CONVENTIONAL SIGNS, IMPERIAL DESIGNS:
MAPPING THE GOLD COAST, 1874-1957

BY

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DISSERTATION

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ABSTRACT

This dissertation challenges conventional cartographic histories of Africa that invariably present a Eurocentric view of the mapping of the continent. These histories typically consider tend to position the Berlin Conference of 1884 to 1885 as the key moment in the mapping of Africa by European explorers, surveyors, and mapmakers. In contrast, this study offers a more balanced cartographic history examining the roles played by Africans in the mapping of the continent. The mapping of the British colony of the Gold Coast (Ghana) serves as a case study that illustrates the influence of Africans surveyors, cartographers, and chiefs in the mapping of Africa.

The research hinges on three central arguments. First, the techniques and technology of mapping enabled the governance of the colony, as maps were *everyday tools of rule*. Second, Africans were critical to the mapping of Ghana from its colonial inception through its independence in 1957. Their cartographic training and contributions to colonial mapping help to explain the striking continuities in mapping into the postcolonial era. Third, local chiefs, though not directly involved with the mapping practices, informed the mapping of boundaries by the colonial administration, thus influencing their territories of rule in northeastern Ghana.

This study demonstrates that cartography was a commonplace tool of colonial administration, and there is a *cartographic governmentality* to such maps. By this I mean, the maps have an instrumentality fostering administrative strategies while also there is a continuous pursuit of a higher degree of accuracy to achieve better knowledge and administrative coherence. It also correlates these interventions to administrative tactics of governing the population, the economy, and the territory. Further, this dissertation illuminates that maps were not solely constructed by British colonial agents. African surveyors and cartographers were influential in

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the mapping of colonial Ghana and their contributions to mapping was not solely framed around British colonial affairs, but reflected local and regional socio-political dynamics or an interest in scientific practice. A third contribution of this study is its focus on African agency, demonstrating that individuals not actively involved in the mapping process as professionals still influenced the mapping of the colony. Namely, local chiefs concerned with their territories of rule sought to influence their socio-political territory of rule and thereby influenced the making of colonial maps.

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CHAPTER 1
INTRODUCTION

Scholarship on the cartography of colonial Africa tends to emphasize the role of Europeans and European interests in the mapping of the continent.[1] European interests undoubtedly played a major role in the mapping the continent; however, Europeans were not alone in their efforts. Africans were also involved, as they actively participated in, informed, and contested various mapping practices.[2] Knowledge and understanding of African involvement is sorely lacking in most academic studies of mapping Africa. This study aims to help remedy this omission by examining the mapping of one African country – Ghana—during the periods of its colonization from, 1874 to 1957.

Africans played both direct and indirect roles in the cartographic construction of the Gold Coast. Their direct role is evidenced by their participation in mapping and survey institutions as surveyors and mapmakers. Their indirect role is illustrated by their political influence in delimiting administrative districts, specifically chieftaincy boundaries. Three interrelated questions guide the overall direction of this study. First, how and under what circumstances did Africans actively influence and challenge the partitioning, surveying and mapping of colonial Ghana? Second, how did British colonial government harness the technologies and sciences of mapping for the purpose of administration and rule of the colony? Third, how did maps and surveys transform relations of power between colonial government and Ghanaians?

To answer these questions, this dissertation makes three overarching arguments about mapping and colonialism. First, I argue that the technologies and sciences of mapping played a foundational role to the Britain's colonization agendas in Ghana – administering people and territory and exploiting natural resources. Second, I show that Africans actively participated in

the processes of partitioning, surveying, and mapping the new colony. My third argument posits that Ghanaians who were not directly involved in the mapping, nevertheless informed and contested chieftaincy boundaries, influencing the making of maps and the making of colonial power. The stakes in surveying and mapping the colony were high, and engagement in the processes and outcomes were critical to the production and rule of the country.

This chapter presents the origins and unfolding of this research, giving a glimpse into the broader concerns that inform this dissertation. In the next section I discuss the methodologies used in this research. My final section introduces the subsequent chapters, and it also points out the major contributions of this study.

Research Motivations

My interest in the cartography of Africa emerged from a research project that I was involved in the 1990s. Working as a research assistant to Professors Thomas J. Bassett and Yvette Scheven, I viewed hundreds of maps of Africa held at the University of Illinois Library. This work resulted in a checklist of maps of Africa published before1900.[3] As I documented and reviewed maps in the collection, I continually found myself interested in a number of recurrent themes. Namely, how were Africans involved in the making of these maps? Relatedly, how was African knowledge represented in the making of these maps? I was also curious about how mapmaking facilitated the European colonial epoch in Africa. Third, I wondered how mapping changed over the course of colonialism, as Bassett and Scheven's research did not delve into twentieth century mapping.

My emerging interest in these questions and topics led to my reading of several key texts that shaped my research further. I initially read several of J. Brian Harley's path-breaking works

that focus on the power-knowledge relationships of mapmaking. Harley also provided

methodological guidance in his writings on the deconstruction of maps.[4] His theorizations

enabled me to approach the history of cartography of Africa with a new appreciation of the

power of maps. In this sense, I recognized Harley's distinctions between the external and internal

power of maps. That is, Harley contends that the influence of a map's patron or sponsor in the

mapmaking process represents its external power. This form of power differs from the internal

power of maps, which is for instance marked by the meaning and significance of lines, symbols

and color embedded in maps. Harley's writings also helped me to further understand the

Foucauldian concept of power-knowledge and the ways that knowledge and power work in

conjunction with each other through the mapping of territory.[5] He links internal power to

Foucault's power-knowledge, describing it as:

> ...the way maps are compiled and the categories of information selected; the way they are
> generalized, a set of rules for the abstraction of the landscape; the way the elements in the
> landscape are formed into hierarchies; and the way various rhetorical styles that also
> reproduce power are employed to represent the landscape. To catalog the world is to
> appropriate it, so that all these technical processes represent acts of control over its image
> which extend beyond the professed uses of cartography.[6]

Harley's oeuvre and particularly his later works illuminated cartographic power and guided the

development of my research. In this sense my study tackles questions of power, as maps serve

colonial state interests and as Africans were employed and sought to influence the mapping of

territory.

The second major work that shaped my dissertation research interest is Matthew H.

Edney's *Mapping an Empire: The Geographic Construction of British India, 1765-1843.*[7] Edney

embraces several of the Foucauldian theories advanced by Harley and pursues the power-

knowledge of maps in the mapping of colonial India. Specifically, Edney's study examines the

ways in which surveying and mapping were designed, like a panopticon, to watch over and

control colonial subjects and territory. Edney writes, "The maps of India… form a disciplinary mechanism, a technology of vision and control, which was integral to British authority in South Asia."[8] His work illuminates and details many compelling arguments about the ways in which modernizing scientific and technical practices were used to make imperial rule possible. Both Edney's and Harley's work inspired me to consider the pertinence of the Foucauldian concept of governmentality to the mapping and colonialism in Ghana. Governmentality, as explained by Foucault and subsequent scholars, refers to the everyday exercise of power by the state with emphasis on the techniques and tactics of regulation, measurement, and calculation.[9] In this regard, this dissertation seeks to understand how maps work in the context of colonialism, advancing knowledge about the colony while furthering the development of institutions to govern the region and people.

While Edney's text informed my research trajectory around the governmentality of mapping during colonialism, one of the key issues that I found lacking in his study was the role of local populations in the process of mapping. He alludes to Indian involvement and acts of resistance that occurred, but Indian roles are generally unclear and not explored within his research. Thus, Edney's research and this gap in his study sparked my interest in the role of Africans in the making of imperial and colonial maps. His book led me to consider what role Africans had in the making of colonial-era maps, both as survey department employees of the colonial administration and as informants in the communities that were being mapped.

While the works of Harley and Edney influenced my initial questions about the power of maps during colonialism and the role of Africans in the mapping of colonial Ghana, my first forays into British and Ghanaian archives further informed the scope and directions of this dissertation., I became increasingly aware of the importance of one Gold Coaster, George Ekem

Ferguson, who played a key role in the expansion of British colonial territory and the making of early colonial maps. Employed by the British colonial government in early 1880s to the mid-1890s, Ferguson copied and drafted maps for the British administration. Over the course of his career, Ferguson worked on colonial boundary surveys, drafted large-scale plans, compiled colony-wide political maps, and depicted the expansion of British colonialism. The Gold Coast Colony's governor hired Ferguson for several missions to Asante and the "hinterlands," where he secured treaties of trade and protection, and his maps and reports served as key documents that supported British territorial claims to these regions.

Ferguson not only drafted maps, but he also produced other paintings and sketches – scenes of locales and views that he encountered. In one such sketch, Ferguson highlights his own role as a surveyor and places himself in the center of the image (Figure 1.1)[10]. He depicts himself standing on an overlook as he scans the basin of the Volta River, likely holding an Abney level to survey the horizon. In the lower right of the frame, laborers are shown carrying the supply loads in support of the mission. In the image, Ferguson also marks out significant points on the horizon. On the whole, the sketch suggests the distinct difference of Ferguson, as he is not with the other workers, and his centrality to the imperial project as he places himself at the center of the picture. Additionally, he is empowered with the equipment that enables him to survey the broader terrain and visually portray key points on the horizon. I include Ferguson's self-referential sketch here both to mark Africans' contributions to the mapping of Ghana and to emphasize the contribution of the technologies and sciences of mapping to colonial rule. This preliminary research verified that Africans indeed were key to the mapping and expansion of the British colony. As my research questions evolved, I sought to understand Ferguson's contributions and the broader socio-political context in which he operated. Likewise, I wanted to

uncover the roles and contexts of the many African surveyors who would follow Ferguson, particularly in relation to the changing colonial governance related to expansion, administration, consolidation, and dissolution.

These readings, among others, and the pre-dissertation research I conducted informed the ultimate research questions that I noted earlier and reiterate here:

1) How did the administrative interests of the British colonial governments harness the technologies and sciences of mapping?

2) How and under what circumstances did Africans actively influence and challenge the partitioning, surveying and mapping of colonial Ghana?

3) How did maps and surveys transform relations of power between colonial government and Ghanaians?

I hypothesize that mapping and surveying, as technologies and science, contributed to the colonization of the Gold Coast; that Africans were essential actors involved in the surveying and mapping of the colony; and that Africans actively informed and challenged chieftaincy boundaries, shaping the making of maps.

Overall, this study makes two notable contributions to the literatures on colonial cartography and African social history. First, it offers a periodization of colonial mapping with a focus on Ghana. I chart the mapping of the colony through periods of 1) colonial expansion (1874-1900), 2) development and administration (1900-1930), and 3) consolidation and decolonization (1930-1957). In doing so, I demonstrate the ways that maps and surveys serve as mundane or commonplace "tools of rule." Further, in this periodization, I show the involvement of African surveyors and cartographers throughout the colonial era, illustrating that their contributions we essential to mapping of the colony. Second, this dissertation highlights the role

of local agency in the production and use of maps within the Gold Coast Colony, thereby challenging the Eurocentric narratives that tend to dominate cartographic studies. From the early work of George Ferguson to the contribution of Africans employed by colonial survey department, this study illustrates the colonizer's reliance on African workers and knowledge in map compilation and colonization.

Methodology

I draw upon both secondary literature and archival materials to write this social history of the cartography of Ghana. I rely particularly on the annual reports of the Gold Coast Colony and of its various departments for insights into the construction and administrative use of maps. I examined reports on the surveying and mapping of the Gold Coast from the records of the Colonial Office, housed in the British National Archives in Kew and the records of the administration (ADM) as well as the Colonial Secretary's Office (CSO) located at the Public Records and Archives Administration Department (PRAAD) in Accra. The CSO contains files of the colonial Survey Department, which gave context and background to my research. Many additional reports on mapping and surveying also emerged in the administrative files of PRAAD in Accra and Tamale. Personnel files for surveyors working in the early twentieth-century were also another key resource found at the PRAAD-Accra offices.

There were both challenges and opportunities in conducting this archival research. Of the opportunities, the most notable was the wealth of unique resources that exist among the various libraries and archives that I visited. I uncovered hundreds of uncataloged maps at the Ghana Survey Department and the British Library, and I examined many other hundreds of printed maps held at both these locations as well as at PRAAD and the British National Archives. In

addition to the maps, I read hundreds of files that dealt with mapping, surveys, partitioning, and colonial administration. The opportunities of uncovering such a wealth of resources on this topic also relates to some of the challenges I faced in conducting this research.

The most significant challenge I faced in writing this work stemmed from the dispersed and uncataloged sources of Ghana's cartographic history. The maps, reports, and related documents are held by many different archives and libraries, across both Ghana and the United Kingdom. This fragmented archive made it difficult to piece together particular events or follow a narrative thread. In some institutions, there were abundant materials but cataloging and preservation of the records were under-resourced, which meant that locating and reviewing complete files was not always possible. Another challenge was that while some files were particularly abundant, information relevant to this dissertation was relatively scanty. Additionally, in both the UK and Ghana record keeping and archival holdings taper off dramatically in the 1930s in part due to the global economic crisis.

I compiled a database of these archival resources, which allowed a simple temporal analysis of the unfolding history of Gold Coast surveying and mapping. The core themes of this research emerged from content analysis of these files and records. I supplemented archival records with other documents drawn from the holdings of the University of Illinois Library and as well as texts available from other libraries through its interlibrary loan system. These repositories furnished the materials pertaining to the British Colonial Office, colonial surveying, and Ghana's colonial history.

The archival records held by both the U.K. and Ghana are scanty and often times non-existent after the 1930s. In general, the documentation found within the archives is recorded from the perspective of colonial official. To understand the later period of colonialism and to

understand African perspectives on surveying from both surveyors' and community members'

perspectives I interviewed retired surveyors and the residents of communities where surveyors

worked. Twelve surveyors and one cartographer, each of whom worked or was trained during the

colonial era, helped fill in major gaps in the archival record from the 1930s to independence in

1957. I also met with and interviewed the former head of the Survey Department, who offered

information on the history of the department and its practices, despite not having been employed

during the colonial period. I also interviewed community members about the demarcation,

mapping, and administration of their communities.

I identified the surveyors and cartographer whom I interviewed after visiting the Ghana

Institution of Surveyors in Accra. Thanks to meetings with members of this organization, I was

introduced to individuals who had been employed by the Survey Department during the colonial

era. In the process of interviewing these former surveyors, I also obtained additional names and

contacts of people to interview.

After gaining my informants permission, I recorded and transcribed all interviews. I

conducted a content analysis of these materials from which I was able to identify common

experiences and unique insights. The interviews and experiences of these individuals informed

my understanding of the surveying and mapping of Ghana between 1928 and 1958.

Since the views of ordinary people are rarely found in the colonial archives, I sought to

understand the perspective of community members who lived in areas mapped during the

colonial period. To gain this perspective, I first identified communities that had been mapped

during the colonial era and where archival records indicated a history of conflicts around land

matters or boundaries. Several archival files referenced conflict in the area surrounding three

Upper East communities: Binaba, Kusanaba, and Zongoiri. Based on these files and the sketch

maps contained in the files, I worked with a local agricultural extension agent who was from the area to introduce me to elderly members of the community. He helped identify men in each of these communities who might help inform me of the local history and have knowledge of these boundary conflicts. Of the people involved in these conflicts, all of them have since passed away; thus, we were only able to interview individuals with second-hand knowledge of the conflicts. Only a couple of the individuals interviewed had knowledge of these conflicts in any detail.

Additional key resources for this research are the maps compiled during the colonial era by the British government and the Gold Coast's colonial Survey Department. I reviewed and analyzed every such map available that was held by the Ghanaian and British national archives as well as those held by the British Library. I also reviewed many of the maps held by the library at Ghana's Survey Department. Here, the general condition of the library and the maps prevented me from having full access to the all the materials; however, the unit and staff were extraordinarily helpful in providing as much access as possible to their rich and unique collection.

My review and analysis of colonial maps include several exceptions. The Survey Department library held the hand-drawn concession maps compiled at the turn of the twentieth century, and I was unable to access and review the many hundreds of these maps at the time of my visit. I was able examine approximately thirty concession maps. Maps pertinent to land cases and stool boundaries were also not accessible and therefore not reviewed.

Table 1.1 summarizes the principal agencies that were involved in the mapping of the Gold Coast between 1874 and 1957. The table highlights the various entities, timeframes, and mapping activities that I discuss in detail in this dissertation.

Mapping of the Gold Coast, 1874-1957		
Name	Dates of operation in the Gold Coast	Mapping activities
War Office, U.K.	1874-1901	Colonial expansion through wars and treaty-making
	1874-1904	Boundary maps
	1911-1916	Maps of Gold Coast Colony and political divisions
Governor, Gold Coast	1884	Map of Gold Coast Colony divisions
Governor, Gold Coast; Colonial Office, UK	1890-1897	Colonial expansion through treaty-making
Royal Engineers, U.K.	1896-1900	Kumasi maps
Mines Survey Department, Gold Coast	1899-1905	Concession maps
	1907-1908	Topographical Maps of Gold Coast Colony
War Office, U.K.	1902-1907	Topographical Map series
Survey Department, Gold Coast	1908	Wall Map of the Gold Coast
	1910-13	Accra, Cape Coast, Sekondi Town Surveys
	1924-29	Topographic Maps
	1928-1949	Atlases of the Gold Coast
	1930-1957	Topographic Maps
	1920-1957	Town surveys
	1920-1957	Cadastral Maps
	1922 - 1946	Road Maps of the Gold Coast

Table 1.1: Agencies and Mapping Activities in the Gold Coast, 1874-1957

Organization of the Dissertation

The following three chapters of this dissertation address the fundamental research

questions that guide this study. Each chapter contains its own literature review to position the

particular arguments of that chapter. The next chapter examines maps as a form of

governmentality and as "everyday tools of rule." Chapter three engages the role of African

surveyors and cartographers in the mapping of the colony. The fourth chapter examines the

involvement of local power-brokers in the making of sketch maps. The final chapter is a

conclusion, recapping the main arguments and findings of this study.
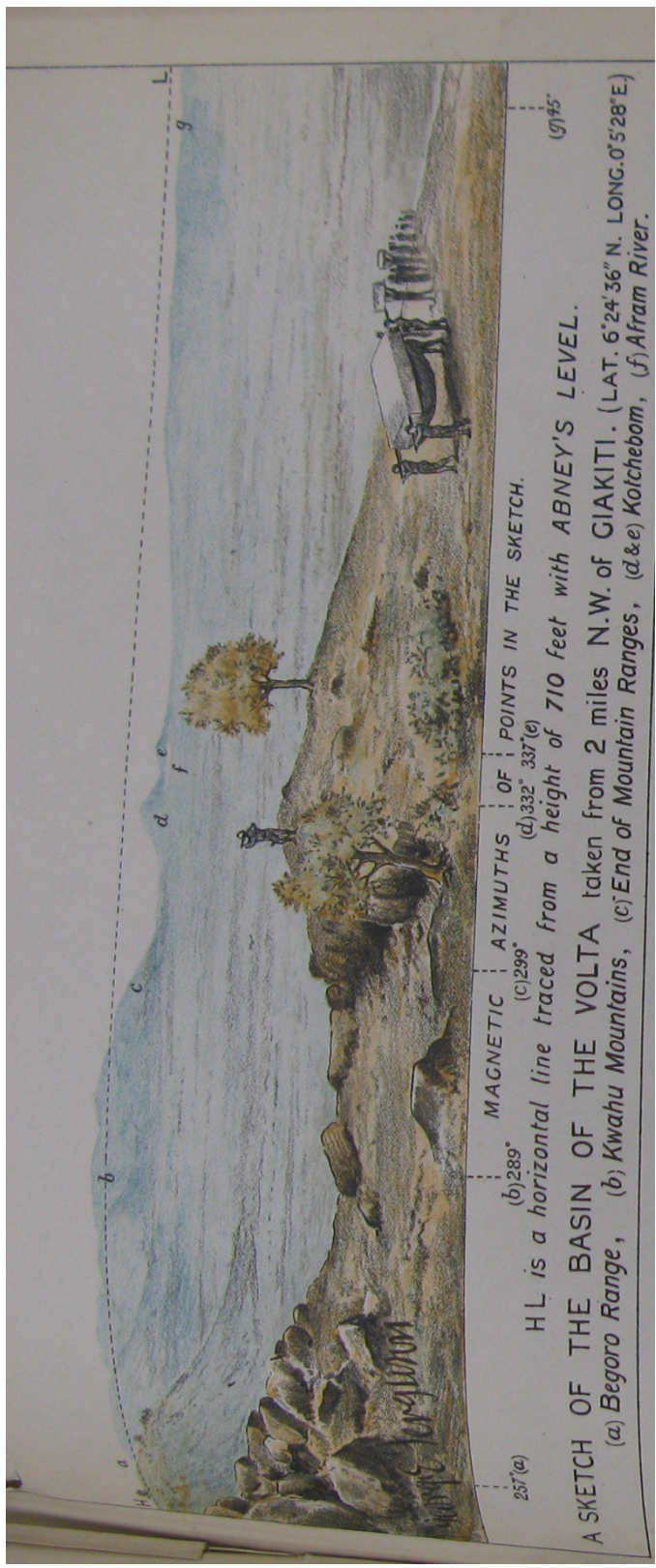
FIGURE 1.1: "A Sketch of the Basin of the Volta," by George E. Ferguson [10]

[1] Bassett, Thomas J., "Cartography and Empire Building in Nineteenth-Century West Africa," *Geographical Review* 84 (3): 316-336, 1994; Bassett, Thomas J. and Phillip Porter ,"'From the Best Authorities': The Mountains of Kong in the Cartography of West Africa," *Journal of African History* 32(3):367-413, 1991; Penn, Nigel "Mapping the Cape: John Barrow and the First British Occupation of the Colony, 1795-1803," *Pretexts: Studies in Writing and Culture* 4 (2): 20-43, 1993; Stone, Jeffery C. *A Short History of the Cartography of Africa.* African studies. Vol. 39. Lewiston: E. Mellen Press, 1995; Stone, Jeffery C., "Imperialism, colonialism and Cartography," *Transactions of the Institute of British Geographers* 13 (1): 57-64, 1988; Stone, Jeffery C., "The District Map: An Episode in British Colonial Cartography in Africa, with Particular Reference to Northern Rhodesia," *The Cartographic Journal* 19 (2): 104-28, 1982; Worby, Eric, "Maps, Names and Ethnic Games: The Epistemology and Iconography of colonial power in northwestern Zimbabwe," *Journal of Southern African Studies* 20 (3), 371-392, 1994.

[2] Bassett, Thomas J. "Influenze Africane sulla Cartografia Europea dell'Africa nei Secoli XIX e XX" ("African Influences on European Mapping of Africa in the 19th and Early 20th centuries"). In E. Casti, & A. Turco (Eds.), *Culture dell'Alterità: Il Territorio Africano e le sue Rappresentazioni* (pp. 359-371). Bergamo: Edizioni Unicopli, 1998.

[3] Bassett, Thomas J. and Yvette Scheven. *Maps of Africa to 1900: A Checklist of Maps in Atlases and Geographical Journals in the Collections of the University of Illinois, Urbana-Champaign.* Robert B. Downs Publication Fund No. 9, University of Illinois Library and the Graduate School of Library and Information Science, 2000.

[4] Harley, J. Brian, "Maps, Knowledge, and Power," in *The Iconography of Landscape: Essays on the Symbolic Representation, Design and Use of Past Environments,* D. Cosgrove and S. Daniels (eds), pp. 277-312. Cambridge: Cambridge University Press, 1988; Harley, J. Brian. "Deconstructing the map," *Cartographica* 26 (2):1-20, 1989; and Harley, J. Brian, "Cartography, Ethics and Social Theory," *Cartographica* 27 (2): 1-23, 1990.

[5] Foucault, Michel. *Discipline And Punish: The Birth of the Prison.* New York: Vintage Books, 1979.

[6] Harley, "Deconstructing the Map," p. 166.

[7] Edney, Matthew H., *Mapping an Empire: The Geographical Construction of British India, 1765-1843.* Chicago: University of Chicago Press, 1997.

[8] Edney, *Mapping an Empire,* p. 25.

[9] Michel Foucault, "Governmentality," in *The Foucault Effect: Studies in Governmentality*, Graham Burchell, Colin Gordon and Peter Miller (eds), pp. 87-104, University of Chicago Press, 1991; Gyan Prakash, *Another Reason: Science and the Imagination of Modern India*, Princeton University Press, 1999; Donald S. Moore, *Suffering for Territory: Race, Place, and Power in Zimbabwe,* Duke University Press, 2005; and James C. Scott, *Seeing like a State: How Certain Schemes to Improve the Human Condition Have Failed*, Yale University Press, 1998.

[10] CO 96/215 "Mr. Ferguson to the Governor."

CHAPTER 2

MAPS AS EVERYDAY TOOLS OF RULE IN THE GOLD COAST

The British colonial state in the Gold Coast actively engaged cartography with the intent of making the colony ideally more legible, and thus more governable. Maps and surveys conveyed information about the colony, its resources, and people. Colonial officials used this cartographic information for planning and development purposes and for promoting colonial policies. In this way, maps helped create an order to British interests and interventions in the colony by selecting and omitting social and physical characteristics of the land and population. In the process of rendering the physical and social landscape more legible, cartographers reduced variances and nuances to two-dimensional and simplistic representations. Colonial maps flattened the land to facilitate the aims, interests, and legitimacy of British governance.

This chapter is primarily concerned with how maps and surveys worked to facilitate governance in colonial Ghana. I argue that maps and surveys were part of the common arsenal, or *everyday tools of rule*, that were used to govern the colony. I show that British colonial administrators used maps and corresponding texts strategically, reasoning that armed with maps that were increasingly accurate and refined in the knowledge they contained, the colony would be more easily administered. I develop these arguments by engaging the Foucauldian concept of governmentality, where state power is tied to techniques and tactics to regulate, calculate, and measure. The technologies of surveying and mapping advanced the government's ability to generate knowledge and create institutions to govern the colony.[1] This knowledge is often technical and based in routinized practices surrounding calculation and regulation. The targets of governmentality, as described by Foucault, are territory, economy, and the population.[2] These three targets are evident in colonial maps of the Gold Coast. Through the compilation and

engagement of maps and surveys, surveyors, draftsmen, and political officers helped to frame and make the Gold Coast as a strategy to support colonization and rule.[3]

To tell this story, I first construct a theoretical framework that draws upon three literatures: the scholarship on science, technology, and colonialism; critical cartography; and, lastly, mapping and African history. I then turn to the maps and surrounding texts on the Gold Coast's cartography to demonstrate the relationship between mapmaking and governmentality; I argue that this relationship is evident in three domains: territorial, economic, and demographic.

First, I will show that Gold Coast surveyors and mapmakers deployed multiple techniques to make the territory knowable. They created a geodetic framework, topographical maps, and used "conventional signs" in their legends that together produced new territories of colonial rule. Rather than an expansive understanding of the colony, these mapping tactics narrowed the colonial administrators' gaze and focused attention on a set of values deemed worthy of representation.

The Gold Coast economy was the second target of colonial governmentality. For example, concession maps, distinct from administrative maps, were crucial to measuring and controlling the economy of the Gold Coast. Both private and government surveyors compiled concession plans, and when these were compiled by private surveyors, government surveyors checked and validated them. Surveyors issued these plans at much larger scales than most other maps of the Gold Coast, facilitating measurement and management. These maps governmentalized the economy geographically by codifying geographic coordinates of concessions, and, through a series of regulatory practices, they created a state system aiming to track concessions and concession agreements in the Gold Coast.

The final target of colonial governmentality explored in this chapter is population. In the Gold Coast, as in other British African colonies, there was considerable preoccupation with controlling people by determining the spatial boundaries of different ethnic groups. This interest was motivated particularly by the move to indirect rule, where the administration aimed to create ethnically homogenous territories ruled by chiefs known as a "native state." As such, the colonial state continually strove to align administrative territories with ethnicity based on the faulty assumptions that ethnically homogeneous territories, first, existed and, second, could be exploited to streamline administration of the population. The final section of this chapter examines the ways that the colonial administration used maps to define the territorial boundaries of ethnicity and map those territories into defined administrative regions or native states.[4] In summary, this chapter will show the ways that the mapping of the territory, economy, and population of the Gold Coast amounted to a cartographic governmentality in which maps became everyday tools that rendered the colony more governable.

Literature Review

Science, Technology, and Colonialism

The literature on science, technology, and colonialism interrogates the ways that the tools and technology of empire, which includes cartography and surveying, were instrumental in the process of colonization and governance. It is concerned with, among other things, the ways that science and technology facilitated government interventions and policies via development or modernization schemes. A dominant theme in this literature emphasizes the instrumentalist nature of science and technology.[5] Referred to as "tools of empire" or agents of European culture, science and technology are seen as serving and benefiting its users and the powerful. For

instance, Daniel Headrick argues that multiple variables, including technology, must be considered when constructing models of causality for nineteenth-century European imperialism. He suggests that instead of focusing on any sort of hierarchies of causality, scholarship must recognize that imperialism was driven by both motives and means. Technologies in transportation, communication, medicine, and weaponry made expeditions and imperialism both practically and economically feasible. Headrick maintains that technological means could reinforce motives. For example, he details the development of quinine to treat malaria, bolstering interest in Africa and exploration via waterways.

Headrick's work is important for demonstrating the significance of science and technology to empire building. However, his research overlooks the local dimensions of scientific development within the colonies. Within this instrumentalist approach, science drives the impulse to empire and shapes practices, but empire and the local dimensions of it are not fully appreciated in this literature. This dissertation seeks to illuminate the local dynamics of science, technology and colonization by focusing on the multiple roles played by Ghanaian surveyors in mapping the colony. It examines the local conditions and needs that influenced the development and use of maps for administration. The Gold Coast Survey Department, which employed African surveyors, emerged within colonial state structures with considerable power. The department produced maps that furthered colonial governance. For instance its topographical sheets delimited territories for administrative and development purposes and concession maps that privileged property rights and the extractive industrial economy. A nuanced understanding of mapmaking in colonial socio-political contexts is needed.

Beyond the instrumentalist viewpoint, the socio-political context of a tool's development and use also needs to be considered. Both the changing circumstances of colonialism and the

nature of technological and scientific practice lends itself to innovation and change. For instance, the mapping of territory and the making of maps were informed by the needs and pressures that arose over different phases of colonization.

With the poststructuralist turn of the 1990s, other scholars examined science and technology as being constitutive of and constituted by the society in which they emerge.[6] For some scholars, including Prakash, the relationship of science to government was not purely instrumental; rather, they see technology and science as intertwined with and implicated in state power.[7] In the case of India, Prakash views these technologies of governance as involving Indians in these technologies, as civil servants, politicians, and nationalists. Further, science and technology helped to create the colonial state and lay the groundwork for subsequent interventions.

Prakash argues that colonial science and technologies emphasized objectification, organization, development, and modernization of the colony. In his study of Britain's colonization of India, Prakash states:

> The administration became regularized and extended its reach farther down into the colonized society in its effort to generate new forms of knowledge about territory and the population. As the British produced detailed and encyclopedic histories, surveys, studies and censuses, and classified the conquered land and people, they furnished a body of empirical knowledge with which they could represent and rule India as a distinct and unified space. Constituting India through empirical sciences went hand in hand with the establishment of a grid of modern infrastructures and economic linkages that drew the unified territory into the global capitalist economy.[8]

Prakash's explanation points to conceptual issues that are key to the Foucauldian notion of *governmentality*. Prakash explores this concept—explaining that state "administrative apparatuses," techniques, and tactics emerged to manage new knowledge (*saviors*) with the aim of nurturing, developing, and governing a population, economy, and territory.[9] For example,

through sanitation or engineering projects, the government addresses the population's welfare and health as well as the development of the economy. Meanwhile, state entities were founded to implement, manage, and administer these projects and associated knowledge. However, Prakash argues that the momentum behind governmentalized power and techniques fosters state hegemony and an expansive power.

Foucault's concept of *governmentality* did not engage colonial contexts, however. He focused on the *governmentalization* of Europe from the fifteenth and sixteenth centuries onward, as administrative states emerged.[10] Thus, Prakash pursues the notion of *colonial governmentality*. He explains that "*colonial governmentality* operated as the knowledge and discipline of the other; it was positioned as a body of practices to be applied upon an alien territory and population."[11] Prakash argues that science and technology aimed to remake and reframe colonies; he contends science was a means to address perceived backwardness and bringing in European modernity. He suggests that the colonies were "underfunded and overextended laboratories of modernity. There, science's authority as a sign of modernity was instituted with a minimum of expense and a maximum of ambition."[12] These techniques and measures must be understood in relation to strategies of governmental power and bureaucratization, where pursuit of increasing accuracy is also seen as a means of strengthening governance. As will be shown, the colonial texts that surround discussions of mapping and surveying in the Gold Coast support this extension of governmentality to encompass colonial rule.

Colonial governmentality is a key concept that informs this study. This study extends the concept of colonial governmental to mapmaking and suggests that it informs the maps, mapping practices and the involvement of local surveyors and cartographers in colonial Ghana. It helps to

articulate the relationship between surveying and mapping, on the one hand, and colonial rule, on the other. Here a cartographic governmentality refers to the ways that mapping, including the technologies, tactics, and the institutions, and technicians behind these practices, facilitate administrative rule. This dissertation builds on this concept as it examines the making and re-making of Ghana as a colony, through maps and surveys, constructed according to British knowledge, authority, and priorities. I argue that the pursuit of calculable knowledge and increasing accuracy through the tactics of mapping is inextricably tied to governance. I view maps and surveys as a means that structured administrative power by producing and marking the colonial territory, the economy, and the population. As Prakash details for India in the nineteenth century, this study looks at the ways Ghanaians were drawn into colonial bureaucracies as "subordinate functionaries." For instance, Africans were trained as junior surveyors and cartographers to work within the colonial administration. Their training did not transform the Survey Department's practices; rather their success was largely measured on their faithful application of the standards and practices of British colonial surveying. This cadre of technicians did not pose obstacles to the unfolding governmental power but rather participated in it.

Both the instrumental and governmental applications of science and technology are highly relevant to the aims of this study. Cartography was a colonial tool that fashioned socio-political hierarchies and land rights within the Gold Coast. More specifically, maps were used to execute policies and chart development through the mapping of survey frameworks and topographies to achieve greater accuracy, track mining and timber concessions, and manage ethnicities through ethno-political regional divisions. In these ways, maps and surveys served as *everyday tools of rule.* Further, cartographic governmentality helps demonstrate the way in which the colonial state developed via surveys and maps as it sought social and territorial control

and to nuture development and modernization. This study will show that the science and technology of mapping was not purely in the hands of the British colonial agents but that local actors facilitated as well as challenged these practices. Educated Ghanaians learned the trade of surveying and mapping while chiefs contested division of territory made possible through mapping.

Critical Cartography

The literature on critical cartography builds upon science and technology studies. This scholarship challenges the neutrality of maps, and, in particular, understands maps as objects and sources of power and knowledge.[13] This research helps reveal the ways that cartographic sciences furthered and legitimized colonial administrative interests through mapping. Related to this study, critical cartography informs my understanding of how colonial mapping and colonial administration relied upon both the external, juridical power of maps and the internal power of maps, as described below.

In the case of Britain's harnessing of cartography for its colonial agenda, the works of J. Brian Harley offer foundational approaches to critical cartographic analysis. Harley's oeuvre explores the relationship between power and knowledge as they are manifested in maps and mapping practices. He argues that power is both external and internal to the map. On the one hand, external power operates in the use of maps as a form of juridical power, as they were connected to the state, the church, a patron, and other centers of power. In this study of colonial maps of Ghana, this form of power is linked most directly to the colonial state. On the other hand, a map's internal power derives from the way the map is made, which Harley terms the "cartographic process." He explains, "By this I mean the way maps are compiled and the

categories of information selected; the way the elements in the landscape are formed into hierarchies; and the way various rhetorical styles that also reproduce power are employed to represent the landscape."[14] In exploring the internal power of maps, Harley makes use of the Foucauldian concepts of discourse and power-knowledge.[15] He argues that maps can be read as texts that seek to persuade its readers that the world is constructed in a certain way.[16] In terms of power-knowledge, Harley stresses the ways that power and knowledge operate in tandem, as power is embedded within all knowledge.[17] Thus, the internal power of maps arises from the power-knowledge that informs the making of the map.

Harley's scholarship on the power of maps strongly influences my understanding of British colonial mapmaking. His work falls short, however, in explaining the multiple ways in which cartography contributed to governmentality. That is, the connections between cartography's power-knowledge and the administrative practices are not thoroughly explored in Harley's works, and he does not reunite these two threads of internal and external power in explaining the power of maps. That is, in the use of the map through its external power, does the colonial state draw also on the internal power of the map, and the ways in which power-knowledge are deployed in the making of the map? Can and do these forms of power work in conjunction with one another? More concretely, do maps created by the colonial state, as the external power of the map, draw on the internal power of the map to exert power in a multitude of ways? A goal of this chapter is to suggest that the ways in which surveyors, cartographers, colonial administrators, and the colonized peoples engaged with maps cannot be fully understood without extending cartography's connection to the broader social-political landscape, by which I mean the colonial government and the local population.

Matthew Edney's detailed examination of colonial mapping in British India takes up many of Harley's theoretical arguments in his writings on the relationship between maps and state power in colonial India.[18] His study is helpful in revealing both the aims and struggles the British faced in the mapping of India. Edney applies Harley's theoretical conceptualization of power-knowledge of maps to his study and arrives at a more complicated explanation of the ways that maps failed to support some of the objectives of state interests. Specifically, Edney describes the ways in which the Great Trigonometric Survey of India was comparable to Bentham's panopticon, detailed in Foucault's text, *Discipline and Punish*.[19] That is, within British colonial administration, mapping was thought to provide a level of surveillance and means for asserting rule over British India. His study points to the fact that mapping, like all panopticons, cannot achieve "perfect, empirically known truth… but instead constituted contested knowledge of a socially constructed reality."[20] In addition to the cartographic panopticon, Edney also asserts that the geographical construction of British India was a means for asserting a "territorial rationality" to India and legitimacy to British rule. This rationality imposed British notions of order onto the landscape, but Edney does not connect this order to the administrative rule of the colonial state. The broader objectives of the East India Company and of British imperialism are by and large missing from his unfolding narrative of mapping.

While Edney likens the map to a panopticon—or a simplification of an ideal surveillance strategy—I seek to link Gold Coast maps more concretely to administrative techniques and targets of administrative power. Cartography was instrumental and essential to the administrative needs of the colonial state. This chapter will show the role played by maps and mapmakers in territorial claim-making as they helped to chart the development of the economy, and to divide and rule its population through ethnic-based territorialization. Cartography supported these

governance needs. An analysis of mapping in the colonial context provides an opportunity to investigate the role of cartography in establishing and facilitating colonial rule. In this study, I pursue the internal power-knowledge of maps and surveys as it became embedded in and part of the toolset used in colonial government rule.

Mapping African Colonial Histories

Research on African and Ghanaian history points to important themes tied to mapping and territory that inform the scope of this study. There are two trajectories within this scholarship that I address. First, a number of scholars examine the mapping of Africa in relation to cartographic practices in global or African history. Second, the partitioning of contested territories and zones is also a focus of a number of social and political histories of Ghana. I examine both trajectories under the broader theme of mapping African colonial histories.

