Fra Mauro's World Map (c. 1448-1449): Mapping, Mediation and the Indian Ocean World

Marianne O'Doherty – University of Southampton

Begun around 1448 and completed some time before 1459, Fra Mauro's World map, illustrated in the figure accompanying this article, is a beautiful object. Its designer, Fra Mauro, was an inmate of the Camaldulian monastery of San Michele on Murano, and worked on the map over a period of some years with the assistance of a workshop including fellow-monks and the Venetian galley captain and cartographer, Andrea Bianco. Around 4 m. square and mounted on boards that enable it to be hung on a wall, the map was clearly intended for display. Beyond this, however, its purposes are obscure; on the one hand an inscription on its face declares that it was created 'a contemplation de questa Illustrissima Signoria' (Fra Mauro's World Map, ed. Falchetta, #2834, p. 699), implying a close connection with the Venetian state. On the other hand, there is no record of the map ever hanging anywhere other than the church and hall (aula) of the monastery where it was produced (Fra Mauro, pp. 143-44). The map as a whole is fascinating, and has been an object both of wonder and of scholarship for historians of cartography, exploration and culture for hundreds of years. Recently, Piero Falchetta's superb edition and English translation of its c. 3000 Venetian legends, published with copious notes and CD-Rom with high-resolution reproduction of map has made it accessible, for the first time, to a wider audience of students and non-specialists.

In tandem with Falchetta's recent, long-term project of editing the map, its representation of the Indian Ocean world has attracted particular scholarly attention (Cattaneo, 2004; Falchetta 2004). Fra Mauro's delineation of the Indian Ocean region

is unusually detailed; even a brief glance at the map shows the Ocean between Africa and China (top; the map is oriented, like many Arab maps of the period, to the south) dominating a large swathe of the map and dwarfing the Mediterranean towards which it reaches out. In his representation of the region, Fra Mauro clearly capitalised on Venice's position as a hub in the exchange both of goods and knowledge between East and West (Beck, Manoussacas and Pertusi, 1973). A network of linked legends spread out across the ocean's surface traces the routes of spices, luxury goods, and people between Indonesia and China, between China and Africa, between Arabia and South Asia, between the Indian Ocean World and the Black Sea and, through the Black Sea, to Europe. However, the map does not merely reflect Western European conceptions of the Indian Ocean world and of its own relationship with that world at the moment of the map's production. Like all maps, this map aims not simply to represent space, but to intervene in and manipulate its political and socio-spatial world. Maps map, according to Denis Cosgrove, worlds 'material or immaterial, actual or desired, whole or part, [...] expressed, remembered, or projected'; not just the 'spatial embodiment of knowledge', and in so doing are also 'a stimulus to further cognitive engagements', engagements that can take many forms (Cosgrove, 1999, p. 2). Certainly, the world projected in this map, and the activities it stimulated are, potentially, particularly significant: in 1459, records show that a copy of it — now lost — was made and sent to Alphonso V of Portugal (Cattaneo, 2003), at the time sponsoring the series of voyages down the western coast of Africa that would eventually take Bartolomeu Dias and Vasco da Gama into the Indian Ocean. An understanding of this map is therefore crucial to the wider project of understanding the historical development of relationships between Western Europe the Indian Ocean world.

But the significance of this cultural artefact does not begin and end with its position in a historical process of transition from what Chaudhuri has identified as a period of regional segmentation of trade between the Western Indian Ocean and the South China Sea to a period of European dominance in the Indian Ocean world (Chaudhuri, pp. 102-03). The map is a deeply complex artefact that is positioned intentionally by its cartographer in the role of mediator between Western Europe and the Indian Ocean world; between oral and written systems of knowledge; between reality and representation, and, temporally, between 'then' and 'now'. It is this mediating position and the cartographer's exploitation of it that forms the focus of this article. Following a discussion the detailed graphic and textual representation of the Indian Ocean world that the map lays out for 'the contemplation' of the Venetian state, I will explore this map's position as a spatial and temporal junction, filtering information between past, present and future and between east and west, and so working to shape the world that it appears to represent.

