



Harbors, Animals, Trains

On a slightly windy February day in 1903, perfect “emperor weather,”¹ the *Mole* concrete pier in Swakopmund finally opened. Getting to that moment had taken time and effort. But now, the pier was packed with dignitaries, workers, and curious onlookers. A postcard captured festivities that day—after all, the construction had taken three and a half years. Now, crowds came to see the 365-meter-long structure stretching into the unpredictable coastal waters. As Governor Theodor Leutwein recalled later, “It had been a hard fight, that now played out between human skill and energy and the power of nature. Again, and again the waves pushed the heavy concrete blocks that had been sunk in the ocean away, and again and again were they replaced until finally, they proved to be stronger and the *Mole* could open up for traffic on 12 February 1903.”² Nature had been conquered, it seemed, or at least harnessed. To celebrate, countless visitors flocked to the small coastal town. German consul to South Africa, and future governor of the colony, Friedrich von Lindequist, later commented on the lush green vegetation defining Swakopmund that day.³ It had rained. The responsible hydraulic engineering surveyor Hermann Friedrich Ortloff, his deputy, and countless unnamed African workers—segregated based on status and race—crowded the new harbor to watch various ceremonies.⁴ The mood on the pier was elated, celebratory, certainly optimistic. Officials were confident that this structure would bring an upturn for the colony. No more fees and restrictions at nearby Walvis Bay. Instead, and from here forward, German ships could deboard “comfortable and without problems.”⁵ That the rough sea again took its toll and destroyed parts of the *Mole* in the coming months was no problem—after all, the harbor in Cape Town did not have it much better.⁶ According to the Swakopmund-based newspaper *Deutsch-Südwestafrikanische Zeitung*, little in that sense could dampen German confidence now that the colonial power had its very own harbor and entry port, conquered in the communal “fight against the sea.”⁷ And so, after a final “beer evening” and a last hail to Swakopmund, a satisfied engineer Ortloff left the colony with a job done.⁸

Harbors and ways to reach central Namibia are at the center of chapter 3. Environmental factors had made transportation to and into the colony difficult. Although German newcomers relied on the labor and expertise of West

African Kru men, bigger investments into infrastructure to ease the landing process had become essential. Ox wagons simply could not keep up with demand, especially once the *Rinderpest* epizootic disrupted transport. Animal transfer with the introduction of camels from Tenerife had failed while local resistance further threatened colonization. The situation became increasingly precarious. A concrete pier and a small-gauge railway, means traditionally described as “tools of empire” and “penetration,”⁹ were supposed to solve such logistical nightmares. Understood more recently as “imperial infrastructure,”¹⁰ these structures would surely bring a transformation from African wasteland to productive settler space. Maybe, some hoped, such investments might even help divert German settlers otherwise lost to the United States. The roles and rule of experts, including imperial self-perceptions and the dismissal of local expertise, mattered. Such human ingenuity and labor have been widely discussed by scholars.¹¹ But African labor, natural forces, animal dependencies, and diseases also shaped structures, especially in times of racialized biopolitics tied to *Rinderpest*.¹² After all, and as partially sketched out by historian Philipp Lehmann for Southwest Africa, “In this most arid of German colonies, infrastructural development ran up against unprecedented environmental difficulties, and the tried and tested strategies and experiences from other European and colonial battlegrounds proved to be inadequate.”¹³ The concept of environmental infrastructure allows for the incorporation of these factors, be those human (e.g., ingenuity, labor), non-human (e.g., pathogens), or natural forces (e.g., currents, wind)—and by doing that help complicate, disrupt, and rethink existing understandings and storylines.

Chapter 3 follows German colonial settlement patterns from the Atlantic Ocean across desert landscapes. The first section focuses on the creation and improvement of harbors. Apart from Lüderitzbucht, it became namely the town of Swakopmund where human ingenuity, labor, and natural forces shaped structures. The next section then highlights efforts to reach inland. Forces defining desert landscapes, as well as a non-human agent introducing the *Rinderpest* pandemic, threatened colonial ambitions. Stories around animal engineering and the fight against this pathogen capture German desires to overcome such challenges. The construction of the railway then holds together the final section. Seen as a silver bullet meant to control, rule, and transform the land, railway imperialism fueled colonial narratives of conquest and defined stories around an emerging white settler space.¹⁴

Technological Marbles

“The sun casts a dazzling light through the haze of thin clouds over the sea and beach.” These are the words of the editor of the *Deutsch-Südwestafrikanische Zeitung* newspaper Georg Wasserfall. It was the year 1901, and he described

the landing process in Swakopmund. “The sea scintillates with color: streaks and spots of light-green alternate with light-blue as the thin clouds in the air part to allow patches of the blue sky to show through.” After further painting a picture of the beautiful scenery, his gaze wandered to “a stately steamer” offshore. “Between it and the shore a large number of rowboats traverse in uninterrupted traffic to unload their cargo. A small steam launch brings the boats near the beach, the oars dipping into the ridge of the last wave, rushing a boat with the speed of an arrow onto land and in the next instant placing it securely upon the sand bank.”¹⁵ Some of these surfboats had been specifically developed by the company Lührs for landing on the West African coastline.¹⁶ Teams of skilled Kru men, employed to compensate for a missing natural harbor and landing structures, loaded, rowed, and unloaded newly arriving cargo. Accidents were not rare. In June 1899, for example, a landing boat shuttling between steamer *Lothar Bohlen* and Swakopmund tipped over in the rough of the Atlantic Ocean. According to one paper, “a boat with fifteen men capsized about thirty meters away from the surf.”¹⁷ The sea was not particularly harsh that day—newly arriving passengers had just stood up in the boat too early. It shifted, turned sideways, and tipped. Search efforts began right away, retrieving twelve. At that point talk about the construction of a harbor had already been widespread. A popular tune sung regularly in a ballroom in Klein-Windhoek at least dreamed of a long, wide, and solid pier, and easy landings without Kru men and accidents.¹⁸

Further south, in Germany’s only natural entry point, Lüderitzbucht, infrastructure projects had defined efforts to ease landing for some time. Originally, the South African Territories Syndicate Ltd had held a monopoly on any such work. Although promising to build a railway,¹⁹ a lack of landing structures or potential for trade made such ventures pointless.²⁰ Eventually the German Colonial Society stepped in. In 1895, the *Deutsche Kolonialzeitung* newspaper, the mouthpiece of that society, had confidently outlined that “with little effort, Lüderitzbucht could be turned into a rather good harbor.”²¹ Two years later the Colonial Society began with the construction of a small wooden jetty. Virtually all materials had to be brought in. The completed jetty was 140 meters long; by 1898, it was extended by about another eighty. The Colonial Society also brought in a steam crane and established a small coal depot allowing visiting ships to refuel.²² In July 1900, German workers then began blasting away the rocks at the entrance of the bay.²³ By the turn of the century, reaching and landing in Lüderitzbucht became somewhat easier.²⁴

Yet there had been little reason to stop there. Why call at Lüderitzbucht when there is no way to replenish water supplies? Even for the Woermann-Line, a German shipping company overseen by entrepreneur, politician, and avid colonialist Adolph Woermann, there was little economic reasoning for adding Lüderitzbucht to its service. Plus, without adequate water provisions, few could make the journey through the desert. The German Colonial Society



Figure 3.1. NAN 06653, “Pulling a half-drowned condensator out of Angra Pequena, ca. 1896,” courtesy of the National Archives Windhoek.

stepped in again, installing a so-called sun condensation unit. It was meant to produce drinking water out of the ocean using evaporation.²⁵ Whereas this sounds fancy, early units were no more than a wooden box filled with seawater and covered with a glass lid. It looked more like a hotbed used for gardening. In the winter, so between May and August, it could produce about five gallons of drinking water a day; in the summer about thirty-five gallons.²⁶ One observer who traveled to Lüderitzbucht in 1890 noted that “Back home, we give beggars a piece of bread, here the Hottentot wants just a drink of water!”²⁷ By August 1897, the Colonial Society then installed a much more sophisticated steam condensation setup: seawater evaporated to be collected on a glass roof (Figure 3.1).²⁸ While newspapers such as the *Deutsches Kolonialblatt* newspaper bragged about such improvements,²⁹ drinking water remained costly and hard to come by.³⁰

Farther north in Swakopmund, Germany’s main entry point and presumed competitor to nearby Walvis Bay, investments eventually began to pour in. Officially founded in 1892, ships had increasingly utilized the area to unload their cargo on the beachfront. At this point, that meant anchoring several kilometers off the coastline. Over time, more and more German newcomers arrived through this gateway. Governor Theodor Leutwein, for instance, came

ashore on 1 January 1894. Soon colonial enthusiasts began fantasizing about quickly overtaking and “gradually paralyze[ing] Walvis Bay.”³¹ Yet such rhetoric was no more than wishful thinking—by 1891 there were only 310 Germans living in all of Southwest Africa.³² At least settlers in Swakopmund had access to drinking water. Residents had hand-dug water holes in the nearby riverbed of the Swakop River, using sardine cans as ladles to get the water out.³³ Travel inland was also much easier. According to one memorandum submitted to the German parliament, oxen treks would be thankful for the new harbor in Swakopmund.³⁴ At the same time, currents, winds, fog, and shallow waters continually complicated the landing process. In 1896, a report published in a German maritime magazine pointed to the strong surf.³⁵ Hugo von François was confident that development would be simple. In his view, German ingenuity and expertise could easily build an excellent harbor. Silting-in, he voiced, would not be an issue. Observations and descriptions of the coastline had long circulated, among them, a report by Commander J. Heldt of steamer *Jeanette Woermann* who had experience landing there.³⁶ According to a summary published in a newspaper in 1895, the ship stopped in Walvis Bay first. There, “unfavorable harbor conditions” defined the landing and boarding process. Of course, this was not the case at the mouth of the Swakop two days later, when “not even one bag got wet.”³⁷ Whereas Heldt’s report was tainted by the author’s aversion toward Germany’s nearby colonial competitor, he favored a low-cost metal jetty.³⁸ Most officials, however, believed in the potential of a concrete pier—and ultimately decided to go with that option.

Efforts of what would eventually come to be known as the *Mole* began with a detailed assessment of the location. No other than well-known Naval Harbor Architect Heinrich Mönch, an expert on naval structures with experiences in Wilhelmshaven and Kiel, briefly visited Swakopmund in 1895; he put forward an estimate in 1897 and developed the overall plans.³⁹ Hydraulics Engineering Surveyor Friedrich Wilhelm Ortloff led the subsequent construction. Born in 1860 in Stettin, Ortloff had attended the Andreas Real-Gymnasium in Berlin-Friedrichshain before ending up at the Technical Institute Berlin, later rising to government master builder.⁴⁰ In November 1898 he arrived in Swakopmund, accompanied by around fifty workers from Germany.⁴¹ Adding to Mönch’s reports, Ortloff soon put forward a coherent proposal.⁴² A feasibility study of the proposal by the Königlich-Preussischen Ministeriums der öffentlichen Arbeiten (Royal-Prussian Ministry for Public Works) brought no complaints—although those experts acknowledged that they were not able to assess the structural integrity of the project since they did not know much about the local circumstances and natural forces, especially regarding the movement of sand along the coastline.⁴³ Ortloff, who had spent two years observing the “harsh and inaccessible” nature,⁴⁴ however, was not worried. He concluded that “a stronger movement of sand [along the coast]

could not have occurred.”⁴⁵ This assessment was surprising given that he also wrote about the potential for a silting-in of Walvis Bay. Whereas his scientific observations might have been skewed by his contempt for Germany’s neighboring opponent, his records include details about climate and weather, waves, ocean currents, shifts in sea levels and coastlines, and water depth. According to one scholar, his measurements only recorded deposits near the mouth of the Swakop River, however, and not much further north.⁴⁶ Whereas this oversight would have major consequences later on, in May 1899 Ortloff went ahead and submitted his proposal for the construction of a *Mole* to the Foreign Office. After a couple of minor adaptations, construction finally began.⁴⁷

Descriptions of the actual building process give a sense of circumstances; they also shed light onto German mentalities and mindsets. The work in Swakopmund certainly captured the imagination of the general public. Specialist magazines such as the *Zeitung des Vereins Deutscher-Eisenbahnverwaltung* had outlined a lack of structures in the empire early on.⁴⁸ Now, regular technical magazines and regular papers told tales about overcoming nature. Local newspapers were framing the project as “the fight” against the elements along a foreign and frightening coast.⁴⁹ Yet it would be Ortloff himself who painted the most vivid picture of all. He certainly believed in the abilities of German engineering as well as the inevitable conquest and defeat of nature—even if it might be more challenging compared to more familiar settings in Northern Germany. Mostly published in technical magazines several years later, Ortloff repeatedly framed the actual construction process as a heroic colonial struggle against the undisciplined waters, climate, and peoples of Southwest Africa. In the case of Swakopmund, heroic storylines generally set in with the foundation stone ceremony on 2 September 1899.⁵⁰ At that point work had already begun, including the erection of mostly prefabricated housing for workers. Early efforts had also included the construction of a narrow-gauge railway to transport rocks from a nearby quarry and the assembly of a water pipeline run by a windmill later used to guarantee the town’s water supply.⁵¹ Ortloff had chosen a spot with some solid rocks to build on. He favored the use of a mixture of concrete, sand, and granite for the foundation. The project employed hundreds of workers. Statistics shift over the course of construction. On average, 78 whites and 197 black workers were employed on site. At a highpoint, there were 142 white workers and 520 African laborers at work.⁵² According to Ortloff, out of 78 German workers, some quit right away; others got used to conditions only after some time. He added that Herero and Ovambo laborers worked hard and behaved well. Still, and in line with discriminatory mindsets, Ortloff added that they needed strong guidance and had to be “treated appropriately.” “These people had to be treated like children: one must be friendly but just.”⁵³ Out of reach for the German colonial state in the north, and with a long history of traveling south for work, migrant Ovambo workers were likely contract laborers. Maybe that is why they worked more diligently than the Herero, to

follow the newspaper *Deutsche Kolonialzeitung*.⁵⁴ During Governor Theodor Leutwein's rule German colonists already began breaking up allegiances of certain Herero chiefs "in order to provide labour for government projects."⁵⁵ Ortloff thus likely also relied on some forced or at least unwilling laborers. In any case, African workers lived segregated from white settlements in *werfts* (homesteads) and *pontoks* (huts); they also faced harsh punishments. One official report signed by Ortloff himself gives some idea of what that might have entailed: it speaks of twenty-five blows for a worker by the name of Cleopas for "laziness" on the job.⁵⁶ Ovambo and Herero certainly completed the more arduous tasks. According to Ortloff, the comparatively few whites mainly "operated machinery, maintained railroad tracks, sharpened chisels, and such."⁵⁷

