5 Machines in the Palm Groves

Concession Fever

By the turn of the twentieth century, the industrial world was hungry for fat. Dirty hands needed washing; powerful machines needed greasing. More importantly, the growing acceptance of margarine as a food meant that more and more fat from the tropics was headed for northern stomachs. Before his own turn to the margarine industry, soapmaker Sir William Lever griped that he had "no chance against the Butterine maker" in battles for raw materials. Consumers were willing to pay more for food than for soap.[1] Firms making lower-value products like greases and polishes had to "ransack the ship's hold for leakages from the palm-oil cask."[2]

This should have been good news for oil palm farmers: prices for palm oil and kernels finally rose, pulling the industry out of a long slump. But the recovery came just as Europe's imperial powers consolidated their grasp on Africa. Except for Liberia, all of the oil palm belt was under European control by 1910. Industrialists like Lever applauded these invasions: "The native himself cannot develop [palm oil]," he declared, condemning the "wasteful, extravagant, and costly" methods African farmers used to make oil and crack kernels.[3] He and others looked to new machines—for which more than twenty British patents were issued by 1914—that flailed, shredded, squeezed, spun, and pressed palm fruit with more power and speed than human hands could ever match. Moreover, they promised to make oil purer than anything made in an earthen pit, carried in calabashes. By 1910, scientists had proven that rancid palm oil was caused by enzymatic fermentation; promptly cooking fruit at high temperatures to deactive these enzymes was the key to edible oil.[4]

But machines for palm oil weren't new. In 1852, a Liberian colonist set up a screw-press imported from Liverpool, inspiring "emotions of astonishment, and admiration" among local people who ridiculed "their own imperfect method of making oil."[5] In 1864, Europeans predicted the demise of handmade oil in Africa once the right machines arrived, freeing up labor to harvest more trees.[6] But early machines were too expensive and unwieldy

for African oil-makers. A rich entrepreneur could make all the palm oil they needed by buying slaves or acquiring wives, who fulfilled other functions outside the palm oil season.[7] Most new machines of the twentieth century weren't developed for Africans, though. These steam-driven monsters were designed to serve European capital.

To entice investors, colonial administrations offered business concessions that granted land and special powers. In theory, colonizers granted concessions in partnership with local chiefs and landowners; but in practice, the interests of local people were ignored. An outbreak of "concession fever" in the Gold Cost in 1900, for example, led chiefs to sign away rights to more land than the entire colony contained.[8] Some concessionaires wielded extraordinary power; companies in the Congo Basin and the interior of Nigeria raised private armies and negotiated treaties with African kings and chiefs.[9]

Lever Brothers, Jurgens, and other soap and margarine firms hunted for concessions in Africa after 1900, lured by reports of "an inexhaustible supply" of palm oil and kernels.[10] While these companies had a particular interest in palm oil as edible fat, oil palms had special attractions for investors when compared with other tropical commodities like rubber, coconuts, or cocoa. These tree crops took years to mature, making machinery less important than land and labor. In contrast, oil palm groves looked like ready-made plantations. "[The] capital engaged will be immediately remunerative," promised one colonial official.[11] With prices for edible fats surging in the years leading up to 1914 (see graph 3.1), managing and mechanizing Africa's palm groves looked like an eminently sensible idea to European capitalists.[12] But as these capitalists discovered, Africa's palm groves were not what they seemed. There were plenty of trees, to be sure, but making money out of them proved more difficult than Europeans imagined. Harvesting labor, rather than the mere presence of palm trees, turned out to be the key factor. Only European firms that could rely on state-backed coercion could get enough of this labor at prices deemed "reasonable" to company directors.

Oil Palm Concessions in France's African Empire

Cocoa, coffee, rubber, and cotton all attracted capital to French West Africa, but French reports stressed the sheer abundance of oil palms to prospective investors. In 1902, one writer claimed that an average hectare of "forest" in southern Dahomey contained 128 trees, and only three of them

were *not* oil palms. He thought Dahomeans used perhaps 70,000 hectares of palms, leaving 230,000 free for Europeans to exploit.[13] Another writer worked through estimates for Ivory Coast. After taking into account the varying age and health of trees, losses in "native" oil-making, and domestic consumption, he concluded that 50,000 tons of oil and more than 125,000 tons of kernels were "lost in the bush," waiting for European machines to recover.[14]

The pace of investment was slow in French West Africa, however. The long-established merchant firms had modest means, and the most successful were British and German and therefore politically suspect. Colonial wars of "pacification" continued into the twentieth century in several regions, discouraging investors. And although France considered "vacant" land to be state property, early officials were in no rush to alienate large tracts in French West Africa. In Ivory Coast, Governor Clozel argued that vacant land didn't really exist, recognizing the importance of forest fallow for African farmers.[15]

Clozel's successor, Angoulvant, had no sympathy for the idea of "forest fallow." He echoed the claim that palm produce was "lost" in the forests and called on European capitalists to modernize the industry, sweeping aside local concerns.[16] The groves weren't as empty or unused as Europeans thought, of course. Fishermen from the Ivoirian village of M'bato protested one 1,000-hectare concession granted to a French company, noting that they collected kernels in the grove during the dry season. The seasonal use accounted for the lack of houses and routine maintenance. One official griped, "These people have more palms than they can use." In another Ivoirian village, Locodjo, fishermen admitted, "We aren't made to climb the palms, we are fishermen." But they still protested a concession that threatened their access to oil palms. The government told them it had no interest in taking away palms that villagers kept weeded and pruned, but the people declared: "Leave us our palms!"[17]

Despite protests, foreign companies won concessions to exploit oil palms in French West Africa. The machinery that was supposed to revolutionize the industry failed to perform well, however. A plant installed by the Fournier company near Cotounou in 1908 used hydraulic pistons to smash fruit and squeeze out oil, replacing hundreds of men and women pounding out fruit in mortars. Yet the machine broke down almost immediately. The company continued buying fruit "to avoid shaking the confidence of the natives," but wound up making inedible hard oil with their fermenting stockpile when the machine was fixed months later.[18]

Even when machines worked, working palm groves proved harder than expected, as the American trader and inventor Earle W. J. Trevor discovered. His Pericarp Syndicate opened a factory at Bingerville in 1914 using patented machines of Trevor's own design, and the syndicate soon opened a second plant at Abidjan.[19] His concession gave him rights "to all the fruit not required by the natives for domestic purposes," but no ownership of the trees themselves. "It would be unfair to make a contract by which a native could not take all he wanted for his own domestic use or manufacture," he noted. Trevor explained that he managed conflicts informally, having his men harvest palms that were farther away from villages. Villagers were free to make and sell all the oil they wanted, though Trevor refused to buy it.[20]

