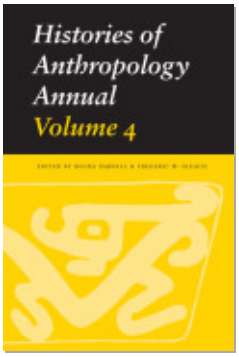
Salubrious Khartoum: Building a Colonial City, 1899–1912

Henrika Kuklick



Histories of Anthropology Annual, Volume 4, 2008, pp. 205-219 (Article)

Published by University of Nebraska Press
DOI: *https://doi.org/10.1353/haa.0.0042*

Salubrious Khartoum

Building a Colonial City, 1899–1912

Henrika Kuklick

Prelude

At first glance, this essay may seem an unlikely contribution to the history of anthropology. Its significance for historians of anthropology will become clear as I will explicate three relevant and associated developments that occurred during the period it treats. First, this was the era in which organized anthropology embraced the methodology earlier developed by naturalists; unlike previous anthropologists, who had based their generalizations on information they acquired from hither and yon, anthropologists decided that sound judgments must be grounded in direct observation in the field. For example, in the summer of 1896–97 the University of Melbourne's first professor of biology, the Oxford-trained Baldwin Spencer, and his collaborator Frank Gillen, who had long been a sympathetic administrator of Australian Aborigines, did fieldwork that led to *The Native Tribes of Central Australia* (1899). In 1898 the Cambridge-trained zoologist A. C. Haddon (who had placed second in the competition for the chair Spencer held), organized the Cambridge Anthropological Expedition to Torres Straits, a seven-man team that spent seven months on a cluster of islands located between Australia and New Guinea; the first of its *Reports* would be published in 1901. In 1900 Haddon had become the Cambridge's first lecturer in ethnology (an anthropological subfield relatively close to today's sociocultural anthropology). In 1902, Haddon wrote to Spencer that *Native Tribes* was "the best book of its kind about any people."

Second, it is important to remember that many practitioners of the new style of anthropological work were trained as physicians; three members of the Torres Straits Expedition were, and one of these, C. G. Seligman, turned to doing his own field research after his experience in the Torres Strait islands; by 1913 he held the chair of Ethnology at the London School of Economics, one of the constituent institutions of the University of London. How did medical training translate into ethnol-

ogy? Remember that the only effective medical practices in this era were public-health measures, designed to improve humans' environments.[1] Architecture itself was a public-health tool; dwellings designed to effect good ventilation were thought to prevent tuberculosis. A protected water supply system improved the health of city dwellers. Climates everywhere affected residents' health in various ways: in the United States, malaria was endemic in some places; in Britain, there were sites with special airs and waters, such as the spas that Charles Darwin (a doctor's son) regularly visited for therapeutic purposes; and some places were exceptionally unhealthy, such as the parts of Africa that did not attract European settlers. Moreover, significant advances were being made in public health. In 1892 Ronald Ross, serving the British regime in India as a member of the Indian Medical Service, determined the mechanism by which malaria was transmitted from mosquitoes to humans, for which achievement he won the Nobel Prize in medicine in 1902 (in the second year that the Nobel Prizes were awarded). More important (recall that there is still no cure for malaria), Ross conceived a formula for practical action—involving both a team of workers and a set of techniques to be used in places where malaria was endemic—and dramatic declines in malaria rates occurred wherever Ross's formula was applied.

Third, sanitary schemes that were truly effective (as opposed to those founded on untenable premises) allowed the implementation of colonial rule in places that had previously been essentially only formal subject territories. Travel to colonial parts became considerably safer for Europeans. (One should note, though, that pacification within any given colony was always uneven; moreover, the Sudan, of which Khartoum is the capital, had only a vaguely defined border when it ceased to be a colony.) So travel to colonial parts from the metropoles became attractive to many types of persons—those scientists whose research required fieldwork, commercial figures, adventurers, and those whose economic prospects at home were hopeless but might be better in a colony. Thus, anthropologists were but one group that profited from this era's medical advances; indeed, their discipline could hardly have developed as such without them. To say this is hardly to suggest that anthropology was the "handmaiden of colonialism," a once-popular slander. To the contrary, most colonial regimes distrusted anthropologists. The British colonial rulers of the Sudan would prove exceptional in this regard, as we will see.