Several studies offer critical assessments of mapping in relation to African and global histories. For instance, Bassett's study of cartography and empire-building demonstrates that maps were inextricably linked to Africa's partitioning and European colonization. He deconstructs the power of European maps, linking imagery, focus, and blank spaces to the effort to legitimize nineteenth-century imperialism in Africa.[21] Likewise, Bassett and Porter examine the persistence of supposedly authoritative information—specifically, the location of the Kong Mountains—in "scientific" maps.[22] They contextualize broader European debates about the region's physical geography, which led to the mythical mountains' continued portrayal on maps. The authors argue that in the construction of maps—scientific or otherwise—all maps are socially constructed and imbued with rhetorical intent. In both of these works, the authors draw on the literature emerging from critical cartography to build their case and deconstruct the maps

as part of their interpretative approach. One focus of Porter and Bassett's research is on the

audience for the maps, and the way maps were used and interpreted. But in addition to audience,

the involvement of the original cartographer or agency is also significant in the mapping process.

By focusing on the maps and exchanges that surrounded maps at or near the time of production

and active use, my study uncovers some of the initial concerns and debates associated with the

making of maps. Such material can reveal greater understanding of the representation of

boundaries, the inclusion or exclusion of territory, or difficulties encountered in compiling the

map. Understanding the contexts of production and the surrounding debates and discussions

reveals intents, editorial decisions, and concerns. In interpreting the power of maps, these are

telling decisions that reveal the internal power that informs mapmaking. Relating this discussion

to the previous section on critical cartography, I seek to understand the interplay between the

internal and external power that informs mapping in Africa.

Stone explores the relationship between maps and imperialism in his history of European

mapping of Africa.[23] His research highlights very significant changes in cartography that

followed on the heels of colonialism. He states that "The great cartographic watershed for Africa

relates to the replacement of relatively remote European imperial influence with direct colonial

authority."[24] Specifically, he notes that a great preponderance of colonial-era maps are

characterized by larger scales, increased production of cadastral maps and direct connections to

administration.[25] He argues that these changes in map production are linked to different phases

of colonization. The early phase of colonization is marked by exploration and conquest. The

cartographic needs and production of this phase resulted in small scale maps. The later phases of

colonization marked by the exploitation of natural resources and the consolidation of colonial

state rule were facilitated by the production of larger scale maps. In summarizing Stone's

research, the colonial mapping of Africa emerges from the functions and needs of both the makers and audience of the maps. Stone's research suggests a very direct tie between these administrative needs and map production; however, the ways in which those needs are expressed and later inscribed in maps are not explored fully. This study will look at the multiple practices of making, using, and interpreting colonial maps and how they enabled a form of colonial governmentality.

This study also draws inspiration from the African history literature that addresses the politics of territoriality or boundary making. For example, Bening's scholarship on Ghana examines the social and geographic history of internal boundaries.[26] His text is a detailed study of colonial and postcolonial regional boundaries and national integration. He seeks to interpret the emergence of a unified Ghana from three separate British possessions, the Gold Coast Colony, Ashanti, and the Northern Territories. While this work does not center specifically on mapping and surveying, he notes some of the cartographic history of these administrative changes. Importantly, this research opens up a greater engagement with the spatial histories of the country. Bening examines the complex negotiations, maneuverings and conflicts surrounding these boundaries and the realignment of governance that accompanied these changes. Bening lays an important spatial and historical foundation for my study of the mapping of Ghana.

In Bening's study of northern Ghana's history, he examines the location of regional capitals, the formation of "modern native states, and the administrative structures implemented under colonialism."[27] He presents administrative histories for both the colonial state and for Ghanaian communities under colonial rule. Examining the foundation of "modern native states," Bening writes, "…collapsing kingdoms were reconstituted and welded together of hitherto independent settlements to form cohesive communities under colonial domination known as

native states and which have become entrenched as traditional areas."[28] He later explains that considerable effort went into determining the geographic territory and identities of various ethnic groups, such that "the first internal boundaries…[would] 'adhere as nearly as possible to existing racial boundaries' to avoid dividing homogeneous groups and partitioning the territories of chiefs between districts."[29] In this way, Bening's research draws together many of the concerns I have with both British and Ghanaian administrative structures being tied to spatial and ethnic configurations of rule. That is, he documents the history and efforts of the colonial administration to establish territorial rule in northern Ghana and points to the policies of the administration and their strategies of working with and against different Ghanaian interests to establish these regional configurations of native states under indirect rule. His approach informs my research by demonstrating the colonial administrative interest in manipulating territories and locating district capitals to administer colonial territories. What I seek to add to Bening's research is a focus on mapping as a tool of rule within these strategies. I also seek to understand whether the maps validated these processes or whether they complicated the work of creating new geopolitical configurations. In doing so, I will document the ways that administrators came to understand the social landscape of Ghana through mapping the terrain, resources, and the people onto various maps of the region.

Carola Lentz's writings on ethnicity also explore the spatial configurations of ethnicity and rule in Northern Ghana, but unlike Bening, she engages maps directly. [30] Her analysis is primarily concerned with the ways in which ethnicity is fabricated and codified as a means toward establishing colonial policies and rule. She refers to several maps to demonstrate that they were discursive devices helping to "invent traditions" of ethnic identity.[31] According to Lentz, colonial maps helped advance the idea of ethnicity, particularly as a model for governance

and the division of territory, regardless of the complexity that colonial administrators encountered. Her goal, while not explicitly stated, is to understand maps as administrative tools. Continuously noting the murkiness of ethnic categories, Lentz explains how maps solidified ethnicities that persisted throughout the colonial and into the postcolonial era. Her assessment of the making of ethnicity and territories is central to my own interpretation of mapping the population. This chapter builds on Lentz's concept of the discursive creation of ethnicity through mapping. Adding to her approach, I seek to understand more concretely the ways that colonial administrators and mapmakers used such maps to govern the colony.

Both Bening and Lentz offer richly detailed case studies and concepts that are important to my work. Bening traces spatial histories of native states, district capitals and Ghana's regions, while Lentz examines the discursive creation of ethnicity via mapping. Stone, on the other hand, broadly ties the interest of the colonial state in influencing mapping projects. Stone points to the production of larger scale maps as the colonial state sought to learn more about the districts being ruled.[32] Building on Stone, Bening and Lentz's work, I present maps as helping to inform and guide British colonial rule. Second and because of this distinction, I am able to then interpret colonial rule and African engagements where mapping is a tool of administration. I view maps and mapping as structuring approaches to rule and informing the colonial administrative planning and practices.

In summary, these three literatures offer a number of key concepts that enable my analysis of maps as tools of colonial rule in the Gold Coast. First, colonial governmentality is central to this investigation into the ways in which maps work. It informs the structuring of my case studies, as I investigate the mapping of territory, the economy, and the population—all noted as targets of governmentality. I further delve into the concept of colonial governmentality

by seeking to understand the calculus of administrative power, specifically through the productions and use of maps. Concretely, I examine the ways in which the colonial state used maps to expand the territorial scope, exploit the gold and other resources, and align regional boundaries with the social construction of identities. Second and drawing from the critical cartography literature, the study seeks to understand the ways that the colonial state mobilized maps to support their interests and at the same time how these interests shaped mapping. To explore the ways that both the internal and external power of maps helps to realize a more robust understanding of the colonial state. Namely, I consider the ways in which the state used maps to make various claims to power; I also examine the ways that knowledge-power represented within the maps and through their compilation reinforced colonial power. Third, this study probes the contexts, discussions, and intentions that shaped mapped production. I focus on the practices of surveyors and the Survey Department and the stated interests that colonial administrators had in maps. Further, I explore the ways that maps helped to codify ethnicity and were thus instrumental in governance policies such as indirect rule.

I.   Territorialization: Cartographic Conventions & New Spaces of Colonial Rule

In this section, I focus on cartographic practices that enabled the expansion of colonial territory. Though discussions of colonial expansion in the Gold Coast typically address northward territorial expansion from early coastal claims, here I focus on the expansion of territorial representation supported by a narrowing of the cartographic focus. That is, by enlarging the scale of maps, the maps represented an expansion of the extant territory, narrowing the lens to bore down and see an expanded local view. Further, this enlargement of the scales of maps results from the changing techniques that changed the focus of maps, portrayed territory in

topographic quadrangles, and simplified the depiction of various features on maps in order to better administer the territory, its resources, and its people. Changing cartographic practices on Gold Coast maps included the establishment of geodetic frameworks, the making of topographic sheets, enlarging the scale of maps, and adopting "conventional signs" or key symbols for the maps.

The frameworks, topographic quadrangles, and a system of 'conventional signs' was part of the process of governmentalizing mapping practices that began to take shape in the Gold Coast in the early twentieth century. These mapping practice supported governmentalization by pursuing ever-increasing accuracy and standardizing representations and symbols. That is, maps fostered the territorial interests of the colonial state by increasing the legibility of the land, resources and people that the state sought to administer. The intent and pursuit of such accuracy aided colonial officers posted to district and regional offices in getting to know and administer the regions. I examine each of these practices – framework construction, topographic quadrangles, conventional signs in more depth in this section. In doing so, I also explore the role of the Survey Department and its efforts to foster better governance through improved mapping practices, which signals the importance of understanding mapmaking practices and the contexts of their production. Further and following Stone's arguments about the changing scale of colonial maps, I seek to understand these changes in relation to administrative goals.

Early colonial maps of the Gold Coast worked to establish the colonial space and its northward expansion. By the early twentieth century and following the accession of Asante and the Northern Territories into the Gold Coast, colonial maps focused less on extending colonial territory. Rather, new maps were needed to facilitate everyday colonial rule and to exploit systematically the country's natural resources. These maps fostered new understandings of

colonial spaces and resources which enabled district and regional administrators to more effectively pursue colonial agendas and needs. Mapping territory changed over time, as the Survey Department of the Gold Coast developed new systems for representing social, political, and physical space and coordinating mapping. The Survey Department, with some oversight from the Colonial Survey Committee in London, created new standards for representing the resources and features of the territory. These transformations in mapping led to the development of new spaces of colonial rule**.**

Conventionalizing Mapping - Frameworks, Quadrangles, and Signs

Frameworks

The mapping of the Gold Coast Colony and Ashanti was linked to an initial framework of theodolite and compass traverses created in the early 1900s and to a revised framework that was constructed in the 1920s using triangulation and theodolite traverses.[33] As the framework developed in areas not previously covered by its net of coordinates, there was a potential for more maps to be crafted that built off this framework and later sub-frameworks. Its establishment was important to enabling greater coordination and accuracy of mapping, as closer coordinates would reduce the extent of errors. As Edney's research on the trigonometric surveys of British India shows, the establishment of a framework was part of an effort to create a "cartographic ideal" where the colony was assumed to be knowable through such techniques and measures.[34] As in Edney's study, this "cartographic ideal" is based on an assumption that there is a "perfect geographic panopticon," where the colony could be reduced to a "rigidly coherent, geometrically accurate, and uniformly precise imperial space…"[35] Throughout implementation of the main framework, surveyors perpetually strove for accuracy. Measurements were noted in field books

and on maps, but also "permanently" marked on the ground with beacons. These techniques and practices and the continual pursuit of codified exactness exemplify the relationship between cartography and governmentalization.

Directors of the Gold Coast's surveying department consistently wrote of their drive for the greatest accuracy in erecting the framework, yet they also acknowledged the need to balance accuracy against the financial cost, environmental conditions, and time involved in mapmaking. The density of vegetation was one of the primary barriers that added to time and costs of completion and prevented surveyors from using the most accurate methods available, such as triangulation. F.G. Guggisberg, director of the Gold Coast Mine Survey Department during the early 1900s, wrote, "The topographical survey of a country is based on a horizontal and vertical framework executed with great accuracy."[36] In its first several years of existence, the Mines Survey department cut many traverse lines in association with concession surveys. However, the department had not yet established a main coordinate system that spanned the country and to which these traverses could be connected. Rather, there was an effort to connect the concession traverses together after being measured and marked and not with reference to one baseline that would synchronize all measurement into one standard. .[37] The Mines Survey Department aimed to use these traverses throughout the Colony and Ashanti, "…forming a skeleton on which to build a map, the concessions being tied on the skeleton, and their positions with regard to each other thus definitely ascertained."[38] This initial work took place during the first seven years of the department's existence. Guggisberg again explains, "the framework thus started was enlarged until, as you will see from the map, the whole of the Gold Coast, and part of Ashanti, became covered with a network of accurately surveyed lines."[39]

In addition to this southern framework covering the littoral Gold Coast Colony, the concessions and Ashanti, by1908 there was also a separate baseline rigid traverse that spanned the Northern Territories that connected the German and French boundaries on the east and west of the country; however, the northern traverse remained disconnected from the framework started in the southern part of the Gold Coast.[40] While the department established these initial frameworks, largely based on theodolite traverses, the main framework was rechecked in the 1920s.

Following World War I and with the reopening of the Survey Department in 1920, the department implemented a scheme for the triangulation of the colony to improve its geodetic framework. The annual report for that year states:

> …both topographical and cadastral, now requires the investigation and elimination of certain errors in this framework. It was not possible in the pioneer days, with the facilities and staff then available, to provide anything further than astronomical checks, and the errors were not then of the importance that they have now acquired, with the development of the country, and the need for more detailed surveys, both topographical and cadastral.

The Survey Department saw the establishment and revision of the main framework as foundational to the ongoing mapping of the colony. Reflecting on this work, Curnow also described the importance of the framework with the department's reopening: "…the Survey inaugurated its work with the express recognition of the principle that a proper triangulation framework, or its equivalent, is essential for all branches of mapping, and should be the initial concern."[41] As such, the main framework was the priority, and extending off of this framework, secondary frameworks could be launched from the fixed points of the main framework.

For instance, the Survey Department initiated a rigid cadastral framework that was executed by using some of the fixed coordinate points of the main framework. The department initiated it in 1923. Like the main framework, the Cadastral Branch of the Survey Department

launched the project to provide fixed points for local surveys and as a way to coordinate among cadastral surveying projects of the department and private surveyors. An annual report of the Survey Department describes the necessity of using the cadastral framework, stating: "It is found necessary to emphasis [*sic*] these points as often as possible to bring before the public and the administration the necessity for a survey framework of the highest accuracy. To the absence of an accurate framework may be ascribed the original reason for confusion in land matters in many parts of the world."[42] One of the goals, then, for the Cadastral Branch was to reduce the number of land conflicts through these measures. The assumption was that a cadastral framework and the resultant maps that relied on it would codify boundaries to meet everyone's expectations. A perpetual goal of the Survey Department was to revise any errors to achieve accuracy. With new equipment, techniques, and staffing, the department prioritized and revisited the main geodetic framework and planned either extensions or primary, secondary, or tertiary frameworks to spawn off of it. Departmental annual reports throughout the 1920s and into the 1930s reported on the geodetic framework and highlighted these extensions. In this way, there was an ongoing encoding of territory—establishing new geographic coordinates, mapping them into the framework, and enabling more systematic mapping that used these data points.

Surveyors were responsible for establishing "permanent" markers and beacons on the ground to denote geographic coordinates—featured in maps and in their field notes. The beacons were points that correlated the map and the framework to the land and provided the "points of departure" for future surveys. However, a problem lay in the fact that the markers did not always survive that long. Curnow describes the reestablishment of the 1920s framework: "With regard to the framework, it was found necessary for various reasons to construct a new net. One pertinent reason was that many of the beacons used in the previous survey had disappeared."[43] In

the 1920s, new cement beacons were established that the Survey Department thought would be more long-lasting. These beacons were made of cement and with a brass, numbered disc embedded in the cement were used to mark the "points of departure" in traverses, such that surveyors could determine coordinates from these points and draft their new maps based on these points (Figure 2.1: Beacon with brass plate).[44] To try to address the destruction of the beacons, the Survey Department had to hire two staff members to inspect beacons and entrusted local chiefs to guard since people would remove the brass plates.[45] While the damaging of beacons is worthy of future study, it is not so much the point here as that their damage was also part of a continual process of establishing and maintaining what was thought to be a basis for accurately mapping the Gold Coast. That is, the framework was useful to surveyors only so long as beacons were preserved and available for future surveys.

The main framework, the sub-traverses for cadastral and topographic sheets, and the beaconing system provided a means to establish greater synchronization of mapping within the Gold Coast and to extend that system into areas that were not accurately connected to the rest of the coordinate system. While geographic coordinates were indicated on maps prior to the framework, they were not referenced to the larger network of known, triangulated coordinates. In crafting these networks, surveyors continually reestablished these points and extended the web of geographic coordinates into areas previously unconnected. These practices were routinized— following standardized methods of tracking, calculating, and denoting the framework on paper and on the earth's surface. In doing so, the Survey Department reduced the complexity and diversity of each geographic locale to codified systems based on geodetic mapping.

Topographic Sheets

The establishment of the main geodetic framework and sub-frameworks became the basis of the topographic mapping of the Gold Coast. Similar initiatives took place across British Africa at this time, where surveying units and the War Office produced more large scale topographical maps.[46] In doing so, mapping moved from covering the territorial expansion of the colony and the extent of British authority to a narrowing of the gaze to particular quadrants. Within these quadrants, surveyors were to convey a more detailed knowledge of the colony. The topographic sheets of the Gold Coast were initiated by F.G. Guggisberg in 1905, when he was a surveyor in the Mines Survey Department, and completed as part of the thirty-four-map series printed in 1907-08, after Guggisberg had assumed the directorship of the then Survey Department. In the following section I outline the methods by which the larger scale topographic quadrants at 30- by 30- minute squares were produced.

Guggisberg sought to produce maps that could be broken down into smaller units, remapped, and used with greater specificity. He did this by using standards developed by the Topographical Section of the General Staff (TSGS) of the War Office, which implemented a numbering and lettering series to reference sections of the general map of Africa. That is, the map was divided into block squares that were numbered, and these blocks were further divided into quadrants that were lettered. Thus, the TSGS created map quadrants that were labeled 72-0, 72-P, 72-Q, 72-R and 73-O, 73-P, 73-Q and so on, mapped first at a scale of 1:250,000. In compiling maps of the Gold Coast, Guggisberg further divided these blocks into smaller squares of 30 minute by 30 minute quadrangles ultimately mapped at 1:125,000. His coordinate system produced four sets of 72-P, and these quadrangles were labeled with Roman numerals. Thus, the Gold Coast maps were labeled 72-P-I, 72-P-II, 72-P-III, and 72-P-IV (see Figure 2.2). Each of

these quadrants were then issued as individual topographical sheet maps, and the sheet was

named according to one of the most sizable communities located in the quadrant.

The mapping of smaller topographical quadrants aided map production covering the Gold

Coast Colony and part of Asante. That is, the Mines Survey surveyors divided the War Office

series into four quadrants and filled in the details of each quadrant to construct the composite

map detailed above.[47] Specifically, the staff took the appropriate TSGS sections representing the

Gold Coast, which had been issued at 1:250,000, divided them into the four parts, produced

maps of 1:50,000, and then added supplemental data to these maps. The Survey Department staff

then reduced these maps to the scale of 1:100,000. Ultimately, these sheets were adjusted again

and reproduced at a scale of 1:125,000, so that they met the standard being set in London for

colonial topographical sheets.

In compiling these topographical sheets, Guggisberg described them as forming the "True

Map of the Gold Coast." [48] He had learned that the War Office wanted to produce a map of the

Gold Coast at 1:1,000,000, which Guggisberg thought was too small a scale to provide useful

information about concessions, roads, and other details. Guggisberg saw these topographic sheets

as possessing greater administrative utility. Writing about the "True Map of the Gold Coast,"

Guggisberg stated:

> I am certain that this map when completed will be of the very greatest use to the Courts in
> land cases, for Commissioners can easily fix any small chief"s boundaries on them; to the
> Commissioners in visiting their districts, keeping up roads, etc; to the Public Works
> Department for roads and surveys; to Mining Prospectors; to Companies taking up new
> concessions, and to the Puisne Judges in issuing Court Orders for Surveys."[49]

The quadrants would piece together to form a comprehensive coverage of the Colony and part of

Ashanti. Likewise, they were compiled on a scale that met the standards of the Colonial Office.

The series emerged from practices highly regulated by administrative standards, codified by the Mines Survey Department, and designed for everyday governmental use.

Conventional Signs

The production of topographical maps also brought with it a codification of particular values and interests of the colonizing government and the surveyors. Map legends or keys symbolized these interests and values. Map keys detailed what was referred to as "conventional signs" (Figure 2.3).[50] These signs created hierarchical information, reduced locally complex landscapes and represented them with standardized symbols. As noted by Harley, the way that signs are hierarchically portrayed indicates institutions stratifications and perceptions of relational power.[51] He also writes: "size of symbol, thickness of line, height of lettering, hatching and shading, the addition of color … we can begin to see how maps, like art, become a mechanism 'for defining social relationships, sustain social rules, and strengthening social values.'"[52] In the mapping of Gold Coast topographies, the symbols presented in these reference keys clearly illustrate the values of the colonial administration.

These symbols were adapted from the War Office's "Map of Africa." The local department created a printing plate of those symbols.[53] On the earliest published topographic sheets, the Survey Department referred to this plate as the Reference plate. According to Guggisberg's textbook on topographical surveying in West Africa, surveyors were to keep track of the symbols and the features that they were to represent, and when encountering such features in the field, then listing these features and their location in the field notebooks. When printing a new map, the department used the reference plate adding it along with the newly produced sheet. In this way, the exact symbols were reproduced with every map.

There were some key differences between the War Office reference key (Figure 2.4) and the Gold Coast Survey Department's reference key. Although both served British colonial interests, the Survey Department was interested in representing administrative details hierarchically. Also the Survey Department characterized a broader range of features, including administrative features, the physical geography, information for further surveying, and including some limited information about Gold Coast cultural contexts. Administrative details included information about boundaries, capitals, communities, concessions, roads, railways, telegraph lines, and the location of various government offices. The plate classified and ranked towns by size and noted whether it was a capital or if there was a 'head chief' located at the town. In doing so, the plate emphasizes the importance of certain locations based on their size or because particular power-brokers were identified within these communities. The hierarchy of these symbols also applied to some physical features and to the information about different transport networks under development. Size of rivers and types of roads would prepare administrators who were travelling in the Gold Coast for the type of journey they needed to be prepared for.

Beyond hierarchical information, the reference key also provided markers of other institutions that mostly served the colonial administration. Institutions such as churches, rest houses, post offices, telegraph offices, tax collection stations, and preventive service stations[54] likewise dotted the maps, and reference the infrastructure that supported colonial rule. Symbols also supported the work of surveyors. The topographical "conventional signs" marked survey beacons, rigidly traversed roads, doubtful names and positions on the maps. These markers enabled further survey work and the evolution of the topographical maps.

The keys did provide some marks for African cultural information, beyond the location of "head chiefs" noted previously. The maps included labels of ethnicity and "tribal boundaries."

Here the representation of such information was extremely limited, as surveyors and administrators had very little data on these matters. However, this information supported administrative practices whereby administrators began to be preoccupied with the location and extent of ethnic groups for purposes of territorial division and indirect rule. The mapping of ethnicity to facilitate colonial rule is discussed in more detail in the last section of this chapter.

As with topographical mapping, the use of these signs was to implement a standard approach and privileging of particular social or physical data. The signs worked by reducing the complexity of local circumstances and representing that complexity in a consistently simpler way. This simplification was reproduced on all topographical sheets. Colonial surveyors recorded the location of particular features and ignored other features not represented on the reference key plate. The landscape was reduced to the classifications that the Survey Director and War Office valued through their creation of the referenced list of signs. Conventional signs were yet another way of reducing complexity and representing a narrow set of colonial, administrative interests.

Together, the use of quadrangles, conventional signs, and a main framework were strategies of the government Survey Department to standardize the colony's territory and territorial mapping. Since expansion of the colonial territory had by and large ended by 1901, these techniques continued the mapping of territory through a narrowing of the gaze and an intensification of the scope of the maps. Such efforts compared with mapping in other colonial contexts, too. Edney describes the mapping of British India:

> The application of the same techniques and scales of enquiry to each and every district meant that the resultant maps and statistical tables all contained the same sorts of information and were constructed and tabulated in the same manner. They therefore obscured, or denied, local nuances and particular circumstances. The systematic surveys provided the information required by increasingly centralized states and, more fundamentally, they constituted each state's representations of its territorial self.[55]

These approaches demonstrate the governmentality of colonial mapping such that administrative agendas aligned with these technical mapping interventions. Specifically, the representation of similar data, symbols, and measurements focused and standardized the maps, and people could interact with multiple maps more easily compiling and reading these predetermined features on the maps. Additionally and because of these predetermined elements to the maps, the maps could function and foster similar uses of the maps. Further, the colonial administration sought to control and know the Gold Coast's territory with increasing accuracy, and the territory continued to be a target of governmental measurability and techniques. The increasing specificity of maps and strategies of representation led to new spaces of colonial rule that correlated to the colonial administration's needs—building roads, resolving boundary disputes, determining the location of key resources such as concessions, people, communities, or specific colonial offices. Thus, instead of the expansive territory, the colonial administration focused on narrower sections of land and controlled and coordinated measures through a series of techniques that could enable a supposedly more accurate knowledge of the Gold Coast.

   With regard to the power of these maps and cartographic features, frameworks, topographic sheets, and conventional signs supported the explicit needs and aims of governance and in doing so expressed the external power of maps. Likewise, the features expressed the internal power of the maps—creating hierarchies, prioritizing particular interests in the case of conventional signs. Topographic sheets privileged the standardization of the quadrangular map, shaped by longitude and latitude. Frameworks supported an emphasis on increased accuracy and the geographic coordinate system. Through the lens of colonial governmentality, both the external and internal power of maps are expressed and can be deciphered.

II. Economy: Concessions and Thematic Mapping

Foucault's concept of govermentality also seeks to understand the economy through its measurability. That is, Foucault argued that the economy becomes discernible via regulation, assessment, and calculations. In the context of colonialism, controlling and measuring the economy was a significant objective of the British colonists, as it was indicative of a level of success or failure of the colonial enterprise. In the Gold Coast, one of the first major developments that transformed the colonial economy was the granting of concessions for gold, rubber, and timber.. Hence, mapping and regulatory procedures involved in mapping concessions became important tools in measuring and regulating the economy.

The boom in rubber, timber, and mining concessions in the late nineteenth century sparked concerns and interests in surveying and mapping in the Gold Coast. With the growth of these concessions, European and African prospectors moved into southern Ghana and began negotiated lease agreements with chiefs. The government inserted itself into these negotiations and sought to regulate the granting of concessions through legislative means.[56] As part of this regulation, the Gold Coast government stipulated that concessions must also be surveyed and registered. This stipulation led to a dramatic rise in surveying in the Gold Coast.

The Concessions

It is important to understand the administrative, legislative, and historical contexts in which the expansion of concessions and survey mapping took place. The boom began with rubber harvesting in the 1890s, but by 1900 it was largely focused on gold mining. As extractive industries dependent on land, their exploitation sparked an interest on the part of the government to create land laws that would allow government to manage the colony's economic development.

The Gold Coast Legislative Council initially attempted to pass two separate land bills in 1894 and then in 1897.[57] It was suggested that these bills would help "to secure the interests of the Govt. [and of natives themselves]"[58] by requiring all concessions to be registered and by establishing a concessions court.[59] Early discussions of the land bill even sought to vest all "waste lands"—all unoccupied lands, forests, and minerals—in the crown.[60] From the perspective of the colonial administration, among the problems with this plan was the lack of surveys and property boundaries that were recognizable to the colonial administration.[61] The colonial government thus acknowledged the need for surveying and boundary-marking as important mechanisms for future administration of lands and concessions.

By 1897, when Governor Maxwell introduced the Public Lands Bill, he stated, "the Government has finally determined that the administration of the public domain for the public benefit shall be ensured by efficient State machinery." As a part of the proposed legislation, chiefs would be well-compensated from the land revenues. In addition, certificates to land, based on English law, would be issued to all landholders.[62] These explicit strategies of alienation of resources and manipulation of chiefs as auxiliaries of colonial rule were highly criticized by an elite group of Gold Coasters who mobilized substantial opposition against the proposed land bills, in part through the formation of the Aborigines' Rights Protections Society. As a result, the Gold Coast Legislative Council shifted its attention to the Concession Ordinance, which passed in 1900. In contrast to the lands ordinances, the Concessions Ordinance permitted Gold Coasters to engage concessionaires directly in the leasing and allocation of lands. Meanwhile, the ordinance provided the opportunity for the colonial administration to regulate lands in more subtle ways, while pursuing the administration's interests, as described below.

The Concessions Ordinance enabled all Gold Coast citizens to grant concessions according to the rules of customary law, and, within six months of the ordinance or transfer, compelled all concessionaires to register at the concessions court.[63] While surveying was not the major focus of the bill, the government embedded surveying within the legislation, which resulted in a great number of surveys being executed. The ordinance stipulated that all registered lands must be surveyed. Specifically the bill stated:

> Before any title *certificate* be issued to *in respect of* any land a grant to which is affirmed by any judgment of the said Court and before any rights of possession can be claimed under any judgment in respect of any land affected by any grant or concession whether of ownership or of any lesser right to such land, such land shall be surveyed by some duly qualified surveyor, whose work must be submitted for approval to the Director of Public Works or other person appointed in that behalf by the Governor, and the cost of such survey shall be paid by such person, persons or company claiming to be entitled under such judgment.[64]

The requirements meant that Government surveyors, initially located in the Public Works Department, either conducted the surveys or checked the concession plans of private, licensed surveyors. The colonial government's surveyors were central to the issuing of certificates of validity. Through this regulation, both government surveyors along with officials in the concessions courts became "key point[s] of governmental control under the ordinance."[65] As a means towards the quantification and regulation of concessions, the requirement of surveys added a technical intervention that would result in a new cadre of technical staff and officers to execute the plans according to the bill's stipulations. Such technocratic interventions resulted in several layers to administering the concessions, and produced a new realm of mapped data that needed to be tracked and recorded.

The concessions bill also drew on legislation enacted four years earlier, "An Ordinance to provide for the demarcation and survey of land," referred to as the Survey Ordinance of 1896.[66] This ordinance, based largely on English law, created a means for licensing surveyors,

government ordered surveys, expectations of the surveyors, chiefs, and communities in regards to a survey and rates of pay. With both the survey and concessions bills enacted, hundreds of concessions plans were drafted in the early twentieth century. In 1901, the government formed the Mines Survey Department to help oversee concessions mapping. While boundary commissions and public works surveyors had been engaged prior to 1901, this department would help centralize and organize the mapping of the Gold Coast over the decades to come.

A number of problems pertaining to surveying and mapping emerged following the passage of the concessions bill. First, there was a shortage of trained and licensed surveyors in the Gold Coast. As a result, the governor and the first head of the Mines Survey Department, A.E. Watherston, requested increased staff and equipment to process concession plans and extend the work of the new government survey unit. However, their requests were met with some cynicism at the Colonial Office:

> The delay in Concessions work was first of all said to be due to want of barristers, then want of Judges, and is now said to be due to want of surveyors. We are writing to the Governor with regard to the question of increasing the legal staff, and we have written to the W.O. [War Office] for more surveyors but I doubt whether we shall be able to get many more R.E. [Royal Engineer] Officers.[67]

The Colonial Office also noted private surveyors should be encouraged, and the licensing of surveyors should be facilitated both in England and the Gold Coast. However, the Colonial Office failed to recognize that, with the creation of the Mines Survey Department, a new bureaucracy responsible for cross-checking and monitoring had been established. The department head and his colleagues also complained of the Mines Survey's substantial backlog of work, which was certainly due to the boom itself as well as the implementation process and checking of all surveys.

The Gold Coast's government surveyors found it necessary to get more involved in the surveying and processing of concessions plans. Watherston complained that many licensed surveyors had not *cut the boundary lines*[68] accurately, and plans were also submitted that lacked the accuracy expected by the Mines Survey Department. The department's staff was drawn into the process of granting certificates of validity, checking plans, cutting lines, and resurveying properties initially done by private surveyors.[69] The department also sought more efficient ways to coordinate the surveys being conducted by licensed surveyors. Early in the department's existence, the survey parties were responsible for fixing datum points and traverses which the licensed surveyors could use to fix the coordinates of their plans.

Surveying and Regulating the Concessions

The annual reports of the Mines Survey Department revealed the activities of the Mines Survey staff during the concessions boom. Early reports were strictly textual descriptions of the scope of the department's work. However, each year, more and more details appeared. By 1904, the reports contained multiple tables. One tracked the work of all survey parties, costs of the surveys, location, concessions checked and cut, and the amount of money recovered from the mining company. A second table recorded the concessions receiving certificates of validity and included information on barristers, occupation, and rent. A third table listed concessions that had yet to issue certificates of validity. Another table included the schedule of work by concession, company, surveyor, and associated fees.[70] Mines Survey also systematized the work of licensed surveyors—including the demarcation of boundaries, surveying, and plan preparation. These requirements stipulated the location, frequency, and type of boundary markers to erect. Surveying regulations pertained to the allowable errors in the perimeter measurements, use of

tools, and coordinate system. All plans were to adhere to scale standards, the marking of true north and datum points, and to represent roads, communities, and natural features.[71] While seemingly innocuous standards could facilitate the work of surveyors, they also produced a system of practices that were regulated and judged by the Mines Survey staff. Further, the tracking of all the concessions in tables was a means of further documenting their profitability for the government.

Beyond the texts, numerous concession plans from the early twentieth century offer insights into the regulatory mechanisms that were implemented via the maps. These concession plans are currently held by the Survey Department's library in Accra. The plans, all of which are manuscript editions, include a statement indicating that the plan had been approved by the one of the surveyors at the Mines Survey Department. The wording of the statement varies slightly from map to map. Some government surveyors certified that the plan corresponded to the written lease or to orders of the court (Figures 2.5). Many statements noted the inclusion of government datum points on the plan and all indicated that the demarcation of the ground "is sufficient." The government surveyor and the licensed surveyor who executed the plan each signed and dated the map. Likewise, if the map was reproduced by a draftsman at the Deeds Registry in Accra, the Survey Department's draftsman also noted his work, signed and dated the plan. These concession plans also include a survey number, enquiry number, and a "certificate of validity" number as well. These notations give a greater sense of the ways in which the concessions and their mapping were processed and recorded at various levels, and the centrality of the Mines Survey Department in the governmental regulation of the concessions. Finally, the concession plans themselves offer increasing details on the layout and terrain of the Gold Coast. The Mines Survey Department set the acceptable scales at 1:5000 and 1:10,000, and most plans meet that

requirement. The execution of hundreds of such plans, despite variable quality, suddenly generated local and regional data that had not yet been recorded much less represented graphically. Mines Survey required that the surveys adhere to its set standards and included coordinate datum points that could be integrated into other maps of the region and the framework. Further, the topographical data, locations of communities, roads, rivers, and so on, provided insights that would have required massive investments from the British and Gold Coast governments to acquire. Where the quality of a concession plans was doubted and boundaries had not been adequately cut, the mines survey staff ultimately had to recheck the boundaries and plans. Indeed, many plans may not have adhered to the standards of the Mines Survey Department. However, regardless of accuracy, appraisals of scientific and/or technical accuracy, such as surveying, can continually be reevaluated, based on changing instrumentation, standards, skills, and advancement of knowledge. Therefore, from the standpoint of colonial governmentality, the surveying of concessions is not about *the actual production* of accuracy so much as *the pursuit* of accuracy and the process of economic regulation via cartographic practices.

Mapping the Regional Economy by Mapping the Concessions

Ultimately, the Gold Coast government found it necessary to have a broader sense of the concessions being established across the colony. Numerous boundary conflicts arose between and among concessionaires and local residents. The colonial government sought to understand the geographical distribution of the concessions as a whole and within the context of colonial development. In 1901, during the peak concession booms, Governor Matthew Nathan wrote about the need to conduct a survey of the Gold Coast mapping the location of all the gold mines

of the Colony. He stated, "I consider it absolutely essential that they do a complete survey with the least possible delay."[72] He went on to explain:

> The great number of concessions, the vagueness with which in many instances their boundaries are described in words, the fact that in none are these boundaries continuously marked on the ground, and the impossibility of locating the relative position of concessions with regard to each other from independent individual surveys of them, starting from ill-defined points in or near them (the relative position of these points not being determined by any system that can in the least be relied on), all point to the necessity for some general survey.

The rise in concessions and boundary conflicts led to considerable chaos. Mapping and surveying were seen as interventions that would impose greater regulation and order.

Just a few months prior to Governor Nathan's plea for a map, Stanford's Geographical Establishment issued "A Map of the Gold Coast with Part of Ashanti Showing the Positions and Areas of Mining Properties" in November 1900 (Figure 2.6).[73] As noted on this map, it was compiled from maps and data supplied by the War Office, Colonial Office, engineers, explorers, and mining companies. The territory covered almost mirrors some of the previously issued maps of the Gold Coast Colony,[74] covering the coast to 7° North and the full width the colony at the time. However, the map of gold mine concessions was issued at four statute miles to an inch as compared to eight miles to an inch in the Gold Coast colony and nearby territory maps. Further, the particular edition of "A Map of the Gold Coast with Part of Ashanti Showing the Positions and Areas of Mining Properties" was in two-sheets and was a folding map. Given the words that extend across the break in the map, the map was unlikely printed with the intention of being divided or folded. However the folded edition available at Ghana's Survey Department, suggests the map had utility in the field, and thus it was divided and folded for the purpose of using it while traveling or ease of posting it to others.

This map was the first of several maps on concessions in the Gold Coast.[75] These regional maps give a strong sense of the concession boom in the colony. The concessions are also mapped in relation to other common markers on recent editions of the "Map of the Gold Coast Colony and Neighbouring Territories." Using perhaps the latest versions of the Gold Coast Colony map, this gold mining map also shows the colony's investment in infrastructure for the exploitation of the resources and rule of the territory. As indicated in the key, roadways surveyed and unsurveyed appear. Railways built and proposed are marked. Telegraph lines are indicated. Both communication and transportation systems facilitated these business ventures and deepening investments, and thus their representation was needed.

The mapping of the colony's concessions and individual concession plans speaks to the increasing documentation and monitoring of the economy through mapping and as such, it demonstrates the colonial governmentality of mapping as it relates to the economy. For the government, the regulation of these economic ventures was tied to clarification of land and boundaries. But mapping concessions also provided a source of economic viability for the Mines Survey Department and the government. The individual plans involved an array of tracking and regulatory mechanisms. This regulation produced and gave deepening legitimacy to various governmental units and structures, including the Mines Survey Department, Concessions Courts, the Deeds Registry, and the various staff within them. These regulatory practices added legitimacy to the plans themselves but also legitimized the work and rules of the Mines Survey Department, as its formation was initially crafted around processing these plans. The plans produced greater details of the terrain and economic investment in resource exploitation and resulted in governmental investment in establishing datum points and a framework for coordinating concession surveys and other surveys of the colony.

In exploring the mapping of the concessions, this study situates and directly engages the socio-political contexts that informed map production and tracking of map data. In doing so, it contributes to an understanding of the role of the Survey Department and surveyors as they actively produced and helped to regulate the mapping of the concessions and the colonial economy tied to the concessions. The chapter likewise contextualizes their roles in the governmentalization process, as well, as they actively measured, represented, and partly regulated the colony's concessions.

III. Population: Ethnicity and Administrative Boundaries

A third target of colonial governmentality is the population, and here again maps are important tools for making the population knowable. Through such assessments, maps also seek to make the population more governable. As noted earlier in this chapter, ethnicity was one of the common foci of British colonial rule. British administrators, by and large, considered ethnicity to be an important basis of governance in Africa. It also became a basis for assessing the rationality of administrative boundaries and headquarters in the Gold Coast. While not universally implemented as a means for territorial division, the colonial administration also delimited boundaries based on the physical landscape.