The company hoped that locals would trade oil-making for fruit harvesting, but when they refused, Trevor recruited men from the north who had no ties with the local communities. "The natives like this work and do not like the mining," Trevor insisted.[21] When pressed about how the men were recruited—and whether they were indentured or enslaved—Trevor replied: "It is a French colony." What he meant was that formal indenture wasn't required: recruiters used incentives and coercion to bring migrant laborers from the north, men who couldn't slip away into a village and take up farming because of ethnic, linguistic, and religious differences with the locals. Some were sold by elites into this new kind of servitude. With imported labor, the Pericarp Syndicate produced about 100 tons of palm oil monthly. While Trevor boasted of shipping oil with only 2 percent free fatty acid (FFA), he noted that some of his shipments had as much as 80 percent FFA.[22] The root cause was the Pericarp Syndicate's inability to get fresh fruit fast enough to keep its machines running at an efficient pace.

This experience proved typical for oil palm concessions in France's West African colonies. Local people refused to sell fruit to the mills at the prices offered, and industrialists found that harvesting "wild" groves with their own employees was more labor-intensive than they anticipated. There was no harvesting machine and no prospect of ever making one. By the late 1920s, only about twenty-eight of the forty or so large concessions in French West Africa were still operational, collectively working less than 30,000 hectares. Only a handful of these continued to work palm concessions, with most pursuing coffee, cocoa, or rubber.[23]

In French Equatorial Africa, with a smaller population dispersed over a vast area, colonial officials offered companies gigantic concessions and incredible power over the people living on the land.[24] While rubber and mining attracted the most capital, reports of endless palm groves interested Lever

Brothers in 1910. Instead of negotiating his own concession, Lever bought what was once the largest concession in the world, the Compagnie Proprietaire du Kouilou Niari (CPKN). Holding rights to six million acres, CPKN seemed like a bargain at £70,000. An expedition sent in 1911 delivered bad news, however: reports had wildly exaggerated the number of oil palms, which "grew in scattered clumps, in no state to supply an oil mill."[25] Lever built a mill anyway, but couldn't find workers to cut fruit. He disassembled the machines in 1913 and shipped them to Belgian Congo.[26]

Agronomist Yves Henry complained that Africans refused to "take long term responsibility" for working oil palms because the government was "reluctant to apply coercive measures." The only way to make machinery work, Henry concluded, was "the payment of a price which removes all interest in treatment by the native." But this was out of the hands of anyone in Africa and depended on consumers of palm oil and kernels in Europe and on competing fat industries around the globe. Writing in 1918, Henry argued that the only path forward for a mechanized palm oil industry was within a plantation, where managers could control the palms and the people who harvested them.[27] Yet while French colonies remained open to capitalists into the 1920s, colonial administrators increasingly pinned their hopes for oil palm exports on small-scale farmers.[28]

"Some Light Compulsion" in Germany's African Empire

Germany's time as a colonial power in West Africa was short: not even three decades, from the Berlin Conference of 1885 to Germany's loss of Togo and Cameroon in 1914. Although the two colonies were very different in size and environment, colonial officials used coercive policies in both to provide European companies with land concessions and low-cost labor.[29] Prosper Müllendorff, editor of the *Kölnische Zeitung*, responded to early criticism about these practices in a 1902 speech. "I do not pretend that there has not been some light compulsion used on the workmen." But he insisted that coercion was necessary to keep concessions running, and he claimed that Africans were better off for having earned cash wages.[30]

German scientists working in Cameroon and Togo were early advocates of a plantation system in the oil palm industry, arguing that labor costs were compounded by relying on "natural" palm groves with tall trunks and variable yields.[31] In a 1902 paper, scientist Paul Preuss argued that a hectare of palms run as a plantation would pay more than a hectare of cocoa, the crop that was luring many Africans away from oil palm. But this calculation

assumed that machines were processing the fruit. A skeptical French expert calculated that simply cracking the kernels from that hectare of palms (2,235 kilograms) without machines would take four people an entire year. Extracting the oil (1,095 kilograms) would take two people three-quarters of a year.[32] Without machinery, plantation cultivation made no sense.

Germany's Colonial Economic Committee offered a prize for the first practical palm oil mill, jumpstarting interest in mechanization. Germany's Haake company won the prize in 1902 with a set of machines that cooked and shredded fruit, separated pulp from the kernel, squeezed out the oil, and then dried and cracked the kernels. Two German plantations in Cameroon and a French concession in Dahomey installed the machinery to great fanfare. But they were far too big and costly for African elites to consider; the intended customers were European capitalists with large tracts of land. To feed the new machines, administrators ordered chiefs in Cameroon to plant twenty-five oil palms for every house in a village, and fifty for each new house built.[33]

Farmers weren't enthusiastic about raising seedlings and harvesting fruit for the mills, however. The prices offered per bunch were low compared with prices for finished oil. Men avoided produce-buying stations out of fear of "being caught by a recruiting agent and forced to work on some distant plantation or on the government railway."[34] By 1913, at least 18,000 Africans were working—often involuntarily and under harsh conditions—on Cameroon's fifty-eight European-owned plantations.[35] Among those plantation owners were the Dutch soap and margarine firms of Jurgens and Van den Bergh. Their directors were cautious about investing in Cameroon, despite the "light compulsion" provided by government. The two firms partnered on a 3,000-hectare concession in 1908 using the Haake mill, planning to gradually replace fruit bought from villagers with a plantation. The project stalled and was abandoned when the First World War broke out, however.[36]

In Togo, Germany conquered a population already busily at work in the palm oil and kernel trade. Like neighboring Dahomey, Togo already had some oil palm plantations founded by local traders and Afro-Brazilians, many of them former slaves who returned to their homeland as entrepreneurs.[37] Colonial officials focused on rationalizing African agriculture, introducing new machines, plant varieties, and farming techniques.[38] But several companies did get big land concessions, including one firm that started an oil palm plantation at Agou. The firm installed a stamp mill adapted from oilseed crushing (figure 5.1). The process was the same as African palm oil methods, but with steam power replacing human muscle, and steel-shoed hammers taking the place of wooden pestles.[39]