Khartoum as a Strategic Site

Situated at the confluence of the Blue and White Niles, Khartoum was an important place in the Turco-Egyptian regime that dominated the area of

the Sudan from 1821 to 1885; by then, it had an estimated population of fifty thousand. During the next twelve years, however, its population declined precipitously, depleted by massive out-migration, disease and famine—all consequences of revolt against Egyptian rule. In 1898 the Sudan was pacified by an Egyptian army led by the British general Sir Herbert Kitchener, who made Khartoum an administrative center, the headquarters of a novel political structure installed in the Sudan on January 19, 1899—the "Condominium," nominally a government partnership joining Britain and Egypt as equal authorities, which was in practical terms wholly British. In 1882 Britain had occupied Egypt, representing its act as a defense of the authority of Egypt's hereditary ruler, the Khedive, rather than as its de facto assumption of sovereignty, in order to counteract the territorial ambitions of its rivals in the region, particularly the French. Lord Cromer, the British ruler of Egypt in all but title, conceived the Condominium Agreement in the fictitious terms that governed Britain's conduct in the region; in order to preclude a reassertion of Ottoman rights over the Sudan, the country was placed under formally joint Egyptian and British jurisdiction, so that the rights of either Egypt or Britain to act there could be invoked as specific situations indicated, but the principle of British predominance was established. Egypt's share of Sudan's administration was thus nominal, managed by the British consul-general and British advisors in the Egyptian ministries.[2]

Kitchener became the first Governor-General of the Sudan, and outlined a plan for the rebuilding of the city—the execution of which he continued to monitor even after Sir Reginald Wingate (the erstwhile chief intelligence officer of the Egyptian army) became Governor-General at the end of 1899. Kitchener's troops leveled Khartoum's remains, making possible construction of an entirely new city, salvaging for restoration only the principal buildings and palm groves of old Khartoum. City settlement was expanded to the northern bank of the Blue Nile, to the (formally separate) area called Khartoum North, where a substantial native population was anticipated and tolerated and where were situated the town's railroad station, stores, and some of the its military barracks. Kitchener's grand design expressed the assumption that Khartoum was destined to become "the largest town in Africa"; because the Sudan was "capable of supplying most of the cotton that Lancashire can take," the city would soon have a thriving economy as the "centre of an enormous cotton trade" (McLean 1911:585). Between 1899 and 1912 fundamental decisions were made that were intended to make the city an embodiment of British imperial notions of social order, in both symbolic and practical terms. The city's street plan served as a constant reminder of

imperial power: over a grid of streets, the major one designated Victoria Avenue, a diagonal network of streets was laid; each diagonal crossing was named after a successful imperial battle, and the diagonal network as a whole was intended to facilitate military control of the city (McLean 1911). In 1906, the design was commissioned for a symbolic center for imperial Khartoum—an Anglican Cathedral, the Cathedral Church of All Saints—the foundation stone of which was laid by H.R.H. Princess Beatrice, and which was consecrated in 1912.[3] Moreover, because Khartoum was to be reconstructed along "sanitary lines," it would testify to "the thorough efficiency of the administration of the country," justifying the imperial mission (McLean 1911:596).[4] Elevated standards of public health in Khartoum would make settlement there attractive to Europeans—the intended principal beneficiaries of sanitary efforts, as was usual in imperial cities (McLean 1911:583).[5]

It would be hard to overestimate the symbolic significance in all of the British Empire of the establishment of British rule in the Sudan. Official Britain had had no desire to assume sovereignty there. Not least because Wingate wrote a fictionalized account of the heroic end met by General Charles Gordon while he was attempting to secure the Sudan for Britain, considerable popular support was generated for action to avenge Gordon's death (see Johnson 1982). Queen Victoria acted as just one member of the masses when she expressed enthusiasm for taking possession of the territory. She and they had made an imperial martyr of General Gordon (who had been one of the contract administrators—of various nationalities—who had served the Ottoman Empire to prevent the Sudan from becoming a refuge for Egyptian dissidents). A fervent Christian who believed himself an instrument of God's will, Gordon was already a popular hero. In 1883, shortly after Britain had occupied Egypt, he was sent to the Sudan to execute a mission he disregarded—to lead Egypt's evacuation of the Sudan. Instead, he entrenched himself in Khartoum, meeting there the death he had apparently anticipated, while the force sent to rescue him in response to British public demand was two days' march away from the city. Nevertheless, Britain refused to assume fiscal responsibility for supporting the Sudan regime (which, alone among Britain's colonial domains, was managed by the Foreign Office—which paid virtually no attention to it). So, as Governor-General, Wingate adopted a strategy of symbolic representation of British presence in the Sudan that may be interpreted as deliberate compensation for official indifference to the country, exploiting his opportunities to present British Royalty as concerned and benevolent actors in Sudanese affairs.[6] But Wingate also undertook to rationalize British rule by putting

it on a scientific basis, as he observed in his "Foreword" to the first number of *Sudan Notes and Records*, the government publication designed for the promulgation of knowledge useful to colonial administrators. It is of more than parenthetical interest that the Sudan under Wingate was by far the earliest colonial government to determine that its administrative staff might profit from instruction in anthropology, inviting Oxford and Cambridge to develop courses for them in 1908, and it was unique among colonial regimes in its enthusiasm for commissioning research by academic anthropologists, beginning with the husband-and-wife team of C. G. and B. Z. Seligman in 1909 (see Kuklick 1991a:50).

