burma from the Bay of Bengal to the Irrawaddy River and from Mindon town (about 19°20'N) to Sale town (about 70°50'N)	Transferred in 1978 from Yethaphan monastery to the collection of U Maung Maung Tin, Mandalay	Burma, allegedly before 1824 (before first Anglo-Burmese War), but more likely between 1870 and 1885 because of similarity to m	Approximately 131 × 109
p. Pakokku District, on west of Irrawaddy in Upper Burma	University of Rangoon Library, P/26144	Relatively recent copy of a late nineteenth-century original	101.5 × 120.5
q. Kyauk Ye District astride Chindwin River in northern part of Upper Burma, between 22° and 26°N	Collection of U Maung Maung Tin, Mandalay	Burma, late (?) nineteenth century	Approximately 37.5 × 154.5
r. Auntgyi Kin Chaung Forest; location not known	Copied from a map in the collection of Than Tun, Tokyo; copy in collection of U Maung Maung Tin, Mandalay	Burma, date not known	Approximately 14 × 119

(continued)

Orientation	Medium	Language and Script, with Description	Published Accounts
East	Painted in red, green, white, and yellow on black gridded <i>parabaik</i> and stored between wooden staves	Burmese. An exceptionally detailed map very similar to o and very likely prepared for military intelligence in anticipation of further hostilities between the second and third Anglo-Burmese Wars (1852–85). Relevant signs identified include “outpost for a town,” “outpost for a village,” “British forces at a town (Garrison),” “British force [other],” “border pillar,” “path” (in two categories). Additional details on settlement, drainage, hills, forests, etc., are also abundant, as are religious signs (for pagodas, tumuli, spirit houses, and rest houses).	None known
East	Painted in black, red, green, and yellow on white gridded <i>parabaik</i> in seven panels	Burmese. Described as “Map for posting [military] outposts between the bank of the Western Yoma [Arakan Range] and Red Karen Area. . . .” Though less detailed than m, this map uses the same set of signs for features with military references.	None known
West	Green, red, and yellow on black <i>parabaik</i> , bearing a yellow square grid (with intervals of approximately 1.9 cm)	Burmese. See figure 18.9 and text.	None known
West	Red and black ink and green watercolor on cloth	Burmese. A general map with naturalistic signs (rivers with wavy lines therein, forested hills in frontal elevation, etc.). Villages named within oblong cartouches. Miscellaneous notes (e.g., “Many crops can be grown here”) in several parts of map.	None known
East	White talc on black <i>parabaik</i> of nine panels	Burmese. Rather simple sketch map with several rivers, two parallel mountain chains, and four towns depicted.	None known
Not known	Original was a black <i>parabaik</i> in fifteen panels with details in white talc and yellow and red paint	Burmese. Forest paths and boundaries shown, as are villages, pagodas, streams, and hills, all in characteristic late nineteenth-century fashion. Area depicted appears to be rather small.	None known

Area Covered	Place Where Map Is Held, Accession Number	Provenance and Date	Dimensions (cm) (h × w)
a. The route between Amarapura and Taraek ("Tartary"), more specifically to the Chinese emperor's hunting seat at Jehol (Chengde), beyond Beijing	Location of original not known	Given to Captain Symes at Amarapura in 1795 by the Zabua (prince) of Bhamo, near the Chinese border northeast of Ava	Long, narrow map. Original dimensions not known; 30.4 × 9.0 map area in printed form.
b. Routes from Bassein ("Pathein") to Bangkok ("Banteouk")	National Archives of India, New Delhi, Historical Map Folio ¹ 157, no. 21	Burma, 1795	33 × 48
c. Much of Indochinese peninsula, with Chiang Mai, Toungoo, and Martaban in the northwest and Phnom Penh (?) and Saigon (?) in the southeast	NAI, HMF 157, no. 34	Burma, 1795, with annotations, presumably by Hamilton	27 × 37
d. Lower Irrawaddy River	In possession of U Maung Maung Tin, Mandalay	Burma, uncertain date, presumably predates British occupation of 1852	Not available; <i>parabaik</i> (Burmese paper) of many folds
e. Area along the Shweli River in the Shan States astride the Burma-China border	British Library (Or. T.C.I.d), Or. 3478, no. 5, part of the Phayre Collection	Burma, pre-1867	180 × 49