The ultimate goal in the mapping of the distribution of ethnic groups was to support territorialized and hierarchical rule, or what the British in 1922 termed indirect rule.[76] The colonial government used maps to structure administration around chieftaincies and community allegiances. Particularly in the Gold Coast Colony and Ashanti, the demarcation of stool lands and ethnicity was tied to strategies of indirect rule. By contrast, in the Northern Territories direct rule was initially implemented and family or "ethnic lands" were not mapped. However, in the

1920s, the government became increasingly focused on ethnicity and hierarchies of chieftaincy for the purposes of administration in the north. Over time, there was a move to represent ethnic groups spatially and implement indirect rule via chiefs in the Northern Territories.

While British administrators often sought to define boundaries around ethnicity and chieftaincy, the plan was highly problematic. The mutability of identity is well-established — both spatially, over generations, and even individually over time depending on the person's circumstances.[77] Under various state and local administrative policies, changing migration flows, family contexts, as well as religious and cultural contexts, people might identify their ethnicity differently. Relating specifically to a stool or skin,[78] allegiances to chiefs were not always singular, and households fell under multiple chiefs. Similarly, some individuals and households denied central leadership in a chief.[79] Certainly, too, the robustness of an individual's leadership and people's support for a chief, paramount chief, and elders fluctuated. Additionally, the ties between chieftaincy and the colonial administration swayed people's allegiances away from chiefs. Thus, a stool or skin's influence also rose and fell over time and certainly among different leaders. Finally, the historic legacy of recognizing chiefs as community leaders varied tremendously in different cultures. Applying a colonial administrative mold that fit the colony was impossible. Nevertheless, the mapping of ethnicity and, thereby, chieftaincy achieved recognition as a set of terms that needed to be measured and understood for British governance of the Gold Coast.

Administering and Mapping Ethnicity in the Gold Coast Colony

One example of mapping ethnicity and administration can be seen in a copy of the Intelligence Division's 1895 map entitled, "Map of the Gold Coast Colony and Neighbouring

Territories." This map was the basis for discussions and marking up the Gold Coast territory into particular districts (Figure 2.7).[80] Archived records show that there are a number of layers to this map and its manuscript editions. In 1900, Governor Hodgson initiated the discussions. He wrote to the Colonial Office:

> I have long been desirous of settling the boundaries of the several Commissioners districts within the Colony only a few of which had been defined in their entirety, and of preparing a Map of the Colony which besides having the districts marked in colour should give the Customs stations, telegraph line and stations, Government constructed roads and so forth.

With the letter, Hodgson circulated a copy of the 1895 map with the manuscript additions. The governor explained that past Orders in Council, issued over the past 24 years, defined the division of the colony into districts. In his letter, Hodgson indicated that the colony was fully divided. Though the divisions had thus far not yielded any significant complaints regarding the inaccuracies of the boundaries, he speculated that should there be any boundary disputes, they would be minor. While the governor argues for the stability of these boundaries, such stability could be due to the weaknesses of the colonial government in enforcing or giving any political meaning to these boundaries. The nascent colonial government with relatively few government officials posted within the districts would be hard pressed to give meaning to district boundaries through any administrative practices or policies, and thus, in some sense these boundaries existed more on paper than on the ground. That being the case, any local reaction to such boundaries would also be muted.

The goal of the proposed map was to assist government's attempts to manage populations and communities, and for resolving conflicts. In particular, the Governor Hodgson was interested in establishing the Kwahu and Eastern Akim districts and posting a district commissioner there. He explained that the posting of an officer would help quell disturbances

arising amongst the people regarding chieftaincy authority versus governmental power. Likewise, the establishment of a British mining company in the district had also resulted in tensions, and the new district postings would help address those concerns as they arose. Lastly, Hodgson argued that the Kwahu District could be turned into a profitable region for the colony given its agricultural potential.[81]

On receiving the map and accompanying letters, the discussion in the Colonial Office approved the formation of the Kwahu and Eastern Akim Districts.[82] The Sefwi district boundaries were their primary concern, however. There had been previous discussions of moving both Kwahu and Sefwi into Ashanti; however, the new governor of the Gold Coast, Governor Nathan, had concerns about the success of administering these districts under Ashanti. As part of his reasoning, he pointed to sentiments among the residents, explaining "the chiefs and people in Kwahu and Sefwi, who consider that they have been freed for ever [sic] from their connection with Ashanti…."[83] Thus, the administration considered ethnic identities of people in these communities and past conflicts with the Asante people when delineating these boundaries. Further, it was a strategy in physically dividing and ruling the Asante Kingdom. The Colonial Office staff declined to forward the map to the Division of Military Intelligence because of the representation of other boundaries on the map. The Colonial Office instead returned the map to Governor Nathan and requested that the districts be reevaluated once again. New Orders-in-Council made by the Executive Council of the Gold Coast Colony government redefined the boundaries of various districts again.

Governor Nathan returned the 1895 map to the Colonial Office in February 1902.[84] He explained that he had addressed the Colonial Office's requests regarding the boundaries of Sefwi and Ashanti. In addition, he added further changes. Nathan stated:

I have taken this opportunity to slightly modify the boundaries of the districts of the Colony and I have shown these modifications on the Map. A full description of the boundaries is annexed and will shortly be embodied in a Local Order in Council. The modifications appeared to be urgently required for administrative convenience.

Among other changes, the governor enlarged Wassaw and Ada districts so that chiefs and all their subjects were under the same District Commissioners. Also, the governor modified several district boundaries to align with linguistic boundaries, particularly keeping Fante and Ga speaking communities in separate districts. The governor similarly changed other boundaries according to natural features, such as rivers. Enumerating his points, Nathan explained:

3. I contemplate later on making further considerable changes in order that the limits of the administrative districts may correspond more completely with the boundaries of territories under Native Head Chiefs. For this purpose however further knowledge of the topography of the country and tribal relations of the people will be necessary and, as this will take considerable time to collect, I recommend that the administrative divisions that have been temporarily decided upon should be enfaced on the map under preparation.
4. It will be a great convenience to me to have copies of this Map at an early date.

With Nathan's changes serving both the Colonial Office's concerns and local administrative concerns in the Gold Coast, the administration forwarded the map to the Intelligence Division of the War Office, which reissued the map with these modifications in February 1902 [85] (Figure 2.8[86]). This version of the map also includes the additional marks noted in the key, highlighting the administrative services and infrastructural developments that accompanied these divisions. Additionally, in firming up district boundaries that border the German and French colonies, the Intelligence Division also provided documentation of the boundaries between European colonies.

For these discussions and administrative alignments, the colonial government sought to align administrative boundaries with local ethnic and linguistic boundaries. The officers made presumptions of cultural uniformity within the region, considered known conflicts and histories between groups, and then aimed to tie colonial investments in infrastructure to those regions.

Supporting this demarcation, the administration posted government officials to administer the various divisions. The government assigned officers to mediate concerns and conflicts within the districts, while supporting the development of the mining industry. The administration viewed the division of territory according to ethnicity as the ideal arrangement. This map was a template for carving up these territories, delineating boundaries and jurisdiction, and locating various service centers. In sum, these descriptions, along with the 1895 map, indicate that the colonial government considered the spatial alignment of regions, leadership, services, and ethnicity as supporting governance of the colony.

Mapping Native States and the Northern Territories

During the 1920s, the colonial administration moved to establish territorialized rule in the Northern Territories. This rule attempted to territorialize both chieftaincies along with ethnicity, and establish what was termed "native states," where the colonial administration implemented ethnically-based indirect rule relying on local chiefs to facilitate the work of the British. There is considerable documentation of these processes, which makes an examination particularly valuable. Case studies highlighted in subsequent chapters also examine the mapping of northern Ghana in the colonial era.

In the first two decades of British administration of the Northern Territories, the administration was reorganized several times, led military campaigns, and faced uprisings against colonialism. In addition, a number of administrators were charged with maladministration.[87] As a result, by the 1920s, the Colonial Office and Gold Coast recognized the need to implement new administrative strategies within the Northern Territories. As a part of the move to build a new system of rule, maps were fundamental tools in determining the new

arrangements, as the administrative officers asked district-level officers to submit suggested boundaries on the 1:1,000,000 map of the colony in 1923 and 1924.[88] The political officers along with the Survey Department in Accra, assembled this information and attempted to develop a districting plan that served their administrative needs.

However, in 1928 the administration reexamined these boundaries, along with the administrative hierarchies in the north. Officials wanted to move toward a system of "native administration" or indirect rule in the Northern Territories. The spatial configuration of this new administrative system would engage the mapping of ethnicity and districts. The impetus for further changes was complex. The financial costs of colonialism were high, and the administration thought a cheaper avenue would be "native rule." Also, faced with a global economic depression in 1929, the British administrative costs needed to be drastically cut. Likewise, imposing direct taxation administered by chiefs throughout "native authorities" would be a means of supporting these new structures of administration.

The move toward indirect rule generated a broad array of concerns and agendas, and there was considerable debate regarding the plan and its implementation. From the standpoint of mapping territories, the new administrative configurations demanded, under ideal circumstances, that paramount chiefs take on greater responsibilities for their communities, and lower ranked chiefs and elders in smaller communities serve the paramount chief. The wider community was to follow its local chief, but the paramount chief would be the overarching administrator for the region or "native state" or "native authority." Thus, as a part of this process, the colonial officers sought to create paramount chieftaincies through the creation of "native states." District and provincial officers actively requested various chiefs and elders to follow the newly appointed

paramount chiefs in other communities. A 1928 letter quoted Governor Guggisberg's goals for

indirect rule as he outlined them in 1921:

> Our policy must be to maintain any paramount Chiefs that exist and gradually
> absorb under these smaller communities scattered about. What we should aim at
> is that some day [sic] the Dagombas, Gonjas and Mamprusi should become strong
> native states. Each will have its own little Public Works Department and carry on
> its own business with the Political Officer as a Resident and adviser. Each state
> will be more or less self-contained. The question is what steps are to be taken as a
> foundation on which to build... I would like the Chief Commissioner to draw up
> and submit to me in due course a policy for the Northern Territories showing a
> definite scheme for fostering the formation of these big states w…[without?]
> compulsion.[89]

Thus, as the process moved forward, officers queried existing chiefs on their willingness to

"follow" chiefs based on historical or cultural ties. The officers also determined the geographical

extent of these communities and which communities would fall into amalgamated districts.

Meanwhile, the British government employed R.S. Rattray as a government anthropologist to

conduct an ethnographic survey of ethnicities throughout the Northern Territories. His research,

including a two volume set, *Tribes of the Ashanti Hinterland*, was part of the effort to help

officers devise the plan for "native" rule.[90] In his ethnographies, Rattray began each ethnic

history with the basic locational geography that delineated the boundaries of the communities,

and his work likely drew on the work for district officials who mapped and described these areas.

With these interests and ideals under discussion, the British administration engaged the

use of mapping as a technique for planning the transition to indirect rule. Early in 1929, the Gold

Coast's governor requested that the Chief Commissioner of the Northern Territories compile a

map "with all tribal boundaries in different colours, for easy reference…." The request was

redistributed to Provincial Commissioners and then to District Officers, adding that they should

outline the boundaries in blue.

Reports, letters, and maps were returned to the Provincial Commissioner; at least one sketch map survived within archival files. This map, seen in Figure 2.9, is a sketch of South Mamprussi District attached to a brief note from the District Commissioner.[91] The sketch illustrated the district as a whole, boundaries of three ethnicities, adjacent districts, several of the South Mamprussi's communities, a few of the major roads, and the boundary of the newest area merging into British colonial territory—the former German-ruled Togoland. While the individual ethnicities were not to be administered as independent units, the map indicated an interest in delineating ethnic boundaries: first, by mapping them, and second, by the fact that the boundaries of the district fully encompassed the boundaries of these populations. Lastly, as a part of the process of consolidating the Northern Territories' districts, the identification of a paramount chief under whom this district and these ethnicities reported was part of the process, as noted above.

As reports and maps were submitted, P.F. Whittall, as Acting Provincial Commissioner of the Northern Province, assembled a map of ethnicities and districts across the province based on the 1:1,000,000 General Map of the Gold Coast.[92]. He included tribal boundaries and names on the maps. While this particular map edition could not be located, a similar version of this map compiled by Whittall does exist (Figure 10).[93] This map was circulated with a report on the development of native administration as well. Whittall likely assembled the map based on the reports from the various District Commissioners across the Northern Province. The map indicates the various ethnicities and marks out the boundaries of each in red, the administrative boundaries in blue, and the territories of these ethnicities are also filled in with different colors. This style of depiction matches the original request from the Governor and the Chief Commissioner of the Northern Territories. Whittall also included population figures for the

various ethnic populations depicted, based on the 1921 census estimates. Communities where British officers had resided over the years were also indicated on the map. The map marked out the international boundaries but did not include any details on the newly mandated British territory of Togoland.

According to Lentz, this map discursively served to create ethnicities for the purpose of rule in Northern Ghana, and indeed it does reinforce the mostly territorially bounded ethnicities. Where British documentation of ethnic identities was convoluted, the map indicates single ethnic community with additional groups noted parenthetically. The map is also tied directly to the governmental strategies of ruling these populations, and it does so by simultaneously defining ethnicity and territories of indirect rule. As requested by the Governor and the Chief Commissioner of the Northern Territories, the map established new organizational relations between the ascribed territory of particular ethnicities and the establishment of districts and provinces. While not all ethnicities were contiguous with administrative regions, the map illustrates that there was an effort placed on such arrangements, as Wala, Nabdam, Mamprusi, Builsa, Kusasi, and Talansi are listed as wholly within various districts. Whittall depicted the remaining four groups crossing into two districts.

His map showed again the ways in which various ethnicities were fixed by their geographic territory. The research that led to the compilation of this map helped to ascribe ethnic populations to a particular distribution and political districting. Likewise, the map would feed into subsequent discussions and political conferences to assign governmental power through the fixing of paramount chiefs and native authorities to rule these bounded "tribes" and political regions. The codification of ethnic territory, regardless of geographical accuracy, along with the delineation of administrative territory was a means for empowering particular social and ethnic

hierarchies that would continue to reverberate in the years that followed. These consequences will be further explored in chapter 4.

These case studies from the Gold Coast Colony and the Northern Territories emphasize the British administration's goal of aligning ethnicity and the mapped districts, as well as some of the difficulties the British encountered in this process. Unlike the previous two sections on territory and the economy, this section exemplifies the ways multiple offices of the colonial state mapped the Gold Coast and shows that it was not just a domain of surveyors. In particular district- and regional-level officers to colony-wide representatives such as the Secretary of Native Affairs participated in mapping ethnicity and political domains, and as such, the measures of ethnicity are not calibrated in the same ways that surveyors mapped the territory or the economy.

This chapter seeks to complement the approaches of Lentz, Bening, and Stone by looking at maps as an everyday tool of administration which place people in so-called tribal categories to facilitate governance. Both scholars detail the history of "native states" in creating indirect rule in Northern Ghana. While Bening focuses on the administrative histories that fostered indirect rule, Lentz conceives of this history as based around the creation and codification of ethnic categories. The techniques of mapping ethnicity to district boundaries are more imprecise than topographical and concession mapping and did not rely on geographic coordinates and measures to map these lines. Rather, the determination of ethnicity was the deciding point, and officers tended to overlay these determinations as tracings on existing maps. The Survey Department's primary role was to interpret, draft, and reproduce these maps.

In establishing their territorial policies of rule, the colonial administration relied on maps as "everyday tools of rule" to create what the administration termed "native states." The British

implemented this system first by having British officers identify and/or endorse chiefs or local

"strong men" to serve the administration. Identifying "tribes" who then followed these men was

the next step. The third step was mapping the extent of these "tribes" to create these "native

states." The maps illustrate an intensification of British practices to circumscribe people's

identities and tie those identities to both a hierarchy of chiefs and to a specific district.[94] Further,

by mapping ethnicity the colonial state was reinforcing its policies and approach to ruling

through chiefs.

Conclusion

This chapter presents the ways in which the Gold Coast colonial government used and

developed maps as "every day tools of rule" during Ghana's colonial rule. Mapping territory, the

economy, and the population exemplify the ways in which maps sought to make the Gold Coast

more legible and governable for the colonial administration. Specifically, this chapter shows that

maps were tactics and techniques to help administrators pursue increasing accuracy and

knowledge about the territory, economy, and population. Recent scholarship on colonial

cartography argues that maps supported Britain's conception of British India and a cartographic

ideal.[95] According to Edney, his study is "of the creation of a legitimating conception of empire,

of political and territorial hegemony, mapped out in a scientific and rational construction of

space." This chapter endeavors to extend elements of Edney's arguments to show that maps

created more than a legitimized ideal or conception. They fit into broader strategies of daily rule

and administration, where maps were essential to implementing policies and practices.

That is, map construction illuminates a deepening interest in tracking and knowing the

territory for purposes of developing and administering it. In its quest to produce more practical

maps, the Survey Department compartmentalized the territory. It did so by first fixing a topographic framework that would provide surveyors with more accurately derived geographic coordinates. Second, it narrowed the scope and scale of the maps to increase their practical value to colonial administrators. It did so through simplifications that emphasized the infrastructure of colonial offices in a standard way across all the topographic sheets. These maps literally constructed the colony by facilitating its day-to-day development and adjudication of boundary disputes.

Another target of Gold Cost colonial maps was the economy. The mapping of concessions exemplifies the ways maps made the economy more knowable to the government. As resource extraction emerged as a primary investment interest of private companies, governmental tracking of these prospecting and exploitation agreements and plans were of considerable concern. Government surveyors played key roles in producing hundreds of the plans and also in certifying the plans. In the course of this work, they documented the geographical location and extent of these concessions. Further, concession mapping contributed to the mapping of the broader Gold Coast economy.

Lastly, maps facilitated the administration of the population, wherein the colonial government sought to define and territorialize people according to its definitions of ethnicity. Then colonial officers mapped the geographic extent of ethnicities and crafted administrative boundaries around many of them. These maps enabled a hierarchical and territorialized system of rule, ultimately referred to as indirect rule.

Finally, this chapter advances the literature on science, technology and colonialism; critical cartography; and African colonial histories of mapping. With regard to the science, technology and colonialism literature, the chapter details the workings of a cartographic colonial

governmentality. It demonstrates the instrumentality of maps in fostering administrative strategies and the continuous pursuit of a higher degree of accuracy through better scientific representation and mapping methods. It also correlates these interventions to administrative tactics of governing the local population, the economy, and the territory. Relating to the critical cartography literature, this research offers examples of how the internal and external powers of maps work in tandem. Conventional signs, for instance, demarcated interests of the colonial administration, and at the same time created hierarchical information that privileged and reinforced colonial agendas and interests. Lastly, this chapter contributes to African colonial history by first focusing on the active use of maps during the colonial era, demonstrating the intentions behind colonial cartography at the time. Further, this study highlights the role of maps in structuring indirect rule and British strategies to divide, conquer, and rule the population. The degree of success or failure of these maps in supporting these strategies is a topic that I return to in Chapter 4.

FIGURE 2.1: Image of a concrete beacon and brass metal plate, Annual Report 1924-25[96]
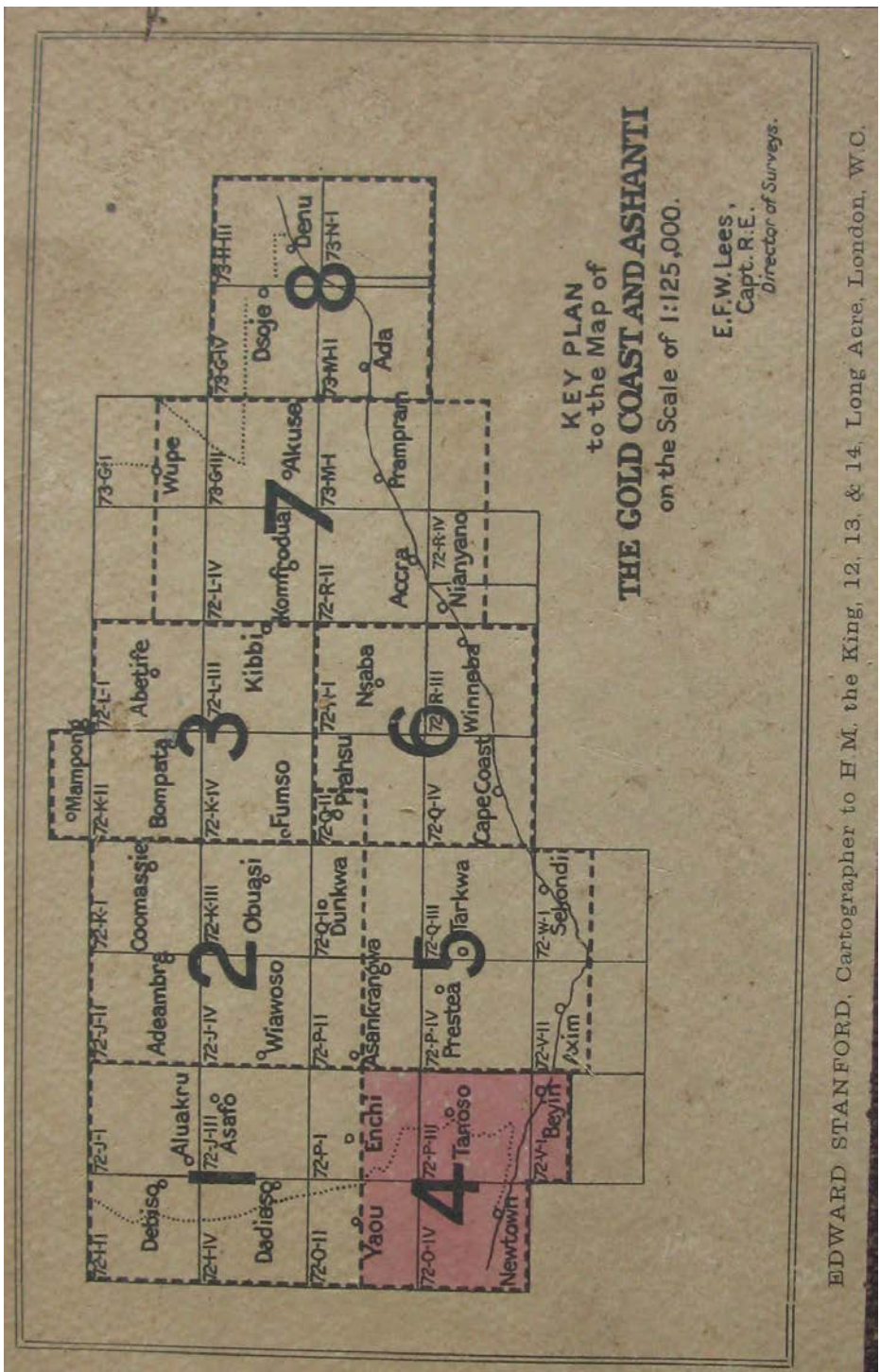
FIGURE 2.2: "Key Plan to the Map of the Gold Coast and Ashanti on the Scale of 1:125,000," 1908, by E.F.W. Lees.[97]

FIGURE 2.3: Reference key from "Ada," 1908, Gold Coast Survey Department.[98]
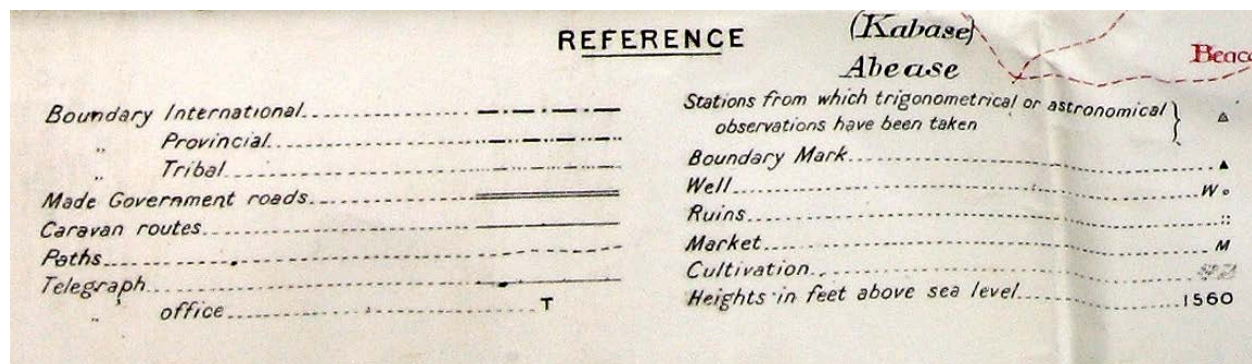
FIGURE 2.4: Reference to "Gold Coast, Sheet 60-P," 1905, Topographical Section General Staff.[99]
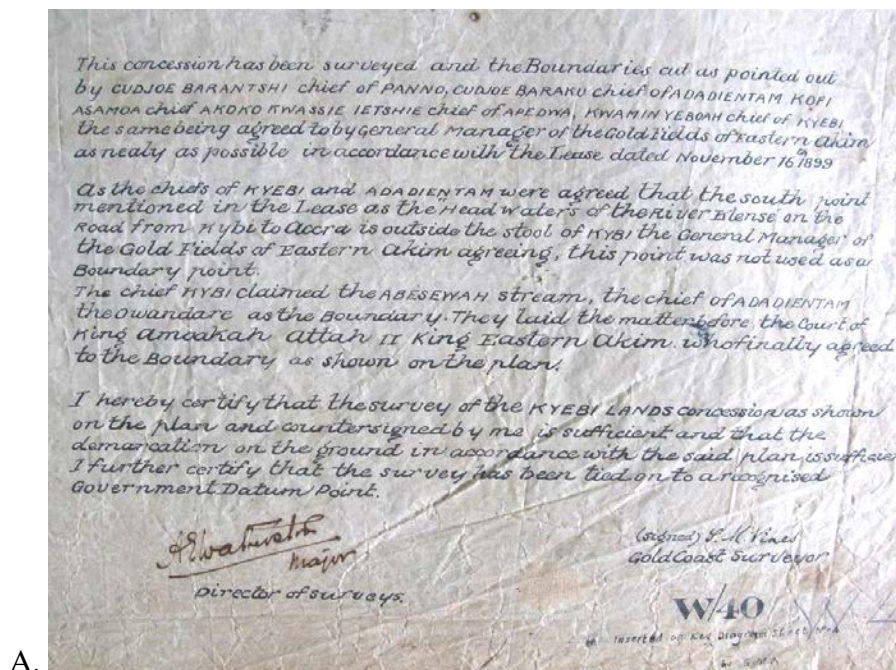
A.
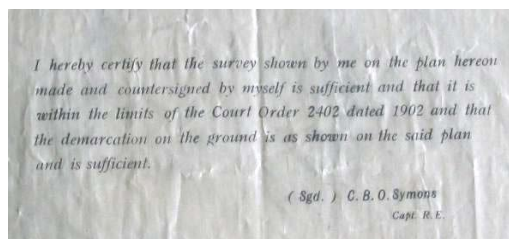
B.
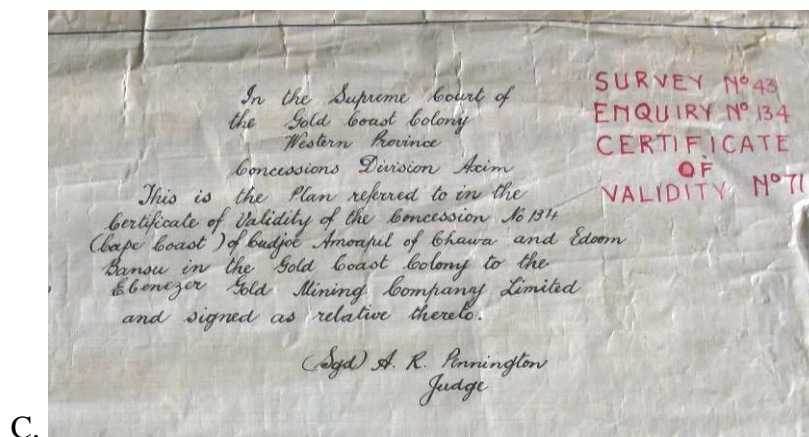
C.

FIGURE 2.5: Various Certifications on concession plans, including: A. "Plan of Kibbi Lands Gold Fields of Eastern Akim, Scale 1/5000;" B. "Plan of Mamponsu Concession: West African Mahogany Petroleum & Gold Co. Ltd., 1:25,000;" and C. "Gedua or Guadum Concession Lower Wassaw the property of The Old Ebenezer Native Mines Ltd., Scale 1/5000;" uncataloged concession maps, Ghana Survey Department.[100]

FIGURE 2.6: "A Map of the Gold Coast and part of Ashanti showing the positions and areas of mining properties," by Henry Wallach, November 1900. [101]

FIGURE 2.7: "Map of the Gold Coast Colony and neighbouring territories," 1895 with manuscript additions, by Intelligence Division War Office, MPG2/988(3).[102]
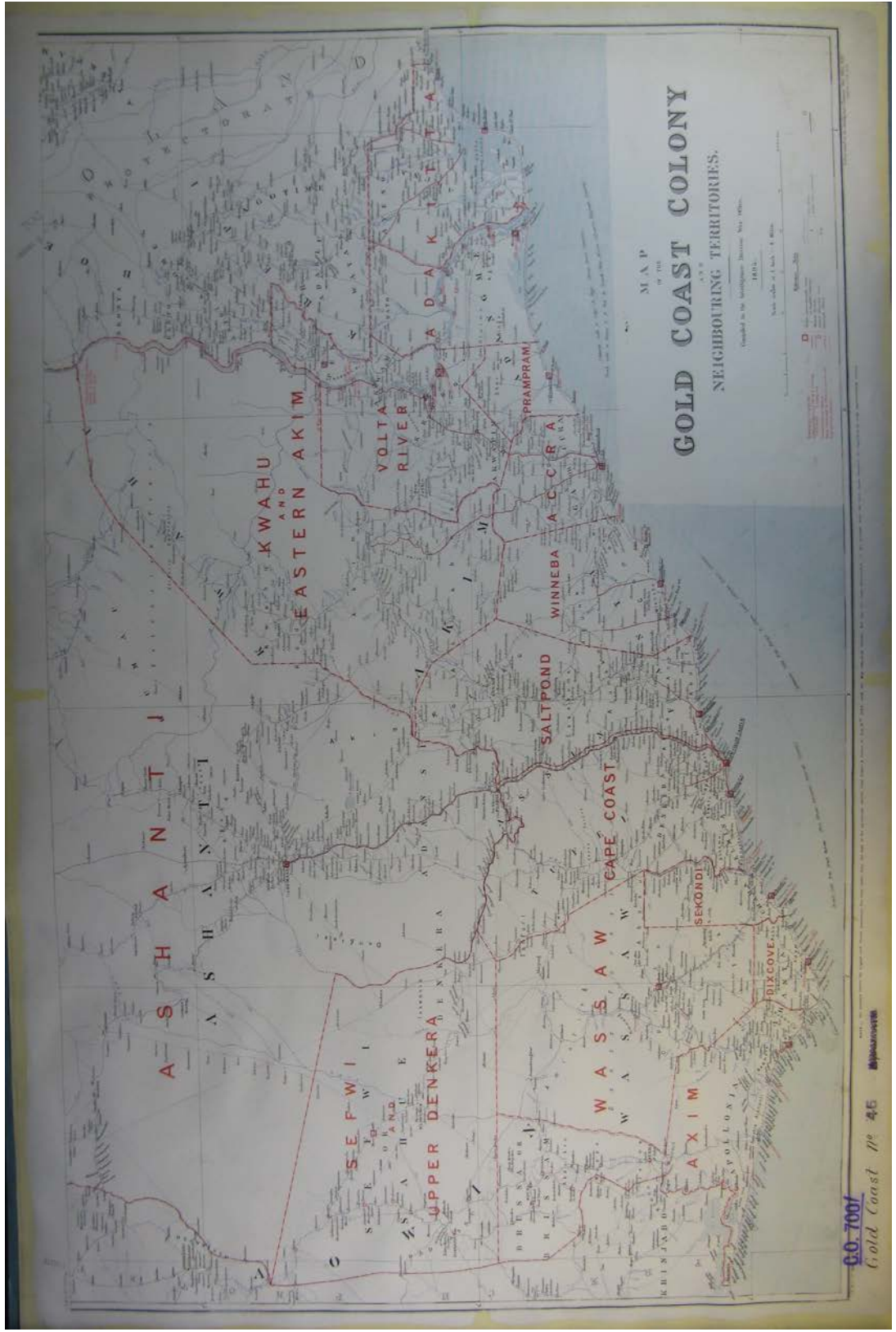
FIGURE 2.8: "Map of the Gold Coast Colony and neighbouring territories," 1895 corrected with 1902 manuscript additions, by Intelligence Division War Office.[103]
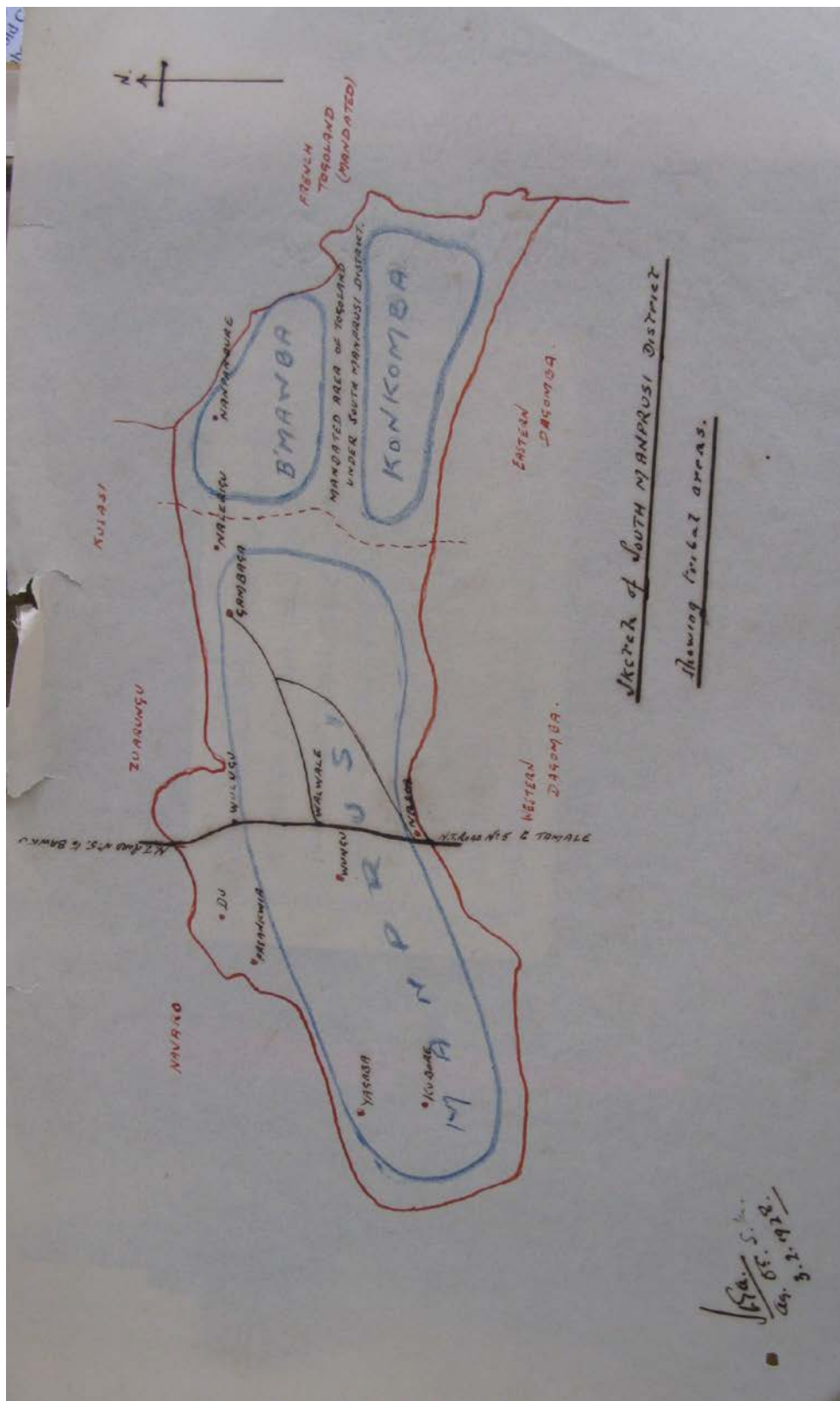
FIGURE 2.9: "Sketch of South Mamprusi District showing tribal areas," by Sr. J. Eyre Smith, 3-2- 1928.[104]
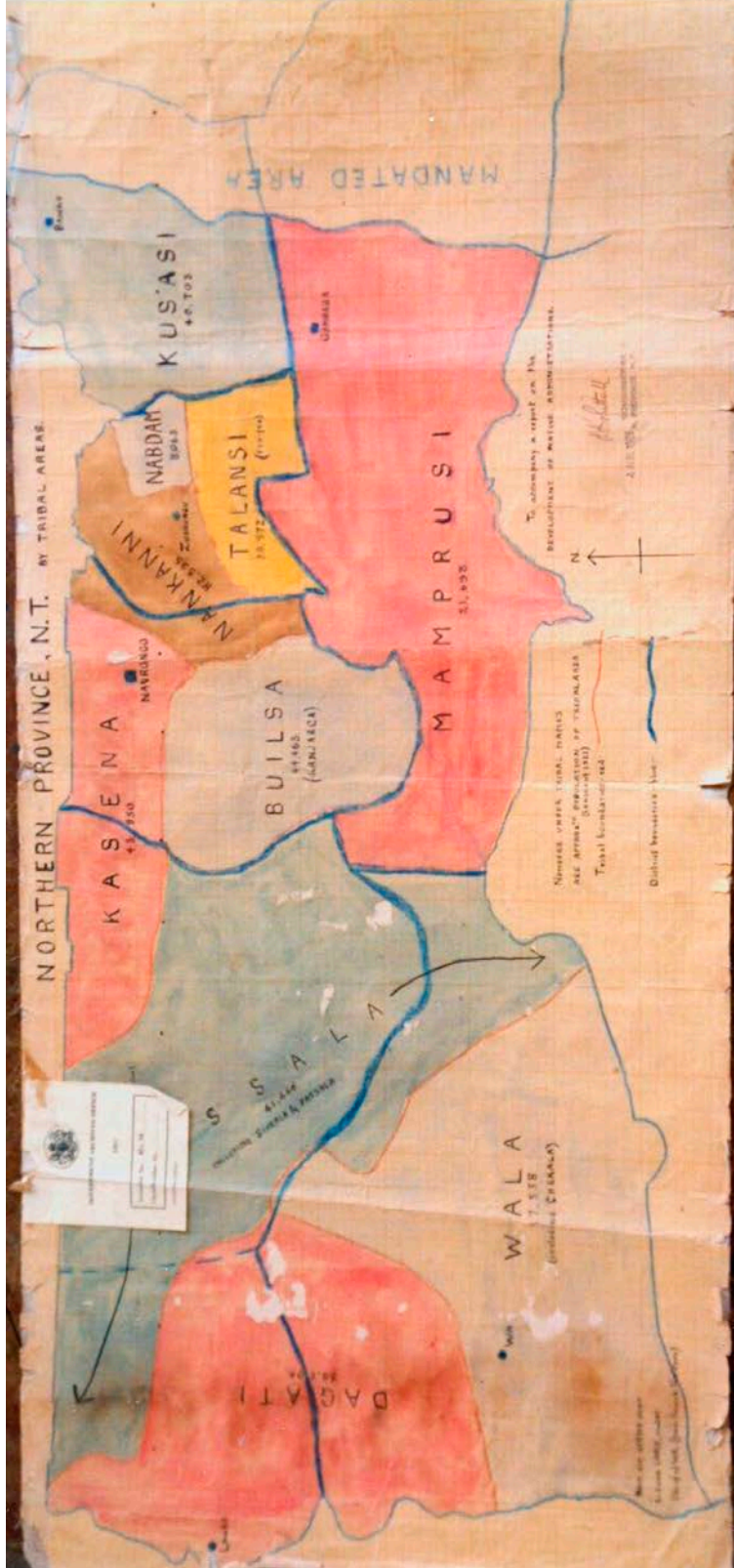
FIGURE 2.10: "Northern Province, NT by tribal areas," by P.F. Whittall, 4 August 1928.[105]

[1] Gyan Prakash, *Another Reason: Science and the Imagination of Modern India,* Princeton: Princeton University Press, 1999 citing Michel Foucault, "Governmentality," in *The Foucault Effect: Studies in Governmentality*, eds. Graham Burchell, Colin Gordon and Peter Miller, 87-104, University Of Chicago Press, 1991.