Just as important, because Khartoum was to be reconstructed along "sanitary lines," in Kitchener's words, it would testify to "the thorough efficiency of the administration of the country," justifying the imperial mission (McLean 1911:596). Sanitary measures were urgently needed, for as was stated in the only British military handbook available to British forces at the time, Khartoum was a place of "miserable" mud houses, "dirty in the extreme," where during the rainy season "numerous hollow flats" collected water that stagnated, "rendering the place very unhealthy" (Report on the Egyptian Provinces 1884:122). Elevated standards of public health in Khartoum would make it an attractive tourist destination, commercial venue, and even long-term residence for Europeans. That is, as one of Kartoum's architects observed, its plan had to be designed with attention to the fact that "a portion of its population are not in their natural zone, and are, therefore, not in adjustment with their environment. Special consideration and provision has to be made if this portion of the population is to enjoy even a fraction of the comfort of the native population who are adjusted to the climatic conditions" (McLean 1913:226).

The Symbolic and the Practical

The symbolic and practical came together in the creation of an institution that was critical to the planning of Khartoum—the Wellcome Tropical Research Laboratories established there. Following his victory in 1898 Kitchener appealed for funds to establish a secondary school in Khartoum that would be named Gordon Memorial College. Henry Wellcome, the leading figure in the British pharmaceutical industry (though he was American born and trained) and a man with an avid interest in African affairs, responded with a generous check. Wellcome then traveled to the Sudan, where he observed the prevalence of disease and met with officials.[7] He offered to equip a research facility to be housed in Gordon Memorial College, on the condition that the

government maintain it and pay the salaries of its director and staff (see, e.g., Abdel-Hameed 1997:33, 38). This was not his first foray into philanthropy. He had an extensive collection of all manner of objects, many of them medical devices, which he acquired in an essentially anthropological spirit; that is, he wished to display in his museum evidence of the lives of ordinary people. And he would pay additional visits to the Sudan to supervise archaeological excavations that added objects to his collection. By 1910, Wellcome's interest in the Sudan led him to do archaeological work himself; he spent much of the next four years presiding over a team of thousands of Sudanese laborers at an ancient site at Jebel Moya (see Arnold and Olsen 2003). His laboratory would undertake research that would serve the public good: promoting technical education; investigating the diseases "of man and beast" in the Sudan and assisting the medical staffs thereof; taking inventory of water and food supplies, agricultural and mineral resources, and other issues relevant to public health with a view to promoting "the industrial development of the Sudan" (Balfour 1904:9, 7)

Wellcome's objective in establishing the research facility in the Sudan was hardly disinterested, however. Researchers' charges included "experimental determination of toxic agents, particularly the obscure potent substances employed by the natives"—ethnobotanical inquiries that were functionally equivalent to those conducted to this day by pharmaceutical companies that, like Wellcome's own, expect them to yield findings of commercial value—although in the post-colonial era, indigenous knowledge is the intellectual property of its initial possessors, and pharmaceutical companies are obliged to negotiate if they wish to turn indigenous knowledge into marketable drugs. Indeed, the strongest evidence of the importance of this sort of research to Wellcome is the speed with which the scientists in Khartoum worked to satisfy his requirements. The laboratories' first report stated that over a hundred different "remedies indigenous to or used in the Sudan" had been collected, and that a "therapeutic garden" had been planted at the facility so that the staff would be able to inspect closely those growths that were of "vegetable origin and of poisonous plants" (Balfour 1904).

Wellcome himself selected the first head of the facility, Andrew (ultimately Sir Andrew) Balfour (1873–1931), who arrived in Khartoum in 1902. A physician trained at the Universities of Edinburgh and Cambridge, Balfour specialized in public health, a field developing rapidly just when he entered it; he took his BSc degree in public health, his MD thesis was on the pollution of rivers by the dyestuffs industry, and he also earned a doctorate in public health. Public-health techniques

were elaborated by practitioners of the distinct specialty of tropical medicine, created at the very end of the century. British-dominated (if not exclusively British), tropical medicine was first institutionalized in the schools founded in Liverpool and London in 1899, both intended to train persons to make the tropics safe for Europeans (see Worboys 1988). Balfour's own interests had shifted to tropical medicine following his decorated service in the South African War between 1900 and 1901.