The wet and cold climate along the coast shaped construction and narratives. For one, the weather on the coast was not a climate the Herero and Ovambo would have been used to. Both lived in areas away from the coastline. Evidence about their specific experiences on site is sparse. One report from the harbor office complained that the indigenous population "were supposedly not very useful and that they furthermore did not take the climate along the coast well."⁵⁸ Initially the weather had been good, and construction had moved along with few issues or delays. Then circumstances changed dramatically. As Ortloff noted later on, "Yet suddenly, at the beginning of June [1900] a heavy sea emerged, and it resulted in the massive destruction [of sections of the pier] so that the continuation of work had to wait until the end of the year."⁵⁹ Strong waves swept away a German worker. He drowned at sea.⁶⁰ Plus, temporary wooden structures got crushed.⁶¹ At one point, Ortloff, returning from Germany after a vacation, could not even land due to the weather.⁶² Instances of reprieve as weather cleared up were only temporary. According to one newspaper writing in 1902, "In the last eight days we had after good times once again a malicious sea, which also made it hard for construction work on the *Mole*. No less than six blocks on the south side of the site fell over or were moved, four of them in one night. If one does not observe the energies oneself then one can hardly envision the force of impacting waves. It is a sight of gruesome beauty to see from the tip of the structure the stretched surge arrives and then breaks along the upturned blocks, the white foam splashes high up and with wild roaring and foaming washing high up over the rocks of the embankment."⁶³ Delays soon piled up, and the work dragged on. Descriptions of one afternoon in Swakopmund give a sense of what that meant when a ship arrived: Kru men struggling when trying to land people and cargo, fighting currents, surf, wind, fog. Papers wrote that "The *Mole* boat had come too close to an incorrect [landing] spot on the beach due to fog and at the attempt of the rowers to get back at sea it became waterlogged. Luckily all five or six passengers got away with a cold bath."⁶⁴ "If only the ocean stays calm for a little longer," one impatient voice exclaimed by June.⁶⁵ It was to no avail, and the weather displayed "a rarely seen great wildness," to quote from another newspaper article.⁶⁶

Eventually, and in large part due to the unacknowledged efforts of Herero and Ovambo laborers, the project was completed. For German experts and colonists, it had always just been a matter of time until *their* ingenuity would defeat nature. Plus, and to follow one newspaper, if even the English acknowledged the “considerable progress” thanks to Ortloff’s expertise, then all would be well.⁶⁷ Ortloff himself had spoken enthusiastically about the future of the *Mole* at a talk in Berlin. In his view, it would open in September 1902.⁶⁸ Meanwhile landings continued to rely on surfboats steered by Kru men. Margarethe von Eckenbrecher, a settler disembarking with her husband in 1902, described her arrival around that time: “The anticipation and excitement were so big, that one barely had the time for fear. Like an arrow, we shot through the surf, and with a whopping jerk, the front of our boat drove on the sand while the back rose high. From ashore some kaffir [derogatory term for a black African] came towards us and before having a clue about their intentions one of them had already put me on the back and carried me trotting towards the dry [ground].”⁶⁹ From her point of view the completion of the *Mole* was long overdue when it finally opened in early 1903.⁷⁰ The price tag for construction of the *Mole* and surrounding structures of about 2.5 million Marks was stunning. Yet the investment certainly seemed worth it.⁷¹ Ortloff ended his narrative by reflecting on “the unique construction site some thousand kilometers away from the *Heimat* homeland,” defined by a lack of machinery, a lack of disciplined workers and harsh environmental conditions—including “the not rarely miserable climatic circumstances and the resulting diseases and pandemics.”⁷² For him, the opening ceremony in February 1903 marked not only a personal victory. This was a victory for German engineering, ingenuity, and persistence in the face of unknown challenges. That it had been largely Herero, Ovambo, and Kru male workers who had withstood the Atlantic Ocean, who had faced strong winds, cold weather, and diseases did not make it into colonial narratives. In April 1903, one newspaper noted that this structure now organized the landing process “in a decent way.”⁷³ Others agreed, stating that the unloading went rather smoothly now.⁷⁴ Setbacks like the destruction of a small lighthouse located at the *Mole*’s endpoint were brushed aside.⁷⁵ Instead, and according to contemporary discussions, German ingenuity and hard work had solved the access-problem once and for all.

Animal Engineering

The pathogen came from far away. Eventually known by the German term for cattle plague, biologically the *Rinderpest* virus (RPV) is a single-stranded, negative sense RNA virus. That means it has ribonucleic acid as its genetic ma-

terial.⁷⁶ Widely believed to be “the most lethal virus disease of cattle, domestic buffaloes and various wild artiodactyla,”⁷⁷ scientists now know that transmission generally comes from close contact with an infected animal. That could happen via the inhalation of nasal or oral droplets, or fecal discharge.⁷⁸ The disease then develops in three phases. After what scientists call “a silent incubation period” of about eight to ten days, fever and violent diarrhea follow. Infected animals become restless and depressed, lose their appetite, and experience constipation and congestion of the visible mucous membranes. As the virus multiplies, nasal discharges and the onset of diarrhea with other symptoms plague animals. In the final phase, which lasts about a week, animals arch their backs and strain, and their excrement increasingly include blood. Fatalities can be imminent at any point during this third stage and animals mostly die of dehydration.⁷⁹ Whereas those surviving the plague recover quickly and benefit from life-long immunity, according to recent studies mortality rate approaching 90–100 percent have been documented.⁸⁰ The devastating pandemic likely emerged in the steppes of eastern Europe and western Asia before moving into Eastern Africa by the 1880s.⁸¹ In 1896, there was a reported case in the Zambezi region,⁸² sparking fears for Southwest Africa’s transport system and broader livelihoods of pastoralists.

Little had changed in regard to transport since German arrival in Angra Pequena. *Pferdesterbe* (African horse sickness), an insect borne disease endemic to the region, had made the use of horses unsuitable.⁸³ Travelers thus had to rely on ox wagons to cross a “desolate, sad ground” and “[b]arren mountains, rivers without water, trees without leaves, birds without voices,” to follow one contemporary.⁸⁴ In 1898, one colonial proponent described howling winds, the crinkly sound of constantly moving sand, and the dense fog—the latter only increasing the possibility of getting lost.⁸⁵ “The almost unrelenting blowing wind from southeast, often turning into a storm, pushes sand from one spot to the other; here it blows it away from one dune, there it accumulates it onto a dune. Often hundreds of such wandering colossuses are right next to each other, and through those one has to meander a path.” He also gave readers a sense of the journey: “Once in a while it also happens that one can do no other than cut right over one of those crooks, and then man and animal have to use all their power to overcome that obstacle. The big whip, a five-meter-long bamboo stick with six-meter-long whiplashes, then blows the poor oxen without mercy, and with screams from the herding personnel it moves forward piece by piece.”⁸⁶ If all went well—and that meant the ox wagon had not been overloaded, did not get stuck too often, there was enough water, and the wagon train did not get lost—then crossing the Namib Desert from Lüderitzbucht could be done within about sixteen hours. Many times that meant sending oxen back to drink; it was also not unusual to hear about

some travelers losing twelve, fourteen, even sixteen animals out of a group of twenty. Bleached corpses of animals eventually littered desert routes, bearing witness to the precarity of traveling inland (see book cover photo).

The situation had not been much better further north. Although drinking water was easier to come by in Swakopmund, travelers still faced similar challenges. An episode from 1893 illustrates the dangers. At the time, a group of soldiers had landed in Walvis Bay, about forty kilometers to the south. On their way to Swakopmund they almost ran out of water. That some had decided to drink salty seawater only made matters worse. Kru men from Swakopmund reached that particular group just in time.⁸⁷ Hiding the liquid by burying it in along the way eventually became standard practice for many journeys beyond town-limits. The route to Windhoek along the Baiweg, that main artery established by Jonker Afrikaner earlier, also crossed arid landscapes. Plus, ox treks on that route had to scale a good amount of elevation to reach Windhoek on the Khomas Highland plateau at about 1,500–1,800 meters above sea level. Once traffic increased, so did overgrazing along the way. That again limited travel. Attacks by Witbooi's men and other groups could disrupt journeys as well. Take the experiences of colonialist Kurd Schwabe. Disembarking in Walvis Bay and part of the march to Swakopmund that almost ran out of water, he described the growing reliance on supply carts for feed as pastures got worse and worse along an often unprotected Baiweg.⁸⁸ For him, and many others, the interior was thus a place where traders die of thirst or are robbed by the indigenous population.⁸⁹

News of the *Rinderpest* (cattle plague) horrified colonists and Africans. Anxieties in German Southwest Africa ran high once the pandemic arrived in nearby South Africa and neighboring British Bechuanaland. German travelers relied on ox wagons and could not afford to see disruptions; some farmers in the interior also had cattle. Herero, who lived in “a period of intense reconstruction” and (re-)pastoralization, were a modern pastoral society.⁹⁰ They owned large herds of cattle as well as small stock of sheep and goats; they also held claims to land (wells and pastures), guns, and horses. A cattle pandemic would certainly threaten their economic survival. A letter from Windhoek published in a paper captured overall sentiments and concerns in the colony regarding the “the specter of Rinderpest” closing in; it also already noted that Herero herds will be hit most directly, a potentially beneficial prospect for white farmers competing for resources.⁹¹ In June 1897, an article in the newspaper *Deutsche Kolonialzeitung* outlined what was at stake regarding logistics. “Without a regular connection of interior stations to the harbors the sizeable colonial troops will not only be hindered in their flexibility but also face starvation; all of the wonderful gains regarding trade would be destroyed and in times to come no person would invest neither money nor life into such a risky colony.” The article emphasized that “[i]n fact, all is at play for German Southwest Africa.”⁹²

Officials soon sought to protect the colony the best they could. By June 1896, the German colonial government in Windhoek had already banned the import of all potentially infected animals and suspicious animal products, namely horns and hides, at least for the area loosely under German control.⁹³ Moreover, Deputy Governor Friedrich von Lindequist established a *Rinderpest-Absperrlinie*. Best translated as a “cattle plague cordon” meant to halt the spread of the pandemic, this boundary stretched (east to west) from Otjituo to Tsawisis and was established between November 1896 and February 1897. The colonial government placed sixteen military outposts along a stretch of 500 kilometers.⁹⁴ In most cases, such outposts were strategically located near watering holes to better control the movement of people and animals, a move that would permanently alter the topography in favor of German control. In the end, however, efforts to protect the German protectorate failed and the pandemic arrived in early 1897. According to Governor Theodor Leutwein, “It entered north of Gobabis by coming over the eastern border and first hit the cattle herds of chief Tjetjo. Before news of that could reach the government the pandemic had already been borne to the Windhoek district by traders.”⁹⁵ Of course, *Rinderpest* did not magically move by itself; it was also not a wave but began as a trickle. As outlined by historian Gary Marquardt, the epizootic used environmental factors as well as troubled relationships among different communities, combined with other dynamics, to spread through the region.⁹⁶ Widespread drought helped because animals were close together at watering points.⁹⁷ In German Southwest Africa, news about a suspicious disease among cattle herds eventually reached Windhoek on 6 April 1897. That day colonial troops inaugurated a monument for their fellow soldiers who had lost their lives in the fight against a recently defeated Hendrik Witbooi.⁹⁸ Veterinarian Karl Ludwig (Louis) Sander, who had come to the colony in 1893 to investigate Horse Sickness and other diseases,⁹⁹ later concluded that preventive measures had failed largely because massive rains had turned areas generally unsuitable for such a pandemic into contagious spaces.¹⁰⁰ In his view, a lack of experts, insufficient infrastructure, and secrecy among those first suspecting an issue did not help.¹⁰¹ Sander, like other voices at the time, blamed specific instances of non-cooperation from Herero for the outbreak of the disease although they had been “insistently made aware” of its devastating nature.¹⁰² Such references illustrate how discussions of the pandemic slotted into underlying racist stereotypes regarding the supposed ignorance, laziness, or stubbornness of African cattle farmers.