[2] Foucault "Governmentality:" Prakash, *Another Reason*; Donald S. Moore, *Suffering for Territory: Race, Place, and Power in Zimbabwe*, Duke University Press, 2005; James C. Scott, *Seeing like a State: How Certain Schemes to Improve the Human Condition Have Failed*, Yale University Press, 1998.

[3] Foucault, "Governmentality;" Prakash, *Another Reason*; Arun Agarwal, *Environmentality: Technologies of Government and the Making of Subjects*, Duke University Press, 2005.

[4] To illustrate these domains or targets of colonial govermentality, I will examine a selection of colonial maps and associated texts. Maps circulated and were used by various wings of the colonial administration – from Mines Survey and Survey Departments, Lands Department, political administration, and government offices based in the U.K. Rather than have strict comparisons between the various sectors that used and developed a particular type of map (e.g. cadastral, topographic), the point here is to show the ways that maps were part a broader process of colonial governmentalization.

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[7] Prakash, *Another Reason.*

[8] Prakash, *Another Reason*, p. 4.

[9] Citing Foucualt, "Governmentality."

[10] Foucault, "Governmentality."

[11] Prakash, *Another Reason*, p. 10.

[12] Prakash, *Another Reason*, p.13.

[13] Harley, J.Brian, "Maps, Knowledge and Power" in *The New Nature of Maps: Essays in the History of Cartography*, pp.52-81. Baltimore: The Johns Hopkins University Press, 2001; Harley, J.Brian, "Deconstructing the Map," in *The New Nature of Maps: Essays in the History of Cartography*, pp. 149-168. Baltimore: The Johns Hopkins University Press, 2001; J. Brian Harley, "Cartography, ethics, and social theory," *Cartographica, 27*(2), 1-23, 1990; Wood, Denis and John Fels, *The Power of Maps. Mappings,* New York: Guilford Press, 1992; Matthew H. Edney, *Mapping an Empire: The Geographical Construction of British India, 1765-1843*, Chicago: University of Chicago Press, 1997.

[14] Harley, "Maps, knowledge, and power" (2001 edition), p. 166.

[15] Harley, "Maps, knowledge, and power;" Harley "Deconstructing the map;" Harley "Cartography, ethics, and social theory.

[16] Harley, "Maps, knowledge, and power."

[17] Harley "Deconstructing the map."

[18] Edney, *Mapping the Empire.*

[19] Foucault, Michel. *Discipline And Punish: The Birth of the Prison*. New York: Vintage Books, 1979.

[20] (p. 325).

[21] Bassett, Thomas J. "Cartography and empire building in nineteenth-century West Africa" *Geographical Review* 84 (3): 316-336, 1994.

[22] Bassett, Thomas J. and Phillip Porter "'From the Best Authorities': The Mountains of Kong in the Cartography of West Africa," *Journal of African History* 32(3):367-413, 1991.

[23] Stone, Jeffrey C., *A Short History of the Cartography of Africa*. African studies. Vol. 39. Lewiston: E. Mellen Press, 1995; Jeffrey Stone, "Imperialism, Colonialism and Cartography," *Transactions of the Institute of British Geographers* 13, (1): 57-64, 1988; Jeffrey Stone, "The District Map: An Episode in British Colonial

Cartography in Africa, with Particular Reference to Northern Rhodesia," *The Cartographic Journal* 19, (2): 104-28, 1982.

[24] Stone, Jeffrey C. "Colonialism and Cartography in Botswana," in *Maps and Africa. Proceedings of a Colloquium at the University of Aberdeen April 1993, Aberdeen,* J.C. Stone (ed), 1994 p. 179 citing Stone "Imperialism, Colonialism, and Cartography."

[25] Stone "The district map;" Stone "Imperialism, colonialism, and cartography: Stone *A Short History*; McGrath, G. *The Surveying and Mapping of British East Africa, 1890-1946: Origins, Development and Coordination* (No. 18 ed.). Toronto: B. V. Gutsell, 1976.

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[29] Bening, "Foundations of the modern native states of northern Ghana," p. 188 citing CO 879/54

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[31] Ranger, T.O., "The Invention of Tradition in Africa," in *The Invention of Tradition*, E.J. Hobsbawm and T.O. Ranger (eds). Cambridge: Cambridge University Press, 1983.

[32] Stone, "The district map;" Stone, "Imperialism, colonialism, and cartography; Stone, *A Short History*.

[33] CO 96/415 "Coord of Traverse System."; Gold Coast Annual Report 1921.

[34] Edney, *Mapping an Empire*.

[35] Edney, *Mapping an Empire*, p. 319.

[36] Guggisberg, F.G. "Mapping the Gold Coast and Ashanti," *Transactions Report of the Council of the Liverpool Geographic Society*. 19 (December): 7-14, 1911, p. 6.

[37] ADM 5/1/80 Departmental Reports 1903, "Report of the Mines Survey Department for the Year 1902-3."

[38] CO 96/458 Mines Survey Department.

[39] Guggisberg, "Mapping the Gold Coast and Ashanti."

[40] Gold Coast Annual Report, 1908.

[41] Curnow, Irene 1927, "The Progress of Topographic Mapping in the Gold Coast," *Scottish Geographical Magazine*, 43 (2):91-97, p. 93.

[42] ADM 5/1/101 Annual Reports, Survey Department 1924-25.

[43] Curnow 1927, p. 93.

[44] ADM 5/1/100 Annual Reports, Survey Department 1923-24.

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[46] Stone 1995.

[47] CO 96/433 "Survey of Tropical Africa," "Report on the Gold Coast Mines Survey."

[48] CO 96/441, "Report on the Mines Survey Dept. '05," p. 11.

[49] CO 96/441, "Report on the Mines Survey Dept. '05," p. 11.

[50] MP 21, Gold Coast Survey Department, "Ada" Accra: Gold Coast Survey Department,1907.

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Citing Geertz, Clifford 1983 "Art as a Cultural System," in *Local Knowledge: Further Essays in Interpretive Anthropology*, pp. 94-120. New York: Basic Books, p. 99.

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[54] Anti-smuggling stations.

[55] Edney, *Mapping an Empire*, p. 36.

[56] CO 96/247 "Draft Crown Lands Ordinance;": CO 96/290 "Lands Bill."

[57] CO 96/202 "Mining Districts;" CO 96/247 "Draft Crown Lands Ordinance;": CO 96/290 "Lands Bill."

[58] The insertion of securing the interests "of natives themselves" is a handwritten note inserted into this typed text.

[59] CO 96/290 "Lands Bill."

[60] CO 96/202 "Memorandum on Proposed Crown Lands Ordinance."

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[66] CO 96/277 "Ordinance 8 1896 – Survey."

[67] CO 96/383 "Survey of the Gold Fields," Minutes.

[68] Clearing vegetation to demarcate the boundary lines to the concessions.

[69] CO 96/405 "Survey Party," Letter from Director of Surveys to CS, July 4, 1902; CO 96/416 "Report on Mines Survey 1902-03."

[70] ADM 5-1-81 Departmental Reports, "Report on the Mines Survey for the Year 1904."

[71] ADM 5-1-79 Departmental Reports, "Report on the Mines Survey for the Year, 1902," "Survey Notice, London, September 1, 1902."

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[73] Uncataloged map at the Survey Department, Accra.

[74] See MR 1/178(1) as well as CO 700 Gold Coast21, FO 925/573, and MPHH 1/219(1).

[75] See CO 700 Gold Coast 41 "Map of the West African Gold Mines drawn and compiled by the Chartographic Company …issued by the West African (Gold Coast) Mining Corporations, Ltd…", 1901 CO 700 Gold Coast 65 "Map of the West African Goldfields compiled by A J Clevely, Map Specialist, from the 1:125,000 Gold Coast Maps (by permission of the War Office) with all the latest information of the Mining Companies," 1909 and 1911.

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[77] Lentz, *Ethnicity*; Ranger, "The Invention of tradition."

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[79] Lentz, *Ethnicity*.

[80] MPG 1/988(3).

[81] CO 96/361 "Boundaries of Districts."

[82] CO 96/361 "Boundaries of Districts."

[83] Metcalfe, G.E. "Nathan to Chamberlain, Kumasi, 20 March, 1901" in *Great Britain and Ghana*: *Documents of Ghana History 1807-1957*. Citing CO 96/378, Cd. 938, p. 21.

[84] CO 96/394 "Boundaries of Districts Map."

[85] *Ibid.*

[86] CO 700 Gold Coast45.

[87] CO 96/570 "Northern Territories – Maladministration."

[88] ADM 56/1/52 Administrative Boundaries – Ashanti and Northern Territories.

[89] NRG 8/2/5 Native Administration 1919-30.

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[91] ADM 56/1/52 Administrative Boundaries – Ashanti and Northern Territories.

[92] *Ibid.*

[93] MP 58 "Northern Province: (N.Ts): Tribal Areas," 1928 by P.F. Whittall.

[94]Rattray, *Tribes of the Ashanti Hinterland*; Ladouceur, Paul André, *Chiefs and Politicians: The Politics of Regionalism in Northern Ghana* London, 1979; Allman, Jean Marie and John Parker, *Tongnaab: The History of a West African God.* Bloomington : Indiana University Press, 2005 Lentz, *Ethnicity*.

[95] Edney, *Mapping an Empire.*

[96] ADM 5/1/101 Annual Reports, Survey Department 1924-25.

[97] Uncataloged map of the Ghana Survey Department "Key Plan to the Map of the Gold Coast and Ashanti on the Scale of 1:125,000," 1908, by E.F.W. Lees.

[98] MP 21 1908 "Ada."

[99] CO 96/444 "Gold Coast, Sheet 60-P," 1905, Topographical Section General Staff

[100] Uncataloged maps, Ghana Survey Department, A."Plan of Kibbi Lands Gold Fields of Eastern Akim, Scale 1/5000;" B. "Plan of Mamponsu Concession: West African Mahogany Petroleum & Gold Co. Ltd., 1:25,000;" and C. "Gedua or Guadum Concession Lower Wassaw the property of The Old Ebenezer Native Mines Ltd., Scale 1/5000."

[101] Uncataloged maps, Ghana Survey Department, "A Map of the Gold Coast and part of Ashanti showing the positions and areas of mining properties," by Henry Wallach, November 1900.

[102] MPG 2/988 (3) "Map of the Gold Coast Colony and neighbouring territories," 1895 with manuscript additions, by Intelligence Division War Office.

[103] CO 700 Gold Coast 45 "Map of the Gold Coast Colony and neighbouring territories," 1895 corrected with 1902 manuscript additions, by Intelligence Division War Office.

[104] ADM 56/1/52 Administrative Boundaries, "Sketch of South Mamprusi District showing tribal areas," by Sr. J. Eyre Smith, 3-2- 1928.

[105] MP 58, "Northern Province, NT by tribal areas," by P.F. Whittall, 4 August 1928.

CHAPTER 3

**UNCOVERING THE ROLES OF AFRICAN SURVEYORS AND
DRAFTSMEN IN MAPPING THE GOLD COAST, 1874 TO 1957**

On March 6, 1957, Ghana became the first African country south of the Sahara to win its independence. In the lead up to this landmark date, British colonial institutions were forced to yield to Ghanaian political agendas and interests. Specifically, demands for self-government led to changes in the constitution, town and national legislative structures, and increased educational and professional opportunities. However, the new nation was also marked by many colonial inheritances. Colonial era maps, surveying agendas, institutions, and practices were among these legacies. My research shows that many postcolonial surveyors and cartographers maintained a similar sensibility about their work as their colonial predecessors. They viewed mapmaking as essentially apolitical in nature. To understand these cartographic inheritances, this chapter pursues the ways that local Africans became surveyors and draftsmen and contributed to the mapping practices that supported the emergence and development of the colony. This chapter also examines local surveyors' and draftsmen's training, opportunities, and perspectives on colonial Survey Department practices, illuminating the continuities and subtle changes as the colony moved toward independence.

By pursuing these themes, this chapter reveals the fundamental importance of Africans as key actors in colonial mapping and surveying. Second, I argue that the persistence of colonial-era mapping practices was possible in part because of the engagement of African surveyors in these scientific techniques. Lastly, this study exposes the workings of a colonial governmentality in which surveyors carry forward their technical practices but distance themselves from their work's political nature.

Ghana's cartographic construction unfolded to a large extent under colonialism, which was formalized in 1874 with the founding of the Gold Coast as a British colony. The mapping of the colony and the institutionalization of surveying emerged over the subsequent decades. The mapping and the emergence of the Gold Coast took place in three temporal phases: 1) colonial expansion (1874-1901); 2) administration and development (1901-1930); and 3) consolidation and decolonization (1930-1957). This chapter examines each period, focusing specifically on the engagement of local African surveyors and draftsmen and the ways that surveying initiatives and maps fit into the broader administrative agendas and colonial needs. I draw upon archival texts, maps, and interviews with fourteen Ghanaian surveyors and a draftsman who worked in the Gold Coast Survey Department during the period of decolonization to delineate these three periods.

As a prelude to this study on the role of Africans in what is typically viewed as a European scientific project, I situate Ghana's cartographic history within three broad literatures: cartography, colonialism, and local participation; African intermediaries in European colonialism; and colonial governmentality. This section is further enriched by a discussion of the emergence of surveying agendas and institutions, including the role of local surveyors and cartography during the colonial period. These literatures are reinforcing and at times overlapping, but I delineate salient threads of this scholarship below. I point to some of the most relevant works and the way this social history of surveying in colonial Ghana contributes to them. This study's contributions to these literatures is to document the ways that Africans were essential to colonialism's technical projects in Africa and gives voices to the silences surrounding their participation in colonial mapmaking. It looks specifically at the ways that colonialism drew in and trained its African staff, inculcating them into the value of its scientific

practices and techniques and making them willing participants in perpetuating its mapping practices.

Literature Review

Cartography, Colonialism, and Local Participation

The literature on mapping and colonialism typically focuses on the ways in which cartography fostered the founding, development, and legitimizing of European colonies.[1] In many studies, the role of local experts in relation to colonial cartography is largely neglected. Stone's research on African colonial mapmaking gives scarce mention to the local population's involvement in the process.[2] D. Graham Burnett's study of empire-building in Guyana focuses on British roles in mapmaking.[3] He notes that local informants provided toponyms to British surveyors, but that much of their information was seriously considered. Matthew Edney's work on India provides hints of local participation, but he only briefly discusses the involvement of Indian surveyors in British processes of mapping the subcontinent. He does mention, however, that the archive contains many instances of Indian resistance to surveying.[4] Despite the evidence of local participation in colonial cartography, research largely omits their involvement.

There are some exceptions to this silencing of local participation in the colonial and imperial cartographic process. J. B. Harley examines the influence of Native Americans on seventeenth-century American maps.[5] In deciphering the "shadows" of Native American influence on the maps, he suggests the subtleties of their contributions. Their active role in participating in mapmaking exercises and as informants is not substantiated. Karl Offen studies the influence of Amerindians' spatial practices on colonial maps.[6] He contends that the political power and independence of Mosquito Indians enacted authority over their space, resources, and

populations—such that their creation of Mosquitia was also represented in eighteenth-century British and Spanish maps. In two studies, Thomas Bassett notes indigenous influence on European mapping of Africa.[7] In both studies, he demonstrates that African knowledge was important to the making of European maps and also illustrates the ways that Africans helped to make European maps. He describes the influence of travel reports, place names, "oral maps," and drawings in the sand as indications of the sharing of geographic knowledge. Bassett also explores the ways that European mapping practices influenced indigenous mapping traditions. What these studies neglect and what is pursued in this chapter is the systematic involvement of Africans in colonial mapping. That is, beyond the travel accounts and exchange of knowledge, European colonial power often trained a cadre of workers to facilitate the mapping of their overseas colonies.

A study conducted by Olayinka Balogun discusses the training of Nigerian surveyors at the turn of the twentieth century.[8] Balogun notes that surveying was the first professional career introduced into the Nigerian educational system. His study offers a glimpse into the evolving opportunities for African surveyors, which parallels many of the developments in colonial Ghana. Balogun provides some analysis of the links between changing economics and politics of colonialism to the training opportunities available to Nigerian students; yet, his assessment does not relate the training opportunities to broader impacts in the mapping of Nigeria.

This chapter builds on these works to examine the engagement, training, and contributions of Ghanaian surveyors and draftsmen in the mapping of the Gold Coast. I argue that history of the mapping of the Gold Coast cannot be understood without considering the roles played by Africans mapping the colony. Specifically, by documenting Africans' work and roles as mapmakers, I interrupt the metanarrative of colonial cartography being a practice of foreign

agents solely conquering, partitioning, and mapping the African colonial terrain. This chapter begins with an examination of the influence on the mapping of the Gold Coast by an early Gold Coast surveyor, George Ekem Ferguson. I then discuss the institutional structures of surveying, the training and employment of African surveyors, and the contributions of these surveyors and draftsmen to the work of the Survey Department until Ghana's independence. Documenting the untold story of African surveyors' work over eighty-three years, this study establishes their interests and concerns with colonial cartography, including its technical and political rationalities, agendas, and organization. This history demonstrates that African surveyors' participation was essential to the colonial project and the mapping of Ghana. Further, this study also causes one to rethink aspects of Matthew Edney's work, in the sense that local participation and knowledge was essential to the construction of a colonial cartographic panopticon. The imposition of British rationality and British rule, enabled in part through mapping, was a far more complex process – that directly engaged local knowledge and power, as this dissertation shows.

Colonial Governmentality

      The second body of scholarship that this study engages centers on the Foucauldian concept of governmentality and the related concept of colonial governmentality. Governmentality encompasses modern states' power and rationality, undergirded by the techniques and sciences of the state.[9] Michel Foucault writes of governmentality that it is "the ensemble formed by the institutions, procedures, analyses and reflections, the calculations and tactics that allow the exercise of this very specific albeit complex form of power, which has as its target population, as its principal form of knowledge political economy, and as its essential

technical means apparatuses of security."[10] With this lens, such calculations and tactics as mapping are means for deploying power in seemingly subtle ways. Couched as technological or scientific interventions or approaches, these techniques appear more benign or even beneficial in the context of governance, which I will discuss in more detail shortly. First I address colonial governmentality.

Since Foucault's theory emerges from Western Europe case studies, recent scholarship has reframed governmentality in the colonies as colonial governmentality.[11] Gyan Prakash describes colonial governmentality as the configuring and administering of the colonized territory and people—"under the authority of science," and particularly according to the knowledge and tactics of the colonial state. [12] He distinguishes the colonial governmentalized state where:

> …administration became regularized and extended its reach farther down into the colonized society in its effort to generate new forms of knowledge about the territory and population. As the British produced detailed and encyclopedic histories, surveys, studies, and censuses, and classified the conquered land and people, they furnished a body of empirical knowledge with which they could represent and rule India as a distinct and unified space. Constituting India through empirical sciences went hand in hand with the establishment of a grid of modern infrastructures and economic linkages that drew the unified territory into the global capitalist economy.[13]

Prakash notes that beyond the purely administrative agendas, there is commonly a "developmentalist impulse" of such colonial governmentalist tactics, also seen within this case study. As such, administration and/or development may both be desired outcomes of colonial governmental tactics.

Prakash further characterizes colonial governmentality as being limited by the weaknesses of the colonial state, and because of these weaknesses, local intermediaries, who he calls "subordinate functionaries," are needed to facilitate the techniques of governance. That is, according to Prakash, in implementing the colonial states' governmental projects, which

included censuses, engineering initiatives, and public health projects, the colonial state drew in local agents, who helped to translate, assist, and provide essential labor to such projects. In the case of mapping the Gold Coast, the training of these functionaries and the involvement of these colonized peoples provides avenues for understanding African engagement in surveying and mapping.

Works drawing out governmentality more concretely include James Scott's study of the simplifications of statecraft.[14] Scott sees technologies of the state as "narrowing of the vision" from the complex realties that exist to more simplified, legible forms. Scott uses the example of the simplification of complex land tenure systems by the state through land privatization and regulation. He argues that cadastral maps create a Cartesian legibility based on standard measures and calculability. He argues that these static measures and reductive knowledge encoded in a map serve administrative agendas, for instance in government planning and taxation. Further, a bureaucratizing and modernizing state seeks to record and control its resources in a more systematically consistent way, such as through cadastral mapping.

In colonial contexts, the research of Arun Agrawal helps to illuminate the workings of governmentality. Agrawal's study of forest regulations in India demonstrates the ways in which colonial forestry policies and management strategies were initially resisted by the Kumaon community, but over time and into the postcolonial era, the same community embraced such regulatory policies, forming environmental groups and policing their own community's use of forest resources. He builds on Foucault's concept of governmentality to show that "modern forms of power and regulation achieve their full effects not by forcing people toward state-mandated goals but by turning them into accomplices."[15] Agrawal demonstrates the ways in which governmentality influences people's conduct and questions the value of drawing

distinctions between the state and society. He explains, "Instead of examining the boundaries and definitions of the state and society, an analysis of governmentality orients attention toward the concrete strategies to shape conduct that are adopted by a wide range of social actors and how these different actors collaborate or are in conflict in the pursuit of particular goals."[16] With reference to colonial mapping, this analysis draws attention to the ways the British state in colonial Ghana used mapmaking to affect the conduct of its subjects in ways that legitimated colonialism. These examinations of governmentality reveal some of the ways Gold Coasters become involved in these techniques and practices, embracing them and implementing them over time. Drawing on these works, I introduce the notion of *cartographic governmentality* as a way to delineate ways in which African surveyors became willing accomplices to the practices of the colonial Survey Department.

African Intermediaries and Colonialism

The third body of literature that I draw upon explores the roles Africans played as intermediaries in European colonialism.[17] Seeking to go beyond the research that dichotomizes African responses to colonialism into camps of resistance or collaboration, this study understands people's roles in relation to the contexts and avenues open to them as employees of colonial enterprises. It draws on the colonial governmentality literature, specifically Agrawal's work, to suggest that the colonial state turned to local agents – not as collaborators, but as accomplices, in implementing the techniques and tactics of governance. As accomplices, local people became vested in the both the regulation and outcomes that similarly interested the state. Further, it seeks to understand some of the temporal distinctions that unfolded over the transition

from colonial expansion to the beginning of self-rule. Thus, this study draws upon literature that highlights some of the temporal variation in the engagement of African workers.[18]

African responses to colonialism tend to identify two primary positions—collaborators and resistors, and likewise research exploring colonial intermediaries tends to promote the binary worlds they move between.[19] This scholarship emphasizes their knowledge of both the colonial world and their home culture. The tendency toward reducing the complexities of intermediaries' multiple worlds relates to countering either their absence from colonial histories or their instrumentality to foreign rule. For example, David Turnbull's study of Australian go-betweens seeks to uncover their hidden role in colonial histories, but in doing so, he puts forward "the figure of the go-between [who] is always two-sided, always both enabler and betrayer…."[20] Turnbull continues to describe the man who could move between "two worlds" but was ostracized and "unable to find a home on either side" of the boundaries that he crossed.[21] Similarly, Kwame Arhin's study of colonial civil servants in the nineteenth century highlights the mediating role that George Ekem Ferguson played in the Gold Coast's colonization.[22] According to Arhin, Ferguson's role as an intermediary enabled a bridging of modernity and tradition. Recent essays on African intermediaries explore their experiences in "straddling multiple worlds."[23] The binary simplification of colonial vs. African or traditional vs. modern represents some of the ways the colonial archive captures difference. This study will seek to engage both the simplifications of archival texts and the broader contexts of African surveyors' work life.

Benjamin Lawrance, Emily Osborn, and Richard Roberts' edited volume, *Intermediaries, Interpreters, and Clerks: African Employees in the Making of Colonial Africa,* demonstrates that African colonial intermediaries negotiated multiple contexts. They moved in-between the

changing interests of local colonial administrations, broader colonial networks, African polities

on the ground, educated African elite, rural communities, and their own families. The case

studies in Lawrance, Osborn, and Roberts' volume reveal that the influence of intermediaries

waned over the colonial period. During the early periods of colonialism, colonialists depended

quite heavily on the Africans employed in their service, and these intermediaries held

considerable power to interpret, cultivate, and exploit a particular relationship.[24] They state: "In

the flux of conquest and its aftermath, African intermediaries working closely with European

colonial officials (or appearing to) could develop or carve out positions of considerable authority.

The 'rule' of colonialism had not yet been set or developed…" Explaining their evolving role,

these authors write: "As the bureaucracy of the colonial state solidified, however, the

possibilities for Africans to rise to positions of authority declined. The positions held by Africans

became more strictly codified: their duties, ranks, and salaries were regulated by the state."[25]

They note that instead of relating to a particular person, at this stage, African colonial employees

rather relied on "their understanding and manipulations of the bureaucracy" as their main point

of engagement.[26] The scope of this study will demonstrate the changing influence and

relationships of African workers to the colonial state, as their individual influence waned and

their positions became more codified within the Survey Department.

In summary, the topic of the mapping and surveying of colonial Ghana speaks to multiple

audiences. It engages with literatures that explore the relationship between colonialism and

cartography, which has largely neglected the role of local peoples in map making. It speaks to

the postmodernist literature on governmentality by showing how colonial subjects participated in

mapping the confines of colonial rule. And third, the case study speaks to the relatively recent

literature on the intermediaries of colonization. It is this third theme to which this study most

directly contributes. The social history of surveying and mapping documents the ways that colonial processes were not purely endeavors of foreign agents but involved local people. By focusing on Ghanaian surveyors, this study shows their role over the course of decolonization and the stability that they provided in ongoing agendas and trajectories in mapping. Lastly, local practitioners who worked during the decolonization and independence eras distanced themselves from the politics of their practice, but still fit into a broader context in which maps and surveying functioned as tools of rule. I now turn to pursue these arguments across the three temporal frames of Ghana's colonial era.

Historical Context and the Evidentiary Record

The maps and mapping of Ghana are among the inheritances of its colonial era and continue to influence postcolonial mapping practices and views. To substantiate this claim, I provide a social history in the unfolding of Gold Coast maps demonstrating that Africans played significant roles in surveying and mapping the territory throughout the colonial period. I present this history sketching out three broad phases of colonialism and cartography: 1) conquest and expansion, 2) administration and development, and 3) consolidation and dissolution. At the beginning of each section, I provide a brief introduction to the period before launching into my focus on surveyors and mapping of the period. Within each phase, I examine the emergence and roles of African surveyors and draftsmen and the institutional structures that surrounded surveying. At the close of this chapter, I then bring these threads together to substantiate my larger claims about Africans' roles in the mapping of the Gold Coast and in the continuities in scientific mapping practices in the post-colonial period.

It should be noted that the three phases of colonialism charted in this study draw on some rather disparate data sources, and thus the narrative across these periods can seem at times rather disjointed. The reason for this disjointedness is that the data, like the periodization, are fragmented by colonial and global change—political mobilization, changing leadership, wars, and the global depression, to name just a few of these changes. Also, the data are represented by the ruptures of colonial sources, written by a changing array of British officers. I do draw on African surveyors' or draftsmen's voices in written documents, maps, and in documents informed by Gold Coasters, but those voices are far from continuous or wholly represented within the archive.

Given the fragmentary evidence, this chapter bridges the three phases of colonialism with multiple data sources. These sources include reports by and about George Ekem Ferguson during the first phase of colonial expansion (1874-1901). Ferguson produced a large number of maps, and these sources are also examined. Evidence for the second phase (1901-1930) of colonial administration and development emerges mostly from the reports of the colonial government surveying units and related archival records. These records are far less individually focused, and instead feature the bureaucracies and structures of administration. To balance this bureaucratic perspective, I draw from personnel files dating from this period to illustrate African participation in colonial-era mapmaking. The third phase (1930-1957) centered on consolidation and decolonization. It lacks the depth of archival documentation, as the colonial recordkeeping was shallow for this period. To make up for this deficit, I draw upon secondary sources and, most importantly, interviews with surveyors who first started their training and work during the colonial and early postcolonial era. While the data and narratives can seem disparate and disjointed at times, the role of African surveyors is still evident throughout all three periods. The

scope of their contributions can be seen in the cartographic construction of the colony, the

unfolding governmental practices of mapping, and the continuity of mapping practices during

decolonization—points that I will return to in the chapter's conclusion.

Phase I: Colonial Conquest and Expansion

British colonialism on the Gold Coast emerged in the nineteenth century. It took a more

defined political arrangement and geographic coherence in 1874. At this time, the British located

administrative offices in Accra and assumed administrative control over a continuous territory

along the coast and inland to about 6° 50" north.[27] The British continued to expand their

authority along the coast and in small steps northwards. The Berlin Conference of 1884-1885

clarified the terms of colonial expansion amongst the European countries, as a whole, and further

catalyzed British strategies to expand northwards beyond the Asante Empire.[28] The British

previously led several incursions into Ashanti and faced considerable resistance. However, with

a race to extend colonial territory, the British sought to weaken Asante allegiances and sidestep

Ashanti to execute trade, friendship, and protection agreements in the so-called "hinterlands,"

north of Ashanti, before the Germans or French could establish any colonial claims there. The

British trained and relied on a key African intermediary, George Ekem Ferguson, to explore and

document this region in maps and reports, as well as to execute treaties of trade and protection on

behalf of the British. His peaceful negotiations with communities in the Gold Coast hinterlands

lay claim to an extensive region on behalf of the British Empire. He built a network of spies who

facilitated the reconnaissance of Asante and ultimately supported Britain's war against the

empire.[29] Ferguson's work and leadership ultimately helped Britain to capture the Asantehene

and other key leaders, establishing British rule over Ashanti.

Over a twenty-seven-year period, this expansion led to the formation of three political entities under British rule—the Gold Coast Colony, Ashanti, and the Northern Territories—which collectively formed the Gold Coast (Figure 3.1).[30] Ordinances codified the formation of the Northern Territories and Ashanti in 1901, in which chief commissioners administered these protectorates. The governor of Gold Coast ruled the littoral colony and oversaw the commissioners based in Ashanti and the Northern Territories. The period 1874 to 1901 marks the phase of colonial conquest and expansion in the Gold Coast. In the following section I provide general contextual and biographical information on Ferguson before describing his specific role in colonial mapmaking during this period.

George Ekem Ferguson, A Gold Coast Surveyor during Early Colonialism

The number of Gold Coast surveyors working during the period of colonial expansion was limited, as educational opportunities within the colony and West Africa were relatively few. However, George Ekem Ferguson, who ultimately learned surveying skills, rose within the British colonial network and wielded considerable influence in the expansion of the Gold Coast.[31] Ferguson was born around 1865 in Anomabu, near Cape Coast, of African and European heritage. His parents were both Gold Coasters. His paternal grandfather was a Scottish doctor who served in the Gold Coast colonial establishment, and on his maternal side he had a Dutch ancestor. These family connections to imperial and colonial networks likely opened up opportunities for Ferguson to both acquire an education and make connections within the colonial administration. He attended school at Cape Coast Wesleyan School as well as the Wesleyan Boys' High School in Freetown, where he excelled in his studies.[32] Shortly after his return to Cape Coast, he began working for the colonial administration at the age of seventeen.

He copied maps and was trained on the job by British colonial officers. Thus, his mapmaking career began. Over time, Ferguson worked in multiple colonial departments, including the Public Works Department, where he produced a number of large scale maps, facilitated the survey of the Anglo-German boundary, and where he learned how to compile political reconnaissance maps.

One of Ferguson's earliest maps, entitled "A Sketch Map of the Divisions in the Gold Coast Protectorate," dates from August 1884 (Figure 3.2). The title plate notes that the map was compiled under the direction of the then governor, William Young, based on official papers, by George E. Ferguson. The map exemplified the governor's interests in a preliminary internal partitioning of the colony.[33] The governor previously submitted a scheme for district administration in September 1884 to the Colonial Office. Based on that communication, it appears likely that Governor Young commissioned this map for colonial administrative purposes.[34] The map served to determine the distribution of colonial officials posted in the districts and created a hierarchy amongst the districts.[35] For Ferguson, this was the first map he compiled of the broader Gold Coast protectorate. Ferguson previously copied a number of other larger scale maps that were of a narrower focus than the entirety of British possessions at the time. His "sketch map" was one in which Ferguson's skills and contributions were both demonstrated and acknowledged at higher colonial administrative levels. The map was of considerable interest in London and was an important turning point that helped advance his mapmaking career.[36]

In compiling this "Sketch map of the Divisions in the Gold Coast," Ferguson drew on multiple sources. For example, he integrated cartographic symbols and knowledge that he gained in copying other maps. This is evidenced by several elements in this map. The framing of the

region is much like the British maps of the region. The east-west and southern coordinates of the map are similar to maps produced by the Intelligence Division War Office (IDWO) in 1881 and 1873.[37] Ferguson, however, limited the northern extent. The map's scale is similar to those maps, as well. Ferguson listed his as 8.5 statute miles to the inch; whereas the IDWO lists them as a fraction, but is slightly smaller at 1:633,600. In this sense, Ferguson replicated the conventions of mapping of the Gold Coast in his own compilation.

Ferguson also added new elements to the map; elements that while new to the Gold Coast map were conventions and standards used elsewhere. He included a compass star, not seen on the IDWO's Gold Coast maps or other maps of the region in recent years. It closely resembled a compass star seen in another set of Ferguson's large-scale maps, drafted several years earlier. Ferguson's inclusion of this detail is indicative of his growing skill set and knowledge of cartographic design elements. Similarly, he demonstrated his contributions to geographical knowledge—selectively deleting some topographical information and communities that lie beyond the protectorate borders and adding topographical data not previously represented on British maps. Ferguson included some data on river currents, depths, and altitudes of selected points. While perhaps relatively minor in symbolizing colonial conquest or expansionist goals, his contributions were nonetheless indicative of his growing geographic knowledge and his collating of such facts and figures. Ferguson's role in compiling this map demonstrated a competence that extends beyond that of someone who was merely copying maps. His exposure to maps, surveyors' work, and the colonial records helped to extend his knowledge base and enabled him to produce the map.

Ferguson employed other design elements to offer clarity while also highlighting political hierarchies. His use of weighted or hatched lines, colors, and different lettering styles and sizes

was part of the effort used to delineate the importance of specific communities and regions. As the first colonial map to mark internal political divisions within the Gold Coast Colony, Ferguson's map suggests both boundaries and alignments amongst regions and ethnicities. However, his use of these design elements is not consistent throughout the map. Colored lines along the coast inexplicably do not match the colors of regions. Blocks of color often align with districts but not consistently so. The map's named districts do not match other colonial sources, and ethnicity and town names are interchangeably used for regional names. This inconsistency possibly reflects the confusion of a newly established colony and the sources consulted. Also, the map demonstrates the obstacles faced by mapmakers, who provided documents meant to simplify the administrative plans and hierarchies of the government, and yet are unable or fail to represent the complexity they know to exist. Further, Ferguson's contributions to this map may also reflect his lack of training in mapmaking. However, from the standpoint of an African-made colonial map, Ferguson's map is an important example of the practice of engaging a local mapmaker with considerable technical skills in administrative and colonial affairs.

Ferguson's "sketch map" illustrates his emerging role in colonial administration and colonial mapping. Producing an administrative map under the direction of the most senior British colonial official, the governor, is indicative of his value to the administration. Although there were British surveyors working in the Gold Coast at this time, Governor Young sought out a Gold Coaster to lead this project. Ferguson reflected on his map and his contributions in a letter to the subsequent governor of the Gold Coast:

> My first endeavor on entering the public service was to study the geography of the Country and eventually compiled from information which had been collected in the Governor's office Map of the Gold Coast Protectorate under the supervision of the late Governor Young; and I believe I was the first to make out on it the approximate boundary of the several districts in the Protectorate whence the map took its name…[38]

This statement verifies Ferguson's commitment to mapping as well as to the concerns and interests of British colonial governance. Ferguson's dedication is actively supported, as he is promoted, trained, and brought in to the fold of British colonial expansion through mapping. In the years that follow, Ferguson's maps and reports document his perspectives on and contributions to British colonialism and governance in greater detail.

Colonial Expansion through Reconnaissance and Map Design

By the 1890s there was increasing pressure among the European colonizing governments to secure "spheres of influence" on the ground in Africa.[39] However, within the scope of this race to claim territory, the colonizing states needed people to execute treaties with local leaders and document these arrangements in reports and on maps. Toward this end, the Colonial Office and Gold Coast governor sent Ferguson to the Royal School of Mines and the Royal Geographic Society in London in 1889 for further training. In London he learned more about geology, ethnology, and surveying. After his return to the Gold Coast, the governor recruited Ferguson to spy on Asante and to attempt to fracture Asante political alliances. In addition, Ferguson's mission was to travel beyond Ashanti to negotiate treaties of protection and trade with other communities. During these secretive journeys, Ferguson documented his work in reports, letters, treaties, and maps. These sources further illustrate Ferguson's role in mapping, colonial expansion, and his position as an intermediary.

Ferguson's 1892 journey into present-day northern Ghana yielded several maps and texts that served British colonial expansion. After he compiled two maps of his journey, the Intelligence Division of the War Office made some modifications to one of his maps reissuing three versions of it the following year. Ferguson also drafted a number of letters, treaties, and

reports to accompany the maps. The Colonial, War, and Foreign Offices in the UK and the

Governor of the Gold Coast exchanged numerous communications about Ferguson's

accomplishments.

In advance of Ferguson's departure for the 1892 mission, Governor Griffith met with

Ferguson to discuss possible routes and to select the key communities with which to secure

treaties. The Governor wanted him to target four ethnic groups: Dagomba, Gonja, Gurunsi, and

Mossi. The two men relied on French-, German-, and British-made maps to plan the journey.