In addition to his post as director of the Wellcome Laboratories, Balfour assumed the position of Medical Officer of Health for the Khartoum Province. As such, he imposed a "sanitary tyranny" on the European city of Khartoum—which did not extend to the town of Omdurman, within the boundaries of Khartoum Province, since this was designated a place for non-white residents. The most important of Balfour's sanitary efforts was control of mosquitoes, but the sanitary inspectors he supervised also attended to destruction of refuse and stray dogs; monitored the quality of mineral water, milk, and other foodstuffs; conducted house-to-house inspections; and gave expert testimony in court cases (Balfour 1920:35). And the Wellcome Laboratories became an integral part of the Sudan regime. Balfour opened their facilities to government medical officers, and their employees were able to move into government service.[8] Balfour's charge also extended beyond Khartoum. In the Sudan's "outlying stations," he also implemented tactics for malaria prevention that employed Ronald Ross's procedures (Balfour 1904:30). And Balfour's contacts proved useful: government officials based outside Khartoum sent him specimens of indigenous remedies—and, in at least one instance, dispatched an experimental subject, an African boy afflicted with trypanosomiasis, who suffered a drug trial (Balfour 1906:10, 11).[9]

In his government service capacity, Balfour speedily demonstrated the utility of his scientific knowledge. By 1906, when the *Second Report* of the Wellcome Laboratories was published, he could point to remarkable success. By 1905, residents of Khartoum were able to sleep without mosquito nets. His Ross-style "mosquito brigade"—organized shortly after he took charge of the laboratories and comprising two British sanitary inspectors and seven Native inspectors—had reduced the level of contamination in the water supplies of Khartoum from 50 percent to 9.5 percent by the simple expedient of dousing with a mixture of crude and refined petroleum all of the city's water repositories save those used for drinking (Balfour 1904:18, 20; 1906:15).[10] By 1911, Balfour could write with satisfaction, "I have no wish to boast and know that statistics have to be collected over a long period, but, so far as communicable diseases

go, I doubt if a healthier city exists in Africa at the present moment" (D'Arcy 1999:78). Learning of Khartoum's improvement, a writer for the September 25, 1906, London *Daily Mail* observed, "All of Central Africa is going to be made perfectly habitable for the white man. Its agricultural, industrial, and commercial resources will become available . . . [supporting] a numerous and happy people" (Abdel-Hameed 1997:39).

That Balfour should have had, as a medical man, an important impact on the urban form of Khartoum was not incompatible with his professional outlook as a specialist in public health. That is, his primary mode of conceptualizing his task was in ecological and populational terms. Like other public health practitioners of his generation, Balfour integrated earlier, climatic models of disease causation with recent theories of infection via human and other vectors (see, e.g., Anderson 1997:1351–1355). Because he believed climate a major determinant of the health of a population, he attended to the ways that human behavior could lead to its modification—such as the effect of planting gardens, which both added humidity to the air and lowered the temperature (Balfour 1908:64). And he considered that a health management strategy could not be developed for an area absent an understanding of its population characteristics—both animal and human. Before attempting to curtail the proliferation of disease-carrying mosquitoes in Khartoum, he directed a detailed mosquito census, plotting the distribution and lifestyle of each of the types of mosquitoes found there.[11] And because Khartoum was a place through which disease-bearing "natives are continually coming and going and passing through," posing a clear "danger" especially when they originated in the "humid and typically tropical regions of the Southern Sudan," the city's indigenous peoples' habits were described in a fashion akin to those of its insects, in order to determine the risks they posed to European residents (Balfour 1904:14).

Indeed, Balfour understood the colonial regime as itself a health risk factor in Khartoum. That is, Khartoum housed the regime's army of occupation; at any given moment, roughly three thousand disease-ridden "native troops—Egyptians and blacks"—were quartered in both Khartoum proper and Khartoum North (1904:16; 1908:62). Moreover, in the future the health of Sudan's population would be endangered by agricultural development, which would require irrigation of cultivated lands and hence the creation of new bodies of water that would become contaminated with pests and vegetation if not properly constructed and monitored (e.g., Balfour 1908:67).