Fra Mauro's world map is the first surviving European map to represent the Indian Ocean world in detail. However, as cartographic historian Angelo Cattaneo has pointed out, the map's major cartographic innovation is not so much in the detail of its representation as in its assertion of the navigability and habitability of the oceanic space between east Africa and Southern China (Cattaneo, 2004, p. 210). One might, however, go further than this; on the map, the Indian Ocean world comes across as positively crowded; populous and well-traversed, it is a functioning cog in the economic machinery of the world. Indeed, in places, the crowdedness of the region outstrips the representative capacity of the map. 'In this sea' he says of the Indian Ocean, 'there are many islands that cannot be specially noted because of lack of space, but all are inhabited and very fertile in various precious spices and many other new

things' (#594, pp. 302-03). Images of islands, rigged ships, and legends crowd the region, as do the witnesses that clamour to support Fra Mauro's assertions about it: '[E]veryone' — the implication being that there are too many to name — who sails in the Sea of India says that one loses sight of the Pole Star at Cape Chomari (#282, pp. 240-41). Legends trace the routes of goods – notably spices – through the three major trade circuits of the pre-modern Indian Ocean (more or less corresponding with, in modern terms, the Arabian Sea, the Bay of Bengal, and the South China Sea). In one such legend, Indonesia, identified rather confusingly on the map as two islands called Greater and Lesser Java, is identified as housing a regional entrepôt crucial in trade between Eastern Indian Ocean and the South China Sea. Goods are taken from 'the eight islands, in which grow fine spices' around Lesser Java to Greater Java possibly an amalgamation of Java and Sumatra — from which 'one part [is sent] to Caiton and Cathay, another to Hormuz, Cide [Jidda] and Mecca, by the Sea of India, and the third is sent northwards across the Sea of Cathay'. (#589, pp. 302-03; see Falchetta 2004 on the history of this cartographic confusion). Another inscription, this time at Hormuz, on the Persian Gulf, follows the same chain of people and goods to the Black Sea, the doorstep of the Mediterranean world (#348, p. 254). The ocean represented here is not just navigable: it is overlaid with a network of intersecting trade routes, routes that bear its influence deep into continental Asia and Western Europe

The map represents the Indian Ocean, moreover, as not just internally navigable, but as interconnecting with the Atlantic. Subsequent historical events and developments in cartography have led us, of course, to take the interconnectedness between Indian and Atlantic oceans for granted, a position that makes it easy to underestimate the immense rhetorical effort that Fra Mauro puts into persuading the

map's readers of this connection. The possibility of navigation between Europe and Asia tended to be dismissed by late-medieval geographers and cartographers for a range of not always consistent reasons. Claudius Ptolemy, whose first-century *Geographia* achieved influence on contemporary as well as historical geography across Europe, particularly after its translation into Latin in 1406 (Dalché, 2007), disrupted the common late-medieval world view of the habitable world as a three-part *orbis terrarum* (circle of lands or *oikoumene*) surrounded and bordered by an ocean that becomes non-navigable and uninhabitable in the south because of the excessive heat of the so-called torrid zone (Randles, 1994). In its place, however, Ptolemy's *Geographia* set a detailed and, as it turned out, pervasive image of an Indian Ocean bordered by a *terra Incognita* that linked Africa and the South East Asian promontory of Cattigara (see fig. 2). In other words, the Indian Ocean after Ptolemy's re-introduction remained equally isolated, but in this case because landlocked.

Against these two conceptions of an Indian Ocean isolated by geography, hydrography, or climate, Fra Mauro delineates one reached in the past and reachable again in the future:

Some authors write that the Sea of India is enclosed like a pond and does not communicate with the ocean. However, Solinus claims that it is itself part of the ocean and that it is navigable in the southern and south-western parts. And I myself say that some ships have sailed it along that route. This is confirmed by Pliny when he says that in his day two ships loaded with spices coming from the Sea of Arabia sailed around these regions to Spain and unloaded their cargo at Gibraltar [...]. Fazio [Degli Uberti] says the same; and those who have taken this route, men of great prudence, agree with these writers (#53, pp. 192-3)

A clear sense emerges here of the passage between Indian and Atlantic oceans as not just navigable in theory but navigated in fact. Indeed, in a later legend, Fra Mauro exploits his privileged access to both European and Indian navigational knowledge, adducing the authority on the one hand of 'all those who were sent by his Majesty,

King of Portugal' who had sailed south-southeast along the west coast of Africa, and on the other of 'a person worthy of trust, who says that he sailed in an Indian ship caught in the fury of a tempest for 40 days out in the Sea of India, beyond the Cape of Soffala and the Green Islands [unidentified] towards west-southwest' (#149, pp. 210-13). Here, Fra Mauro exploits his position as mediator between geographers and witnesses, past and present, east and west, in order to assert that 'without any doubt that this southern and south-western part is navigable, and that the Sea of India is an ocean and not an inland sea. This is what is said by all those who sail this sea and live in those islands' (#149, pp. 210-13).