Griffith cautioned Ferguson against making treaties with communities that lay solely within the

Neutral Zone. This region was north of Ashanti, and shown in Ferguson's "Country between Say

and Bontuku" (Figure 3.3) as a blue shaded square. This zone was the result of an 1888 pact

between the Germans and British that stated that this area would remain open to both European

nations and that neither could claim exclusive rights to control the trade there.[40]

Over the course of his five-month journey, Ferguson sent a number of reports to Griffith,

and he promised a full report and map on his return to Christainsborg. The London-based

Colonial Offices received the copies but eagerly awaited Ferguson's final report and map. His

first report described various communities and "native authorities"; the treaties that he secured

with five communities in the north (Boniapei, Bole, Daboya, Yendi, and Bimbla); and a map that

he compiled, "Country between Say and Bontuku" (Figure 3.3). An 1887 map by the German

publisher Justus Perthes served as the base map for Ferguson's new map, which he supplemented

with information gleaned from his mission.

Ferguson's reports and map illustrate British expansionist agendas through a number of

strategies and mapping practices. His letter and the treaties document political arrangements.

They demonstrate his ability to connect with local communities with whom he negotiated treaties

while also showing his awareness of the global colonial competition between Britain, France, and Germany. His map bolsters British expansionist goals through several design elements, noted and explained below. Ferguson demonstrated his knowledge of cartography and the power of cartographic design through a number of techniques specifically as he dealt with communities that lay partially or wholly within the Neutral Zone. The written record notes that Governor Griffith cautioned him against making treaties with communities in this zone. However, Ferguson actively engaged communities within this territory. He crossed the borders of this zone and secured four treaties of political and economic alliance, suggesting that despite the written record between the governor and Ferguson that they had a different verbal exchange and that Ferguson was to pursue such treaties. His maps also helped in staking British claims to this area, regardless of the treaty with Germany.

Specifically, his maps illustrate these claims through several design elements. First, he underlined all the communities with whom he made alliances. With the exception of one community, Bole, all other communities with whom he secured treaties lie within the Neutral Zone. Second, he used labels of ethnic groups to stretch into the Neutral Zone. Labels such as "Gonja" and "Dagomba" extend across the boundaries of the Neutral Zone. By demonstrating the spatial extent of these ethnic groups as being spread across the boundaries of the Neutral Zone and into British colonial territory also helped to legitimate British incursions into the Neutral Zone. In these ways, Ferguson's map reflects colonial, expansionist claims, as his political efforts to extend British influence into this supposed Neutral Zone. Ferguson's map demonstrates expansionist claims beyond the Neutral Zone, as well.

Third, colonial agendas are evident in Ferguson's maps based also on his use of colors. Situating his maps within the broader context of imperial mapping, in which Great Britain's

colonies were depicted in red, Ferguson used hues of red that signaled interest, if not intent, to colonize. Ferguson grouped the communities with whom he secured treaties, within a reddish-orange territory with a darker red boundary line. The broader context of that community's influence is represented in the reddish-orange zone. By doing so, he encased the five communities within a large region with common interests. Ferguson thereby showed that British authority extended to the broader regions through this representation. He further indicated that British authority broaden to the lighter orange zones, as described below.

Through the use of color on the map, Ferguson asserted that these regions within the lighter reddish-orange were under British protection based on the political relationships they have with the signatories to the treaties. For example, Bole, with whom Ferguson secured a treaty, previously protected the people in Wa from attack. According to Ferguson's report, Wa was thereby under the chiefs of Bole and having a treaty with Bole entitled British authority over Wa, too. Other areas include Pampamba, Sansanné-Mango, and Gambaga which Ferguson described as "feudations" of the Dagomba chieftancy based in Yendi. He explained that Walembele and Yariba were dependencies of Daboya. By documenting such relationships, Ferguson made the case for extending British rights of trade and friendship to these areas based on the influence that the five signatories could claim. A similar but lighter shade of orange and a hatched red boundary line visually connects these territories as also being within the scope of British colonial authority. Thus, Ferguson's reports and his documentation of the regional political alliances would inform colonial claim-making via his maps and connecting regions with shades of color.

Fourth, Ferguson used color along boundaries lines to assert British colonial agendas in the maps. Ferguson asserted that the so-called Akba or Como River, today the Black Volta,

might be the best natural boundary between French and British interests, and he marked this river on the map with a green line. This green line is in contrast to the yellow hatched line which represents a recent French proposed border. France previously used green to depict their proposed boundary in a map, and Ferguson adopted the use of the same color for marking his countermapping of an Anglo-French boundary. His map, likewise, shows the French boundary cutting across the regions and dominions with which Ferguson had concluded treaties. Ferguson's recommendation that the river be the frontier was based, in part, on information conveyed by a French colonial agent's map and Ferguson's concern for British interests in the region. He reasoned that French officer Louis Gustav Binger's 1890 map did not show France's influence extending beyond this river. Furthermore, he reported France's proposed boundary would hinder access to rich gold deposits and would also cut off Britain's trade network with the "Mosi" kingdom that extends to Salaga. He closed by noting that various African communities expressed their opposition to any type of division. Thus, Ferguson considered colonial economic interests, the extent of French and British treaties, but also the local African's sentiments against dividing the region to support his recommendation for the British and French frontier.

Through his maps as well as his political treaties, Ferguson portrayed and facilitated the expansion of British colonialism. His maps illustrated his cartographic skills as well as his knowledge of political and colonial mapping techniques. Ferguson adopted the techniques used by contemporary cartographers, including the French, German, British, and Spanish. His use of lines, color, and lettering documented that the treaties he had secured and promoted colonial expansion beyond the individual treaties. [41] As Britain negotiated its colonial territory with other European powers, the work of Ferguson, a Gold Coaster, was clearly the most solid evidence

Britain could produce to document its colonial influence and claims. In the next section, I look more closely at Ferguson's intermediary role.

Ferguson as an Intermediary

Ferguson's allegiance to Britain is easily noted by examining this map and the accompanying report, treaties, and letters. Further, his mapping skills and political savvy are also evident. What is less obvious is the significance and complications of his intermediary status, as an African employee to the British colonial state.

Many people attribute Ferguson's successes to his African heritage. According to the Gold Coast governor, Ferguson's knowledge of "native character and languages," facilitated his work.[42] Ferguson was able to communicate successfully with chiefs about their political interests and hesitancies to align with Britain. He drew on his language skills to negotiate treaties, and his knowledge of both regional and international geopolitics figured into these negotiations. He was likewise able to circumvent detection, as he traveled and maneuvered without standing out as a foreign agent. Approximately thirty years after Ferguson's death, another African surveyor, Kweku Asante, working for the Department of Surveys in the Gold Coast wrote a short biographical essay on Ferguson. Asante wrote glowingly of his predecessor:

> Among his many qualifications one which influenced Government in selecting him for the various missions was that 'being a native he could travel with a small following and remain in the bush for long periods whereas the ordinary British Colonial Officer would have required a special escort, a doctor and interpreters.'[43]

Thus, because Ferguson was of African descent, he was seen as better placed to carry out the often arduous political work of colonial expansion.

Praise for Ferguson's works extended throughout the Gold Coast administration and abroad within the Colonial, Foreign, and War Offices. The British Government awarded

Ferguson the Ashanti Star Decoration for his role with the 1895-96 Ashanti Expedition.[44] Also, the Royal Geographic Society posthumously awarded him the Gill Memorial and a gold watch for his contributions to geographical knowledge.[45] As has been stated before, his treaties and maps were key documents supporting British expansion to the 11th parallel and to the Black Volta on the northwestern frontier.

   While Ferguson won such accolades from the colonial administration, he occupied an inherently dangerous position as an intermediary for the British, negotiating political treaties with various African authorities and polities. Ferguson's death and the circumstances that led up to it illustrate the vulnerability of his position. Ferguson's murder occurred while he was on an expedition in the northwestern regions of the Gold Coast in 1897. He was carrying out another colonial, empire-building expedition to secure territories and treaties on behalf of Britain. During the course of the expedition, he encountered the army of the great west African-empire builder, Samori Touré. To underscore Ferguson's vulnerability as an intermediary within the larger scope of empire building, it is important to highlight briefly Samori Touré's role and dealings with the Asante kingdom.

   Touré originally came from the Bisandugu area of present-day Guinea, where he began his own state-building efforts. Following clashes with French colonial forces in that region, he relocated to northern Côte d'Ivoire. Being closer to the Gold Coast, Touré sought to align himself with the powerful head of the Asante kingdom, the Asantehene. Touré and the Asantehene corresponded in 1895 about reestablishing their influence in the region.[46] Wilks writes that the Asantehene sought Touré's assistance in "recover[ing] all the countries from Gaman to the coast which originally belong to Ashanti."[47] Here, Gaman referred to the northern

regions of Greater Asante, where the empire reached at its height in the eighteenth century and which coincided to a great degree with the territory claimed by the British through Ferguson's treaties.[48] These joint interests of the Asantehene and Touré demonstrate the political maneuvers and the level of coordination within Africa's own empires and among its leaders to thwart colonial advancement and to secure their own interests.

The British administration feared the alliance of the Asantehene and Touré, and sought to secure and protect its northern territorial claims from Touré as well as from the French. In 1897, the British governor sent F.H. Henderson, a travelling commissioner, along with Ferguson and members of the Gold Coast Constabulary, to secure this region as British territory and to better document their claims for the upcoming Anglo-French negotiations.[49] According to Henderson's report, Touré and his army initiated a series of attacks on them. Over a week of on and off fighting, Ferguson was shot in the leg and was unable to walk without assistance. Fearing their inability to retreat to a safer area, Henderson reported his willingness to meet with Samori Touré, despite Ferguson's protests against any such meeting. Trying to negotiate an end to the fighting and rather than admitting to any ill-will towards Touré, Henderson argued that British interests were solely to stop French colonial expansion. During these meetings, Ferguson remained behind. At this stage, Ferguson's African carriers abandoned him. Touré's army advanced and found Ferguson alone. According to Henderson's report, before killing Ferguson, the soldiers reportedly encouraged him to accompany them to Samori Touré's headquarters, but Ferguson refused and pointed an unloaded gun at them. Touré's soldiers initially retreated but returned later to find Ferguson still alone. They killed him and brought his decapitated head to Henderson and Touré. Henderson and the carriers all survived this encounter, and Henderson recounted these events and exchanges later.

These final encounters demonstrate that Ferguson's intermediary status was not purely within the dualities of British vs. Gold Coasters. Complex political relationships formed between African empires, colonial powers, and power brokers across these fields. Further, Ferguson was particularly vulnerable because of his intermediary status. Ferguson was abandoned by his African carriers, who were to carry heavy loads and support the expedition, but who were not prepared to secure him to a safe position far away from Touré's army.[50] Ferguson actively supported British expansion, yet he feared for his life and therefore refused to meet with Touré. Whereas the one Briton in this entourage, Henderson, met Touré and survived. Likewise, Ferguson refused to allow Touré's army to take him alive, threatening them and being killed by them. The violent end of Ferguson's life and the display of his head to Henderson suggest that Samori Touré's army knew of Ferguson's status and that his death was a significant loss to the Gold Coast administration and Henderson. Moreover, Ferguson's murder, despite Henderson's conciliatory efforts, reinforced Touré's and his army's reputation for fierceness, specifically, in that his army had killed an African agent of British imperialism. In the end, Ferguson was literally and figuratively trapped in a clash between all of these communities.

To conclude this section on the early phase of British colonial expansion, Ferguson was a key figure in the establishment and mapping of the Gold Coast. By focusing largely on two of his maps and his status as an intermediary in British colonialism, this section demonstrates the importance of his work in contributing to administrative hierarchies, the geographic integrity of the Gold Coast Colony, and the expansion of British colonialism northwards. British administrators' praise of Ferguson's work shows the importance of African intermediaries in literally charting the direction of British colonization in the Gold Coast. Ferguson came up from within the colonial system, being trained and supported by high-level administrators, and became

a key political agent facilitating core colonial goals of expansion. The British had repeatedly been thwarted by Asante's forces as they headed north, and Ferguson offered a way to sidestep Asante. He was able to travel repeatedly through Asante's territories, reducing Ashanti's influence, and document and map its hinterlands. Further, Ferguson's work began a trajectory of engaging and training Gold Coasters in the surveying practices needed by the colonial administration. African surveyors' skills and contributions bolstered a relatively weak British team of bureaucrats and technicians, who lacked contextual knowledge of cultures and languages of the region.

The next section of this paper examines surveying and mapping during the period 1901 until about 1930, when the administration and the development of the Gold Coast dominated colonial activities and discourse. It considers African engagement with mapmaking during a phase of bureaucratization of surveying practices. The period begins with the creation of the Mine Surveys Department in 1901, and ends with the retrenchment of numerous surveyors, draftsmen, students, and staff in the context of the global economic crisis.

Phase II: Colonial Administration and Development

Between 1901 and 1930 government mapping and surveying in the Gold Coast expanded substantially to support the administrative needs and development agendas of the government. In 1901, colonial mapping bureaucracies were extended to expressly support the extraction of gold, timber, and other natural resources and the administration of concessions. The Mines Survey Department quickly assumed additional surveying and mapping responsibilities. In 1908, it changed its name to the Survey Department. Its staff was responsible for documenting the colony's territories, towns, and population. It also set out to establish a topographic framework

for the colony by fixing a network of geodetic points first for the Gold Coast Colony, and then for the Northern Territories. Despite major challenges internationally and domestically during these years, the expansion of the colonial administration is notable, particularly during the 1920s.[51] This section chronicles the expansion of surveying during this second phase of colonialism with particular attention to the involvement of Gold Coasters. It considers major trends in the development of the profession and the bureaucratization of cartographic practices within the colony, specifically with emphasis on when and how Africans participated and contributed to surveying and mapping activities.

The evidence and sources for interpreting Gold Coasters' role in colonial cartography changes with the evolving organization of these practices. The main sources for this period are the Gold Coast's Survey Department annual reports, personnel files, and various administrative files, once held by the Colonial Secretary's Office or by the Governor. And unlike the previous period in which George Ekem Ferguson regularly communicated with the Governor about his cartographic and political endeavors, the contributions of individual Gold Coasters are not well documented, as generally only the surveyor-general or senior staff are listed on the maps. Thus, the specific contributions of individual surveyors are not evident for this period. This move toward increased anonymity reflects a normalization of cartographic practices that is characteristic of colonial governmentality.

Africans and the Survey Department, 1901-1920

At the turn of the twentieth century, there was a great demand for colonial surveyors across British Africa but comparatively few qualified personnel were available. To meet this demand, the British Colonial Office, in conjunction with local colonial administrations,

established surveying departments across its African colonies.[52] The Gold Coast Mines Survey Department was founded in 1901 to meet the colonial government's mapping needs. The demand for surveyors and draftsmen was particularly acute in the Gold Coast because of the boom in gold, timber, and other concessions that had begun with the expansion of British authority over Ashanti and the influx of prospectors. With this surge in concessions, there was considerable confusion around the issuing of land leases and their coordination on the ground. The Mine Surveys Department and their surveyors were key to bringing order to this confusion. Department surveyors checked and validated plans, cut boundary lines, and conducted surveys of the leased lands. The department also licensed private surveyors who were hired by mining and timber companies to produce surveys of their concessions.[53] Faced with such demand both London-based offices and the Mine Surveys noted the need for local staff.

The demand for African surveyors, draftsmen, and other assistants only partly stemmed from the extraordinary amount of survey work to be undertaken. The colonial argument for hiring Africans was also based on the economics of paying this African staff substantially less than it paid its metropolitan staff. The colonial administration, including both those based in Accra and in London, did not expressly seek the political or cultural knowledge that an African staff could bring to the department. Rather the colonial government recruited African staff to assist with the mundane tasks and demands for surveying and maps.

Both the Geographical Section of the British Association for the Advancement of Science and the Colonial Office emphasized "the absolute necessity of resorting to native agency for its topography."[54] The Colonial Office circulated the recommendations of Thomas Holdich, chair of the Geographical Section of the British Association and author of "How Are We to Get Good Maps of Africa?" This 1901 pamphlet drew on his career in the Survey of India and the role of

Indian surveyors. For Holdich, the need for African surveyors was based largely on economics, where Africans would be paid at a fraction of the salary of Europeans. Holdich saw Africans as providing executing much of the work of the surveys, whereas Europeans would serve more or less in supervisory positions. While Holdich's report was aimed at a continental scale he did take note of the contributions of George Ferguson in the Gold Coast. Holdich recommended that colonial officials identify other "natives of Africa who will exhibit the same peculiar aptitude for geographical map-making."[55] Holdich's reference to Ferguson's "peculiar aptitude" suggests that the recruitment of African surveyors was not simply an economic calculus. That said, Holdich did not explicitly acknowledge the full scope of Ferguson's contributions and the many ways that African surveyors might contribute to this second phase of the colonial project.

Within the Gold Coast's Mine Surveys Department, A.E. Watherston, the first director, agreed in principle with Holdich's ideas and discussed options for training African staff. He regularly reported that the unit was understaffed. He went so far as to recruit a number of unpaid African staff to work in the department as assistant surveyors or laborers helping with chaining and traverse measurements. Watherston held racist views toward Africans. He wrote, for example that Africans disliked physical work.[56] Given his prejudices, Watherston was disinclined to move beyond his minimal efforts to employ African staff. This policy changed in 1905 when the Mine Surveys came under new direction.

Under the leadership of F.G. Guggisberg, the Mines Survey hired four so-called "native" surveyors, including a draftsman, in 1905. This hiring marked a formal recognition of African professionals within the department. It also established a hierarchy based on race and professional training that regulated duties, supervision, salary scales, promotion grades, and other entitlements between African and European staff. Guggisberg codified many of these

practices in his reports and in his 1911 *Handbook of the Southern Nigeria Survey: A Textbook of Topographical Surveying in Tropical Africa.*[57]

Of the four men employed at the Mines Surveys unit, one or possibly two of them were Gold Coasters, but all of them were listed as "natives." The men included: E.J. Smith, a Gold Coaster, T.H. Vaughan, a West Indian surveyor, J.B. Essuman-Gwira, and a draftsman with the name, Robert Josiah.[58] Guggisberg's 1906 report noted his willingness to hire more African professionals and that he received applications from "natives" who studied surveying in London; however, he was not satisfied with their skills.[59] In the absence of a local survey school, the number of African surveyors and draftsmen remained low.

In its first twenty years, the number of African surveyors and draftsmen employed in the department reached a maximum of three surveyors and one draftsman working at the department (See Table 3.1).[60] By 1915, only two surveyors remained, as one surveyor left the Gold Coast and one of the men died. The African draftsman was promoted to a surveyor position.
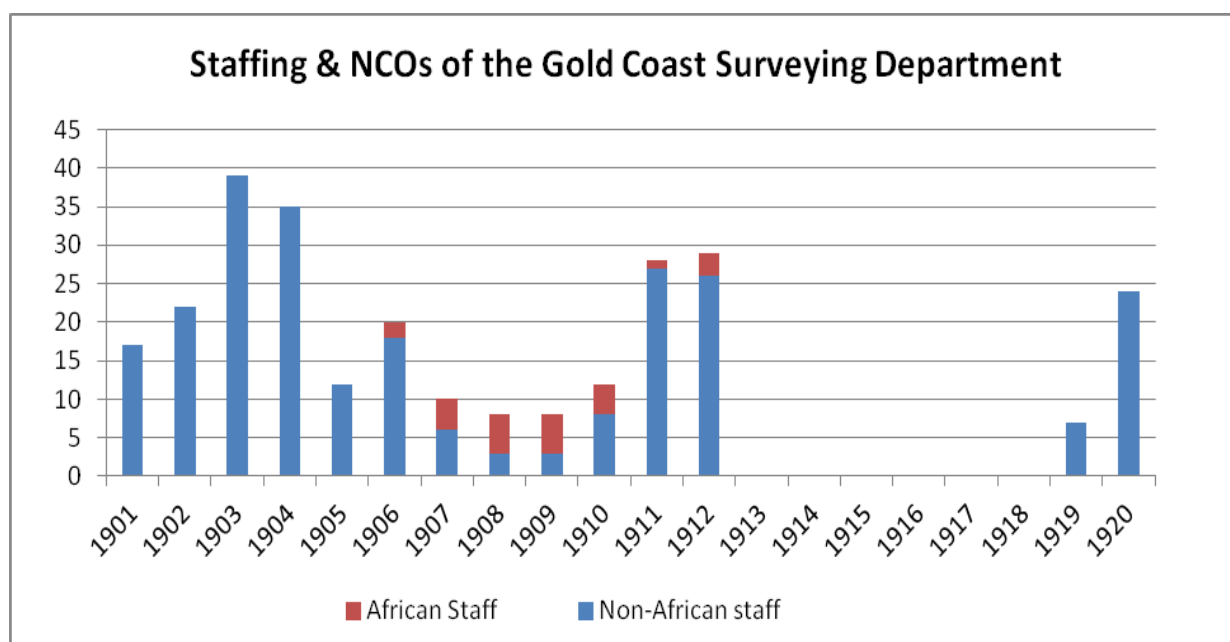
TABLE 3.1: Staffing of the Gold Coast Surveying Department from 1901-1920

The department had the option of sending students to Southern Nigeria for training at a survey school established there in 1908. However, from the record it appears that the department preferred to train African staff on the job. In addition to the four professional positions, many more Africans were employed by the department as laborers to assist in the surveying of the colony. The department closed for four years during the first world war as many of the Europeans staff were dispersed to various war zones. Both the department's annual reports and other records were not maintained for some time as well. During this period, it appears that African staff were relocated to the Public Works Department.[61]

Annual reports and personnel files suggest that African surveyors worked on both town and topographic surveys and also helped establish the colony's topographic framework. The "native" staff were assigned to the town surveys of Accra and other large communities. A number of these town sheets were handled entirely by the African staff. Departmental reports indicated that the African surveyors were "very useful" in contributing to the first ten topographic sheets of the Gold Coast Colony, printed in 1907 and 1908. In his description of the topographical mapping of the Colony and Ashanti, Guggisberg noted that ten surveying parties were active and that each party was supported by fifty Africans. It is likely laborers dominated these African employees. But with only two or three Europeans in each party, Africans also fulfilled various technical roles —working as headmen, probationers, chainmen, sappers, as well as carriers. Guggisberg explained in the same report that young Africans, who had just left Government schools, had become good and "cheap" surveyors who were capable of filling in details on the maps between the framework and conducting compass surveys.[62] Thus, in addition to the four professional staff, many more Africans played supporting roles in the production of topographical maps for the Gold Coast.

Despite his commitment to hiring and training Africans, Guggisberg's characterization of African surveyors was not always favorable. He considered the African surveyors as less adept at cadastral mapping. He noted that they did not grasp the mapping of "artificial features" such as concession boundaries. These concession boundaries were delimited based on negotiations between prospectors and local land owners and were regulated through colonial administrative offices, including judges, surveyors, and the deeds office. As a result, Guggisberg preferred to assign African surveyors to mapping the physical features of the landscape. It was in this way that Guggisberg himself drew a line between what African and European surveyors could and should survey and map.

Expanded Opportunities during the 1920s

Following World War I and the related hiatus of the Gold Coast's Survey Department, F.G. Guggisberg became Governor of the Gold Coast in 1919. In his new role, he revitalized the Survey Department by supporting cadastral and topographic mapping and by funding new initiatives. For example, a special party was formed in the Survey Department to undertake the mapping of stool boundaries.[63] The department also compiled new maps to serve and educate the general public. These maps included atlases and road maps. The government opened a publication office in Accra which allowed for the local printing of maps and other documents. Most importantly, Governor Guggisberg prioritized the economic development of the colony. The Survey Department became a key player and beneficiary of the Governor's development plans.

The Survey Department's revitalization resulted in many changes across the department, including new opportunities for its African surveyors and draftsmen. Due to an increasing

demand for maps, there were both new positions and training opportunities. One of the most significant developments was the establishment of a new government-run survey school for African students. Students advancing through the program would receive practical training and apprenticeships as surveyors and mapmakers for the department.

Table 3.2 provides an overview of the staffing of the Survey Department throughout much of the 1920s and into the mid-1930s.[64] Africans surveyors, draftsmen, and technical staff were found in all of the department branches: cadastral, topographic section, and in records and reproduction. Africans were also posted to the newly formed provincial surveying units. The overall number of Africans employed by the Survey Department is most certainly underestimated. The annual reports only cite notable positions held by African personnel. It is likely that many of the lower ranked positions that are either not associated with a title or not listed as even a position were held by African employees. While the highest ranking staff are
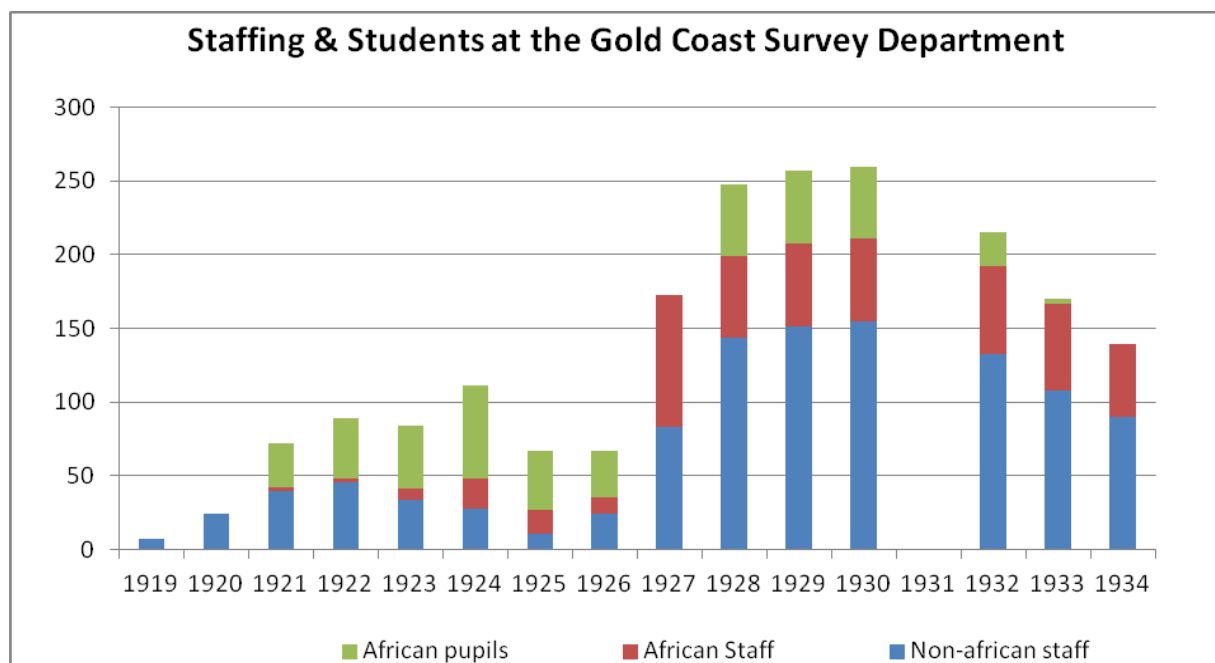
TABLE 3.2: Staffing at the Gold Coast Survey Department, 1919-1934[65]

listed and named, many of the supporting assistant surveyors, draftsmen, clerks, and laborers are anonymous individuals within these reports. Thus, these documents likely underestimate the contributions of African staff to the surveying of the colony.

In addition to the growing number of African staff, there were new standards for assigning the rank of professional staff. In terms of the naming of positions, the department implemented a four-tiered system for ranking surveyors. Promotion in the system was dependent on employees passing what were known as "efficiency bars." The reorganization enabled some African staff to hold a "European appointment," meaning they were paid on a scale that applied to European surveyors. Kweku Asante, hired as a chainman in the early 1910s, received multiple promotions in the early 1920s, including the rank of Surveyor with a "European appointment." A.A. Young, a Nigerian cadastral and town surveyor, who worked in the department for eleven years also held a "European appointment." With these appointments, the colonial administration modified its former practice of paying Africans on a lower pay. The year of Asante and Young's promotion, 1922, the surveyor-general, R.H. Rowe, wrote that further promotion was possible:

> … if the two surveyors can continue to maintain their standards of faithful and loyal work, they may hope to rise still higher in their profession, and help by their example in the department to form that character and reliability so necessary in the African Surveyor before he can qualify for the higher appointments.
> To those African Surveyors who read this report I say clearly that, while high technical skill is essential and will be demanded of them, technical skill alone will not qualify them. Reliability, loyalty to their superiors, and such strength of character as to ensure proper control of their subordinates, are essential before recommendations for promotion will be made.[66]

The just compensation to Asante and Young for their work and the possibility of future promotions suggests a changing working environment in which European and African professional staff could be compensated more equitably. Yet, no other surveyors received such promotions or held a "European appointment" in the years to come. The department's expansion

in the 1920s also coincided with the starting of a survey school internal to the unit and creating a pipeline for Gold Coasters to enter the profession.

Training African Surveyors

The heads of the Gold Coast Survey Department knew that in order to establish a well-trained local staff, they would need to create a local training school for surveyors and draftsmen. The topic was repeatedly taken up by both Watherston and Guggisberg under their leadership of the Survey Department. The Colonial Office decided to support a surveying school in 1907 but located it in Southern Nigeria rather than the Gold Coast. [67] With Guggisberg's return as Governor and his commitment to surveying and development, a second survey school in British West Africa was created in the Gold Coast in 1921.[68] The Gold Coast Survey School first opened in Odumase and admitted twenty-three students in its first year.[69] The school regularly had more applications from students than it could accept, and applications generally increased over time as the school and profession gained a strong reputation. By 1927, 101 students had entered the training program and twenty-six had successfully graduated.[70] By 1930, forty-four students had qualified as government surveyors.[71]

The training program entailed three years of instruction and practical training that took place during and after the formal instruction. Admission was based largely on successfully passing an exam, which encompassed arithmetic, elementary algebra, geometrical drawing, history, geography, English, and general knowledge. Exams were typically held once or twice a year in some of the larger urban centers in the Gold Coast Colony and Ashanti. Students also had to be at least sixteen years old.[72] Once admitted, students would sign a bond agreement, receiving some support for their training but also committing to work for the department for four

years following their successful completion. [73] According to its initial curriculum, the first year would focus on elementary surveying, math, and developing drafting skills. Students were introduced to topographical mapping—using rope and sound traverses and aneroid barometers. The second year, students would continue learning topographic skills, including leveling and plane-tabling, and prismatic compass traverses. They would also begin cadastral map training, learning leveling, large scale plane-tabling, basic theodolite usage, and chaining.[74] Many of the annual reports specify some of the applied learning that students took part in, mapping missions and topography around Odumase. This practical training then culminated in the students' third year, when they were referred to as 4th Class Native Surveyors and were assigned to the provincial surveying units or other sections of the department for their practical training. Successful graduates would then begin their minimum of four years of service to the colonial administration.

For the Survey Department, the benefits of creating this program were multiple. First, it addressed the shortage of trained technical staff available to the department. Second, most African staff were paid on a lower salary scale than their European counterparts; thus training local surveyors helped to keep costs lower. Salary, pensions, and allotments for field-based charges were lower for African surveyors and draftsmen, and transport costs to and from the Gold Coast were obviously eliminated for local surveyors. Another benefit was that students contributed to departmental initiatives as a part of their training. The head of the Cadastral Branch wrote, "2nd and 3rd year students have been employed for a period of several months in the field. They have made excellent progress...the Survey School has well justified its existence, and without it, we would not be able to turn out the quantity of work that we are now capable of producing." A private letter from the head of the Topographical branch indicated, " I never

imagined that any of these fellows could become so efficient at the job ...their sheets are quite up to the standard of those turned out by the European surveyors, and of course the costs are working out extraordinarily low."[75] Channeling students into government service enabled the Survey Department to be extremely productive in the 1920s. Further, the department knew that it would also have its most successful students enter as surveyors, working for the unit for at least four years. After these four years, Gold Coast surveyors and draftsmen could then enter the private sector, if they chose to.

The survey school and the new opportunities within the department created employment opportunities for African students and surveyors. The survey school was an institution that could channel them into careers that engaged their talents in algebra, geometry, geography, science, and their general knowledge.[76] Retired Ghanaian surveyors who were trained during the colonial period reported that the surveying career also spoke to their sense of adventure. Over the course of the 1920s the number of African surveyors employed in the department reflected the growth of opportunities. However, for many of the students, their education had its limits. During the first ten years of the survey schools' existence, none of the students rose to the point of being compensated on a European pay scale. Additionally, by 1926, more than 40 percent of the students had been dismissed or transferred to other departments in the colonial government.[77]

As part of the students' mentoring, the surveyor-general, R.H. Rowe, established a process for continued supervision of African surveyors. Within the Cadastral Branch, the 1923-24 annual report explained, "That the junior native surveyors have proved to be of considerable assistance does not mean that an efficient European supervising staff is no longer necessary. …good European supervision will be essential…. The stage through which these junior surveyors are now passing is one in which they require constant supervision, very careful

guidance and sympathetic help." These attitudes toward the African surveyors were not uncommon within the annual reports and departmental memos of its European staff. There was a tendency to offer praise to select and named professionals (as described below) and a mentoring to promising junior surveyors. There was also some skepticism of African students, some staff, and certainly the unskilled laborers. Assessments reported in annual memos legitimized, first, the continued employment of European surveyors and experts. They also validated Europeans holding higher ranks than the African staff, as well. Such attitudes are unsurprising given the colonial context in which they operated. This narrative of continued patronage and mentoring was common in the period of colonial development.

Mapping for Administration and Development

During the 1920s, the work of the department and its African surveyors resulted in considerable output in terms of the number of maps, the revision and expansion of the country's topographic framework, and the planning and implementation of several development schemes. Africans were essential to the functioning of every departmental unit. By 1924, African surveyors led by Kweku Asante were assigned sole responsibility for the updating of a Cadastral Survey of Accra at a scale of 1/1250.[78] Within the Topographical Branch, Africans were given greater responsibility, producing field sheets and significantly lowering costs of production. Major Bell, head of the Topographical Branch, reported decreasing costs of production. He calculated that a detailed topographical survey per one-inch sheet of 290 square miles cost £94 less in 1924 than it did the previous season. He also estimated that once a field camp was entirely made up of African surveyors and laborers, the cost would drop £294 below the 1923 amount. African surveyors and draftsmen were also advancing within the Reproduction and Records unit

and at the survey school. F.O Hanson was promoted as the senior African draftsman to fill a position vacated by a retiring European officer. Also, A.A. Young worked at the school as assistant instructor, and he was expected to be promoted to instructor once a vacancy opened up.[79]

At the same time that African personnel expanded over the 1920s, there was increasing emphasis on creating standards for techniques and practices. One of the first steps in this process was to establish a new topographic framework based on theodolite traverses and leveling tied to the traverse Mercator projection. With the framework, new beacons were established as points of departure for future surveys.[80] The Topographic Branch established their new standard scale as 1/62,500 (one inch to a mile), which let it update their small scale maps published in the 1907-8 and 1914. Also, most cadastral maps of cities and town were completed at 1/6250 and 1/1250. Along with the scale changes, surveyors and draftsmen implemented standards for deriving their data and representing it. New tools were introduced during this period that enabled greater accuracy, including a steel tape for chaining and a wireless set that helped to establish longitude. The department used conventional signs throughout this period as a key to their topographic sheets, and standards for orthography and names for locations were also codified by the department. In these ways, the department began to craft a more systematic approach to mapping the Gold Coast. African personnel were certainly involved in these processes, and thus, through these processes and across the staff there was an inculcation of the importance of standards and accuracy.

Working for the colonial administration, African surveyors were needed to carry out surveys and support the new interest in town layouts, cadastral plots, and topographical sheets. Their contributions to these efforts became increasingly anonymous. Instead of crediting the

individual people involved in compilation, published maps indicated only the surveyor-general's name. This move occurred as mapping standards were established in the Gold Coast, and it included new standards of representation and scale replacing some of the more variable practices.

In summary, the period 1901 to 1930 was an important one for involving more Africans in the profession of surveying and mapmaking. The demand for skilled surveyors significantly increased during this period, where the administration sought to address the need of concession mapping by investing in the professional training of Africans to undertake this work at relatively low cost. For African surveyors, their options for training and advancement were initially limited. Situated within the institutions and power relations of British colonialism, Gold Coasters and other African staff had to fit into the subservient roles and hierarchies that the British had created for them. Despite these obstacles, African personnel played a prominent part in the Survey Department's activities. The increasing number of well-trained African surveyors and the accomplishments of certain individuals advanced the work and influence of the Survey Department. Higher level administrators took note of some of these contributions and recognized them with promotions.

Phase III - Colonial Consolidation and Decolonization

The visibility of African surveyors and their work declined during the Great Depression and World War II. These international crises led to fewer resources being allocated to the colonies and thus to the Survey Department. In addition, from the 1930s onwards there was mounting pressure from the African press, student unions, trade unions, traders and returning war

veterans, to end British colonialism through a series of strikes, marches, and other political actions. The official end of British colonialism in the Gold Coast came in March 1957.

For the Survey Department, the retrenchments of the 1930s led to declining production and a temporary closing of the survey school. From 1931 to 1933, the Survey Department reduced both its European and African personnel substantially. It lost fifteen European positions, including two draftsmen, a lithographer, seven surveyors, and two supernumerary surveyors. Among its African personnel the department lost sixty staff and students. These numbers included twenty-four draftsmen, eight surveyors, and twenty-one pupil surveyors.[81] While the survey school reopened later in the 1930s, the number of students remained comparatively low. Staff numbers also remained lower than before the Depression but exact numbers are unclear. , When funding was in place for both training and implementation, new surveying technologies were introduced and facilitated production. As during the 1920s, the work of the department was cast as serving the development of the colony.

Training opportunities for African surveyors were cut for many years, but in the mid-1950s new opportunities arose for training and credentialing. Gold Coaster surveyors remained in the lower ranking positions in the department and were paid on different scales. Yet, the credentialing options that opened up were important to the status and recognition of African surveyors. More generally, however, the training and involvement of African surveyors no longer received the attention that it once had in Survey Department reports. Thus, in this period, African involvement, while still essential to the mapping of the colony, receives less attention in reports, memos, or archival records from the department.

It is also important to note that during this late phase of British colonialism, the colonial archives and records of the Survey Department are less complete or sometimes nonexistent. With

fewer Survey Department reports, reconstructing the involvement of Africans in the history of the department turns much more around the memories of African surveyors as well as a few published reports and studies. In this section I highlight the training of these men along with documenting some of the core themes that arose when discussing their professional practice. Although the archival record is weak in this period, these themes—credentialing and commitment to mapping's perceived neutrality—give some sense of the priorities and interests of these surveyors.

Training and Credentialing

Despite the retrenchments of the 1930s, most Africans working as government surveyors and draftsmen during the late colonial period continued to be trained in the government-run survey school in Accra. The training opportunities were generally very limited during the 1930s and 1940s, but notably opened up for aspiring African surveyors in the 1950s.

During this period the survey school continued to be officially linked to the broader department, and its headmaster reported to the surveyor-general. One notable change was that students were no longer designated as either African or native students, but rather they would begin their working careers being called "pupil surveyors." Students were required to work for the Survey Department for a number of years after completing their education. This training institution and the students' attachment to the department helped inculcate a cadre of surveyors and draftsmen into the culture of the Survey Department.

By the mid-1950s, a few additional changes and opportunities opened up in the Gold Coast. Some departmental surveyors received additional training in the UK. This training gave them the opportunity for credentialing under the Royal Institution of Chartered Surveyors

(RICS). In 1955, a branch of RICS was set up in Ghana with the London office approving its draft constitution and regulations.[82] Also at this stage, the University of Science and Technology in Kumasi was offering survey training courses. Several African students trained in surveying at the university level could earn the RICS certification, if they succeeded in the curriculum and exams.[83] The RICS training, while not fully standardized across the British Empire or Commonwealth, regulated syllabi and the series of examinations that students would need to pass to earn their certification.[84] Among the retired surveyors whom I interviewed, RICS requirements for credentials were known to be rigorous but not always well-suited to the needs and contexts of Ghanaian surveyors.