It made sense to Balfour to conceptualize the health risks incurred by Europeans resident in Khartoum as compounded of the interaction of

specific pathogens and general climate. After all, the city's environment made it hospitable to disease-bearing insects.[12] And tropical habitats as such—beset with heat, rain, winds, and bright sunlight—were especially perilous for those persons who were not constitutionally suited to living in them by virtue of their racial characteristics. From mid-November to the beginning of March, the environment of Khartoum was healthy, blessed by "bright sunshine, a dry heat tempered by cool breezes . . . and comparatively cold nights," relatively free from those "sudden changes in temperature so liable to induce abdominal complaints and chills" (Balfour 1908:63). But from May through July, Khartoum was beset by often violent sandstorms, which were "sometimes followed by torrential rain and accompanied by thunder and lightening"; the sandstorms and their aftermaths could "turn day into night and night into a period of torment," having "a marked effect on health conditions" both because they conduced to "worry and annoyance" that often disturbed sleep and because they could "carry infected dust into food and drink" (1908:63). Other climatic features—the "monotony" of conditions in the tropics and "the action of intense sunlight and heat on the nervous system"—added to the stresses Europeans suffered, "play[ing] no small part in producing that nervous irritability so characteristic of the tropics" (1908:63–64).

What preventive measures could be adopted to safeguard Europeans' health? Balfour and his colleagues recommended a behavioral regimen for individuals promoted in guides directed to colonial officials. Officials should wear clothing suitable for the tropics, which included proper (black or orange) undergarments; shun the midday sun (especially if their stomachs were empty); purify their drinking water; and avoid bathing outdoors—particularly during those hours when mosquitoes and biting flies were likely to be swarming (Balfour 1908:67; Crispin 1912). And the colonial regime could mount sanitation campaigns. All places where water might collect should be rigorously monitored, and doused with petroleum whenever necessary. Epidemics of dysentery could be prevented by following—to the letter—the system of sanitary containment for human waste that had been devised for Khartoum. But Balfour saw public-health schemes as liable to failure because, of necessity, their implementation depended on indigenous personnel, who would only work effectively if closely supervised and threatened with fines for unsatisfactory performance (1906:21; see also 1908:62, 66, 72–73).

The most reliable means to safeguard Europeans' health, then, was systematic urban planning, which would effect favorable living conditions. This is not to say that figures such as Balfour did not equate su-

perior architecture *as such* with high civilization. Indeed, it would be hard to exaggerate the degree to which architectural achievement denoted high culture for Britons in the late nineteenth and early twentieth centuries. Within Britain itself, architectural accomplishments were thought to "embody the traditions and best qualities of our race," according to the Right Honourable John Burns, the Member of Parliament who sponsored the 1909 Town Planning Act—the objectives of which Kitchener proclaimed he had anticipated in his plan for Khartoum. Indeed, Burns said, his Act was based on recognition that architectural surroundings determined the character of social life: it was no "accident that the beautiful manor house, the restful vicarage, the stately homes of England, and the beautiful public schools and colleges have turned out the Ruskins, the Morrises, the Nelsons, the Newtons, and the Darwins" (Burns 1911:63–65).[13] And when persons whose politics ranged from those of the arch-imperialist Cecil Rhodes to those of the radical Alfred Russel Wallace contemplated impressive structures found in the non-Western world, such as the ruins at Great Zimbabwe and Angkor Wat, they assumed that such structures of high technical standard had to have been built by erstwhile residents of Zimbabwe and Cambodia, peoples far superior to those then living there (Wallace 1900:476–83; Kuklick 1991b:135–69). For Herbert Baker, unquestionably the most important architect throughout the entire British empire, buildings in colonial settlements represented concrete expressions of colonial rulers' mission to bring "order, progress and freedom within the law," enabling subject peoples to "develop national civilizations on the lines of their own tradition and sentiment" (Baker 1981:278). And the architect of the symbolic center of imperial Khartoum, its Anglican Cathedral, had as a young man been Baker's close associate; it is significant that the cathedral was built on the site where General Gordon supposedly met his end (see Greig 1970:231).