1. Hereafter abbreviated NAI, HMF.

SHAN ROUTE MAPS

Orientation	Medium	Language and Script, with Description	Published Accounts
Roughly north for most of the map and northeast for the portion relating to China	Presumably on European paper	Translated from Burmese to English. The original probably drawn by an officer of the Zabua of Bhamo at the request of Francis Hamilton. Towns, including twenty-five in Burma and only ten in China, are shown by rectangles (with double outlines for important places), and rivers are of varying widths, some being only noted (e.g., “4 small rivers”) and not drawn. Traveling times between towns are given in days. Three-fifths of the length of the map is taken up for the distance from “Shue Prido” (Amarapura) to Bhamo, a distance with stages adding up to 14 days of travel and the remaining two-fifths almost entirely in China, for a distance requiring 121 days of travel. The route from Bhamo to Tarek Pri (Jehol) is shown by a double line along part of which a note “10 days by camel” appears and, farther north, “carriage road.” Between Udhin Pri (Beijing) and Jehol is a wavy line and the note “mountains,” signifying “those along which the great wall is built.” No other physical features are depicted.	Francis Hamilton, “Account of the Route between Tartary and Amarapura, by an Ambassador from the Court of Ava to the Emperor of China,” <i>Edinburgh Philosophical Journal</i> 3 (1820): 32–42 and pl. I.
North	Presumably on European paper	Translated from Burmese to English. A single route, via Rangoon, is shown between Bassein and Martaban (“Monttama”), but thence two routes go to Bangkok, one more directly (presumably by Three Pagodas Pass and the Kwai River valley), and the other via Tavoy (“Davoy”) and Mergui (“Byeit”) on the Tenasserim coast. Distances along various stages are given either in days of travel or in leagues. What appears to be the Burmese-Siamese border is indicated by a dashed line. The Malay Peninsula below Mergui is omitted as on map a in appendix 18.1.	None known
Northeast	Presumably on European paper	Translated from Burmese into English, with pencil notations added. Map focuses on Ayutthaya (“Ayoitaya”). The easternmost city, thirty-five days distant from Ayutthaya, is “Tyeinseen,” next to which “prob. Saigon” appears in pencil. The map is very crude and provides little information other than travel times between a dozen important travel nodes.	None known
Varies; features point away from river	White <i>parabaik</i> bleached with chalk; details in black, green, and red	Burmese. On gridded paper. Rivers very naturalistically rendered. Main streams colored in green wash, tributaries (shown only for short distances) not colored. Other features outlined in red or black. Text in black.	None known
Not determined	Painted on European paper	Language not determined, either Shan or Burmese. Highly pictographic map at what seems to be a very large scale. Few toponyms. Fish in all the rivers, boat with two fishermen in the Shweli River.	None known

APPENDIX 18.3

Area Covered	Place Where Map Is Held, Accession Number	Provenance and Date	Dimensions (cm) (h × w)
f. The Irrawaddy River below Pagan	British Library (Or. T.C.I.d), Or. 3478, no. 7, part of the Phayre Collection	Burma, pre-1867	189 × 31
g. The route from Papun ("Paphoon") in Burma to Chiang Mai ("Zimmay") in northwest Thailand	NAI, HMF 90, no. 12	Burma, 1870	40.4 × 35.8
h. Area from Bangkok and Chiang Mai east to Phnom Penh and Saigon	NAI, HMF 91, no. 14	Burma, 1232 B.E./A.D. 1871, author identified as U Yit	64.5 × 122.5
i. Telegraph line from Nyaungu or the Irrawaddy (near the then border of British Burma) to Mandalay	In possession of U Maung Maung Tin, Mandalay, "Parabaik no. 191"	Burma, between 1860 and 1880	Thirty-one panels, each panel approximately 37.5 × 12.8; total length is 3.97 m

APPENDIX 18.4 BURMESE MAPS OF

Area Covered	Place Where Map Is Held, Accession Number	Provenance and Date	Dimensions (cm) (h × w)
a. Amarapura and its environs, an area estimated as 80 × 65 km	National Archives of India, New Delhi, Historical Map Folio ¹ 157, no. 17	Burma, 1795	60 × 48
b. Area focusing on a large lake (Yemyet?) and another smaller lake to the north of Amarapura, covering an area estimated as 75 × 45 km	NAI, HMF 157, no. 31	Burma, 1795	42 × 27
c. Approximately the same as b	NAI, HMF 157, no. 32	Burma, 1795	47.5 × 30
d. An area to the southeast of the great bend of the Irrawaddy River at Amarapura, estimated as 10 × 50 km	NAI, HMF 157, no. 33	Burma, 1795	47.5 × 30
e. "Mhinelonghee Forest," north of an east-west stretch of the Salween River, perhaps in the Shan States	Royal Geographical Society, Burma S 29, no. 34. Also NAI, HMF 90, no. 11.	Copied in Calcutta in June 1871 from a "native map in the possession of Messrs. Todd Findlay & Co., Moulmein"	82.9 × 68.2