Experiments meant to alleviate pressures on oxen by introducing camels took place immediately. As mentioned already, Commissioner Curt von François had initially tried his hand at such an animal transfer in 1891. German impatience, partially grounded in a lack of expertise, combined with problems scaling high desert dunes, had resulted in failure. Not that some efforts had

not been promising. In 1892, and according to Lieutenant François, camels outdid oxen and demonstrated their “helpfulness.”¹⁰³ Expenditures, however, to follow one letter found in the colonial archives, were at this point no match for those of existing transport animals. These camels that had arrived in the colony stayed. Most of them became seemingly feral and overall “useless,” to follow one discussion. Maybe ironically, they grew in population. In 1897, the *Siedlungsgesellschaft* settlement society then again tried to introduce camels as pack animals. Hoping to tame and make use of existing camels for work, the society specifically pointed to the need for additional transport animals given the *Rinderpest*.¹⁰⁴

German and African ingenuity also got to work. African societies had experiences with cattle diseases. One infected Friesland bull imported to neighboring South Africa in 1854 introduced the contagious bovine pleuropneumonia (CBPP) to the region. The outbreak stayed localized yet returned in 1860, the year the Herero later named Otjipunga (the year of the lung). Efforts to control future issues took shape thereafter. Jonker Afrikaner for one oversaw the establishment of a quarantine station near Otjihorongong (halfway between Windhoek and Gross Barmen).¹⁰⁵ Once *Rinderpest* appeared on the horizon African societies relied on all kinds of methods to combat it. Local medicines such as an aloe plant (*Otjindombo*), as well as the insertion of an infected piece of meat into an incision made in the cow’s neck, seemed to help somewhat.¹⁰⁶ For German officials, containment initially became the name of the game.¹⁰⁷ Plus, they depended on the father of modern bacteriology, Robert Koch, who had developed a vaccination method. Koch had been invited to South Africa by the Cape Government to study the cattle plague. By late March 1897, he informed officials that he had a workable solution.¹⁰⁸ Historian Giorgio Miescher describes how Koch “cautioned against using a vaccine obtained from blood serum, believing this method is too uncertain and in need of further research, he believed a vaccine created from the bile fluid of animals infected with rinderpest would protect healthy cattle,”¹⁰⁹ and noting that “the existing methods of quarantine, disinfection, and ad hoc inoculation were used in the hope of slowing the pandemic’s spread and mitigating its effects.”¹¹⁰ Yet enforcing quarantine was difficult. Although the German colonial government employed a veterinarian Wilhelm Rickmann by 1894, veterinary infrastructure suffered from a lack of manpower. Plus, few initial signs of sickness and market forces limited abilities to enforce any meaningful confinements.¹¹¹ And so preventive measures, cordons, and experimental vaccines went nowhere. Governor Leutwein, who noted in a report on 17 May that cordoning off of Hereroland could be helpful in decreasing their cattle to a “reasonable amount,”¹¹² called upon the help of Koch’s assistant, Paul Kohlstock. The latter had worked with Koch in Kimberley. After several delays the expert finally arrived in Windhoek from Cape Town in late May 1897.¹¹³ By then the situation on the ground had

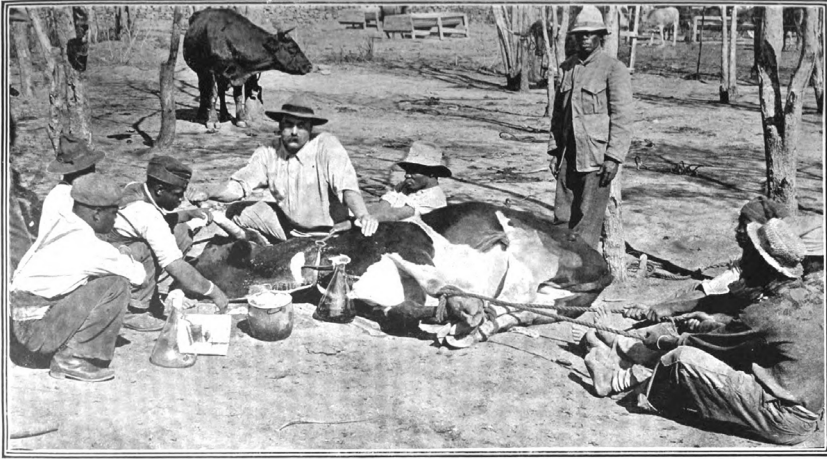


Photo: Dugmore.

II. Bleeding fortified cattle for the production of Serum.

Figure 3.2. Harvesting blood for serum, Cape Colony, ca. 1902. *Agricultural Journal of the Cape of Good Hope* 23 (1903), after 72, HathiTrust/public domain.

become increasingly desperate. For one, prices for travel inland had increased dramatically. That resulted in higher cost for goods that the colony depended on.¹¹⁴ Farmers were thus eagerly awaiting the results of all kinds of trials.¹¹⁵ Concerns about limited success lingered early on,¹¹⁶ and at least according to Sander, all of this took way too long.¹¹⁷ Discussions about mandatory inoculation soon followed as the colonial government tried to get a handle on the situation.¹¹⁸ Over time, improvements tied to blood-inoculation, boosters, and the use of gall fluid brought some relief (Figure 3.2);¹¹⁹ the government also set up a research laboratory for animal diseases at Gammams near Windhoek and over time would expand the veterinary infrastructure in the colony.¹²⁰ Contemporary German writers, in line with broader colonial narratives, thus soon spoke about the victory of science over nature.¹²¹

Yet *Rinderpest* had not struck equally. As Miescher observed: “Contemporary authors considered the vaccine campaign a success primarily because the vaccine saved many or even most of the livestock belonging to European settlers. However, the picture was far bleaker among African cattle owners, especially those in central Namibia, where losses were significantly greater.”¹²² At this point previous conflicts between German colonists and namely the Herero in central Namibia, as well as divisions among the latter, had already resulted in loss of territory. German newcomers had bought land and cattle; Governor Leutwein’s policy of divide and conquer as well as local rebellions also provided ample avenues for confiscating land, waterholes, and animals. Although

the Herero still owned lots of livestock, historian Jan-Bart Gewald noted that the resulting “inadvertent overcrowding” in some areas had dire implications for them.¹²³ Miescher unpacked the underlying power structures responsible for broader discrepancies regarding the impact of the virus more. He noted that “European settlers and the African elites allied to the colonial system were more likely to comply with the unfamiliar inoculation process”¹²⁴—and more of their animals survived. As a result, and to follow veterinarian Sander, some Herero were left with some forty animals out of thousands.¹²⁵ According to colonial official and future settlement commissioner Paul Rohrbach, “It is hard to say how large the herds of the Herero were at the time . . . What is certain is that the majority perished. But quite a few livestock survived.”¹²⁶ German sources at times reference Herero’s refusal to participate in vaccination campaigns. As outlined by Gewald, this had several reasons. For one, inoculation was still unreliable. Second, those officials overseeing the intentional infection of cattle cared little about Herero concerns tied to certain animals. Overzealous vaccinators, for instance, “confiscated cattle for the production of vaccine regardless of the size of the stock owner’s herd, and then used the vaccine on the herds of totally different stock owners.”¹²⁷ Dramatic drops in price, of course, also did not help people deeply tied to cattle for their livelihood.¹²⁸ Evidence also suggests a “cattle apartheid,” with the Germans prioritizing their own animals and infrastructure.¹²⁹ Finally, and at least according to one oral history, Germans employed vaccination as a means to expand their control. “Our guns were confiscated under the pretext of being immunised,”¹³⁰ two Herero noted later on. The Germans certainly hoped to expand their influence and access to land, and there are documented instances of them using force.¹³¹ Tensions had grown for some time. Take an incident near Omaruru when a German vaccination team tried to forcefully vaccinate Herero animals.¹³² “Among the herds belonging to the whites,” on the other hand, and to follow Rohrbach, “some 50–90 percent were saved, depending on when they were inoculated.”¹³³ Sander points to survival rates of 30–50 percent in the early days in the district of Windhoek and along the Baiweg.¹³⁴ It was still a devastating sight. According to settler Helene von Falkenhausen, carcasses littered the landscape, which at times poisoned water supplies.¹³⁵

The outbreak of the pandemic marked a turning point in Namibian history. The disproportionate impact on Herero cattle reshaped power structures.¹³⁶ The experiences shared by Kajata, a Herero voice recorded by Sander, put it succinctly when stating, “Until now I was a *Großmann* (big man) and had lots of people in my service, now I am among the poorest and must look for services I can provide for others!”¹³⁷ One observer reported that many Herero were left with merely 5 percent of their herd.¹³⁸ That was a disaster. They lost economic power in the area and were forced to rely much more on German jobs.¹³⁹ That only German settlers saw government compensation made

things worse.¹⁴⁰ The Herero's loss was the German empire's gain. As Sander pointed out, the pandemic made the Herero population less dangerous and gave Germans "a big advantage."¹⁴¹ For him this meant that Germans might be able to access cheap labor and finally force the local population to settle down. German settler Carl Schlettwein, who had come to the country in 1896, agreed. He later stated that "[d]espite the enormous losses, the rinderpest also had some benefit for the economic status of the colony, one might say. The white cattle farmer was suddenly confronted with entirely new circumstances. He was suddenly at the forefront in importance."¹⁴² A high demand made the surviving cattle worth much more, another massive advantage. A German newspaper wrote in this context, "If hunger forces large numbers of natives to seek employment and pay, one can fix their wages . . . in an appropriate form. Only under such changed conditions is it possible to undertake the settling of the country with any fair chance of success. Those who know the country are therefore of the opinion that the consequences of the *rinderpest* can be very beneficial for the development of the Protectorate."¹⁴³ Yet the pandemic also resulted in the breakdown of transport. According to one scholar, in 1896 the pandemic brought travel inland to the brink of total collapse.¹⁴⁴ Without alternatives the demand for the construction of a railway became noticeable.¹⁴⁵ As outlined in the *Windhoeker Anzeiger* newspaper in 1899, "The danger brought by the outbreak of the *Rinderpest* pandemic in South Africa in the year 1897 brought the colonial administration to the decision to start with the construction of a railway from Swakopmund into the interior."¹⁴⁶ Governor Leutwein made the same point later when writing, "The most important consequence that emerged out of the Rinderpest was the long hoped for and profoundly necessary construction of a train from the coast to Windhoek."¹⁴⁷ The fact that the Herero were now much more dependent on the colonial state and looking for labor was a bonus when thinking about such a major construction project.¹⁴⁸

Reaching Inland

"Here I stand, I can do no other."¹⁴⁹ This statement is commonly associated with Protestant Reformer Martin Luther and his defense at the Diet of Worms in 1521. Yet within Namibian history it refers to a stranded, rusty road locomotive. Partially restored and declared a national monument in 1975, these days tourists can see the steam tractor in the Martin Luther Museum a couple of kilometers outside of Swakopmund. Its *storie*, told widely within the German-speaking community to this day,¹⁵⁰ began with the efforts of German lieutenant and imperial entrepreneur Edmund Troost. Troost was eager to address Southwest Africa's logistical nightmare: there was no railway line inland



Figure 3.3. NAN 09045, “Martin Luther’ steam tractor (Troostsche Lastwagen), in the desert, already partially destroyed by rust,” undated, courtesy of the National Archives Windhoek.

and so-called cape or ox wagons crossing the desert from the coast were slow and often unreliable.¹⁵¹ If the young colony ever wanted to challenge neighboring Walvis Bay with its own German entry point at Swakopmund, he believed, reliable access to the interior was a must.¹⁵² Troost, who had already instituted a regular shipping line between Cape Town, Lüderitzbucht, Walvis Bay, and later Swakopmund,¹⁵³ envisioned that a road locomotive would bridge the time until the inevitable construction of a railway.¹⁵⁴ Hence, in early 1896, a steam tractor was hauled aboard a shipment leaving Hamburg to Swakopmund, arriving in the colony in late February.¹⁵⁵ Unloading the massive engine was difficult, especially since the ship had not picked up experienced Kru men in Monrovia. Whereas this ironically forced Troost to drop at Walvis Bay,¹⁵⁶ his problems did not end there. Witbooi’s raids, the limited availability of labor, the high costs for water, and the absence of expert mechanics continually delayed travel.¹⁵⁷ In the end, his “steam oxen,” as Troost affectionately called this metallic beast, sat around for about four and a half months.¹⁵⁸ That standstill, by the way, explains its nickname *Martin Luther*. Eventually the locomotive went on its journey, dragging itself through desert sands, stuck virtually every fifty meters or so. According to Troost, “It was neither the fault of the high weight nor the lack of machine power [but] rather the fact that wheels, which had only six attachable crossway shovels, found no sufficient points of traction

in the sand.”¹⁵⁹ The roughly forty-kilometer journey took an astonishing three months (Figure 3.3).¹⁶⁰ And although the tractor was able to complete a couple of additional trips, it would take the construction of a railway to finally reach inland.

