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Nature, Infrastructure, and the
Making of German Southwest Africa



Martin Kalb

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Environing Empire

*Nature, Infrastructure, and the
Making of German Southwest Africa*



Martin Kalb



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Acknowledgments

This book project required me to wear good walking shoes. Historians generally wander to and from the archives, at times walking off to see specific sites and spaces. We all develop routines and habits, defined by various pressures to gather the materials we need before having to return to our desks. For this volume, I found myself indoors in Berlin and Koblenz, London and Windhoek. Plus, I visited smaller institutions and libraries in Frankfurt, Karlsruhe, Basel, Lüderitz, and Swakopmund. I still think about certain materials, conversations, smells, or quirks—spaces leave impressions on researchers. Yet for this book, I also had the privilege and pleasure to make use of weekends to wander off the beaten paths, outside the metaphorical dim light of a dusty archive and into the bright and stunning landscapes of Namibia. At one point I gazed over Lüderitz from atop Diamantberg (diamond mountain) to get a sense of Germany's first colonial holding and gateway point—a natural harbor indeed. A stroll to Shark Island gave me a sense of a space intimately connected to German history. Seeing the railway leading inland, across desert dunes, or wandering the former diamond town of Kolmanskop on a hot afternoon, brought colonial ambitions to life. Trips to Swakopmund, at first look a charming seaside with impressive avenues, reminded me of my own Western gaze. There, I visited the remains of German efforts to create a gateway into central Namibia; there, a field of graves situated beyond the morning fog on the edge of town speaks volumes to the inherent destructiveness of German colonialism. Later, a drive along Skeleton Coast to Cape Cross brought home the wrath of the coastline and the need for a safe harbor. That day my guide sketched the Benguela Current onto the sand as we stood in front of the beached fishing trawler *Zeila*. A drive into the Namib Desert—that stunning, hostile, yet vibrant landscape—left similar impressions on me. Nature is not just a backdrop.

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Harrisonburg, VA, March 2022



Introduction

“Grief and yearning” were the cause of death, wrote Hugo von François in 1896. At the time von François was a colonial soldier serving in the *Schutztruppe* (literally protective troops) in German Southwest Africa (modern-day Namibia). He continued describing how “due to its lonesomeness, the animal repeatedly escaped to the coast” and eventually killed itself.¹ Hugo’s older brother Curt, who happened to be the colony’s first commissioner, had purchased the camel stallion on the Canary island of Tenerife seven years earlier. Technically, this was not even a camel (*Camelus ferus*); it was a dromedary (*Camelus dromedarius*), a well-adapted animal with only one hump, longer limbs, padded feet for desert travel, and shorter hair meant to deal with warmer climates. Since these mammals can withstand severe dehydration, drink quickly, and deal with heat and dust storms, their import into a colonial possession defined by aridity made sense. Once purchased, workers had dragged the frightened creature onto a steamer to the colony, unloading the animal in the nearby British enclave Walvis Bay. With few natural harbors along a rugged and dangerous coastline, the Germans still relied on their competitor’s landing structures. Logistical problems did not end there. The high sand dunes of the Namib Desert, one of the oldest landscapes in the world, as well as waterless lands virtually shielded the interior of Germany’s first colony from newcomers. Although colonialists soon planned for technological solutions, in the 1880s treks venturing inland still relied on ox wagons. Maybe, so some hoped, camels would change such dependencies. German commissioner Curt von François at least felt confident that this animal transfer might simplify the situation in Germany’s first colony. He thus spent an astonishing 7,000 Marks on the relocation of just one camel.² Sadly enough, this first, lonesome animal got homesick, “longing for the land of its heart,”³ as Hugo von François wrote. It ran away to the coast several times, drowning at one point once the ocean current got ahold of it. Maybe it felt mistreated. As a herd animal it likely also sought company. Camel friends did not arrive until July 1891, when the colonial government imported another ten animals—two stallions and eight mares. When it came to revolutionizing transportation that animal relocation made no difference. For one,

these desert ships had a hard time scaling the steep sand dunes of the Namib Desert. Plus, German handlers had no idea how to work with them. Camels demand expertise and experience. And they need patient handlers. Neither was present in Southwest Africa. Instead, soldiers got irritated and annoyed. The camels, on the other hand, denied cooperation: they simply refused to get up, screamed vigorously, and bit their handlers, or just tried to brush riders off by making use of low-hanging branches.⁴ Dreams of quickly scaling the desert, of reaching the opportunities found behind the dunes, lingered for some time.⁵ In the end, however, those fantasies quickly vanished like desert mirages.

This study analyzes environmental factors and logistics in the creation of the settler colony German Southwest Africa (1884–1915). The infamous Benguela Current, a treacherous coastline, and the Namib Desert kept the interior off European minds and maps for centuries. On the other side of that borderland, few local groups found ways to sustain life in inhospitable desert landscapes and along dangerous ocean coasts. By the late eighteenth century, however, the commodification of resources, soon followed by the tentacles of aggressive global market capitalism, extended into this space. Demand for whale oil, seal skins, and guano resulted in booms and busts along a newly forming commodity frontier as Europeans and Americans plundered the coastline. African societies initially gained from interactions with outsiders. In the long run, however, all kinds of newcomers, be they missionaries, traders, miners, explorers, or whatever, introduced early imperial structures. The British declared ownership of the most prominent landing spot, Walvis Bay. In 1883, German businessman Adolf Lüderitz then laid claim to the area the Portuguese had called Angra Pequena, the Little Bay. Known by the 1890s as Lüderitzbucht, next to Walvis Bay it remains the only other natural harbor in modern-day Namibia. Officially under the protection of the German Imperial government by August 1884, its two bays provided an initial access point into the Second Reich's first and soon most important colonial possession: German Southwest Africa. Yet Germany had been a latecomer to the many Scrambles for Africa, picking up leftover crumbs of a cake that other colonial powers had sampled but left aside. In this context that meant difficult entry into the colony, problems crossing the Namib Desert, and widespread aridity. All of these logistical problems added to already mounting pressures when it came to the making of permanent settlements understood as German *Lebensraum* (living space) for a crowded homeland.⁶

Nature and culture are key for understanding the dynamic process at play in this creation of German Southwest Africa. Instead of separating both realms and emphasizing Western-centric technological cultures in the fight against outdated natures, this study employs historian Emmanuel Kreike's concept of environmental infrastructure. In his view, environmental infrastructure is "neither fully Nature (thence the anthropocentric infrastructure) nor entirely

an artifact of Culture (thence the qualifier *environmental*).⁷ Instead, such structures constitute “a coproduction of human ingenuity and labor on the one hand and nonhuman actors (animals, insects, microbes, and plants) and forces (physical, chemical) on the other.”⁸ Apart from emphasizing processes and outcomes, this framework also highlights muddled messes of human and non-human agencies. The focus on what Kreike calls environmental “infra-structuring” or “environing” in his view “advances understanding of the process of environmental change, highlighting the pluralistic and differentiated character of the agency, motivations, and mechanics involved.”⁹ For German Southwest Africa, *environing* offers the analytical space to incorporate technological, human, and animal engineering while acknowledging messy hierarchies, complex entanglements, and multiple agencies.¹⁰ For one, human agents mattered in Southwest Africa. African inhabitants had long lived in, and impacted, the region. Later, “the impact of (Western) markets and commodification,” to follow Kreike, was a “form of human agency that dramatically shaped the environment.”¹¹ Such demands initially drove whaling, sealing, and guano mining (later copper and diamond mining), and in that process shaped colonial encounters with coastline and hinterland. Over time human ingenuity and knowledge fashioned the creation of landing structures, railways, and irrigation systems meant to access and sustain a colony designed for Germans. The construction of the *Mole* in Swakopmund, a concrete pier reaching into ocean waters as well as railways scaling deserts underscores the role of technology that has long defined understandings of German imperialism in the region. The exploitation of contract, migrant, and forced labor to build and maintain such structures was essential, and Germans employed discriminatory policies, everyday colonial violence, and genocide to use African bodies meant to compensate for the failures of existing structures. Second, non-human agents including natural forces mattered. The Benguela Current and the Namib Desert created a borderland that shaped environmental infrastructure. Plus, flash floods impacted landing structures and railways while aridity constituted more than a backdrop for those trying to settle the land. Non-human agents such as *Rinderpest* (cattle plague) pathogens disrupted transportation and reshaped power structures; that pandemic also resulted in the resurrection of animal transfers. Or take the naval shipworm, a chewing mollusk whose appetite destabilized wooden structures in Germany’s entrepôts. In that sense, human factors (ingenuity, labor) and non-human factors (physical environment, biological agents) defined the making of the colony.

The framework of environmental infrastructure provides avenues for exposing colonial narratives. Part of a broader Western discourse, contemporaries and scholars long tied discussions to investment, improvement, progress, rationalization, modernization, development, and technology.¹² Distance-diminishing technologies including roads, bridges, railroads, telegraphs, to

borrow James C. Scott's term, or the process of *Erschliessung* (opening-up) in the German context, has thus seen a good amount of scholarly attention.¹³ Of course, motivations and overall objectives were by no means homogenous. In German Southwest Africa, at least, schizophrenic and ever-changing visions regarding the colony's future,¹⁴ maybe even fantasies, collided throughout this timeframe.¹⁵ Still, contemporary proponents of German colonialism largely agreed on the need for easy access, the solution of the water question, and the creation of sustainable settlements for Germans. Engineers thus oversaw the construction of a new harbor in Swakopmund; they also built railways inland. Hydrologists meanwhile pushed for comprehensive irrigation projects meant to transform arid and hostile landscapes into homesteads based on cattle farming and agriculture. Setbacks and failures, which scholars have seen as feeding vulnerability,¹⁶ became part of their colonial narratives. That deeply rooted European storyline orbited around the struggle against nature, that conquest and transformation of wastelands into productive spaces.¹⁷ More so in empire, and as outlined by historian Corey Ross, "The European claim to mastery over nature was a central legitimatory prop of modern imperialism—one that not only resonated with contemporary notions of racial hierarchy and societal evolution, but that also nourished a belief in the right, even duty, of Europeans to govern those who were less capable of controlling the world around them."¹⁸ In German Southwest Africa, hydrology engineer Friedrich Ortloff, who was responsible for the construction of a harbor in Swakopmund, saw his efforts as a battle against the onslaught of the ocean. Failures or unintended consequences resulted in brief reevaluations but rarely challenged self-perceptions of technological advancements. Insistence and willpower, maybe even stubbornness, were the name of Germany's colonial strategy when battling flash floods, diseases or a wood-eating mollusk. Progress, after all, understood as the mastery of nature, always lay just around the corner. Scuffles against nature gave meaning and strengthened overall *Deutschtum* (Germandom), and for German settlers, who saw landscapes transformed in their favor in the long run, such heroic tales help them developed a frontier spirit and Southwestern identity.¹⁹

A focus on environmental infrastructure also further contextualizes and complicates discussions of colonial violence, including war and genocide. Meant to underscore the intimate entanglements between development and destruction in the making of the German Southwest Africa, this approach accentuates logistics beyond German agencies. Of course access and water mattered for anyone living in the region. For the German vision of the colony, it was central, as was a dependent labor force meant to sustain German living spaces. The *Rinderpest* pandemic assisted in the German creation of a settler colony. Although it disrupted transport to the interior, this pathogen destroyed the livelihoods of the Herero in Central Namibia, forcing them into dependencies grounded in exploitative and discriminatory labor relations. In

addition, the pandemic pressured stakeholders in Berlin to invest in the construction of a railway. All of that brought more settlers into the region. Those newcomers then took over land and water, reshaping existing environmental infrastructure into restricted setups meant to sustain a white settler colony grounded in everyday violence. A major rebellion became the last resort for Herero and later Nama; a subsequent war and German genocide then became the basis for the creation of white settler living space. The war was a complex affair defined by emergent brutalization.²⁰ Environmental infrastructure as an instrument of war and resistance shaped these processes. African forced labor compensated for failing structures meant to sustain the war effort; precolonial structures sustained opposition beyond the official end of the war. Labor laws later ensured Africans stood in cold ocean waters to build jetties, laid railway ties across arid landscapes, dug wells for German farmers, and crawled over hot desert sands searching for diamonds. In that sense, and in line with scholarship aiming to see the global without ignoring the local, environmental infrastructure making up settler colonialism entailed the destruction and containment of African societies.²¹

A study focusing on the creation of German Southwest Africa as the Second Reich's first and only settler colony, the multiple and entangled agencies involved in that process, and the consequences of such efforts thereby has four objectives. For one, paying attention to nature's agency within German Southwest Africa muddles existing storylines. Geography, environment, or nature more broadly, mattered. The Benguela Current, a lack of natural harbors, and the Namib Desert defined interactions and structures within this space well before the Germans arrived; a lack of water further shaped dynamics throughout the colonial period. Plus, non-human agents influenced human behaviors and the other way around. Whales, seals, and bird droppings pulled Europeans to the coastline in the first place. The disruption and destruction of animal habitats and lives, and subsequent migration or extinction, later molded encounters. The *Rinderpest* challenged logistics and destroyed African livelihoods while the cravings of the naval shipworm made additional investments a necessity. In that sense, nature mattered—as did human actions. Maybe historian Bernhard Gissibl put it best when writing in a similar context, “Animal action and behavior influenced and determined what humans did (and vice versa). In that relational processual, and compounded sense, animals did have agency.”²² Imperialism effectively enlarged “the spatial scale of such entanglements and broaden[ed] the cast of actors,” to build on Ross's work.²³ This study thus remains distinctly human-centered or anthropocentric, yet messy with its unresolvable tensions and inseparable mixtures of agencies.