1. Hereafter abbreviated NAI, HMF.

(continued)

Orientation	Medium	Language and Script, with Description	Published Accounts
North (?)	Ink (?) on European paper	Burmese. A simple sketch map. Streams are shown by double lines, settlements (almost exclusively along the river) by small circles, district boundaries by dotted lines; boundary (stakes?) are indicated.	None known
West (?)	Black ink on European paper, two sheets pasted together	Burmese text with English translation added later. Titled "Rough sketch made by a forester during a discussion of some of the other maps forwarded with this. It shows the route from Paphoon to Zimmay (original)." ("Other maps" are presumably items j and k of appendix 18.2.) Rivers, three towns (in squares), two other localities (in ovals), and a trail (dashed line) are depicted.	None known
East	Brown ink and brown, blue, and yellow watercolor on paper	See text and figure 18.29	None known
Varies; features point away from the Irrawaddy	White ink and red chalk on folding black <i>parabaik</i>	Burmese. See text and figure 18.32. Abundant detail in addition to telegraph line itself, such as pagodas and other prominent buildings along the route, drainage levees along the Irrawaddy, and hills distant from Irrawaddy.	None known

PRIMARILY RURAL LOCALITIES

Orientation	Medium	Language and Script, with Description	Published Accounts
North	Ink on European paper	Burmese translated into English. Emphasis is on settlement. Towns are shown by squares and named; a great many villages are shown by circles and not named. Pagodas, rivers, lakes (including two large ones in the northwest), and hill ranges are depicted.	None known
North	Ink on European paper	Burmese translated into English. Emphasis is on travel times between settlements.	None known
North	Ink on European paper	Burmese translated into English. Emphasis is on travel times between settlements.	None known
North	Ink on European paper	Burmese translated into English. Emphasis is on drainage pattern. What appear to be some remarkable examples of stream capture are depicted. Western escarpment of Shan Plateau is shown as a range of hills.	None known
North	Black ink on European paper	Burmese. Individual portions of the forest are named. Rivers very prominently shown by double lines up to 4.5 cm apart. Rocky barrier in river pictographically shown. Mountains individually depicted (no two alike). One settlement has individual houses on piles shown in a ring in frontal elevation.	None known

Area Covered	Place Where Map Is Held, Accession Number	Provenance and Date	Dimensions (cm) (h × w)
f (i-iv). Several villages, location not determined	Rangoon University Library, MS. 9108	Upper Burma, late nineteenth century, presumably pre-1885	(i) 52 × 81.6; (ii) 26.5 × 52; (iii) 52 × 141.5; (iv) 52 × 61. Each pleat of the <i>parabaik</i> measures 52 × 20.5.
g. A portion of Shwebo District in Upper Burma	Not known	Burma, 1881; map was executed on the order of King Thitand	Scale is four times that of reproduction in source cited
h. A portion of Kyaukse District in Upper Burma	Not known	Burma, presumably ca. 1881 by association with g	Not known

(continued)

Orientation	Medium	Language and Script, with Description	Published Accounts
East on i, ii, iv; North on iii. Cardinal directions are marked on the edges of each map.	Red, two greens, brown, blue, yellow, and white watercolor, plus ink, on <i>parabaik</i>	Burmese. See figure 18.33 and text. These are essentially cadastral maps relating to the lands in several villages that were inherited by a minister, Mahamingyaw Raza, who presumably ordered the survey from which the maps were made. Since map iv is clearly not finished, one cannot be sure about the total area over which the survey was intended to extend; but six empty pleats in the <i>parabaik</i> suggests that the survey was less than three-fourths complete. Notations on maps state which parcels of land belong to the minister and which to other persons. Numbers written in most fields indicate how many bundles of rice could be planted there, while other fields are identified as seedling nurseries. Field boundaries are prominently depicted in green, but in some large fields a note states that individual divisions are not shown. Fields devoted to crops other than rice are noted. Distinctive signs exist for earth embankments, tanks and ponds, roads, etc. Built-up areas of villages are depicted by a few houses, more or less realistically drawn in oblique perspective. A great variety of vegetation, including palms, broadleaf trees, tall herbaceous plants, etc., is shown over many parts of the maps. A naturalistically rendered hill range forms the northern margin of map iii.	None known
Not known	<i>Parabaik</i> ; media otherwise not known	Burmese. "It shows the irrigation system of the Shwebo Myinnè [modern equivalent unknown] the Ma embankment and the Mahananda Tank." The original gives the names of some eighty pipes. It also shows villages and village jurisdictions.	A. Williamson, comp., <i>Burma Gazetteer, Shwebo District</i> , vol. A (Rangoon: Superintendent, Government Printing and Stationery, 1929), reference on 54 and copy of map in cover pocket.
Not known	<i>Parabaik</i> ; media otherwise not known	Burmese. Presumably similar to g.	Ralph Neild, H. F. Searle, and J. A. Steward, <i>Burma Gazetteer, Kyaukse District</i> , vol. A (Rangoon: Government Printing and Stationery, 1925), reference to irrigation technology (pre-British) on 72-74.