Railways matter greatly for colonialism, and that was certainly the case for German Southwest Africa. In Germany, contemporaries assigned railways an almost mythical power when it came to development.¹⁶¹ More so in Southwest Africa than any other German colony, to follow one writer in 1897, railways are a vital question, a question of life and death.¹⁶² Such rhetoric claimed that this technology was needed to cross the barren desert landscapes blocking off the interior. After all, to reference another voice from the time, without a railway, the harbor would remain more or less disjointed from the interior, a worthless beachhead leading nowhere.¹⁶³ At the time, contemporaries generally looked to the United States and its railway system. There, they felt, the conquest of the west, the conquest of nature, had been successful. For some the eventual construction of railroad was meant to actually change the overall economic trajectory of the colony.¹⁶⁴ For Governor Leutwein, it brought strategic advantages. After all, he wanted to control both land and people. He already wrote to the German Chancellor in 1892 that “not the unlimited increase of the colonial troops but the construction of railway lines” should be used to strengthen the German power base in the colonies.¹⁶⁵

Until the turn of the century, several factors had limited initial efforts to make such an investment. First, Germany’s indirect and at times schizophrenic imperialism resulted in little funding. Requests to finance large-scale infrastructure projects were generally shut down by parliament. Moreover, in some instances syndicates technically held monopolies regarding the construction of railways. In September 1892, the German government had given the South West Africa Company (SWAC) control over around 75,000 square kilometers in the northern part of Hereroland. Conditions applied, including that the company would begin constructing a connection between Sandwich Harbor and the mouth of the Kunene River.¹⁶⁶ By then the annual report of 1892–93 already pointed to missed opportunities;¹⁶⁷ little happened thereafter, apart from calls in the press.¹⁶⁸ Some proposed the use of donkeys or oxen to pull wagons on cost-saving wooden tracks.¹⁶⁹ Lieutenant Franz von Bülow, who published a book about his three years in Southwest Africa in 1896, emphasized the great promise of a railway reaching inland from Swakopmund. “Once in some years a train is crossing this desert and with that moving the transport of goods much deeper inland into the grassy areas then humanity will barely be able to imagine the challenges that the entry into Damaraland once brought.”¹⁷⁰ On 4 August 1896, Governor Leutwein then approached the German chancellor to express his concerns when it came to transportation issues. In Leutwein’s opinion, a lack of water, limited grazing, and the *Rinderpest* pandemic

made a railway the only solution.¹⁷¹ The Director of the Colonial Department of Foreign Affairs, Baron Freiherr Oswald von Richthofen, an avid proponent of such infrastructure and the role of the government on site, spoke on behalf of the project in parliament in February 1897.¹⁷² Backing materialized not least due the *Rinderpest* pandemic and a lack of alternatives. Hence, by 1897 the construction of the around 380-kilometer-long *Baiwegbahn* (Bay Way Line), later known as the *Staatsbahn* (state train), could begin.¹⁷³

Although increasingly aware of natural factors, the Germans seemed surprised by the difficulties that emerged during the building process. Maybe they could still not fully grasp the terrain they needed to scale; maybe they believed their ingenuity and technology would solve it all. Those commenting on the construction had projected a simple undertaking. According to Missionary Büttner, “If someone would want to plan a railway from this coast into the interior then this land would provide little difficulties for the construction of a train.”¹⁷⁴ Lieutenant Schwabe agreed when writing in one newspaper, “Technical difficulties are non-existent, rather level spaces with hard surface and no sand drifts due to shifting sands and wandering dunes as would be present in any starting point further south.”¹⁷⁵ However, this rather optimistic and confident assessment overlooked several challenges. For one, everything had to be brought in. There was no *Mole* yet, which meant taking apart a couple of locomotives to then land them with surfboats was the only way to get them to Swakopmund.¹⁷⁶ Delays piled on. One frustrated commander supposedly dumped his load in the ocean awaiting it to be washed ashore.¹⁷⁷ Plus, accidents continued to happen. In early September 1899, a Kru man drowned “at very difficult surf” when trying to navigate and land rails loaded in a surfboat.¹⁷⁸ To save landing costs, and given the terrain, the train ran on a narrow-gauge of sixty centimeters instead of the more widespread larger Cape gauge.¹⁷⁹ It also took time to mark a route. Once that was completed the construction process was organized in four steps: first, the preliminary groundwork division cleared rocks and debris along the demarcated route; second, the embankment building division took care of constructing the railbed; third, the construction division set up supply buildings; finally, there was the well drilling crew that had to establish a stable water supply along the tracks.¹⁸⁰ A first group of workers arrived in Swakopmund on 11 September 1897 and went to work quickly. That unit consisted of a demarcation division led by engineering official and Lieutenant Kecker. As one report focusing on irrigation noted at the time, “It is a major problem . . . also for railways given bridges and openings that observations tied to existing rainfall are rather scarce.”¹⁸¹ This was difficult work, in mountainous terrain cut by rivulets and runlets, crossing arid landscapes and scaling steep inclines and an elevation of more than 1,600 meters up to Windhoek.¹⁸² Flash floods at times disrupted progress as well, like along the Khan riverbed in early 1898.¹⁸³ Pressed by a lingering pandemic and limited

funding, the construction crew simply picked the shortest route.¹⁸⁴ In a way, it just followed the German colonial topography that already existed. In one instance, decision-makers insisted that the route snarled along the northern bank of the Swakop River to more easily dispel possible British requests to connect Walvis Bay.¹⁸⁵

African labor built much of these structures. The German suppression of rebellions by groups such as the Swartbooi provided land and “a cheap pool of labor,”¹⁸⁶ to follow one historian. Plus, the *Rinderpest* made the Herero more dependent. Although German military personnel of between 125 and 150 men and some workers from the Cape Colony made up part of the work force, the majority were Herero and Ovambo at up to 1,000 individuals.¹⁸⁷ Take the construction of a bridge crossing the Okahandja River in October 1901. That site saw the employment of only seven whites—compared to 108 blacks.¹⁸⁸ African contract labor came from different groups. Herero leader Kavizeri, for example, received a provision of five Marks per laborer and contract while the workers themselves received payments of ten Marks per month and free provisions; Herero and Damara leader Manassee and Cornelius, respectively, later also contracted workers for the construction of the railway.¹⁸⁹ Conditions on work sites and in nearby *werfts* were difficult, especially since many contract laborers were not accustomed to the harsh coastal climate. A typhus epidemic struck early on;¹⁹⁰ at one point a gastrointestinal illness resulted in the death of six white and eighteen black workers.¹⁹¹ Plus, German discrimination and violence against African workers defined work places. Take a black laborer from South Africa by the name of John Murway. He got twenty blows with the sjambok whip in September 1898; that was then followed by two weeks in chains. He had presumably tried to agitate others in light of the harsh working conditions and called a white foreman a “bloody German.”¹⁹² His citizenship, which on paper might have provided more protection, seemed to make little difference on site. Hard work away from home in hostile desert environments made work difficult for whites as well. However, and as even the newspaper *Windhoek Anzeiger* admitted at one point, “The state of health of whites . . . was generally good,” blacks, on the other hand, dealt “with several occurrences of illnesses and deaths.”¹⁹³ Africans were the ones completing the most difficult tasks: digging into desert sands, moving rocks, hauling wooden railway ties and steel tracks, and putting them in place. Not surprisingly then, several black workers abandoned the worksite, resulting in a lack of labor and more expansive German efforts to recruit help from the Cape Colony.¹⁹⁴

Construction, framed as a battle against nature within German colonial narratives, moved along with good speed. Due to the incline, workers only covered about 500 meters per day for the first ten kilometers. Construction finally reached Nonidas after two months, on 20 November 1897.¹⁹⁵ With little knowledge regarding the course of the Khan River, and how to best cross it,

officials decided to save money and take the easy way out, maybe updating later, and ordered tracks to be laid in the riverbed.¹⁹⁶ After scaling elevation and arriving on the high plateau, construction moved forward much quicker. Then, between Christmas 1897 and late January 1898, twenty-four African men died of a stomach fever. That tragedy decreased the willingness of some local leaders to provide labor or at least left workers reluctant to sign up.¹⁹⁷ Officials soon brought in additional hands from South Africa, and by April 1898 the section reaching the station later known as Rössing was completed. As one laborer noted at the time when thinking about this newly emerging topography, “the white people have gone completely mad, and are building a house [the Rössing train station] in the middle of nowhere.”¹⁹⁸ The route from thereon forward had to cross deep gorges, mountainous landscapes, and barren deserts (Figure 3.4). Problems with labor, water, supplies, and mechanical issues also repeatedly delayed progress. The water supply was a particular concern. Workers needed enough drinking water as did animals working at construction sites. Without water nearby delays seemed to become the norm.¹⁹⁹ Impurities in the water also threatened boilers of locomotives, machinery that already had to grapple with sand and high temperatures.²⁰⁰ Initially, and before drilling crews could alleviate some of the complications, it remained up to mules to supply worksites by hauling large iron-rimmed barrels of water.²⁰¹ Then there were problems with too much water. In Southwest Africa, the highly seasonal nature of most rivers posed serious threats as torrential rains could result in flash floods. In an instant, seemingly dry riverbeds turned into dangerous streams. One such “downpour” took place in the night from 1 March to 2 March 1899.²⁰² Soon rivers at times not accounted for flushed into recently constructed railway embankments, bridges, and other structures. According to one newspaper, “This also showed that the avoidance of constructing bridges due to austerity measures, which, if those were to withstand the onslaught of such an amount of water, would have cost much, would have resulted in no negative outcomes for the disruption of traffic.”²⁰³ A similar situation emerged in January 1902, when rain again flushed away large sections. Another newspaper pointed out that “[s]uch amounts of rain as they came down from the sky in the last weeks require at times costly precautions that had not been anticipated and budgeted for among the *Eisenbahnkommando* railway commando.”²⁰⁴ Delays and disruptions added up, sucking up funds few had planned for.²⁰⁵

In their quest for alternative means of transport authorities yet again considered using camels. Little had come about efforts put forward by the *Siedlungsgesellschaft* in 1897. Now, two years later, the German government got involved. Apart from purchasing twenty-three camels in Egypt, it also found four native Egyptian handlers meant to accompany them. The acquired animals soon awaited further travel in Alexandria. The plan was to ship them to Lisbon



Figure 3.4. NAN 23383, “Railway bridge construction, probably between Windhoek and Swakopmund [190?],” courtesy of the National Archives Windhoek.

or Gibraltar, and then have a steamer from the German Woermann-Line take them to Walvis Bay or Swakopmund.²⁰⁶ Yet logistics turned out to be a nightmare. For a couple of months discussions circled around how to best transport the animals once aboard. Could they just linger on deck? Do they need boxes? Two animals then seemingly ran away. By late April the remaining twenty-one camels awaiting shipment in Egypt got sick. They now required two weeks of quarantine.²⁰⁷ Rearrangements regarding the transportation to Southwest Africa had to be made as costs piled up. Eventually, it became simpler to take the twenty camels (another one had run away in the meantime) and Arab handlers to Hamburg first. Carl Hagenbeck, a dealer of all things related to wild animals and founder of Hamburg’s zoo, took in the battered creatures. In a letter to Berlin he wrote that he is doubtful they will ever gain full recovery.²⁰⁸ So whereas he called on “the gentlemen in Berlin” to stop by and take a look for themselves after some apparently doubted his assessment,²⁰⁹ the animals stayed in Hamburg for some time. They finally arrived in Southwest Africa in fall 1899.²¹⁰ By then the whole ordeal had cost more than 36,000 Marks and would have little impact on construction.²¹¹

Thankfully, and in the meantime, the completion of the railway line had moved along. It still took four years and nine months. The price tag was more

than 15 million Marks—almost three million over budget.²¹² By mid-June 1902, however, the route opened. It was time to celebrate. On the morning of 17 June at 6:15 A.M., a train had left Swakopmund.²¹³ Two days later, at 1:30 P.M. the first passenger train, decorated with flags, arrived in Windhoek. “It was a grand train consisting of four-passenger cars first- and second-class, and one third-class car for the indigenous population plus two luggage cars,”²¹⁴ wrote the newspaper *Deutsch-Südwestafrikanische Zeitung*. The train that day was not full—just twenty-nine passengers came from the coast. Regardless, those awaiting them in Windhoek welcomed them with a hurrah and a formal ceremony. Pride was on display that day, pride of having conquered nature by scaling difficult terrain.²¹⁵ Officials had much to applaud. Not only was the opening actually ahead of schedule, but it also coincided with the beginning of the *Landwirtschaftliche Ausstellung* (agricultural exhibition) in Windhoek.²¹⁶ According to Governor Leutwein, and given the *Rinderpest*, the train had even saved the colony from “a lingering hunger crisis.”²¹⁷

Private developments meant to exploit resources also seemed to take off. An expedition had explored the potential for European copper mining in the Otavi region for SWAC in the 1890s. There, San had extracted the precious metal for centuries.²¹⁸ Different proposals for a railway, including one connecting to Portuguese Angola, emerged right away. Yet it took until early 1903 for the Otavi Minen- und Eisenbahn-Gesellschaft (OMEG) (Otavi Mining and Railway Company), an offshoot of SWAC, to begin construction. Nationalistic rhetoric and costs drove the decision to reach Otavi and later Tsumeb from Swakopmund.²¹⁹ Similar to the *Staatsbahn*, the enterprise—overseen by the Berlin-based Company Arthur Koppel A.G.—was framed as a battle against nature. First, there was the fight against ocean waters. In one instance, a steamer fully loaded with 1,860 tons of material sank off the coast of Liberia.²²⁰ There was also not enough water—or at least existing waterholes had to be cleaned and restored.²²¹ The Germans had again underestimated existing terrains; yet in line with colonial storylines they also once more defeated them. Work only lasted for three months before the war disrupted overall efforts due to a lack of Herero labor.²²² Nonetheless, by 1903 the project itself looked promising, and ambitious plans already looked toward a bright future.²²³

Access defined Germany’s early efforts in Southwest Africa. Treacherous ocean waters and a rough and unpredictable coastline made natural harbors keys for entering, controlling, and ultimately developing the colony. Lüderitzbucht, originally claimed in 1884, offered a safe landing spot. However, a lack of drinking water and high desert dunes limited transport inland. Walvis Bay further north, the other natural harbor and the only access point to the central plateau, had been claimed by the British. Once quests for alternative landing

spots failed, and since depending on the British in Walvis Bay seemed to become a liability, the Germans pushed for their own gateway—and founded Swakopmund. Yet landing north of the Swakop River turned out to be laborious and dangerous. Without landing structures, the Germans depended on African experts. For contemporaries it was thus up to German ingenuity to solve the access question—and thanks to the construction of the *Mole*, easy landing in the colony could now be guaranteed. Transport inland along the Baiweg remained difficult, however, even before the pandemic hit the colony. The *Rinderpest*, a pandemic dependent on the environment and human actions,²²⁴ then fully disrupted travel; yet it also resulted in the construction of a railway to Windhoek. By 1903 environmental infrastructure, defined by human and non-human agents, as well as natural forces, had thus further reshaped existing topographies away from the Baiweg.