Baker's architectural principles were not limited to design alone. He developed a style of tropical architecture that was supposed to safeguard Europeans' health—and that expressed the principles Balfour also endorsed, which were enunciated in the Wellcome Tropical Research Laboratories' *Reports*.[14] Certainly, Balfour's ideal tropical city plan required efforts beyond the capacity of the Sudan administration: he hoped that Khartoum's very ecology might be altered, by, say, either a drainage scheme or an elevation of the city (1906:19–21). Absent major earth-moving efforts, Balfour had to content himself with recommendations for houses designed to moderate the effects of a climate unhealthy for Europeans. Baker and his architectural colleagues had studied vernacular

structures in Britain and abroad because they believed that they constituted built environments that were appropriate responses to natural environments, and the architect of Khartoum Cathedral designed it "to suit the special needs of a tropical climate" (McLean 1911:591). Considering the housing that ought to be built for Europeans in Khartoum, Balfour and his colleagues sought inspiration in indigenes' housing—functional adaptations to the climate that ought to be recognized as such. That is, both Europeans and the darker peoples of the tropics required protection from *heat*, which was provided by houses built in local style. Europeans in particular had to be protected from the sun's *rays*, which were dangerous to human beings in inverse proportion to the quantity of pigmentation in their skins—a generalization that echoed the pronouncements of an American authority on tropical medicine, Charles Woodruff, whom Balfour admired (McLean 1913). Colonists must stop building houses "only suitable for temperate climates, and in which even a black man would feel uncomfortable," as Balfour's colleague W. H. McLean, observed in "Dwelling Houses in the Tropics." "The native houses are generally well darkened, with only a few small openings, and they are often really healthier than the houses occupied by white men" (Balfour 1908:68). Health-promoting houses for Europeans had to be designed to take advantage of prevailing winds, protected by overhanging roofs and graced with verandahs, surrounded by trees, and arrayed on wide streets such as those of colonial Khartoum (McLean 1913:225–227).

Why is this story significant? Not least of the reasons is that Balfour's patron, Henry Wellcome, had a genius for public relations, and made certain that a wide audience learned of the research he sponsored in Khartoum. For example, two thousand complimentary copies of the first *Report* of the Laboratories, published in 1904, were sent to a list of people compiled by Wellcome himself, Balfour, and the governor and director of education of the Sudan. Recipients included politicians; government officials; specialists in tropical medicine; businessmen in Britain, the United States, and the colonies; and the crowned heads of Britain, Russia, Germany and Japan. An additional six hundred copies of the *Report* had to be printed to satisfy requests for it made after it had received unanimously enthusiastic reviews.[15] Second, research done under Wellcome's auspices had enormous importance in the world of tropical medicine because it had few competitors. The British Colonial Office established a Colonial Advisory Medical and Sanitary Research Committee in 1909, but it was practically ineffective. Official doctrine that colonies should be self-sustaining—which meant, among other things, that colonial governments were supposed to raise internally the funds necessary to

support whatever medical research was done under their jurisdictions—meant that tropical medical research was largely funded by private philanthropies, chiefly the Wellcome Trust and the Rockefeller Foundation (See Beinart 1989:111). Third, his work in Khartoum was the beginning of Balfour's distinguished career. He left Khartoum in 1912 because he believed that continuous residence there was hazardous to his health (and Henry Wellcome had ceased to take a direct interest in the laboratory there). Wellcome then appointed Balfour director-in-chief of the Bureau of Scientific Research he established in London in 1913. During World War I Balfour became the military's expert on the medical needs of soldiers fighting in tropical areas, and after the war he became director of the London School of Hygiene and Tropical Medicine.

Coda

Advances in tropical medicine created a safe working environment for anthropologists in the field, fundamentally transforming their discipline. Rather than using information gathered indirectly to substantiate an imagined hierarchy of the world's peoples, anthropologists were now able to recognize that differences among peoples were variations of type rather than of quality.

Notes

1. For a survey of these developments, see Rosen 1993, especially 295–303. See also Hawkins 1923.

2. Britain appointed the governors-general of the Sudan directly, and the second of these, Sir Reginald Wingate, concerned both to prevent the infiltration of Egyptian nationalism and pan-Islamicism and to eliminate the restrictions on the Sudan's development that benefited the Egyptian economy, established the policy of local command—notwithstanding the financial support that the Sudan received from Egypt—tolerating deviation from his policy of non-interference from Egypt only in those instances in which he saw clear benefit for his domain. The British flag flew in the Sudan, and in a variety of ways Egyptian influences were excised from the country: Sudanese people were discouraged from making prolonged stays in Egypt; Egyptian newspapers were banned; military units under British command with Sudanese recruits were created for the occupying army, so that the Egyptian presence might be reduced; and special courses were devised at Gordon College in Khartoum to train Sudanese for the lower administrative positions that were open to non-British persons, reducing the dependence on Egyptian personnel. (Egypt was to be granted the status of an independent constitutional monarchy in the peace accords that ended World War I, as a land that had belonged to one of the defeated Central powers, but retained a special relationship with Britain until 1956.) See, e.g., Holt and Daly 1979, especially 47–58, 76–80; Daly 1986:11–14; Warburg 1970:163–178.

