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'FROM THE BEST AUTHORITIES': THE MOUNTAINS OF KONG IN THE CARTOGRAPHY OF WEST AFRICA*

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> '...what gives the map this extraordinary authority, an authority greater than that of the sacred books of all religions[?]' (Kenneth Boulding)

On nineteenth-century maps of Africa, a great mountain chain named the Mountains of Kong stretches across much of the western part of the continent around the tenth parallel. The mountains first appear in two maps drawn by James Rennell for Mungo Park's account of his legendary journey to the Niger River (Fig. 1).[1] They subsequently appear on nearly all of the major commercial maps of the nineteenth century beginning with Aaron Arrowsmith's four-sheet map of the African continent (Fig. 2)[2] and ending in the early twentieth century.[3] The Kong Mountains were popularly viewed as a great drainage divide separating streams flowing to the Niger River and Gulf of Guinea. They were also believed to be rich in gold, covered with snow, and an 'insuperable barrier' hindering commerce between the coast and the interior. What is intriguing about the Kong Mountains is that they never existed except in the imaginations of explorers, mapmakers and merchants.

The 'rise' and 'fall' of these mountains is of theoretical interest to cartographic historians for two reasons. First, their representation underscores the view of writers like Harley and Stone that the conventional periodization of the history of map making into 'decorative' and 'scientific' phases is greatly exaggerated.[4] Maps of the eighteenth and nineteenth

* We thank George Dimock, Mahir Saul, and Carol Spindel for their comments on an earlier draft of this paper. We are also appreciative for the substantive editorial guidance of David Robinson and helpful critical comments of three anonymous reviewers. Thanks also to Greg Chu, Tanya Meyer, Phil Schwartzberg (Cartographic Laboratory, University of Minnesota) and Jane Domier (Cartographic Laboratory, University of Illinois) for drawing several of the maps, and to John P. Beyers (University of Minnesota) and James Akerman (Newberry Library) for help in determining the scale of maps consulted in this study.

[1] M. Park, *Travels in the Interior Districts of Africa : Performed under the Direction and Patronage of the African Association in the Years 1795, 1796 and 1797. With an appendix containing geographical illustrations of Africa by Major Rennell* (London, 1799).

[2] A. Arrowsmith, 'Africa' (London, 1802).

[3] R. Tramplers, *Mittelschulatlas* (Wien, 1905).

[4] J. B. Harley, 'The map and the development of the history of cartography', in J. B. Harley and D. Woodward (eds.), *The History of Cartography*. Vol. 1: *Cartography in Prehistoric, Ancient, and Medieval Europe and the Mediterranean* (Chicago, 1987), 1–42; J. B. Harley, 'Deconstructing the map', *Cartographica*, XXVI (1989), 1–20; J. Stone,

Fig. 1. The Mountains of Kong first shown in James Rennell's 'A Map Shewing the Progress of Discovery & Improvement in the Geography of North Africa' (1798) (Scale: 1:10,000,000).

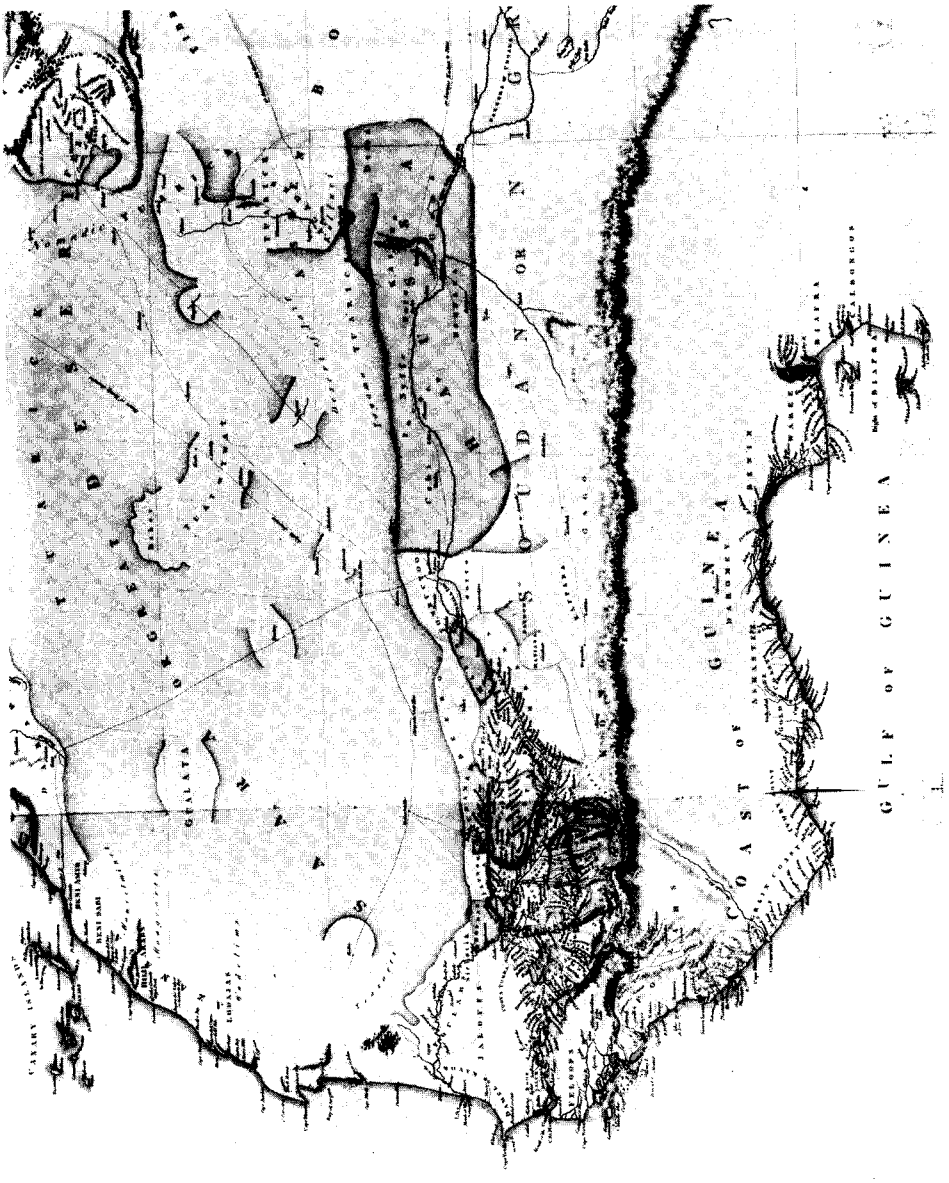

Fig. 2. The first commercial map showing the Kong Mountains, by Aaron Arrowsmith (1802) (Scale: 1:7,000,000).

centuries were supposed to be based on reliable sources and to be objective and accurate (i.e. scientific) in contrast to the reliance on hearsay and subjective representations on earlier maps.[5] Rennell's depiction of the Mountains of Kong and their subsequent reproduction in nineteenth-century maps indicates that maps are, above all, social constructions drawn for specific audiences within their historical contexts. This study thus challenges the assumed neutrality or 'honest face' of maps by confirming Harley's basic point that 'all maps state an argument about the world and they are propositional in nature'.[6]

Second, the cartographic history of the Kong Mountains illustrates the 'extraordinary authority of maps'.[7] The inherent quality of maps as images gives them a unique role in shaping knowledge. As Robinson argues, the map as spatial image is 'a powerful, highly efficient cognitive device'.[8] The authority of maps is based on the public's belief that these images are accurate representations of reality, or 'true' maps. One assumes that cartographers are guided by an ethic of accuracy and are applying scientific principles in map construction.[9] The greater the authority of the mapmaker, the greater the impression the map will have in shaping the public's perception of an area. The depiction of the Kong Mountains on nineteenth-century maps of West Africa exemplifies this authoritative power of maps.

Our essay is divided into six sections. The first part examines early manifestations and nineteenth-century representations of the Kong Mountains in some 292 maps. The next section discusses the contexts in which the Mountains of Kong were 'discovered' by Mungo Park and illustrated by James Rennell. The section following reviews the role of later explorers such as Caillié, Clapperton and the Lander brothers in perpetuating the myth of the Kong Mountains. The final sections focus on popular perceptions of the mountains and on views that challenged their existence. The elimination of the mountain chain is credited to Louis-Gustave Binger who established himself as the new authority on West African geography following his famous expedition of 1887–9.

PRECURSOR MOUNTAIN RANGES

Mountain ranges appeared in early maps of West Africa long before they were named the Mountains of Kong. We examined 292 maps dating from the early sixteenth to the early twentieth centuries for evidence of an east–west trending mountain range named Kong. The results of this study are shown in Figure 3. Evidence for mountains in the area where the Kong Mountains flourished in the nineteenth century can be divided into five time periods (Table 1).

On maps dating from the sixteenth and seventeenth centuries, an east–west

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'Imperialism, colonialism and cartography', *Transactions of the Institute of British Geographers*, XIII (1988), 57–64.

[5] R. V. Tooley, *Maps and Mapmakers* (New York, 1987), 42.

[6] Harley, 'Deconstructing', 2–5, 11.

[7] K. Boulding, *The Image* (Ann Arbor, 1969), 67; Harley, 'Map', 2–3.

[8] A. Robinson, 'The uniqueness of the map', *The American Cartographer*, V (1978), 5–7.

[9] Harley, 'Deconstructing', 4–5.

Table 1. *Periods of cartographic representation of the east-west mountains in West Africa*

1511–1699	Period of precursor (p) east–west mountain ranges where the Kong Mountains would later be shown.
1700–1726	A transition period when de l'Isle's influential maps of 1700 and 1722 greatly reduced the number of mythical mountain chains in West Africa.*
1727–1797	Period when virtually no mountains were shown in the area (•).
1798–1890	Period of the Kong Mountains (K), an east–west range at about ten degrees North latitude stretching from present-day Futa Jallon eastward, in some cases across the continent to merge with the equally fabled Mountains of the Moon.
1891–1934	Period after which the Kong Mountains no longer appear on maps. Kong is retained as the name of a town (t) and as a regional name (also t). An east–west mountain chain is no longer shown, but smaller mountains and mountain chains are correctly shown (Atacora, Akwapim, Nimba, etc).

* G. de l'Isle, 'L'Afrique dressée sur les observations de M^{s}. de l'Académie Royale des Sciences, et quelques autres, et sur les mémoires les plus récens' (Paris, 1700); G. de l'Isle, 'Carte d'Afrique dressée pour l'usage du roy' (Paris, 1722).

trending mountain range was commonly shown dividing coastal Guinea from interior Nigritia. The Niger River was known from the accounts of al-Idrisi and Leo Africanus although the direction of flow was disputed.[10] Numerous rivers were known by mapmakers to flow to the Atlantic coast. It was logical, therefore, for cartographers to place a drainage divide between the coast and the Niger. It was but a short step to drawing mountains along this interfluve. Figure 4 shows the pattern of rivers in West Africa. We indicate the divide that separates the Niger River drainage from rivers flowing directly to the Atlantic. This division generally corresponds to the classical distinction between interior Nigritia or Sudan and coastal Guinea, although it should be noted that the actual path of the divide is far from being the simple east–west line commonly drawn on early maps of Africa.

Eighty-four per cent of the maps we inspected for the period 1511–1699 showed east–west trending mountain chains where the Kong Mountains were later to appear.[11] To what extent the practice of depicting mountain ranges

[10] African Association, *Proceedings of the Association for Promoting the Discovery of the Interior Parts of Africa* (London, 1967; Facsimile Reprint of 1810 edition), 1, 524–45.

[11] We inspected several repositories of maps in creating Figure 3. This includes maps of Africa at the University of Minnesota in the James Ford Bell Library and the John R. Borchert Map Library (including the rare maps and rare atlases collections), maps in the Rare Book and Special Collections Library at the University of Illinois, Urbana–Champaign, maps shown in R. V. Tooley, *Collectors' Guide to Maps of the African Continent and Southern Africa* (London, 1969), and O. Norwich, *Maps of Africa* (Johannesburg, 1983), and maps in our personal collections.