Colonists framed these experiences around German ingenuity and persistence. Friedrich Ortloff narrated the struggle against treacherous ocean currents, inhospitable climates, and the inabilities of African workers along those lines. In his view, it had been German determination and expert knowledge that ultimately led to victory in a difficult fight. Similarly, scientific expertise was able to succeed in the struggle against the *Rinderpest* pandemic. There had been losses, of course, but in the end, the disease had been overpowered. The construction of mainly the *Staatsbahn* from Swakopmund to Windhoek also showcased the value of willpower, a good work ethic, and superior technology. German ingenuity had battled difficult terrains, aridity, and all kinds of other challenges. Efforts to bring in camels, or Troost's stint with a road locomotive, became signs of Germany's optimism and pioneering spirit, later humorous anecdotes, yet always in line with overall stories of development and progress. Modernity could not be stopped. These were, after all, engineers and hydrologists, military officials and professional craftsmen, so all experts able to take on any obstacle or frontier. Now, in 1903, German settlers could easily land using the *Mole* in Swakopmund; now they could make their way to the central plateau using the comfort of a railway. Soon hard-working and self-sufficient frontier pioneers and colonists could begin to further transform barren wastelands into cultivated and profitable *Kulturlandschaften* (cultural landscapes). The future of Southwest Africa seemed bright and the country open for business.²²⁵ As such storylines began shaping a colonial-settler identity other factors defining environmental infrastructure fell by the wayside. After all, and to follow one historian, it was thanks to the pandemic that Herero had replaced perished trek oxen to carry train tracks and ties for the construction of the railway inland.²²⁶ In that sense, colonial narratives, at times still looming large within the scholarship, had little interest in natural forces; in other instances, they still underestimate the importance of the non-human agent *Rinderpest* for African history. And, they certainly spilled little ink acknowledging the contributions of Africans.

Notes

1. *Deutsch-Südwestafrikanische Zeitung*, “Die Molenfeier,” 19 February 1903. See also *Deutsch-Südwestafrikanische Zeitung*, “Die Einweihung der Mole in Swakopmund” and “Aus Swakopmund,” 12 February 1903; *Deutsches Kolonialblatt*, “Deutsch-Südwestafrika: Die Hafenanlage in Swakopmund,” 13 February 1903; *Deutsch-Südwestafrikanische Zeitung*, “Aus Swakopmund,” 26 February 1903. See also Martin Kalb, “Water, Sand, Molluscs: Imperial Infrastructures, the Age of Hydrology, and German Colonialism in Swakopmund, Southwest Africa, 1884–1915,” *Environment and History* 26, no. 2 (2020): 175–206.
2. Theodor Leutwein, *Elf Jahre Gouverneur in Deutsch-Südwestafrika* (Berlin, 1908), 140.
3. BArch-K, N 1669, Friedrich von Lindequist (Generalkonsul des Deutsche Reiches für Britisch-Südafrika in Kapstadt).
4. *Deutsch-Südwestafrikanische Zeitung*, “Die Molenfeier,” 19 February 1903.
5. *Deutsche Kolonialzeitung*, “Südwestafrika,” 2 May 1901. See also *Deutsch-Südwestafrikanische Zeitung*, “Aus Swakopmund: Die erste Löschung an der Mole,” 15 May 1903; *Deutsch-Südwestafrikanische Zeitung*, “Aus dem Schutzgebiet: Schiffsverkehr,” 27 October 1903.
6. *Deutsch-Südwestafrikanische Zeitung*, “Aus Swakopmund: Mole,” 29 May 1903. See also *Deutsch-Südwestafrikanische Zeitung*, “Aus Swakopmund: Gewalt der See,” 12 June 1903; *Deutsch-Südwestafrikanische Zeitung*, “Aus Swakopmund: Springflut,” 29 September 1903.
7. *Deutsch-Südwestafrikanische Zeitung*, “Die Einweihung der Mole in Swakopmund,” 12 February 1903.
8. *Deutsch-Südwestafrikanische Zeitung*, “Aus dem Schutzgebiet: Abschiedsfeier,” 3 April 1903. See also *Deutsche Kolonialzeitung*, “Rundschau: Südwestafrika: Nachklänge von der Molenfeier,” 2 April 1903.
9. Headrick, *Tools of Empire*, 11. See also Clarence B. Davis and Kenneth E. Wilburn, eds., *Railway Imperialism* (Westport, 1991). On recent criticisms, see Straeten and Hasenöhr, “Connecting the Empire.”
10. Laak, *Imperiale Infrastruktur*. See also Agnes Kneitz, “German Water Infrastructure in China: Colonial Qingdao 1898–1914,” *NTM Zeitschrift für Geschichte der Wissenschaften, Technik und Medizin* 24, no. 4 (2016): 421–50, here 422.
11. Timothy Mitchell, *The Rule of Experts: Egypt, Techno-Politics, Modernity* (Berkeley, 2002). See also Gudermann, “Conviction and Constraint,” 33. Scholarship repeatedly focuses on development without much discussion of African labor. See Hans Oelhafen von Schöllnbach, *Die Besiedelung Deutsch-Südwestafrikas bis zum Weltkrieg* (Berlin, 1926), 43–49; Klaus Dierks, “Schmalspureisenbahnen erschließen Afrikas letzte Wildnis: Namibias Schienenverkehr zwischen Aufbau und Rückgang,” 347–361, here 347, in Becker and Hecker, *1884–1984*; Bravenboer and Rusch, *The First 100 Years of State Railways in Namibia*; Kaulich, *Die Geschichte der ehemaligen Kolonie Deutsch-Südwestafrika*; Bruno Wägli, “Dampf in Südwest: Eisenbahnbau zur Kolonialzeit in Deutsch-Südwestafrika” (thesis, University of Freiburg, 2008).
12. Miescher, *Namibia's Red Line*. For a summary of scholarship, see Thaddeus Sunseri, “The African Rinderpest Panzootic, 1888–1897,” *Oxford Research Encyclopedia, African History* (Oxford, 2018).

13. Lehmann, "Between Waterberg and Sandveld," 535.
14. Davis and Wilburn, *Railway Imperialism*.
15. *Deutsch-Südwestafrikanische Zeitung*, 30 October 1901 (Wasserfall), as quoted in "'Old Swakopmund' Reexamined," 28.
16. Ulrike Lange-Basman, "Schiffbaumeister in Ottensen, Neumühlen und Övelgönne bei Altona von 1700 bis 1870," *Deutsches Schifffahrtsarchiv* 38 (2015): 181–216, here 186. See also Yoko Rödel, "Landungsbrücke von Swakopmund" (diploma thesis, Technical University of Vienna, 2021), 56.
17. *Windhoeker Anzeiger*, "Aus dem Schutzgebiet," 8 June 1899. See also *Windhoeker Anzeiger*, "Aus dem Schutzgebiet," 6 July 1899.
18. *Windhoeker Anzeiger*, "Local-Nachrichten," 17 August 1899, as quoted in "Namibian Labor Empire."
19. *Deutsche Kolonialzeitung*, "Verhandlungen des Ausschusses," 20 February 1897. See also "South African Territories Company Limited," 276, in *Deutsches Kolonial-Lexikon*, II.
20. *Deutsche Kolonialzeitung*, "Die Denkschrift über die Gesellschaften im Schutzgebiet von Südwestafrika," 20 February 1897.
21. *Deutsche Kolonialzeitung*, "Die wichtigsten Häfen unseres südwestafrikanischen Schutzgebiets," 11 May 1895.
22. Külz, *Deutsch-Südafrika im 25. Jahre Deutscher Schutzherrschaft*, 47. See also *Lüderitzbuchter Zeitung*, "Fünfzig Jahre Lüderitzbucht," April 8, 1933, as included in *Lüderitzbucht damals und gestern*.
23. *Deutsches Kolonialblatt*, "Deutsch-Südwestafrika. Zum Hafenaufbau in Lüderitzbucht," 1 October 1900. See also Hafenaufbautechnische Gesellschaft, ed., *Deutsche Kolonialhäfen. Ihre technische und wirtschaftliche Entwicklung nebst ihren Bauten* (Berlin, 1939), 36; Uwe-Ulrich Jäschke, *Die polyzentrische Infrastruktur Namibias: Entstehung und Entwicklung in der deutschen Periode 1884 bis 1914/15* (Dresden, 2002), 117.
24. *Annalen der Hydrographie und maritime Meteorologie* XXIV, no. VII, "Kapstadt–Angra Pequena–Walfisch-Bai–Mossamedes–Benguela–Loanda–Kap Lopez–Kamerun," 1896.
25. *Deutsche Kolonialzeitung*, "Beschreibung der Küste zwischen Mossamedes und Port Nolloth," 29 November 1890.
26. François, *Nama und Damara*, 14.
27. Rudolf Ludloff, *Nach Deutsch-Namaland (Südwestafrika): Reisebriefe von Dr. R. F. Ludloff* (Coburg, 1891), 27.
28. Külz, *Deutsch-Südafrika im 25. Jahre Deutscher Schutzherrschaft*, 46. See also *Die Woermann-Linie während des Aufstandes in Deutsch-Südwest-Afrika* (Hamburg, 1906), 38; *Deutsche Kolonialzeitung*, "Kleine Mitteilungen," 16 October 1897; Otto Wipplinger, "Sea Water Distillation Plant at Lüderitz," *The Civil Engineer in South Africa* (1963): 281–89, here 281.
29. *Deutsches Kolonialblatt*, "Gewinnung von Trinkwasser in Lüderitzbucht," 16 May 1898.
30. Külz, *Deutsch-Südafrika im 25. Jahre Deutscher Schutzherrschaft*, 50. Külz estimated a yearly expense of 400–600 Marks per household for water and observed that it would certainly not be used for gardening.
31. François, *Nama und Damara*, 308. See also Hintrager, *Südwestafrika in der deutschen Zeit*, 32.
32. Kreienbaum, "Ein trauriges Fiasko," 57.

33. *Deutsch-Südwestafrikanische Zeitung*, “Eine neue Ueberraschung,” 13 February 1907. See also Bravenboer and Rusch, *The First 100 Years of State Railways in Namibia*, 17.
34. “Denkschrift betreffend das südwestafrikanische Schutzgebiet unter besonderer Berücksichtigung des Zeitraums vom 1. Oktober 1892 bis zum 30. September 1893,” in *Stenographische Berichte über die Verhandlungen des Reichstages*, 9. Legislaturperiode.—II. Session, Erster Anlageband (1893/94) (Anlage 48), 345–59, here 351 (Berlin: Julius Sittenfeld, 1894). Retrieved 11 March 2021 from <https://www.reichstagsprotokolle.de>.
35. *Annalen der Hydrographie und maritime Metereologie* XXIV, no. XII, “Kapstadt–Swakop–Mund–Walfisch–Bai–Kap Cross–Große–Fisch–Bucht–Mossamedes–Espiegle–Bucht–St. Mary–Bucht–St. Paul de Loanda,” 1896. See also *Annalen der Hydrographie und maritime Metereologie* XXIV, no. X, XXV, no. IX, and XXVIII, no. VI. Victor Franke landed without issues in June that year. Victor Franke, “Victor Franke in Swakopmund,” *Nachrichten Gesellschaft für Wissenschaftliche Entwicklung (Museum Swakopmund)* 31, no. 2 (1999): 24–29, here 24.
36. François, *Nama und Damara*, 308 and 15.
37. *Deutsches Kolonialblatt*, “Deutsch-Südwestafrika. Landungsverhältnisse an der Tsoakhaubmündung,” 1 July 1895. See also BArch-B, R 8023/1078, Landungsverhältnisse an der Swakop-Mündung, Anhang, 4 January 1895 and BArch-B, R 8023/1078, Skizze 27 June 1895 and Fragebogen.
38. *Deutsche Kolonialzeitung*, “Kleine Mitteilungen,” 27 July 1895. Such instalments had been rather successful elsewhere. See Hafenbautechnische Gesellschaft, ed., *Die Deutsche Kolonialhäfen*, 37–42 and 65–77.
39. Heinz Walter Stengel, “Der Bau der Mole in Swakopmund.” *Die Muschel* (1967), 52–63, here 59; KIT-Archive Karlsruhe (KIT), Kolonialsachen, 27025, 28 (Abschrift, Kostenanschlag des Marine-Hafenbaumeisters Mönch/ Wilhelmshaven für eine Hafenanlage in Swakopmund, 15 July 1897). See also NAN, HBS, St. Unit 1, File 1/4, Technisches Gutachten 12 September 1899; Kaulich, *Die Geschichte der ehemaligen Kolonie Deutsch-Südwestafrika*, 464. For overall plans see also *Archiv für Post und Telegraphie. Beiheft zum Amtsblatt der Deutschen Reichs-Post- und Telegraphenverwaltung*, “Kleine Mitteilungen: Der Hafen von Swakopmund,” August 1903.
40. BArch-B, R 1002/1276, Friedrich Wilhelm Ortloff.
41. *Deutsches Kolonialblatt*, “Zum Hafensbau in Swakopmund,” 1 February 1899. See also *Deutsch-Südwestafrikanische Zeitung*, “Die Mole,” 12 February 1903; BArch R 1002/1276, Ortloff: Personal-Nachweisung.
42. NAN, HBS, St. Unit 1, File 1/4, Technisches Gutachten 12 September 1899. Some files include plans from 1899 to 1901 and sizes range from 1:50 to 1:2,500—though sadly many of them are damaged. See NAN, HBS, St. Unit 8, File 4/3. See also Hermann Schwabe, *Zeitung des Vereins Deutscher Eisenbahn-Verwaltung*, “Die Verkehrsverhältnisse des Deutsch-Südwestafrikanischen Schutzgebietes,” 37ter Jahrgang, no. 25 (27 March 1897).
43. NAN, HBS, St. Unit 1, File 1/4, Technisches Gutachten 12 September 1899.
44. Hermann Friedrich Ortloff, “Der Bau des Hafens in Swakopmund,” *Zeitschrift für Bauwesen* LIV, no. IV to VI, 1904, 346–64, here 346. See also *Windhoeker Anzeiger*, “Aus dem Schutzgebiet,” 14 February 1901. In 1895, architect Heinrich Mönch had measured only slight sanding for the Mole. BArch, R 1001/1865a, Hafenanlagen in Swakopmund