3. See, e.g., Weir 1916; Weir was the Cathedral's architect.

4. I am quoting from Kitchener's responses to discussion of his paper.

5. For Kitchener's continued involvement in the town planning process, see, e.g., McLean 1913:228. On the typical preoccupation of practitioners of medicine with the health of Europeans, see, e.g., David Arnold's "Colonial Enclaves: The Army and the Jails" (Arnold 1993:61–115).

6. A frequent visitor to the monarch's residences at Balmoral and Windsor, Wingate made the most of every royal visit to the Sudan, and created national holidays to celebrate royal events. See Warburg 1970:171.

7. In 1880 Wellcome established a pharmaceutical company in Britain (where he remained for the rest of his life. With his colleague Silas Mainville Burroughs (who died young), he founded Burroughs Wellcome and Company. It still exists, and is still British-based, though the Wellcome name disappeared from its title as a series of mergers with other pharmaceutical companies produced the giant corporation that is now called Glaxo-SmithKline. For information about Wellcome, see, e.g., James 1994.

8. John Newlove, for example, originally Balfour's laboratory assistant, became Sanitary Inspector for Khartoum in 1904; he may have been especially mobile within the colonial order of Khartoum, however, because he knew Arabic. See Balfour 1906:10–12; Balfour 1904:18.

9. The experimental treatment was that of Dr. Sheffield Neave, who briefly served as the laboratory's traveling pathologist and naturalist.

10. Apparently in addition to the "mosquito brigade," a "special native inspector" was charged with monitoring the steamers and boats that visited Khartoum; see Balfour 1908:64.

11. The same approach was used in plotting mosquito habitats throughout the territory, though in lesser detail. See Balfour 1904.

12. As European visitors to Khartoum prior to its British occupation had testified, the city had always been "a perfect hot-bed of mosquito life" (Balfour 1908:66).

13. Burns boasted that Britain was making "greater strides" in its program of slum clearance and overall town planning "than any other country in the world"—a claim not without foundation. As Gwendolyn Wright observes, for example, not until the beginning of the twentieth century did the French Chamber of Deputies pass a bill that was, in essence, a translation of English statutes of a half a century earlier—requiring all large towns to create public health regulations, provisions that included powers to inspect housing and demolish those dwellings that were judged unsanitary—and the French failed to act on these statutes (Wright 1991:20).

14. See, for one positive—and obviously influential—assessment of Baker's contributions to colonial architecture, a letter sent by L. S. R. Amery, then Britain's Colonial Secretary, to Arthur Balfour, April 16, 1926 (A. J. Balfour Papers, British Library, Box 49775). Arthur Balfour had no family connection to Andrew Balfour (Balfour is a very common Scottish name). He had been Britain's Prime Minister, was during World War I its Foreign Secretary (in which capacity he issued the 1917 Balfour Declaration, which proclaimed that the land that would become Israel must become a homeland for the Jewish people). At the time this letter was written, A. J. Balfour was actively promoting the use of scientific expertise in the formulation of government policy.

15. Wellcome evidently saw involvement in African matters as a means to gain publicity for his business—as providing him opportunities to stage the promotional campaigns for which he had considerable flair. His pharmaceutical firm had grown prosperous marketing drugs in the form Wellcome named the "tabloid"—medicine in compressed form in standardized doses, which had been first manufactured in the United States—a form that suited

travelers; Wellcome promoted his product's virtues through public presentations of kits of drugs in tabloid form to prominent travelers, the first of whom was the self-invented adventurer and African explorer, Henry Morton Stanley (1841–1914). His patronage of the Tropical Research Laboratories provided another occasion for self-serving publicity—a grand dinner to which such celebrities as Stanley were invited, along with the press—which marked the creation of the laboratories; and laboratory reports that were elegantly printed and lavishly illustrated (including some color plates protected with tissue covers bound into the volumes).

References

A. J. Balfour Papers. British Library, London.

Abdel-Hameed, Ahmed Awad. 1997. The Wellcome Tropical Research Laboratories in Khartoum (1903–1934): An Experiment in Development. Medical History 41:33, 38.

Anderson, Warwick. 1997. The Trespass Speaks: White Masculinity and Colonial Breakdown. American Historical Review 102:1351–1355.

Arnold, David. 1993. Colonizing the Body. Berkeley: University of California Press.