KEY: p = a precursor east–west range before 1798 where the Kong Mountains will be shown
• = absence of mountain range where the Kong Mountains are often shown between 1798 and 1905
K = Kong Mountains (or variant, e.g. Kong Gebirge) annotated to an east–west mountain range
m = mountains only, without place name, appears where the Kong Mountains show between 1798 and 1905
t = town or regional name of Kong annotated, but no mountain range

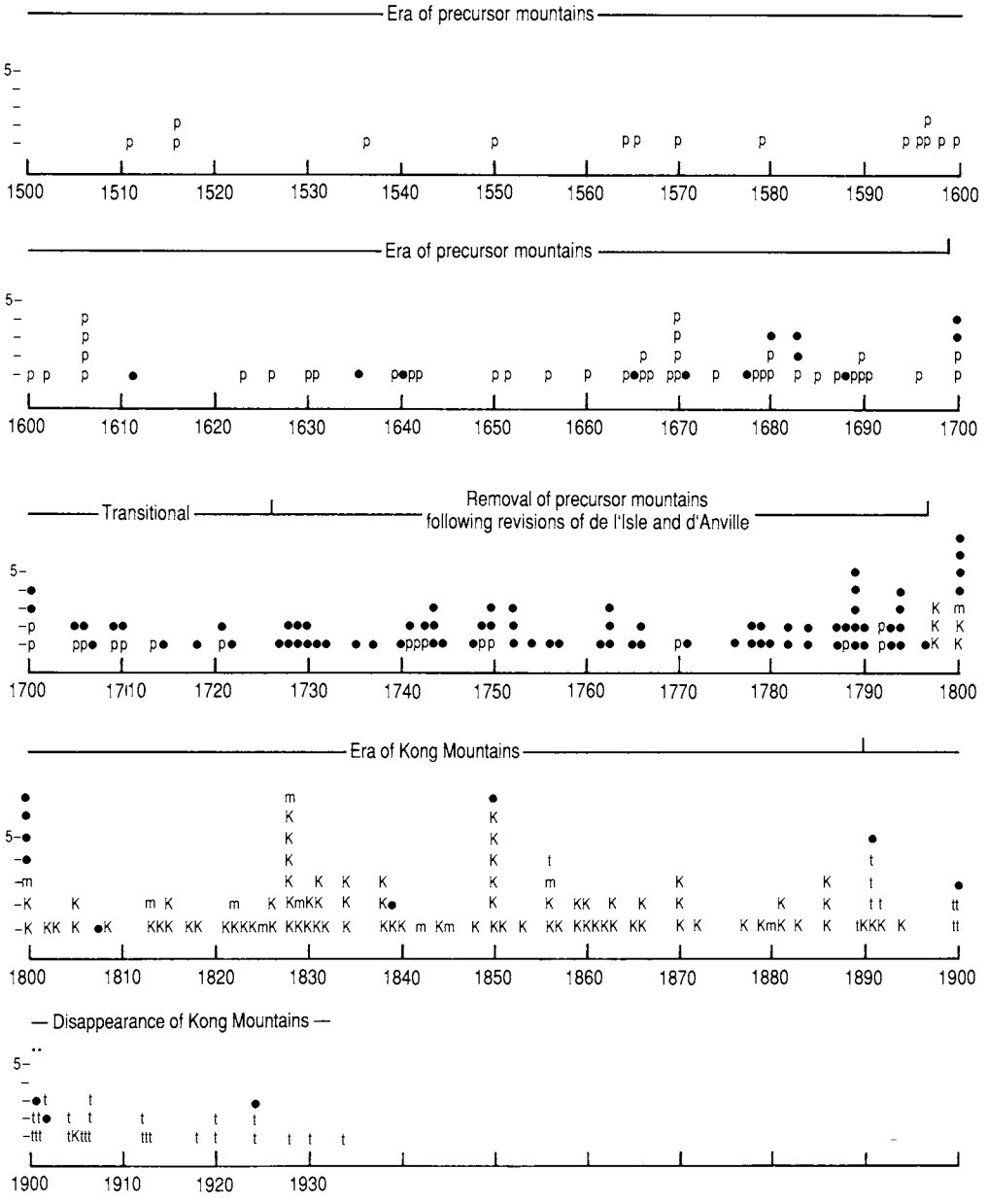

Fig. 3. Appearance, persistence and disappearance of the Kong Mountains.*

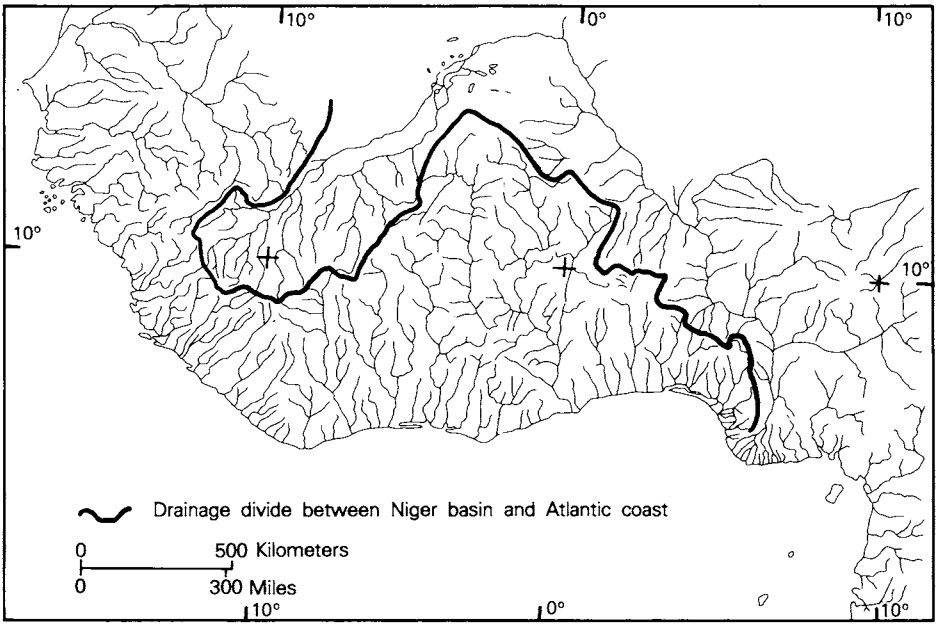

Fig. 4. Drainage divide between the Niger Basin and the Atlantic Coast. *Source*: Africa South of the Sahara, 1971, Scale: 1:7,500,000, Pretoria: Government Printer.

in this area for more than 180 years influenced nineteenth-century cartographers to place a mountain chain there cannot be known. Nor do we know the contribution of African informants to the creation and perpetuation of the Kong Mountains as 'disinformation' for their own political and economic ends. There is evidence, to the contrary, that Europeans received first-hand accounts from Africans that the mountains did not exist in certain areas, but this information was usually ignored.[12]

The transition period (1701–26) is marked by the gradual disappearance of mountains in West Africa. The most influential cartographer of this period was Guillaume de l'Isle (1675–1726), who ranks with Ptolemy and Mercator as 'one of the major forces in the progress of cartography'.[13] His 1700 map

[12] Capt. R. F. Burton, 'The Kong mountains', *Proceedings of the Royal Geographical Society and Monthly Geographical Record*, New Series, 4 (1882), 484–6; P. Curtin, *Africa Remembered* (Madison, 1967), 187; J. Dupuis, *Journal of a Residence in Ashantee* (London, 1824; reprint 1966), xviii; cf. J. MacQueen, *Geographical and Commercial View of Northern Central Africa, Containing a Particular Account of the Course and Termination of the Great River Niger in the Atlantic Ocean* (Edinburgh, 1821), 148; J. MacQueen, *A Geographical Survey of Africa* (London, 1840; reprint 1969), 9.

[13] Tooley, *Collectors*, 68.

**Footnote*: Summary for the various time periods: (1) 1511 through 1699, p = 53/63 total (84 per cent); (2) 1700 through 1726 transitional period, p = 8, • = 11; (3) 1727 through 1797, o = 63/72 total (88 per cent); (4) 1798 through 1890, K = 80/99 total (81 per cent) [K + m = 90/99 total (91 per cent)]; and (5) 1891 through 1934, t = 31/39 total (79 per cent). Total number of maps is 292.

of Africa is a landmark not only for correctly determining the longitude of the Mediterranean but also for its elimination of many erroneous geographical features such as Ptolemy's Lakes Zaire and Zaflan.[14] He set a standard for accuracy that d'Anville alone surpassed in the eighteenth century. Most of the east–west mountain ranges of West Africa disappeared in de l'Isle's 1700 and 1722 maps. It was J. B. d'Anville (1697–1782) who erased the remaining vestiges of imaginary mountains in the area where the Kong Mountains would later appear. His 1727 and especially his 1749 map of Africa contain large blank spaces illustrating both his commitment to deleting unverifiable geographical features and European ignorance of the continent.[15] The areas that were known were drawn in great detail. It was because of d'Anville's resolve to depict only those features which could be proven to be true that his maps are often said to represent a scientific reformation in cartography. As the authority on African geography for most of the eighteenth century, his maps were also widely copied.[16]

From 1727 to 1797 (treating 1700–26 as a transition), 88 per cent of the 72 maps we examined showed no mountains where precursor mountains had been and where the Kong Mountains would later appear. It was upon this blank slate that Rennell drew his mountains in 1798. Of the 99 maps we inspected for the period 1798–1890, 81 per cent were unambiguously labeled 'Mountains of Kong' or a comparable variant (Monts de Kong, Kong Gebirge, etc.). The lettering was annotated to a generally east–west trending range around ten degrees north latitude. When we include the maps showing an unnamed mountain range, 91 per cent of the maps for this period have a mountain chain in the area where the Kong Mountains flourished. A closer look at the origins of this mountain chain reveals much about the authoritative role of cartographers in shaping the public's spatial image of West Africa.

MUNGO PARK AND THE AFRICAN ASSOCIATION

The story of Mungo Park's first journey into the interior of Africa (1795–7) is well known.[17] His book was remarkable for its revelations about the cultural and physical geography of this part of Africa, unknown yet fascinating to Europeans because of its purported riches. For centuries, monarchs and merchants sought to discover the source of the gold that reached the Mediterranean ports of North Africa via trans-Saharan trade caravans. This quest for control of the gold trade was the principal reason for the pioneering Portuguese voyages along the African coast during the late

[14] De l'Isle, 'L'Afrique'.

[15] J. B. d'Anville, 'Afrique publiée sous les auspices de Monseigneur le Duc d'Orléans premier prince du sang par le Sr. d'Anville' (Paris, 1749) in Norwich, *Maps*, 148–9. Also see d'Anville's 'Carte particulière de la partie principale de la Guinée située entre Issini et Adra' (Paris, 1729), in which he notes to the north of the 'Royaume d'Asianté' that 'We have no knowledge whatsoever of what is beyond these lands' in J. B. Labat, *Voyage de Chevalier des Marchais en Guinée*, 2 (Paris, 1730), frontispiece map.

[16] E. Raisz, *General Cartography* (New York, 1948), 32ff.; C.-A. Walckenaer, *Recherches géographiques sur l'intérieur de l'Afrique septentrionale* (Paris, 1821), 220–9.

[17] Much of this section is drawn from Hallett's discussion of the African Association's formation and activities. See R. Hallett, *The Penetration of Africa* (London, 1965), 1, 231–49.

fifteenth century. In the 300 years which followed, Europeans acquired an extensive knowledge of the coastal areas, along parts of the Senegal, Nile and Zambezi rivers, and in some parts of the interior such as Ethiopia, Morocco and Angola. Yet, on eighteenth-century maps like d'Anville's influential 1749 map of Africa, Europe's ignorance of African geography was apparent.[18] Blank spaces covered much of western, central and southern Africa. Along the West African coast, traders' knowledge of the interior rarely extended more than 30 km inland. It was d'Anville who identified the major geographical problems of the day such as discovering the courses of the Niger, Nile, Congo and Zambezi rivers.[19]

The Association for Promoting the Discovery of the Interior Parts of Africa, also known as the African Association, was founded in 1788 with the expressed purpose of expanding European knowledge of the unknown regions of Africa. As Hallett pointed out, this quest for scientific knowledge was also inspired by commercial motivations.

> *The utility of enlarging the fund of human knowledge* – there in a phrase of fine precision lay their motive: scientific curiosity one may call it – but curiosity applied to scientific ends. They were all men of affairs; as they looked to Africa, their vision was not distorted by the crude images of strange men and strange beasts that bemused so many of their contemporaries; rather they speculated on the products that the unknown interior might reveal, the markets those teeming millions – it was a common fallacy to exaggerate Africa's population – might afford the growing manufactures of Great Britain.[20]

The membership of the Association in 1790 reflected its combined scientific and commercial orientation. It was composed of three groups. First, there were professionals, including Joseph Banks, the renowned naturalist who accompanied Capt. Cook on his first voyage and who was by far the most prominent founding member. A second group was composed of aristocrats and politicians, many of whom were active slave abolitionists like William Wilberforce. The third group consisted of bankers, industrialists and merchants who reflected the interests of the commercial class of Great Britain, which had a practical stake in the outcome of the voyages to be sponsored by the Association.[21]

It was estimated that the gold trade between the commercial centers of the Niger and the Barbary coast amounted to £1 million a year during the late eighteenth century. British merchants were keen to divert this trade along an alternative route to the trans-Saharan one controlled by Moorish traders. The prospect of discovering such a route seemed most promising from the west coast of Africa. One of the Association's first explorers, Daniel Houghton, had travelled up the Gambia River and speculated that the Niger

[18] D'Anville, 'Afrique'.

[19] H. Wallis and D. Middleton, 'The mapping and exploration of Africa and Joseph Banks', in P. Larby (ed.), *Maps and Mapping of Africa* (London, 1987), 47–54.

[20] Hallett, *Penetration*, 197.

[21] *Ibid.* 212–14. A similar organization was established in France at the turn of the century and was known as the 'Société de l'Afrique intérieure'. Little is known of its members and achievements. It appears to have been modelled after its British counterpart; it was founded in Paris and later moved to Marseille. See A. Fierro, *La Société de Géographie, 1821–1946* (Paris, 1983), 5–6, and Walckenaer, *Recherches*, 65–6.