- (Aufzeichnungen, betreffend die Entstehung und Versandung des Hafens von Swakopmund und die zur Bekämpfung der Versandung getroffenen Maßnahmen).
45. Ortloff, "Der Bau des Hafens in Swakopmund," 361. Some of Ortloff's observations later appeared in a comprehensive study tied to climate and other environmental factors. See Albert Gülland, *Das Klima von Swakopmund* (Berlin, 1907), 1.
 46. Stengel, "Der Bau der Mole in Swakopmund," 58. It is not clear from Stengel's discussion why Ortloff would not have noticed the movement of sand well beyond the mouth of the Swakop River.
 47. *Ibid.*, 60.
 48. *Zeitung des Vereins Deutscher-Eisenbahnverwaltung*, "Der Handelsverkehr Deutschlands," 26 October 1892.
 49. *Deutsch-Südwestafrikanische Zeitung*, "Die Mole," 12 February 1903.
 50. *Deutsches Kolonialblatt*, "Grundsteinlegung zur Mole," 15 September 1899. See also *Windhoeker Anzeiger*, "Aus dem Schutzgebiet," 14 September 1899.
 51. Bravenboer and Rusch, *The First 100 Years of State Railways in Namibia*, 17–18.
 52. Stengel, "Der Bau der Mole in Swakopmund," 61. A good number of white workers came from Cape Town. See also *Deutsch-Südwestafrikanische Zeitung*, "Aus Swakopmund," 30 October 1901; *Globus*, "Kleine Nachrichten," 30 January 1902; *Archiv für Post und Telegraphie*, "Kleine Mitteilungen: Der Hafen von Swakopmund," August 1903.
 53. Hermann Friedrich Ortloff, *Landungsverhältnisse an der Küste Deutsch-Südwestafrikas* Vortrag, gehalten am 14. Dezember 1901 (Berlin, 1902), 37. See also *Archiv für Post und Telegraphie*. "Kleine Mitteilungen: Der Hafen von Swakopmund," August 1903.
 54. *Deutsche Kolonialzeitung*, "Rundschau," 23 October 1902. The numbers for Nama workers are unclear.
 55. Bley, *South-West Africa under German Rule*, 23–24. Bley points to a prisoner-of-war camp in Windhoek prior to 1904 (85).
 56. NAN, HBS, St. Unit 15, File 6/5, Kaiserliches Hafenbauamt, 25 November 1902.
 57. Ortloff, *Landungsverhältnisse an der Küste Deutsch-Südwestafrikas*, 35.
 58. NAN, HBS, St. Unit 1, File 1/2 (Allgemeiner generelle Verhandlungen und Verfügungen den Hafenbau betreff. 1898–1902), Report, 9 November 1900.
 59. Hermann Friedrich Ortloff, "Der Bau des Hafens Swakopmund," *Zeitschrift für Bauwesen* LIV, no. X to XII, 1904, 669–92, here 680, 683, and 692.
 60. *Windhoeker Anzeiger*, "Die Mole," 20 June 1900, as referenced in "Namibian Labor Empire."
 61. *Windhoeker Anzeiger*, "Aus dem Schutzgebiet" 29 August 1900.
 62. *Deutsch-Südwestafrikanische Zeitung*, "Aus dem Schutzgebiet," 6 March 1902. See also *Deutsch-Südwestafrikanische Zeitung*, "Aus dem Schutzgebiet: Der Molenbau," 29 January 1902.
 63. *Deutsch-Südwestafrikanische Zeitung*, "Aus dem Schutzgebiet," 27 February 1902. See also *Deutsch-Südwestafrikanische Zeitung*, "Aus dem Schutzgebiet: Aus Swakopmund," 23 March 1902.
 64. *Deutsch-Südwestafrikanische Zeitung*, "Aus dem Schutzgebiet: Aus Swakopmund," 3 April 1902.
 65. *Deutsch-Südwestafrikanische Zeitung*, "Aus Swakopmund: Mole," 17 June 1902.
 66. *Deutsch-Südwestafrikanische Zeitung*, "Aus dem Schutzgebiet: Aus Swakopmund–Schlechtes Wetter," 17 July 1902.

67. *Windhoeker Anzeiger*, “Was ein Engländer von Swakopmund sagt,” 23 May 1901. As one article pointed out at the turn of the century, other colonial powers also did not reach colonial glory overnight. See *Globus*, “Deutsch-Südwestafrika im Jahre 1900,” 17 January 1901 (Kannengießler).
68. *Globus*, “Kleine Nachrichten,” 30 January 1902. See also *Deutsch-Südwestafrikanische Zeitung*, “Aus Swakopmund,” 17 June 1902.
69. Margarethe von Eckenbrecher, *Was Afrika mir gab und nahm* (Berlin, 1907), 42.
70. Hafenaubentechnische Gesellschaft, ed., *Die Deutsche Kolonialhäfen*, 58.
71. *Deutsch-Südwestafrikanische Zeitung*, “Die Mole,” 12 February 1903. See also Franko Seiner, “Hafenbauten in Deutsch-Südwestafrika,” *Über Land und Meer* 90, no. 42 (1903); Kaulich, *Die Geschichte der ehemaligen Kolonie Deutsch-Südwestafrika*, 465.
72. Ortloff, “Der Bau des Hafens Swakopmund,” 680, 683, and 692.
73. *Globus: Illustrierte Zeitschrift für Länder- und Völkerkunde*, “Deutsch-Südwestafrika im Jahre 1903,” 1 April 1904.
74. *Deutsche Kolonialzeitung*, “Rundschau: Eisenbahn und Mole,” 25 June 1903. See also *Deutsches Kolonialblatt*, “Der Molenbau in Swakopmund,” 1 June 1901.
75. *Deutsche Kolonialzeitung*, “Rundschau: Von der Mole,” 23 July 1903. For a display of confidence, see also *Archiv für Post- und Telegraphie*, “Kleine Mitteilungen: Der Hafen von Swakopmund,” August 1903.
76. David M. Morens, Edward C. Holmes, A. Sally Davis, and Jeffrey K. Taubenberger, “Global Rinderpest Eradication: Lessons Learned and Why Humans Should Celebrate Too,” *The Journal of Infectious Diseases* 204, no. 4 (2011): 502–5, here 502.
77. J. R. Crowther, “Rinderpest: At War with the Disease of War,” *Science Progress* 80, no. 1 (1997): 21–43, here 21.
78. Morens et al., “Global Rinderpest Eradication,” 503.
79. Crowther, “Rinderpest,” 21–24. See also Gary Marquardt, “Building a Perfect Past: Environment, People, Conflict and the Creation of a Rinderpest Epizootic in Southern Africa,” *Journal of Southern African Studies* 43, no. 2 (2017), 349–63, here 350.
80. Morens et al., “Global Rinderpest Eradication,” 503. See also Miescher, *Namibia’s Red Line*, 20.
81. Crowther, “Rinderpest,” 24; Gary Marquardt, “Open Spaces and Closed Minds: A Socio-Environmental History of Rinderpest in South Africa and Namibia, 1896–1897” (PhD diss., University of Wisconsin-Madison, 2007), 20–23.
82. Miescher, *Namibia’s Red Line*, 20. See also Clive A. Spina, *The Cattle Plague: A History* (New York, 2012), 525–26.
83. Wedekind, *Impfe und herrsche*, 51–54. Wedekind outlines how Oorlam-groups found ways to protect their horses (54); he also captures German efforts to deal with this sickness (67–85).
84. August Boshart, *Zehn Jahre Afrikanischen Lebens* (Leipzig, 1898), 166–67, as quoted in Kundrus, *Moderne Imperialisten*, 146.
85. E. Seydel, *Die Namib-Expedition mit Schilderung der Gewohnheiten und Rechtsanschauungen der Namib-Buschleute* (Borna, 1910), 10.
86. Seidel, *Deutschlands erste Kolonie*, 32. Numerous Südwest stories tell of similar experiences from within the Namib Desert. Scherz, *Südwest Geschichten am Lagerfeuer erzählt von Ernst Rudolf Scherz*, 16; Hennig, *Sturm und Sonnenschein in Deutsch Südwest*, 123–24.

87. Schwabe, *Mit Schwert und Pflug*, 5–6. See also François, *Deutsch-Südwest-Afrika*, 165.
88. Schwabe, *Mit Schwert und Pflug*, 89.
89. *Ibid.*, 354.
90. Dag Henrichsen, “Ozongombe, Omavita and Ozondjemob—The Process of (Re-)Pastoralization amongst Herero in Pre-colonial 19th Century Central Namibia,” in *People, Cattle and Land: Transformations of a Pastoral Society in Southwestern Africa*, ed. Michael Bollig and Jan-Bart Gewald, 149–86, here 152 (Cologne, 2000). See also Krüger, “The Golden Age of the Pastoralists,” in Zimmerer and Zeller, *Genocide in German South-West Africa*, 3–18.
91. *Deutsche Kolonialzeitung*, “Die Lage in Südwestafrika,” 5 June 1897 (letter from 20 March 1897).
92. *Deutsche Kolonialzeitung*, “Rinderpest und Eisenbahn in Deutsch-Südwest Afrika,” 19 June 1897. The author already proposed the quick construction of a railway to remedy the situation.
93. Miescher, *Namibia’s Red Line*, 20–21.
94. *Ibid.*, 23–24; Herbert P. Schneider, “The History of Veterinary Medicine in Namibia,” *Journal of the South African Veterinary Association* 83, no. 1 (2012), 1–11, here 3.
95. Leutwein, *Elf Jahre Gouverneur in Deutsch-Südwestafrika*, 126.
96. Marquardt, “Open Spaces and Closed Minds,” 189–90. See also Wedekind, *Impfe und herrsche*, 103.
97. Suneri, “The African Rinderpest Panzootic, 1888–1897.”
98. Leutwein, *Elf Jahre Gouverneur in Deutsch-Südwestafrika*, 127. See also Miescher, *Namibia’s Red Line*, 26. Marquardt emphasizes the role of rain in the spread. See Marquardt, “Open Spaces and Closed Minds,” 140–43.
99. Wedekind, *Impfe und herrsche*, 58.
100. Ludwig Sander, *Die Rinderpest: Einfluß auf die wirtschaftlichen Verhältnisse in Deutsch-Südwestafrika* (Berlin, 1897), 3–4.
101. *Ibid.*, 4–5.
102. *Ibid.*, 5. One voice called for limiting “*Wanderlust* the desire to wander off by the indigenous population” once and for all, a statement that previews colonial ambitions of not letting a crisis go to waste. Lübbert, *Gesundheitsverhältnisse in Deutsch-Südwestafrika im Jahre 1901/02*, 404, accessible at the Kolonialbibliothek Frankfurt am Main.
103. BArch-B, R 1001/8535, Kamele in Deutsch-Südwestafrika.—Beschaffung von Kamele Feb. 1891-Juli 1899, Band 1), letter, Hauptmann Francois to Auswärtiges Amt (Kolonialabteilung), 12 July 1892.
104. BArch-B, R 1001/8535, Kamele in Deutsch-Südwestafrika.—Beschaffung von Kamele Feb. 1891-Juli 1899, Band 1), letter, Deutsche Siedlungsgesellschaft für Deutsch Südwestafrika an das Auswärtige Amt (Kolonialabteilung), 5 June 1897.
105. Schneider, “The History of Veterinary Medicine in Namibia,” 2–3.
106. Marquardt, “Open Spaces and Closed Minds,” 149.
107. Sander, *Die Rinderpest*, 6.
108. *The Lancet*, “The Travels of Professor Koch,” September 24, 1898; Robert Koch, *Dr. Koch’s Reports on Experiments Conducted at Kimberley for Discovery of a Cure for Rinderpest* (Cape Town, 1897); Robert Koch, *Reise-Bericht über Rinderpest, Bubonpest in Indien und Afrika, Tsetse- oder Surrakrankheit, Texasfieber, tropische Malaria, Schwarz-*