At the same time, and as the second main point, human views of nature and the stories we tell ourselves can teach us much about contemporary mentalities and identities. In an effort to question and deconstruct settler narratives,

this volume primarily focuses on German tales of conquest. Whereas African narratives and experiences are central to any discussion of environmental infrastructure in the region, the use of that framework is meant to disrupt descriptions of dramatic episodes staged or sold as the conquest of nature. Epic battles between culture and nature, future and past, West and rest, advanced and uncivilized made wonderful tales for Germans; yet those stories must be contextualized, complicated, and contradicted. As outlined by historian Christo Botha when it comes to Namibian environmental history, the appreciation that dynamics during the colonial period were “pervaded by European perceptions of toil and battle to tame a hostile landscape” are central to make sense of these times.²⁴ Again and again the Germans portrayed colonialism as a struggle between man and nature, that played out in different acts or episodes. Such stories defined the long nineteenth century, Europe’s age of conquest and progress.²⁵ Take the German tale of the *Deichgraf* (Dykemaster), the infamous main protagonist of writer Theodor Storm’s *Der Schimmelreiter* (*The Rider on the White Horse*). First published in 1888, the main character took on the forces of nature when hoping to claim and protect the land from the North Sea. Contemporaries framed efforts to construct landing structures along similar lines and wrote extensively about such “fights.” For them, nature acted when they wrestled against ocean waters or battled with desert sands that constantly covered railway tracks amid the Namib Desert. At times, they also fought against non-human actors, such as the pathogens of *Rinderpest* or a small ocean termite that persisted in eating away at wooden landing structures. For some, even the struggle against a resisting or just existing local population became part of this war. Views of the indigenous populations as *Naturvölker*, a term that literally translates to nature people as thereby distinct from *Kulturvölker*, cultured people such as the Germans, at times justified destruction.²⁶ Everyday violence, even the annihilation of African societies, seemed part of a larger natural transformation process grounded in Social Darwinism. Exposing and disrupting such storylines, by giving agency to multiple actors, is thereby essential when hoping to paint a complex and nuanced picture of the German colonial project in Southwest Africa.

Third, a framework aimed at bridging divisions between culture and nature draws attention to the overall German belief in technology, progress, and the rule of experts; it also underscores that colonists questioned if not dismissed local indigenous expertise and labor. In Southwest Africa it had been missionaries such as Gotthilf Büttner or Johannes Olpp that originally helped frame imperial fantasies; later it became explorers such as Gerhard Rohlfs, botanist Hans Schinz, or individuals like geographer Karl Dove, that pointed to future transformations of the colony rooted in infrastructure. The François brothers both wrote extensively about the colony early on and tried their hand at animal transfers. In that sense, officials called for engineers who were “driven

by an optimistic belief in progress” and trusted “that they could transfer the concepts of maximum efficiency and productivity from the mechanical world to the organic world,”²⁷ to follow one historian writing about nineteenth century Prussia. In Southwest Africa, German expert building officer Friedrich Ortloff supervised the construction of a concrete pier in Swakopmund; hydrology engineer Theodor Rehbock and engineer Alexander Kuhn outlined ways to solve the water question. Animal engineering, maybe best personified by expert epidemiologist Robert Koch, followed similar trajectories. At times outspoken farmers such as Albert and Gustav Voigts, Carl Schlettwein, and Ferdinand Gessert clashed with these “outsiders.” In their view, they themselves had worked the land and could thus claim real expertise. All of those “experts,” including a handful of “German women for empire,”²⁸ as historian Lora Wildenthal has called them, were pitted against supposedly stubborn and backward African societies and inhabitants. In line with historian James Scott’s critique of “imperial and hegemonic planning mentality that excludes the necessary role of local knowledge and know-how,”²⁹ few Germans cared about existing indigenized African knowledge and expertise regarding landscapes, water, and other resources. Such know-how only existed elsewhere, like when the Germans eventually hired expert camel handlers from Northern Africa. That attitude, of course, is part of a Western-centric global and colonial network,³⁰ as German newcomers in Southwest Africa “considered themselves uniquely qualified as guardians of an undeveloped arid country and took pride in their scientific innovations and economic achievements,” to follow Botha.³¹ Simultaneously, the long-discussed laboratory of modernity was much more fluid and complicated than we tend to believe.³² German hydrologists, for instance, were part of a multilayered global network, visiting sites in neighboring South Africa, listening to the complaints of local farmers in Southwest Africa, and learning from irrigation schemes in the American West and Australia; they also inadvertently incorporated indigenous knowledge while trying to accommodate for German folk traditions such as dowsing. Multidirectional entanglements and overlaps regarding the transfer of technology was hence defined by multiple centers and peripheries, and repeatedly shaped by everyday life and local environmental circumstances. Meanwhile African labor, repeatedly pushed to the margins in popular discussions that argue that the end justifies the means, fell to the wayside. Kru men from West Africa served as landing experts to sustain the colony; Herero, Nama, and Ovambo labor built landing structures, railways, and dug wells. Their know-how, contributions, and voices mattered greatly in the creation of Southwest Africa, a space never meant for them.

Finally, a discussion of environmental infrastructure provides a framework of analysis when thinking about connections between conquest, transformation, and destruction. Death and development go hand in hand in Southwest

Africa.³³ Newcomers disrupted ecological systems when slaughtering whales, seals, and other animals; they introduced new species when bringing along the naval shipworm. Whereas animals adapted, migrated, or perished, humans within those spaces faced similar fates. Try, fail, and try again was the German mantra in many circumstances, and some hesitation before judging with the benefit of hindsight is beneficial. Nonetheless, in German Southwest Africa, and in colonial settings in general, improvements were never intended for Africans. Instead, transformations included by default the subjugation, exploitation, and at times also the virtual annihilation of Herero, Nama, and other local societies. According to understandings at the time, lands were unoccupied or unutilized, and in need of German infrastructure. Everyday violence against nature and some of its people, even genocide, became an essential ingredient in this transformation of nature. Although the colonial state rarely had total control, and various forms of resistance remained widespread, improvisation of colonial authorities within frontier environments remained devastating for the local population.³⁴ Difficulties accessing the interior of the colony, for example, required railways crossing desert landscapes. Colonial narratives point to engineering marvels and a successful conquest and transformation of nature; in reality, it was the labor of namely Herero, Nama, Damara, and San that allowed for such, at best, temporary mastery of an arid terrain. Environmental infrastructure, created for white upper-class settlers, was thus deeply intertwined with the back-breaking labor and the destruction of a black proletariat.

Weaving together different scholarly works helps drive the narrative. In line with discourses situated “at the intersection between imperial history, environmental history and history of technology,”³⁵ *Environing Empire* pushes New Imperial and Global History beyond considerations of connectivity and mobility.³⁶ Thanks to scholarly publications concentrating on Germany’s first and arguably most important colony, such an attempt has become feasible.³⁷ In many ways historians Horst Drechsler and Helmut Bley initiated critical discussions in the 1960s. The latter already described well-known patterns of military conquest and settler colonialism although he noted that there were only “minor differences to be expected from the geography.”³⁸ Since then, scholars have acknowledged existing challenges grounded in geography and the environment, explored the disconnect between imperial imaginations and realities, and discussed what historian Jürgen Zimmerer once titled “infrastructural inadequacies.”³⁹ An array of case studies tied to conquest and cultivation, conservation, commodification, afforestation, the *Rinderpest* pandemic, and war also offer a plethora of vantage points.⁴⁰ Recent and forthcoming works meant to re-center labor and laborers in Namibian history provides avenues for moving beyond existing paradigms as well.⁴¹ Inquiries around *Siedlungskolonialismus* (settler colonialism), *Lebensraum* (living space), genocide, and settler identities, at times overshadowed by discussions focusing on continuities within

German history, have generated lots of interest.⁴² Essential when engaging with Namibian history have been studies focusing on indigenous populations that have long shaped and reshaped environmental infrastructure.⁴³ Thanks to the work of many experts it has thus been possible to step outside colonial and national premises by looking for “evidence in the raw materials of other disciplines,” be it archeology and anthropology, geography, biology, or ecology.⁴⁴

The incorporation of previously overlooked materials, along with a fresh take on long utilized sources, sustain this study. With an emphasis on the German period, *Environing Empire* relies in large part on colonial archival records. As historian Lorena Rizzo recently put it, “we are well advised to keep in mind that German colonial ideas and hopes of total conquest and control of the African population remained a fantasy.” After all, she continues, “The South West African territory was simply too extensive, and the government lacked the resources in funds and personnel to achieve its proclaimed aims. Likewise, colonised subjects—while undoubtedly suffering under a repressive regime—kept finding ways of resisting and evading the grip of the state and its executive institutions, such as the police.”⁴⁵ Subjective perceptions of colonizers, their dreams of the empire, are useful to capture understandings of nature from that perspective. German officials, settlers, and all kinds of experts left behind treasure chests filled with heroic legends, imperial fantasies, and at times unexpected downfalls. Personal files, official reports, and colorful sketches give insight into the colonial gaze while technical magazines give a sense of expert views. Previously snubbed materials of technocrats in particular, as well as materials describing environmental forces and animal agents, are front and center. Diaries, travel accounts, and newspapers supplement that narrative and can help us understand the messiness of underlying agencies and consequences once questioning heroic colonial storylines and reading against the grain.⁴⁶ Landscape photographs, for example, often constructed empty spaces to justify imperial control and indigenous displacement;⁴⁷ the positioning of infrastructure within such snapshots can also serve as evidence, especially because colonists displayed trophy-like showmanship of conquered natures. African agents and agencies, and the voices of Herero, Nama, Damara, San, Ovambo, and other groups are vital to make sense of environmental infrastructure. The use of oral histories, defined as eyewitness accounts of contemporaries, life stories, and traditions, is without a doubt “a methodological must” when it comes to Namibian history.⁴⁸ However, and similar to efforts regarding the transformation of nature elsewhere, the views of those at the receiving end rarely make it into the archives. Fortunately, researchers now have a tapestry of materials available to them.⁴⁹ And so, in these sources, the multilayered and intricate voices of nature exist. Nama share their extensive knowledge tied to flora, fauna, and water networks; settlers with their camp-

fire stories⁵⁰ and gossip seeped in colonial thinking tell heroic tales of pioneers fighting nature; and colonial experts point to future improvements of nature when inserting photographs displaying the damage caused by the mollusk into archival records.⁵¹ At other moments, visiting shipwrecks along the Skeleton Coast convey accounts of treacherous ocean currents; the silted-in remains of the *Mole* in Swakopmund capture the role of wandering sand; dry riverbeds, arid landscapes, and abandoned dams encapsulate the water question. Wearing good walking boots, to see, hear, smell, touch, and feel these factors on-site—the mighty waves of the Atlantic Ocean, the excruciating heat within desert landscapes, the remains of long-gone infrastructure—helped reveal nuances when trying to paint a multilayered picture defined by an array of protagonists. Overall then, and in line with the recent scholarship, “pursuing such an entangled history of technological infrastructure, colonialism, and the environment has immense potentials to overcome current biases and limitations, widening the scope of investigation to formerly neglected areas, topics, and actors, putting ‘classic’ theories and assumptions to the test, and retelling familiar stories with new twists to the tale.”⁵²

Environing Empire is organized more or less in a chronological manner from predatory commercialism to genocidal settlement colonialism, including “phases of apathy, brutality and reform.”⁵³ Each chapter explores human ingenuity, labor, non-human actors, and natural forces, all of which make up environmental infrastructure; sections also unpack colonial tales. Chapter 1 sets the stage by focusing on resource extraction along an environmental borderland. Objectives are twofold: to demonstrate how environmental factors framed the incorporation of the shoreline into capitalistic, administrative, and colonial structures; plus, to show how such forces eventually “entrapped” subsequent German colonial efforts. Structures to access Southwest Africa are the focus of chapter 2. As coastal towns, Angra Pequena and Swakopmund encapsulate German pains when trying to create their own entry points into the colony. The role of Great Britain as a model and adversary, African resistance, the convoluted nature of German colonial policies, and non-human agents such as *Rinderpest* capture the multiplicity of players at work. Chapter 3 then centers on landing structures and railways as solutions to difficulties in entering the protectorate. The construction of the *Mole* in Swakopmund and a rail line to Windhoek paint a picture of human ingenuity. Yet other actors such as natural circumstances are vital when trying to understand setbacks and broader consequences. Efforts to solve the water question are centered in chapter 4. A lack of drinking water was a major challenge haunting the colony throughout its existence. Here, colonial experts, and a belief in hydrology and irrigation, drive the narrative. The inclusion of silenced local knowledge, grander visions of the colony, and natural circumstances again speak to muddled agencies. Chapters 5 and 6 discuss environmental infrastructure as an instrument of war

and resistance, beginning with the initial phase of the 1904 Uprising. On top of Herero resistance, the harbor in Swakopmund begun silting in while issues with flash floods further disrupted the use of the railway. Such strains characterized the German military campaign and raised anxieties; they also shaped colonial storylines devoid of African agency. Chapter 6 stays with logistics, war, and genocide. For one, the shipworm disrupted landings in Lüderitzbucht and Swakopmund; moreover, mobile desert dunes piled on train tracks crossing the Namib Desert. Colonial narratives, the role of African labor, and the use of precolonial structures to resist German dominance are at the center. The creation of a model colony are key in chapter 7. Although debates about the future of German Southwest Africa (mining, cattle, agriculture) loomed for some time, imperial visions generally agreed when it came to access (landing structures, railways), water (wells, dams, irrigation), and (African) labor. During this time investments and subsidies in large part thanks to the discovery of diamonds brought more settlers to the colony; available funds also sustained the expansion of animal transfers and the cultivation of plants. A model settler colony for whites formed and with it a German *Südwesterner* (Southwesterner) identity rooted in stories of conquering nature. A conclusion centers such tales; it also explores consequences, legacies, and continuities reaching well beyond Germany's loss of the colony.