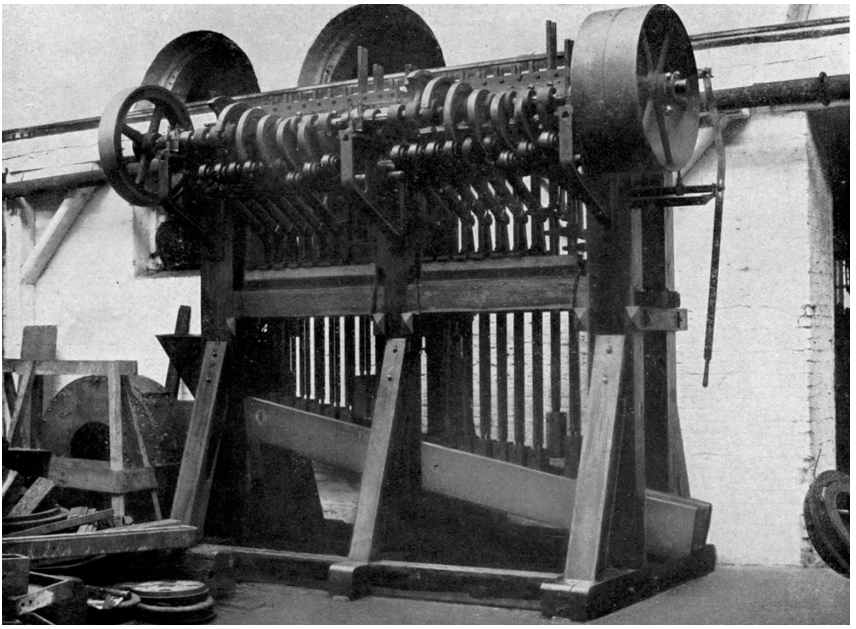

FIGURE 5.1 The Humboldt company's stamp mill for pounding palm fruit, similar to the machine installed at Agou. A belt drives the upper camshaft, which raises and drops hammers on fruit in the angled trough. Soskin, *Die Ölpalme*, facing 48.

At least 960 people labored to feed the machines at Agou. When British forces seized the plantation in 1914, only 184 were willing to return to work, giving some indication of the popularity of the experiment.[40] The British soon received a joint letter from King Kofi and King Leleklele recounting the plantation's troubled history. A certain Dr. Grüner arrived in 1898 "asking me to give them some land to buy but I and my old [elders] don't agree," the kings wrote. Grüner "said that if we failed to give him, he will let his soldiers fight with us, and kill us with gun." Grüner took "all the land from our hand," leaving the people with "no place for us to plough." Hoping to make their case in colonial courts, the kings hired a lawyer for the princely sum of £25, but he never came. The British officer who received the letter noted that King Kofi brought "the actual bag of money forced on him some nine years ago which he has left untouched."[41]

Though they removed the German staff, the British didn't give the land back. Instead, they let villagers farm the plantation in exchange for weeding and cleaning the palms, hoping to study the experiment in palm mechanization. British managers complained about villagers gathering palm fruit for their own use and admitted to threatening villagers with eviction to keep

them pruning and weeding.[42] After a year, the results proved disappointing. A British officer reported, "the oil produced by the natives in Togoland is very good quality, and the oil produced by our machinery [at Agou] was very little better than that produced by the natives." The machinery got 12 percent more oil out of palm fruit than did the local methods, but this hardly justified the expense of the machines and the whole plantation system.[43]

The main lesson learned from Germany's oil palm experiments was that a steady pool of labor was required for any mechanized mill. No matter how good the machines or stands of oil palms were, they were useless without people to cut fruit. Neither Togo nor Cameroon provided a model for the victorious British and French, as it became clear that the German projects relied on a politically unacceptable amount of violence for their very existence.

Concessions in British West Africa

Unlike their French and German colleagues, British officials were cautious—overly so, argued some contemporaries—about granting concessions. Sir William Lever had multiple bids for concessions in Nigeria rejected; he blamed haughty attitudes toward industrial capitalism among colonial officials, along with what he thought was misplaced respect for African land tenure systems.[44] But Lever, Jurgens, and other firms had acquired stakes in oil and kernel trading companies before 1914, and they were successful in winning concessions in two other British colonies, Sierra Leone and Gold Coast.[45]

The race for concessions began in earnest in 1907, when Lever—armed with patents for a new machine for processing palm fruit—approached the government of Sierra Leone. The company's plan was straightforward and brash: Lever Brothers would build a factory and light rail network in the midst of palm groves that were "practically wasted."[46] The government would grant a ninety-nine–year monopoly on fruit purchasing within a circle twenty miles across. The company stressed, "We desire that no compulsion should be used in influencing the people, the aborigines being absolutely free to carry their produce to our mills or elsewhere as they pleased." But Lever only planned to offer £1 per ton for palm fruit. The governor did the math: about 2.5 pence per day for a fruit cutter. A government head porter—hardly an enviable job—earned 7 pence.[47] The governor nonetheless agreed to the proposal with the lease reduced to twenty-one years, and a surveyor offered encouraging news that "palms grow in greater profusion than in any place I have yet seen" around the proposed site at Yonibana.[48] But now Lever stalled, refusing to respond to Sierra Leone's counteroffer.

Unlike the French and Germans, British officials in West Africa made no claim on "vacant" land if Africans asserted rights to it. As one governor put it, "The ownership of the palms is not in dispute: they are the property of the native inhabitants."[49] Europeans were free to negotiate with African landowners, and some did. One group acting on behalf of British soap firms leased more than 36,000 hectares in central and western Gold Coast, setting up a network of small mechanized palm oil mills as "Palm Oil Estates Managers Ltd." (POEM).[50]

Officials in Gold Coast and Nigeria told Lever that he was welcome to negotiate leases and set up machinery, but they refused to grant monopoly rights over anything more than a small circle around a mill. Lever set up three kernel-crushing mills in 1910 to test the waters, but they were unprofitable messes. Lever's managers didn't trust Africans to manage the machines, and the cost of hiring Europeans heaped up operating expenses.[51] There was no local market for kernel cake, and the puncheons used to carry kernel oil leaked, causing "tremendous wastage." When Lever Brothers sent specialized tankers to carry the oil, they incurred the wrath of the monopolist Elder Dempster steamship line, which threatened to cancel freight rebates it used to reward its big customers.[52] Rival traders also bid up kernel prices, hoping to force Lever to quit—which he did.