River was navigable just 350 miles farther inland. Little was known about the course of this river. It was widely believed to flow westward and along its banks could be found the major trade centers of Timbuktu and 'Hausa'. After Houghton failed to return from his expedition, the Association employed Mungo Park in 1795 'to pass on to the River Niger... ascertain the course and, if possible, the rise and fall of that river... visit the principal towns or cities in the neighbourhood, particularly Tombuctoo and Housa'.[22]

Park's account of his voyage is one of the great classics in the exploration literature.[23] Most notable among his achievements was his report that the Niger flowed in an easterly direction, a geographical fact of interest to both merchants and mapmakers. After travelling a little beyond Segu, he decided to make his way back to the Gambia. On his return, Park sighted a mountain range in the distance which he was told lay within the empire of Kong. He made his observation on 23 August 1796 on the road between Bamako and Sibidolo.

> I gained the summit of a hill, from whence I had an extensive view of the country. Towards the south-east, appeared some very distant mountains, which I had formerly seen from an eminence near Marraboo, where the people informed me, that these mountains were situated in a large and powerful kingdom called Kong; the sovereign of which could raise a much greater army than the King of Bambarra.[24]

In one of the maps illustrating Park's book, these mountains are shown and labeled 'Mountains seen by Mr. Park'.[25] To the west of this small range is written in large letters: 'A Chain of Great Mountains extends along these Parallels'. The mountains appear in a second map in the book as a boldly marked ridge extending across the width of West Africa (Fig. 1).[26] The mountains were apparently named after the 'Kingdom of Kong' about whose existence Park had first learned in the Segu region. According to Green, the Sonongui 'state' centered around Kong in present-day northern Côte d'Ivoire flourished in the eighteenth century under Seku Watara and his kin. The Mande-speaking Sonongui were a warrior group who migrated to the Kong region in the sixteenth century during the disintegration of the Empire of Mali. By the late seventeenth century, they had formed an alliance with Jula traders who provided both material and spiritual support to the Wataras in their quest for political power and territorial control. The Sonongui sphere of influence reached as far north as Jenne through systematic raiding and alliance-building in which the Wataras and their

[22] Hallett, *Penetration*, 231. [23] Park, *Travels*.

[24] Ibid. 240. Park may have seen 200+ m. inselbergs at about 12° 10′ N and 7° 30′ W. Delafosse credits Mungo Park with the orthography *Kong*. The actual pronunciation is 'Kpon' or 'Gbon'. Green argues that the etymologies of these African words are uncertain. See M. Delafosse, 'Le peuple siéna ou sénoufo', *Revue des études ethnographiques et sociologiques*, 1 (1908), 19n; K. Green, 'The foundation of Kong; a study of Dyula and Sonongui ethnic identity' (Ph.D. thesis, Indiana University, 1984), 137–8.

[25] J. Rennell, 'The route of Mr. Mungo Park, from Pisania on the river Gambia, to Silla on the river Joliba or Niger; with his return by the southern route to Pisania. Compiled from Mr. Park's observations, notes, & sketches, by J. Rennell' (London, 1798) in Park, *Travels*.

[26] J. Rennell, 'A map shewing the progress of discovery & improvement in the geography of North Africa: compiled by J. Rennell' (London, 1798) in Park, *Travels*.

warrior slaves offered military protection to client ethnic groups. Sonongui influence is believed to have peaked in the mid-eighteenth century.[27] However, the town of Kong remained a powerful commercial as well as intellectual center during the nineteenth century when it controlled major trade routes linking the forest and savanna regions.[28]

Both maps in Park's book were compiled by James Rennell, the geographical consultant to the African Association and one of the most prominent geographers of his day.[29] Rennell's compilation was in the same scholarly tradition of the great mapmakers of the eighteenth century like de l'Isle and d'Anville. Like them, Rennell was knowledgeable about the ancient and medieval sources of African geography. In the appendix to Park's book, entitled 'Geographical Illustrations of Mr. Park's Journey', Rennell provides us with insights into his method of mapmaking. In the sections analysing the course of the Niger, he compares the reports of contemporary explorers like Lucas, Hornemann, and Park with the observations of Ptolemy, Abulfeda, al-Idrisi, and d'Anville.[30] The reader is impressed by the geographer's erudition and critical analysis in reconciling varying accounts of the river's course. It was this method of critical compilation that made Rennell 'the highest authority in Europe' in the early nineteenth century.[31] Indeed, his contemporaries placed him on the same footing as de l'Isle and d'Anville.[32]

In 'Geographical Illustrations', Rennell discussed the significance of Park's discoveries for determining the course of the Niger. He hypothesized that the Niger rose in the Mountains of Kong, flowed east for a great

[27] Green, 'Foundation', 330–59, 398–406; Y. Person, 'The Atlantic coast and the southern savannahs, 1800–1880', in J. Ajayi and M. Crowder (eds.), *History of West Africa* (2 vols., New York, 1974), II, 262–307.

[28] Person, 'Atlantic', 276–81; E. Bernus, 'Kong et sa région', *Études Éburnéennes*, VIII (1960), 267–70. There is much confusion about whether the Kingdom of Kong was known to European mapmakers before Park's voyage. Rennell claimed that the place name of 'Gonge' in de l'Isle (1722), and 'Conche' in d'Anville (1727; 1749) were simply variants of Kong. However, it is likely that Gonge referred to the Kwa-speaking Gonja people of present-day northern Ghana who had organized an important trading state in the seventeenth century. In d'Anville's map, the 'State of Conche' is annotated to be the 'Kingdom of the Sousou'. See African Association, *Proceedings*, I, 221–2, 476; Green, 'Foundation', 407–8; R. Oliver and M. Crowder (eds.), *The Cambridge Encyclopedia of Africa* (Cambridge, 1981), 81, 132; J. D. Fage, *An Atlas of African History* (London, 1966), 19; I. Wilks, N. Levtzion, and B. Haight, *Chronicles from Gonja* (Cambridge, 1986), 1.

[29] James Rennell (1742–1830) entered the British navy at the age of 14 where he learned the techniques of marine surveying. He left the navy to join the East India Company, for which he became the surveyor-general for Bengal by the early age of 21. During his survey of Bengal in 1776, Rennell was wounded by Sanashi fakirs. He retired the following year. Rennell's most important works include his *Bengal Atlas* (1799) and the first 'approximately correct' map of India. As the geographical consultant to the African Association he compiled a new map of North Africa (1790) and constructed two maps to illustrate Mungo Park's account of his travels in West Africa. Rennell was widely viewed as the dean of British geographers after the death of Joseph Banks in 1820. He was involved in the creation of the Royal Geographical Society which was founded in 1830, the year of Rennell's death. See C. R. Markham, *Major James Rennell and the Rise of Modern English Geography* (New York, 1895), 196–7.

[30] African Association, *Proceedings*, I, 524–45. [31] Markham, *Rennell*, 74.

[32] J. Pinkerton, *Modern Geography* (London, 1802, third ed. 1811); Walckenaer, *Recherches*, 239.

distance, and emptied into an inland delta containing large lakes which he called 'Wangara'.[33] He relied heavily on Park's and others' accounts when he wrote:

The discoveries of this gentleman... give a new face to the *physical* geography of *Western* Africa. They prove, by the courses of the great rivers, and from other notices, that a belt of mountains, which extends from west to east, occupies the parallels between ten and eleven degrees of north latitude, and between the 2nd and 10th degrees of west longitude (from Greenwich). This belt, moreover, other authorities extend some degrees still farther to the west and south, in different branches, and apparently of less height.[34]

To support his claim for the existence of this great mountain chain, Rennell made much of obscure references to mountains in the area in the works of Abulfeda and Leo Africanus.[35] He sought further confirmation in the report of Simon Lucas, one of the Association's first explorers, who compiled an account of North African geography based on information provided by a *Sharif* from the Fezzan named Imhammed. Lucas's report appeared in the *Proceedings of the African Association* in 1790:

From that part of the Niger which forms the southern limit of the great empire of Cashna, to the kingdom of Tonouwah, which borders on the coast of the Christians, and of which the Town of Assenté is said to be the capital, a succession of hills, among which are mountains of stupendous height, diversifies or constitutes the general face of the country.[36]

Rennell hypothesized that these 'mountains of stupendous height' must be part of the same ridge sighted by Park and alluded to by the ancient authorities.[37]

[33] 'Wangara' was the name given to the gold-producing areas of West Africa by the twelfth-century Arab geographer al-Idrisi. Leo Africanus also gave the name of 'Wangara' to the gold-rich area in the Zamfara River valley of Hausaland.

[34] African Association, *Proceedings*, I, 421–2.

[35] Abu'l-Fida Ismail ibn Ali (1273–1331), a Syrian prince, wrote a geography of the world which contained 'extremely vague' notions of African geography. According to Hallett, 'one can only conclude that Rennell's anxiety to bolster up his own theory about the great chain of the Mountains of Kong led him to lay so much stress on this [work]'. R. Hallett (ed.), *Records of the African Association, 1788–1831* (London, 1967), 251.

[36] African Association, *Proceedings*, I, 174.

[37] One authority that Rennell does not cite but whose work was very influential in his day was Philippe Buache, France's foremost geographer between the reigns of de l'Isle and d'Anville. In addition to holding the position of First Geographer to the King, Buache was the first geographer to become a member of the Royal Academy of Sciences. He was best noted for his theoretical work in physical geography which regularly appeared in the publications of the Academy. His most influential paper was an essay on physical geography published in 1752 in which he presented his theory that the earth was buttressed by mountain chains that girdled the globe on the surface and below the seas. His system of mountain chains was defined by the basins of the world's great rivers. In one of the maps illustrating his theory, he shows a mountain chain linking the 'Plateau of South America' to the 'African Plateau'. This chain extends across all of West Africa in which the Senegal and Niger headwaters are shown to rise. This mountain chain is a plausible prototype of Rennell's Mountains of Kong. P. Buache, 'Essai de géographie physique...', *Mémoires de l'Académie Royale des Sciences* (1752), 399–416; also, see L. Drayperon, 'Les deux Buache ou l'origine de l'enseignement géographique par versants

Rennell's maps had an immediate impact upon the commercial map industry. Aaron Arrowsmith issued a map in 1802 which he dedicated to the African Association that shows the Mountains of Kong as a major physiographic feature of the continent (Fig. 2).[38] Other mapmakers soon revised their maps to incorporate the most recent geographical knowledge. John Cary, 'the most representative, able and prolific of English cartographers', produced his 'New Map of Africa, from the latest authorities' in 1805.[39] Like Arrowsmith, Cary showed the Kong Mountains as a truly impressive range extending across all of West Africa and joining the equally fictitious Mountains of the Moon in central and east Africa. In sum, Rennell's 1798 map established a new spatial image of West Africa that was to be repeatedly copied by nineteenth-century mapmakers.[40] As the French geographer Walckenaer noted,

> The work of de l'Isle made obsolete that of Sanson, Mercator, and so many others; the work of d'Anville replaced that of de l'Isle. Likewise, geographers who published maps of Africa, particularly on the interior of this part of the world, copied Rennell.[41]

The existence of the Kong Mountains owed more to Rennell's theory on the course of the Niger than to Park's casual observation. For Rennell, the mountains were both the source of the great river and its southern barrier preventing it from reaching the Guinea coast. He hypothesized that the river emptied into the '*alluvial* country' of Wangara where it ultimately evaporated.[42] Rennell's hypothesis of an inland termination for the Niger was influenced by de l'Isle's and especially d'Anville's work. In de l'Isle's influential 1722 map of Africa, he shows the Niger flowing east and emptying into 'Lake Bornou'.[43] D'Anville published a seminal paper in 1759 on the rivers of north-central Africa which Rennell frequently referred to in 'Geographical Illustrations'.[44] In the map illustrating d'Anville's paper, the

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et par bassins', *Revue de Géographie*, XXI (1887), 6–16 and G. Kish, 'Early thematic mapping: the work of Philippe Buache', *Imago Mundi*, XXVIII (1976), 129–36.

[38] A. Arrowsmith, 'Africa'; Wallis and Middleton, *Mapping*; Tooley, *Collectors*, 9.

[39] J. Cary, 'A new map of Africa, from the latest authorities, by John Cary, engraver, 1811' (London, 1811); Tooley, *Collectors*, 35.

[40] Rennell's map differed from earlier maps in a number of other respects as well. For example, Timbuctu was situated at a different latitude than in d'Anville's 1749 map, the course of the Niger was less curvilinear than d'Anville's depiction, and Wangara was presented as an enormous inland swamp. Rennell also replaced d'Anville's Kingdoms of Timbuctu and Cachenah with those of Bambara and Haussa.

[41] Walckenaer, *Recherches*, 239. [42] Hallett, *Records*, 252.

[43] G. de l'Isle, 'Carte d'Afrique dressée pour l'usage du Roy par Guillaume de l'Isle premier géographe ... A Paris Chez l'Auteur sur le Quay de l'Horloge du Palais ... 1722' in Tooley, *Collectors'*, plate 52.

[44] J. B. d'Anville, 'Mémoire concernant les rivières de l'interieur de l'Afrique, sur les notions tirées des Anciens & des Modernes', *Mémoires de Littérature de l'Académie Royale des Inscriptions et Belles-Lettres*, XXVI (1759), 64–81. For references to this work in Rennell, see *Proceedings*, I, 406, 458, 539, 545. The fact that d'Anville was mistaken about the Niger's course shows that there were important exceptions to his method of illustrating only those areas that were known to Europeans. Walckenaer suggests that the debates on the courses of the Niger and Nile were too important for someone of d'Anville's stature to omit these rivers from his maps. See Walckenaer, *Recherches*, 221–2.