Notes

1. Hugo von François, *Nama und Damara: Deutsch Süd-West-Afrika* (Magdeburg, 1896), 272. See also *Deutsches Kolonialblatt*, "Mit Bezug auf die Verwendbarkeit der Dromedare für den Postdienst im deutschen Schutzgebiet von Südwestafrika," 15 October 1892 (François); Richard Trevor Wilson, "The One-Humped Camel in Southern Africa: Imports and Use in South West Africa/ Namibia," *Journal of Camel Practice and Research* 19, no. 1 (Jun., 2012): 1–6.
2. BArch-B, R 1001/8535, Kamele in Deutsch-Südwestafrika.- Beschaffung von Kamelen Feb. 1891-Juli 1899 (Band 1), Kostenüberblick.
3. François, *Nama und Damara*, 272.
4. Ursula Massmann, "Kamele in Südwestafrika," *Namib und Meer* 9 (1981): 31–54.
5. *Daheim: Ein deutsches Familienblatt mit Illustrationen*, "Koloniales," 12 November 1893.
6. Friedrich Ratzel introduced the biogeographical concept of *Lebensraum* (living space) by the turn of the century, a concept floating around in numerous German circles at the time. See Friedrich Ratzel, *Der Lebensraum: Eine biogeographische Studie* (Tübingen, 1901). See also Hans Grimm, *Volk ohne Raum* (Munich, 1926). Historian Heinrich von Treitschke spoke of an "overproduction of humans." See Horst Gründer, *Geschichte der deutschen Kolonien*, 7th ed. (Paderborn, 2018), 27–28 and 43. For scholarly discussion see Hannah Arendt, *The Origins of Totalitarianism* (Orlando, 1976); Patrick Wolfe, "Settler Colonialism and the Elimination of the Native," *Journal of Genocide Research* 8, no. 4 (2006): 387–409; Dominic Schaller and Jürgen Zimmerer, "Settlers, Imperial-

- ism, Genocide: Seeing the Global without Ignoring the Local—Introduction,” *Journal of Genocide Research* 10, no. 2 (2008): 191–99; Dirk A. Moses, ed., *Empire, Colony, Genocide: Conquest, Occupation, and Subaltern Resistance in World History* (New York, 2010); Volker Langbehn and Mohammad Salama, eds., *German Colonialism: Race, the Holocaust, and Postwar Germany* (New York, 2011).
7. Emmanuel Kreike, *Scorched Earth: Environmental Warfare as a Crime against Humanity and Nature* (Princeton, NJ, 2021), 2. See also Emmanuel Kreike, “Architects of Nature: Environmental Infrastructure and the Nature-Culture Trap” (PhD. diss., Wageningen University, 2006), 1–2 and 21–29.
 8. Kreike, *Scorched Earth*, 2.
 9. Kreike, “Architects of Nature,” 2.
 10. Michael Bollig made similar points recently. See Michael Bollig, *Shaping the African Savannah: From Capitalist Frontier to Arid Eden in Namibia* (Cambridge, 2020), 6–9.
 11. Immanuel Kreike, “Environmental and Climate Change in Africa: Global Drought and Local Environmental Infrastructure,” 73–97, here 74–75, in *Environmental Change and African Societies*, ed. Ingo Haltermann and Julia Tischler (Leiden, 2007).
 12. See, for instance, Daniel R. Headrick, *The Tools of Empire: Technology and European Imperialism in the Nineteenth Century* (Oxford, 1981); Clarence B. Davis, Kenneth E. Wilburn, and Ronald E. Robinson, eds., *Railway Imperialism* (New York, 1991). Some of the historiography is also littered with discussions of development and progress, devoid of African voices. See, for instance Udo Kaulich, *Die Geschichte der ehemaligen Kolonie Deutsch-Südwestafrika 1884–1914: eine Gesamtdarstellung* (Frankfurt am Main, 2001).
 13. James C. Scott, *The Art of Not Being Governed: An Anarchist History of Upland Southeast Asia* (New Haven, CT, 2009), 11. On Erschliessung see, for example, Theodor Rehbock, *Deutsch-Südwest-Afrika: Seine wirtschaftliche Erschliessung* (Berlin, 1898); Otto Blum and Erich Giese, *Wie erschliessen wir unsere Kolonien?* (Berlin, 1907); Franz Baltzer, *Die Erschliessung Afrikas durch Eisenbahnen* (Berlin, 1913). See also Sebastian Beese, “Experten der Erschliessung: Die Akteure der deutschen Kolonialtechnik in Afrika und Europa zwischen dem Ende des 19. und der Mitte des 20. Jahrhunderts” (PhD diss., University St. Gallen, 2018), chapter 3.1; Andreas Greiner, “Tensions of Transport: Human Portorage and State Formation in Colonial East Africa, c. 1890–1914” (PhD diss., ETH Zurich, 2019).
 14. Jeffrey Herbst, *Status and Power in Africa* (Princeton, 2000), 58. See also Georg Steinmetz, *The Devil’s Handwriting: Precoloniality and the German Colonial State in Qingdao, Samoa, and Southwest Africa* (Chicago, 2007), 5; Jürgen Zimmerer, *Deutsche Herrschaft über Afrikaner: Staatlicher Machtanspruch und Wirklichkeit im kolonialen Namibia*, 3rd ed. (Münster, 2004), 2 and 16; Birthe Kundrus, *Moderne Imperialisten: Das Kaiserreich im Spiegel seiner Kolonien* (Cologne, 2003), 9 and 290.
 15. Birthe Kundrus, *Moderne Imperialisten*, 53; Steinmetz, *The Devil’s Handwriting*, 22; Zimmerer, *Deutsche Herrschaft über Afrikaner*, 16. For a broader discussion, see Susanne Zantop, *Colonial Fantasies: Conquest, Family, and Nation in Precolonial Germany* (Durham, NC, 1997); Sara Friedrichsmeyer, Sara Lennox, and Susanne Zantop, eds., *The Imperialist Imagination: German Colonialism and Its Legacy* (Ann Arbor, 1999).
 16. Maurus Reinkowski and Gregor Thum, “Helpless Imperialists: Introduction,” in *Helpless Imperialists: Imperial Failure, Fear and Radicalization*, ed. Maurus Reinkow-

- ski and Gregor Thum, 7–20, here 11 (Göttingen, 2013). Helmut Bley and Brigitta Schmidt-Lauber coined the term *abhängige Herren* (dependent gentleman). See Brigitta Schmidt-Lauber, *Die abhängigen Herren: Deutsche Identität in Namibia* (Münster, 1993).
17. David Blackbourn, *The Conquest of Nature: Water, Landscape, and the Making of Modern Germany* (New York, 2006); Richard J. Evans, “Chapter 5: The Conquest of Nature,” in *Pursuit of Power: Europe 1815–1915*, 355–443, (New York, 2016). See also Vittoria Di Palma, *Wasteland: A History* (New Haven, CT, 2014).
 18. Corey Ross, *Ecology and Power in the Age of Empire: Europe and the Transformation of the Tropical World* (Oxford, 2017), 9.
 19. Kundrus, *Moderne Imperialisten*, 141.
 20. Matthias Häussler, *Der Genozid an den Herero: Krieg, Emotion und extreme Gewalt in Deutsch-Südwestafrika* (Weilerswist-Metternich, 2018), 233–34.
 21. In line with historian Ross, “recognizing the complex entwinement of imperial power and environmental change is not to sacrifice the clarity about the enormous scale of transformations that took place, nor about the core responsibility of European states, corporations, and individuals in bringing them about.” Ross, *Ecology and Power in the Age of Empire*, 418.
 22. Bernhard Gissibl, *The Nature of German Imperialism: Conservation and the Politics of Wildlife in Colonial East Africa* (New York, 2016). 11.
 23. Ross, *Ecology and Power in the Age of Empire*, 18.
 24. Christo Botha, “People and the Environment in Colonial Namibia,” *South African Historical Journal* 52 (2005): 170–90, here 170.
 25. Blackbourn, *The Conquest of Nature*; Evans, *Pursuit of Power*.
 26. For the most prominent example see Robert J. Gordon, “Hiding in Full View: The ‘Forgotten’ Bushman Genocides of Namibia,” *Genocide Studies and Prevention* 4, no. 1 (2009): 29–57.
 27. Rita Gudermann, “Conviction and Constraint: Hydraulic Engineers and Agricultural Amelioration Projects in Nineteenth-Century Prussia,” in *Germany’s Nature: Cultural Landscapes and Environmental History*, ed. Thomas Lekan and Thomas Zeller, 33–54, here 33 and 35 (New Brunswick, NJ, 2005). James C. Scott’s *Seeing Like a State* (1998) has been useful in this context although Scott “downplays the role the environment played in challenging their plans.” Heather J. Hoag, *Developing the Rivers of East and West Africa: An Environmental History* (London, 2013), 18.
 28. Lora Wildenthal, *Women for Empire, 1884–1945* (Durham, NC, 2001).
 29. James C. Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven, CT, 1998), 6.
 30. James Fairhead and Melissa Leach, *Misreading African Landscape: Society and Ecology in a Forest-Savanna Mosaic* (Cambridge, 1996), 7; Hoag, *Developing the Rivers of East and West Africa*, 3–4.
 31. Botha, “People and the Environment in Colonial Namibia,” 174.
 32. Frederick Cooper and Ann Laura Stoler, eds., *Tensions of Empire: Colonial Cultures in a Bourgeois World* (Berkeley, CA, 1997), 5.
 33. “The activities of the Protection Force involved both destruction and construction within a wider colonial framework.” Susanne Kuss, *German Colonial Wars and the Context of Military Violence*, translated by Andrew Smith (Cambridge, 2017), 81.

34. Marie Muschalek, *Violence as Usual: Policing and the Colonial State in German South-west Africa* (Ithaca, NY, 2019).
35. Jonas van der Straeten and Ute Hasenöhl, “Connecting the Empire: New Research Perspectives on Infrastructures and the Environment in the (Post)Colonial World,” *NTM Zeitschrift für Geschichte der Wissenschaften, Technik und Medizin* 24 (2016): 355–91, here 357.
36. The discussion follows critiques recently laid out in *Ibid.*, 359–60.
37. For a recent discussion of the historiography see Sara Pugach, David Pizzo and Adam A. Blackler, “The Imperial Imagination 20 Years On: The Historiographical Shift toward a Global Germany,” 1–40, in *After the Imperialist Imagination: Two Decades of Research and Its Legacies*, ed. Sara Pugach, David Pizzo, and Adam A. Blackler (Oxford, 2020).
38. Bley, *South-West Africa under German Rule*, xvii.
39. Zimmerer, *Deutsche Herrschaft über Afrikaner*, 3. Discussions of colonial warfare are particularly sensitive to environmental circumstances. See Kuss, *German Colonial Wars and the Context of Military Violence*; Isabell Hull, *Absolute Destruction: Military Culture and the Practices of War in Imperial Germany* (Ithaca, NY, 2014). See also Häussler, *Der Genozid an den Herero*.
40. Daniel Steinbach, “Carved out of Nature: Identity and Environment in German Colonial Africa,” 47–77, in *Cultivating the Colonies: Colonial States and Their Environmental Legacies*, ed. Christina Folke Ax, Niels Brimnes, Niklas Thode Jensen, and Karen Oslund (Athens, 2011); Botha, “People and the Environment in Colonial Namibia”; Bollig, *Shaping the African Savannah*; Hendrik Snyders, “‘Stinky and Smelly—But Profitable’: The Cape Guano Trade, c. 1843–1910 (PhD diss, Stellenbosch University, 2011); Felix Schürmann, *Der graue Unterstrom: Walfänger und Küstengesellschaften an den tiefen Stränden Afrikas (1770–1920)* (Frankfurt am Main, 2017); Steven Press, *Blood and Diamonds: Germany’s Imperial Ambitions in Africa* (Cambridge, 2021); Antti Erkkilä and Harri Siiskonen, *Forestry in Namibia, 1850–1990* (Joensuu, 1992); Harri Olavi Siiskonen, “The Concept of Climate Improvement: Colonialism and Environment in German South West Africa,” *Environment and History* 21, no. 2 (2015): 281–302; Giorgio Miescher, *Namibia’s Red Line: The History of a Veterinary and Settlement Border* (New York, 2012); Klemens Wedekind, *Impfe und herrsche: Veterinärmedizinisches Wissen und Herrschaft im kolonialen Namibia 1887–1929* (Göttingen, 2021).
41. Bernhard C. Moore, Stephanie Quinn, William Blakemore Lyon, and Kai F. Herzog, “Balancing the Scales: Re-Centring Labour and Labourers in Namibian History,” *Journal of Southern African Studies* 47, no. 1 (2021): 1–16. See also William Blakemore Lyon, “Namibian Labor Empire: Migrant Workers in Colonial South West Africa, 1892–1925” (PhD diss, Humboldt University Berlin, forthcoming).
42. Jürgen Zimmerer and Jürgen Zeller, eds., *Genocide in German South-West Africa: The Colonial War of 1904–1908 and Its Aftermath*, trans. E. J. Neather (London, 2008); David Olusoga and Casper W. Erichsen, *The Kaiser’s Holocaust: Germany’s Forgotten Genocide* (London, 2010); Jürgen Zimmerer, *Von Windhuk nach Auschwitz? Beitrag zum Verhältnis von Kolonialismus und Holocaust* (Münster, 2011); Philipp Lehmann, “Between Waterberg and Sandveld: An Environmental Perspective on the German–Herero War of 1904,” *German History* 32, no. 4 (2014): 533–58; Jonas Kreienbaum,