The experience convinced Lever of the importance of a monopoly to keep competitors from starving his machines. He reopened discussions with Sierra Leone and other colonies in 1911, noting that his machinery was "now perfected."[53] Some top officials in London urged the colonies to accept Lever's proposals, predicting that his machinery "will eventually so reduce the price of oil so that its extraction by native methods will no longer be remunerative."[54] But African elites ferociously opposed monopoly concessions. One writer warned his countrymen that leasing palm groves was a "policy of killing the goose that lays the golden eggs," depriving Africans of food and wine from their own trees.[55] "Do not idly think the country is being developed for you," wrote a Sierra Leone columnist.[56]

Lever never got his monopolies in Nigeria, but British authorities made sure he and other big investors could lease tracts in Sierra Leone and Gold Coast without the kind of competition from smaller firms that had doomed the kernel-crushing venture. To keep out amateurs, British authorities announced that concessionaires would have to spend at least £15,000 on machinery and buildings in the first year. This was a fateful decision: the POEM mill-builders in the Gold Coast had spent only £48,714 on their fourteen separate concessions. The German mill installed at Agou cost only £3,500.

The £15,000 policy forced Trevor's Pericarp Syndicate to set up in Ivory Coast rather than in Gold Coast.[57] Under these conditions, Lever Brothers finally signed an agreement for one concession at Yonibana and started paperwork for a second. Other European firms joined the rush, but the outbreak of the First World War in 1914 prevented them from breaking ground.[58]

The Sierra Leone and Gold Coast concessions that did begin operations experienced the same problems with labor as their counterparts in French and German colonies. Europeans significantly overestimated how many fruit bunches a man would cut in day, as well as underestimating how much wages would cost. One Lever manager suggested a man could cut 100 or even 150 bunches a day. Sierra Leone's governor thought fifty was a more realistic number, and a Lever employee working at Yonibana noted that fifteen or twenty bunches was all that the mill could expect from a man. He reported: "we have been successful in obtaining several tons of fruit only, and this mainly through the good offices of Chief Fulla Mansa," who signed a contract to supply fruit through his slaves and retainers. The Sierra Leone government threatened to withdraw annual subsidies worth £160 if chiefs failed to deliver more fruit cutters. Officials dangled a carrot alongside this stick, noting that the mill would pay £6,000 in wages for a year's worth of fruit.[59] The governor urged the mill to offer higher prices, even temporarily, but Lever Brothers refused to budge. Palm oil had to be cheap and profitable from the start.[60]

After asserting that the chiefs could not conceive of what a ton of fruit looked like, the company measured out a heap of fruit as a demonstration. The chiefs collected their own heap of comparable size, and had it turned into oil and kernels by hand. The results were clear: Lever Brothers offered £1.5 per ton, but the finished oil and kernels were worth £4. The price of fruit had to come closer to £4 before the chiefs would consider selling to the mill. POEM had the same experience in Gold Coast: they offered men 1s. 6d. for cutting twelve bunches per day, but men demanded nearly the full value of the finished oil, 2s. "You cannot induce him to believe that by selling that fruit without the trouble of extracting its oil . . . he is not losing 6d.," complained one European. He added: "however ridiculous it may appear, I think it is this belief which is behind the whole difficulty of production."[61]

The charge, in effect, was that African men were acting irrationally. They couldn't see the value of labor-saving machinery: "To the native, time and labour do not count and are not reckoned as factors at all when calculating the cost of a manufactured article," one official argued. But as another pointed out, "If all palm fruit were carried to a mill the women would

escape their share of the work." So long as men could exploit the labor of wives, children, slaves, and other dependents, it was eminently sensible for them to keep making oil in the household. Women didn't climb trees to cut fruit, and by 1914, they had few other ways of earning a cash income in places like rural Sierra Leone. "I cannot imagine the Sierra Leone native taking kindly to a system whereby he did all the work and his wife none," an official noted.[62]

Land woes added to labor problems for concessionaires in British colonies. The POEM group found one of its Gold Coast palm leases enmeshed in a bitter dispute over the kingship of Ahanta. Partisans of one claimant inflicted "a series of outrages" on mill employees.[63] POEM muddled through the 1920s, importing laborers from Nigeria but finding itself unable to get rights to enough new groves to run an economical business. An anonymous Briton wrote about his own "bitter experience" with land and labor on a Sierra Leone concession.[64] By the 1920s, many Britons agreed that a successful palm oil concession would require "a monopoly of land and people, which amounts to robbing them of their birthright."[65] Colonial officials knew that their power was precarious, resting on the support of pliable chiefs and kings ("indirect rule," in colonial parlance). Seizing land would create political problems that might topple the whole system.

That didn't stop Lever Brothers from joining a committee with other big buyers of palm oil and kernels in a 1923 campaign aimed at opening up Britain's colonies for new concessions. Asserting that "the African of the farming class is not accustomed to regular work," the committee argued that only European capital could develop the oil palm industry.[66] They issued five demands to Britain's imperial government:

1. ninety-nine-year leases or freehold property for mills,
2. twenty-one-year monopolies on fruit buying and factory processing of fruit,
3. leases or freehold title for plantations up to 5,000 acres,
4. government coercion to force fruit deliveries under contract, and
5. monopolies on machine transport around mills.

The committee really presented only two paths: taking African lands for plantations or forcing Africans to work their own groves under monopoly conditions.[67]

Nigeria's Governor Hugh Clifford took the idea of colonial "trusteeship" seriously, believing it was his duty to promote the best interests of his African subjects (and to decide what those interests were). He balked at the

proposals, preferring gradual evolution to radical change.[68] Other officials warned that the committee's proposals were merely "a renewed attempt to fix the shackles of monopoly on the West Africa palm oil and palm kernel trade," with no benefit to Africans.[69]

Clifford pointed out the "unpalatable fact" that companies like Lever Brothers needed Africans and their oil palms more than Africans needed Lever.[70] If British businesses were willing to put long-term industrial development ahead of profits, Clifford was willing to grant special privileges.[71] But British capitalists insisted that businesses had to make money quickly and that African farmers could not be trusted to deliver fruit at market rates. At a minimum, they sought a "nucleus" of plantation land to keep costly machines running.[72]

The Colonial Under-Secretary, Ormsby-Gore, eventually settled on a different idea: paying subsidies to mills to help them—and local farmers—adjust to a new way of working with oil palms. Alarmed by discontent over taxation in Nigeria (see chapter 6), Ormsby-Gore was eager "to show the Nigerian natives that the policy is not dictated by greedy concession hunters or European firms out for profit but to ensure the export of Nigeria's greatest natural product in the future." Ormbsy-Gore wrote, "I know this is rank socialism but so are other things in West Africa and we can't afford to be doctrinaire."[73]