Niger is shown emptying into two interior lakes (Reghebil and Semgonda) in an area called 'Wangara'.

This inland-delta theory was just one of at least five competing theories of the period. Strabo and Pliny believed the Niger to join the Nile. This theory remained popular in the eighteenth and early nineteenth centuries among reputable scholars and explorers.[45] A third theory was proposed by a British merchant named George Maxwell, who lived in the Congo River delta region for many years. Maxwell hypothesized that the Niger and Congo were one and the same river.[46] A fourth theory had the Niger flow east into Lake Chad, continue north under the Sahara as an underground stream and then empty into the Gulf of Sidra (Khalij Surt) on the Libyan coast.[47] A fifth theory was advanced by the German geographer Christian Reichard. In 1803, Reichard (correctly) hypothesized that the Niger flowed into the Gulf of Benin between the Rio de Rey and the Rio Formoso.[48] He believed that the landforms, rivers and soils around the Gulf of Benin indicated the presence of a large delta which was probably that of the Niger. Reichard estimated the volume of the Niger to be too great simply to evaporate in the interior as Rennell had argued. This view was also promoted by James MacQueen in his many writings.[49]

Rennell defended his theory in a series of letters to Joseph Banks in 1815. He rejected Reichard's theory partly on his belief that the Niger could not cut through the Kong Mountains. He viewed the mountains as an interfluve or great divide separating streams flowing towards the coast and the interior. To support his evaporation thesis, Rennell diminished the importance of the river's flow when he wrote to Banks that 'the Joliba (Niger) is far from being, in point of bulk, one of the first class of Rivers'.[50] He provided alternative calculations on the volume and evaporation rate of the river based on estimates derived from sources dating to the twelfth century.

Despite the cogency of Reichard's argument, Rennell's depiction of the Kong Mountains as an 'impassable barrier' worked against its general acceptance. As Thomson wrote in 1890,

> Never was a better instance of a mental discovery of geographical fact. Reichard's hypothesis is a graphic description of actual geography of the middle and lower Niger. This of course was not to be recognised by the world, before whose eyes the Kong Mountains ever loomed up as an impassable barrier running across the suggested line of drainage. Till these could be removed, turned aside, or broken up, no geographer was prepared to allow that the Niger could possibly discharge itself into the Gulf of Guinea.[51]

[45] J. MacQueen, 'Geography of Africa – quarterly review', *Blackwood's Magazine*, XXXI (1832), 190, 203.

[46] For an elaboration of this thesis, see Appendix No. 4 in M. Park, *The Journal of a Mission to the Interior of Africa in the Year 1805* (Philadelphia, 1815), 108–19.

[47] P. Curtin, *The Image of Africa; British Ideas and Action, 1780–1850* (Madison, 1964), 203.

[48] C. Reichard, 'Ueber den angekündigten, num bald erfcheinenden, *Atlas des ganzen Erdkreises*', *Allgemeine Geographische Ephemeriden*, XII (1803), 157–67.

[49] For example, see MacQueen, *Northern Central Africa*. MacQueen also publicised his view in *Blackwood's Magazine* in 1826 (XIX: 113, 687–709), 1831 (XXX: 182, 130–6) and 1832 (XXXI: 190, 201–16).

[50] Hallett, *Records*, 255.

[51] J. Thomson, *Mungo Park and the Niger* (London, 1890), 255.

On balance, some of Rennell's views were quite correct. As Figure 4 confirms, he was correct in postulating that a divide separated streams flowing to the north and south. He obviously exaggerated the height and extent of this divide. The history of the Niger River also supports Rennell's theory of an inland delta. During a dry phase of the Quaternary, the Niger emptied into an interior basin southwest of Timbuctu. When rainfall and sedimentation rates increased during a more humid phase, the river formed a large lake which overflowed to the east where it joined the southerly flowing section of the present-day river.[52]

Rennell's position in the debate over the Niger's course is instructive for a number of reasons. First, as Hallett pointed out, it reveals much about the human dimension to scientific inquiry. 'Few episodes', he wrote, 'provide so clear a lesson of the necessity for the scholar of keeping an open mind and of being able to judge how much evidence must be acquired before a theory can be put forward with assurance – and of the difficulty of doing so.'[53] Second, and more pertinent to this essay, is the rhetorical role of cartography in Rennell's theory building.[54] Our analysis of Rennell's map suggests that 'cartographic facts are only facts within a specific cultural perspective'.[55] Contrary to the idea that eighteenth- and nineteenth-century cartography exemplifies an ethic of accuracy and the fruits of objective scientific enquiry, Rennell's map is based on hearsay and designed to persuade its readers of his Niger theory.[56] The Kong Mountains are a prominent landform of West Africa because they are a prominent part of Rennell's theory on the course of the Niger. They appear on the map as an objective reality, when in fact they owe their existence to the arguments of an eminent scholar involved in academic debates on African geography.

Rennell's status combined with the authoritative power of published maps resulted in the continued representation of the Kong Mountains on commercial maps for sixty years after Reichard's theory was proved correct. Even today, one finds vestiges of Rennell's Kong Mountains in recent editions of *Goode's World Atlas* in which Kong appears in upper case letters in northeastern Côte d'Ivoire signifying an important region.[57] In fact Kong is today a minor administrative center (subprefecture) in this isolated and underdeveloped part of the country.

The changing form and extent of the Kong Mountains are interesting dimensions of this subject and will be discussed in a later section. But first, it is worth examining the observations of other explorers of West Africa to see what they had to say about the Kong Mountains.

[52] A. T. Grove, *Africa South of the Sahara* (Oxford, 1970), 20.

[53] Hallett, *Penetration*, 288. Clements Markham defends Rennell from his critics, some of whom called him 'the man with one idea', by arguing that 'Major Rennell adopted this view (of the Niger's course) provisionally, but without any strong bias, as is clearly proved by his private correspondence on the subject'. See Markham, *Major*, 142.

[54] By 'rhetorical', we follow the Oxford English Dictionary's definition to mean 'expressed in terms calculated to persuade'. *The Compact Edition of the Oxford English Dictionary* (Oxford, 1971), II, 627.

[55] Harley, 'Deconstructing', 3.

[56] *Ibid.* 11; Anon., 'The journal of a mission to the interior of Africa in the year 1805. By Mungo Park', *The Quarterly Review*, XIII, 24 (1815), 146.

[57] Rand-McNally & Co., 'Africa-Northern', *Goode's World Atlas* (Chicago, 1990), 204.

THE ACCOUNTS OF LATER EXPLORERS

In the first half of the nineteenth century, four of Africa's most famous European explorers travelled through the region where the Mountains of Kong were supposedly located. In 1825, Hugh Clapperton set out to solve the riddle of the Niger's outlet. His starting point was the Guinea Coast near contemporary Lagos, whence he travelled northward to Sokoto. He crossed the Niger at Bussa, where Park had lost his life during his second expedition to the Niger in 1805. Clapperton died from an illness in Sokoto but his servant, Richard Lander, succeeded in returning to England with Clapperton's journals.[58] The first chapter of Clapperton's account is titled: 'Journey from Badagry over the Kong Mountains to the city of Eyeo or Katunga'. In the map accompanying the text, the Mountains of Kong are shown extending in a NW to SE direction.[59] Along this ridge is written: 'Mountainous Range called Kong, the highest point where crossed, not supposed to exceed 2500 feet'. Current geographies of Africa identify these highlands as the Oyo Yoruba Upland.[60] What is significant about Clapperton's account is that he believed he was crossing the Kong Mountains.

Farther west, an adventurous Frenchman named René Caillié set out from Sierra Leone in 1827 to visit Timbuktu. Caillié succeeded in reaching this mysterious city and then crossed the Sahara to Morocco, whence he returned to Europe. He received a gold medal from the Paris Geographical Society for his achievements. While passing through what is now north central Côte d'Ivoire, near Tengréla, Caillié noted a 'mountain chain' running in a NE to SW direction, and 'presume[d] that these mountains could well be those of Kong cited by Mr. Park'.[61] He goes on to say 'but it was impossible to believe that he had seen them, being small and of a considerable distance from Segu'. Caillié also noted that the Mandingo word for mountain is 'konko'[62] and believed that Park had mistakenly used this common noun for the name of the range. Notwithstanding these skeptical remarks, Caillié did not seriously question the existence of the Kong Mountains.

Richard Lander returned to the Guinea Coast with his brother John Lander in 1830 to solve the problem of the Niger's course. They followed the path taken by Clapperton to Bussa from whence they paddled down the Niger to discover its delta to be in the Gulf of Guinea as Reichard had hypothesized. In the map illustrating the account of their expedition, the Niger is shown cutting through the Kong Mountains.[63] Like Clapperton, the

[58] H. Clapperton, *Journal of a Second Expedition into the Interior of Africa from the Bight of Benin to Soccatoo* (London, 1829).

[59] J. Murray, 'A chart of the route of the late Capt. Clapperton, from Badagry to Soccatoo, and by his servant Richard Lander, from Kano to the Niger in a different and more easterly direction' (London, 1828) in Clapperton, *Journal*.

[60] A. Best and H. de Blij, *African Survey* (New York, 1977), 146.

[61] R. Caillié, *Journal d'un voyage à Temboctou et à Jenné dans l'Afrique centrale* (Paris, 1830), II, 62.

[62] In Park's published vocabulary, the word 'konko' meant hill. See K. Lupton, *Mungo Park the African Traveler* (Oxford, 1979), 84. In his Bambara dictionary, Père Charles Bailleul uses the words *kulu* or *kuluba* for mountain. C. Bailleul, *Petit dictionnaire Bambara–Français, Français–Bambara* (England, 1981), 283.

[63] J. Murray, 'The course of the Quorra, the Joliba or Niger of Park from the journals of Richard and John Lander with their route from Badagry to the northward in 1830'

Landers did not doubt the existence of these mountains. They fitted their observations into the spatial pattern drawn by Rennell and labeled the highlands the Kong Mountains.

How can we explain the persistence of these mythic mountains? Two reasons can be advanced. First, all four explorers just happened to pass through some elevated terrain during their travels which led them to believe that they were viewing the Kong Mountains.[64] A second reason for their persistence, and one of most interest to cartographic historians, is the authoritative power of maps. Since d'Anville, mapmaking had gained a scientific respectability. Cartographic treatises spelled out the rules governing the technical production of maps using state-of-the-art instrumentation. Progress was measured by adherence to an ethic of accuracy and the construction of 'objective' maps based on recorded facts.[65] For example, the depiction of the Kong Mountains in Arrowsmith's 1802 wall map was believed to be based on such scientific standards. The extremely deferential dedication to the African Association and the prevalence of blank spaces in his map enhanced the impression of its scientific respectability. The dedication reads: 'To the Committee and Members of the British Association for Discovering the Interior Parts of Africa, this map is with their permission most respectfully inscribed, by their most obedient and humble servant'. On one level, the dedication can be seen as a marketing ploy, serving to advertise to potential buyers that this new map was based on exclusive sources. On another level, the dedication was homage to scientific cartography. It implies that only the 'best authorities' like Joseph Banks and James Rennell were consulted in the compilation of this map.

The prevalence of blank spaces in Arrowsmith's maps also makes the mountains' existence more believable. Such spaces reflected not only European ignorance of African geography but also the positivist view that only that which was verifiable could be represented. They illustrate the scientific rule that only facts can be depicted on the map. These learned 'silences' enhance the credibility of what is shown and thus serve to legitimate the existence of the mountain chain.[66]

The titles of maps similarly conveyed the impression of accuracy and scientific respectability. For example, the recurrence of words such as 'new' and 'improved' or 'from the best authorities' suggested to map users that such maps were up-to-date and drawn from authoritative sources.[67] Table 2

(London, 1831) in R. and J. Lander, *Journal of an Expedition to Explore the Course and Termination of the Niger* (London, 1832).

[64] Today, a hill is generally considered to be less than 305 meters (1000 ft). A mountain is higher and usually steeper than a hill. F. Press and R. Siever, *Earth* (San Francisco, 1974), 912–14.

[65] Harley, 'Deconstructing', 1.

[66] Harley, 'Silences and secrecy: the hidden agenda of cartography in early modern Europe', *Imago Mundi*, XL (1988), 57–73. The blank spaces south of the mountain chain also accentuate its height and thus enhance the image of the mountains as a barrier to European penetration of the interior.

[67] There was also a competitive edge to such declarations as cartographers sought to establish the excellence of their maps over others. The competition began long ago. In 1670 J. van Meurs published a map titled 'Africae Accurata Tabula'. The next year, F. de Wit did him one better with a map entitled 'Totius Africae Acuratissima Tabula'.