- “*Ein trauriges Fiasko*”: *Koloniale Konzentrationslager im südlichen Afrika 1900–1908* (Hamburg, 2015); Birthe Kundrus, “Colonialism, Imperialism, National Socialism: How Imperial was the Third Reich?” in *German Colonialism in a Global Age*, ed. Bradley Naranch and Geoff Eley, 330–46 (Durham, NC, 2014); Häußler, *Der Genozid an den Herero*; Daniel Joseph Walther, *Creating Germans Abroad: Cultural Policies and National Identity in Namibia* (Athens, 2002); Adam A. Blackler, “Heathens, ‘Hottentots’, and *Heimat*: Colonial Encounters and German Identity in Southwest Africa, 1842–1915” (PhD diss, University of Minnesota, 2017).
43. Dag Henrichsen, *Herrschaft und Alltag und Alltag im vorkolonialen Zentralnamibia: Das Herero- und Damaraland im 19. Jahrhundert* (Basel, 2011); Kreike, *Environmental Infrastructure in African History*.
 44. Judith Carney and Haripriya Rangan, “Situating African Agency in Environmental History,” *History and Environment* 21, no. 1 (2015): 1–11, here 7.
 45. Lorena Rizzo, *Photography and History in Colonial Southern Africa: Shades of Empire* (New York, 2020), 29.
 46. In this sense, *Envirning Empire* engages with “myths and legends, literary narratives and other texts, landscape perceptions, as well as colonial and wildlife photography.” William Beinart and Joann MacGregor, “Introduction,” 1–24, here 5, in *Social History & African Environments*, ed. William Beinart and Joann MacGregor (Athens, 2003). See also Carney and Rangan, “Situating African Agency in Environmental History.”
 47. Lorena Rizzo, “Faszination Landschaft–Landschaftsphotographie in Namibia,” *Basler Afrikabibliographien Working Papers* 1 (2014): 1–15, here 15. See also Wulf Otte, *Weiß und Schwarz–Black and White: Photos aus Deutsch-Südwestafrika/ from Namibia, 1896–1901* (Wendeburg, 2007); Patricia Hayes, Jeremy Silvester, and Wolfram Hartmann, “Photography, History and Memory,” 2–9, in *The Colonising Camera: Photographs in the Making of Namibian History*, eds. Wolfram Hartmann, Jeremy Silvester and Patricia Hayes, 2nd ed. (Cape Town, 2002); Patricia Hayes, Jeremy Silvester, and Wolfram Hartmann, “Picturing the Past’ in Namibia: The Visual Archive and its Energies,” in *Refiguring the Archived*, ed. Carolyn Hamilton et al., 103–34 (Dordrecht, 2002); George Steinmetz and Julia Hell, “The Visual Archive of Colonialism: Germany and Namibia,” *Public Culture* 18, no. 1 (2006): 147–83.
 48. Larissa Förster, “The Concept of Oral History,” in *What the Elders Used to Say: Namibian Perspectives on the Last Decade of Colonial Rule*, ed. Casper W. Erichsen, 63–74, here 65, (Windhoek, 2008), 65. See also Gesine Krüger, “The Golden Age of the Pastoralist: Namibia in the 19th Century,” in Jürgen and Zeller, *Genocide in German South-West Africa*, 3–18, here 4; Ruth Finnegan, “Reflecting Back on ‘Oral Literature in Africa’: Some Reconsiderations after 21 Years,” *South African Journal of African Language* 12, no. 2 (1992): 39–47.
 49. The *Michael Scott Oral History Project*, several collections of interviews, and the *British Blue Book* are examples easily accessible to scholars. For an annotated bibliography, see Förster, “The Concept of Oral History,” 65–47.
 50. These *stories* are widely shared within the German-speaking community in Namibia. According to Werner Hillebrecht, “much of it [settler stories] is trash, colonial novels en masse, only useful for surveys along ideological criticism.” Werner Hillebrecht, “Hdk SWA, oder im Dschungel der Bibliotheken,” in *In Treue fest, Südwest! Eine ideologiekritische Dokumentation von der Eroberung Namibias über die deutsche Fremdherr-*

schaft bis zur Kolonialapologie der Gegenwart, ed. Henning Melber 187–88, here 188 (Bonn, 1984). See also Andree-Jeanne Tötenmeyer, “Die Problematik der Kinder- und Jugendliteratur Namibias: Gestern und heute,” *Afrikanischer Heimatkalender* (Windhoek, 1990), as referenced in Stephan Mühr, “Zur Erzählkultur im deutschsprachigen Namibia,” in *Südwesten Geschichten am Lagerfeuer erzählt von Ernst Rudolf Scherz*, ed. Ernst Rudolf Scherz, 101–9, here 108 (Basel, 2005).

51. On Nama see, for instance, Sigrid Schmidt, *Zaubermärchen in Afrika: Erzählungen der Damara und Nama* (Cologne, 1994); Sigrid Schmidt, *Als die Tiere noch Menschen waren: Urzeit und Trickstergeschichten der Damara und Nama in Namibia* (Cologne, 1995).
52. van der Straeten and Hasenöhr, “Connecting the Empire,” 379.
53. David Ciarlo, *Advertising Empire: Race and Visual Culture in Imperial Germany* (Cambridge, 2011), 4. Zimmerer divides the period along the lines of colonial conquest, genocidal war, and postwar. Zimmerer, *Herrschaft über Afrikaner*, 14. See also Joachim Radkau, *Nature and Power: A Global History of the Environment*, trans. Thomas Dunlap (Cambridge, 2008), 152.



Currents, Chances, Commodities

The journey across arid stretches of land had been worth it. Back in 1894, Ernst Hermann, who had been working for the Deutsche Kolonialgesellschaft (German Colonial Society), sent Englishman Walter Matthews to find out where all the seals had gone. They had become hard to find around Lüderitzbucht, a harbor in the south of the colony the Germans had claimed ten years earlier. Matthews, “one of the weirdest characters,” according to one newspaper,¹ traveled by ship to Walvis Bay. After landing, he must have heard about a seal colony at Cape Cross, located about 160 kilometers farther to the north along the coast. Since using a boat in coastal waters was too dangerous, Matthews, his two assistants, and several pack mules trekked overland, first to Swakopmund, then onward into a waterless and barren land. Any such journey required careful preparation, with multiple trips just to place water containers along the way to be used later on.² When they laid eyes on thousands of seals hanging out on a large rocky cliff, and even more so once they stumbled upon deposits of guano (Hispanicized Quechua word *wanu* for fertilizer/dung), all such burdens seemed worth it. Matthews did not hesitate: he reached out to C. J. Elers, a wealthy uncle and the managing director of Barret’s Breweries and Bottling Co. Ltd. in London, formed the Damaraland Guano Company, and obtained the required concessions from the German colonial government. Workers from Britain and the Cape, food, timber, even a locomotive, everything had to be brought in by ship.³ Landings were dangerous. After all, this was the infamous Skeleton Coast, part of Namibia’s almost thousand-mile coastline littered with shipwrecks turned maritime artifacts.⁴ In September 1896, the Norwegian bark *Erycina* sprang a leak and sank while unloading coal; that same year another ship stranded in the bay.⁵ In other instances, crew members simply refused to cross the hammering surf.⁶ Problems accessing drinking water also defined life at this commodity outpost, especially when supplies from overseas got delayed. At that point an ox wagon had to trek back to the ephemeral Omaruru River hoping to find water. Life was thus a struggle, defined by hard labor in virtual isolation, rampant diseases, limited medical care, boredom, and miserable damp weather.

Environmental infrastructure within the borderland sitting in-between the waters of the Atlantic Ocean and arid landscapes of an ever-encroaching Namib Desert were defined by human ingenuity, labor, non-human actors, and natural forces. Here, African societies like the Topnaar (also known as †Aonin), one subgroup of the Nama and thus part of the Khoisan, lived in outwardly inhospitable landscapes raising livestock and trading with groups in the interior; here European explorers sailed on the margins fearing wreckage and barren spaces. Both the dangerous ocean waters and arid desert landscapes initially protected Africans from European colonialism; that same frontier also laid the groundwork for an intricate ecosystem sustaining rich marine wildlife that attracted whales, seals, and all kinds of birds. By the eighteenth-century, the commodification of nature attracted Europeans and Americans to the region to plunder whale oil, seal skins, and guano. According to archeologists Jill and John Kinahan, “Isolated contacts with Europeans first occurred in the late seventeenth century, becoming more frequent a century later, and then permanent.”⁷ Although the Topnaar were originally able to take advantage of new trade opportunities, the goods they acquired, combined with rising cattle raids in the interior, eventually weakened them.⁸ Protagonists such as whalers, sealers, and guano miners, on the other hand, introduced new economic and governmental structures to the region. Non-human actors such as whales had to adapt and migrate. A study of this liminal space offers a sense of location, commodity trade, and early interactions. Moreover, it provides the basis for understanding how early structures ultimately framed and manipulated subsequent German colonization. Finally, this section further sustains historian George Steinmetz’s assertion that “There was not, in fact, a sharply delineated transition from precolonialism to colonialism in Southwest Africa.”⁹

Chapter 1 is organized along four sections, beginning with an introduction of the environmental borderland, or what archaeologist John Kinahan has titled the “last frontier of European imperialism in Africa.”¹⁰ A more in-depth discussion of the Benguela Current and Namib Desert are key when trying to make sense of natural forces that make this a non-equilibrium environment.¹¹ Historians are correct when noting that “the proverbial bleakness of the coastline . . . largely deterred Europeans from attempting to settle or trade until the second half of the eighteenth century, although the coast had been known to them since the early 1480s.”¹² However, and as emphasized in the following, the commodification of nature, a form of human agency, to follow Kreike,¹³ pulled cunning businessmen into the region by the seventeenth century. Three major booms are front and center: whaling, sealing, guano mining. Environmental infrastructure, shaped by geographical, biological, and ecological factors, as well as human ingenuity and labor, ultimately initiated early encounters and defined the incorporation of the coastline into the global marketplace.

On the Margins

The coastline of Namibia is littered with shipwrecks that tell stories of treacherous ocean waters and difficult navigation. North of modern-day Swakopmund, tourists can search for the now fully covered wreck of the *Gertrud Woermann II*. It stranded in 1904. The *Zeila*, a fishing trawler now bouncing back and forth between hazardous waves, as well as the beached wrecks of *Benguela Eagle*, *Montrose*, *Suiderkruis*, *Sir Charles Eliot*, and *Dunedin Star*, all long the fuel of adventures stories, are other maritime artifacts discarded along the so-called Skeleton Coast. According to historian Jennifer Jones, “They serve as icons for a unique historical and environmental context against a backdrop of desolate, desert landscape.”¹⁴ Take the wreck of a Portuguese vessel first discovered at Oranjemund in 2008. The diamond company Namdeb, a joint venture between the Namibian government and DeBeers, found its remains during excavation work.¹⁵ Precious diamonds were once deposited upstream of the Orange River. Over time those were flushed down and into the ocean, spreading along much of the southern coast of Namibia and the Northern Cape of South Africa. Namdeb now mines in a *Sperrgebiet* (forbidden zone) reaching from the South African border to about seventy kilometers north of Lüderitzbucht. In any case, after some of their workers spotted the seafaring relic, archaeologists identified it as the legendary *Bom Jesus*. Owned by Portuguese King João III, it sank on its way from Lisbon to western India in 1533. According to one expert, a combination of factors including excess cargo and bad weather likely resulted in the wreckage.¹⁶ Sailing along the coast of Southwest Africa in early days, and on some level even today, meant traveling on the margins.