As Denis Wood has pointed out, maps 'make the past and future present', so that 'whatever invisible, unattainable, erasable past or future can become part of our living' (Wood, p. 7). To present his Indian Ocean as reachable from the Atlantic, Fra Mauro's map must work precisely in this way. Scattered references to the circumnavigability of Africa from geographers' and sailors' reports thousands of years apart in time are compressed into a single cartographic assertion; the past is plundered to serve a desired future. Yet the act of mapping that desired future is, of course, an intervention that helps to bring that particular future about.

In his representation of the navigability and accessibility of the Indian Ocean, we see Fra Mauro exploit his position as adjudicating mediator between geography and eyewitness, between past texts and present map, in order to shape real contacts, relations and actions between the Mediterranean and Indian Ocean worlds. Yet this is not the only way in which Fra Mauro strategically manipulates his intermediary role. The world map is a translation in the literal sense of the word; it carries knowledge over, across both space and time and between cultures. Translating in the most literal sense of the word, the map carries over to its Venetian readers myriad toponyms and

terms of Chinese, Indian, Arabic, Javanese, Malay or other Indian Ocean world origins. Arabic toponyms feature, for instance, along 'the entire outline of the eastern coast of Africa to the south of the Horn of Africa' according to the map's editor (p. 72). Locally-current names appear attached to many of the ports around the Bay of Bengal and eastern Indian Ocean, from Paliechat (Pulicat) and Oriça (Orissa) on the east coast of India to Melacha (Malacca, Malaysia (pp. 227-32) in modern-day Indonesia. The map uses the name Mihen, of Chinese derivation, for the region of Myanmar (#726 and #727, pp. 329-31) and of Cimpangu — from China via Marco Polo — for Japan (# 1334, pp. 434-35; represents Chinese Jih-pên kuo: Rashīd-al-Dīn, ed. Boyle, p. 284, n. 171). Such translations bring with them, of course, traces of the power-relations that produced them; the map's preponderance of toponyms of Arabic origin reflects centuries of Arab dominance in the navigation of the western Indian Ocean (Hourani, p. 83), whilst it is through reports of the Mongol Khan Kubilai's late-thirteenth-century designs on Japan, culminating in two attacks in 1274 and 1281, that news of that island filters through to Europe (Morgan, 1986, pp. 120-21).

When he presents us with the kinds of etymologically-diverse, locally current place names discussed above, Fra Mauro never gives the sources of his information. This has led to much speculation about the sources of his information on the Indian Ocean World, information which one can sometimes find paralleled in Arab works such as the twelfth-century geography of al-Idrisi and the late-fifteenth-century navigational treatise of Ibn Mājid (Crone; Falchetta, 2006, p. 72). When Fra Mauro's role and self-image as mediator is in question, however, the sources of his information are less important than his deployment of them. Indeed, his deployment strategy shows that, for Fra Mauro, the act of translation is not a passive one; the mapmaker selects and manipulates what he wishes to carry over, and silently omits what he does not. In his