Area Covered	Place Where Map Is Held, Accession Number	Provenance and Date	Dimensions (cm) (h × w)
i. A small rural area, presumably in Upper Burma	Collection of U Maung Maung Tin, Mandalay	Burma, pre-1885	Not available
j. A part of Yesagyo District of Upper Burma astride the Chindwin River not far from its confluence with the Irrawaddy	Collection of U Maung Maung Tin, Mandalay	Burma, probably latter half of the nineteenth century	Approximately 93 × 105

APPENDIX 18.5 BURMESE MAPS OF

Area Covered	Place Where Map Is Held, Accession Number	Provenance and Date	Dimensions (cm) (h × w)
a. The former Thai capital of Ayutthaya	National Archives, Rangoon	Burma, ca. 1767	Approximately 87.6 × 356; map consists of twenty panels, each measuring 87.6 × 17.8 cm
b. Environs of Pagan	British Library, Oriental Manuscripts and Printed Books, Add. MS. 18069	Burma, pre-1850, since it was acquired by the British Library in February of that year	One dimension is 44 cm, the other is not known
c. Amarapura and environs, including Sagaing and outskirts of Mandalay	Original held by Than Tun, Tokyo University. Copy is at Taung Lay None monastery, Amarapura.	Amarapura, ca. 1850 for original; copy from 1970s, hand drawn and colored by six monks	93.7 × 105.7 for copy (and presumably also for original)
d. Amarapura and environs, about 9 × 6 km	Original is said to be in London, but its present location is not known. A duplicate was sent from London by U Tet Htut to U Maung Maung Tin in Mandalay in 1962.	Allegedly eighteenth century, but more likely mid-nineteenth century (Amarapura was the capital of Burma from 1783 to 1823 and from 1837 to 1857)	51.4 × 48.9

(continued)

Orientation	Medium	Language and Script, with Description	Published Accounts
Not known	White and various colors, including red, on black <i>parabaik</i>	Burmese. Map bears inscription, "Notes of the Surveyor Nga Thein," in Burmese. It is essentially cadastral and shows lands distributed to the royal prince, princess, and officials; notes grain and vegetable crops grown on same; and indicates fields growing two or more crops per year. Field boundaries are shown by white lines punctuated with red dots. What appear to be a reservoir, canals, roads, and a range of hills are also shown.	None known
East	Painted black, red, and blue-green on cloth	Burmese. Rather large scale. Several rivers shown, in varying widths, in blue-green. Same color used for some isolated, forested hills in northeast corner of the map. Nearly sixty villages are named within red rectangles. Script in black.	None known

