

# Preface

One objective of *The History of Cartography* is to redefine and expand the canon of early maps. The corpus of maps (or map types) described in the previous literature on the history of cartography appears to us today unduly restricted and unnecessarily exclusive. It was based on assumptions that narrowed its scope and rendered it unrepresentative of the richness of mapping across the historical civilizations of the world as a whole. “Maps” meant, in that literature, primarily terrestrial maps, so that star maps, cosmographical maps, and imagined maps, for example, were generally excluded as ways of seeing the world. With the notable exception of the inclusion of China, cartographic history was pictured as largely a Greco-Roman invention or was narrated, for the later periods (the sixteenth century onward), as an accompaniment to the “miracle” of expanding European technology. Even within the core of accredited cartography, pride of place was given to the history of mathematically constructed—“scientific”—maps, so that the history of maps could culminate in the “scale” maps of the modern age and fit the notion of “progress” from a primitive past to a state of modern enlightenment.

In volume 1 we adopted a new working definition of “map” to help in recasting this history. Maps, we suggested in the Preface, “are graphic representations that facilitate a spatial understanding of things, concepts, conditions, processes, or events in the human world.”<sup>1</sup> Our strategy was to bring into the history of cartography maps that had previously been ignored or relegated to the margins of the subject. Volume 1, relating to the early cartography of Europe and the Mediterranean to A.D. 1500, vindicated the expansion of the canon in this way. We were soon to discover that such an open definition was even more desirable for volume 2 if we were to completely redescribe the history of cartography in non-Western cultures, as was our aim. The present book brings together the full range of maps produced in traditional Islamic and South Asian societies from late prehistory onward. It is salutary to compare its length with the number of pages Leo Bagrow devoted to the same areas: six to Islamic cartography, half a page each to India and Persia, and three to Ottoman cartography.<sup>2</sup> The image Bagrow gives is of the Western collector adding a few

exotic specimens to a cabinet of curiosities. But even in narrative discussions of the history of cartography, such as those of Lloyd Brown and Gerald Crone, and notwithstanding the universal ring of their titles, the non-European mapping traditions were largely ignored.<sup>3</sup> Such an approach in the standard texts taught several generations of students that the history of cartography was largely a Western achievement and part of the history of European science. Quoting an Islamic historian of science, it was as if the descent of maps had passed “directly from the Greco-Roman period to the European Renaissance as if nothing took place in the history of science and technology from the fall of Rome in the late fifth century to the fall of Constantinople in the fifteenth.”<sup>4</sup>

That these silences were ill founded was revealed as we came to plan the *History* in detail. In the original general outline sketched in the 1970s, our intention was to include the “foundations” of world cartography, down to A.D. 1500 in both Western and non-Western societies, in a single “archaic” first volume. This was to describe not only the maps of prehistoric, ancient, and medieval Europe and the Mediterranean and the premodern cartographies of the Islamic, Indic, and East Asian realms, but

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1. J. B. Harley and David Woodward, eds., *The History of Cartography* (Chicago: University of Chicago Press, 1987–), 1:xvi.

2. Leo Bagrow, *History of Cartography*, rev. and enl. R. A. Skelton, trans. D. L. Paisey (Cambridge: Harvard University Press; London: C. A. Watts, 1964; reprinted and enlarged, Chicago: Precedent, 1985), 53–56, 207–8, 209–11.

3. Lloyd A. Brown, *The Story of Maps* (Boston: Little, Brown, 1949; reprinted New York: Dover, 1979); Gerald R. Crone, *Maps and Their Makers: An Introduction to the History of Cartography*, 5th ed. (Folkestone, Kent: Dawson; Hamden, Conn.: Archon Books, 1978). As if to symbolize this neglect, in Brown’s book there is the curious inclusion as the frontispiece of a redrawn map from the *Kitāb-i bahriye* from the Ottoman period, but neither the map nor its cultural origin in the Islamic world is discussed in the text.

4. Sami K. Hamarneh, “An Editorial: Arabic-Islamic Science and Technology,” *Journal for the History of Arabic Science* 1 (1977): 3–7, esp. 7. See also Roshdi Rashed, “Science as a Western Phenomenon,” *Fundamenta Scientiae* 1 (1980): 7–21. For cartography, the more specific comments of Fuat Sezgin, *The Contribution of the Arabic-Islamic Geographers to the Formation of the World Map* (Frankfurt: Institut für Geschichte der Arabisch-Islamischen Wissenschaften, 1987), are relevant.

also those of “primitive” peoples in different parts of the world in the phase of their encounter with European colonization. Logistic and intellectual reasons, however, led us to abandon that embryonic plan.