Namibia’s coastline is a dangerous frontier space characterized by an array of natural forces. The country is located within what scholars call a swell wave environment. Those are defined by large waves traveling vast distances across the Atlantic Ocean from the southwest. Gale winds also push toward a rugged coastline. Then, there is the infamous Benguela Current, one of four main eastern boundary upwelling systems in the world. As a strong surface current, it arrives in the region with cold water from the southern Atlantic, wandering up the coast to around the mouth of the Kunene River. Anticyclonic winds drive such movements northward while counter currents below flow southward (Figure 1.1).¹⁷ An unstable process known as upwelling or lifting emerges as “cool waters from the deep offshore are brought to the surface of the coast,” to follow an explanation from the aquarium in Swakopmund.¹⁸ Coastal upwelling systems like the Benguela Current are what scholars call “the ‘powerhouse’ of phytoplankton production.”¹⁹ A rich marine ecosystem is the result of that, attracting fish, whales, seals, and all kinds of birds. At the same time, the system’s variabilities, overall currents and upwelling, and its pull away from

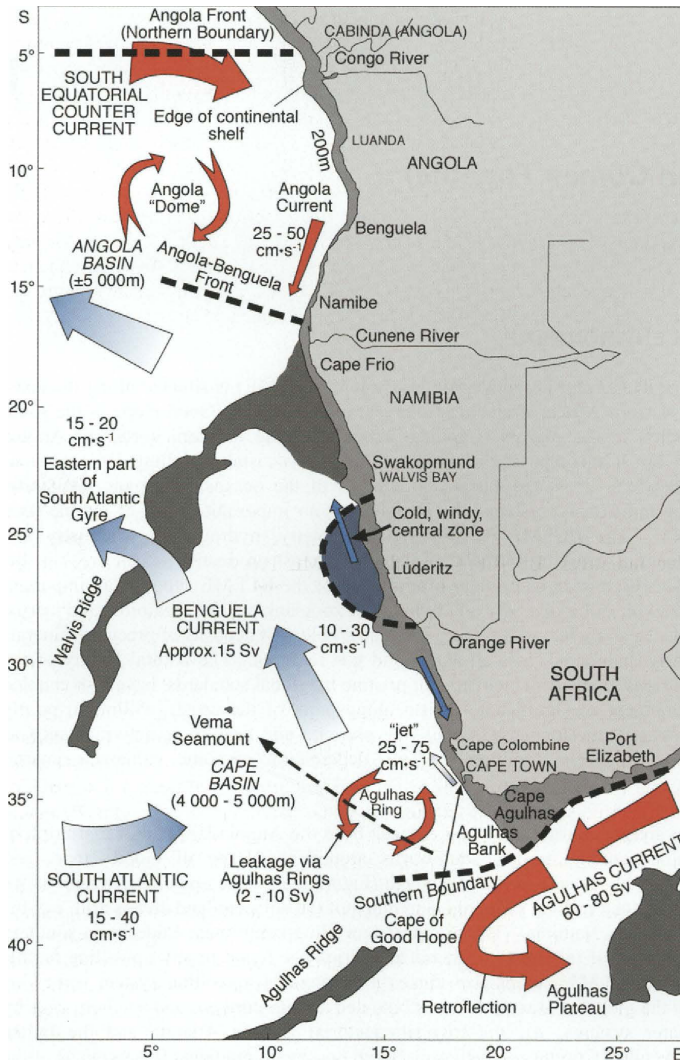


Figure 1.1. Benguela Current (2006), courtesy of Vere Shannon/Elsevier.

the coastline in a circular motion turns dreams of calm and predictable coastal waters into the plotline for nightmares. Ever-shifting beaches made the coast no more than a “fantasy line,” to follow one German missionary later on.²⁰ Sailors stayed away, if at all possible, fearing a more or less uncharted seashore that also lacked natural harbors. As a result, and as one scholar concluded, “The whole of the Namibian coastline was virtually terra incognita during the eighteenth century and had only been visited by passing ships on occasion.”²¹

The Namib Desert equally defines this borderland. Linked to the desiccating effect of water welling from the Benguela Current,²² that ancient arid backdrop dominates the country's geography behind hazardous ocean waves. Considered to be among the world's oldest deserts, the Namib (!*Namib*), a Nama (Khoikhoi language) term that means "shield" or "enclosure,"²³ extends for more than 2,000 kilometers and eighteen degrees of latitude. As outlined by biologist Mary Seely, "Most of the year the strong southwester blows. This results in maintenance of a cool inversion layer, that is, a layer of cooler air lying below a layer of warmer air. An inversion layer reduces the turbulence necessary for cloud development and thus prevents rain."²⁴ Estimates note an average of less than fifteen millimeters of rainfall on the coast to about a hundred millimeters on the eastern desert annually, precipitation that comes with great irregularity and variability.²⁵ The desert wall following the coastline is around one hundred to two hundred kilometers in width and contains a wide-ranging number of large and mobile dunes. Between Swakopmund and Lüderitzbucht, this Sand Sea creeps right down to the shoreline, creating a spectacular contrast of blue ocean water and yellowish sand. Natural havens are hard to come by, and Walvis Bay's harbor only exists due to the Khuseb River and its largely concealed subterranean or underground supply of water.²⁶

A lack of precipitation and broader variabilities provide limited potential for life. Deserts are rich spaces, of course, and the same applies to the outwardly lifeless Namib. As southwestern winds reach the ocean from the desert, they cool over the Benguela Current, the air condenses and forms fog. Once blown inland, such low-level clouds become trapped between less dense hot air. A nightmare for navigation, this rare moisture sustains life in the desert: animals bask in fog. According to one account from the 1890s, "By the bucket it drips from the rigging on the ship."²⁷ At times, dust storms from the east also blow all kinds of nutrients into the desert. As a result, tourists joining one of the many worthwhile desert tours can observe snakes, spiders, bugs, and a variety of other animals, including the stunning endemic shovel-snouted lizard (*Meroles anchietae*); they can also see several types of plants such as the equally endemic *Welwitschia* (*Welwitschia mirabilis*) and a diverse lichen community. Whereas such flora and fauna outline a surprisingly unique and assorted ecosystem, larger mammals and vegetation need more than drops of water. Mobility is key. Desert elephants once wandered in some areas, and jackals as well as brown hyenas still cross the desert, patrol beaches, and prey on seals. Similar to antelopes, these mammals rarely venture away from a stable supply of drinking water.

Humans have long adapted to and transformed these outwardly inhospitable landscapes. Broadly speaking, and according to two scholars, "Namibia had, for centuries if not millennia, various populations of gatherers and hunters, of pastoral nomads breeding and managing small as well as large stock, of

sedentary groups supporting themselves largely on undomesticated fruits and vegetables, ocean or fish resources, and veldkost [field food] . . . or of peoples combining all or several of these agricultural pursuits.”²⁸ Drinking water was essential, of course, and environmental infrastructure that offered such supply could once be found in seemingly unwelcoming spaces. Archaeologist John Kinahan has written extensively about groups living near the Hungorob Ravine and the Khuseib River Delta, both areas that have become case studies for investigations surrounding settlement, trade, and pastoralism. He writes, “The pattern of pastoral settlement and land use that developed in the Namib Desert is a very close adaptation to the prevailing environmental conditions. Small, isolated homestead sites, comprising a few huts and some stock enclosures, were occupied during the long dry season. These sites were situated within a few kilometers of reliable water supply, usually hand-dug wells in dry river courses.”²⁹ Variable supplies forced nomadic pastoralist communities to cultivate the leafless !nara (*Acanthosicyos horridus*), a melon-like fruit growing in arid landscapes.³⁰ Apart from organizing their lives around this plant, they also made use of coastal ecosystems, catching fish, for instance.³¹ An ancient duality took shape, with some living in the delta while others spent more time along the coastline. According to ethnologist Kuno Budack, the former were herders of small animals and cattle, and were originally more dominant. The “people of the sea,” on the other hand, “represent the maritime element in Topnaar culture.”³² Archaeological evidence in the form of kitchen middens, maybe best defined as all kinds of scraps and toolmaking debris left behind,³³ has shown that these groups adjusted remarkably well to this borderland between the ocean and desert.³⁴

Further inland, behind the buffer of the Namib Desert, life and existence equally concentrated around the availability of water, cattle, and trade. Two groups over the years settled in the area of modern-day Namibia: Khoisan-speakers and Bantu-speakers. The former, known for the clicking sounds that define their language, have inhabited these lands for centuries. They include Nama or Namaqua, nomadic pastoralists living in central and southern Namibia, as well as the San people, hunter-gatherers that at times are known by the derogatory term “Bushmen.” The second group, Bantu-speakers, migrated into the area of Southwest Africa in the mid-sixteenth century. At times described as Bantu-colonization, oral traditions suggest that they came from East Africa, Zambia, and Angola. Herero (or Ovaherero) and Damara (or Bergdamara) were known as pastoralists with a deep connection to their cattle; they migrated to the central plateau and settled in central Namibia. As cattle farmers, they became intimately tied to seasonal patterns. Ovambo (Aawambo) and Himba, the latter of the two groups historically not separate from Herero, were two other Bantu-speaking societies. They established themselves farther north. Interactions with other groups, including Dutch settlers

in South Africa, as well as a variety of migratory patterns, resulted in numerous ethnic identities. Mixed-race Oorlam clans, for one, migrated into southern Namibia where they mingled with various Nama groups. Khoikhoi societies like the Nama had arrived from the south much earlier, with one subgroup having migrated into the area near Walvis Bay. Literally “people of a marginal area,” they became known by the Dutch name *Topnaar* (the point) later on.³⁵ All groups defined their surroundings. Water holes turned into spaces for settlements and trade, and over time environmental infrastructure consisting of an intricate and sophisticated trade system with strategically located contact sites took shape.³⁶ Historian Dag Henrichsen described such structures as a three-way triangle: agricultural and handicraft products from the Ovambo in the North, copper and salt from the area around the Otavi mountains, and the Etosha salt pan from groups like the San, respectively, and cattle mainly from the Herero.³⁷ “A clear correspondence between environmental features, local identity and specific economic forms of production existed among the various groups,”³⁸ to follow another scholar. The arrival of Oorlam cattle raiders from the Cape Colony later pushed the frontier further north, which turned Herero hunters and traders into middlemen or intermediaries operating between the Ovambo kingdoms in the north and the Cape.³⁹ All of that made regions along the Namib Desert and the coastline into a frontier space with a hinterland long connected to the interior and beyond.

The first Europeans to travel along the ocean-side of this border were Portuguese explorers in the late fifteenth century. Prince Henry the Navigator had famously called for and sponsored numerous seafaring expeditions; King John II [João II] later stepped into the footsteps of his great-great-uncle by supporting ventures southward. In June 1482, navigator Diogo Cão, known in the English-speaking world as Diego Cam, turned south. Covering thousands of nautical miles, he reached the mouth of the Congo River. After traveling upstream, and engaging with local groups that got little attention in European narratives, he sailed into the uncharted coastline of modern-day Angola. Cão did not travel beyond the mouth of Kunene River, the border between modern-day Angola and Namibia, until his second journey in 1485. Those aboard must have noticed changes in the landscape by the mile—forests of giant baobab trees slowly fading away as the vegetation became more and more sparse. The mouth of Kunene River was likely the last green spot they saw before coming across Namibia’s barren and desolate coastline: yellowish-grey rocks, looming dunes, all in contrast to rich, blue, cold, and dangerous ocean waters. A wall of mist and fog, or the haze of the desert sun, probably made it difficult to see the full scale of this alien landscape. An area soon known as Cape Cross provided a somewhat secure landing spot. Of course, and as pointed out by Henrichsen, that space had long featured in local African histories. In Otjiherero it was called *Otjozondera*, the place of birds; Damara people referred

to it in Khoekhoegowab as (Kai)||ganabes (the water of dumb [scared] people) or ||Gana||Khuibes (the place of the missing camelthorn tree).⁴⁰ African praise poetry also captured interactions with the area while giving a sense of environment and landscapes well before the Portuguese arrived. The latter eventually rowed ashore through a heavy surf. For them, that moment of stepping on land must have felt like walking into a different world: windy, rocky, cold, damp, barren, a place for noisy seals and nesting birds, not for humans. The Portuguese erected one of their famed *padrão*, a limestone cross nowadays usually surrounded by sun-bathing seals. It was 28 August 1483, the feast day of St. Augustine. Then they left. On his second journey later, and accompanied by German mapmaker Martin Behaim, Cão reached Sandwich Harbor.⁴¹ Cão eventually died at sea, or at least fell into oblivion some other way, by then having added more than 2,000 kilometers of coastline to European maps.⁴² It was thereby up to the much more famous Bartholomeu Dias to become the first European to reach Angra Pequena, the small bay. He did so by 1487, leaving behind a store-ship. According to contemporary Portuguese historian João de Barros, stormy weather held his two caravels in that region for about five days.⁴³ The fateful decision to turn away from coast and currents into the emptiness of the Atlantic Ocean paid off: the ships caught winds pushing them back only to discover that they had circumvented the Cape of Storms (later known as the Cape of Good Hope) already.⁴⁴ In 1488, Dias had thus become the first European to make it across the meeting point of two currents, the Benguela and the Agulhas Current—and likely the first to realize that avoiding the Namibian coastline made navigational sense.