Table 2. *Common words in map and atlas titles used in Figure 3*

Word	N	Range	Mean date	Usage frequency rank	Date rank
accurate	8	1670–1792	1687	6	1
authority	9	1770–1850	1817	4	9
best	5	1770–1850	1825	9	11
corrected	9	1666–1850	1752	4	3
enlarged	5	1666–1924	1773	9	6
exact	3	1705–1741	1726	11	2
improved	7	1765–1831	1793	7	7
latest	6	1770–1850	1803	8	8
modern	17	1564–1930	1823	3	10
most	23	1666–1881	1756	2	5
new	68	1570–1912	1735	1	4
revised	3	1766–1925	1857	11	12

lists the words that were most frequently used in the titles of the maps that form the basis of Figure 3. The words in order of frequency are: new, most, modern, authority, corrected, accurate, improved, latest, best, enlarged (usually about an atlas), revised, and exact. 'New' (nova, nouvelle, neue, nuova, etc.) is used most ($n = 68$), with instances as early as 1570 and as late as 1912. The notion of authority is repeated with variations: 'from the latest and best authorities, from the most approved authorities, from original authorities'. The word authority does not occur after 1850, but the force of the idea lives on. Some words flourished and died, while others came into their own in more recent times. For example, the mean date for 'accurate' is 1687, whereas the mean date for 'latest' is 1803.

In sum, the authoritative power of maps probably persuaded explorers like Lander, Clapperton and Caillié to believe in the existence of the Kong Mountains. Like the power of the printed word, the printed 'scientific map' encouraged them to claim they had seen the mountains. The mapmaker's graphic language spoke persuasively despite the contradictory evidence. As a result, these explorers helped to perpetuate the myth of the Kong Mountains by both concurring in their existence and giving them a more accurate location.

POPULAR PERCEPTIONS OF THE KONG MOUNTAINS

As the preceding section suggests, once the Kong Mountains began to appear on commercial maps, they also became engraved in the mental maps of Europeans. This new spatial image was enhanced by subsequent writers who depicted the Kong Mountains in such precise terms as 'blue', 'barren', 'lofty', 'snow covered' and 'gold rich'. Their 'stupendous height', a favorite phrase of the armchair geographer James MacQueen, was generally viewed as a hindrance to commerce between the Atlantic Coast and the Niger basin. Despite some doubts about the very existence of the mountain range

(see below), this new information found in both the popular and academic literature added to the image of West Africa's geography as being 'exceedingly mountainous'.[68]

The idea that the Kong Mountains might well be the El Dorado of West Africa was a popular conception.[69] Fabulous stories are recorded by Green and Terray indicating that the mountains were widely believed to be the source of the Ashanti's gold supplies.[70] The famous orientalist and East African explorer Richard Burton contributed to these myths when he wrote:

> The Western versant [of the Kong Mountains] supplies the gold of Senegambia; the southern that of Ashanti and Wásá. The superficial dust is washed down by rains, floods and rivers; and the dykes and veins of quartz, mostly running north and south, are apparently connected with those of the main range.[71]

Joseph Dupuis, who visited Ashanti in 1820, reported that it was 'widely believed that the Kong Mountains were covered with snow'.[72] When he inquired about the region to the west of Kumasi he learned that:

> After the first hundred miles, the traveller commences ascending a cluster of lofty mountains, and this labour occupies him six days. The mountains abound in rivers and rapid torrents, which discharge themselves on the opposite sides into the Jolliba [Niger], and further to the westward they are so high and steep that no man can ascend to their summits; which are barren, bleak, and oftentimes covered with snow.[73]

A French naval lieutenant remarked in 1866 that the annual flood of the Akba (Comoé) coincided with the snow melt in the Kong Mountains.[74]

Rennell was the first to describe the Kong Mountains as a major drainage divide separating the streams flowing into the Niger basin from those flowing to the Guinea coast. This feature of the range is the most popular perception encountered in the literature of the period.[75] The image of the mountains as an impassable barrier also originated with Rennell. As noted above, he believed that it was impossible for the Niger to flow to the Gulf of Guinea because of the great barrier of the Kong Mountains. Later writers emphasized the 'lofty' elevation of the mountains, their snow-covered peaks, unfriendly inhabitants and 'insuperable barriers' to commerce between the coast and its hinterland.[76] For example, MacQueen wrote that 'the country

[68] MacQueen, *Survey*, 23.

[69] H. Murray, *The Encyclopedia of Geography* (Philadelphia, 1841), III, 46–7.

[70] Green, 'Foundation', 412–14; E. Terray, 'Grandeur et décadence des montagnes de Kong', *Cahiers d'Études Africaines*, CI–CII (1986), 241–9.

[71] Burton, 'Kong', 484. Some prospecting took place 250 kilometers inland from Assimie in 1882, but the results were disappointing.

[72] Dupuis, *Journal*, xcii. [73] *Ibid.*

[74] Terray, 'Grandeur', 246.

[75] Burton, 'Kong', 484; H. Duveyrier, 'La question des sources de Dhioli-Ba (Niger)', *Bulletin de la Société de Géographie*, XX (1880), 530–2; MacQueen, *Geographical Survey*, 72; Malte-Brun, *Universal Geography* (London, 1823), IV, 5; Murray, *Encyclopedia*, 23; Walckenaer, *Recherches*, 409–10; J. B. Eyriès, *Voyages pittoresques en Asie et en Afrique* (Paris, 1841), II, 99.

[76] The term 'insuperable barrier' is found in J. MacQueen, 'Geography of Africa – quarterly review', *Blackwood's Magazine*, XXXI (1832), 190, 212; and Thomson, *Mungo Park*, 235. References to 'lofty' mountains are found in G. W. Colton, *Colton's Atlas of*

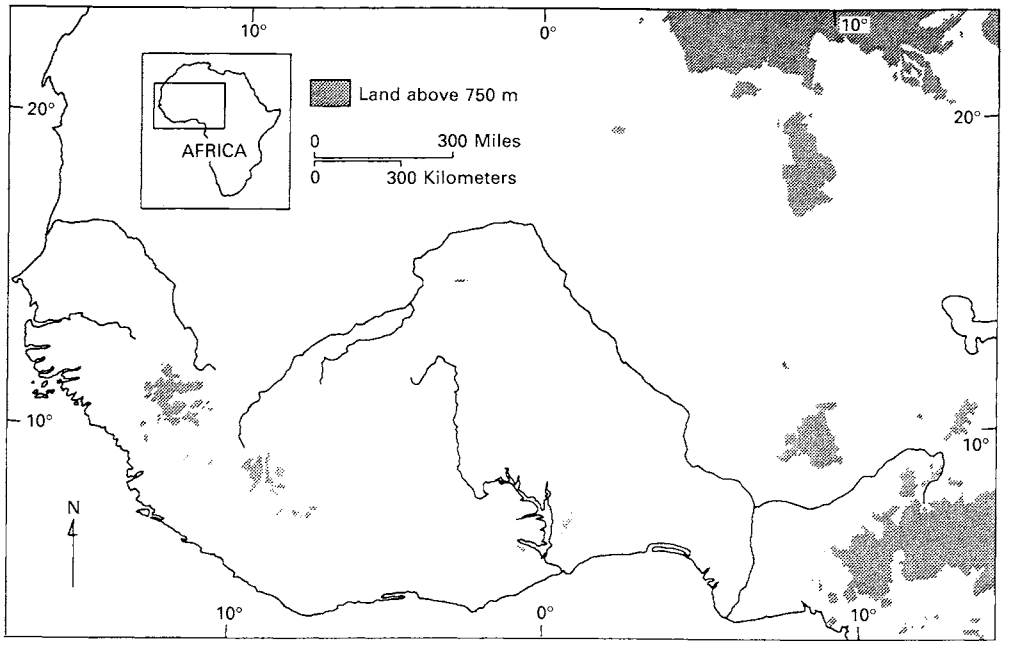

Fig. 5. Land area above 750 meters (2,461 ft) in West Africa. *Source*: Organization of African Unity, Scientific and Technical and Research Commission, *International Atlas of West Africa* (Paris, 1971), Relief, Plates 3, 4, 5, and 6, Scale: 1:2,500,000.

northward from Ashantee to Sego and Jinnë is full of exceedingly high mountains, which renders commercial communications almost impracticable'.[77] Beecham noted the historical importance of the Kong chain as a physical barrier that checked the spread of Muslim peoples into the forest region of the Gold Coast.[78]

There was some difference of opinion on the geomorphology of the fictitious mountains. They were variously described as rugged granitic peaks and/or limestone terraces rising in elevation with distance from the coast.[79]

the World Illustrating Physical and Political Geography, II, Plate 35, North Western sheet (New York, 1856); G. G. Chisholm, *Longmans' Gazetteer of the World* (New York, 1895), 830; and MacQueen, *Geographical Survey*, 72.

[77] MacQueen, *Northern Central Africa*, 148; Walckenaer, *Recherches*, 342.

[78] J. Beecham, *Ashantee and the Gold Coast* (London, 1831), 2–3.

[79] Malte-Brun, *Universal*, IV, 4; F. H. Rankin, *The White Man's Grave: A Visit to Sierra Leone, in 1834* (London, 1836), 145; J. Duncan, *Travels in Western Africa in 1845 & 1846* (London, 1847), 310; Burton, 'Kong', 484–6.

Fig. 6. Representations of the Kong Mountains in nineteenth-century maps of Africa. *Note*: The dark shade indicates the extent of mountains actually named Kong. Outlined areas show where mountains are found on the map, but not named Kong. The nominal scale of the original map is indicated in the lower righthand corner. The last map in the series is a composite of forty maps that show the Kong Mountains.

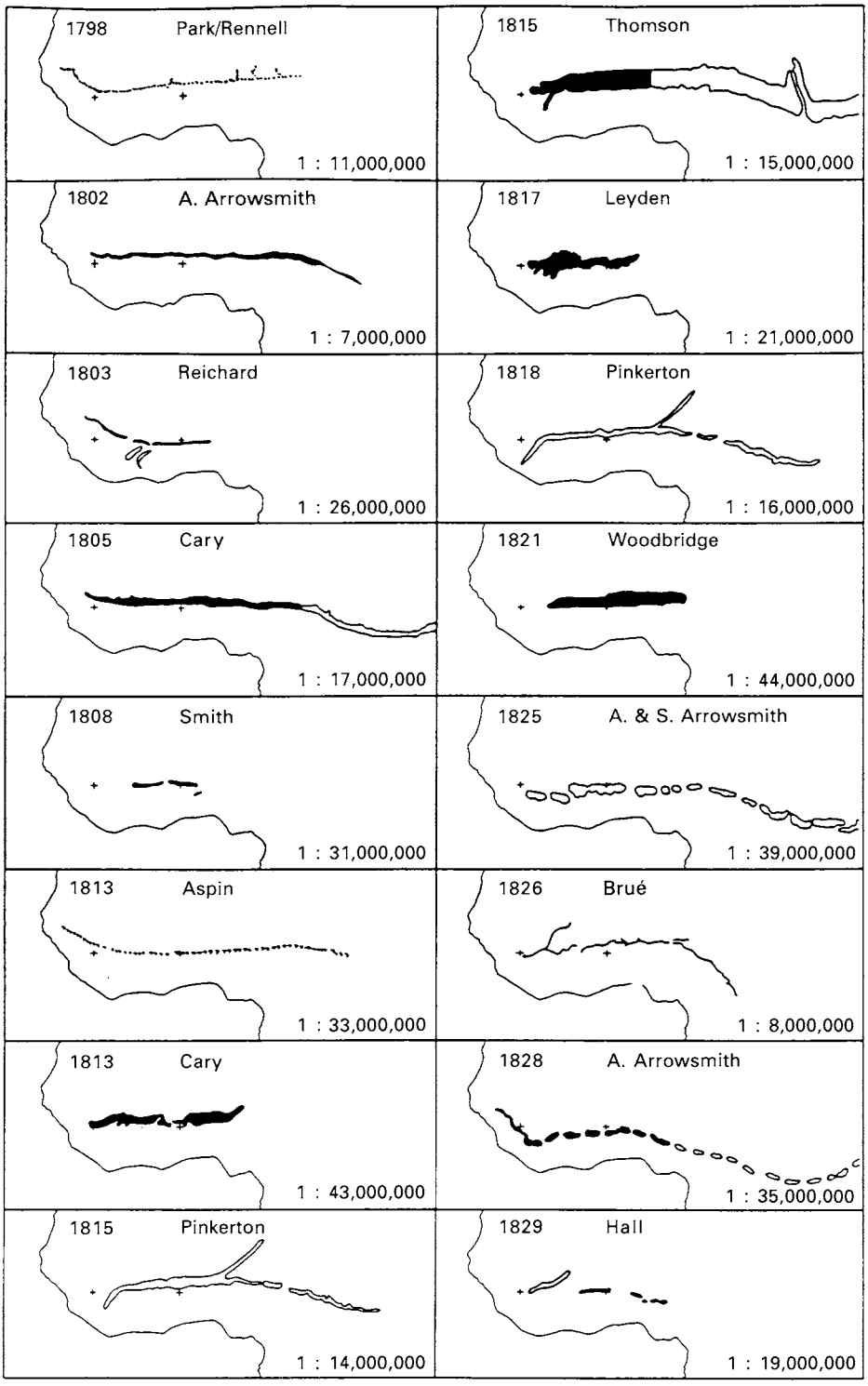

Fig. 6. For legend see facing page.