The first problem arose from the size and complexity of the non-Western mapping traditions. The more we looked, the more substantial we found them, not only in the societies of Islam and Asia but also within other major regions such as the Americas and the Pacific before European colonization. As our preliminary explorations continued—and as we recruited specialist authors and they reported on their work—it became abundantly clear that a credible cartography of the premodern world could not be accommodated within a single volume. Hence in 1982 we decided to defer the treatment of non-European mapping outside the Middle East and Asia to later volumes of the *History*<sup>5</sup> and to devote a whole volume (volume 2) specifically to the maps created by the Islamic and Asian societies. We continued to believe naively that a single “Asian” volume would accommodate a synthesis of secondary literature from which observations could be made about the gaps in available information and directions for future research. Indeed, work on the several regional sections of this volume started simultaneously. Once again, however, as our experts reviewed the non-Western literature for an Asian history of maps and searched out and examined the maps themselves, it at last became clear how seriously we had underestimated the sheer volume of the relevant corpora of material. In 1989, with almost all the chapters already in hand, we made the decision to split volume 2 into two books. The present book thus deals with the traditional Islamic and South Asian societies; volume 2, book 2 will be devoted to traditional East and Southeast Asian cartography. The diversity of material in both books spans a wide spectrum of historical and linguistic contexts and has demanded an extended editorial effort. It has also further encroached on the forbearance of our potential readers and sponsors in the process of preparing the text for publication.

There was also an intellectual reason for splitting volume 2 into two books and allocating a separate tome to Islamic and South Asian cartography. Our early reconnaissance of the literature revealed not only the degree to which Islamic and Asian cartography had been neglected but also the way an epistemological veil had inhibited our understanding of mapping within these cultures *on their own terms*. The traditional approach in histories of cartography had been to evaluate “Arabic” or “Indian” mapping against a Western yardstick of technical innovation. This perception of the relative importance of *our* history and *their* history<sup>6</sup> put Asian maps on the periphery of European cartography. They emerged as abortive or deviant stems in the “mainstream” history

of maps. Thus it could be admitted that the Arabs and the Chinese had mapping traditions of their own, “but it was the European tradition which lay behind the geographical discoveries and the . . . maps of the sixteenth century, and thus came to form the basis of modern geography.”<sup>7</sup> A similar view permeates the cartographic historiography of the Islamic realm and South Asia.<sup>8</sup> As A. I. Sabra put it, there was a tendency to see Islamic science (and, we can add, cartography) as “merely a reflection, sometimes faded, sometimes bright or more or less altered, of earlier (mostly Greek) examples.”<sup>9</sup> The focus was on those early centers of the Islamic world most closely linked to Europe and the Mediterranean. Islamic cartography was thus interpreted either as an extension of Greek classical learning (especially of Ptolemy) or as a pathway along which the cartographic inheritance of Greece was transmitted before its eventual restoration in Renaissance Europe. The role of Islam in world cartography was seen as passive, preserving—along with Byzantium—an essentially Western legacy for the later cartographic dominance of Europe. No hint was given that this knowledge was “a phenomenon of Islamic civilization—a phenomenon which must be understood and explained in terms peculiar to that civilization.”<sup>10</sup>

The maps of South Asia lacked even the transmissional “utility” of Islamic scholarship for Western progress. Moreover, they were described from an external and uncomprehending viewpoint and accorded an even lower status in the hierarchy of cartographic development. As Susan Gole tells us, “The commonly held view [was] that there were no indigenous maps made in India except the cosmographies.”<sup>11</sup> Judging South Asian maps in this way, by Western preconceptions, encouraged the idea that any styles of mapmaking that did not conform to recognized patterns were to be “dismissed as being of no value.” Maps from South Asia were “stored in libraries and museums as quaint curiosities.”<sup>12</sup>

5. To volume 3, on cartography in the Renaissance, and volume 4, on cartography in the Enlightenment, where they will be treated both as cartographic cultures in their own right and in terms of the encounter with European colonial societies in different world regions and historical periods.

6. Bernard Lewis, “Other People’s History,” *American Scholar* 59, no. 3 (1990): 397–405, esp. 397.

7. P. D. A. Harvey, *The History of Topographical Maps: Symbols, Pictures and Surveys* (London: Thames and Hudson, 1980), 12.