Portuguese travelers making the lucrative expedition along Southwest Africa's coast to trade with the Mughal Empire in India knew they were sailing on the margins. Navigation was difficult and dangerous. According to the route-book of Portuguese seafarer and cartographer Duarte Pacheco Pereira, sailors in the sixteenth century stayed a good 400 kilometers offshore.⁴⁵ For them, the land sitting behind the fog was unwanted real estate: there were no harbors to land safely, and there was no drinking water; there was no thriving coastal populations to trade with or enslave; there were no broad rivers slicing into the heart of the continent to reach the interior; and there was no gold, there were no spices and no precious stones. From the decks of ships this land did not seem lucrative, a wasteland in European eyes, with a murderous coastline that only added weeks of perilous travel.⁴⁶ German missionary Heinrich Veder would be much more direct later on when noting, "If there were not to be found on the shores of South West Africa even water and firewood, slaughter stock and slaves, to say nothing of gold and gems, it was sheer waste of time to pay it any further attention."⁴⁷ A later Portuguese writer summarized the Namib in one line: "All this coast is desert and without people."⁴⁸ After the Portuguese, it would be Dutch and British sailors equally steering their vessels

away from this borderland, or at least treading lightly along these margins. At best they got a glimpse of the coastline, like the Dutch who described the mystical figures standing on the beach as *strandloopers* (beach walkers).⁴⁹ At least for now, it seemed as if treacherous ocean waters and the impenetrable Namib Desert safeguarded and insulated the area from European colonialism.

Boiling Giants

Namibia's coastline must have seemed like the edge of the world to them. Thousands of kilometers away from home hunting one of the world's largest mammals, whalers found themselves on the margins. The narrative of Thomas Bolden Thompson, commander of the *Nautilus*, along with descriptions by marine surveyor Home Riggs Popham from the same vessel, paint a picture of their situation. As outlined by archaeologist Jill Kinahan, who has thankfully transcribed and published both accounts, erroneous maps, no luck in finding drinking water, and other problems frustrated both of them.⁵⁰ Eventually, they anchored in Walvis Bay. From thereon they traveled inland to get water, apparently unaware of its accessibility farther south in Sandwich Harbor. Thompson found the people around Walvis Bay friendly and unafraid, and accepted their invite to visit their encampment.⁵¹ And so the newcomers from beyond the horizon left the beachfront for the first time, walking into the towering and likely worrisome dunes of the desert. After several kilometers, they reached a settlement of about twenty huts. Popham latter wrote that those they ran into "had plenty of Cattle but would not suffer us to see where they kept them, and I beleive [*sic*] drove them further inland on our arrival."⁵² For Europeans, the sight of cows in an arid desert landscape, of pastoralists and their own environmental infrastructure, was puzzling.

The same natural factors initially shielding the area had by then pulled whalers into the region. The aforementioned Benguela Current, which made navigation along the coastline so dangerous, was concurrently responsible for a rich marine ecology. Environmental drivers such as surface temperature, upwelling, and the distribution of nutrients are the reason for high levels of phytoplankton biomass.⁵³ As a result, the Benguela Current is a rich ecosystem. Its strong drift constantly scoops up plankton, which then attracts fish, birds, seals, and whales. In the sixteenth century, Portuguese explorer Duarte Pacheco Pereira was among the first to describe a natural haven as "angra da balea," a bay full of whales.⁵⁴ It would soon be known by its Dutch name Walvis Bay. Southern Right Whales (*Eubalaena australis*) in particular migrated into this area. From May until September, these giants bore calves deep within the safeguard of bays and coves. Fewer were humpback or razorback whales. The Southern Right Whale was much easier to catch anyway: high-fat con-

tent made them float, a massive advantage when trying to collect the prey. Plus, and unlike other species, the majestic animal rarely fought back.⁵⁵ When whaling became lucrative, the presence of the world's largest mammals caught the attention of those hoping to make money. That moment came with a spike in demand for whale blubber, a thick layer of body fat. Whalers extracted or rendered this commodity by boiling it, a process known as "trying out." The result was an oil that burned much brighter than petroleum. Due to its elasticity, whalers would also make use of individual baleen plates, which, in the absence of teeth, act like a strainer for whales to get nutrients. Whaling was a worthwhile business until the invention of the hydrogenation process in the early 1900s.

Originally the Dutch dominated the coastline and whaling industry. Of course, whaling ships are not miniature nation-states. Instead, and as outlined by historian Felix Schürmann, such vessels housed sailors from various locations and backgrounds.⁵⁶ Daily life on these boats had its very own dynamics and feel. Ships were at sea for months if not years, traveling into areas few had ever visited or would ever want to visit. The makeup of crews was thus less a representative mirror of a region and more a collection of lower-class workers, former convicts, and maybe adventurers out to make some money. With a more permanent presence at the Cape of Good Hope after its official occupation in 1652, the Dutch had begun exploring the coastline in lieu of later crossing the Orange River from the Cape Colony. The first two exploratory missions of the *Vereenigde Oostindische Compagnie* (Dutch East India Company) traveled north by the late seventeenth century. Yet little went according to plan.⁵⁷ Commander Gerrit Ridder Muijs of the *Grundel* had instructions to explore "the coast north of the Cape" and the hinterland; that ship reached Sandwich Harbor on 1 May 1670.⁵⁸ As they rowed ashore, an unidentified group that might have been Topnaar quickly fled. Muijs and his men followed them only to be surrounded by an armed faction. The only musket the Dutch had with them did not work—and so they fled back to their ship.⁵⁹ In 1677, Commander Wolna of the ship *Boode* ventured into the same region. The crew came across people living in huts framed out of whale bones, probably Topnaar again. Although the Dutch had brought some interpreters from the Cape along with them, communication remained difficult. Plus, and from a European perspective, those living in the region had no commodities such as cattle, ivory, or copper.⁶⁰ It took until 1726 before another Dutch vessel, the *Acredam*, anchored in what they called Walvisbaai. Although on a two-year whaling mission, its first stint flopped as well: they simply could not gather a sufficient amount of whale baleen. The vast distance from home, combined with navigational difficulties and the death of both captain and first mate, made matters worse. Subsequent expeditions by the ships *Sonnesteijn* and *Vrijheijt* had more luck catching and slaughtering whales but scurvy struck crews. Whaling was not going well for the Dutch.⁶¹

Whalers eventually returned in the 1780s. Actually, and as outlined by Schürmann, by then whaling took off.⁶² At that time, the British had begun exploring the area for a different reason: they were looking for a potential penal colony. In 1785 their naval survey ship *Nautilus* returned to England with bad news and an early description of the area: “So inhospitable and so barren a Country is not to be equaled except in the Desarts [*sic*] of Arabia, at least from the appearance of the Shore.”⁶³ As summarized by one scholar, travelers envisioned “wandering tribesmen, eating lice off each other for nourishment” in an area with no potable water, hardly what they had envisioned for a convict colony.⁶⁴ Whaling of the Southern Right Whale, on the other hand, resumed in the following years. More and more ships now anchored in Walvis Bay or in nearby Sandwich Harbor, from Great Britain, the United States, Portugal, France, and the Netherlands.⁶⁵ It got crowded. In 1789 alone, eleven ships from Nantucket stayed around Walvis Bay. One of them went beyond a thousand barrels of whale oil, a first for a US vessel.⁶⁶ It soon became even busier. Historians estimate that about twenty to thirty ships dwelt in Walvis Bay per year by the mid-1790s, the first climax for the whaling industry in the region.⁶⁷

The work of whalers was exhausting and dangerous. There had to be a whale to catch for Europeans first. Many times workers had to wait, bored out of their minds. Longer delays quickly became worrisome given that salaries were proportional to what the ship caught. Plus, there was not really anything to do. As historian Greg Dening put it, “whalers with nothing to do are restless and dangerous.”⁶⁸ Once there was a sighting, most participated in what is known as bay-whaling: ships anchored along the shoreline or in a bay as small surf boats were lowered into the water (Figure 1.2).⁶⁹ Soon a mad chase unfolded as boats tried to reach the prey, at times fending off rival hunters.⁷⁰ Sometimes animals fought back, easily hurting anyone and endangering the men, most of whom could not swim.⁷¹ Once close enough, whalers used harpoons or other devices to shoot the mammal. That required skill and a good amount of luck. After the kill, workers then dragged the dead giant ashore or aboard a vessel. Right away specialists began extracting baleen; they also removed and boiled blubber. All kinds of sharp tools and hot liquids could also easily hurt workers, especially if that process took place on unsteady boats.⁷² Such backbreaking labor, far away from home, with no comfort given the surrounding cold ocean waters and hot desert sands would make life miserable for anyone.

An array of accounts gives a sense of navigation within this liminal space sitting between sea and land, ocean and desert. The Dutch commander of the vessel *Meermin*, Sebastiaan Valentijn, wrote about Walvis Bay in 1793, “The headland of the bay . . . is nothing but a sand-bar covered almost entirely by the sea at high tide, which makes landing there very dangerous, for the weather is nearly always misty and a rapid current flows towards the North.”⁷³ Accidents happened well into the nineteenth century. In April 1859, the ship *Flora*, arriv-



Figure 1.2. “Whale fishery, attacking a right whale,” Currier and Ives, New York, ca. 1860, Library of Congress/public domain.

ing from Cape Town, tried to anchor in the bay. It got caught in the breakers, drifted onto a sandbank, and broke apart. Seven people drowned in the ice-cold ocean waters.⁷⁴ At least Walvis Bay had a safe harbor. “It is well sheltered from all winds & you lay in it as in a mill pond,” wrote one sailor in 1786.⁷⁵ British explorer James Edward Alexander agreed when writing in April 1837 that Walvis Bay “is a very safe bay, the holding ground is good, nothing can hurt a vessel anchored behind Pelican Point.”⁷⁶ Yet there were few resources available on the coastline, and especially the lack of drinking water was a major problem. One voice complained as late as 1830 that “[a]fter considerable labour in digging, we could procure nothing but salt water.”⁷⁷ Some unearthed the precious liquid at Sandwich Harbor further south. They apparently kept it a secret from the competition.⁷⁸ Firewood was a luxury as well, with the exception of driftwood.⁷⁹ Traveling inland might have been a way to solve that problem—but who wanted to venture into an unknown desert landscape with no vegetation in sight? As one sailor noted in 1803, “Nothing is to be seen of the serounding [sic] Country but sand hills.”⁸⁰

The Topnaar, who had long navigated their livelihoods within this frontier-space, on the other hand, saw additional opportunities once Europeans arrived. They already had advantages given long-existing environmental infra-

structure. For one, they knew desert and ocean, with some regularly venturing into the waves to catch fish.⁸¹ Most importantly, they understood where to find water. They even found ways to raise cattle. Livestock was generally kept away from settlements, at places like Khaeros, a small waterhole about twenty-four kilometers inland along the Khuseb River.⁸² Anyone telling Europeans gazing at desert landscapes from the ocean that pastures nearby produced up to six tons of fodder per hectare would have been declared insane. For them, tracks of livestock sometimes visible on the beach must have seemed like a desert mirage.⁸³ Once European newcomers became aware of the presence of livestock, however, they tried to get their hands on such resources. Yet the Topnaar ensured visitors stayed on the beach and behind the dunes, away from their cattle, waiting for days while they were getting their precious animals.⁸⁴ In some instances they also thwarted efforts by Europeans to find out more, eventually placing lookouts at the first line of dunes to warn of approaching ships.⁸⁵ That they also hid their women speaks volumes about their fears of ravaging Europeans, the latter themselves only traveling in groups and generally armed.⁸⁶ Environmental factors had forced them to hold their animals near water and grass anyway—although “even the apparent secretiveness about the location of cattle herds—which had been deeply frustrating for European traders—was an intrinsic part of a pastoral economy in which stock-raiding was an endemic threat to livelihood,”⁸⁷ as John Kinahan summarizes. Exchanges of goods then took place on the beach, that “double-edged space, in-between,” to borrow Denning’s framework.⁸⁸ Here, newcomers such as Thompson offered tobacco, alcohol, knives, and beads for cattle and maybe elephant tusks.⁸⁹ Overall, and to once more follow Kinahan, “that herd-owners needed almost no adjustment to their established patterns of settlement to dominate trade at Walvis Bay, and that they were able to exploit the trader’s ignorance of the terrain in order to maintain control over the supply of livestock to passing vessels. In this sense the evidence from the Namib Desert coast favours the view that—initially at least—traders were drawn into the indigenous economy and were for all practical purposes subject to the values, customs and preferences of pastoral society.”⁹⁰

The whaling boom eventually faded. International conflicts, namely the Napoleonic Wars and its connections to the War of 1812, shifted British whaling efforts toward the Indian Ocean. There, they searched namely for sperm whales along the East African coastline. Whereas this allowed the US whaling industry to dominate the hunting grounds off the coast of Southwest Africa for some time, the boom only lasted until the invention of gaslighting around 1840. Besides, these giant mammals had agency as well. As far as historical records indicate, and unless killed beforehand, they avoided the coastline and migrated elsewhere.⁹¹ By then whalers had made money with a vengeance.⁹² The Topnaar, on the other hand, had begun falling behind. This did not happen overnight. Amid early interactions, those without cattle—a group historian

Randolph Vigne has called “beach dwellers” or “people of the sea”⁹³—actually gained much from exchanges. Consuming yet unable to kill whales at sea, they now found the remains of dead animals on the beach.⁹⁴ “The whole shore is strewn with a great many carcasses of all possible shapes and sizes,”⁹⁵ noted a Dutch captain in 1793. Whalers had left behind such remains, virtually trashing the coastline around Walvis Bay. As another contemporary outlined, “The bay people catch and eat . . . the carcasses of whales, killed by the crews of whaling ships, afford them savoury repasts in the months of May, June, July, and August, or during the time the whalers are about the bay.”⁹⁶ A third account adds, “They subsist chiefly on the carcasses of the whales that are killed by the ships and are turned adrift after the blubber is taken off. They seem to like it best when it has been lying some days on the beach, and is getting tender and smells pretty strong, then they relish it as sweet as I would a beefsteak after a long voyage.”⁹⁷ Over time, however, and according to John Kinahan, those owning cattle were not trading as equals with those coming from across the sea: “the trade goods acquired by the †Aonin [Topnaar] did not have the same value in labour and livestock production in the merchant economy, and as the volume of trade goods increased, their value would have begun to decline.”⁹⁸ That kind of trade, together with the growth in cattle raids from the interior, would weaken them by the early nineteenth century.