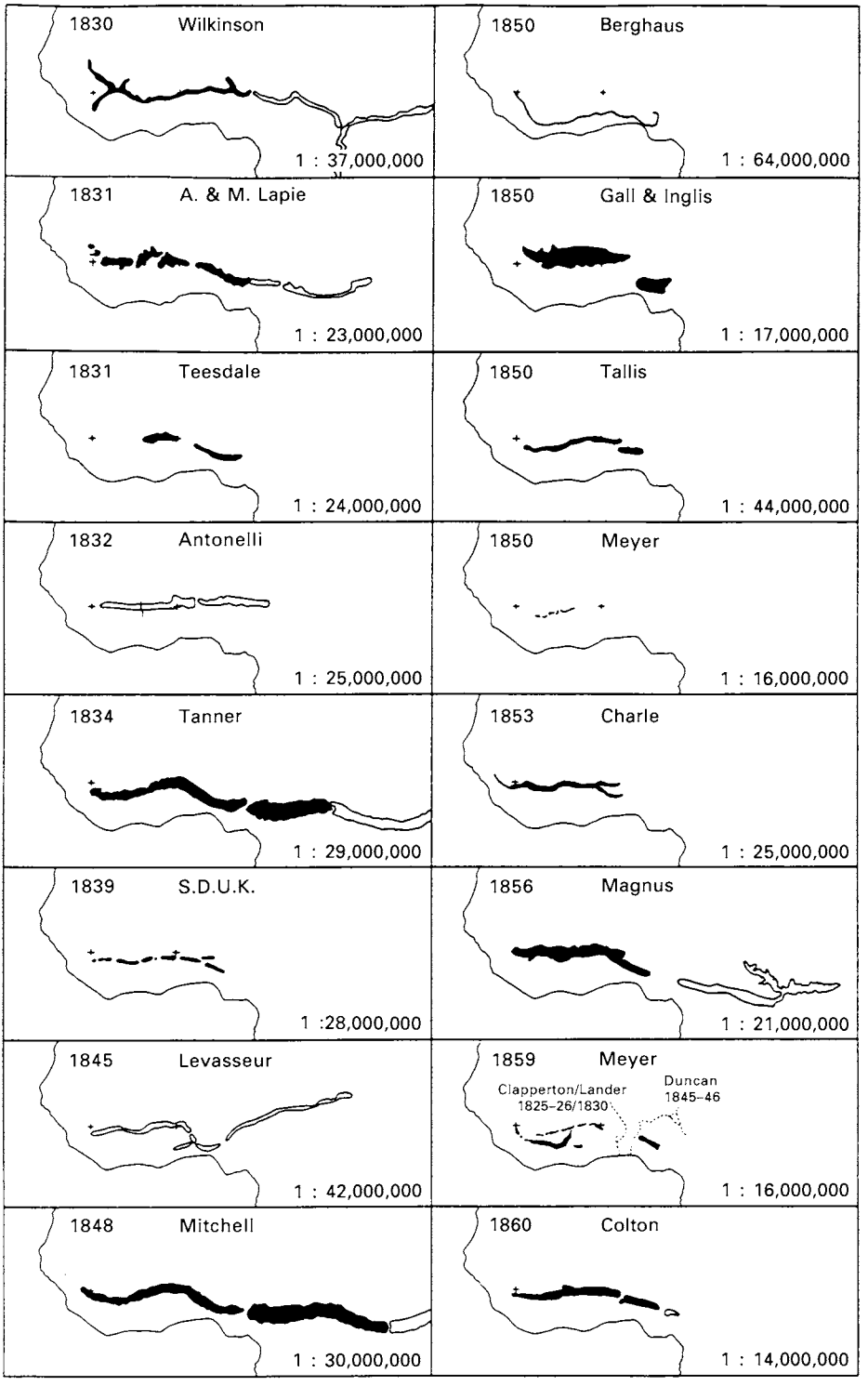

Fig. 6. For legend see p. 386.

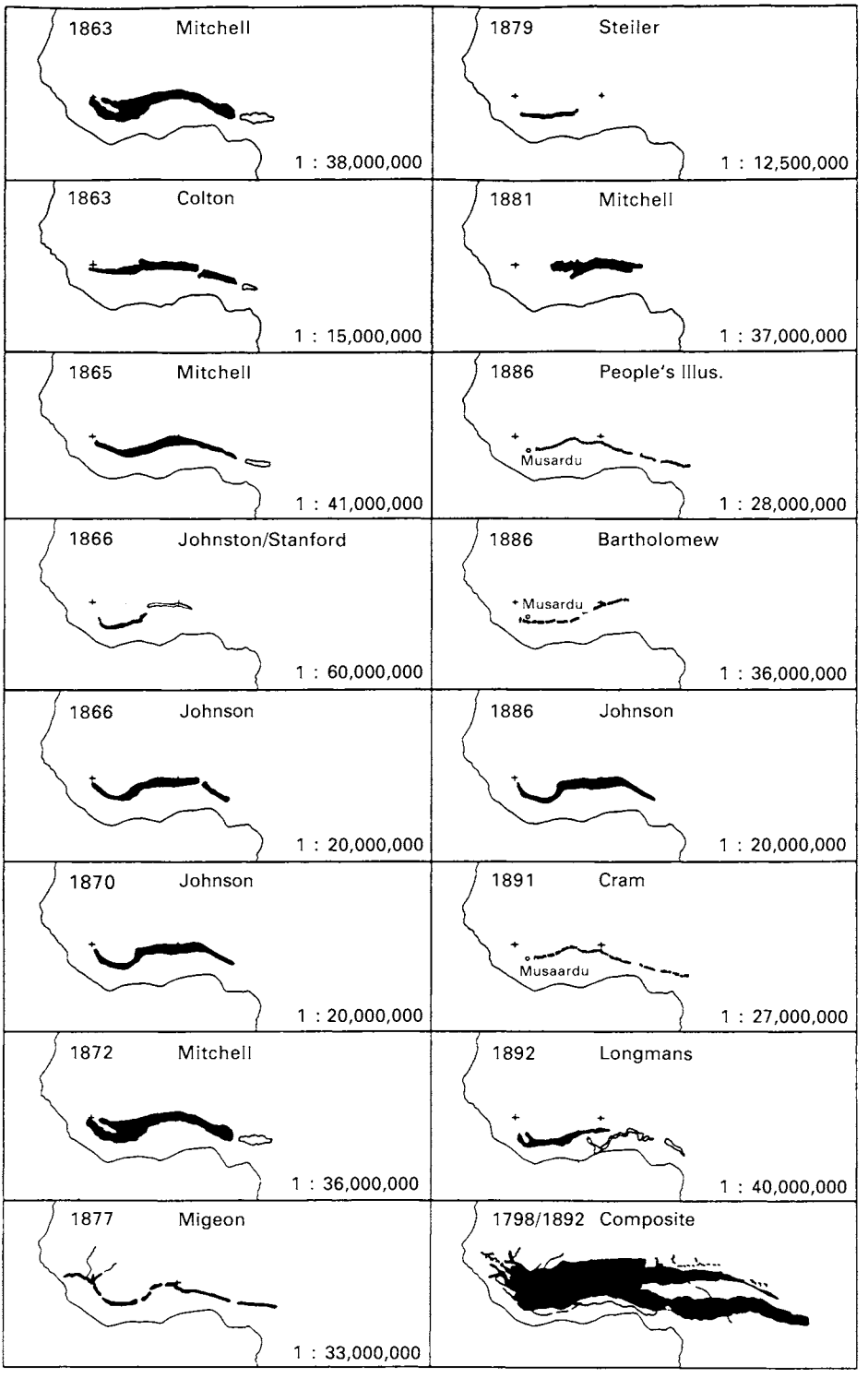

Fig. 6. For legend see p. 386.

In 1888, J. Teilhard de Chardin discussed the 'orographic system' of West Africa in terms of the Kong Mountains.

> One may say that the entire country is composed of a succession of terraces or plateaux which arise along a slope more or less perceptible from the sea to the hills of Manhis, buttressing the Mountains of Kong... The largest part of Dahomey appears to have been comprised of the remnants of the heights of Kong or of the Manhis during the pluvial or diluvial periods of geologic time.[80]

There was, however, some consensus that the Kong Mountains were 'blue'. This notion first appeared in Rennell's 'Geographical Illustrations of Mr. Park's Journey'.[81] The 'blue peaks' of the Kong Mountains also appear in the accounts of Skertchly and Besson.[82]

As might be expected for imaginary mountains, there was considerable doubt about the extent and height of the Kong Mountains. Such doubts begin to appear with Reichard's 1803 map of the continent which shows the 'Gebirge Kong' to be less extensive than Rennell's rendition (see Fig. 6).[83] Pinkerton's maps of 1815 and 1818 have the guarded annotation: 'Kong. Range of mountains supposed to extend across the continent'.[84] The elevation of the mountains similarly varied. Some atlases put the height of the Kong Mountains at no more than 2,500 feet in elevation.[85] But Magnus's *Commercial Atlas of the World* claimed that they rose to 14,000 feet![86] Figure 5 shows that the actual land area above 750 meters (2,461 ft) is restricted in West Africa to the Futa Jallon and the Guinea Highlands on the west, and to the Aïr Massif, Jos Plateau, and Adamawa Highlands on the east.

Figure 6 shows a remarkable variety in both the form and extent of the Kong Mountains during this period. Some of the variation can be attributed to changes in cartographic styles and methods of printing: earlier maps used pictorial representation of mountains, later ones adopted hachures; earlier maps were block printed or made by copperplate engravings; later ones were steel engravings and lithographs. None the less, the passage of time and

[80] J. Teilhard de Chardin, *La Guinée Supérieure et ses missions* (Keer-Lez-Maastricht, Holland, 1888), 61.

[81] African Association, *Proceedings*, I, 476. Emphasis in original.

[82] J. A. Skertchly, *Dahomey as it is: Being a Narrative of Eight Months' Residence in that Country* (London, 1874), 317; 'Extrait d'un rapport de M. Besson, enseigne de vaisseau, commandant le comptoir', 1 mars 1844, in *Annales Maritimes – Revue Coloniale*, IV (1844), 21–3.

[83] C. G. Reichard, *Atlas des ganzen Erdkreises in der central Projection* (Weimar, 1803).

[84] J. Pinkerton, 'Africa', in *A Modern Atlas* (Philadelphia, 1815, 1818).

[85] G. Cram & Co., *Cram's Unrivaled Atlas of the World* (Chicago, 1891), 498.

[86] C. Magnus, *Magnus's Commercial Atlas of the World* (New York, 1856), 41. Before the advent of precise surveying, the heights of mountains were often exaggerated. In the seventeenth century some writers thought that the Italian Alps rose to over 22,000 meters (nearly 73,000 ft), but by the beginning of the nineteenth century the heights of known mountains were generally within a hundred meters of the correct figure. Unknown mountains could, of course, be a different story. See I. B. Ricciolio Ferrariensi, Societatis Iesu, *Geographiae et hydrographiae reformatae libri duodecim* (Bonoiae, 1661); J. K. Wright, 'The heights of mountains: an historical notice', in J. K. Wright, *Human Nature in Geography* (Cambridge, MA, 1966), 140–53; J. Wolter, 'The heights of mountains and the lengths of rivers', *Surveying and Mapping*, XXXII (1972), 312–29.

changes in styles cannot account for the multiplicity of forms the mountains take.[87]

The variety presented cannot be reduced to three or four types, reflecting three or four original sources. The source of particular renditions can sometimes be discerned as in the influence of Rennell's original map on the Arrowsmiths (1802, 1825, 1828) and Aspin (1813).[88] There is a 'family likeness' in the renderings of the mountains by Tanner (1834) and Mitchell (1848).[89] Some of the maps place the mountains north of ten degrees of latitude, most place them at or just south of ten degrees. During the nineteenth century there was a general southward 'drift' in the location of the Kong range. In summary, the patterns suggest that if one is imagining a mountain, one is also free to imagine its height and extent.

THE EROSION OF THE KONG MOUNTAINS

Although the image of a mountainous West Africa was sustained for most of the nineteenth century, some critics questioned the existence of the great mountain chain drawn by Rennell. Such challenges to the dominant spatial image did not lead, however, to a significant redrawing of maps. New information resulted in adjustments in the form and extent of the mountains. The resistance of the Kong Mountains to such potentially erosive forces

[87] Given the variety of ways mountains are illustrated on the maps we inspected (pictorial, oval lines, hachures, etc.), it is a subjective matter to decide how much area is covered by mountains on the maps included in Fig. 6. A further element of subjectivity lies in deciding how much of a long mountain chain to include when only part of it is labeled Kong Mountains, or when it changes name along its length.

The east–west extent of the Kong Mountains varies greatly from map to map. The range in length is from 525 km (325 miles) on the 1850 Meyer map to 3,950 km (2,455 miles) on the Mitchell map of 1848. The average length overall is 1,874 km (about 1,165 miles). The mountains, on average, are longer before 1850 than they are after 1850 (2,141 km vs. 1,677 km). The modal length is 1,950 km and the median length is 1,800 km.

The mean latitudinal position of the Kong Mountains was 10° 1′ N in the period 1798 to 1850. The mean latitudinal position was 8° 58′ N in the period 1850 to 1892. There was a perceptible southward shift in the position of the Kong Mountains as the nineteenth century progressed.

The modal position of the western end of the Kong Mountains was about 10° West longitude, which places it in the Guinea Highlands, southeast of Futa Jallon and northwest of Mt Nimba. The usual position of the eastern end of the Kong Mountains, particularly after 1850, is about 6° E longitude, which places it in the Oyo Yoruba Uplands, east of Ilesha.