In the case of both the RICS credentials and the Survey Department training programs, annual school exams were mechanisms for standardizing surveying practices. Established under a Gold Coast Ordinance of 1928, the exams and "survey rules" created a set of expectations for all students and practitioners to adhere to.[85] One retired surveyor explained that in the 1950s, when he was at the university, exams were even graded externally, suggesting even broader adherence to particular benchmarks for standardizing cartographic practices. Students had to pass through three grades of exams: professional, intermediate, and final.[86] Students who did not pass, he explained, could become technical officers who were ranked beneath surveyors within the department. In this way, the Survey School, and later the university, became institutional mechanisms for establishing a core set of practices that students would have to master in order to be employed.

Objectivity and Neutrality

In the context of the broader political changes afoot in the Gold Coast in the 1940s and 1950s and the move toward independence, surveyors and draftsmen emphasized the apolitical aspects of their job. Informants noted that they remained committed to the impartiality of their practice. In response to my questions on whether independence struggles led to new priorities or changes amongst the Survey Department, African surveyors reported that the neutrality of their practices supported the continuity of mapping practice. Their responses suggest that not only was there no change in practices and priorities with independence, but that one should not expect to see any transformation based on changing political circumstances due to the objective nature of their work.

Interviews with retired employees of the Survey Department and the cartographer clarified some of the ways that surveying standards were set within the department and the ways that objectivity and neutrality were achieved, as a matter of practice. In an interview with Alhaji Iddrisu Abu, the former Director of Surveys, I asked about the role of Survey Department maps in creating a sense of national identity at the time of independence and afterwards. He responded, explaining what he saw as the apolitical nature of surveyor's work. He stated:

> Surveying has no national identity. It's a mathematical, factual situation. If something is a hill it's a hill. …A river is a river. Even if you fly a hundred miles from where you are standing it will not change if you are self-governing or somebody is governing you. …It has no racial, tribal or national identity. It's just facts.[87]

Mr. Abu's acceptance of surveying as an apolitical activity based on mathematically determined neutrality was echoed by all the retired surveyors and the cartographer with whom I spoke. Mathematical measurements, techniques, and calculations are core practices within surveyors' work. But the department's role in surveying disputed property boundaries, stool boundaries, and

international frontiers, underscoring neutrality and mathematical determination is a logical

framing of their professional work. Asserting surveying's neutrality helps to secure the

profession's role in politically contested decision. For Mr. Abu or any surveyor to agree that the

practices have a sociopolitical role in national identity creation would be to negate the value of

surveying's impartiality.

The impartiality of surveying is asserted in a report to the Ghana Institution of Surveyors

in 1991, in which Mr. Abu detailed the state of surveying in Ghana and some of its historical

origins. However, as the statement continues, he hints at the possibility of corrupting practice

and the need to adhere to the professional standards. He wrote:

> The need for an impartial demarcation and redemarcation of land boundaries is
> said to have brought about the professional called the Land Surveyor today….
> From time immemorial the land surveyor's services was and still is impartial
> measurements. Trying always to find the "best fit" to each "environment" the
> surveyor, always allows his measurement, not sentiment to control his judgement.
> Fellow Surveyors, are we sure that we are living our professional lives to this
> standard? If yes then we are well equipped to look to the future.[88]

While all the retired surveyors noted that they upheld their impartiality in their work, the

last line in the quote above suggests that some surveyors might allow "sentiment" to

cloud their measurements and decision making, despite the standards prompted by the

department and the profession.

Despite the claims to the mathematical neutrality of surveying, the retired

surveyors' were aware of how contentious boundary mapping could be, and they had

multiple strategies for mapping socially constructed entities, such as boundaries.

Cadastral surveying for property or stool boundaries was described as dangerous by a

number of surveyors, and reports of assaults or threats were also well-known among

them. Not only did the surveyors encounter and know of conflict at that scale, but Mr.

Osei, who chaired the Joint Demarcation Commission that remapped the 285 mile

boundary between the Ghana and Burkina Faso in 1968-69, referenced tensions that

brewed between the two sides during the surveying.[89] Thus, in coping with violence or

threats of violence, the surveyors drew on particular cultural practices, higher authorities,

maxims, and also acknowledged the limitations of their profession to help diffuse these

situations. For instance, during the mapping of chieftaincy boundaries, several surveyors

explained that they would arrange for representatives of both parties to be present in

order to agree upon the boundary line. Mr. Kuranchi noted that a particular plant, known

as *ntornel*, was planted by people to mark the boundary in the past, and other surveyors

noted that anthills, trees, or rivers might be other markers.[90] Locating such a plant would

serve to mark the boundary on the ground, so long as the two parties still agreed to it.

Further, a commonly stated mantra amongst several surveyors was that "chiefs know

their boundaries" or "the people know their boundaries;" thus, it was not the role of a

surveyor to weigh in on the decision. In cases of protracted dispute among the land

authorities, one retired surveyor advised the parties to take the matter to court rather than

involving him to try to arrive at an agreed upon property line. The mapping of socially

constructed boundaries is one contradiction to the scientific neutrality of the map.

Another contradiction is the valuing of some resources or landmarks over others in terms

of what gets surveyed and mapped.

A good example of the apparent neutrality of mapmaking is the adherence to

using a standard set of symbols to represent cultural and geographical features on maps.

These symbols were known "conventional signs," which Ghanaian surveyors spoke about

at length when asked about them. The former cartographer and former head of the

Cartography Section, Mr. S.R.K Loh indicated that these signs would designate houses, schools, roads, and so on, but the signs could also be adaptable to the cultural context. For instance, in northern Ghana where many houses are round and built in circular compounds, the sign for homes and settlements is round. In maps of southern Ghana, where rectangular house forms were common, the symbol for a home or settlement was rectangular. Mr. Loh indicated that these "conventional signs" were determined by the Survey Department, and copies were issued to all staff whether they were in the field or in the offices drafting maps. He further explained that the conventional signs were important because "…we must all speak the same language." He explained that these symbols informed what was important to depict on a map and what data to collect when in the field. Mr. Loh also stated that ultimately the surveyor-general had the authority to determine what should be depicted. Further, courses taught at the government survey school would include lettering and conventional signs at different scales to ensure consistency.

These standards and "conventional signs" did not change substantially with the transition to independence. A copy of the conventional signs used prior to independence was marked up in the Survey Department library to show what would be changed in the post-independence topographic maps (see Figures 3.4 and 3.5). The new key no longer listed the location of the Chief Commissioner's House and instead indicated Preventative Service Stations (custom stations) occasionally mapped in colonial topographic sheets. The conventions established in colonial contexts largely remained in place in the post-colonial period. These "conventional signs" were not unique to the Gold Coast. They were adopted and implemented across the Britain's African colonies. The valuing of

political borders, post offices and rest houses, for instance, were means of supporting the colonial network and of planning new services in underserved regions. However, the omission of information that might be deemed relevant in Ghanaian cultural contexts indicates that the maps' cultural construction of was in fact still in accordance with British colonial rule.

In summary, this third period of African involvement in colonial mapmaking illustrates the emergence of a cartographic governmentality. Similar to Agrawal's notion of environmentality in which local Indians incorporated the norms and best practices of Indian colonial forest councils, cartographic governmentality refers to the adoption of colonial cartographic standards and practices through training and credentialing that characterized the Gold Coast Survey School. With minor modifications, the post-colonial maps of Ghana looked much like colonial era maps as a result of this inculcation of colonial cartographic norms and practices.

Africanization and Departmental Change

Ghana's independence movement did spur changes within to the Survey Department. These changes came about in the context of political violence and mobilization. On February 28, 1948, a group of war veterans who had been denied benefits for their service to the British Empire during World War II marched to the seat of the British colonial government to submit a petition to secure those benefits. British police fired on the unarmed group, killing three ex-servicemen. This event spawned several days of violence across the country and fueled anticolonial political organization and action. The demonstration and its violent suppression helped give rise to the Convention People's Party (CPP) led by Kwame Nkrumah, who would

become the first president of Ghana. Investigations into the violence and the intensification of the CPP's political mobilization pushed the British colonial administration to "Africanize" the public service staff. Africanization was a strategy of hiring and promoting qualified Africans into higher professional and administrative positions in the public service sector. It also provided increased training opportunities for Africans so that there would be more qualified people available for such openings. Changes did not take place over night. The case of the advancement of African surveyors in the Survey Department indicates that the Africanization policies were gradually implemented.

In 1949 African surveyors occupied few senior service appointments within the Survey Department. The number of African staff remained constant at four and only one promotion took place within the senior echelons.[91] Several Ghanaians, however, were being trained overseas as part of the goal to enhance their professional careers as explained below.

Africanization did not have an immediate effect on the staffing of the Survey Department, in large part due to lack of advanced training opportunities and credentialing. According to former surveyors, the training available to Ghanaian surveyors at the time was not seen as parallel to the training of foreigners. British surveyors were eligible to be credentialed through the Royal Institution of Chartered Surveyors; the surveying training available through the university in Kumasi did not offer this option until 1955. Informants noted that the educational opportunities available to Ghanaians were different, but so too were the appointments open to them. The racially tiered system enabled white surveyors to hold "professional appointments," whereas most African surveyors were assigned to lower-ranking staff and technical positions. While the title "African Surveyor" was no longer officially used informally to distinguish African from European appointments, the use of the title continued to

be used and still carried with it biased assessments. In an article on cadastral traverses, the surveyor-general noted the heavy reliance on African staff in 1945:

> Owing to the smallness of the European establishment, practically all field work must be done by junior African surveyors. Some of the African surveyors are extremely competent, but others show no great ability or desire to think for themselves. A junior African surveyor can safely be left to run a routine cadastral traverse with a minimum of supervision. (p. 138) [92]

The report indicates a continuation of hierarchy and privilege assigned to white surveyors in the Gold Coast. None of the retired surveyors with whom I met, spoke of a racist work environment. In fact, many of them acknowledged positive relationships with British personnel in the department. Yet, many of the retired surveyors did talk about the new professional opportunities that resulted from the independence struggle and Africanization.

One retired surveyor, Mr. A.H. Osei, who began his training as a surveyor in Ghana in 1938, reported that Nkrumah's political mobilization aided surveyors' advancement. The Africanization order made it possible "for the training of local people to become professional men." He recounted the increasing availability of university training to various professions. He said that prior to this policy change, the hiring of outside, white chartered surveyors limited the opportunities open to Africans. Mr. Osei explained that white surveyors, credentialed through the Royal Institution of Chartered Surveyors, were brought in and were one of the biggest reasons that Africans were held back "until these political boys came," referring broadly to the mobilization led by Nkrumah, J.B. Danquah, and others involved in the anti-colonial struggle. Osei's reflections indicate that he benefited from the Africanization of the public service by virtue of the opening up of new training opportunities. After 1948, qualified Ghanaian surveyors were offered professional training and scholarships to University College in London, and Mr. Osei along with two other men were among the first to benefit from these opportunities. Mr. Osei

later became the Deputy Director of the Survey Department and a lecturer at the University of Science and Technology in Kumasi, Ghana. Additionally, one of his fellow scholarship recipients, Mr. R.J. Simpson, would become the first African to head Ghana's Survey Department several years after independence. Thus, Africanization did ultimately change the staffing profile of the Survey Department.

While a number of retired surveyors highlighted the role of Africanization in creating new training opportunities and positions to Ghanaians, none of the men indicated a particularly jubilant atmosphere in light of the appointment of the first Ghanaian director. In fact, the retired surveyors stated that the appointment of an African as head of the Survey Department seemed to be part of the normal course of things following independence. Alhaji Iddrisu Abu, the former Director of Surveys, noted that while he was not on staff during the transition, he was employed by the Survey Department under Simpson and was familiar with the situation in which he was appointed. He explained:

> …before Simpson's time there was no Ghanaian or Gold Coaster who was of sufficient knowledge or luck to … hold a European post. A professional post they called a European post, you know because *they were the professionals* [said with a bit of humor]. The title accorded a certain authority and privilege. So to the extent that you were an African and you were a Staff Surveyor—you were called "a white man." You know, you're a "Black European."

He went on to state that by the time Simpson was appointed, most of the British had left the Survey Department. A few retired surveyors noted that some British surveyors had difficulties accepting staffing changes and still felt they were "a boss" even if they were a technical officer under a Ghanaian surveyor. Alhaji Iddrisu Abu further stated that Simpson led the department through his respect for others and by being self-disciplined himself. For example, he arrived at work each morning at 7:00 a.m..

Thus, during the struggle for independence, the mapping of Ghana—as seen at the level of the surveyor, cartographer, or the Survey Department—does not seem to be very pivotal in nationalist debates or of concerns in the anticolonial struggle. The appointment of Africans to higher professional positions of the Survey Department, while personally significant to the surveyors I interviewed, did not link the transition in leadership to changes in their mapping practice. Rather, the surveyors reported a continued adherence to technical and mathematical standards that the department and profession valued and supported.

Reflecting on the last twenty-seven years of colonialism and mapping, there is a strong sense of continuity in mapping practices. Only minimal changes were noted by retired government surveyors. The degree of continuity is particularly evident the Survey Department's organization and maps. There is little difference between the maps produced during the colonial and early postcolonial eras. This continuity owes much to the surveying and cartographic culture and expertise established during the colonial era.

The persistence of mapping practices and forms demonstrates the ways that the standardization of cartographic practices and training reinforced the trajectories of mapping for development, town planning, and boundary administration and regulation. As an example, the continuities of representations can be seen in the Survey Department's atlases—comparing the administrative maps in the 1955 edition issued before independence and the 1957 edition, produced after independence (See Figures 3.6 and 3.7). Here, the administrative map of the country changes only so far as the country's name changed and the political configuration of the country has changed with new political regions being created and named. Some color changes occur with the creation of a new region, but otherwise, colors are consistent between the two maps. Within the scope of the Survey Department's work, they maintained the same

representation of the hierarchies of administrative boundaries, capitals, and transport networks. Map size, orientation, projection, and scale remain the same between these two editions. These continuities in the maps suggest, as the surveyors and draftsmen noted, that their practices changed very little with the move to independence.

Retired surveyors and the cartographer explained that they did not perceive a political shift with independence that changed their maps and cartographic practice, despite independence and nationhood being monumental and transformative within other realms. They noted some of the changes that did take place intra-departmentally, and many surveyors benefited from the opportunities that opened up. These departmental changes were mostly at the level of personnel changes and promotion opportunities.

Conclusion

Most studies of mapping in colonial contexts understate the role of indigenous populations in mapping the territory. Documenting the history of colonial mapmaking and the ways in which Gold Coasters participated in those processes is one of the most significant contributions of this study. Furthermore, this study also examines the changing involvement of Africans in relation to surveying across the colonial period.

During the first phase of colonial expansion, this study demonstrates the close relationship that the administration cultivated with one African surveyor, George Ekem Ferguson. A contribution of this study is the finding of the extraordinary contributions that Ferguson made to the expansion of British colonialism in the Gold Coast and his active role in the cartographic construction of the colony. More concretely, Ferguson's role in mapping the colony provides evidence of the important role of intermediaries, the ways in which colonialism

engaged cartography, and the ways that Ferguson adopted some of the standard practices of colonial cartography. Second, this chapter also highlights the ways that early intermediaries occupied positions that were often highly influential, but also very vulnerable to the multitude of interests and communities vying for power and influence. Ferguson was repeatedly asked to fulfill important missions that would expand British interests in the region, and he repeatedly succeeded in fulfilling his assignments. Ferguson also adopted particular practices of colonial mapping that illustrated the claim-making and administrative contexts of British colonialism. Thus, Ferguson's maps enabled Great Britain to demonstrate the extent of its claims and influence in a highly competitive geopolitical context of European territorial expansion. His role and his death also demonstrate the vulnerabilities of intermediaries, especially during the early phases of colonization, which is again not an uncommon circumstance of Africans working in the colonial service at the time.[93]

The second period covered by this study focuses on the bureaucratization and standardization of surveying and mapping through the formation of the Survey Department and the expansion of African participation. This section highlights the ways that African professional staff and students greatly increased in numbers in the context of heightened demand for surveys and maps to fulfill an expansive colonial agenda. Employed by the colonial state, they worked to fulfill the governor's needs for administrative organization and development planning. Africans played central roles, especially in the preparation of the town and topographic surveys. However, African contributions to mapping also often were made anonymously in the reports and on the maps. Thus, unlike Ferguson's experience, the work of African surveyors is often hidden in this context. This overt recognition of African contributions was one sign of the bureaucratization of mapping and surveying.

Third, this study examines the cartographic practices of the 1930s to Ghana's independence in 1957. In particular, it reveals significant continuity in the maps made throughout this time. This last period lacks sustained documentation of the work of the Survey Department, in part because of the colonial consolidation and later decolonization that was taking place. The economic depression, World War II, and anti-colonial political actions that were spreading across the colony marked the period and led to increasing fractures of British colonial rule. Likewise, for internal colonial units such as the Survey Department, regular reporting dwindled and disappeared. African surveyors remained essential to the functioning of the Survey Department. However in the absence of many reports that focused on their contributions, it is not clear how they fit into the bigger picture. Interviews with surveyors illuminate several trends. First, surveyors expressed their belief in the objectivity of their practices, and that the training and the work of surveyors emphasized this objectivity, regardless of experiences that indicated otherwise. Second, surveyors noted the move to professionalize their degrees and credentials; Royal Institute of Chartered Surveyor status was an important sign of their professionalism and service. Thirdly, the surveyors noted the Africanization that occurred across the administration and civil service ultimately opened up more positions to qualified Africans in surveying.

A history of Ghana's mapping, like any colonial mapping history, must engage the role of local participants, including surveyors, in order to represent the scope of mapping practices. Unlike past research that underplays local knowledge and involvement, this study's major contribution is to demonstrate the systematic involvement of local experts and surveyors throughout the colonial period. It shows that rather than cartography being strictly in the hands of colonial agents, British colonialists had to rely on African workers and surveyors to map the

colony at multiple scales. Throughout the colonial period, British authorities were highly reliant on African mapmakers. These African intermediaries were not purely outside the realm of colonial surveying but were part of it and essential to the continuity of mapping Ghana.

By exploring African involvement in colonial cartography, this study enriches the literature on the history of cartography. In particular, it speaks directly to Matthew Edney's predominantly Eurocentric focus on colonial cartography in *Mapping an Empire*. The mapping of British colonies, such as the Gold Coast, did more than simply legitimate British colonization, as Edney argues in the case of India. Based on their cartographic skills, Africans held influential and decisive positions in the determination of boundaries, borders, and regions, and mapped these regions on behalf of the colonial state. Further the mapping of the colony helped create a cartographic culture among African surveyors and cartographers, in which the objectivity and neutrality of their practice was valued. Mapping facilitated the exchange of information between colonists and colonized, in which both played active roles informing the depiction of the territory. The involvement of Africans also set in motion considerable continuities between the colonial and post-colonial periods, in relation to the mapped spaces and hierarchies of geographical information.
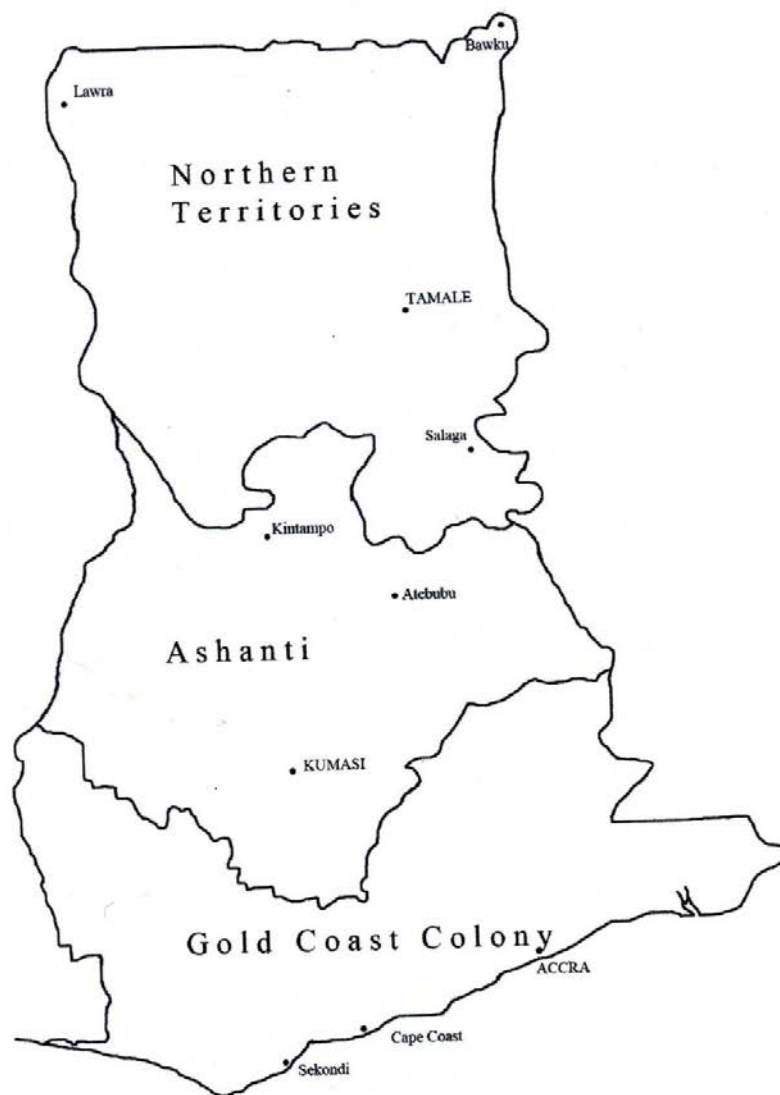
FIGURE 3.1: Map of the Gold Coast adapted from 1907 map

FIGURE 3.2: Geoge Ekem Ferguson, "Sketch Map of the Divisions in the Gold Coast Protectorate. Compiled from Official papers under the direction of H.E. William A.G. Young, Esq., C.M.G., Governor of the Gold Coast Colony, by George Ferguson, London, August 1884"[94]

FIGURE 3.3: "Country between Say & Bontuku," George Ekem Ferguson, 1892.[95]

3.4   3.5

FIGURES 3.4-3.5: Pre-independence "Conventional Signs" as compared to post-independence "Conventional Signs."[96]
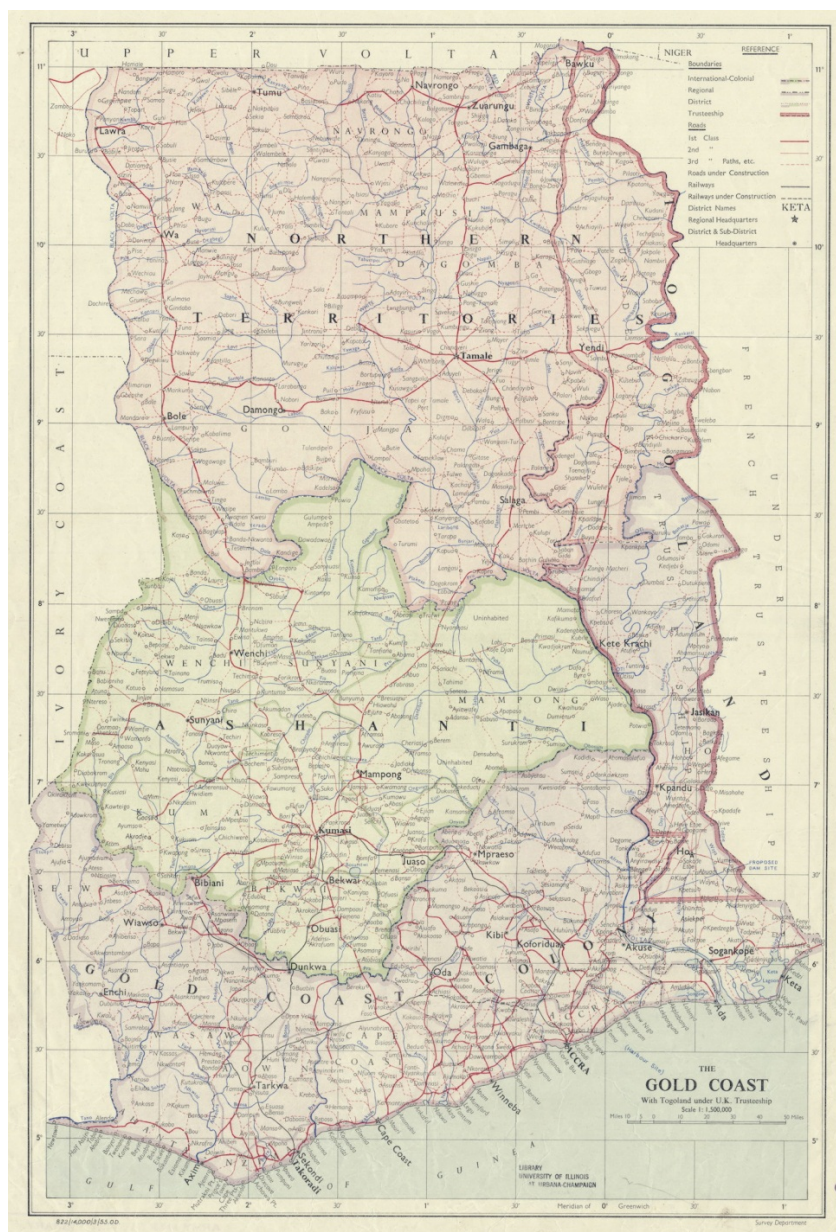
FIGURE 3.6: **"The Gold Coast with Togoland under U.K. Trusteeship," 1955.**[97]
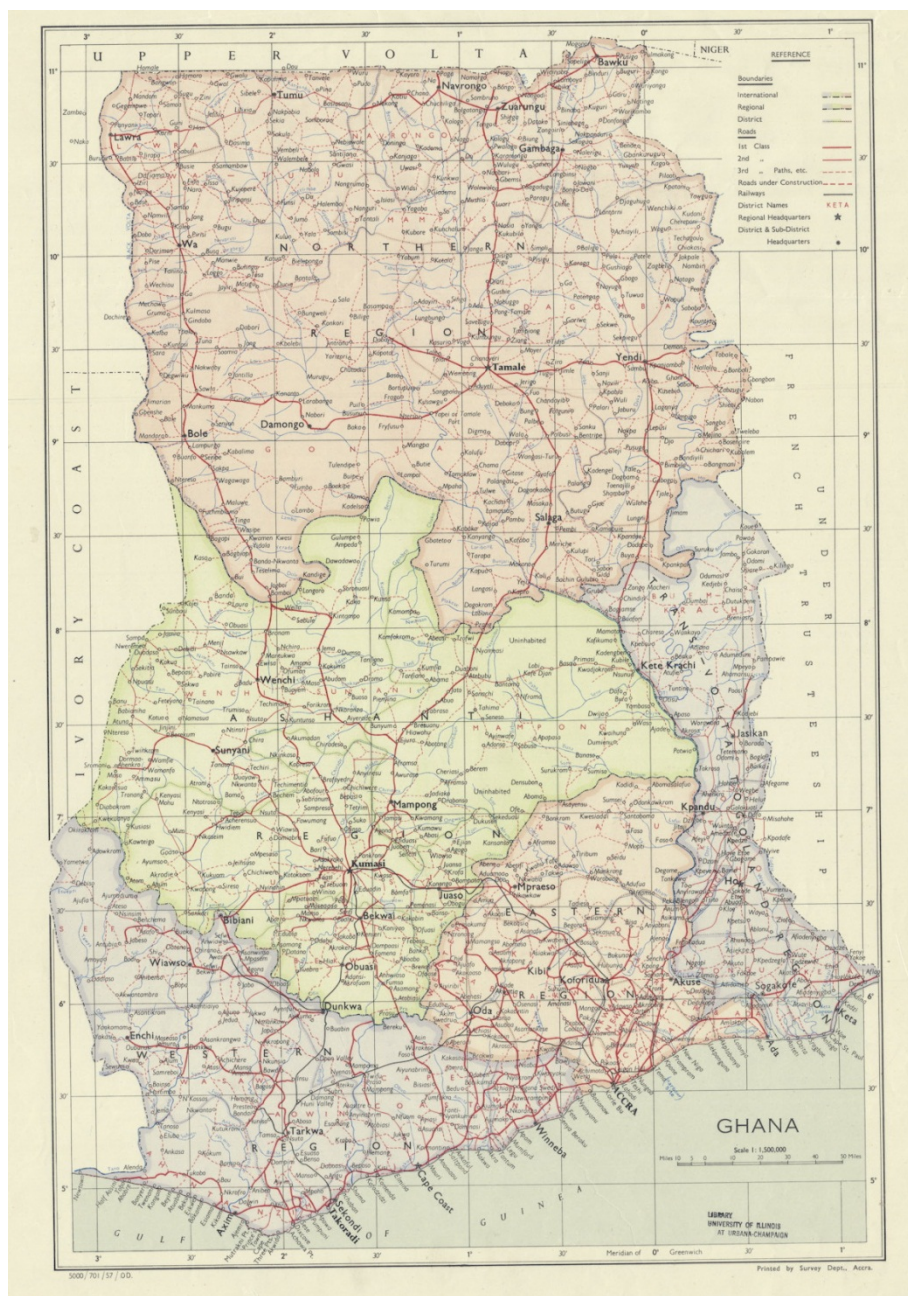
FIGURE 3.7: "Ghana," 1957.[98]

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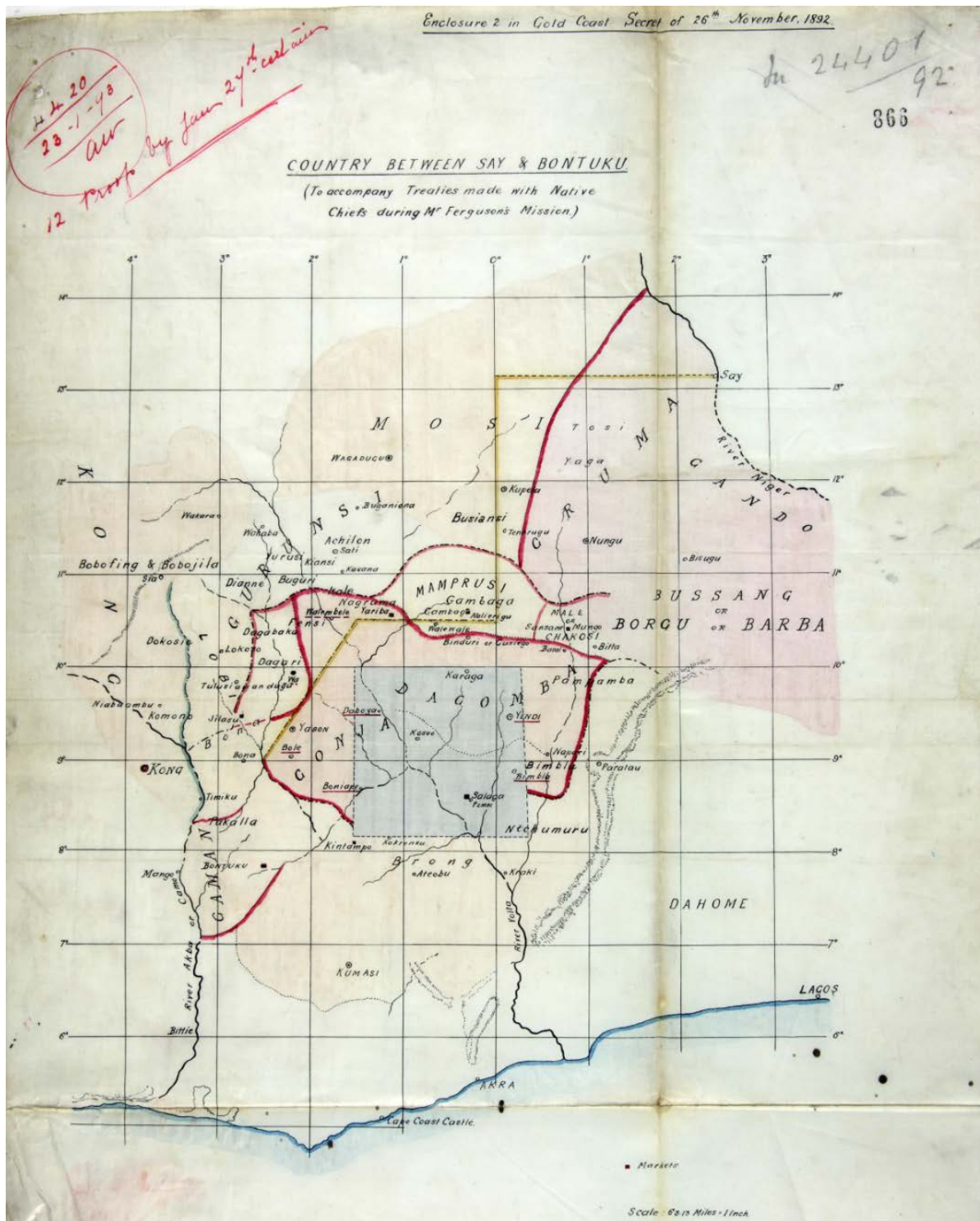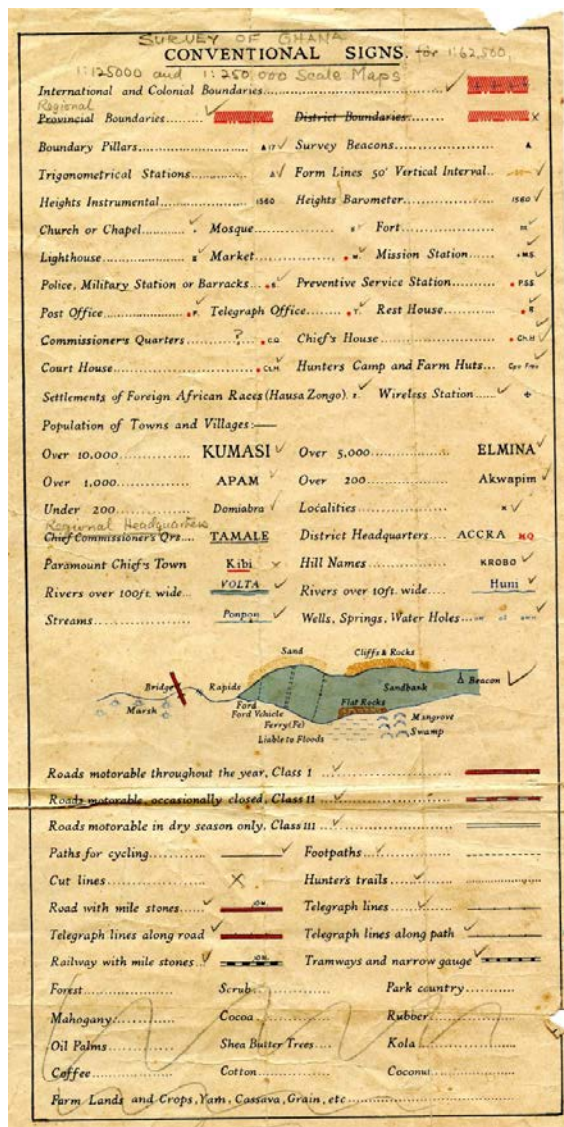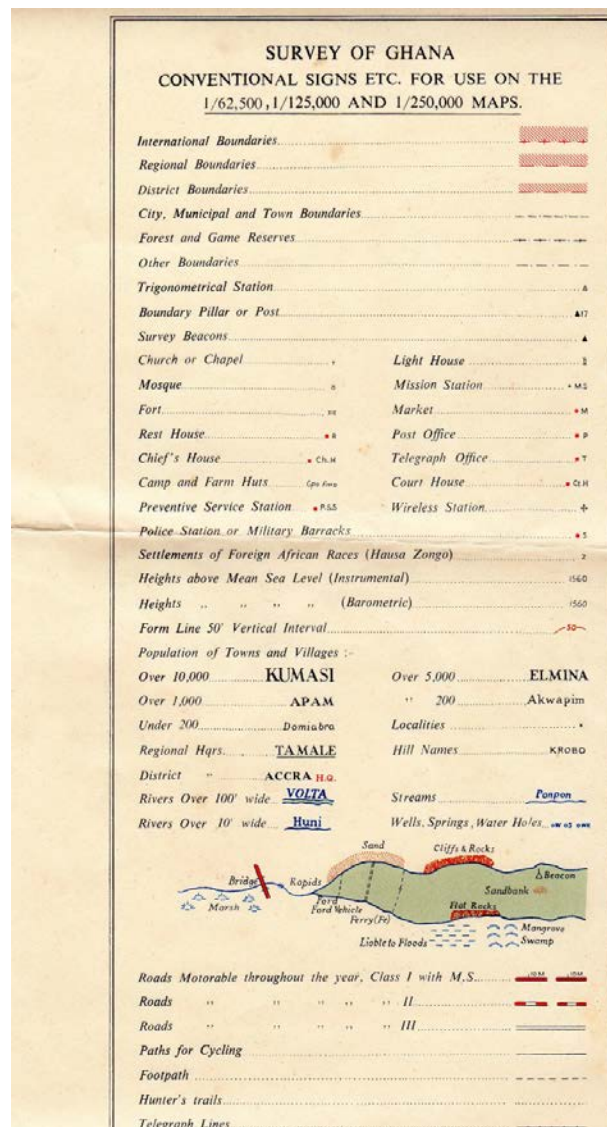
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[25] Lawrance, Osborn, Roberts, *Intermediaries*, p. 13.

[26] Lawrance, Osborn, Roberts, *Intermediaries*, p. 14.

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[28] In this paper, I use Asante to refer to the people, and Ashanti refers to the territory following British nomenclature.

[29] Arhin, Kwame, *The Papers of George Ekem Ferguson: A Fanti official of the Government of the Gold Coast, 1890-1897*. Leiden, 1974.

[30] The area known as the Gold Coast Colony is not always synonymous with the Gold Coast. By 1901, the British colony known as the Gold Coast encompasses the Gold Coast Colony, Ashanti, and the Northern Territories. Referring to the littoral region, I will specific either Gold Coast Colony or Colony. Whereas when referring to the entire British colony, I will use either Gold Coast or the colony.

[31] See Arhin, *West African Colonial*; Thomas "George Ekem Ferguson: Civil Servant Extraordinary." *Transactions of the Historical Society of Ghana* 13, (2): 181-215, 1972; Kwaku Larbi Korang, *Writing Ghana, Imagining Africa: Nation and African Modernity* Rochester, NY: University of Rochester Press, 2003.

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[33] Ferguson's knowledge of the region depicted and therefore his contributions to this map are not articulated in the colonial records discussing the map. Instead, the divisions shown are noted to be based on the *Gold Coast Gazette*.

[34] CO 96/159 Office of District Commissioner for the various districts.

[35] Ferguson's knowledge of the region depicted and therefore his contributions to this map are not articulated in the colonial records discussing the map. Instead, the divisions shown are noted to be based on the *Gold Coast Gazette*.

[36] The Crown Agents financially backed the map's printing, and it was the subject of much discussion by officials in the Colonial Office. These London-based discussions centered around the marking of the northern boundary of the Gold Coast Protectorate with a hatched line, and whether or not such a line might limit later northern expansion of British interests. After internal discussion debated this line, the Colonial Office conclude this boundary marking not to be a concern and allowed the copies to be circulated. The concerns with the map circulated mostly within the Colonial Office and the Secretary of State, and Ferguson was unlikely privy to the discussions. See CO 96/169 "New Map of the Gold Coast" discussed in McGowan's dissertation chapter 2.