Clubbing the Wing-Footed

“This island is formed of volcanic materials, and its shores are resorted to by multitudes of fur-seals; we took about a thousand of their skins in a few days.”⁹⁹ These are the words of an American sealer and captain Benjamin Morrell. Writing about his experiences in October and November 1828, he had cruised along the coastline from Cape Town to Walvis Bay. At an island of about one mile all around known as Ichaboe, he first ran into the Cape fur seal (*Arctocephalus pusillus*). Hunted for their skins, these Pinnipedia, or wing-footed, mammals had been in high demand. Morrell had thus been excited by “[h]aving taken as many fur-seal skins as was practicable” before weighing anchor.¹⁰⁰ At Bird Island nearby, despite a shaky landing, he obtained “the skins of 1,400 fur-seal at one time.”¹⁰¹ Morrell returned to the area later on taking a few seals from Bird Island and Mercury Island. In one day alone he seized a stunning four thousand skins. “It really appears astonishing to me,” wrote Morrell, “that some men of capital do not see the golden opportunity at a single glance, and seize on it with avidity.”¹⁰²

Unlike commercial whaling in the region, seal hunting had begun much earlier. Local populations had long made use of these loud, stinky, and earless creatures equally attracted by fish-rich waters. Some research around seal

hunting points to the use of their fat in numerous areas along the Southwestern Cape;¹⁰³ local groups such as the Topnaar certainly hunted seals along Namibia's coastline.¹⁰⁴ In 1486, the Portuguese then spotted hundreds of thousands of Cape fur seals at Cape Cross.¹⁰⁵ Two years later João Infante, in command of Dias's second ship surrounding the Cape of Good Hope, began hunting fur seals and penguins near Robben Bay.¹⁰⁶ Efforts to pursue these sleek animals expanded with the arrival of the Dutch. As outlined by one scholar, "Dutch settlers took 45,000 seals from the islands of the Cape of Good Hope in 1610, and by the eighteenth century the seal population had plummeted."¹⁰⁷ New hunting grounds were thus needed elsewhere, and Namibia's coastline offered such opportunities, especially once the demand for seal skins as a tough and waterproof material for shoe leather, their fat, and their pelts skyrocketed.¹⁰⁸ On 3 January 1793, the ship *Meermin* came from Tafelbay looking for landing spots to drop off individual seal hunters.¹⁰⁹ Later the *Star* pointed out a useful anchorage spot at Thompson Island that "is very much frequented by the Southseamen who go there for the benefit of sealing which animals is in great abundance there; there have been as many as forty thousand killed in one season on the island." That entry also underscored the isolation and lack of resources when adding that "[t]here is neither wood, water or any kind of refreshment to be got there."¹¹⁰

Hunting seals was no easy job. Unpredictable upwelling and shifting currents, strong gales, dense fog, hidden cliffs, whatever makes an area difficult to navigate this coastline had it. Hydrographic descriptions include countless examples of tragic accidents. In one instance, a young sailor by the name of William Ogden sank "to rise no more."¹¹¹ This calamity took place off Mercury Island while the crew was sealing nearby. That area later known as Ogden Island supposedly offered refuge from currents; but the *Swallow* was unable to find it later on: "It is my opinion that if 'Ogdens Harbor' ever existed, the constant action of the heavy seas which always appear to be breaking on the shores have washed the reefs away mentioned by [Captain Benjamin] Morrell."¹¹² According to a log entry by the *Meermin* from 1793, navigating the coastline overall was tricky. Entries speak of sudden surfs, storms lasting for eight to fourteen days, and thick fog making any navigation risky.¹¹³ It was the promise of riches that continually pulled seafarers to the region. Once on site, getting one's hands on seal skins was a gruesome and laborious process as well. Hunters could easily approach screaming seal cubs and club them with a wooden bat. In the best-case scenario, seals either died right away or at least became unconscious—to be killed with a knife. Adult animals, on the other hand, fought back. Those creatures could certainly hurt anyone coming for them and their offspring. Shooting these oncoming giants became widespread—their fur was less valuable anyway. Benjamin Morrell described the rush of such a hunt on Mercury Island in 1828 when writing, "every nerve

and muscle was exerted, and we had reached the opposite side of the rookery [*sic*], killing several seal in our way, when we found that the other party, under command of Mr. Burton had been stopped in ‘mid-course’ about the centre of the rookery, by the immense number of seal that began to pour down the steep rocks and precipices, like an irresistible torrent, bearing down their assailants, and taking several of the men nearly into the ocean along with them. On seeing the danger, however, we ‘flew to the rescue,’ and soon relieved them by turning the tide of war in another direction. Several hundred fur-seal were left lifeless on the shore and rocks.”¹¹⁴

Morrell lost one of his most valuable men that day. An article in a German colonial newspaper painted a gruesome picture later on. It first set the scene as sealers arrived in small boats trying to avoid detection. Some positioned themselves near the water while others agitated seals to rush toward them—only to club them to death or beat them unconscious. Nets later helped hunters to limit injury from onrushing and desperate animals. Soon seals were skinned “with their bodies still twitching,” to still follow that description.¹¹⁵ The treasures were then hauled aboard by sweaty men soaked in blood, now ready to take off the fat before eventually spreading out the skins aboard, sitting in salt. The pelts, maybe some blubber, was all that hunters were after. The processing had to take place quickly in the early days since wind and weather, as well as daylight, mattered. The German paper saw sealing as “ruthless” and “brutal,” characterizing participants as “murderers.”¹¹⁶ Such rhetoric had more to do with criticizing British hunters than worrying about animal cruelty. Either way, anyone envisioning sealing in this region can imagine the demand and prices paid for the acquired commodities on the world market.

Over time the sealing craze drew more outsiders to the area. Few specialized in seal hunting originally—although over time some individuals and even whole vessels took up the profession.¹¹⁷ Sealing required no capital investments yet allowed self-sufficient hunters and adventures to try their luck. In most cases, however, sealing and whaling went hand in hand. In Angra Pequena, for example, British and American seafarers plundered both in the 1830s.¹¹⁸ The *Meermin* references that some English seal hunters shipped about 21,000 furs to Europe.¹¹⁹ Early descriptions of Angra Pequena painted a desolate picture. Captain Thomas Boulden from the *Nautilus* had commented, “it is much to be lamented that so fine a harbour as [Angra] Pequena should be formed by such a barren, unfruitful soil, apparently doomed to everlasting sterility.”¹²⁰ In 1825, remarks coming from the British vessel *Barracouta* added, “It affords neither wood, water or other refreshment; the surrounding country is barren and uninhabited.”¹²¹ But seal hunting like whaling was good business—even though it became more and more difficult over time. Seals made their own decisions, and avoided or left certain spaces altogether. By 1835 one hunter commented that “[t]he Seals having been harassed so much, the prospect was slim for the

next season.”¹²² He and his men were still able to secure about 1,000 skins. Once the Japanese flooded the market with Siberian seal skins following the Russo-Japanese War, business slowed down even more. Regardless, sealing helped put additional locations on the map; a growing presence of hunters also resulted in more encounters with the local population, more knowledge about the area, and the increasing establishment of some small settlements. In this sense, early environmental infrastructure took shape. Difficulties regarding access essentially became the reason why the German colonial government later saw sealing as unprofitable.¹²³ By then the battered animals had long migrated away from colonial entrepôts such as Walvis Bay and Angra Pequena, away from commercial interests and certain destruction.

Shoveling White Gold

One line triggered off the craze for white gold. The aforementioned seal hunter Benjamin Morrell wrote it down in 1828. Morrell, who commanded numerous ships along the coast of Southwest Africa in the late 1820s, had been sailing around Angra Pequena. He mentioned “the great numbers” of whales near Ichaboe Island, who “are in the habit of playing about the reefs of the island.”¹²⁴ Yet neither that nor his previously quoted reference to seals caught the attention of avid readers back in England. What they scrutinized was a sentence he had seemingly written down in passing about yet another commodity: guano, a substance consisting primarily of ammonia and nitrates that had become a highly sought-after fertilizer. By the 1840s, British companies had begun importing it from the Chilean coast. Now, a sentence, penned down by Morell on the other side of the world, got their attention. It read, “The surface of this island is covered with birds’ manure to the depth of twenty-five feet [about 7.5 meters].”¹²⁵ The prospect of a mountain of guano, basically a mountain of money, must have enticed retired master mariner Andrew Livingstone right away. A shrewd businessman from Liverpool long following the guano trade, he quickly encouraged enterprising merchants James Rae and Norman McLeod to provide the financial backing for a mission.¹²⁶ Ships eventually left Liverpool with sealed orders to ensure secrecy until the last moment.¹²⁷ The quest for guano in Southwest Africa was on.

The ecosystem off the Namibian coastline, combined with a demand for guano, provided perfect conditions for this boom. Although a nightmare to navigate, upwelling lifts plankton into waters near the surface. This process not only attracted whales but also fish then hunted by seals and birds. Scientists estimate that the Benguela sustains countless birds with some estimating up to eighty-two species (seven of them endemic)—the three most abundant when it comes to colonizing seashore and offshore islands are the Cape gannet (*Morus*



Figure 1.3. Island of Ichaboe, drawn on wood by J. B. Zwecker and engraved by G. Pearson, in Charles John Andersson's *The Okavango River* (1861), 399, HathiTrust/public domain.

capensis), the African penguin (*Spheniscus demersus*), and the Cape cormorant (*Phalacrocorax capensis*).¹²⁸ For them, avoiding landbound predators such as jackals and hyenas is essential. Ichaboe Island was such a good spot (Figure 1.3). Located a little over a mile off the desert mainland north of Angra Pequena, bird after bird had built a nest, thousands of them over the years. The relentless desert sun dried out their excrement, literally baking it. Evaporation of nitrate was thus kept to a minimum. The private journal of Washington Fosdick, who traveled on a US vessel into the region later, noted, “It appeared as though it [guano] had never been made for the use or benefit of either man or brute, but had sprung into existence through some of nature’s wild freaks, the vomiting of some subterranean fire.”¹²⁹ Another American voice painted a similar picture in 1845 when writing, “This Island is a wonderfull [*sic*] production of nature, surrounded as it is with reefs & a heavy surf continually rolling on it . . . the deposit . . . appears to have been formed by layers or strata of Animals, such as the Penguin, Gannet & Seal which by some means had been deprived of life, Generation after Generation the live depositing their excrement on the Dead for thousands of Years & the whole becoming decomposed has formed Guano. The skins or skeletons of the different Animals are perfectly fresh only are squeezed flat by the weight over them.”¹³⁰ Customers back in Europe certainly demanded more of this substance ever since its widespread use as

fertilizer, a dynamic scholars have described as “the first green revolution.”¹³¹ Although primarily focusing on the Chilean coastline, historian Edward D. Melillo showcases how the trade of this nitrogen fertilizer brought “significant shifts in environments and labor conditions throughout the world.”¹³² According to historian Hendrik Snyders, “The transformation of guano into a commodity and of the resource frontier into an economic and political frontier is directly attributable to advances in the science of plant nutrition.”¹³³ In this sense, human agencies based on the commodification of nature, combined with natural forces and animal agents, introduced new structures and turned Southwest Africa into a “guano frontier.”¹³⁴

Although prospects were high, the first clandestine mission almost failed. Vessels got blown off course, ran out of drinking water, or simply could not find what Morrell had been writing about. Schooner *Gallovidia* was fortunate enough to find the island but could not land due to heavy surf. It sailed to St. Helena. Two other ships never returned home.¹³⁵ Only a coincidence saved the day for the brig *Ann* of Bristol: during a layover in Cape Town Commander Francis Farr got into contact with some American whaler familiar with Ichaboe Island.¹³⁶ With much better directions in hand, the vessel returned to the region and found what they were looking for. Throughout March and April 1843, miners went to work, scraping up guano and hauling the dried substance aboard. Strong winds and currents, as well as cliffs, rocks, and sandbanks made that a difficult task. At one point a strong southern gale drove the ship off its anchorage altogether. Farr decided to set sail for England, at roughly three-fourths capacity. Once the *Ann* arrived with its smelly riches the secret about mountains of high-quality guano was out, and the “guano rage” turned wild.¹³⁷