The first subsidized mill opened in the Gold Coast, where the *konor* (king) of Krobo had long been agitating for machinery and investment in the oil palm industry.[74] The African & Eastern Co. (A&E) reported that villagers around its new mill at Bukonor were excited: "the women were always more eager than the men in their desire [for the mill]." Men had left to work cocoa farms, and women hoped the mill would lure them back to their palms and families. The *konor* promised to supply all the male harvesting labor needed.[75] He and his chiefs agreed to a fixed-price fruit-delivery contract, and despite reservations about the price and the size of the box farmers had to fill, the *konor* insisted he "would see that this people accepted it."[76] The colonial government promised the mill a rolling subsidy based on fruit purchases, recognizing that the machinery had to operate close to full capacity to repay the investment.[77]

When the mill opened, Krobo men found the prices too low. Women turned against the mill when they realized it would cost them their kernel-cracking earnings. The *konor* could not convince or compel his subjects to climb trees and sell fruit to the mill.[78] The mill worked intermittently through the 1930s, but it could never get enough fruit. The cost of the equip-

ment and the salaries of the white managers who oversaw it meant that the mill needed to sell its oil in Liverpool at about £25 a ton. By 1933, the price was closer to £15 and dropping. The government gave up on the plan in 1937, shipping the machinery to Sierra Leone, where the next subsidized project was slowly unfolding.[79]

In Sierra Leone, the A&E agreed to invest £8,000 in a mill, but only if the colonial government put up an additional £16,000 and had a "nucleus" plantation ready when the machines arrived.[80] Surprisingly, the government agreed. In the depths of the Depression, it was desperate to modernize the oil palm sector. The nucleus plantation at Masanki was built with prison labor and was supposed to teach local farmers how to get the most out of their oil palms. Behind schedule and over budget, the plantation had only a few hundred acres ready when the machines from Bukunor arrived. The United Africa Company (UAC, which absorbed the A&E in 1929) offered to take over the project in 1939, but only if the government turned over 7,000 more acres. The government declined and abandoned the whole scheme in 1941 after a short experiment with hand-powered presses.

The governor explained, "the object of the undertaking is not primarily to enable this Government and the [UAC] to engage in a profitable trade, but to provide an 'object lesson in the application of modern scientific and commercial methods to the cultivation of the oil palm and the preparation of its products.' . . . It seems to me that the lesson has now gone on long enough to achieve its object."[81] Officials in Nigeria reached a similar conclusion after debating a series of UAC proposals, which included subsidies and requests for thousands of acres of land for plantations.[82]

The cumulative experience in British West Africa proved to UAC that "a palm plantation and mill should form a self-supporting unit, and should not in any way be dependent on supplies of fruit being brought by African farmers." A weary Nigerian government finally allowed UAC to lease land for two oil palm plantations in southeastern Nigeria in the mid-1930s, but UAC admitted that early results with seeds imported from Sumatra were "disappointing" and "unpromising."[83] In 1936, the government "decided that it had opened too far, and pushed [the door] back again," closing off access to land for foreigners.[84]

Belgian Congo

Sir William Lever failed to get monopoly concessions in Nigeria in 1911–14 and again in 1923, but he had more luck in Congo. The Congo basin hosted

some of Africa's largest palm groves, but it was a minor palm oil exporter during the nineteenth century. That began to change with the 1885 Berlin Conference, which put a new power in charge of the region: Belgium's King Leopold II. Leopold claimed the region as a personal fiefdom through an entity called the "Congo Free State."[85] It was a "surrealistic oddity: a colony without a metropolis," ruled by Leopold, not Belgium, "in his imagined capacity as head of a federation of Congolese chiefs."[86] Leopold's brutal management of the Free State killed countless people through violence, overwork, starvation, and disease. Export duties on palm oil and kernels made up half of the Free State's revenue by 1890, but the trade was soon overshadowed by wild rubber.[87] Horrifying photographs of adults and children with limbs amputated as punishment for failing to meet rubber-collecting quotas helped galvanize opposition to the Free State in Europe. In 1908, the Belgian government forced Leopold to hand over Congo, making it a colony of Belgium rather than the king's personal property.[88]

Belgium was eager to remake Congo as a model colony. Capitalists willingly invested in Congo's copper mines, but they were skeptical about agriculture. In 1909, colonial minister Jules Renkin sent out agents to drum up interest from foreign investors. The government had its sights set on rubber, hoping to replace the collapsing wild rubber industry with plantation trees. Lever heard Renkin's pitch as he was negotiating with British officials for oil palm concessions. Lever sent two teams to survey Congo's palm groves. As historian D. K. Fieldhouse put it, "The future success of [Lever's project] largely turned on how well these men did their job." Unfortunately for Lever, "they did it badly."[89] One critic alleged that the surveys consisted of "a walk of a few miles into the interior" at three sites, supplemented by "unreliable and vague information" from traders and government officers.[90]

Lever wanted estimates of oil palm density: his intention, like other concessionaires, was to set up machinery in the middle of palm groves and start making oil immediately, saving the trouble of planting new trees.[91] There seemed to be "several million acres" of oil palms across Congo, and only a fraction of them appeared to be used by Africans. After hearing encouraging news, Lever told the Belgians, "Central Africa was not the country for rubber, but for oil."[92] Renkin enthusiastically agreed, boasting that Congo was "a land that literally drips with oil." He played up the idea of huge palm groves going to waste. "The natural product is badly exploited by the natives," he declared.[93]

Lever should have paid more attention when Albert Thys—a man with considerable experience exploiting Congo's people and forests—refused to

join him in a new oil palm project. Thys wrote: "My dear Sir, form a company to exploit the wild oil palms in the Upper Congo, hopeless, there aren't any palms worth mentioning and I know my Congo." Thys urged Lever to invest closer to the mouth of Congo River, but Lever trusted his own experts and pressed ahead.[94]

In 1911, Lever formed a new company, Huileries Congo Belge (HCB), which then signed a treaty with the Belgian administration. Three things set HCB apart from other oil palm concessions. First, the concessions were enormous. HCB could pick out the most desirable land in five "circles," each covering more than a million hectares. If HCB met performance benchmarks, it could convert leases into freehold title in 1945. Colonial law limited African property rights to villages and farmland under active cultivation, making most palm groves fair game for HCB's surveyors. Second, the Belgian government used state power to provide HCB with labor that it could not otherwise recruit. Third and finally, Lever's own dedication to the project mattered a great deal. Lever poured money into HCB, and no one could convince him to abandon the project or reduce his ambitions as the project soured. In late 1912, he personally visited Congo, choosing sites for three oil mills in his "circles."[95] According to Lever's son, "Not a palm area was selected nor a site chosen, except on his authority; not a building was erected unless the plans had been passed by him, and very often these plans were largely his own."[96] Lever meddled in decisions as petty as what went into workers' "chop boxes" (they were horrified to find that he picked canned sheep's tongue).[97]

Lever's confidence in his own judgment and in his experts plagued HCB for years. To Lever's eyes, his Congo circles were full of "healthy and strong" palms, "fruiting as well as they can be expected to do in a wild tangle of bush with palms overcrowding each other."[98] Intending to "improve" the groves, HCB cut away young palms and brush. "It looked much nicer to have trees 30 feet high," remarked colonial agricultural director Edmond LePlae. This was a European vision of what a palm plantation should look like—tall trees, with bare ground between them, perhaps influenced by Lever's earlier foray into coconut plantations in the South Pacific.