depiction of the Indian Ocean, Fra Mauro places the local place names into a distinct relationship with a conspicuously Latinate, largely Ptolemaic, European framework of knowledge about the region. Larger geographical and hydrographic areas and features are marked out on the map by Latinate, often Ptolemaic names, printed in decorated, sometimes gold, capitals. On the land encircling the Indian Ocean we find Africa (#464, p. 279), Ethyopia (#464, p. 279), Garamantia (#526, p. 291), Arabia Felix (# 423), Arabia Deserta (#923, p. 365), Arabia (#446, p. 275), Persia (#755, p. 335), Mesopotamia (#934, p. 367), India Prima (in the northern region of India, #771, p. 339) and India Seconda (Indo-Chinese regions and parts of south west China #671, p. 319; #673, p. 319), names whose Latinity stands out when set against the etymologically-diverse port and town names all around them, seen through the prism of Fra Mauro's own vernacular Venetian dialect. In the sea, we find the Sinus Ethyopicus (Gulf of Ethiopia, #494, p. 285), Sinus Arabicus (Arabian Gulf, #417, p. 269), Mare Arabicum (Arabian Sea, #391, p. 265). Against these, the probably Arabic Colfo de lasiavo (Gubbat Asiya, #238, pp. 230-31) stands out as unusual. 'Mare Indicum' is inscribed in gold-leaf capitals to the south of the Indian Ocean, between Chancibar (Zanzibar #39, pp. 188-89) to the west and Diuamoal (one of the Maldives, from the Arabic Dhibat-al-Mahal, according to Falchetta, #31, p.187) to the east. The principle of selection that underlies this balance between familiar Latinate and unfamiliar, etymologically diverse place names is nowhere clearly articulated but occasionally hinted at. 'This Abasia was called Agisimba by the cosmographers' notes a legend close to the regional descriptor Abassia (#134; #139 pp. 208-09), signalling that Fra Mauro has updated a place name (in this instance Ptolemaic) with one of Arabic derivation that he views as up-to-date.

It would be a mistake, however, to assume that Fra Mauro's temporal translations are uniformly directed to translating the geography of the past into contemporary terms, to create a geography for his future. In fact, there are occasions when the map's concern seems to be to map the Indian Ocean world of recent report onto an Indian Ocean world of timeless myth and legend. To the south of a peninsula that corresponds with the Malay Peninsula on modern maps, the map locates the island of Taprobana. An island located, according to the classical and late-antique geographies of Pliny the Elder, Ptolemy, and Solinus, close to India but so far to the south that it was 'formerly considered another world' ('diu orbem alterum putauerunt': Solinus, 53.1) Taprobana is normally thought by historical geographers to refer to Sri Lanka. However, a note adjacent to this island on Fra Mauro's map translates as 'The Island of Siamotra, or Taprobana' (# 234, pp. 230-31), indicating that the cartographer identified modern Sumatra, of which Fra Mauro probably read or heard from the early-fifteenth-century Venetian traveller Niccolò Conti, as the Taprobane of the ancient world. Particularly significant and surprising here is the balance the map arrives at between ancient and modern; the fifteenth-century toponym Siamotra appears just once on the map, whereas Taprobana(/e) appears in six separate legends (#23, #156, #195, #215, #220, #234, #181). With Taprobane, the map appears to translate the geography of the present into the terminology of 'the cosmographers' he often associates with the past, rather than the reverse. Another act of translation that we might also classify as working from present to past is to be found in the mapmaker's depiction of Africa. Like many maps of the later Middle Ages and Early Modern period, Fra Mauro's mappamundi gives a physical location to one of Medieval Europe's most enduring legends: the priest-king Prester John (# 83, pp. 198-99). The fame of this mythical figure, ruler of the Three Indies, shot through Western

Europe after 1165, when a letter attributed to the potentate and addressed to the Byzantine Emperor Manuel Comnenus began to circulate (Hamilton 1985; Beckingham 1996). However, the map places this figure in Africa, rather than in Asia as was more usual before later fourteenth century (Ramos, p. 109). Moreover, legends indicate that the figure conflates the Priest-King with the great fifteenth-century Ethiopian Christian ruler Zara Yagob (1399-1468; emperor after 1434); the map provides a very specific reference — absent, of course, from the twelfth-century legend — to this kingdom's conquest of parts of the coastal region that is now Somalia (# 38, pp. 188-89). It is difficult to be certain of whether this identification is Fra Mauro's own, or whether it was one current in mid-fifteenth-century Venice, following the visit to Italy of several Ethiopian clerics during the Council of Florence (1439-42; Larner, 1999, 33-34). Nevertheless, the effects, particularly on the temporal work that the map engages in, of the identification are clear and striking. The map does more than turn an unfamiliar African potentate a known, familiar figure whose place in Western Europeans' imaginary worlds was constantly evolving. Beyond this, Fra Mauro's act of mediation translates an element of his geo-political present into mythological ever-present, past, present, and future. The figure of Prester John turns Fra Mauro's contemporary Indian Ocean world into an undisrupted continuation of its past.