- wasserrfieber (Berlin, 1898). See also Gewalt, *Herero Heroes*, 114–15. On efforts to coordinate in a trans-imperial space, see Wedekind, *Impfe und herrsche*.
109. Miescher, *Namibia's Red Line*, 28.
110. *Ibid.*, 28–29.
111. Schneider, “The History of Veterinary Medicine in Namibia,” 1; Gewalt, *Herero Heroes*, 113. See also Wedekind, *Impfe und herrsche*, 19.
112. Leutwein an Kol. Abt., 17.05.1897, BArch-B, R 1001/6063, Bl. 29/30, as referenced in Wedekind, *Impfe und herrsche*, 131.
113. Wedekind, *Impfe und herrsche*, 132. See also Gewalt, *Herero Heroes*, 116; Schneider, “The History of Veterinary Medicine in Namibia,” 4; Marquardt, “Open Spaces and Closed Minds,” 143; Miescher, *Namibia's Red Line*, 29; Wedekind, *Impfe und herrsche*, 136. See also Carl Schlettwein, *Der Farmer in Deutsch-Südwest-Afrika: Eine Darstellung sämtlicher für den afrikanischen Farmer in Betracht kommenden Erwerbszweige und ein Leitfaden für Anfänger*, 2nd ed. (Wismar, 1914), 43–44.
114. *Deutsche Kolonialzeitung*, “Rinderpest und Eisenbahn in Deutsch-Südwestafrika,” 19 June 1897. Such issues already amplified discussions about the construction of a railway.
115. Sander, *Die Rinderpest*, 6–9.
116. *Der Tropenpflanzer* 1, no. 5, “Rinderpest in Deutsch-Südwestafrika,” May 1897.
117. Sander, *Die Rinderpest*, 13.
118. BArch-B, R 8023/1001, Rinderpest.
119. Sander, *Die Rinderpest*, 6. Wedekind recently described the vaccination campaign in great detail. See Wedekind, *Impfe und herrsche*, 132–142.
120. Schneider, “The History of Veterinary Medicine in Namibia,” 4 and 6. Veterinarian Wilhelm Rickmann oversaw the institute that would be destroyed during the 1904 war; he later published about animal diseases in Southwest Africa. Wilhelm Rickmann, *Tierzucht und Tierkrankheiten in Deutsch-Südwestafrika* (Berlin, 1908). See also Wedekind, *Impfe und herrsche*, 232f.
121. Miescher, *Namibia's Red Line*, 29; Wedekind, *Impfe und herrsche*, 299. See also Ada-Schmidt Dumont, “Triumph der Veterinärmedizin. Tierkrankheiten—Geißeln des Farmers,” 420–22, here 420, in Becker and Hecker, *1884–1984*; L. Blumberg, “Robert Koch and the Rinderpest,” *South African Medical Journal* 76 (1989): 438–40.
122. Miescher, *Namibia's Red Line*, 29.
123. Gewalt, *Herero Heroes*, 109.
124. Miescher, *Namibia's Red Line*, 29.
125. Sander, *Die Rinderpest*, 11
126. Paul Rohrbach, *Deutsche Kolonialwirtschaft, Band 1: Südwestafrika* (Berlin-Schöneberg, 1907), 274, as quoted in *Namibia's Red Line*, 27.
127. Gewalt, *Herero Heroes*, 117.
128. *Ibid.*, 119–20.
129. Marquardt, “Open Spaces and Closed Minds,” 151–52; Wedekind, *Impfe und herrsche*, 136.
130. Willy Njanekua and Kasisanda Muuondjo, “Tjiponda, Kahivesa, and the Wars of the Hereros,” 28 January 1986, 154–73, here 161, *Michael Scott Oral History Project*.
131. Wedekind, *Impfe und herrsche*, 296.
132. Gewalt, *Herero Heroes*, 117–119; Marquardt, “Open Spaces and Closed Minds,” 153–55.

133. Rohrbach, *Deutsche Kolonialwirtschaft*, 275, as quoted in *Namibia's Red Line*, 27. See also Rickmann, *Tierzucht und Tierkrankheiten*, 158.
134. Sander, *Die Rinderpest*, 11.
135. Helene von Falkenhausen, *Ansiedlerschicksal: Elf Jahre in Deutsch-Südwestafrika (1893–1904)* (Berlin, 1905), 56. See also Miescher, *Namibia's Red Line*, 27–30.
136. According to Bley, “the epidemic resulted in the immediate impoverishment of the Herero, to a point at which the very lives of many tribal groups were threatened.” Bley, *South-West Africa under German Rule*, 125. According to Miescher, “the rinderpest pandemic marked a turning point in the power relationships of the colony.” Miescher, *Namibia's Red Line*, 19. Wedekind, who highlights the connection between vaccination and power, writes about the “devastating” impact and “shaken foundations.” Wedekind, *Impfe und herrsche*, 141. See also Charles van Onselen, “Reactions to Rinderpest in Southern Africa 1898–1897,” *The Journal of African History* 13, no. 3 (1972): 473–88.
137. Sander, *Rinderpest*, 11.
138. Drechsler, “*Let Us Die Fighting*,” 98.
139. Ibid. According to Gewalt, “Rinderpest broke the economic basis of Herero society.” Gewalt, *Herero Heroes*, 133.
140. Wedekind, *Impfe und herrsche*, 316.
141. Sander, *Die Rinderpest*, 30. See also Sander, *Die Rinderpest*, 38 and 44.
142. Carl Schlettwein, *Der Farmer in Südwestafrika: Eine Darstellung sämtlicher für den afrikanischen Farmer in Betracht kommenden Erwerbszweige und ein Leitfaden für Anfänger*, 2nd ed. (Wismar, 1914), 45, as quoted in Miescher, *Namibia's Red Line*, 30.
143. *Hamburgische Korrespondent*, No. 481, 14 Oct 1897, as quoted in Dreschler, “*Let Us Die Fighting*,” 98.
144. Kaulich, *Die Geschichte der ehemaligen Kolonie Deutsch-Südwestafrika*, 472. Some contemporaries in Windhoek certainly noted that by May 1898 they would run out of resources. Gerhardus Pool, *Eisenbahnen in Deutsch-Südwestafrika, 1897–1915* (Windhoek, 2008), 19. Pool notes that overall circumstance “forced” officials to build the railway. Pool, *Eisenbahnen*, 11.
145. Georg Fleck, *Stand des Eisenbahnbaus in Afrika 1900* (Berlin, 1901).
146. *Windhoeker Anzeiger*, “Rückblicke und Aussichten,” 19 January 1899. See also Petermann's *geographische Mitteilungen*, “Geographischer Monatsbericht: Afrika,” no. 44 (1898): 44–46, here 45.
147. Leutwein, *Elf Jahre Gouverneur in Deutsch-Südwestafrika*, 132.
148. Bley, *South-West Africa under German Rule*, 125.
149. Edmund Troost, *Erlebnisse einer Straßen-Lokomotive* (Hamburg, 1898), 6. See also *Kolonie und Heimat*, “Dernburgs Fahrt nach Südwest,” 4 July 1908. See also *Zeitschrift des Mitteleuropäischen Motorwagen-Vereins* XI, no. 9, “Automobilverkehr in den Kolonien,” May 1912 (Pflug), accessible at NAN, ZBU, 1784 T.VIII A.2 Automobilwesen. Generalia. 1907–1914; Immo Böhlke, dir., *Swakopmund 1892–1915—Filmdokumentation der Ortsgeschichte von Swakopmund aus der Zeit von 1892 bis 1915* (Swakopmund: 2009), 70 min.
150. Hennig, *Sturm und Sonnenschein in Deutsch-Südwest*, 13.
151. BArch-B, R 1001/1848 Unternehmungen des Leutnants Troost (Sept. 1895–Dez. 1904).

152. Troost, *Erlebnisse einer Straßen-Lokomotive*, 2. For broader discussions, see also BArch-B, R 1001/8849 R 1001/8849, Verhandlungen mit England über die Abtretung der Walfischbai.
153. *Deutsche Kolonialzeitung*, “Von der südwestafrikanischen Eisenbahn,” 4 December 1897 (Schwabe). According to Schwabe, it was also due to Troost that Swakopmund became a main entry point compared to Walvis Bay. Schwabe, *Mit Schwert und Pflug*, 282.
154. Troost, *Erlebnisse einer Straßen-Lokomotive*, 4. See also *Deutsches Kolonialblatt*, “Verschiedene Mitteilungen: Erlebnisse einer Strassenlokomotive,” 15 January 1899.
155. Hulda Rautenberg, *Das alte Swakopmund 1892–1919* (Neumünster, 1967), 108.
156. Troost, *Erlebnisse einer Straßen-Lokomotive*, 5–6.
157. *Ibid.*, 7–9. See also *Deutsches Kolonialblatt*, “Verschiedene Mitteilungen: Erlebnisse einer Strassenlokomotive,” 15 January 1899.
158. *Deutsches Kolonialblatt*, “Verschiedene Mitteilungen: Erlebnisse einer Strassenlokomotive,” 15 January 1899.
159. Troost, *Erlebnisse einer Straßen-Lokomotive*, 7.
160. Troost stayed optimistic and later tried to import motorcars. See *Deutsche Kolonialzeitung*, “Kraftwagen für Südwestafrika,” 11 February 1904; *Deutsch-Südwestafrikanische Zeitung*, “Aus Deutschland: Probefahrt des Troost’schen Automobils,” 19 June 1903. *Der Tropenpflanzer* IX and XI also reported.
161. Joachim Radkau, *Technik in Deutschland. Vom 18. Jahrhundert bis zur Gegenwart* (Frankfurt am Main, 1989), 135, as referenced in *Imperiale Infrastrukturen*, 24.
162. Hermann Schwabe, “Die Verkehrsverhältnisse des Deutsch-Südwestafrikanischen Schutzgebietes,” *Deutsche Eisenbahnverwaltung* 25 (27 March 1897).
163. *Deutsche Kolonialzeitung*, “Denkschrift über die Gesellschaften im Schutzgebiet von Südwestafrika,” 20 February 1897.
164. Erich Quiring, *Die Eisenbahnen Deutsch-Südwestafrikas und ihre Bedeutung für die wirtschaftliche Entwicklung der Kolonie* (Borna-Leipzig, 1911), 2.
165. Dierks, 2.0. Retrieved 2 April 2021 from http://www.klausdierks.com/Namibia_Rail/2.htm. See also Drechsler, “*Let Us Die Fighting*,” 106. As outlined by Bley, Leutwein pushed three measures to pacify the Herero: disarmament of individual *werfts*, compulsory registration of firearms, and “the construction of strategic railways.” Bley, *South-West Africa under German Rule*, 67.
166. Kaulich, *Die Geschichte der ehemaligen Kolonie Deutsch-Südwestafrika*, 441.
167. Jahresbericht 1892–93, 350, as reference in Kaulich, *Die Geschichte der ehemaligen Kolonie Deutsch-Südwestafrika*, 440. Technically, the first railway had been constructed by the Damaraland Guano Company around 1895–96 to ease the transportation of guano at Cape Cross.
168. *Deutsche Kolonialzeitung*, “Eine Eisenbahn nach Windhoek,” 7 November 1896; *Deutsche Kolonialzeitung*, “Ansielder für Südwestafrika,” 5 December 1896. See also Erich Quiring, *Die Eisenbahnen Deutsch-Südwestafrikas und ihre Bedeutung für die wirtschaftliche Entwicklung der Kolonie*, (Borna-Leipzig, 1911), 8.
169. Franz Baltzer, *Die Kolonialbahnen mit besonderer Berücksichtigung Afrikas* (Berlin, 1916), 79; Pool, *Eisenbahnen in Deutsch-Südwestafrika*, 23. Contemporaries called it a *Maultierbahn*. See also Sander, *Rinderpest*, 39.