8. See below, pp. 8–10 and 296–302.

9. A. I. Sabra, “The Appropriation and Subsequent Naturalization of Greek Science in Medieval Islam: A Preliminary Statement,” *History of Science* 25 (1987): 223–43, esp. 223.

10. Sabra, “Appropriation and Subsequent Naturalization,” 224 (note 9).

11. Susan Gole, *Indian Maps and Plans: From Earliest Times to the Advent of European Surveys* (New Delhi: Manohar, 1989), 11.

12. Gole, *Indian Maps and Plans*, 13 (note 11).

It was to redress some of the consequences of such attitudes that we decided to treat Islamic and South Asian mapping as distinct areas of cartographic knowledge. The decision was liberating. Once the Western yardstick was thrown out, a new potential to broaden the cartographic canon took shape. For this to happen, though, the transition from Eurocentric to more culturally sensitive interpretations had to be made and new assumptions espoused. Value judgments based on European paradigms had to be modified. For instance, it was no longer satisfactory to see the classical school of Islamic geography of the ninth and tenth centuries as a simple period of spectacular flowering before a long era of decline.<sup>13</sup> Terms such as “decline,” “stagnation,” and “decadence” convey judgments based on the notion of a “scientific revolution” in early modern Europe.<sup>14</sup> As Marshall Hodgson remarked, “Western scholars discuss cultural decline in Islam . . . without really proving that such decadence really existed, and without evaluating the great works of later periods.”<sup>15</sup> Such implicit judgments may explain the earlier neglect of cartography in the Ottoman period. By changing our cultural stance we have been able to add to this volume what we believe is the first systematic account of cartography in the premodern Ottoman Empire.<sup>16</sup>

The treatment of cosmographical maps in this book has also benefited from the shedding of Eurocentric attitudes. Our redefinition of cartography in volume 1 was specifically worded to include graphic representations of the human cosmos in the widest sense. Given the treatment of cosmography in that volume,<sup>17</sup> it would have been unthinkable to exclude from the present volume either the Islamic cosmographical diagrams or the cosmographical maps made by Buddhists, Hindus, and Jains in South Asia. Indeed, instead of omitting South Asian cosmographical maps on the grounds that they have already been treated extensively in works on Indian art and religion, or because they are in some way less than cartographic, we have emphasized them as the quintessential expression of the mapping impulse in these societies. Recognizing them as maps in their own right, the author of the South Asian section has found no need to justify them by gratuitous measurement or to include them only because they “compensate” for the sparser record of terrestrial mapping in South Asia. Rather, they remind us that the study of early maps in non-Western societies cannot be confined to examples mirroring the familiar characteristics of European cartography. The treatment of cosmography in this book is central to our mission to move the history of cartography to accept maps of territories previously regarded as marginal to the accepted core of “scientific” cartography.

The satisfaction of seeing our authors enlarge the scope of the book is considerable, but our editorial attempts

to resolve other problems may have met with less success. Since the inception of the *History*, we have struggled to devise compatible geographical regions and historical periods so as to create a coherent framework for a study of cartographic change and its social interactions.<sup>18</sup> So vast is the canvas of the present book, however, that it has generated a series of special problems.

The basic framework for volume 2, book 1, is geographical. The Islamic heartland is treated separately from South Asia. The cultural distinctiveness of the two areas is also underpinned by long-established historical usage. The continent of “Asia”<sup>19</sup> is a European invention, and already in classical and medieval times it designated the lands to the east of Mesopotamia and Persia, though India was recognized as a separate cultural unit.<sup>20</sup> But this neat geographical-historical arrangement leaves a number of gaps in our treatment. One chronological problem is that the two sections, the Islamic world and South Asia, have different starting dates, partly because the maps of the earliest Mesopotamian and Egyptian civilizations, in view of their affinities with classical Europe and the societies of the Mediterranean, were dealt with in volume 1.<sup>21</sup> In this book the narrative is picked up with the expansion, from the seventh century onward, of the Islamic religion. For South Asia, however, we must go back to the late prehistoric period. Another untidiness is the way geographical regions do not match the changing map of cultural history. The modern term “Middle East”<sup>22</sup> does

13. See, for example, the remarks of George Sarton, “Arabic Science and Learning in the Fifteenth Century: Their Decadence and Fall,” in *Homenaje a Millás-Vallicrosa*, 2 vols. (Barcelona: Consejo Superior de Investigaciones Científicas, 1954–56), 2:303–24.