Clearly, part of the mapmaker's role, in Fra Mauro's view, is to mediate between the geographical frameworks of 'the cosmographers', Christian tradition, and the knowledge of populations, navigators, and travellers about topographical, navigational and political detail. The map's mediations are, moreover, not just geographical but also temporal. It positions the map's Indian Ocean world strategically in relation to a past sometimes distanced from and sometimes brought

close to its present. However, it is not just the Indian Ocean World that is shaped by this process, but the image, role and status of the cartographer himself. Fra Mauro deploys both his locally-sourced Indian Ocean world place names and cosmographic framework in such a way as to cement his own status as a knowledgeable cosmographer and his map's status as up-to-date cosmography, the benchmark against which the outdated should be judged. The particular focus of the cartographer's efforts here is the recently-translated and influential work of Claudius Ptolemy, with which Fra Mauro's map is constantly in tension (Edson, p. 10).

Fra Mauro's problem is that whilst he wishes to define himself and his work against the amorphous group he calls 'the cosmographers' (#134, #1043, 1424 etc), he nevertheless needs the framework for understanding the physical layout of the world that their efforts supply. In the Indian Ocean region, this tension and its results are particularly clear in Fra Mauro's treatment of Ptolemy's work. The map silently carries over Ptolemy's geographical framework and toponyms in too many places to cite, but borrowings relate to settlements (e.g., Stabana, Malaysia, # 592), regions and provinces (Arabia Dexerta, #923), mountains (Sardonis mountains, India, #336), rivers (the Indus and its mouths), peninsulas and promontaries (Satoris, on the Red Sea, #438), gulfs and maritime regions (Gulf of Sabara, #605, p. 308-9; Sinus Gangeticus, # 586, p. 304-05), peoples (troglodites in East Africa, # 427; the Sale in Sailam, #29). These borrowings commonly appear unsignalled on the map. However, when Fra Mauro disagrees with Ptolemy — as with Ptolemy's depiction of the Indian Ocean as an enclosed basin — he sharply foregrounds the completeness and newness of his own depiction and information against Ptolemy's perceived limitations. 'As I have said elsewhere', he writes tersely of Persia, 'this province of Persia is divided into eight kingdoms, and extends far beyond the limited borders that Ptolemy gives it'

(# 1490, p. 471). In a gulf at the furthest eastern edge of China, the map highlights yet again its divergence from Ptolemy's vision of an enclosed Indian Ocean: 'Southwards from this province of Serica [China], Ptolemy labels as terra ignota' (#2243, p. 585). Fra Mauro identifies the Taprobana of classical geography (normally identified with Sri Lanka) with Sumatra of his contemporaries. Rather unfairly singling out Ptolemy for criticism here, Fra Mauro's note reads that 'Ptolemy, when wanting to describe Taprobana, simply described Saylam [Sri Lanka]' (# 215, p. 225).

The process of what we might call 'toponymic translation' that Fra Mauro's map engages in attempts to operate in two dimensions: across space and over time. He mediates between local, etymologically-diverse place names and a global, but Western European, Latinate framework of knowledge. Yet he also attempts to mediate and translate between geographies of the past and geographies of the present, making and breaking identifications between classical and medieval toponyms. However, the map is shot through with indications of its cartographer's self-consciousness and need to define himself and his work as up-to-date and complete, particularly when set against Ptolemy, a figure here silently used to shape Fra Mauro's cartography of the present, whilst ostensibly used to represent the cartography of the past.

We have seen that, when translating — in the sense of carrying over — local place names, Fra Mauro exploits the cartographic advantage that his additional knowledge gives him, using it to position himself and his map as a knowledgeable intermediary between past and future, east and west. But the map does not only carry over locative detail; it also advertises and capitalises its position as mediator between lived experience, practice, autochthonous narrative and geographical theory. In its representation of the Indian Ocean world, the map's attempts to translate into

cartographic form features that almost certainly derive from local, practical knowledge are particularly frequent and noticeable. A whirlpool to the east of the Bay of Bengal is, the map comments, 'very dangerous for sailors' (# 240, pp. 228-29). A chain of uninhabited islands that encompasses the Ocean to the south represents, according to an adjacent note, the southernmost limits of navigational practice:

Note that when navigators see the birds of these islands, they think that they have come too close to them and they pull away – because beyond these islands are the Shadows, which are so dense that if a ship ventured into them it would not be able to go either backwards or forwards' (#25, p. 183).