170. Franz von Bülow, *Deutsch-Südwestafrika: Drei Jahre im Lande Hendrik Witboois. Schilderungen von Land und Leuten* (Berlin, 1893), 69.
171. Bravenboer and Rusch, *The First 100 Years of State Railways in Namibia*, 15. According to Bley, governor Theodor Leutwein personally won the support of parliament in favor of constructing a railway. Bley, *South-West Africa under German Rule*, 130.
172. von Richthofen, 22 February 1897, 182 Sitzung. Retrieved 2 April 2021 from www.reichstagsprotokolle.de. See also Pool, *Eisenbahnen in Deutsch-Südwestafrika*, 24–25; Bravenboer and Rusch, *The First 100 Years of State Railways in Namibia*, 16–17.
173. *Deutsches Kolonialblatt*, “Deutsch-Südwestafrika. Südwestafrikanische Baiwegbahn,” 1 December 1897. See also Quiring, *Die Eisenbahnen Deutsch-Südwestafrikas und ihre Bedeutung für die wirtschaftliche Entwicklung der Kolonie*, 10. Technically, this decision went against the monopoly granted to SWAC. See Pool, *Eisenbahnen in Deutsch-Südwestafrika* 20–24; Bravenboer and Rusch, *The First 100 Years of State Railways in Namibia*, 8.
174. Büttner, *Walfischbai und Angra Pequena*, 8.
175. *Deutsche Kolonialzeitung*, “Einiges über die Küste des südwestafrikanischen Schutzgebietes und den Verkehr an derselben,” 8 December 1894 (Schwabe).
176. *Deutsche Kolonialzeitung*, “Von der südwestafrikanischen Eisenbahn,” 4 December 1897 (Schwabe). See also Bravenboer and Rusch, *The First 100 Years of State Railways in Namibia*, 17.
177. Bravenboer and Rusch, *The First 100 Years of State Railways in Namibia*, 31. See also Pool, *Eisenbahnen in Deutsch-Südwestafrika*, 46.
178. *Windhoeker Anzeiger*, “Aus dem Schutzgebiet,” 28 September 1899.
179. *Windhoeker Anzeiger*, “Die Eröffnung der Eisenbahnstrecke Jakalswater-Karibib,” 18 July 1900. See also Kärchhoff, “Die Eisenbahn in Deutsch-Südwest-Afrika,” *Himmel und Erde. Illustrierte naturwissenschaftliche Monatsschrift* XIII, (1901) 553–61, here 554. Fleck later noted that the use of a smaller gauge had been necessary given terrain, timetable, and available funding. Fleck, *Stand des Eisenbahnbaus in Afrika 1900*, 9–10.
180. Pool, *Eisenbahnen in Deutsch-Südwestafrika*, 28–38 and 46; Bravenboer and Rusch, *The First 100 Years of State Railways in Namibia*, 26.
181. *Deutsche Kolonialzeitung*, “Das Syndikat für Bewässerungsanlagen in Südwestafrika,” 13 March 1897.
182. Bravenboer and Rusch, *The First 100 Years of State Railways in Namibia*, 22; Franz Baltzer, *Die Kolonialbahnen mit besonderer Berücksichtigung Afrikas* (Berlin, 1916), 80; *Deutsch-Südwestafrikanische Zeitung*, “Eröffnung der Eisenbahn bis Windhoek,” 3 July 1902. For an overview see Pool, *Eisenbahnen in Deutsch-Südwestafrika*, 39–40. On the issue of water in particular, see also Kärchhoff, “Die Eisenbahn in Deutsch-Südwest-Afrika,” 559–60.
183. *Windhoeker Anzeiger*, “Aus dem Schutzgebiet,” 16 March 1898.
184. Kaulich, *Die Geschichte der ehemaligen Kolonie Deutsch-Südwestafrika*, 442. See also Beat H. Schweizer, *Bahnen in Namibia: 110 Jahre Schienentransportsystem im ehemaligen Deutsch Südwest-Afrika* (Cape Town, 2007), 24; *Deutsches Kolonialblatt*, “Deutsch-Südwestafrika. Südwestafrikanische Baiwegbahn,” 1 December 1897.
185. Pool, *Eisenbahnen in Deutsch-Südwestafrika*, 30; Bravenboer and Rusch, *The First 100 Years of State Railways in Namibia*, 22.

186. Drechsler, "Let Us Die Fighting," 103. For labor more broadly, see also NAN, EVE A.5.A, (Vol. 1–3), *Allgemeine Angelegenheiten der Schwarzen Arbeiter 1897–1907*; NAN, EVE A.5.B. (Vol. 1–3), *Farbige Arbeiter, Straftakten der Eingeborenen 1897–1903*.
187. Leutwein, *Elf Jahre Gouverneur in Deutsch-Südwestafrika*, 136. See also *Windhoeker Anzeiger*, "Aus dem Schutzgebiet," 11 April 1901; Drechsler, "Let Us Die Fighting," 106; Bley, *Namibia under German Rule*, 23–24; Kaulich, *Die Geschichte der ehemaligen Kolonie Deutsch-Südwestafrika*, 143.
188. Pool, *Eisenbahnen in Deutsch-Südwestafrika*, 59.
189. *Ibid.*, 39–40.
190. *Deutsche Kolonialzeitung*, "Die Arbeiterfrage beim Bahnbau in Südwestafrika," 6 June 1898. The author of this article suggested hiring Chinese laborers.
191. Pool, *Eisenbahnen in Deutsch-Südwestafrika*, 42.
192. RKA, Nr. 5077 (Auszug aus den Strafverzeichnissen der Bezirksämter des deutsch-südwestafrikanischen Schutzgebietes), Blatt 112, nr. 27, as quoted in Fritz Ferdinand Müller, *Kolonien unter Peitsche: Eine Dokumentation* (Berlin, 1962), 95. Although tainted with ideological language, this volume includes excerpts from the German colonial records documenting daily violence throughout the colonies.
193. *Windhoeker Anzeiger*, "Aus dem Schutzgebiet," 16 March 1898.
194. For instance, of Manasse's thirty laborers twenty-eight left. Pool, *Eisenbahnen in Deutsch-Südwestafrika*, 42–43.
195. *Deutsche Kolonialzeitung*, "Von der südwestafrikanischen Eisenbahn," 4 December 1897 (Schwabe); *Deutsches Kolonialblatt*, "Eröffnung der Bahn-Theilstrecke Swakopmund-Nonidas," 1 January 1898. See also Bravenboer and Rusch, *The First 100 Years of State Railways in Namibia*, 26.
196. Schwabe, *Mit Schwert und Pflug*, 419; *Windhoeker Anzeiger*, "Die Eröffnung der Eisenbahnstrecke Jakalswater-Karibib," 18 July 1900. See also Baltzer, *Die Kolonialbahnen*, 80; *Windhoeker Anzeiger*, "Von Karibib nach Jakalswater," 18 July 1900; Walter Paschasius, *Die Militäreisenbahn Swakopmund-Windhuk in den Aufstandsjahren 1904–1907* (Berlin-Steglitz, 1934), 3–8, here 3. Pool points to difficult circumstances. Pool, *Eisenbahnen in Deutsch-Südwestafrika*, 32–33.
197. Bravenboer and Rusch, *The First 100 Years of State Railways in Namibia*, 27.
198. *Ibid.*
199. *Windhoeker Anzeiger*, "Aus dem Schutzgebiet," 11 April 1901. See also *Windhoeker Anzeiger*, "Aus dem Schutzgebiet," 17 January 1901.
200. Pool, *Eisenbahnen in Deutsch-Südwestafrika*, 72; Bravenboer and Rusch, *The First 100 Years of State Railways in Namibia*, 37.
201. NAN, EVE 150, C.6.A. Wasserversorgung 1902–1908; Bravenboer and Rusch, *The First 100 Years of State Railways in Namibia*, 32–33.
202. *Deutsches Kolonialblatt*, "Deutsch-Südwestafrika: Regenfall," 15 April 1899.
203. *Ibid.* See also NAN, EVE 140, C.3.A (Vol. 1–2), Betriebsunfälle 1898–1903. According to the *Windhoeker Anzeiger* newspaper, a flood and the resulting washout of embankments in April 1899 disrupted traffic for five days. *Windhoeker Anzeiger*, "Aus dem Schutzgebiet," 27 April 1899.
204. *Deutsch-Südwestafrikanische Zeitung*, "Aus dem Schutzgebiet: Regen," 8 January 1902. This specifically referred to the necessary large-scale rocking of railway ties meant to protect tracks from getting flushed away. See also *Deutsch-Südwestafrikanische Zeitung*,

- “Aus dem Schutzgebiet: Verkehrsstörung,” 5 February 1903; *Deutsch-Südwestafrikanische Zeitung*, “Aus dem Schutzgebiet: Regen,” 12 February 1903; *Deutsch-Südwestafrikanische Zeitung*, “Das Eisenbahnglück bei Karibib,” 22 December 1903; Bravenboer and Rusch, *The First 100 Years of State Railways in Namibia*, 40.
205. *Deutsch-Südwestafrikanische Zeitung*, “Vom Eisenbahnbau,” 10 April 1902; *Deutsch-Südwestafrikanische Zeitung*, “Aus dem Schutzgebiet: Vom Bahnbau,” 5 June 1902. It did not help that it had been military officials, so no engineers or railway experts, who oversaw much of the construction, a problem later criticized. See *Deutsche Kolonialzeitung*, “Die Bahn Swakopmund-Windhuk,” 17 April 1902 (Rehbock).
206. BArch-B, R 1001/8535, Kamele in Deutsch-Südwestafrika.—Beschaffung von Kamelen Feb. 1891—July 1899 (Band 1), letter Woermann-Linie an von Lindequist, 20 February 1899. See also BArch-B, R 1001/8535, Kamele in Deutsch-Südwestafrika.—Beschaffung von Kamelen Feb. 1891—July 1899 (Band 1), letter Woermann-Linie an Auswärtiges Amt (Kolonialabteilung), 17 March 1899.
207. BArch-B, R 1001/8535, Kamele in Deutsch-Südwestafrika.—Beschaffung von Kamelen Feb. 1891—July 1899 (Band 1), telegram, 25 April 1899.
208. *Ibid.*, letter Hagenbeck, 21 July 1899.
209. *Ibid.*, letter Hagenbeck, 26 July 1899.
210. BArch-B, R 1001/8535, Kamele in Deutsch-Südwestafrika.—Beschaffung von Kamelen Aug. 1899—May 1900 (Band 2), letter, Kaisl. Deutsches Gouvernement für Südwestafrika an das Auswärtige Amt (Kolonialabteilung), 28 November 1899.
211. BArch-B, R 1001/8535, Kamele in Deutsch-Südwestafrika.—Beschaffung von Kamelen Feb. 1891—July 1899 (Band 1), letter Kaisl. Deutsches Gouvernement für Südwestafrika an das Auswärtige Amt (Kolonialabteilung), 22 March 1900 (Anhang: Zusammenstellung).
212. Pool, *Eisenbahnen in Deutsch-Südwestafrika*, 63; Quiring, *Die Eisenbahnen Deutsch-Südwestafrikas*, 9–10.
213. Pool, *Eisenbahnen in Deutsch-Südwestafrika*, 60–61; Bravenboer and Rusch, *The First 100 Years of State Railways in Namibia*, 45. See also Jahresbericht 1902–03, 119, as referenced in Kaulich, *Die Geschichte der ehemaligen Kolonie Deutsch-Südwestafrika*, 443. The last rails had been bolted down June 17.
214. *Deutsch-Südwestafrikanische Zeitung*, “Eröffnung der Eisenbahn bis Windhoek,” 3 July 1902.
215. *Deutsches Kolonialblatt*, “Eröffnung der Bahn-Theilstrecke Swakopmund-Nonidas,” 1 January 1898. For a broader sense of German pride, see also Hans Meyer, *Die Eisenbahnen im tropischen Afrika: Eine kolonialwirtschaftliche Studie* (Leipzig, 1902), 73. Such storylines are still apparent in more recent scholarship. See Bravenboer and Rusch, *The First 100 Years of State Railways in Namibia*, 48.
216. I *Deutsch-Südwestafrikanische Zeitung*, “Eröffnung der Eisenbahn bis Windhoek,” 3 July 1902; *Deutsches Kolonialblatt*, “Deutsch-Südwestafrika. Eisenbahn Swakopmund-Windhuk,” 1 October 1902.
217. Leutwein, *Elf Jahre Gouverneur in Deutsch-Südwestafrika*, 134. See also Quiring, *Die Eisenbahnen Deutsch-Südwestafrikas und ihre Bedeutung für die wirtschaftliche Entwicklung der Kolonie*, 8; Hintrager, *Südwestafrika in der deutschen Zeit*, 38. Schöllnbach noted that it prevented “stagnation.” Schöllnbach, *Die Besiedelung Deutsch-Südwestafrikas bis zum Weltkriege*, 44.

218. Lyon, "Namibian Labor Empire." See also Bollig, *Shaping the African Savannah*, 73–74.
219. Bravenboer and Rusch, *The First 100 Years of State Railways in Namibia*, 59–60. See also *Deutsch-Südwestafrikanische Zeitung*, "Die Otavibahn," 9 October 1902; *Zeitung des Vereins Deutscher Eisenbahn-Verwaltungen*, "Eisenbahnpläne in Südwestafrika," XLI, no. 44, 8 June 1901.
220. Schweizer, *Bahnen in Namibia*, 19.
221. Arthur Dix, *Afrikanische Verkehrspolitik* (Berlin, 1907), 52.
222. Quiring, *Die Eisenbahnen Deutsch-Südwestafrikas*, 14. See also Bravenboer and Rusch, *The First 100 Years of State Railways in Namibia*, 60; Gustav Röhr, *Die Feldspurbahnen Südwestafrikas: 1000 km auf 600 mm Spur* (Krefeld-Bockum, 1967), 76. Fencing could do little to keep workers on site—although according to one self-published apologist argument, the fencing was there to "protect" the nearby population of Swakopmund. Röhr, *Die Feldspurbahnen Südwestafrikas*, 31.
223. G. Kecker, *Ein Beitrag zur Frage der wirtschaftlichen Entwicklung von Deutsch-Südwestafrika. Denkschrift über den zweckmäßigen Anschluß der Otavibahn an die Staatsbahn Swakopmund-Windhoek* (Brandenburg a.H., 1903).
224. Marquardt, "Building a Perfect Past," 350. Marquardt indicates how earlier scholarship turned *Rinderpest* into a free-moving enemy devoid of any context.
225. *Deutsch-Südwestafrikanische Zeitung*, "Rückblicke und Aussichten," 1 January 1903. See also Hintrager, *Südwestafrika in der deutschen Zeit*, 40.
226. Nonn, *12 Tage und ein halbes Jahrhundert*, 236.