Yet as Congolese farmers knew, old trees were too tall to climb and could be poor producers. HCB learned the hard way that the best trees were between ten and twenty years old.[99] HCB also discovered that brush and weeds were in fact an important part of fertility, protecting and regenerating the soil. "Clean-weeding" was an obsession of early-twentieth-century colonial plantation managers, who wanted to remove all plant competition from

FIGURE 5.2
A pruned oil palm in a clean-weeded palm grove in Congo, ca. 1912. Stereoscope slide in author's collection.

their land (figure 5.2). It took years for colonial experts to recognize the mistake.[100] As scientists working in Congo later discovered, exuberant palm groves didn't mark fertile soils, they built them. A 1942 report concluded that grove improvement and full-fledged plantation agriculture broke the nutrient cycle, while the "wastage side of the cycle, the rotting away and oxidation of the humus, continues—indeed, it is hastened by exposure to the tropical sun." The humus "very soon vanished into thin air."[101]

European scientists working in Congo eventually developed a good deal of respect for local agricultural practices. They praised Congolese farmers as "native Conservators," carefully managing the bush by felling undesirable trees and preserving valuable ones. "They will also never cut a palm tree," one official remarked.[102] A former HCB manager explained that although the land was "not 'cultivated' like a European coconut estate," it was nonetheless intensively managed. Farmers rotated crops and land through forest fallow cycles. Oil palms were so valued that communities held meetings to discuss the fates of diseased trees. Farmers were disgusted by the colonists' taste for palm "cabbage," which required the destruction of the tree. It was "about as economic as burning a house down to roast a pig."[103]

By 1915, HCB was already preparing to replace palm groves with plantations in the three northern circles where palms were much scarcer than an-

ticipated.[104] But progress was slow. Clearing primary forest and palm bush for plantation agriculture was enormously expensive. A 1935 report estimated that it took fifty work-days to clear a hectare of grassland, 100 work-days for brush, 200 for light forest (which described many palm groves), and 400 for primary forest.[105]

The machines that were supposed to be at the very center of the HCB project also disappointed. Lever's steamship fleet suffered from constant breakdowns, and the first palm oil and kernel-cracking machines revealed serious design flaws. According to an HCB employee, sixteen of the units shipped to Congo were little more than "a lot of scrap knocking about" and were cannibalized to make a few working machines.[106] They were later replaced with new designs using centrifuges, rather than presses, to extract oil. By the 1920s, these new facilities were turning out top-quality oil, but like oil mills across western Africa, they were useless without labor to feed them with fruit.

HCB initially bought fruit from local people within the five "circles," working on the naïve assumption that they had left palm produce rotting in the groves for lack of a market. If this was where HCB had stopped, its experience would have differed little from other European concessions. Lever's treaty granted him the right to harvest trees in his concession zones, however. Company employees could cut fruit in these zones, regardless of whether local people claimed ownership of palms.[107] Officials were supposed to investigate the history and legal customs governing land before alienating it, but many simply ignored the law, declaring land outside actively cultivated village fields to be state property.[108] Company employees harvesting what were ostensibly wild trees provided most of HCB's palm produce through the 1940s.

The 1911 treaty required HCB to pay minimum wages and provide food, housing, and medical care to workers.[109] When Sidney Edkins arrived to work for HCB in 1911, however, he found few people eager to work for the company despite the amenities. Ivory hunters, rubber traders, slavers, and railroad builders had taken a horrific toll on the population during the Free State era. Edkins complained that in the Upper Congo, "hardly a village was to be seen" along the railway lines. Forced labor "had practically exterminated the existing population for a distance of 50 miles either side of the track, in addition to thousands of imported labourers."[110] All along his journey into Congo, he found abandoned villages and "miserable beings" suffering from sleeping sickness. "The remaining population was in such poor physical condition that they no longer had the energy to keep the larger wild animals at bay." Elephants and buffaloes raided farms and "appeared to

have lost to great extent their fear of men." Edkins recalled a young European killed in an elephant raid on Leverville in 1913, found with a bent gunbarrel and a face smashed to a pulp.[111]

The Belgians—and some contemporary scholars—argued that apocalyptic descriptions like this exaggerated the situation.[112] Yet when Lever visited in 1912, he acknowledged that labor was scarce. Instead of raising prices paid for fruit, Lever asked for police patrols in the countryside, which could round up men to work to pay their tax bills.[113] Lever was convinced that Africans simply didn't want to work. He complained, "The Palm tree is in these parts the Banking account of the native . . . His bank is always open when he wants to draw on it."[114]

Colonial taxation was one of two tools used to find labor for HCB and other enterprises in Congo. The government charged men a head tax and levied taxes on wives, pressuring wealthier men to pay more. Notably, the taxes had to be paid in cash, not palm oil. This meant taxpayers had to sell produce to a trader or work for a foreign business.[115] In the Elisabetha circle, one of Lever's five concession zones, the tax was set so high that men would have to cut fruit for forty-eight days to pay it. Workers got food and housing while on duty, but they would pay everything they made in that term to the state. In the Barumbu circle, HCB's director asked the government to spread tax collection throughout the year, hoping to prevent workers from spending a few weeks on the job, earning their tax money, and absconding. He also asked for higher taxes in oil palm areas, and for "moral assistance" in persuading chiefs to send their subjects to work. "The natives in our region are apathetic and lazy," he complained. Forcing people to work was in fact "defending the best interests of the black man."[116] In the midst of the First World War, Belgium withdrew many of its troops, prompting some Congolese to merrily tell HCB recruiters "that they would no longer go to work, having no need of money now that *Bula Matari* (the government) no longer had soldiers to collect taxes."[117]

The other labor-finding tool was the use of traveling recruiters, who enlisted men for three-year contracts. Recruiters weren't a welcome sight: in 1914, HCB agents were "met with a volley of arrows" on at least four separate occasions.[118] Officials paid chiefs for delivering labor recruits, but chiefs could be deposed if they failed to meet quotas. Chiefs often compelled younger men to sign contracts. But recruitment patterns were uneven, leaving some villages "practically depleted of able-bodied men while others were largely ignored."[119] A Belgian official tasked with recruiting men for HCB complained in 1925 that he "believes himself daily becoming more and

more a veritable merchant of men, when his villages become empty at his approach, as at the approach of a slave trader."[120]