This legend does not attempt to plot the *tenebre* or *scurita*, the shadows or regions of darkness that, according to the Ibn Mājid's late-fifteenth-century navigational manual, circumscribed the Indian Ocean to the South and west (Ibn Mājid, p. 208; pp. 218-219). Rather, it attempts to plot the practice of navigators, who used the habits of birds to locate themselves and set courses (see Ibn Mājid, pp. 196-97). Here, the map mediates between practically-acquired, orally-transmitted knowledge and the theoretical knowledge of the world transmitted through geography and cartography.

However, in this process of mediation between oral tale and written information, the mediating cartographer sometimes encounters a problem. While the testimony of 'those who sail in these seas' or 'live in these islands' is sometimes a powerful source of authority, travellers' tall tales can sometimes have the opposite effect. This problem results in Fra Mauro sometimes taking on the position not of disinterested mediator between knowledge and experience, but of implicated adjudicator, attempting to create and police a distinction between geography and fable. In the east of the Ocean, south east of the coastline of Mahabar (the Coromandel coast) the island of Andaman is marked, with an adjacent legend that appears to be drawn, at least in part, from oral report. A gold circle on the island indicates with graphic certainty a

feature to which the adjacent legend is only willing to attest obliquely. 'On this island there is said to be [se dixe esser] a water which can turn into gold any iron you wet with it' (# 208, pp. 222-23, my emphasis). The distancing passive 'there is said to be' here indicates a level of scepticism that is confirmed in a linked inscription at the westernmost edge of Fra Mauro's known world. Following a discussion of an Irish lake said to exist ['se dice esser'] which has similarly marvellous powers, he comments:

And if one believes this thing, one can also believe in the lake of Andaman. Those who wish to have plentiful information on these wonderful and these monstrous things should read Julius Solinus's Polyhistor, Pomponius Mela, St. Augustine, Albertus Magnus and St. Thomas Aquinas in his book against the curious. Similarly, they can read Aristotle's Meteorology and Pliny on the wonders of the world, and they will see thousands of things of which I have not mentioned one (# 2212, p. 579).

Here, the cartographer gives us a glimpse into his conception of his role as adjudicating mediator; the map of the world is not the place for 'wonderful and monstrous things' ('cosse mirabile e de altre monstruose'); the reader in search of these is given a recommended reading list. Although he makes use of — and indeed capitalises upon — oral reports about whirlpools, the regions of shadow, the number of islands in the Indian Ocean, voyages between India and Africa, the practice of mapping is a discipline with bounds, a perimeter that he creates through his actions. As mediator between practice and geography, to decide which of the sailors' stories that reach him merit translation into the durable medium of graphic and written cartography is a task that falls to him.

Conclusion

When I was first invited to write about a medieval map of the Indian Ocean I chose Fra Mauro's map because thought of it as a transitional object, a spatial and temporal crossing point, facilitating and indeed embodying connections between Indian Ocean and Mediterranean, between oral tradition and written cosmography, between medievalitas and modernity, between periods of Arab and European dominance in the Indian Ocean world. It is true that the map is all of these things, but it is also true that it is not an innocent witness. In a map, critically positioned between Mediterranean and Indian Ocean worlds, Fra Mauro exploits his position as mediator between places, knowledge systems, world and representation, past and present, to shape not just the graphic space of the map but the real space of the world. Beyond this, the map works not just to mediate, but to aggrandize its cartographer's mediatory role. Whilst it claims to carry over the words of witnesses from the Indian Ocean world, these words are dislocated, anonymised, subordinated and, sometimes, suppressed in the selective process of mediation. In fact, an artefact that appears from one angle to be a crossing point looks more like a checkpoint from another. Equally, the map's process of mediation between geographies past present and future in fact serves to consign certain aspects of the region's geography to a constructed past, and to bring others into the future that the map itself, through its strategic conflation on a plane surface of selected past, mediated present, and desired future worlds, is engaged in bringing about.