Arnold, Ken, and Danielle Olsen, eds. 2003. Medicine Man: The Forgotten Museum of Henry Wellcome. London: The British Museum Press.

Baker, Robert Grant. 1981. Indian Summer: Luytens, Baker, and Imperial Delhi. New Haven, CT: Yale University Press.

Balfour, Andrew. 1904. First Report of the Wellcome Tropical Research Laboratories at the Gordon Memorial College, Khartoum. London: Baillière, Tindall and Cox, for the Department of Education, Sudan Government

———. 1906. Second Report of the Wellcome Tropical Research Laboratories at the Gordon Memorial College, Khartoum. Khartoum: Department of Education, Sudan Government.

———. 1908. Third Report of the Wellcome Tropical Research Laboratories at the Gordon Memorial College, Khartoum. London: Baillière, Tindall and Cox, for the Department of Education, Sudan Government.

———. 1920. War Against Tropical Disease. London: Baillière, Tyndall and Cox for the Wellcome Bureau of Tropical Research.

Beinart, Jennifer. 1989. The Inner World of Imperial Sickness: The MRC and Research in Tropical Medicine. *In* Historical Perspectives on the Role of the MRC. Joan Austoker and Linda Bryder, eds. Oxford: Oxford University Press.

Burns, John. 1911. Inaugural Address. *In* Royal Institute of British Architects, Transactions of the Town Planning Conference, London, October 10–15, 1910, Pp. 62–76. London: Royal Institute of British Architects.

Crispin, Edward Smyth. 1912. The Prevention and Treatment of Disease in the Tropics: A Handbook for Officials and Travellers Compiled Chiefly for the Use of Officials in the Sudan. London: Charles Griffin and Co.

D'Arcy, Patrick F. 1999. Laboratory on the Nile. New York: Pharmaceutical Products Press.

Daly, M. W. 1986. Empire on the Nile: The Anglo-Egyptian Sudan, 1898–1934. Cambridge: Cambridge University Press.

Greig, Doreen E. 1970. Herbert Baker in South Africa. Cape Town: Purnell.

Hawkins, Edgar. 1923. Medical Climatology of England and Wales. London: H. K. Lewis and Company.

Holt, P. M., and M. W. Daly. 1979. The History of the Sudan. Boulder, CO: Westview Press.
James, Robert Rhodes. 1994. Henry Wellcome. London: Hodder and Staughton.
Johnson, Douglas H. 1982. The Death of Gordon: A Victorian Myth. The Journal of Imperial and Commonwealth History 10:285–310.
Kuklick, Henrika. 1991a. The Savage Within. New York: Cambridge University Press.
———. 1991b. Contested Monuments: The Politics of Archaeology in Southern Africa. *In* Colonial Situations: Essays on the Contextualization of Ethnographic Knowledge. George W. Stocking Jr., ed. Pp. 135–169. Madison: University of Wisconsin Press.
McLean, W. H. 1911. The Planning of Khartoum and Omdurman. *In* Royal Institute of British Architects, Transactions of the Town Planning Conference, London, October 10–15, 1910. Pp. 575–595. London: Royal Institute of British Architects.
———. 1913. Town Planning in the Tropics, With Special Reference to the Khartoum City Development Plan. The Town Planning Review 3:224–231.
Intelligence Branch, Quartermaster-General's Department, Horse Guards, War Office. Report on the Egyptian Provinces of the Sudan, Red Sea, and Equator. 1884. London: Her Majesty's Stationery Office.
Rosen, George. 1993. A History of Public Health. Expanded edition. Baltimore: The Johns Hopkins University Press.
Spencer, Baldwin, and F. J. Gillen. 1899. The Native Tribes of Central Australia. London: Macmillan.
Wallace, Alfred Russel. 1900. Affinities and Origin of the Australian and Polynesian Races. *In* Studies, Scientific and Social. Pp. 476–483. London: Macmillan.
Warburg, Gabriel. 1970. The Sudan, Egypt and Britain, 1899–1916. Middle Eastern Studies 6 (1970):163–178.
Weir, Robert W. S. 1916. The Cathedral of All Saints, Khartoum. The Builder 110 (May 19):371–373.
Worboys, Michael. 1988. Manson, Ross and Colonial Medical Policy: Tropical Medicine in London and Liverpool, 1899–1914. *In* Disease, Medicine and Empire. Roy MacLeod and Milton Lewis, eds. Pp. 21–37. London: Routledge.
Wright, Gwendolyn. 1991. The Politics of French Colonial Urbanism. Chicago: University of Chicago Press.