PRIMARILY URBAN LOCALITIES

Orientation	Medium	Language and Script, with Description	Published Accounts
Not known	Painted in numerous colors and black ink on white <i>parabaik</i>	Burmese. See figure 18.38 and text. The ornateness of the illustration on this map belies its essentially military intelligence function.	None known
Not known	White steatite pencil on black <i>parabaik</i> of forty folds, each measuring 44 × 17 cm	Burmese; captions in English added to one of the three maps that appear on this <i>parabaik</i> manuscript. The largest is of Pagan, showing the city's many temples and the Irrawaddy River for some distance north and south of the city. There are two other small sketch maps of Pagan, but their content has not been ascertained.	None known
West	Original was on <i>parabaik</i> with four panels, presumably executed in ink and paint. Copy is on two pieces of European paper pasted together, executed in black, red, blue, violet, brown, and green felt-tipped pens.	Burmese. Features relating to urban settlement in red. These include the old royal city, its walls, palace, and streets; woods and hamlets outside the city, with hamlet names in black or blue oval cartouches; monasteries and pagodas in brown; rivers, canals, ditches, areas of periodic inundation, and two wooden causeways in blue; vegetation, in various forms, naturalistically drawn in frontal elevation in green and violet; text in black. Forested range of Sagaing Hills, shown in frontal elevation near top (western) edge of map, with clouds in sky just beyond (rendered in a Tibetan style). Colors are said to reflect those of the original.	None known
West	Painted in red, blue, two greens, yellow, and pink, plus ink, on white <i>parabaik</i>	Burmese. The description for c is broadly applicable to this map. Among the differences are that here some hamlets are named within oval cartouches, while others are given irregular, though more or less ovoid, shapes; the Sagaing Hills are shown with less forest cover and often with pagodas on the summit, and a side-wheeler steamboat appears in the Irrawaddy River (if this last feature appeared in the original, that would rule out any date before the mid-nineteenth century).	None known

Area Covered	Place Where Map Is Held, Accession Number	Provenance and Date	Dimensions (cm) (h × w)
e. Mandalay	Burmese Department, University of Mandalay	Amarapura or Mandalay, ca. 1853	Not available
f. Mandalay and its environs, an area about 43 × 27 km	Collection of U Maung Maung Tin, Mandalay; previously held in Sagaing Sin Nin monastery (in the town of Sagaing?)	Mandalay, ca. 1856	Approximately 108 × 54
g. Mandalay and small area to west and south, approximately 18 × 21 km	Pagan Atwin Wan monastery in Mandalay; notes based on a copy held by U Maung Maung Tin, Mandalay	Mandalay, between 1857 and 1866	Approximately 71 × 102
h. Mandalay and its environs, including Amarapura and Ava	Photostat negative at the Library of Congress, Burma, n.d., 1: --. Location of original not known.	Presumably in reign of King Mindon, 1853–78, after he established the capital at Mandalay in 1857	43 × 56
i. A portion of Mandalay said to measure about 890 × 830 m, including the king's apartments within the wooden stockade inside the fort	Location of original not known (said to be in possession of U Maung Maung Kyaw); copy was made by U Maung Maung Tin, Mandalay	Burma; between 1857 and 1885, probably in latter half of that period	Approximately 76 × 56

(continued)

Orientation	Medium	Language and Script, with Description	Published Accounts
Not available	Not available	Burmese. Said to be a development plan.	U Maung Maung Tin and Thomas Owen Morris, "Mindon Min's Development Plan for the Mandalay Area," <i>Journal of the Burma Research Society</i> 49, no. 1 (1966): 29-34 with two maps.
East	Painted in white, green, yellow, and red on black <i>parabaik</i>	Burmese. Map titled "Map of the Boundaries of the Royal City." Seems to have been intended in part for planning. Few details of the urbanized area are provided, but names relative to the royal gardens are given. There are numerous details of hill features (all shown in frontal elevation) and natural and artificial drainage. About fifteen pagodas are shown, all in frontal elevation, and also several monasteries.	Than Tun, "Mandalay Maps," <i>Papers of the Upper Burma Writers' Society</i> , 1966; I have been unable to locate this reference.
East	<i>Parabaik</i> , details painted in blue, red, and yellow, text and outlines in ink	Burmese. Emphasis is on the street plan and different quarters of the city; quarters of distinguished people are named. Various channels of the Irrawaddy are shown very naturalistically and in considerable detail. The Sagaing Hills to the west are shown in frontal elevation.	None known
East	Based on the translation of the map legend, the original was in two yellows, red, and blue (and possibly other colors), probably a mixture of ink and paint on paper	Burmese. Very detailed map, essentially cadastral in nature. Drawn on graticule of squares 7.5 mm on a side. General layout of city and palace compound therein with wide surrounding areas, within which are hundreds of uniformly small circles, each with an adjacent name, presumably the owner of the field within which the circle lies. The legend states that one type of yellow indicates fields owned by the king, another yellow field, owned by civil servants, red "inherited" fields, and blue "private" fields. Roads are indicated by dotted lines; drainage is shown in detail, with streams of varying width; hill ranges are depicted naturalistically, but all in uniform height, as if seen in frontal elevation. Other map features include areas of clustered rural settlement, numerous pagodas (in frontal elevation), what might be monasteries (in oblique pictorial perspective), groves of trees (in frontal elevation), irrigation tanks, etc.	None known
Not known	Copy appears to be in black ink on European paper. Media of original, drawn on white <i>parabaik</i> , not known.	Burmese. See text and figure 18.40. Features shown include wooden stockade, guard posts, barracks, armory, elephant shed, carriage shed, official apartments, water palace, apartment for storing presents (?), servants' house, kitchen, monastery, rest house for <i>nats</i> (Burmese demigods), tower for relic of Buddha's tooth, clock tower, mint, swimming bath, and gardens.	None known