[37] FO 925/874.

[38] Thomas "George Ekem Ferguson," p. 181 citing CO 96/200 Ferguson to Private Secretary, 6 April 1889.

[39] Boahen, *African perspectives.*

[40] CO 879/37 Further Correspondence. Anglo-German Claims.

[41] Bassett, T.J. "Cartography and Empire Building in Nineteenth-Century West Africa." *Geographical Review* 84, (3): 316-35, 1994.

[42] CO 96/223 Ferguson – Secret Mission, 1892.

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[44] Asante 1933.

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[48] Wilks, Ivor, *One Nation, Many Histories: Ghana Past and Present.* Accra: Anansesem Publications, 1996. In future research it is worth looking at whether Ferguson's successes in negotiating treaties throughout this region benefitted from the legacy of Asante in the region.

[49] Arhin, Kwame, *The Papers of George Ekem Ferguson: A Fanti Official of the Government of the Gold Coast, 1890-1897*. Leiden, Netherlands: African Studies Centre 1974.

[50] *Ibid.*

[51] G.E. Metcalfe 1964. *Great Britain and Ghana: Documents of Ghanaian History 1807-1957*. London: Thomas Nelsons and Sons.

[52] Stone, Jeffrey "The District map: An episode in British colonial cartography in Africa, with particular reference to Northern Rhodesia," *The Cartographic Journal*, 19 (2): 104-128, December 1982. Martin, C.G.C. Maps and surveys of Malawi: A history of cartography and the land survey profession, exploration methods of David Livingstone on Lake 'Nyassa', hydrographic survey and international boundaries, geographical, environmental and land registration data in central Africa. Rotterdam: A. A. Balkema, 1980.

[53] Gold Coast Annual Reports 1901, 1902, 1903.

[54] Holdich, Thomas H. *How are we to get good maps of Africa?* London, 1901; and CO 96/396 Surveys

[55] Holdich, *How are we to get good maps of Africa?*

[56] CO 96/396 "Surveys."

[57] Guggisberg, F.G., "Mapping the Gold Coast and Ashanti" *Transactions of the Liverpool Geographical Society,* pp. 7-14, 1911.

[58] In later years, Josiah changes his name to Kwantreng. NAG PF 3/54/104 Kwantreng.

[59] NAG ADM 5/1/83 Annual Reports, "Report of the Mine Survey for the Year 1906."

[60] It should be noted that the data featured in Table 3.1 is not entirely comprehensive; as not all non-professional positions are listed. It comes from the departments' annual reports which in some cases reported by name and title the people working in the department, but lower ranking positions were inconsistently listed. Undoubtedly many Africans served in the lower ranked positions within Mine Surveys and later the Survey Department.

[61] CO 96/599 "Survey Dept. Resuscitation."

[62] Guggisberg," Mapping the Gold Coast and Ashanti."

[63] The stool is the symbol of Akan chieftaincy, and it likewise refers to the land and people over which the chief rules.

[64] After the mid-1920s annual reports no longer included a roster of positions and people.

[65] ADM 5/1/96-106, Annual Reports 1919-1930. The 1931 Annual Report is missing.

[66] ADM 5/1/99 Annual Report Survey Department.

[67] ADM 5/1/83 Annual Reports, Report of the Mine Survey for the Year 1906; CO 96/456 "Survey School for Natives"; ADM 5/1/84 Annual Reports, Survey Department 1907; Guggisberg, "Mapping the Gold Coast and Ashanti.

[68] The British located the first survey school in Southern Nigeria, opening in the first decade of the 20th century.

[69] The location of the school was within 11 miles of Akuse, where the Survey Department would also initiate its new topographic framework of the colony. Akuse would be the starting point for the primary chain. Curnow, Irene J., "Topographic Mapping in Africa," *Journal of Manchester Geographical Society*, 41: 32-37, 1925.

[70] ADM 5/1/103 Annual Report 1926-1927.

[71] ADM 5/1/106 Annual Report 1930-31.

[72] ADM 56/1/116 Survey Department.

[73] ADM 5/1/102 Annual Report 1925-26.

[74] ADM 5/1/100 Annual Report 1923.

[75] ADM 5/1/100 Annual Report 1923.

[76] ADM 56/1/116 Survey Department.

[77] ADM 5/1/103 Annual Report 1926-27.

[78] "The Gold Coast Survey Department," *Geographic Journal*, 1926, v. 68, no. 5, pp. 451-452.

[79] ADM 5/1/98 Annual Report 1921.

[80] Annual Report 1923-24.

[81] Annual report for 1931-32.

[82] Anon. 1955 -"Extracts from Council Minutes."

[83] All of the retired government surveyors trained in the mid to late 1950s received some, if not all, their training through this university, as opposed to the Survey School.

[84] Anon 1965 "Notice."

[85] Smith, E.G.1928.

[86] Interview with Benedict A. Neequay, August 21, 2008.

[87] Interviewed 11/2008.

[88] Abu, Iddrisu, Ghana Institution of Surveyors Workshop, "State of Surveying and Mapping in Ghana." Land Surveying Day 25th & 26th July 1991.

[89] Interview with Mr. A.H. Osei, 11/8/2008.

[90] Interview with Mr. S.W. Kuranchi; 12/5/2008.

[91] RG 5/1/396 Africanisation.

[92] Lawes, A.V. "Cadastral Traverses in the Gold Coast." *Empire Survey Review*, v. 8, pp. 138-142, 1945.

[93] Lawrance, Osborn, Roberts, *Intermediaries.*

[94] CO 700 Gold Coast 21(1), "Sketch Map of the Divisions in the Gold Coast Protectorate. Compiled from Official papers under the direction of H.E. William A.G. Young, Esq., C.M.G., Governor of the Gold Coast Colony, by George Ferguson, London, August 1884."

[95] CO 96/226, "Return of Mr. Ferguson" with manuscript map "Country between Say and Bontuku."

[96] Uncataloged, Ghana Survey Department, Pre-independence "Conventional Signs" and post-independence "Conventional Signs."

[97] "The Gold Coast with Togoland under U.K. Trusteeship." Accra: Gold Coast Survey Department, 1955.

[98] "Ghana." Accra: The Ghana Survey Department, 1957.

CHAPTER 4

"CHIEFS OUGHT TO KNOW THEIR BOUNDARIES":
BOUNDARY DISPUTES AND COLONIAL SKETCH MAPS

In the colonial administration of the Gold Coast's Northern Territories, district and regional political officers produced and used sketch maps as "everyday tools of rule." Primarily, these maps demarcated chieftaincy authority, which the British colonial state relied upon to rule the Northern Territories. The production of these maps not only served colonial interests; they also had consequences and meaning for chiefs whose authority was either reinforced or diminished by these maps. In the northeastern region of the colony, where chiefs did not exist prior to colonialism, the invention of chieftaincy was a means for the colonial state to establish its administrative footing in the region, assign minor responsibilities to these chiefs, and create a network of intermediaries with whom the district officers could count upon in their systems of direct and indirect rule. The responses of colonial chiefs to their leadership roles varied across the region; some embraced their newly assigned roles, while others were less enthusiastic and even resisted colonial rule, indirect or otherwise.

Paul Ladoucer and other scholars divided the colonial administration of the Northern Territories into two phases: direct rule from 1902 to 1932 and indirect rule from 1932 to 1945. This periodization, however, tends to simplify the multi-faceted importance of indigenous authorities to colonial rule. Colonial administrators in the Northern Territories relied on their chiefs during both periods, and as I will show, chiefs helped mark boundaries and delimit customary territories even during the period of direct rule. Under indirect rule, the colonial government sought to empower chiefs with greater authority over their people and territory according to the codification of "traditional practices." Colonial authorities sought to streamline

and consolidate chieftaincies, create hierarchies of chiefs, and to delimit chieftaincies or territories of chiefly authority. Maps were key to the making of these new territories, and ultimately served as "everyday tools of rule." One of the consequences in creating territorialized administrative structures was to spark and rekindle local and regional rivalries. While there is no evidence showing that the maps themselves were ever directly used by local chiefs, the mappings did have political effects. The production of maps that served to divide and amalgamate chieftaincies was of concern to the newly appointed chiefs.

This chapter explores the role of chiefs in the production of chieftaincies through a series of case studies from three communities. Each case involves the making of sketch maps by colonial authorities in the context of establishing everyday rule. These sketches were important resources, informing both colonial administrative practices and local political dynamics. While they served colonial administrative agendas and needs, these sketches were also the objects of African contestation and rule.

In exploring these case studies from northeastern Ghana, this chapter contributes to three literatures: critical cartography and local agency; chieftaincy and tradition; and territory and boundaries. In the cartography literature, this study engages with the works of J.Brian Harley, Matthew Edney, and John Pickles particularly, and redresses a lack of perspective on the ways that local agency mattered in the making and use of colonial maps.[1] Engaging with works on power and tradition, this chapter will explore Terence Ranger's thesis on the "invention of tradition," looking specifically at the invention of chieftaincy in northeastern Ghana.[2] I will also consider Thomas Spear's critique of Ranger, which suggests that the "invention of tradition" thesis is overstated and overlooks the role of Africans in the creation of local chiefs and "traditions."[3] I argue that the making of chieftaincy, through the territorialization of authority

and as seen in sketch maps, was a tactic of both the colonial administration and the chiefs themselves. This chapter also contributes to the literature on territory and boundaries. In many cases, this scholarship tends to focus on international boundaries and argues that Africans often manipulated and used such boundaries to their own advantage in movement, trade, and in evading state policies.[4] However, looking more closely at the local politics of boundaries and border zones, Christian Lund, Carola Lentz, and Paul Nugent argue that boundaries, through their creation and enforcement, also sparked local and regional political tensions.[5] This chapter explores the ways in which both chiefs and regional colonial officers negotiated boundary agreements, trying to optimize their own political and territorial agendas. In the following sections, I explore these literatures in greater depth before outlining the case studies.

Literature Review

Critical Cartography and Agency

Scholarship on critical cartography broadly addresses the ways that power informs mapping and maps represent forms of power. Both Harley and Edney contributed to the theorizations that shaped this field, exploring power and power-knowledge in maps and mapping, in which they acknowledge resistance, counter-mapping, and other forms of contestation. However their discussions of maps and power fail to engage local agency, as forces that influence and shape cartographic construction. Pickles is also critical of such works that focus on the power-knowledge debate of cartography without engaging with the local dynamics of power that inform map construction.[6] In this section, I outline both Harley's and Edney's conceptualizations of cartographic power, and, following this discussion, I address studies that

consider local agency in relationship to mapping as a way to understand the dynamics of

cartographic power.

In terms of cartographic power, Harley characterizes maps as having both internal and

external power.[7] He describes the ways that power is "exerted on" maps through sponsoring

agencies or patrons supporting a particular maps' making, which he terms "juridical power," and

how power is implemented internally and *through* maps. Harley defines internal poweras :

> … a power that intersects and is embedded knowledge. It is universal. Foucault writes of 'the omnipresence of power: not because it has the privilege of consolidating everything under its invincible unity, but because it is produced from one moment to the next, at every point, or rather in every relation from one point to another. Power is everywhere; not because it embraces everything, but because it comes from everywhere.' Power comes from the map and it traverses the way maps are made. The key to this internal power is thus cartographic process. By this I mean the way maps are compiled and the categories of information selected; the way they are generalized, a set of rules formed into hierarchies; and the way various rhetorical styles that also reproduce power are employed to represent the landscape.[8]

Harley argues that through the practices, styles, and rules that guided mapping, power-

knowledge circulated through the making of maps, their representation, and their use. As a

constant, power-knowledge is unavoidably imbued in all maps.

Edney's work also explores both the power-knowledge internal to maps and the juridical

external power of maps. About the latter, he states:

> …maps are thoroughly intertwined in their instrumentality with all the other ways in which an individual or group or polity exerts its control over property or territories, and over tenants and populace. That is to say, maps are part and parcel of the continual renegotiation of status and authority between representatives of a polity, local vested interests, and perhaps other power structures such as religious institutions. In Foucauldian terms, mapping can be one of several processes whereby centralized authorities appropriate local, preexisting institutions suffused with power/knowledge, which they then harness for the intermittent exercise of centralized, 'juridical power."[9]

Edney sees such juridical power as being tied, in part, to governmentalized power.[10] That is, this

power is felt through the policies and especially the actions of patrons, sponsors, and/or map-

makers who use the maps. In these functionalist assessments of the power of maps, both Harley

and Edney situate power beyond the scope of informants. For them, power is conceived at the discursive level of power-knowledge or in the hands of politically elite sponsors of the maps. They thus underplay the role of local agency. Maps are viewed as being controlled and informed by singular, monolithic entities and not subject to interactions with local communities, informants, and alternative viewpoints.

One of Harley's articles does examine the role of local agents, situating the mapping of seventeenth-century New England in relation to Native Americans' knowledge.[11] Acknowledging the importance of Native American knowledge to mapmaking, Harley asks hypothetically what these maps would have looked like had Native Americans not lived in the area and had they not informed these mapped regions. He notes the need to look for "shadows of their knowledge" in these maps, as place names or landmarks were indicative of both their presence and role.[12] At the same time, he describes the elimination of local names and the erasure of indigenous territory, furthering colonial expansion and claim-making. While Harley is sensitive to these presences and silences in maps, he underestimates the active role of Native Americans. Map-makers and surveyors may have capitalized on local knowledge, but in what ways did Native American agency purposefully engage or experience the mapping of the area? How too did Native American socio-spatial practices shape European perceptions and experience of space, which then ultimately made its way into Europeans' maps? Is there a way to understand contestations, resistance, collaborations from the perspective of indigenous peoples in colonial mapmaking? An important reason for examining these local perspectives is to consider that colonial mapping, like colonialism, was not simply imposed as an external practice but emerged in the context of a complex interchange between colonizers and colonized. Edney's research on the mapping of British India focuses largely on the construction of a "cartographic ideal"

according to British needs and visions of the region. He is less interested in Indian informants, acts of collaboration or resistance, or local socio-spatial practice that informed map-making. Colonial histories tend to provide ample opportunities to illuminate the "tensions of empire,"[13] and Edney notes that there were numerous instances of obstruction. Yet, he does not document nor theorize this agency within the scope of his study.

In a more recent text, Edney points to the external power of maps, their instrumentality and juridical power, and here he suggests that it is this power that local people struggle against.[14] He writes, "Local groups resisted the exertion of local and centralized authority that the surveyor represented…."[15] The enforcement of the map, whether through the state surveyors, district officers, the police, or other officials, represented the territorialized power of the maps. By and large, Edney's interpretations of the cartographic modes and relationships to the maps are from the perspective of the colonizers rather than the colonized. He looks at map readers and the construction of identities amongst people actively using the map, but he fails to examine the role colonized people played in map compilation.[16]

John Pickles is critical of cartographic "power talk" that fails to look at agency and the use of maps. He contends that to reduce maps to a functionalist tool of the powerful obscures the complexities of struggles that may inform the making or use of maps. He writes, "…we need an understanding of mapping that does not reduce the work maps do to the repressive exercise of power. …we need some way of understanding the constitutive role maps play in shaping identity and practice."[17] To draw this point out further, I would suggest that Pickles' interest is in the ways that map construction and map deployment actively informs one's sense of self or engagement of the area being mapped. Pickles further suggests that cartographic research must challenge metaphors of "imposition, overlay, and eradication" and understand that mapping

includes transcultural, sedimented knowledge. This chapter offers an examination of mapping and agency and illustrates the way that local people were invested in the construction of colonial sketch maps. While illuminating the active role of local people in the construction of maps, this study also considers the ways their agency, on the one hand, both engages and evades colonial power. On the other hand, it considers the ways that the colonial administration and mapping practices attempted to circumscribe local action. Several studies pursue local agency in relation to colonial mapping and provide insights to the ways that local acts and engagements can be understood in relation to mapping. This scholarship outlines cases of resistance, contestation, collaboration, and more subtle engagements.[18]

Michael Given's study of Britain's colonization and mapping of Cyprus outlines the charges of encroachment, arson, and removal of boundary markers as some of the challenges to British authority.[19] Given attributes considerable weight to the resistance of the Cypriots and the failures of British mapping in this narrative. He writes, "Resistance to imperial rule came not only from individual actions and shared institutions of the colonized, but from the very absolutism with which colonialism tried to impose their rule. The net of demarcation lines cast over the island by the British caught only themselves."[20] His functionalist assessment suggests that the outcomes of Cypriot resistance to British mapping was key to the end of British colonialism.

Several other assessments of colonial mapping argue for the need to understand the co-constitution of empire by the colonizer and colonized.[21] Sujit Sivasundaram's study of Sri Lanka examines British colonialists' reliance on local knowledge and labor for surveys and used locally made paths for road surveys. Sri Lankan guides also withheld information and their knowledge of the local geography from the British. Sivasundaram's point is to articulate the ways that both

Sri Lankans and the British contributed to the configuration of maps and surveys which are commonly only attributed to the British. Kapil Raj's study of the mapping of India makes similar points. He draws on a wider array of forces in which British knowledge was co-constituted by arguing that ideas, skills, and instruments were shared and circulated between and among British and India officers in the surveying, measurement and representation of South Asia.[22]

These studies offer richer assessments of local participation in colonial mapping. However, they tend to underplay the complexity of the local situation and the multiple ways that colonial subjects competed with each other as well as the state for territorial control and its representation in maps. Colonized communities are more fragmented and not a monolithic whole that works with or against colonialism. Precolonial communities were diverse and tensions among people and groups predated colonization and existed beyond the realm of colonial power. Further, power struggles over territory and authority both played into colonial politics and preexisting dynamics. With the colonization of northern Ghana, the communities were further fragmented, in part, based on mapping. This study seeks to understand ways that colonial officials made and used maps to try to divide and rule local power-brokers and peoples. I also show the ways that local people endeavored to inform the making of new spatial configurations and their associated meanings.

Chieftaincy and "Tradition"

"Traditions" such as chieftaincy, are require historical and cultural analysis to understand their origins. This chapter draws on the scholarship that explores the making of traditions with emphasis on how traditions emerge, change, and are codified. The literature can be divided into two main camps. Ranger articulates one position, which he terms the "invention

of tradition." The other builds on Spear's critique of of Ranger's view which, Spear argues,

overstates and overlooks (how can something both overstate and overlook?) African agency in

the invention of tradition."[23] First, I characterize their positions before delving into the specifics

of authority.

 In Ranger's original article, he argues that the making of African traditions such as

chieftaincy emerged from legacies imported from Europe and invented by administrators,

missionaries, African elders and scholars.[24] The problem then is not that Ranger denies African

engagement in the creation of tradition, but that he privileges the role of the colonial outsider.

Spear argues that Ranger gives colonial authority too much power and neglects the role of

Africans in creating and contributing to such stable notions of chieftaincy, in particular. Spear

writes:

> Colonial power is taken for granted, while economic forces are neglected. Colonial
> duplicity overwhelms African gullibility. And African politics, often expressed in intense
> disputes over tradition, is neglected. Colonialism was not simply a unilateral political
> phenomenon, however. Colonial authorities sought to incorporate preexisting polities,
> with their own structures of authority and political processes, into colonial structures,
> themselves in the process of being developed in response to local conditions.[25]

With this debate in mind, the broad question that I ask in this chapter is, in what ways did

Africans, particularly those living in decentralized, stateless communities, influence and shape

the making of colonial traditions? More specifically, this chapter delves into the ways these

communities informed the mapping of chieftaincy and territory.

Chieftaincy

 Academics commonly examine the making of chieftaincy and chiefs' power under

colonialism within the discourse of the "invention of tradition." This argument is not to say that

all chiefs were invented positions, but rather their alignment with British colonialism reified

particular positions and powers of chiefs. Ranger characterizes the need for such positions from the standpoint of the colonial administration: "Colonial governments in Africa did not wish to rule by a constant exercise of military force and they needed a wider range of collaborators than those Africans who were brought into the neotraditions of subordination. In particular, they needed to collaborate with chiefs, headmen and elders in the rural areas."[26] In this argument Ranger privileges the colonial government as imparting power to local actors. In response to Ranger, Spear argues that there are nuances and powerful local interests that are often at stake in the making of chieftaincy authority, and thus to put "invention" largely in the hands of the colonial administration is a mistake. As part of his argument Spear highlights a foundational contradiction between indirect rule and the codification of chieftaincy, "If colonial administrators were to capitalize on the illusion of traditional authority, their rule was limited by the need of those authorities to maintain their legitimacy. Nor could traditional authority simply be invented if it was to resonate with people's values and be effective."[27] For Spear, the making of chieftaincy authority and power could not have been unilaterally crafted without some basis and collusion from within the communities being ruled.

The colonial administrative enterprise relied on a relatively small staff. Sara Berry has described the operation of colonialism as "hegemony on a shoestring." [28] A.H.M. Kirk-Greene has described colonialism as a "thin white line"[29] that lacked administrative personnel throughout much of the colonies. Given this weakness, the British required additional support. Drawing African chiefs into the machinery of colonial power was necessary if the colonial administration was to move beyond purely an occupation of foreign lands. Thus, depending on the local political context of leadership, colonial administrators began working with indigenous authorities to do what?. In the Gold Coast's Northern Territories this took different forms. Jean

Allman and John Parker, note the "Law of Colonial Reversal" worked by 'centralizing acephalous societies and decapitating strongly centralized ones."[30] They go on to explain how the ways in the Tong Hills, the first settlers were overlooked by both the colonial administrators as well as by the *nayiri,* the head of the Mamprusi kingdom based in Naleirgu. However, the later migrants to the Tong Hills, the *nayiri* appointed their earth custodian, as a local chief over the whole Tong Hills area. Such practices were common across the communities of the northeastern and the northwestern parts of the Northern Territories, in part because they were not strongly centrally organized communities prior to Britain's colonization of the region.[31] As Carola Lentz shows, "the history of the introduction of …chieftaincy was marked by tactical jockeying between outright resistance, avoidance (fleeing across the international border or to a neigbouring district), acceptance, as well as the active appropriation of new institutions."[32] Such responses demonstrate African participation in the crafting of chieftaincy as an institution.

Jeff Grischow, too, notes that it was not just at the stage of introducing chieftaincy that tensions were high. During the transition to indirect rule in the Northern Territories in the early 1930s, chiefs actively inflamed rivalries over hierarchy and challenged administrative boundaries as other tactical measures to influence their positions.[33]

Such engagements with chieftaincy illustrate the broader social contexts in which Africans participated in the creation and codification of chieftaincy. Along with such studies, this chapter will illustrate the ways that chieftaincy was contested and engaged amongst colonial African chiefs, themselves. Mapping was a strategy of arbitrating such contestations, though it remained largely in the control of the colonial administration. Thus, the making of chieftaincy through territorializing their authority was a tactic of the both the colonial administration and the

chiefs themselves. But in the case of the colonial administration, they used sketch maps as one means to arbitrate and document the extent of their authority.

Territorialization: Boundaries in African and Ghanaian History

The third body of literature that this study engages with and contributes to concerns territorialization, and more specifically African territory and boundaries. Among the core texts that engage territoriality are the works of Robert D. Sack and Stuart Elden. Sack defines territoriality most simply as "the attempt to affect, influence, or control action as (missing word?) and interactions (of people, things, and relationships) by asserting and attempting to enforce control over a geographic area."[34] In exploring territoriality, he sought to sidestep some of the previous research that implicated the biological drive for territory as a foundation to territorialization. Instead, Sack develops a rubric of both tendencies and conditions of territoriality, and he explored the reasons for territorialization under various geopolitical circumstances. For example, "enforcement of access" is considered extremely important under conditions of "dividing and conquering."[35] His systematization of territory is rather deterministic and lacking in geographic and historical specificity. On the hand, Elden's research calls for the contextualization of territory and territorialization.[36] Elden contends:

> Territory can be understood as a political technology: it comprises techniques for measuring land and controlling terrain. ….Understanding territory as a political technology is not to define territory once and for all; rather it is to indicate the issues at stake in grasping how it was understood in different historical and geographical contexts. Territory is a *historical* question: produced, mutable, and fluid. It is *geographical*, not simply because it is one of the ways of ordering the world, but also because it is profoundly uneven in its development. It is a word, a concept and a practice, where the relation between these can only be grasped genealogically. It is a *political* question, but in a broad sense: economic, strategic, legal and technical.

Elden offers a spectrum of ways in which territories are shaped, and this study builds on his

contextualization to suggest specific points in which African regional boundaries were defined

through mapping.

In a more applied study of territorialization, Matthew G. Hannah' draws on the

Foucauldian concept of *governmentality*.[37] In doing so, he makes the case for the "emergence of

administrative techniques of national social ordering" and argues for their spatial nature.[38]

Hannah explores the formation of governmental objects and the rationality imposed through the

execution of the census in late nineteenth-century America and by following the career of

Francis Amasa Walker, director of the 1870 and 1880 censuses and commissioner of Indian

Affairs. Tracking the development of a statistical atlas, Hannah details the ways in which

governmental knowledge was produced and used in creating the nation. He argues that these

efforts:

> render the field of observation open and accessible to the governmental gaze, …fix the
> units of enumeration at known locations within it, … standardize acts of observation,
> …control the observers themselves, and then…capitalize on the perceived impartiality of
> observation by rendering compilation as efficient and accurate as possible, [and by doing
> so] Walker pursued a comprehensive spatial politics of governmental knowledge.[39]

Rather than being concerned with defining the contexts of territorization, Hannah instead pursues

what it means for territory to measured, mapped, and recorded, particular in relation to the

formation of the nation. Hannah research is influential (how?), and I likewise explore the

implications of mapping to delineations of chieftaincy power, particularly at a regional scale.

Pertaining to studies of African boundaries studies, much of the research covers one of

two ends of a scalar spectrum: international frontiers, on the one hand, or local contestations tied

to land rights, on the other.[40] Few studies examine internal, regional boundaries, which are

important in demonstrating the role of the state in administering its territory and people.[41] Here I

outline a few salient examples from the literature on local and international territories on the

ways in which contestation and negotiation influence the drawing of regional boundaries during

the delimitation of the Gold Coast Colony.

At the international scale, Paul Nugent and A.I. Asiwaju argue that all boundaries are

essentially artificial, though some boundaries appear firmer than others. At the national level,

boundaries are the limits of state territories. But it is also through enforcement of those

boundaries that the state exists.[42] The boundaries of the state, thus, only become meaningful

through state practices of mapping, taxation, development, allowing or preventing movement,

and defense against "outside" aggression or independence movements.

At a regional scale, some of these same characterizations of international boundaries are

important apply too, as they demonstrate the role of the state in forming governance structures

and practices and empowering select local chiefs. In the context of mapping these boundaries in

colonial Ghana, this study will illustrate the ways that the sketch maps mobilized chieftaincy,

particularly, as a means to administer these newly formed regions. In doing so, the power of the

colonial state was more closely aligned with chiefs. Reflecting on boundaries between

chieftaincies, Nugent writes, "When the colonial powers embarked upon the delineation of

international and subsequently internal boundaries, they created an environment in which old

hierarchies could be reversed if political aspirants only played their cards right."[43] According to

Nugent, through the colonial state's intervention and in the making of chiefs, boundaries had the

potential to reframe who the chiefs might be and the scope of their domain. He continues: "Their

[the chiefs'] willingness to play the game was of crucial importance to colonial states seeking to

convert lines on maps into political realities on the ground."[44] Once again, Nugent asserts the

dominance of the colonial state in aligning chieftaincy to the territory, and further explains that

some colonial chieftaincies benefited just as some did not. But what Nugent does not discuss is

that it is not just that some alliances grew stronger, but that the contentious boundaries led to rivalries and bitterness between neighboring chiefs. Both Lund and Berry discuss such contentiousness between chiefs in their research.[45] They show that in Asante and in Northern Ghana, chieftaincy boundary disputes opened up new tensions and rivalries and colonial officers often were involved in the arbitration of such disputes.

Lund maintains that part of the process of boundary negotiation also involved both "forum shopping" and "shopping forums."[46] The first, "forum shopping" involves disputants making claims to audiences who will most likely side with the disputants. Lund argues that the audience or institution often "shopped for forums" to achieve their own political interests. In this way, "shopping forums" also manipulate the conflict such that disputants can achieve their political goals and interests. Von Benda-Beckman writes, "they shop for disputes as disputants shop for forums."[47] In the case of British officers who had relatively short time-horizons in any post and with the occasional turn-over in chiefs, as they passed away or were deposed, means that "forum shopping" and "shopping forums" occurred on a regular basis with boundary conflicts. Sketch mapping by colonial officers was influenced by these local "shopping" strategies to shape the territory in a group's favor.

In addition to the state's interest in boundaries, local people actively challenged state imposed boundaries. Nugent and Bening, for example, explore the ways that people negotiated international boundaries by avoiding taxation and labor corvees as well as by exploiting various trade networks.[48] Berry likewise notes people moved between different chieftaincies and stool boundaries to avoid the stringent labor requirements of one chief.[49] Thus, boundaries provide refuge or economic opportunities to citizens able to move between different territories.

This study contributes to understandings of territory and boundaries by linking the colonized territories to maps, and deciphering the ways that power and struggles informed their making. Colonial officials documented contestations and political boundaries in reports and diary entries, in maps, and by erecting physical markers. Despite this documentation, conflicts tended to erupt periodically as disputants sought forums for their claims to be heard and decided upon. Sketch maps were drafted to illustrate possible solutions. These maps reflected the judgment of the colonial official but were also informed by local disputants. This chapter looks at ways in which boundaries and territories fit into the broader political agendas of chiefs, interested in consolidating their power, and colonial officers, seeking to establish a network of power-brokers to facilitate colonial rule and needs.

Locational Context of this Study: Northeastern Colonial Ghana

In addition to the theoretical concerns outlined above, this chapter contributes to a growing corpus of studies that highlights a historically neglected region of the country. As compared to southern Ghana, northern Ghana has been overlooked in terms of both state initiatives and scholarship. There is, however, a growing body of literature on northern regions.[50] Within this expanding, the geographical coverage is uneven. The northeastern region is, for example, relatively neglected in the recent literature focused on northern Ghana. The chapter helps to fill this gap by focusing on the Binaba, Kusanaba, and Zongoiri areas.

Case Studies: Mapping Binaba, Kusanaba, and Zongoiri

Four sketch maps drafted by British colonial officers from 1916 to 1933 provide evidence of the colonial-era tensions between and among three communities: Binaba, Kusanaba, and

Zongoiri. These tensions related to the relationships between the appointed chiefs, the geographic scope of their authority, and the changing policies of British officials in the area. The unfolding of colonial power and the territorialization of chiefs' powers took several turns over the course of the colonial era. As a part of these changes, British officers drafted sketch maps to create, document, and negotiate the territorial power of the chiefs and communities within the broader political context of colonialism. The sketch maps were internal colonial documents, attached to district record books, associated with land conflicts, and contributed to the creation of native authorities for indirect rule.

As "everyday tools of rule" these sketch maps reflect the rudimentary governance in place at the time. They document the status of administrative boundaries and the territories of chieftaincy, and are intended for colonial officers' use. Yet, as these case studies show their compilation are the outcome of African agency and colonial concerns with administration. African chiefs brought forward territorial complaints to colonial authorities who themselves sought to solve such complaints in an effort to construct chieftaincy authority and loyalties. Chiefs were aware that they could bring their complaints forward. They frequently contested political divisions made by previous officers as well as challenged the territorial claims of other chiefs in the area. African chiefs' engagement and contestation invariably shaped these sketch maps and their associated political boundaries.

SKETCH 1: Negotiating Boundaries and Chieftaincies

During the 1910s British administrators began asserting greater influence in the northeastern region of the colony.[51] In 1915 or early 1916, both Akwallagu, the chief of Zongoiri, and Azubilla, the chief of Kusanaba, each built rest houses to provide accommodation

to travelling British colonial officers visiting their respective neighboring districts.[52] Among the responsibilities assigned to colonial officers was to visit periodically the districts and communities in their provinces, to see to it that roads and bridges were built and maintained, and to hear the concerns of the recently appointed chiefs.[53] In February 1916 when Acting District Commissioner E.M. McFarland visited the communities, he encountered tensions between the chiefs of Zongoiri and Kusanaba. Each of the chiefs had built their rest house on the land of the other chief.

As background, in 1906 the colonial administration appointed chiefs in each of these communities.[54] Since that early meeting, the colonial officers hosted multiple sessions to negotiate chieftaincy boundaries and seniorities amongst the men.[55] When McFarland arrived in Kusanaba in February 1916, however, he found there were unanswered and new concerns. Both the chiefs of Zongoiri and Kusanaba, Akwallagu and Azubilla respectively, encroached on the other chief's district. Each chief built rest houses meant to support British colonial interests, which was an approach that had low consequences, as no residents would be displaced by these efforts and the facility would only be used by visiting British officers. Still it was a strategy of extending each chief's claims while also consolidating their territory. McFarland ordered that the two communities swap rest houses to put an end to their efforts of encroachment, and with Azubilla he arranged two days of camping in Kusanaba territory so that he could conduct a survey of the boundaries.

McFarland prepared his map by looking for past boundary marks that were cut into the bark of trees. He also sought to borrow a prismatic compass from the Chief Commissioner of the Northern Territories, C.H. Armitage. Meanwhile, the chiefs coordinated communal labor to build stone cairns next to the marked trees as an additional marker of their respective chieftaincies.

Also, McFarland arranged for an interpreter to facilitate the markings and to bring with him

several African constables who could help keep order and take note of the boundary. The

following day McFarland and a one of the constables, Abadu Kanjarga, rode along the

boundary.[56] Both McFarland and Kanjarga confirmed with residents and local headmen who

lived along the way the borders and which chief they should follow. Only in one case, they asked

a headman to move to the opposite side of the boundary to follow the Zongoiri chief, Akwallagu.

McFarland noted in the district record book that both the Zongoiri and Kusanaba chiefs agreed to

his boundary arrangements.

Along with these joint efforts to mark the physical boundary, McFarland drafted a sketch

map of the region (Figure 4.1). He entitled it, "Diagram of Kussenaba – Zongoiri Boundary,"

The map shows the shared boundary between districts and towns from which they take their

names. In addition to the districts, he depicted the smaller communities along the boundaries and

the location of the headmen's homes, labeled "H.M." The White and Read Volta River also

frame the region depicted. At the bottom of the map, McFarland notes, "This is NOT a MAP."[57]

This note indicates his concern about the lack of accuracy of his diagram, the lack of a scale, and

its failure to conform to colonial cartographic standards. While his diary notes repeatedly

mention his interest in a prismatic compass and survey, this sketch and his notes do not suggest

he was ultimately able to complete a compass survey of the region. Thus, this lack of precision

may have led him to label the sketch map as a diagram and to discount its legitimacy as a map.

Despite these perceived shortcomings, the sketch map documents and helps to enforce the

decisions about the new district boundaries.

The significance of this sketch map is in the role of local agency in its production. It is

only due to the tensions between Kusanaba and Zongoiri, as well as their enlisting of a colonial

administrator to mediate, that the map was even made. Further, information depicted on the map is locally derived, and decisions about locations in relation to the boundary are meant to flow back to the community through the interpreter who traveled the boundaries with McFarland. Harley's categories of internal and external power, focused as they are on power-knowledge produced and wielded by agents of the state, do not sufficiently account for how local African agency functioned as a vector in either the making of this map or the attempted resolution of the boundary conflict that resulted from the same process. The colonial creation of chieftaincies gave rise to this dispute, and thus external power is at play. Local knowledge also made this map both necessary and possible to sketch; it also contributed to how it was sketched, confirming the path of the boundary. Moreover, the map's meaning had to be mobilized locally, and only insofar as that meaning is communicated and endorsed does the sketch have any external power.

Both this sketch map and the collaborations between McFarland, Azubilla, and Akwallagu were interventions to produce a solution to a locally contested district boundary. Despite the tentativeness that McFarland noted on his diagram, the enforcement and agreements that underlies this map are more definitive. The consent of the chiefs, headmen, and residents to the newly marked boundaries indicates their active role in the decision. The sketch map documents these territories and helped to establish the territorialization of these chieftaincies. His records—both the sketch map and his notes are in the Bawku district record book— were kept as a means of conveying both the process and the decisions to future administrators of the region.

The boundary dispute illustrates a case of "forum shopping," as the chiefs both brought their concerns forward to a newly appointed colonial officer. That is, the chiefs sought out McFarland and the opportunity to advance their own territorial claims, hoping that his ruling would favor their own individual stake in the region. The sketch map, while tentative too,

represents and attempt by McFarland to document conflict and resolution for himself and future colonial administrators of the district. While described as an amicable solution in the district records books, McFarland's solution did not have lasting effect. In the 1920s and in the 1930s, boundary tensions emerged again. Officers compiled additional maps based on these conflicts, as I will discuss below.

SKETCH 2: Renewed Boundary Conflicts

In 1925, an older dispute over territorial boundaries was reignited between the chiefs of Kusanaba and Binaba. The Kusanaba chief, Abrugi Anyore, claimed several compounds and an area where their religious fetish was located.[58] The area was located on a hill referred to as Zorkpaliga or Zoopalaga.[59] Anyore explained to the Kusasi District Commissioner, C.St.B. Shields, that his grandfather used to worship there and in the past that he used to control all of this land. Abuguri Atubiga, the chief of Binaba, claimed that the area belonged to Binaba. Atubiga recounted the history of this case, arguing that a previous district commissioner, Colin Harding, had awarded this territory to Binaba in 1912.[60]

The district commissioner consulted the district records book, including previous maps, and determined that Harding had confirmed that a total of six compounds belonged to Binaba.[61] Shields agreed that this boundary conflict was the same as that previously adjudicated by Harding, but he was not able to determine the homes' exact locations in the absence of a map depicting them. Also, because several boundary conflicts were reported in these records, including the previously described case, Shields remained somewhat confused by Abrugi's grandfather's claims to the land and by the fact that Binaba had controlled it for at least thirteen years. Shields realized he would not solve the argument at that point, and he opted to leave the

area. As he was leaving, he heard a fight erupt between the two factions. Shield describes the situation and his response in the record book, "…someone gave the war cry, and I had to gallop back a bit and hit everyone on the land with my walking stick which I fortunately had with me. By this means and by chasing people on horse-back I rounded the Kusinaba crowd up. Arrested the following and sent them to Bawku. Chiefs of Kusinaba and Binaba to deposit £15 each for guarantee of good behavior until this palaver is over."[62] After witnessing these tensions and arresting both the chiefs, the district commissioner decided he needed to take more action to address the problem.

In his attempt to solve the dispute, Shields consulted with the rival chiefs and compiled a map to send to the Provincial Commissioner of the Northeastern Province (Figure 4.2). He learned from the residents currently living in Zorkpaliga that they wanted to continue to follow Abuguri Atubiga, the chief of Binaba. Secondly, he reported that the Kusanaba residents were not prevented from going to worship at their fetish, despite Binaba's control of the land. Shields then prepared a sketch map of the area to illustrate his proposed solution. He included several features that demonstrate his familiarity with mapping standards, and as a map, it stands in contrast to the tentativeness of McFarland's diagram. A key, a scale, the use of the graph paper, and the orientation arrow help lend greater specificity to the content of the map. Yet, Shields did not use his map to make a decision but to provide documentation to the provincial commissioner. Rather than mapping a solution to the boundary conflict, Shields included on the map both the current boundary and a possible revised boundary. He sent these documents to the provincial commissioner, who ruled on this boundary conflict, deciding in favor of keeping the boundaries as they were, with Binaba holding on to the territory and Kusanaba people still having access to their fetish.