A composite of forty maps which show the Kong Mountains (and name them so) in the period 1798 to 1892 is shown as the last item in Fig. 6. The Kong Mountains, at one time or another, have been attributed to the area shown in the shade pattern.

[88] A. Arrowsmith, 'Africa'; A. and S. Arrowsmith, 'Africa', in *Outlines of the World* (London, 1825); A. Arrowsmith, *Orbis Terrarum Veteribus Noti Descriptio. A Comparative Atlas of Ancient and Modern Geography from Original Authorities, and Upon a New Plan, for the Use of Eton School* (London, 1828); J. Aspin, *Africa Drawn from the best Authorities, for the Illustration of Lavoisne's Genealogical, Historical, Chronological, & Geographical Atlas* (London, 1813).

[89] H. S. Tanner, 'Africa', in *Tanner's Universal Atlas* (Philadelphia, 1834); S. A. Mitchell, 'Map of Africa showing its most recent discoveries', in *A New Universal Atlas Containing Maps of the Various Empires, Kingdoms, States and Republics of the World* (Philadelphia, 1848).

underscores the authoritative quality of maps. The fact they continued to stand despite the revolutionary finding of the Lander brothers that the Niger emptied into the Gulf of Guinea suggests that cartographic knowledge is partly based on non-logical factors such as aesthetics, habit, the urge to fill in blank spaces or the absence of a new authority.[90]

Among the first to cast doubt on the existence of the Kong Mountains were the proponents of alternative theories on the Niger's course. The editors of the *Quarterly Review* supported Maxwell's view that the Niger and Congo were one and the same river.[91] For this to be true, they had to deny the importance of the Kong Mountains as a barrier preventing the southward flow of the river. This was achieved by questioning the very existence of the Kong Mountains,

> of which we entertain the strongest doubt, for this simple reason, that it rests wholly on *hearsay*, and even this on very slender authority. Park, in his first journey, saw two or three peaks, near which the Gambia, the Senegal, and the Niger are supposed to take their sources; but instead of a central belt extending across Africa, he did not know whether they extended thirty, three hundred or three thousand miles.[92]

Before the Lander brothers' discovery of the Niger's terminus, James MacQueen hypothesized (like Reichard) that the Niger emptied into the Gulf of Guinea. MacQueen did not doubt the existence of the Kong Mountains but argued that there must be a major gap in the range for the Niger to reach the sea.[93] Malte-Brun was similarly dubious about the existence of a 'high central chain' stretching from West to East Africa. He stated that the writings of Ptolemy and Leo Africanus 'prove nothing' for the existence of such a chain. Moreover, the large numbers of slaves that reached Benin from inland parts suggested 'an open and easy communication with the interior'.[94] Malte-Brun was willing to call the present day Futa Jallon the Kong Mountains but beyond that 'the learned Rennell has stretched his conjectures too far, in pretending to connect this chain to that of the Mountains of the Moon on the south of Abyssinia'.[95]

Similar doubts arise in the pages of geographical journals on the eve of Binger's expedition to Kong. In a paper presented to the Paris Geographical Society in 1880 on the sources of the River Niger, H. Duveyrier remarked that some tributaries

[90] For a discussion of the stability and resistance of images, see Boulding, *Image*, 7–18.

[91] Anon., 'The journal of a mission to the interior of Africa, in the year 1805, by Mungo Park', *Quarterly Review*, XIII (April & July 1815), 120–50.

[92] *Ibid.* 146. Emphasis in original. The anonymous reviewer was responding to statements made by the editors of Mungo Park's *The Journal of a Mission to the Interior of Africa in the year 1805* (Philadelphia, 1815), in which numerous objections were raised about Maxwell's hypothesis, including the existence of the Kong Mountains, 'of which there appears to be no doubt'. Park, *Journal*, 115.

[93] MacQueen, *Northern Central Africa*, 149; MacQueen's map in this text shows such a gap in what is otherwise an extraordinarily mountainous West Africa. See 'A Map of Africa North of the parallel of 7° South Latitude; Showing the course & direction of the principal Rivers & Mountains particularly of the Niger & of the Gir With Their Tributary Streams, from the best Authorities. Drawn by James MacQueen, Glasgow 6th June 1820'.

[94] Malte-Brun, *Universal*, IV, 5–6.

[95] *Ibid.* 5.

appear to emerge from a plateau where, applying to a chain the name of a large market center, our maps indicate a Kong Mountain chain. It should be added that the very existence of a long continuous west–east mountain chain, given by all the old maps and by many new ones, is still to be proven.[96]

In 1888 a large section of the mountain chain stretching from Ashanti to Yoruba country was declared not to exist by Charles Maunoir based on the travels of the German merchant G. A. Krause in Mossi country (1886–7). Maunoir reported that 'to the north of Salaga as far as Mossi, the country is flat; the Kong mountain chain that one sees, even on the most recent maps, stretching to the east and north of Achanti, Dahomey and Yoruba, does not exist'.[97]

Some 'erosion' of the extent of the mountains is seen in certain maps and in their accompanying texts. For example, Meyer's map (1859) shows the Kong Mountains in three widely separated fragments, and the paths of the explorations of Clapperton and Lander and that of Duncan (1845–6) are shown crossing a large zone having no mountains.[98] In 1866 *Stanford's Library Atlas of the World* shows the Kong Mountains only in the western part of West Africa.[99] The eastern end of the mountain chain suggests that it is breaking up. A separate range (Zaraga Mts) appears to the northeast.

The first section of the Kong Mountains to disappear from the maps lay east of the Niger River. After 1850 it was common to refer to the Udi Plateau as King William Ridge or King William Mountains (Fig. 6: Meyer 1850, 1859; Mitchell 1863; Johnston/Stanford 1866). Fanciful connections with the mythical Mountains of the Moon (also known by its Arabic variants; Komri or Humra Mountains) were seldom made after 1860. By 1866 reports were reaching atlas makers that elevations between the coast and the Niger were not great. Johnson's popular *New Illustrated Family Atlas of the World* stated:

> North of the great triangular table-land lies Soudan, or Central Nigritia, under which name may be comprehended the countries watered by the Senegal, Gambia, and Niger, along with the coast of lower Guinea and the basin of lake Tsad, in the west of this section a mountainous table-land of no great elevation, in which the rivers above take their rise. The Kong Mountains, which run parallel with the Guinea coast, are a branch of this plateau.[100]

Burton sought to arrest this erosion in a paper presented on the Kong Mountains in 1882 before the Royal Geographical Society.[101] He argued that 'this range, which has almost disappeared from the maps', was the source of the Gold Coast's streams and, therefore, 'must exist'. 'The Ancobra, for instance, which often rises and falls from 20 to 40 feet in twenty-four hours,

[96] Duveyrier, 'Question', 530–2.

[97] C. Maunoir, 'Rapport sur les travaux de la société et sur les progrès des sciences géographiques', *Bulletin de la Société de Géographie*, IX (1888), 41.

[98] J. Meyer, *Neuester Zeitungs Atlas für alte & neue Erdkunde* (Hildburghausen, 1859).

[99] (A. K. Johnston) 'Stanford's library map of Africa', *Stanford's Library Atlas of the World* (Glasgow, 1866, with additions to 1877).

[100] A. J. Johnson, *Johnson's New Illustrated Family Atlas of the World* (New York, 1866), 97.

[101] Burton, 'Kong mountains', 484–6. Also in R. F. Burton and V. L. Cameron, *To the Gold Coast for Gold: A Personal Narrative* (London, 1883), 2, 354–8.

suggests that its sources spring from an elevated plane at no great distance from the sea'.[102] He described the range in the words of Clapperton, Duncan, and other travellers as made up of

towering masses of granite which contrasts so strongly with the southern swamps; upstanding outcrops resembling cathedrals and castellations in ruins; boulders of enormous dimensions; pyramids a thousand feet high, and solitary cones which rose like giant ninepins.[103]

Burton mistakenly gave more credence to these explorers' accounts than to the report of a 'native guide' he met at Axim who 'knew the Kong village but not the Kong Mountains'.[104]

In 1886, when the territorial rivalry between Britain and France was approaching its peak in West Africa, an atlas by Bartholomew contained a regional map of the area in which the Kong Mountains had virtually disappeared. There is one small area labeled Kong. Relief is suggested by hachure lines drawn to emphasize the drainage pattern. The descriptive index lagged behind in revision. It stated: 'Kong Mts., range Africa, between Soudan and Upper Guinea, from near Sierra Leone to Dahomey, 2500 ft. elev'.[105] That same year, Jean Bayol, the Lt Governor of Senegal and Dependencies, suggested that crossing the Kong Mountains might not be as difficult as many had supposed. While on a mission to Ivory Coast that year, he gathered information 'from reliable sources' that indicated that one could ascend the Kong Mountains in just six hours. He also believed that ostriches could be used as pack animals in the most rugged sections of the mountains![106]

[102] *Ibid.* 484. [103] *Ibid.* 485–6. [104] *Ibid.* 486.

[105] J. Bartholomew, *The Popular Hand Atlas of the World* (New York, 1886), 38. At about this time the controversial town of Musardu began to appear in the Guinea highlands on maps of West Africa. This town, like the Kong Mountains, appeared and then disappeared, and its very existence is disputed. Benjamin K. Anderson, a Liberian explorer, published an account of his travels made in 1868–9. He undertook a second journey to Musardu in 1874. His travels predate both the French pursuit and capture of Samori and his army in 1899 and the adjudication of the Franco–Liberian boundary. Anderson's travels, if authenticated, would have given Liberia a claim to territories in the interior. It was thus in the interest of the French to discredit Anderson's published reports. One member of the Mission Hostains–d'Ollone (1898–1900), Charles d'Ollone, called Anderson's account an outright fabrication, claiming that he wrote his account with the aid of facts furnished by captives from the interior. As evidence, he cited the example of two towns (Nzolou and Nsapa) that Anderson placed more than sixty kilometers apart, which according to local inhabitants were in fact within shouting distance. He found many errors when comparing the maps for their own expedition with that prepared by Anderson. See Bartholomew, *Popular*; A. K. Johnston 'Stanford's library map of Africa constructed by A. Keith Johnston' (Edinburgh, 1866; reprinted with additions, 1877); and G. Cram & Co., *Unrivaled*, 196–7; B. K. Anderson, *Narrative of a Journey to Musardu* (New York, 1870); F. Starr, *Narrative of the Expedition Despatched to Musahdu by the Liberian Government under Benjamin J. K. Anderson, Senior, Esquire in 1874* (Monrovia, 1912); E. de Martonne, 'La frontière libérienne', *Bulletin de l'Afrique Française, Renseignements Coloniaux*, v (1928), 2293–314; and C. d'Ollone, *De la Côte d'Ivoire au Soudan et à la Guinée* (Paris, 1901), 281.

[106] P. Atger, *La France en Côte d'Ivoire de 1843–1893* (Dakar, 1962), 116.

BINGER: THE NEW AUTHORITY

It was Louis-Gustave Binger, a French military officer who spent two years (1887–8) exploring the area between Bamako and Grand-Bassam, who declared that the Mountains of Kong did not exist. Binger is considered to be 'among Africa's great explorers' and his expedition to be 'the last of the epic European explorations of West Africa'.[107] It was a combined treaty-making expedition, a reconnaissance of commercial opportunities for French traders and manufacturers, and a journey of exploration. He left Bamako in June 1887, traveled through the devastated countryside around Sikasso where Samori's forces were waging war with Tieba's army, and reached the legendary Kong in February 1888. As he approached Kong, he observed 'on the horizon, not even a ridge of hills! The Kong mountain chain, which stretches across all the maps, never existed except in the imaginations of a few poorly informed explorers'.[108]

The reference to maps in Binger's statement is revealing. It shows that he, like others before him who questioned the Kong Mountains' existence, had to confront the authority of maps.[109] To alter the spatial image of West Africa, Binger had, first, to disprove the authoritative basis of prevailing representations and, second, to establish his own credentials as an authority on the geography of the area. Both objectives were attained by observing that no mountain chain was to be seen in the vicinity of Kong. Earlier maps placed Kong at the base of the mountain chain, but no European had visited the area before Binger. Binger's observations were both ocular and 'scientific'. He carefully surveyed the area through which he traveled, making 13 astronomical readings along the way. In the process, he correctly determined the exact longitude of Kong which had been off by 1° 24′ (154 kilometers).[110]

[107] J. Baker, *A History of Geographical Discovery and Exploration* (London, 1937), 319, 355; Hargreaves, *West Africa Partitioned.* Vol. 1: *The Loaded Pause, 1885–89* (London, 1974), 90–1.

[108] Le capitaine L.-G. Binger, 'Du Niger au Golfe de Guinée par Kong', *Bulletin de la Société de Géographie* (Paris) (1889), 338–9; also quoted in le capitaine Binger, 'La ville de Kong et la prétendue chaîne de montagnes de Kong', *Revue de Géographie*, XXVI (1890), 62. A similar statement is found in Binger, *Du Niger au Golfe du Guinée* (Paris, 1892), 1, 285, but interestingly the reference to maps is omitted. It appears that Binger no longer perceived a need to confront the authority of maps showing the Kong Mountain chain by the time his book was published (1892). His position on the fictitious mountain range had been known to the public for at least three years prior to its publication. In addition to his presentation before the Paris Geographical Society on 3 December 1889, summaries of Binger's observations based on his letters from the field were published by the *Revue Française de l'Etranger et des Colonies et Exploration* on 1 February 1889. In a footnote to one such report, the editors note: '...one must not look for the origin of the name of the city (Kong) in the nature of the countryside in which it is located. M. Binger only saw mountainous areas to the N-N-W.' Anon., 'Exploration du capitaine Binger: pays de Kong', *Revue Française de l'Etranger et des Colonies et Exploration, Gazette Géographique*, IX (1889), 148.