At the Lusanga circle, an HCB official reported in 1915 that most of the workforce were in fact slaves, many of them children incapable of doing the work.[121] A 1931 report bluntly described the recruitment process in Kwilu: "The chiefs supplied slaves. The slaves, once designated, were resigned to their fate. They were given a work-book, a blanket and a machete. They were told what work was expected of them, and in general they do it fairly willingly." Slaves often had their three-year contracts automatically renewed. "In practice, a cutter is never set free but cuts fruit until he dies, or until his manager lays him off because of old age."[122] Climbing trees to cut fruit was considered slave's work in some parts of Congo; "few men would do it voluntarily."[123] A 1932 report claimed: "The native has a deep-rooted notion that once a cutter always a cutter. Even if the occupation were ten times better paid, it would continue to be despised."[124]

Climbing a palm trunk with a rope was arduous and potentially deadly work, and many men in Congo didn't even know how to do it.[125] One concessionaire in French West Africa declared that no tree over 35 feet tall was worth harvesting due the risk of deadly falls. In addition to the man falling off the tree, the tree itself might topple: the weight of a man at the top of a swaying palm could pull the shallow-rooted tree "right out of the socket."[126] Harvesters also risked encounters with venomous snakes in palm bush and at the top of palms. The greatest risk came from the tsetese fly, *Glossina palpalis*. The insect carries the *Trypanosoma* parasite that causes sleeping sickness, and it thrives in wet, shady palm groves. Villages weren't placed in the midst of "palm bush" for good reason.[127]

HCB learned that it could only expect six to nine fruit bunches per workday in typical groves. In Dahomey's intensively farmed palmeries, a cutter might get as many as fifty a day. The key factors were the condition and height of the trees, their distribution, the size of the bunches, and the distance from the collection point.[128] While HCB boasted about "how few minutes are needed to cut three or four of these clusters," other sources stressed that securing seven bunches in an entire day was "considered to be a difficult task to execute."[129] Men conscripted women as unpaid laborers, using wives and children to carry fruit from distant trees back to collection points. A doctor noted illnesses, deformities, and premature aging among women and girls subjected to this heavy work.[130] Men employed as cutters found it difficult to get married, since women knew they would have to carry fruit, adding to the unpopularity of fruit cutting.[131]

To earn the weekly ration, workers for HCB and other firms had to meet delivery quotas.[132] Managers showed no sensitivity to the seasonality of fruit yields or the distance and height of the palms. Instead, they employed sentries, one armed man "to harass 7 to 8 cutters," complained an official.[133] While HCB needed cutters to deliver fruit to make money, it faced additional pressure from the terms of the 1911 treaty. If HCB failed to meet export benchmarks, it could lose its leases. Belgian officials noted that company agents resorted to measures that were "hard to justify" when output fell. "[W]ithout any effort to find the causes of the drop in the production," agents used police and chiefs to whip and coerce workers. "We demand a constant return from them although palm kernel [*sic*] production is seasonal."[134]

At times, HCB failed to meet the standards set by the 1911 treaty, withholding clothing and rations. In a cruel irony, some workers were denied a regular supply of palm oil to dress their food.[135] Perhaps the most extreme penny-pinching involved prohibitions on collecting palm leaves: "We carefully measure out the leaves [from palms] necessary for their participation in tribal life, in agriculture, in the repair of their huts," one official stated. The company wanted to avoid damage to "its" palms from excessive leaf cutting.[136]

Conditions for Congolese farmers worsened after 1917, when Belgium instituted a policy of compulsory cultivation. Edmond LePlae, colonial director of agriculture, floated the idea in the Anglophone world in a 1914 article, noting the apparent success of forced labor in Germany's colonies. LePlae argued, "it would supply a fairly simple means of overcoming the apathy and heedlessness of the blacks."[137] He later declared, "It is deplorable to say to the natives 'Work if you want, you are free!' . . . It is necessary to engage the population in work, oblige them to produce and accumulate, and lead them by the hand."[138] The racist policy required Congolese families to plant crops dictated by officials. For some, this meant planting food crops to supply HCB and other firms. In other cases villagers planted new oil palms to renew and expand the groves for HCB. By the 1930s, two million Congolese were living under compulsory cultivation orders.[139] Failing to grow crops as ordered meant two months in jail. As much as one tenth of the entire adult male population of Congo was imprisoned at some point in the year for this and other offenses in the 1950s.[140]

Congolese men and women found ways to resist HCB's efforts to commandeer their labor and their palm trees. Edkins found a "secret village" hidden in the bush to escape recruiters, stumbling on a common survival strategy.[141] Theft and sabotage also plagued early HCB operations: Edkins noted that local people appropriated practically all movable metal objects

from the first settlement at Leverville. Entire railways vanished at three other locations. At Brabanta, three out of the five Europeans stationed there were allegedly poisoned.[142]

The best-known episode of overt resistance came in 1931, when a group of Pende men refused to work as cutters. Angry at HCB and other companies, Pende communities flocked to a new sect dedicated to the removal of European influences. Sect members then killed and dismembered a Belgian officer, and they fought with armed patrols sent to arrest them. By the time the revolt was crushed, at least 550—and probably more—Pende men and women had been killed. Back in Belgium, one politician sympathized with the rebels: "The reasons [for their rebellion] are economic in nature," he insisted, pointing to low prices offered for palm fruit and the high rate of taxation. "The revolt is simply the logical and inevitable consequence of this oppression." The widow of the slain official agreed: she told the press that foreign companies "have mistreated the blacks, and exploited them."[143]

Did all this coercion and violence work? At least 26,000 people were directly employed by HCB by 1930, and by the end of the decade, the company could export more than 60,000 tons of palm oil.[144] Many of these employees worked voluntarily, earning enough money to buy amenities like bicycles and sewing machines. Life in the concessions offered relative freedom for those fleeing oppressive elders and chiefs or slave status. Men from diverse ethnic backgrounds turned to age sets as a way of organizing and supporting one another, prompting colonial ethnologists to fret about the breakdown of tribal authority and the "proletarianization" of workers.[145] But most Congolese still avoided work as fruit cutters, and wherever a good alternative presented itself—selling handmade oil and kernels to merchants, growing other crops, or gathering copal (a fossilized tree resin, like amber) from the forest—people chose the alternative.[146] Belgian officials gradually clamped down on these escapes, banning the sale of oil and kernels to petty traders. But no policy could hide the fact that climbing trees was tough and unpopular work. And without labor to cut fruit, Lever's machines were useless, no matter how many palm trees Congo held.