14. Sabra, “Appropriation and Subsequent Naturalization,” 238–42 (note 9).

15. Marshall G. S. Hodgson, “The Role of Islam in World History,” *International Journal of Middle East Studies* 1 (1970): 99–123, esp. 103.

16. See chaps. 10–12 and parts of chap. 14.

17. Harley and Woodward, *History of Cartography*, 1:85–92, 203–4, 261–63, 340 (note 1).

18. For a discussion of the overall framework of the *History*, see Harley and Woodward, *History of Cartography*, 1:xviii–xix (note 1).

19. Its geographical bounds as imposed by atlas or dictionary definition comprise the lands east of Hellespont and the Urals and south of the Caucasus Mountains. On the arbitrariness of the modern map for cultural history, see Marshall G. S. Hodgson, “The Interrelations of Societies in History,” *Comparative Studies in Society and History* 5 (1963): 227–50.

20. Donald F. Lach, *Asia in the Making of Europe*, 2 vols. in 5 (Chicago: University of Chicago Press, 1965–77), 1:335.

21. Harley and Woodward, *History of Cartography*, vol. 1, chaps. 6 and 7 (note 1).

22. The term Middle East was first used in 1902 by the American naval historian Alfred Thayer Mahan. See Bernard Lewis and P. M. Holt, eds., *Historians of the Middle East* (London: Oxford University Press, 1962), 1–3, for a discussion of the historical geography of regional nomenclature. See also the helpful discussion in Bernard Lewis, “The

not coincide with the areas—extending from a long-lived center of chartmaking in North Africa to the mapping of the Mughal Empire in northern India—where Islamic cartography flourished in various historical periods. A similar problem applies to the “cartographic region” of South Asia. Though this area formed the heartland for the development of the Buddhist world maps dealt with in this book, they later spread, in modified forms, to other regions of Southeast and East Asia and could have legitimately formed part of the subject matter of volume 2, book 2.

Coupled with the structural difficulties of trying to organize a balanced overview of Islamic cartography, there is the problem of unevenness of knowledge about mapmaking under the different Islamic empires—the Abbasid, the Safavid, the Mamluk, the Mughal, and the Ottoman—and the way these empires coincided (or failed to coincide) with the area’s linguistic geography. Not all Islamic texts including maps were written, or written about, in Arabic.<sup>23</sup> There is much relevant material in languages such as Syriac, Persian, and Turkish. Even so, the extent to which our authors have been able to reconstruct cartographic traditions across the Islamic world has varied, and though we offer relatively full descriptions of mapmaking under the Abbasid, Mughal, and Ottoman empires, evidence for Persian cartography and for some aspects of Muslim mapping in Spain before the *reconquista* remains much more elusive.

There are also differences in our academic starting points. For the history of Chinese cartography in book 2 of this volume, we can build on the synthesis by Joseph Needham and his associates.<sup>24</sup> In contrast, the single general reference work for Islamic cartography, *Mappae arabicae* by Konrad Miller,<sup>25</sup> is three-quarters of a century old. Hitherto the fullest up-to-date summary of Islamic cartography has been an article in an encyclopedia.<sup>26</sup> Many of the original texts of manuscript sources containing maps lack critical modern editions. Specialists in Islamic and South Asian studies point to large numbers of manuscripts that remain unpublished and even uncataloged. Our authors have drawn on some of these, but the discovery of new manuscript sources not only would add new detail but could revise some of the key issues raised in this book concerning cartographic transmission. For example, increasing attention is being paid to the astronomical and mathematical sciences of the Islamic world, and much of this work will bear on the mathematical aspects of map projections. Although we have attempted to inform readers of current research directions, even work in progress, there is no way we can be sure of incorporating it all.