[109] Note the references to maps in the quotes from Duveyrier, 'Question', and Maunoir, 'Rapport', 41, in the previous section.

[110] H. Duveyrier *et al.*, 'Rapport sur le concours au prix annuel fait à la Société de Géographie', *Bulletin de la Société de Géographie*, XI (1890), 150; Binger, 'Niger', 369.

Fig. 7. The inset map to Binger's 'Itinéraire de Bamako au Golfe de Guinée à travers les Pays de Kong et du Mossi' (1889) in which the Kong Mountains have been eliminated (Scale: 1:9,000,000).

Binger produced a number of maps of his expedition.[111] The one

[111] We are aware of at least five different maps produced by Binger to illustrate his journey. The first is a four-sheet map (1:1,000,000) which we have not seen but is cited in G. Demanche, 'Les traités Binger au Soudan Française', *Revue Française de l'Etranger et des Colonies et Exploration, Gazette Géographique*, XII, 100 (1890), 220. A second map illustrated his presentation before the Paris Geographical Society and was published in Binger, 'Niger'. This map (1:2,500,000) is titled 'Itinéraire de Bamako au Golfe de Guinée à travers les Pays de Kong et du Mossi, levé et dressé par le Capitaine L. G. Binger, 1887–1889'. It is this version that contains the inset map (1:8,750,000) titled 'Esquisse orographique de la région explorée' shown in Fig. 7. The third and fourth maps are found in *Le tour du monde* to illustrate Binger's lengthy account of his

published by the *Bulletin de la Société de Géographie* contains an insert map titled 'Orographic Sketch of the region explored' in which the Kong Mountains are conspicuously absent (Figure 7). The insertion of this thematic map is further proof of Binger's conscious attempt to refute the claims of mapmakers that a mountain chain stretched across the area. This map presents a forceful counter image that completely undermines earlier representations. It is a dramatic remapping of the region which conclusively shows that the Kong Mountains do not exist.

Through this combination of personal observation, surveying and map-making, Binger established himself as a major authority on the geography of West Africa. Such recognition was bestowed on him even before the publication of his two-volume *Du Niger au Golfe de Guinée*.[112] His presentation before the Paris Geographical Society on 3 December 1889 was highly acclaimed. He was praised for 'completely modifying the orography and hydrography of the region'.[113] Attending Binger's lecture were many distinguished representatives of the colonial movement in France. In addition to members of the Paris Geographical Society, many of whom were well-known expansionists,[114] his audience included representatives of the president's office, the armed forces, and the colonial affairs office of the French State Department.[115] Besides having 'the glory of removing the last blank spot on the map of Soudan',[116] Binger won the grand gold medal from the Geographical Society. In the award ceremony, he was honored for redrawing the map of West Africa.

> Despite the number of travelers... the physical geography of this part of Africa, which measures at least one million square kilometres, was truly unknown. Even until quite recently geographers drew a continuous chain of mountains, the Kong chain, running from east to west, which appears to be an artistic necessity for them to separate the basins created by their speculations... These [Binger's] surveys show first that [this region] is not crossed by a mountain chain in the direction of the parallels, and they give a much longer course than one had supposed up until now to the rivers which empty into the Ivory Coast and Gold Coast.[117]

Binger's achievements on the diplomatic front further enhanced his reputation and the legitimacy of his new map.[118] During his visits to the

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expedition. One is titled 'Itinéraire général de Dakar au Golfe de Guinée (1887–89)' (1 : 14,000,000), the other is 'Itinéraire du voyage du Capitaine Binger de Bénokhobougou à Kong et à Bobo Dioulasou' (1 : 2,000,000). See Binger, 'Du Niger au Golfe de Guinée', *Le tour de monde*, LXI (1891), 23, 70. A fifth map is found in Binger's book and is titled 'Carte du Haut-Niger au golfe de Guinée par le pays de Kong et le Mossi, levée et dressée de 1887 à 1889 par le G. Binger, Cap^ne^ d'Inf^erie^ de Marine par ordre de M. Etienne, Sous-Secrétaire d'Etat des Colonies, Hachette et Cie. (1 : 1,900,000)'.

[112] L.-G. Binger, *Du Niger au Golfe du Guinée* (Paris, 1892).

[113] H. Schirmer, 'La géographie de l'Afrique en 1800 et 1890', *Annales de Géographie*, I (1892), 187.

[114] Fierro, *Société*, 222–33.

[115] Anon., 'Séance extraordinaire du 3 décembre 1889 tenue dans le grand amphithéâtre de la Sorbonne pour la réception de M. L.-G. Binger', *Compte Rendu des Séances de la Société de Géographie et de la Commission Centrale*, XV–XVII (1889), 380–2.

[116] *Ibid.*

[117] Duveyrier, 'Rapport', 149.

[118] G. Demanche, 'Traités', 219–21; Duveyrier *et al.*, 'Concours', 151; Anon., 'Pays de Kong: exploration Binger', *Revue Française de l'Etranger et des Colonies*, XI, 85 (1890), 39–45.

commercial centers of Kong and Bonduku, he succeeded in making treaties with local rulers. These protectorates opened up a new north–south trading axis for France's possessions between the Sudan and the Guinea coast. Binger's treaties greatly influenced France's decision to extend its control over the coast between Lahou and Cape Palmas and their hinterlands.[119] This area ultimately became the western half of the colony of Ivory Coast. Binger's success in expanding France's sphere of influence combined with European interest in redrawing the political map of Africa created favorable conditions for the ready acceptance of his interpretation of West African geography.

In summary, Binger made a substantial contribution to French colonization in West Africa on both the diplomatic and cartographic fronts. His treaties secured new protectorates for France in areas that were considered to be of great commercial significance. His new map of the region furthered the process of empire building by removing what Europeans had perceived as a major geographical obstacle to trade between the Guinea coast and its hinterland. Binger's discovery that the Kong Mountains did not exist opened up new commercial horizons. The inveterate trader Verdier was enchanted with the possibilities.

> A route is opened towards this unknown country of Kong, which we now know to be inhabited by a population of higher civilization than that of the coast, which is consequently capable of offering outlets for our manufactured products. By happy coincidence, this new market opens at the very moment when a French shipping company is going to help French products arrive on the African coast.[120]

Binger's findings had an immediate impact on the commercial map industry. For example, Rand McNally's 1890 map of Africa showed the Kong Mountains. In its 1891 edition, they were gone.[121] By 1894 and 1895, the Kong Mountains were largely eliminated from maps and had all but disappeared from accompanying text. They persisted most tenaciously in gazetteer and index entries. This is not surprising since revision of a gazetteer is time consuming and probably not done with every new edition. Bartholomew's *Oxford Advanced Atlas* of 1928 has an entry in its index that reads: 'Kong Mountains, French West Africa, 8·40 N 5·0 W'.[122]

CONCLUSION

In this essay, we have gone beyond the limited 'first and last appearance' approach of some cartographic historians.[123] We have emphasized that the important questions are not what is and is not accurate, but what are the

[119] J. Hargreaves, *West Africa Partitioned*. Vol. 2: *The Elephants in the Grass* (London, 1985), 55.

[120] Quoted in Hargreaves, *Loaded Pause*, 91. Curtin discusses how the West African interior was portrayed in the early nineteenth century in mythic terms as more healthy, wealthy and civilized in comparison to coastal areas. See Curtin, *Image*, 86–7, 226, 353.

[121] Rand McNally & Co., 'Africa', in *Atlas of the World* (Chicago, 1890), 225; Rand McNally & Co., 'Afrika', *Neuer familien Atlas der Welt* (Chicago, 1891), 239.

[122] J. Bartholomew, *The Oxford Advanced Atlas* (London, 1928), 70–1.

[123] R. V. Tooley, 'The great lakes of Africa', *The Map Collector*, VII (1979), 13–16; L. Karpinski, 'Early Michigan maps: three outstanding peculiarities', *Michigan History Magazine*, XXIX, 4 (1945), 506–11; M. Knes, 'Michigan's mythical mountains', *Michigan Natural Resources* (Sept.–Oct. 1983), 26–9.

contexts in which the Mountains of Kong emerged, endured, and ultimately disappeared. This study dispels the myth of conventional cartographic history that non-decorative maps of the nineteenth and twentieth centuries are illustrative of objective scientific research. When we examine mapmaking in its social context, the oppositional nature of this debate on the objectivity vs the subjectivity of maps appears misdirected. 'All maps strive', as Harley notes, 'to frame their message in the context of an audience'.[124] The cartographic history of the Kong Mountains shows that maps are social constructions that are highly rhetorical in nature. We have traced the origins of the mountains to James Rennell and noted how they served to bolster his arguments within contemporary academic debates on the course of the Niger River. Rennell's audience was, however, much larger than the scholarly geographical community. The commercial interests backing the African Association's activities also had a stake in knowing which way the Niger flowed.

This cartographic history also illuminates the authoritative power of maps. Once the Kong Mountains were engraved in the mapmaker's plate, they became a salient feature in the mental maps of Europeans. Maps that were drawn 'from the best authorities' were believed to be accurate. Although there were some doubts about the existence and extent of the mountain range, the image of a highly mountainous West Africa persisted in the public's imagination throughout the nineteenth century. It required the emergence of a new authority like Binger to change this dominant image. Finally, the elimination of the Kong Mountains from maps in the late nineteenth century symbolized the much larger process of spatial reorganization taking place in Africa under European colonization. Binger's expedition was part of this partitioning of Africa following the 1885 Berlin Conference.[125] It was within this new political geographic context that the great barrier of the Kong Mountains was removed and Binger made his contribution to empire-building.

SUMMARY

This study goes beyond the 'first and last appearance' approach of cartographic historians to examine the social contexts in which the Kong Mountains were first depicted in and then eliminated from nineteenth-century maps of Africa. This history shows that the conventional periodization of the history of cartography into 'decorative' and 'scientific' phases is greatly exaggerated. We trace the mountains' origins to the geographer James Rennell and show how their purported existence served to support his arguments on the course of the Niger River at the turn of the nineteenth century. The enduring depiction of the Kong Mountains throughout the century illustrates the authoritative power of maps. This authority is based on the public's belief that cartographers are guided by an ethic of accuracy and are applying scientific procedures in mapmaking. Despite doubts about the existence of this mountain chain, the 'extraordinary authority' of maps helped to perpetuate an erroneous spatial image of West Africa until Binger's famous expedition in the late 1880s. With the publication of his travels and maps, Binger became the new authority on West African geography. His work altered the subsequent cartography of the region and substantially contributed to French empire-building.

[124] Harley, 'Deconstructing', 11.

[125] Binger went on to become the first colonial Governor of Ivory Coast in 1893.

APPENDIX

This appendix summarizes the source materials for Fig. 3. Each map is identified by date, author, title, and library (or book) where seen. The entries are in chronological order. Libraries and other sources are identified as follows:

[1] = James Ford Bell Library, University of Minnesota.
[2] = John R. Borchert Map Library, University of Minnesota.
[3] = Rare Book and Special Collections Library, University of Illinois at Urbana–Champaign.
[4] = Special Collections and Rare Books, University of Minnesota.
[5] = R. V. Tooley, *Collector's Guide to Maps of the African Continent and Southern Africa*, London: Charta Press, 1969.
[6] = Oscar I. Norwich, *Maps of Africa*, Cape Town: Ad. Donker/ Publisher, 1983.
[7] = Egon Klemp, *Africa on Maps Dating from the Twelfth to the Eighteenth Century*, Edition Leipzig, 1968.
[8] = Personal collections of the authors, almost entirely those of Thomas J. Bassett.

The following key is used throughout to indicate how the map was classified for Figure 3.

[p] = precursor mountains, that is, an east–west trending mountain range where the Kong Mountains are often shown on maps made during the nineteenth century.
[o] = no mountains, that is, absence of a mountain range where the Kong Mountains are often shown on maps made during the nineteenth century.
[K] = Kong Mountains (or variant, e.g. Kong Gebirge) annotated to an east–west trending mountain range.
[m] = mountains only, without place name, appear where the Kong Mountains are often shown on maps during the nineteenth century.
[t] = town or regional name of Kong, annotated, but no mountain range, used for maps published after 1798. Where [m, t] is shown there are mountains and there is a town of Kong or Kong as a regional name (or both), but the mountains are not unambiguously labeled Kong Mountains.

Maps shown on Figure 3

1511 [p] Bernardos Silvanus, Mapa Universal de 1511, in Carlos Sanz, Mapas Antiquos del Mundo, Reproduced by Carlos Sanz [2].
1516 [p] Carta marina de 1516, in Carlos Sanz, Mapas Antiquos del Mundo, Reproduced by Carlos Sanz [2].
1516 [p] Martin Waldseemüller, Carta Marina navigatorea Portugallen Navigationes, Plate 12 [7].
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