Area Covered	Place Where Map Is Held, Accession Number	Provenance and Date	Dimensions (cm) (h × w)
j. Eastern and southern sides of Mandalay; covers an area of about 6.5 × 5 km	Collection of U Maung Maung Tin, Mandalay; obtained from Lone Taw monastery in the western part of the city	Mandalay, between 1859 and 1885	Approximately 71.5 × 48.5
k. A section of northeastern Mandalay, about 9.5 × 3.5 km	National Library and Museum, Mandalay, acc. no. 143, 25.5–60	Presumably same as j	Approximately 72.5 × 125
l. Plan of Sedawgyi Dam at Lone Taw in western Mandalay	Collection of U Maung Maung Tin, Mandalay; obtained from Lone Taw monastery	Presumably same as j	Approximately 43 × 95
m. Chiang Mai (“Zimmay”) and its approaches	National Archives of India, New Delhi, Historical Map fol. 90, no. 17. Copy at the Royal Geographical Society, Thailand S/S2 no. 39.	Northern Thailand or Shan States, 1870, by Sa-ya-pay	27.5 × 20.8
n. A small area east of Mandalay near Yankin Hill	Collection of U Maung Maung Tin, Mandalay	Upper Burma, 1876 (?), by the surveyor Nga Thein	Approximately 42.5 × 60
o. An area on the northern outskirts of Mandalay, an area of about 1.3 × 0.5 km	Collection of U Maung Maung Tin, Mandalay	Mandalay, late nineteenth century	Approximately 114 × 61
p. Golden Temple and environs, Mandalay, including a portion of Mandalay Hill	Not known	Presumably Mandalay, late nineteenth century	Not known

(continued)

Orientation	Medium	Language and Script, with Description	Published Accounts
Not known	Painted in yellow, red, and white on black <i>parabaik</i> of four panels	Burmese. Described as “Drainage Plan of Eastern and Southern Side of the Royal City.” Features relate largely to what the description implies: streams, channels, drainage ditches, moat, and bridges. Other features include the outline of a fort, gateways, streets, and gardens.	None known
East	Painted in red, green, white, and yellow on black <i>parabaik</i>	Burmese. Appears to be related to engineering works in respect to drainage. Cartographic signs by and large duplicate those of j. One sign indicates “rod used for surveying.” A unique sign on this map is “structure for keeping inscription.”	None known
East	White talc and yellow paint on gridded black <i>parabaik</i> in six panels	Burmese. Very large-scale representation of the precinct of a dam showing adjacent physical features, partly in planimetric perspective (for drainage), partly in frontal elevation (hills and forest), and partly in oblique perspective (a single house).	None known
North	Blue pencil on European paper, with later addition in ink of English translation of text	Presumably Shan, with English translations subsequently added. A simple outline map of the town, its major urban roads, the palace, six exterior and two interior city gates, and three approach roads.	None known
East	Painted in white, red, green, and brown on gridded black <i>parabaik</i>	Burmese. Described as “Note of the Surveyor Nga Thein.” Very likely a map of some royal estate, since it includes the lands surrounding a palace. Other features include villages, religious edifices, roads, a canal, streams, and hills.	None known
East	White chalk on black <i>parabaik</i>	Burmese. See text and figure 18.41. Includes carefully rendered architectural plans of Kyauktawgyi Pagoda, Sandamuni Pagoda, Pathana Sima (ordination hall), and other religious and royal edifices near the southern base of Mandalay Hill.	None known
Varies	Not known; appears to be painted and drawn in ink on white <i>parabaik</i> ; number of panels not known	Burmese. Only about one-fourth of the palace is shown in the published illustration cited. A mixture of a planimetric perspective to show general layout of temple and frontal perspectives to show gates, towers, specific architectural features, and Mandalay Hill.	Barbara Nimri Aziz, “Maps and the Mind,” <i>Human Nature</i> 1, no. 8 (1987): 50–59, illustration on 58–59.