Understanding Palm Groves

Lever called the palm groves he saw around Leverville "The grandest sight I have seen in any part of the world."[147] But he was dead wrong in thinking, like most Europeans, that they were a "gift of nature."[148] Belgian missionary Hyacinthe Vanderyst was one of a few foreigners who recognized the

anthropogenic nature of Congo's palm groves from an early date. Drawing on conversations with farmers in the Kwilu region of Congo, Vanderyst vigorously defended Congolese ownership of the palms. He heard oral traditions about the oil palm's ancient migration alongside humans, and he learned that farmers sowed palm seeds for the express purpose of building up groves. Scattered clumps of oil palms in grassland and scrub were signs of former villages rather than survivors of a destroyed rainforest.[149]

Many societies along the Congo River and its tributaries had clear rules about palm ownership: men who planted them and their heirs owned them, though a grove in a long-abandoned site might be open to anyone.[150] Earthen pits for pounding palm fruit could mark village and clan territory; a settlement without a historic pit "is subject to challenge on the grounds that the ancestor was incompetent or never existed in the first place."[151] Vanderyst stressed that many groves had been abandoned recently due to the sleeping-sickness epidemic (along with colonial depredations, though the priest avoided this subject).[152] This was true elsewhere in western Africa, where disease, war, and drought transformed large swaths of land in the palm belt, forcing farmers to abandon some areas and settle new ones.[153]

Yet for many Europeans, palm groves were synonymous with "forest" and were therefore wild. In nineteenth-century accounts, palms formed "the body of the forest" or were "intermingled more or less numerously among the common forest trees."[154] Accounts of Dahomey often described thick palm forest, when travelers were in fact moving along royal roads lined with plantations.[155] Some early works on oil palms were written by colonial foresters, working on the assumption that the palms were an integral part of the tropical forest.[156]

The French botanist Auguste Chevalier provided a rude awakening for Europeans, reinforcing Vanderyst's contemporaneous findings in Congo. Focusing on the Ivory Coast and Dahomey, Chevalier revealed that few, if any, palm groves were truly natural—in the sense that they nothing to do with humans. In Ivory Coast, Baoulé informants told him that their ancestors brought palm kernels with them when they migrated westward, recreating the palm groves of their homeland in a place that had previously been devoid of oil palms (N'Zi and Bandama districts).[157] Where others saw "forests" of palms, Chevalier learned to identify groves in varying stages of use and disuse.

Europeans were also slow to realize that *not* using palms was an important use. Fallowed oil palms fed animals, and scattered seeds for future palms; they also added significant amounts of biomass to the soil as fruit,

leaves, and trunks fell to the ground and decayed. Palm roots and leaf cover conserved rainfall and checked soil erosion. Without humans to prune leaves and clear away brush, palms failed to reliably set fruit and were overgrown. Crowded palms grew tall and lanky in their battle for sunlight.[158] Chevalier argued that palm groves were better thought of as human-made orchards than as forests. He drew an analogy with the Mediterranean region: what European would claim that olive trees formed a forest?[159]

In a proper forest environment, deciduous giants eventually overtop the palms, dooming them to rot in the shade. Where such forest trees can't grow, old palms suppress younger palms, before succumbing to old age en masse. As a detailed study of one site in southeastern Nigeria in the 1950s and 1960s showed, a grove established on a village abandoned in 1870 was practically gone by 1950. What was left behind was open country suitable for farming, with a few surviving palms scattered around—a far cry from the thick forest scientists once thought was the natural home of the oil palm. Another village site abandoned in 1900 had thinning palms giving way to farmland, while a village abandoned in 1930 hosted a healthy, dense palm grove.[160]

The rivers of southeastern Nigeria and tributary rivers of the Congo were the only areas where palms grew wild in large concentrations, taking advantage of riverbanks and swamps that kept forest species at bay. Yet ethnographic evidence from Congo shows that swampy groves were economically marginal, with most farmers planting trees nearer to their farms.[161] In Nigeria, a colonial forester concluded that—despite thick stands of palms along waterways—the oil palm was "a semi-domesticated plant" for all intents and purposes, growing where people made room for it.[162]

Ideas like "forest" and "farm" were of course European ways of seeing the world. African societies recognized contrasts between cultivated and uncultivated land, but this wasn't the limit of their environmental understanding.[163] Tamara Giles-Vernick's study of the Mpiemu people's environmental knowledge offers one example. Living in today's Central African Republic, the Mpiemu describe the environment through relationships and narratives, not by rigid ecological typologies. One kind of forest is recognized as "uncultivated," another as a place to hunt game, and another as a place where the understory is so thin that a person can see another person a long way off. Such understandings extend across time, recognizing past uses and populations of species that might no longer exist.[164] In Nigeria, Igbo farmers similarly used at least seven distinct elements to classify farmland: geographical location, vegetation types, soil structure, soil color, historical uses, drainage characteristics, and ownership or tenure.[165]

Africa's palm groves reflected generations of farming and management of the landscape. They were neither completely natural nor entirely human built, but rather emerged as "a cultural creation and a lived environment."[166] It took a long time for colonial science to accept this fact, but by 1949, the leading Belgian oil palm researcher declared "that the oil palm did not occur in a truly natural state in the Belgian Congo. . . . Wherever it occurred it revealed the habitation of man."[167]

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The importance of humans in building, maintaining, and exploiting Africa's oil palms meant that any capitalists—no matter how impressive their machines—had to address the human factors in production. Belgian Congo was the only African colony in which the mechanized model succeeded in producing large amounts of palm oil and kernels for export markets. But as a British official concluded, there was "no doubt that the system existing in the Congo is accompanied not only by monopoly rights, but also by some elements of coercion." The model was "unthinkable in a British protectorate."[168] "You cannot do this, and thereby convert them into slaves of European capitalism," humanitarian activist E. D. Morel declared, "without the use of armed force, pitilessly, relentlessly, and above all, continuously applied."[169]

If forcing people to climb trees and feed oil mills was unthinkable, what else could be done? And how had a country like Nigeria—where concessionaires barely made a mark on the oil palm industry—managed to double its oil and kernel exports between 1910 and 1930, dwarfing HCB's accomplishments in Congo? Chapter 6 turns to the other side of the colonial story, examining how Africans worked with and against colonial governments to expand and transform the "traditional" oil palm industry.