In technical matters, we adopt what seems to be the consensus among specialists. For South Asia we have mainly used the Christian calendar. For the maps of the

Islamic world, however, we have provided both Islamic and Christian dates. In this way the Islamic sense of time is preserved. At the same time, comparisons can be made with Europe, particularly in the periods of most active interaction between Europe and regions of Islamic culture. A major problem—and, to us, new—has been the need to deal with phonetic languages, such as Arabic, and to pay particular attention to the transcription of all Asian languages. We have not attempted to reproduce Arabic characters but have adopted the Library of Congress transliteration system for Arabic and Persian. In a multi-author work, there is never full agreement on such a personal and idiosyncratic topic as transliteration, and this book has been no exception. The decision to use the Library of Congress system was based on two considerations. First, it was recommended by *The Chicago Manual of Style* as the most widely used system. Second, we felt that—while Arabists could work back to the original Arabic characters from any rational system (including that of the Library of Congress)—nonspecialists would find it easier to look up authors and titles of Arabic works in libraries using the Library of Congress system, which is commonly used for this purpose. We are well aware, however, that in our efforts to be consistent throughout the volume we have not succeeded in pleasing everyone. As a compromise, in the very few cases where the Library of Congress form is obviously counter to modern practice, we have provided the commonly known form. For decisions on when to use a transliteration of Ottoman as opposed to modern Turkish, we have relied on the judgment and experience of our individual authors, whose practices may differ. For all languages, lengthy “book” titles and personal names are usually given in full only on the first use, and subsequently we use an abbreviated form. Wherever possible, we have added a translation of the title.<sup>27</sup>

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Map of the Middle East: A Guide for the Perplexed,” *American Scholar* 58 (1989): 19–38.

23. It is wrong, therefore, to equate Islamic cartography exclusively with the Arabic-language areas as some authors have implied: Bagrow, *History of Cartography*, 53 (note 2), is misleading when he states of Islamic cartography that “all its cartographers wrote in Arabic.”

24. Joseph Needham, *Science and Civilisation in China* (Cambridge: Cambridge University Press, 1954–), esp. vol. 3, *Mathematics and the Sciences of the Heavens and the Earth* (1959); vol. 4, *Physics and Physical Technology* (pt. one: *Physics*, 1962; pt. three: *Civil Engineering and Nautics*, 1971).

25. Konrad Miller, *Mappae arabicae: Arabische Welt- und Länderkarten des 9.–13. Jahrhunderts*, 6 vols. (Stuttgart, 1926–31). Miller’s work also typifies the emphasis of many European Orientalists on the historical geography of the regions or in the reconstruction of their place-name nomenclature.

26. S. Maqbul Ahmad, “*Khariṭa*,” in *The Encyclopaedia of Islam*, new ed. (Leiden: E. J. Brill, 1960–), 4:1077–83.

27. On the grounds that they may contain substantive or allusive information relevant to our interpretation of the role of maps in these

That we were able to grapple at all with the problems involved in this work and later felt able to comment on some important interpretative issues in Islamic and South Asian cartography in our “Concluding Remarks” is largely owing to the scholarship of the specialist authors who have agreed to write on these subjects. In the fullest sense, this is their volume. We wish to acknowledge their patience during the decade it has taken for the text to come to fruition, and for the good grace with which they have accepted editorial intervention at various stages in the work. We are most deeply indebted to our two associate editors—Gerald Tibbetts and Joseph Schwartzberg—who became indispensable advisors as well as major authors. We know they have sacrificed other academic projects and personal opportunities to work with us for so long on the challenge of creating a new history. Equal thanks must be extended to Ahmet Karamustafa, our assistant editor, whose contribution to the book as a whole has been far greater than that title implies. Dr. Karamustafa began work on the Islamic section as a post-doctoral fellow at the University of Exeter and, since his appointment to the Department of Asian and Near Eastern Languages and Literature of Washington University in Saint Louis, has played a key role in introducing us to new authors and to developments in Islamic scholarship.

At various stages in the work we have also benefited enormously from the advice of a circle of specialist scholars to whom we were initially outsiders and who may have wondered whether there would ever be any product from our persistent inquiries. These individuals have generously found time to recommend new authors and, in the later stages of the work, to give critical readings of several chapters. In the initial planning of the book we received useful help on the Islamic section from William C. Brice. More recently Susan Gole has shared her extensive knowledge of Indian mapping and has made available illustrations that otherwise would have remained unobtainable. In addition to the advice of the four anonymous readers of the University of Chicago Press (two for the Islamic section and two for the South Asian), comments on particular sections by Owen Gingerich, Thomas Goodrich, Abbas Hamdani, Paul Kunitzsch, David Pingree, and Jamil Ragep have been particularly valuable. For occasional, but nonetheless essential, advice we are also in the debt of C. F. Beckingham, Simon Digby, Edward S. Kennedy, Roshdi Rashed, and Fuat Sezgin.