This conflict unfolded around both local power struggles and struggles informed and influenced by a colonial administrative ruling. That is, interest in access to a place of worship was the motivating factor, but from the perspective of the colonial administration, it was more important to support the relatively new position of chieftaincy rather than to grant access to the fetish. Thus, the colonial administration ruled in favor of supporting chieftaincy boundaries. The conflict also demonstrates the roles that local people played in challenging and informing the making of boundaries, as both chiefs brought their concerns to Shields and the provincial officer. Also, Shields made this map in conjunction with the chiefs from both Binaba and Kusanaba expressing their interests and concerns in the context of their claims. Shields also documented the interests of the people living in Zorkpaliga as well. These interactions informed the map and the ultimate ruling by the provincial commissioner. The incident demonstrates that African agency and mapping are informed by multiple voices and perspectives and that colonial official negotiating such claims had to consider or represent multiple views in the production of their sketch maps. The construction of the map was informed by local practices. The external power of this sketch map to British colonial administrators would inform map use and enforcement, but the engagements and tensions between local people motivated and informed the map's making.

This instance also raises the question of "forum shopping," where people sought out venues and officers to reassess their claims. The practice of "forum shopping" may connote a casualness or informality, but in this conflict people were not just seeking a willing officer to rehear their case, but rather they raised the specter of violence—should the case not be heard and resolved.

The decision of the provincial commissioner demonstrates the administration's support of maintaining the boundaries that enhance the rule of chiefs as opposed to supporting religious

practices. His ruling suggests both the importance of chieftaincy being aligned with territorial boundaries, whereas these boundaries were seen to be more flexible when it came to access to the fetish.

SKETCHES 3 & 4: Documenting Histories for Indirect Rule

In the late 1920s and into the 1930s, the colonial state shifted its administrative system from direct to indirect rule in the Northern Territories. The colonial administration implemented several steps to facilitate the transition. These plans included a series of studies of the history and anthropology of these various districts.[63] Indirect rule involved the establishment of native authorities who would exercise some power over defined areas, known as "native states." A hierarchy of local rulers, including paramount chiefs, chiefs, and headmen were to adjudicate local conflicts according to their determination of "traditional law." In attempting to resolve various tensions in the making of these new territories and chieftaincies, the colonial administration provided chiefs with "shopping forums" such that their concerns could be heard. These "shopping forums" provided avenues in which administrators could hear concerns and grievances. Among these grievances were boundary disputes. These forums enabled a consultative process in which colonial officials gathered and assessed local knowledge, with the twin goal of resolving disputes and facilitating administrative rule in the region. Sketch maps played a role in the resolution of territorial disputes and the implementation of indirect rule.

In the northeastern province of Bawku, also known as the Kusasi District, J.K.G. Syme held the new title of District Commissioner. E.W. Ellison was appointed his Assistant District Commissioner. In the early 1930s, in preparation for the switch to indirect rule, Syme wrote "The Kusasis: A Brief History," based in part on his reading of past records and partly based on

interviews, primarily with division and provincial chiefs.[64] As part of this report, he compiled a

sketch map of the district. Coincidentally, new chiefs were installed in Zongoiri, Kusanaba, and

Binaba during the late 1920s and early 1930s. Ayeebo Abugre was the new chief of Kusanaba.

Amoabo Akologo became chief of Zongoiri. Agana Apiga deposed his father in Binaba and

assumed the chief's position.[65] With these changes of leadership, past boundary conflicts

resurfaced. Syme's study provided a forum for territorial claims to be renegotiated. Syme's aim

was to resolve the boundary conflict once and for all. As the Binaba and Kusanaba land claim

was reintroduced, however, it is clear that Syme already had some preconceived notions on the

legitimacy of the different chieftaincies and their rights. Syme indicated that Kusanaba was one

of the earliest and most legitimate chieftaincies in the region. He referred to Binaba and

Zongoiri's chiefs as "upstarts." [66] Over the course of resolving the boundary conflict Syme also

indicated other concerns that would ultimately inform his decisions.[67] First, he noted the

vulnerability of people who were not of Kusasi-descent who he would either force to follow a

particular chief or force them to move. Second, the Achanga market would need to be relocated

to accommodate the particular boundaries. Third, he would involve the chiefs of the three

communities, Binaba, Kusanaba, and Zongoiri, and he would involve the paramount chiefs or

their representative from Bawku and the historically powerful chief of Mamprusi, the *nayiri.*[68]

      The day that the resolution was to take place all the parties were to arrive at the Achanga

market. Everyone with the exception of the Binaba chief, Apiga, assembled there as planned.

Apiga, who had already registered his outrage at the planned renegotiation of boundaries, was

instead within eyesight of Syme and the assembled group.[69] As Syme and Ellison began to meet

with the households who lived on the land, the chiefs of Zongoiri and Kusanaba also began to

sort through their differences and decide who should follow a particular chief. As this proceeded,

Apiga arrived "in a truculent mood" with three other men, and he started to "rave," saying that only he would communicate with his people, levying insults against the *nayiri's* representatives for not supporting him.

Eventually, Syme intervened, asking the constables to escort Apiga approximately 200 yards away and restrain him there.[70] Tensions escalated as Apiga's armed allies then arrived on horseback. The constables ultimately arrested twelve of Apiga's men and took Apiga under "open arrest" to Gambaga.[71] Following this disturbance, Syme and Ellison interviewed residents at the site, confirmed who they wished to follow, and thereby determined the new Achanga market boundaries. Despite the fact the residents were not Kusasi, Syme, the residents, and the chiefs negotiated which chief would have authority over this immigrant community, thereby creating new "traditions" and hierarchies of authority. Syme also decided on a new location for the Achanga market. Afterwards, the colonial official along with the chiefs traversed the new boundaries, because according to Syme "chiefs ought to know their boundaries."[72]

Both Syme and Ellison produced sketch maps to represent the new boundaries. Syme sent copies of his map to the chief commissioner of the Northern Territories, E.O. Rake, who approved the map and also used it to enforce the boundaries (Figure 4.3). At a later date, the aggrieved Apiga went "forum shopping." He approached Rake to have his concerns heard again. Rake used Syme's maps to reinforce the boundary decisions that had been made.[73] Ellison's map ended up in the district record book, and such that it would serve future colonial officers who would inherit the book and its records (Figure 4.4).

In this remapping, the revisiting of the Binaba, Kusanaba, and Zongoiri boundaries emerged more or less out of Syme's research on the Kusasi people and asking questions of Ayeebo, the Kusanaba chief, more so than it came from active squabbles or contestations. He

provided a "shopping forum" to the chiefs, as he wanted to hear their claims again. His decision was likely influenced by stronger alliance that Syme and other people had formed with Ayeebo. Whereas, Shields favored the Binaba's chief in this land decision, Apiga fell into some disfavor. Residents of Binaba and Kusanaba today referred to him as a "terror" and a "wicked man."[74] Syme's efforts to build closer political alliances with Kusanaba's chief, Ayeebo, would not change the overall geographic scope of the Kusasi District, but it would increase the scope of the Kusanaba chiefs' territory and win favor with him. Syme's "shopping forum" and his willingness to change boundaries supported his political goals of building alliances with chiefs and empowering them further in the shift to indirect rule.

As the colonial government move toward implementing indirect rule across the Northern Territories, district and regional political officers sought to align communities under a hierarchy of chiefs. Under headmen, chiefs, and paramount chiefs, these British officers consolidated communities, creating a series of boundaries that would shape these hierarchies. Along with these efforts, their delimitation would attempt to re-frame ethnic identities as singular and unified within these regions and standardize "traditional" laws for these communities.[75] Shopping forums were opportunities that colonial officials afforded chiefs and paramount chiefs, as practices were negotiated, codified and indirect rule was implemented.

Discussion and Conclusion

In this focus on Zongoiri, Kusanaba, and Binaba, the case studies largely focus on the events and activities that led to the making of maps. They illustrate the local agency mattered in the making of chieftaincy and power, the making of territory, and in the making of maps. The case studies show that although chiefs' power may be derived partly from British colonial

recognition, it was also constructed and consolidated by their own agency as they actively sought to expand their influence and territory.

In terms of chieftaincy, this agency was evident when chiefs sought out hearings that would favor their empowerment, particular during the period of direct rule. "Forum shopping" was also a common strategy of chiefs during the period of indirect rule. With the actual transition to indirect rule, colonial administrators also provided "shopping forums" as they sought to create native authorities and hierarchical rule by paramount chiefs, chiefs, and headmen across the Northern Territories. Determining the extent of chiefs' rule in Kusanaba, Binaba and Zongoiri was just one small part of creating these hierarchies and territories across the Northern Territories in the early 1930s.

These decisions and processes for understanding chieftaincy and territory are often the result of strategies of "forum shopping," where African power brokers used new opportunities to present their claims. Changes in staffing, in particular, presented many opportunities for "forum shopping" as turn-over among the British staff was very high. This change afforded the possibility of seeking alternative decision making and new arrangements, as the chiefs of these communities represented their claims and concerns to a potentially unknowing new officer. At the same time, this case study further illustrates that colonial agents also capitalized on these engagements, building stronger ties to chiefs who could serve as strong leaders within colonial administration. These administrative agendas then tended to lead to district officers favoring those individuals in boundary decisions.

In terms of mapping, these case studies illuminate the ways that colonial officers drew on the knowledge and agency of local actors in drafting their sketch maps. The maps are internal documents that circulated among colonial officers; chiefs and other power-brokers may never

have seen or used these maps. Nonetheless, it was through the actions of both chiefs and officers that boundaries were drawn and maps were made. Chiefs had an interest in the outcome these mappings, and they actively contested the external power of those maps that did not favor their interests. In this sense, the making of these maps along with the juridical power that emanated from the maps connote the influence of both chiefs and colonial officers in mapmaking.

District officers' work involved identifying, establishing, and supporting local authorities who could serve the administration in the communities. The delineation and revising of territory through sketch mapping were tactics that facilitated this rule. This mapping involved sketches that were rudimentary and tentative in the presentation of content, but explicitly political in terms of building alliances through the delineation of territory. The ultimate power of these sketches was to create the spaces of indirect colonial rule in which officially recognized chiefs played important roles as political intermediaries.

Such mappings, and the zero-sum nature of redefining territory, could and did enflame tensions between chieftaincies, creating greater rivalries among neighboring chiefs. Furthermore, as higher ranking chiefs weighed in on decisions, boundary disputes could also exacerbate tensions and reporting relationships between paramount chiefs, chiefs, and headmen. The colonial record tends to mask the ways in which such contestations strained relations between chiefs and colonial officers. Undoubtedly, these decisions must have, but the reports and district records books tend to characterize these tensions as solely between chiefs and communities or alternatively that the chief, himself, was somehow deficient, rather than suggesting that the chiefs bore any grudges or ill-will towards the officers adjudicating such decisions.

This chapter's aim is to outline the ways that local dynamics contributed to and informed the mapping of territory, boundaries, and chieftaincy in colonial Ghana. The making of these maps and their explicit juridical power exists in the policies surrounding and the enforcement of these maps by colonial officers. The case studies show that the power of maps was temporary, and only through people's continual consent would the external power of the map, policies and practices have legitimacy. That is, Chiefs periodically questioned the policies emanating from these maps, and they also sought to have boundaries change and widen their scope of their control.

This chapter demonstrates that the mapping of internal, administrative regions of the colonial state was a political act that involved both British officers and African chiefs. Regional mapping of these boundaries could empower or disempower chiefs, and as a result there was often some jockeying among these men to sway the territorial. It further illustrates that during both periods of direct and indirect rule, there was a consultative process between the colonial administration and chiefs. The primary difference being that chiefs brought their claims to the colonial officers during direct rule; whereas during indirect rule the administration provided forums for chiefs to air their concerns as a part of codifying the administration of the regions. The challenges to chiefs' territorial rule led to the continual re-sketching of the boundaries.

This study also portrays the ways that African agency furthered the making of "traditions," in the sense of mapping traditional areas rule by African chiefs. They helped codify and implement more than traditional laws. They also influenced the geographical extent to which such laws and practices would be implemented. As such, it is not just the codification of traditional practices but the extrapolation of such practices to a broader region that occurred in these mapping exercises.

In relation to the studies of critical cartography and agency, this chapter demonstrates that through active engagement, chiefs could inform and challenge the legitimacy of these sketch maps, regardless of their familiarity with the actual map. Lines were reconsidered and redrawn to address their challenges. Unlike Harley's study of Native American mapping or Edney's study of India, here, Africans take an active role in colonial Ghana defining chieftaincy boundaries. Political officers mapping these regions took note of chiefs political and territorial grievances in the sketches they produced. The making of colonial political space was not purely a British imperial act but involved the active participation of African authorities whose power were both expanded and diminished under colonialism.
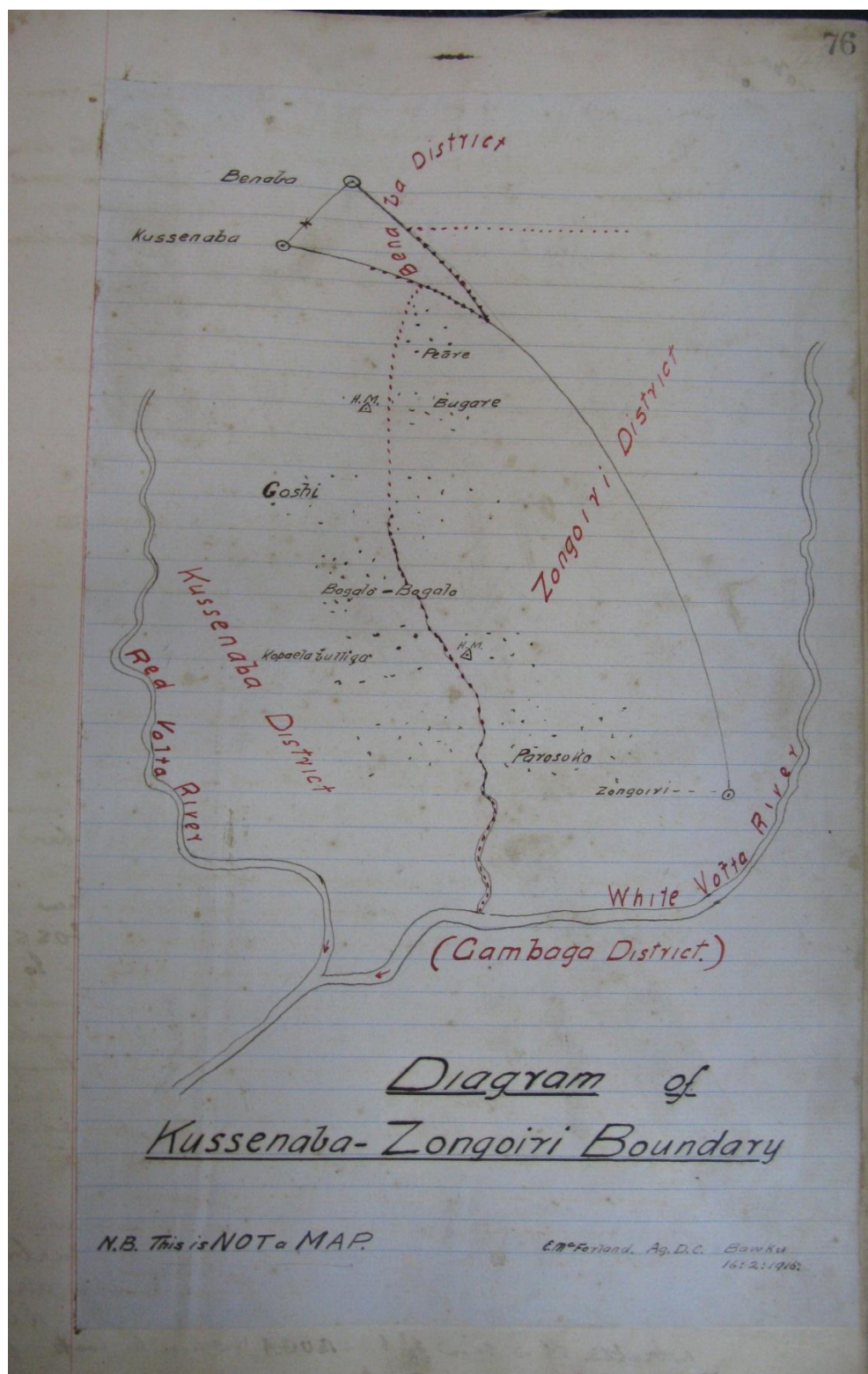
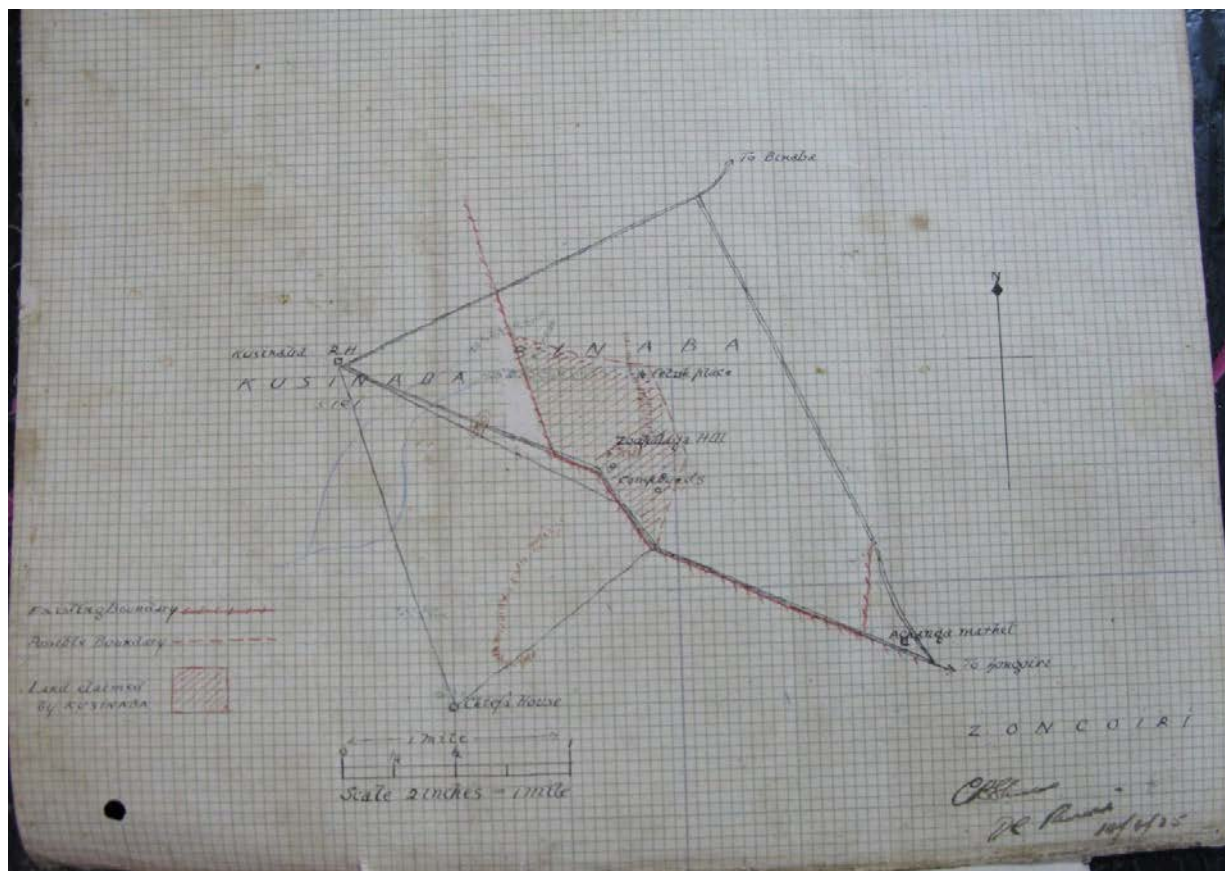**FIGURE 4.1: "Diagram of Kussenaba-Zongoiri Boundary" by E.M. McFarland, 1916.**[76]
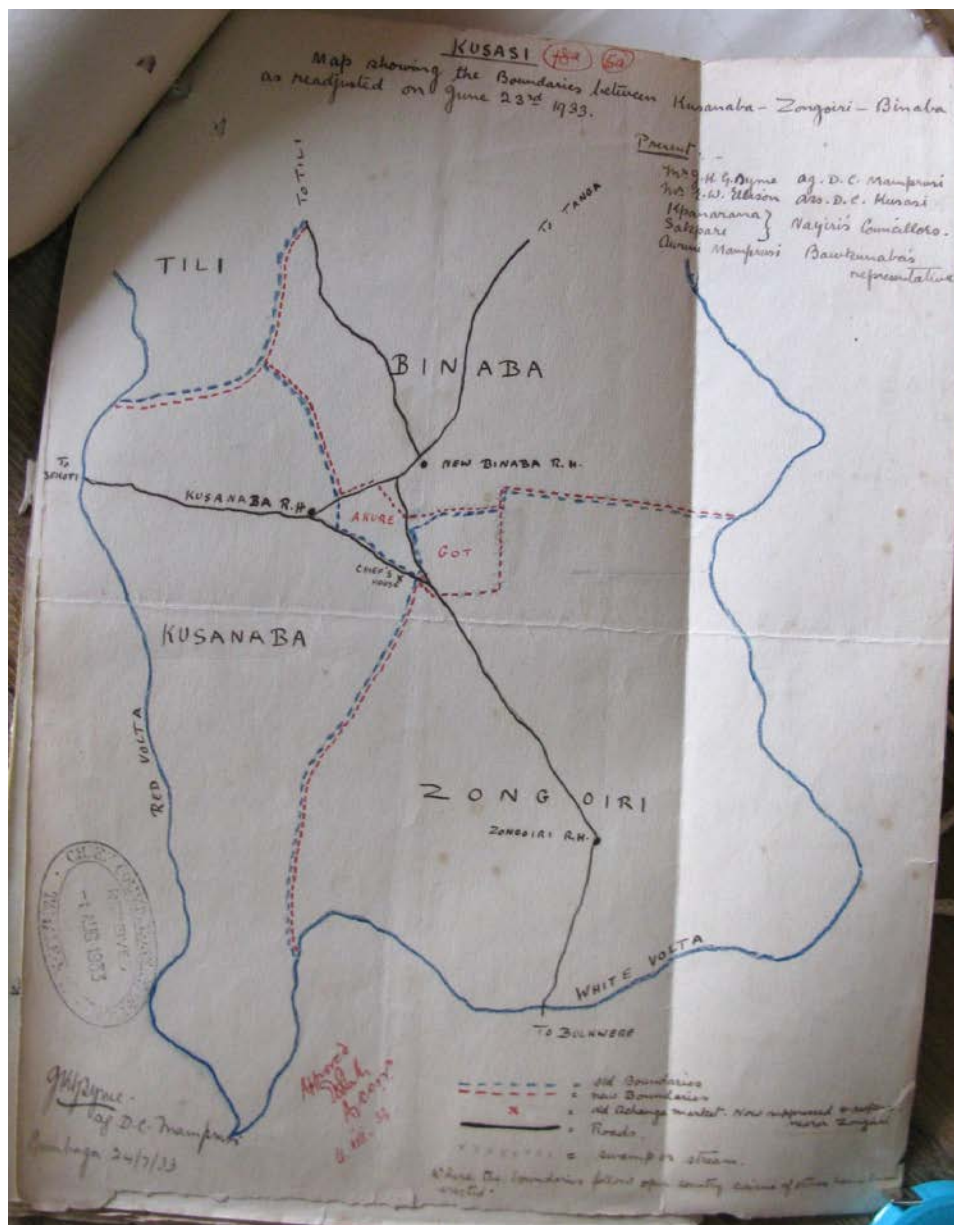
FIGURE 4.2: Untitled map, by Capt. C.St.B. Shields, 1925.[77]

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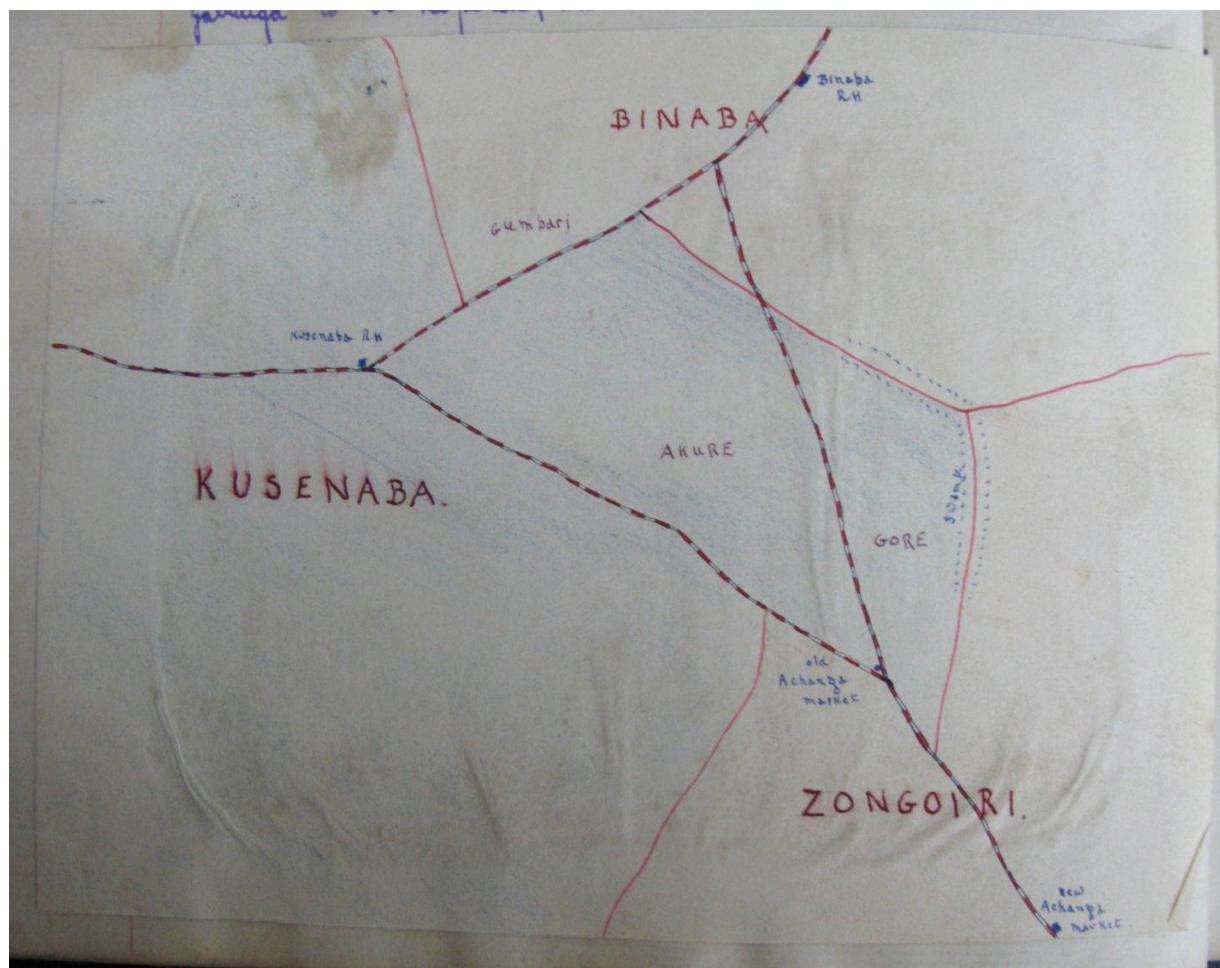**FIGURE 4.3: "Kusasi," by J.K.G. Syme, 1933.**[78]

FIGURE 4.4: Untitled map, by E.W. Ellison, 1933.[79]

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[6] Pickles, *History of Spaces.*

[7] Harley, "Deconstructing the map," (2001 edition).

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[9] Edney, "The Irony of imperial mapping," p. 31.

[10] Personal communication. He also connects it to Foucault's concept of biopower outline in *The History of Sexuality, vol 1.*

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[17] Pickles, *History of Spaces*, p. 113-114.

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[19] Given, "Maps, fields, and boundary cairns."

[20] Given, "Maps, fields, and boundary cairns," p. 20.

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[22] Raj, *Relocating Modern Science.*

[23] Ranger, "The invention of tradition in colonial Africa;" Spear, "Neo-Traditionalism."

[24] Ranger, "The invention of tradition in colonial Africa," p. 262.

[25] Spear, "Neo-traditionalism", p. 4.

[26] Ranger, "The invention of tradition in colonial Africa," p. 229.

[27] Spear, "Neo-traditionalism," p 12-13.

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[44] Nugent, "Arbitrary lines," p 48.

[45] Berry, *Chiefs Know Their Boundaries,* Lund, Christian, *Local Politics and the Dynamics of Property in Africa.* New York: Cambridge University Press, 2008.

[46] Lund, *Local Politics*, p. 9.

[47] Lund, *Local Politics*, p. 9 citing von Benda-Beckman, Keebet, "Forum Shopping and Shopping Forums: Dispute Processing in a Minangkabau Village," *Journal of Legal Pluralism* 19: 117-159., 1981, p. 117.

[48] Nugent "Arbitrary lines;" Bening, "Location of regional and provincial capitals."

[49] Berry *Chiefs Know Their Boundaries.*

[50] Allman and Parker, *Tongnaab*, Lentz, *Ethnicity and the Making of History;"* Ladoucer, *Chiefs and Politicians*; Bening*, Ghana: Regional Boundaries and National Integration*, Grischow, *Shaping Tradition;* Sean Hawkins, *Writing and Colonialism in Northern Ghana: The Encounter between the LoDagaa and "The World on Paper."* Toronto: University of Toronto Press, 2001; Ivor Wilks, *Wa and the Wala: Islam and Polity in Northwestern Ghana.* Cambridge: Cambridge University Press, 1989; Ibrahim Mahama, *A Colonial History of Northern Ghana.* Tamale: GILLBT Printing Press, 2009; Benedict G. Der, *The Slave Trade in Northern Ghana*, Accra: Woeli Pub. Services, 1998; Abdulai Iddrisu, *Contesting Islam in Africa: Homegrown Wahhabism and Muslim Identity in Northern Ghana, 1920-2010,* Durham, NC: Carolina Academic Press, 2013.

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[52] ADM 57/5/4 District Record Book (Bawku District).

[53] Bening, R.B, "Indigenous Concepts of Boundaries and Significance of Administrative stations and Boundaries in Northern Ghana," *Bulletin of the Ghana Geographical Association,* 15: 1-21, 1973.

[54] ADM 57/5/4 District Record Book (Bawku District); ADM 56/1/34 Meetings between H.E. the Governor and the Chiefs in the N.T.

[55] NRG 8/1/22 Land Disputes Mamprusi State; NRG 3/1/4 Gambaga Informal Diary 1921-33; ADM 56/1/34 Meetings between H.E. the Governor and the Chiefs in the N.T.

[56] Could this be Abudu Kanjarga who returned to Kusanaba ---re: murders/Thomas article.

[57] ADM 57/5/4 District Record Book (Bawku District).

[58] ADM 56/1/284 Bawku Native Authority; NRG 5-1-1 Land Disputes 1921-1927.

[59] Interview with Ogoe Emmanuel and Simon Asaaro. Today Zoopalaga is written as Zorkpaliga.

[60] I could not locate any records relating to the 1912 conflict and Harding's decision.

[61] ADM 56/1/284 Bawku Native Authority.

[62] ADM 57/5/5 District Record Book (Bawku).

[63] Rattray, R.S., *The Tribes of the Ashanti Hinterland.* Oxford: The Clarendon Press, 1969, c1932.

[64] NRG 8/2/214 The Kusasis: A Brief History, by J.K.G. Syme.

[65] Interview with Ogoe Emmanuel.

[66] NRG 8/2/214 The Kusasis: A Brief History, by J.K.G. Syme; NRG 8/1/22 Land Disputes Mamprusi State.

[67] NRG 8/1/22 Land Disputes Mamprusi State and NRG 3/4/1 Informal Diaries, 1921-33.

[68] The *nayiri* is the title of the chief at Naleirgu and over the Mamprusi people. It is a position that pre-dates the colonial imposition of chiefs.

[69] NRG 3/4/1 Informal Diaries 1921-33.

[70] *Ibid.*

[71] NRG 8/1/22 Land Disputes Mamprusi State.

[72] NRG 3/4/1 Informal Diaries, 1921-33.

[73] NRG 8/1/22 Land Disputes Mamprusi State.

[74] Interview with Ogoe Emmanuel, 2008. -Apiga was known to have a bad temper and be quite cruel, and a number of tales of his misdeeds and inhumane treatment of others were shared about him. In the archives, documentation also substantiates his offenses. Syme referred to him as a "pompous autocrat" and wrote of Apiga's multiple offences, fines, and maltreatment, but in the same entry wrote, "In spite of it all, however, he is a useful Chief and has his people under excellent control. A constable is always kept at Binaba and he lives in the Interpreter's quarters. He patrols the many markets in the neighbourhood and keeps an eye on the chief." Certainly, Apiga's control was in part achieved through terror and fear. While Apiga was also held in check by the colonial administrator's posting of a constable nearby.

[75] Ladouceur, *Chiefs and Politicians.*

[76] ADM 57/5/4 District Record Book (Bawku District) containing"Diagram of Kussenaba-Zongoiri Boundary" by E.M. McFarland, 1916.

[77] ADM 56/1/284 Bawku Native Authority, untitled map, by Capt. C.St.B. Shields, 1925.

[78] NRG 3/1/4 Gambaga Informal Diary 1921-33, "Kusasi," J.K.G. Syme, 1933.

[79] ADM 57/5/5 District Record Book (Bawku), untitled map, by E.W. Ellison, 1933.

CHAPTER 5

CONCLUSION

Conventional cartographic histories of colonial Africa privilege the roles played by European colonial agents in mapping the continent and individual colonies.[1] Studies of empire also emphasize the importance of the Berlin Conference of 1884 to 1885 as a key moment in the demarcation and mapping of Africa at the hands of European nations.[2] The various roles performed by Africans are largely muted in these accounts. There are some scholars who acknowledge that European mapmakers at times relied on and used local African geographical knowledge and labor.[3] Yet few scholars systematically focus on the role of Africans in mapping the colonies. Hunt provides brief notes on African indigenous mapping, and Bassett provides a broader overview of these practices across the continent and over many centuries.[4] In another work, Bassett also documents African contributions to European mapmaking in which Africans serve mostly as informants to maps that can be read as hybrids of European and African knowledge. Balogun writes about Nigerian surveyors and their training during the colonial era. However, he is less concerned with critically examining these practices in relationship to the development of Nigerian mapping. Given the scope of these histories, many questions remain to understanding the cartographic histories of Africa countries. Among these questions are: 1) What roles did Africans play in establishing and mapping the colonies; 2) Did African involvement in mapping contribute to continuities or ruptures in mapping practices between the colonial and postcolonial eras; and 3) How did Africans view their involvement in colonial mapping practices? These are among the questions that this dissertation seeks to address.

The omission of African mapmakers from colonial cartographic histories motivated my research on African participation in the mapping of colonial Ghana from 1874 to its

independence in 1957. This study aims to understand three interrelated concerns with the mapping of the Gold Coast. First, it examines how the colonial state employed cartography in the governance and administration of the colony. Second, it documents the various ways that African professional surveyors and mapmakers contributed to the mapping of the Gold Coast over the course of the colonial epoch. Third, this work examines local people's geographic knowledge and the ways that their knowledge and power struggles informed colonial mapping.

In addressing these concerns I put forward three fundamental arguments. First, the techniques and technology of mapping facilitated colonial governance, as maps were *everyday tools of rule*. Second, Africans played critical roles in the mapping of Ghana from its colonial inception through its independence in 1957. Their cartographic training and contributions to colonial mapping help to explain the striking continuities in mapping into the postcolonial era. And third, local power brokers informed the mapping of chieftaincy boundaries by the colonial administration and the alignment of mapping and power in colonial Ghana.

My research addresses each of these hypotheses in three separate chapters. The first of these chapters examines the ways the techniques and technology of mapping contributed to colonial governance. Colonial mapping in Ghana was a form of everyday tools of rule that fostered an expanding knowledge-base about the colony and sought to leverage that knowledge into power over the colonial people and resources. Specifically, the mapping and surveying of Ghana sought to measure and manage the territory, the economy, and the population. The chapter demonstrates the normalization of cartographic practices in which new mapping configurations, focal points, and measures were introduced and used to advance everyday administrative ends. For instance, the construction of large scale maps and topographic maps

aimed to facilitate the administration and economic development of the colony. As everyday tools of rule, maps were part of the mundane but powerful arsenal of governance.

The second chapter examines African contributions to colonial mapping. From the precolonial to the postcolonial periods, African surveyors and mapmakers produced cartographic knowledge that advanced colonial state making. This research demonstrates a striking continuity in mapmaking between the colonial and postcolonial eras. I identify three distinct phases in which Africans played important parts in the cartographic construction of Ghana. During the period of colonial expansion, George Ekem Ferguson led the mapping of the Northern Territories which greatly assisted Britain's colonization of that region. During the early twentieth-century, hundreds of Ghanaians learned the science of survey and mapping at the Gold Coast Survey Department School. At independence a smaller cadre of Ghanaians continued to be trained and work in the Survey Department. These surveyors embraced the colonial government's mapping practices and agendas as scientifically neutral practices for development. Adopting the techniques and practices of British colonial cartography, these African government workers facilitated the continuation of state mapping agendas and perceptions of its neutrality into the postcolonial era.

Lastly, this dissertation examines the role of local, non-technical people in the mapping of colonial Ghana. This attention to ordinary Africans demonstrates that local knowledge and authorities shaped both the maps and the colonial policies that the maps sought to propagate. The chapter illuminates three case studies from one region where local chiefs sought to influence the scope of their territorial authority. The case studies illustrate local power brokers' strategies and challenges to state making by influencing the drawing of chieftaincy boundaries. Colonial officers drafted sketch maps to demarcate chieftaincy boundaries. This mapmaking, while

rudimentary and having limited political scope, were sites or forums where chiefs influenced the the delimitation of administrative territories. This chapter illustrates some of the ways that colonialism imposed spaces of rule that engendered and rekindled conflicts between local power brokers. At the same time, it shows some of the ways that such conflicts and their resolution informed by both mapmaking and state-making.

In sum, the chapters come together to make three fundamental contributions. First, understandings of the history of cartography and African colonial history are enriched through the study of African surveyors and mapmakers. Africans were major contributors to the mapping of Ghana, and this knowledge helps to correct the Eurocentric histories that have dominated these literatures. One might anticipate that across much of Africa and the colonized world that colonized peoples played important roles in state mapping practices. Second, this study demonstrates that surveying and mapping were commonplace tools of administration where there was an unfolding continuity of practices over the course of the colonial era. It shows that cartography and its processes were normalized as part of the routine course of administration. Third, this dissertation reveals the importance of African agency in influencing the administrative contours of state power. Beyond the actual making of maps, Africans contested boundaries and the exercise of local authority which, in turn, influenced state mapping. Empire-building and mapmaking are often seen as closely aligned, and it is important that scholarship take seriously the role of Africans in constructing and influencing both maps and state power.

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