List of figures

- Fig. 1. Fra Mauro's World Map (Full)
- Fig 1.a. Fra Mauro's World Map: detail of Western Indian Ocean
- Fig. 1.b. Fra Mauro's World Map: detail of Eastern Indian Ocean
- Fig. 2: Detail of Indian Ocean from Claudius Ptolemeus, *Alexandrini philosophi cosmographia* (Rome: Buckinck, 1478)

Texts and translations

- Mājid al-Najdī, Ahmad b., *Kitāb al-Fawā'id*, in *Arab Navigation in the Indian Ocean before the Coming of the Portuguese*, trans. by G. R. Tibbetts, Oriental Translation Fund N.S., XLII (London: Royal Asiatic Society, 1971)
- Fra Mauro's World Map, ed. and trans. by Piero Falchetta, Terrarum orbis 5 (Turnhout: Brepols, 2006)
- Ptolemeus, Claudius, Alexandrini philosophi cosmographia (Rome: Buckinck, 1478)
- Rashīd al-Dīn, *The Successors of Genghis Khan*, trans. by John Andrew Boyle (New York: Columbia University Press, 1971)
- Solinus, C. Julius, *Collectanea rerum memorabilium*, ed. by T. Mommsen (Berlin: Weidmann, 1895)

Further references

- Beckingham, C. F., 'The Achievements of Prester John' in *Studies in Medieval History presented to R..H. C. Davis*, ed. by H. Mayr-Harting and R. I. Moore (London: Hambledon, 1985), pp. 177-91
- Cattaneo, Angelo, 'Fra Mauro *cosmographus incomparabilis* and his *mappamundi*: documents, sources, and protocols for mapping', in *La cartografia europea tra primo Rinascimento e fine dell'Illuminismo*, ed. by Diogo Ramada Curto, Angelo Cattaneo, and André Ferrand Almeida (Florence: Olschki, 2003), pp. 19-48
- -----, 'La *Mappamundi* di Fra Mauro, l'idea di oceano e le direzioni di navigazione all'alba dell'espansione europea', in *Mundus novus : Amerigo Vespucci e i metodi della ricerca storico-geografica*, ed. by Annalisa D'Ascenzo (Genoa: Brigati, 2004), pp.109-21
- Chaudhuri, K.N, *Trade and Civilisation in the Indian Ocean: An Economic History from the Rise of Islam to 1750* (Cambridge: Cambridge University Press, 1985)

- Cosgrove, Denis, 'Introduction: Mapping Meaning', in *Mappings*, ed. by Denis Cosgrove (London: Reaktion, 1999), pp. 1-23
- Crone, G. R., 'Fra Mauro's Representation of the Indian Ocean and the Eastern Islands', in *Studi Colombiani*, 3 vols (Genoa: Civico Istituto Colombiano, 1952), pp. 57-64
- Dalché, Patrick Gaultier, 'The reception of Ptolemy's Geography (End of the fourteenth to Beginning of the Sixteenth Century)', in *Cartography in the European Renaissance*, History of Cartography, 6 vols (Chicago: University of Chicago Press, 1987-), 3.1, 285-358
- Edson, Evelyn, *The World Map 1300-1492: The Persistence of Tradition and Transformation* (Baltimore: Johns Hopkins, 2007)
- Falchetta, Piero, 'Maps of the Eastern Islands (Sri Lanka, Sumatra, Java) in Venetian Cartography from Fra Mauro to Coronelli', *Journal of the International Map Collectors' Society*, 99 (2004) 47-55
- Bernard Hamilton, 'Prester John and the Three Kings of Cologne', in *Prester John, the Mongols and the Ten Lost Tribes*, ed. by Charles F. Beckingham and Bernard Hamilton (Aldershot: Variorum, 1996), pp. 177-91
- Hourani, George F., *Arab Seafaring in the Indian Ocean in Ancient and Early Medieval Times*, rev. and ed. by John Carswell (Princeton: Princeton University Press, 1995; orig. publ. 1951)
- Larner, John, 'The Church and the Quattrocento Renaissance in Geography', *Renaissance Studies*, 12 (1998), 26-39
- Morgan, David, *The Mongols* (Oxford: Blackwell, 1986)
- Venezia centro di mediazione tra oriente e occidente (secoli XV-XVI). Aspetti e problemi, ed. by Hans-Georg Beck, Manoussos Manoussakas and Agostino Pertusi, 2 vols (Florence: Olschki, 1977)
- Ramos, Manuel João, Essays in Christian Mythology: The Metamorphosis of Prester John (Lanham: University Press of America, 2006)
- Randles, W. G. L., 'Classical Models of World Geography and their Transformation following the Discovery of America', in Haase, W. and M. Reinhold, eds., *The Classical Tradition and the Americas, I: European Images of the Americas and the Classical Tradition* (Berlin: De Gruyter, 1994), pp. 5-76
- Wood, Denis with John Fels, *The Power of Maps* (London: Routledge, 1992)