As the History of Cartography project has continued to grow in size and complexity—with a further three volumes already in various advanced stages of commissioning and preparation—we have become even more dependent upon the organizations, foundations, and individuals who have provided the financial support necessary for a work on this scale. We coeditors particularly wish to thank our own academic departments and the graduate

schools of the University of Wisconsin at Madison and Milwaukee for their long-term institutional support of the project in both a material and a personal sense. We are also grateful for the generous grants received for this book from foundations, institutions, and individuals who are fully acknowledged on page vi. In addition, we would like to thank Jack Monckton and Kenneth Nebenzahl for their advice on fund-raising and Richard Arkway, Martayan Lan, Inc., George Ritzlin, Thomas Suarez, and Martin Torodash—map dealers who helped by publishing our call for financial support in their catalogs.

It is only this overall level of support that has enabled us to have the privilege of working with a highly qualified staff for the essential yet time-consuming editorial tasks of bringing such a book to press. All volumes of the *History* are intended to provide a basic work of reference for scholars and other readers across the spectrum of the relevant disciplines. As in volume 1, we have paid particular attention to creating a bibliographical apparatus that is full and accurate. In controlling the day-to-day operations of this work—and in liaison with the University of Chicago Press and with authors, advisors, and editors—our managing editor Jude Leimer has been the secure anchor of the whole editorial process. It is largely through her determination, organizational ability, and bibliographical flair in tracking down arcane references that we have been able to move forward. In his capacity as research associate, Kevin Kaufman has also shown great initiative and scholarship and has dealt imaginatively with a wide range of research problems and with drafting new material where gaps in the text needed to be plugged. Paula Rebert has most capably checked many of the references in this book, and for additional research help we are grateful to Matthew Edney and David Tilton. Deniz Balgamis, Judith Benade, Kathryn Kueny, and Michael Solot took time during their trips abroad to bring us crucial materials from Turkey, India, and Egypt. Ms. Balgamis and Hichem Sellami have also helped with translations of Turkish and Arabic texts. Cartography is nothing if not a visual language; a major feature of the book is its attempt to include a representative set of illustrations. In this vital editorial task Christina Dando and Guntram Herb have tenaciously pursued pictures and cleared permissions from a large number of distant libraries. The line drawings were skillfully prepared by the University of Wisconsin Cartographic Laboratory in the Department of Geography at Madison.

Anyone who has experienced the problems of managing a small office within a large organization will also

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non-Western societies. G. M. Wickens, “Notional Significance in Conventional Arabic ‘Book’ Titles: Some Unregarded Potentialities,” in *The Islamic World: From Classical to Modern Times: Essays in Honor of Bernard Lewis*, ed. Clifford Edmund Bosworth et al. (Princeton, N.J.: Darwin Press, 1989), 369–88.

appreciate how essential Susan MacKerer has become as administrator for the Project as a whole. She always works with efficiency and good humor on vital tasks that run from the diplomatic to the technical. In the Milwaukee office of the Project the editorial effort would similarly have soon come to a halt without the absolutely crucial support of Ellen Hanlon. Mark Warhus, coordinator of the Office for Map History of the American Geographical Society Collection, has also given much logistic help to our endeavor, and in the Madison office, we received essential secretarial and library help from Ellen Bassett, Karen Beidel, and Judith Gunn.

We are delighted to have the opportunity to thank several people at the University of Chicago Press. Penelope Kaiserlian, associate director, has promptly and sympathetically smoothed out any administrative problems; Alice Bennett, copy editor par excellence, has improved the consistency and efficiency of the text; and the apt design and versatile layout created by Robert Williams have proved a match for the complexities of the text, tables, and illustrations.

As our momentum increases and at this stage in the

life of the Project as a whole, the professional and personal debts of the two coeditors are mounting too rapidly to enumerate here. Some of the authors with whom we worked on volume 1—notably Tony Campbell, Oswald Dilke, and Catherine Delano Smith—have continued to offer us sound advice, while our former editorial colleague Anne Godlewska continues to keep a watchful eye on our progress from Canada. At a personal level, we owe a debt to our families in England and Wisconsin that cannot be measured. Their support, tolerance, and love has been unsurpassed, and we fear that at times we must have sorely tested their patience as the *History* has taken up more and more of our energies. Rosalind Woodward has played a key role in the internal social life of the Project and in frequently bringing the external perspective of common sense to organizational problems.

With so much given to us from all quarters, readers might begin to wonder how there could be any blemishes at all in the book. For the fact that there are many, we both take full responsibility. We are conscious that in the end this is only a small first step in writing the non-Western history of cartography.