In the following years, a boom brought hundreds of ships to the area, most from Great Britain. Both Farr and James Rae outmaneuvered Livingstone by attaching their names to the first official claims to the source—something Snyders has titled a classic case of “anarchic frontier behavior.”¹³⁸ A commentator writing in the *Nautical Magazine* was thus right when noting that the Liverpool party paved the way into “an epoch in the annals of British agriculture and commerce.”¹³⁹ Over time, however, efforts to establish a monopoly failed. By late 1843, vessels were not only sponsored by merchant houses from Liverpool but also from London and Glasgow.¹⁴⁰ Plus, the US schooner *Emeline* and a few French vessels showed up as well. In several instances, ships would load inferior guano from locations nearby; once they discovered Ichaboe Island they replaced their cargo right away.¹⁴¹ Over time the number of vessels on site skyrocketed, increasing from an estimated forty-six vessels in May to a hundred in July, three hundred in September to a stunning 460 in December of 1844.¹⁴² Around six thousand people were on site at one time!¹⁴³ Since much of the area was exposed to devastating gale winds and currents, safe spots were hard to come by. As a result, even just slightly protected spots to the

northeast became highly sought after.¹⁴⁴ Accounts of dangerous maneuvering give a sense of the madness. As one American sailor noted at the time, “with the immense number of British shipping crowding round it to the number of 300 Sail . . . I consider it to be a very dangerous anchorage amongst such a number of ships & I am not sorry I am going to leave it without loading.”¹⁴⁵ Not all had such an awareness, and there were countless wrecks.¹⁴⁶ Interactions with nearby groups, likely Topnaar, developed as well. Accounts mention encounters with a small group of people that seemingly inhabited an area near a brackish spring in a bay opposite the island.¹⁴⁷ “Here, then, we first set our feet upon ‘poor cursed Africa,’” read one source from 1846, “being saluted as we landed by a party of natives, consisting of seven men and two women, with a hearty shake of the hand, accompanied by the familiar words ‘How do?’ ‘how do?’ which were, however, speedily followed up with ‘Jacket,’ ‘Trousers.’”¹⁴⁸ Whereas such dialogue speaks to existing trade relations with English-speakers, engaging with sailors could open new opportunities for these inhabitants; yet it was also dangerous. Some at least kept their women and children out of sight.¹⁴⁹ Historian Arthur C. Watson described one encounter when noting, “In May 1844, a group of captains and some of their men, for want of better activity, went to the mainland and, rushing upon a temporary settlement of Hottentots [derogatory term for Khoikhoi people], killed their dogs, plundered their huts of bows and arrows and of the ostrich shells in which water was kept, and fired the settlement.”¹⁵⁰ It took some time before the exchange of provisions, clothing, and tobacco for ostrich feathers, skins, cattle, and labor between local groups and guano miners became more widespread.¹⁵¹ Drinking water was vital, of course. Delivery ships from Cape Town tried to transport it in wooden casks, a difficult endeavor. Containers holding the precious substance were often leaky and arduous to bring ashore without risking contamination.¹⁵² By then new environmental infrastructure defined by shipping routes and landing spots had long begun integrating the region into the global marketplace.

For workers on site, the task of mining guano was backbreaking labor. During the boom sailors and contracted non-seamen mined guano in an “ad-hoc labour regime.”¹⁵³ Early on, guano mining required scraping and shoveling the dried mass into some sort of container. Those bulky crates then had to be carried through cold surfs to the shoreline, before loading them onto ships. As summarized by Snyders, workers “had the aid of basic tools such as crowbars, spades and wheel-barrows. They also bagged and loaded it on board ship [*sic*]. Working offshore with inadequate or even absent mooring facilities and equally hazardous loading equipment meant that labour crews were engaged in an extremely dangerous work.”¹⁵⁴ After some time, workers tried to use planks purchased in Cape Town to build small jetties to then directly connect deposits on the island to boats. Wheelbarrows came in handy to move and load much larger volumes in a shorter amount of time. Simple

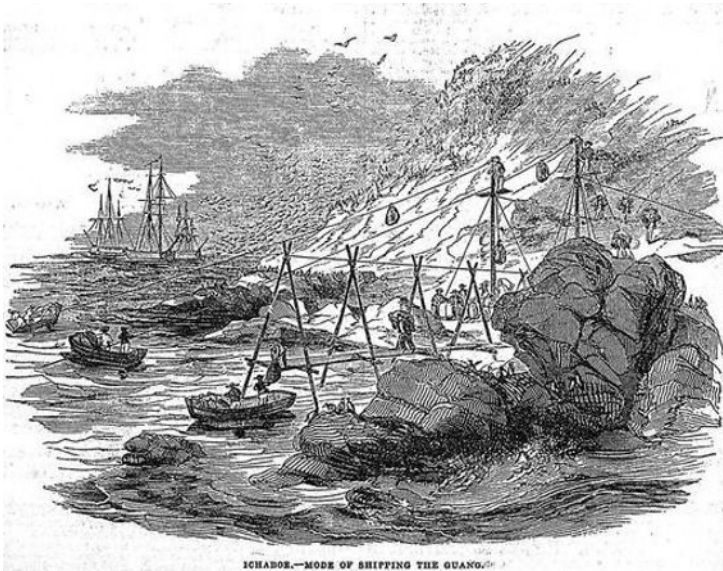


Figure 1.4. “Ichaboe, mode of shipping the guano,” *Illustrirter Kalendar für 1850* (1850), 83, HathiTrust/public domain.

structures, partially visible in a sketch from later on (Figure 1.4), eventually became rather sophisticated—and some could even be elevated depending on the reach of the water.¹⁵⁵ According to two scholars, such assemblies “consisted of crossed legs of spars lashed with rope and wedged into the most suitable niches in the jagged ocean floor. The spars formed shears that were linked by cross spars and plants to form walkways” that extended up to ninety meters into the ocean.¹⁵⁶ Few such operations could withstand strong surf and whitecaps, however, and guano mining ultimately remained a slow, frustrating, and dangerous assignment.¹⁵⁷ Injuries were widespread, and even simple ailments could become fatal. In one instance, a captain hurt his finger, tried to amputate it unsuccessfully, and died within three days. It was thus not surprising that a visitor traveling along the Southwest African coastline in the nineteenth century stumbled upon numerous grave sites.¹⁵⁸ Lieutenant Ruxton from the British Navy gives some details when describing a rather grim encounter on Ichaboe Island in 1848: “On landing, which owing to the surf is always difficult, I found the whole surface of the island covered with skins and carcasses [*sic*] of seals and penguins, in every stage of decay. At the south-west point, are the graves of thirty or forty seamen and labourers killed whilst working in the pits, by the fall of guano. The skins and bodies of the seals and penguins had been originally the surface covering of the valuable deposit underneath; and had to be removed in order to reach the guano, to which they served, not only

as a protective covering from the damp spray of the sea, but also, in course of time decomposing themselves, formed new layers of this extraordinary substance.¹⁵⁹ Just the stench must have been awful.

Irritations among workers grew over time. The environment was in no way inviting—“bleak, barren, and unpromising beyond description” with the “desolation of the scene being completed by the angry surf which with ceaseless and depressing rhythms rolls in upon the shore,” to follow one description.¹⁶⁰ Motivation to even be there came from the sight of the product, “The rich treasure however, lay before them, and energy and emulation soon attempted to overcome the natural difficulties.”¹⁶¹ Most ships had seamen and workers aboard, the latter generally unemployed men in need of a job or out for an adventure. Pay was poor, medical services and housing almost non-existent with most sleeping under old sails or wooden shacks on the island itself.¹⁶² Nosebleeds, a sign of scurvy, were widespread among workers and speak to a lack of adequate nutrition.¹⁶³ “Drunkenness and debauchery,” to follow two scholars, made the work site all the more volatile and dangerous,¹⁶⁴ especially since disputes were often “settled by the law of the fist.”¹⁶⁵ Snyders has vividly illustrated how workers organized and rebelled against exploitation, deferred wages, rationing, and unfair contract enforcement. “They actively resisted their exploitation and marginalisation based on their own developing worldview and growing understanding of their rights, particularly their rights as British citizens.”¹⁶⁶ Efforts to install an arbiter brought only temporary relief, and even the repeated arrival of the British Royal Navy helped little. In September 1844, Commander Sir John Marshall from the *Isis* tried his best to control several hundred ships and thousands of workers, asking his readers to imagine a scene of crowded and misbehaving men fighting over guano in a hostile coastal frontier environment.¹⁶⁷

Riots and mutinies, as well as everyday quarrels on site, had long-term consequences. The active promotion of guano trade as a way to fill US vessels by the US Consul in Cape Town, Isaac Chase, had brought more and more US ships to the area—the schooner *Emeline*, of Mystic, was the first to arrive.¹⁶⁸ According to one sailor, “The shipping here are all English, our flag being the only American one.”¹⁶⁹ The British certainly dominated the trade, with merchants trying to protect their monopoly in whatever way possible. One way to do that was to exert control over emerging platforms and landing structures. Once landing structures were in place, agents tried to prevent other ships from using them, or at least charged them exorbitant rates for doing so.¹⁷⁰ Early claims to the island also materialized. The captain of the bark *Douglas*, Benjamin Wade, took it in the name of the Queen of England, a move meant more to intimidate and disempower competition than illustrating control. The British Government at least did not officially endorse such a move until 1861—even if Wade called for legal backup.¹⁷¹ Wade also acted as a proper harbor and customs authority, a role not everyone appreciated. In March and April 1844,

some sailors revolted and established a “rogue guano republic,” to borrow Snyders’ phrase.¹⁷² It took the arrival of the British Royal Navy and its warship *Thunderbolt* in May 1844 to at least temporarily reestablish order.¹⁷³ By 1861, a sign read, “Notice. This land of Ichaboe is this day taken possession of for and in the name of Her Britannic Majesty Queen Victoria and is hereby declared a dependency of . . . Signed . . . Captain H. M. S. Furious, June 21, 1861.”¹⁷⁴ A twenty-one-gun salute could be heard as Captain Oliver J. Jones of *Furious* hoisted the Union Jack that day.¹⁷⁵ A policing authority had arrived.¹⁷⁶

Although the guano boom eventually faded, it had drastically changed the coastline. By early to mid-1845 most deposits had been depleted. Lieutenant Ruxton noted in 1848 that Ichaboe Island had been “cut down nearly to the waters’ edge, and all the guano [had been] removed.” He added that “[t]here was still a depths of many feet, in many places, of an inferior guano but too much impregnated with moisture and sand to be worth removal, though at the same time very valuable as a manure.”¹⁷⁷ From one little island, 284,752 tons of guano were removed, which resulted in an estimated value of 1,993,264 pounds, or seven pounds per ton.¹⁷⁸ The island was bare, and birds did not return to replenish deposits. It was simply too crowded and dangerous for them. Instead, they had begun migrating to other spots along the coastline. Soon leftover guano combined with some sealskins could not fill ships anymore.¹⁷⁹ In 1861, Cape Governor Sir George Grey then annexed the guano islands, thus all but ending private exploitation. An array of islands off the coast of Southwest Africa, including Ichaboe, Plum Pudding, Pomona, Possession, Halifax, and Mercury Island, now lay in the hands of the Cape Colony.¹⁸⁰ By then the changes to the region had been far-reaching. Mining had disrupted migration patterns and pushed the bird population elsewhere. Newcomers from across the ocean had also interacted with Topnaar and others. Of course, and to follow Snyders, “natural features, its sense of isolation and its lack of life-sustaining resources such as food and freshwater” limited human settlement and offered no real entry point.¹⁸¹ At the same time, the “unbridled exploitation made inevitable the introduction of some form of control,” to build on another scholarly account.¹⁸² As summarized by Jill Kinahan, “The fabulous profits which had attracted the rush of private adventurers and all the major merchant houses of Britain, gave the Namib coast much publicity”—and many now began exploring the coastline for other commercial opportunities.¹⁸³

Scholars have long described how Namibia’s coastline became integrated into merchant capitalism and the global market economy,¹⁸⁴ and focusing on environmental infrastructure (human ingenuity, labor, animal agents, natural forces) helps our understanding of that process. Following the end of three commodity booms, traders linked through structures stayed connected—now

interested in ivory, copper, and cattle. In 1835, for instance, a report noted that a US brig had come to Angra Pequena solely to trade, expecting to purchase 2,000–3,000 cattle from Nama; in the 1840s regular trade would have also developed in Walvis Bay.¹⁸⁵ By then routes reaching inland had become more stable. There, in the hinterland shielded from the coast, border crossings of semi-Europeanized groups long defined daily lives, and their “influence . . . on the culture history of South-West Africa can hardly be overestimated,” to follow historian Alvin Kienetz.¹⁸⁶ Europeans coming from the ocean could now tap into those networks and structures. Soon individuals such as Aaron de Pass initiated a regular route between Cape Town and Walvis Bay, bringing all kinds of manufactured goods and returning with cattle and sheep; his ships would load guano and sealskins near Angra Pequena. His son later established a base at Sandwich Harbor, where an abundance of salted and cured fish, shark liver oil, sealskins, and guano made for lucrative business.¹⁸⁷ Global networks took shape, with guano from the coastline and fish from Sandwich Harbor used as fertilizer for sugar cane plantations and food for workers on the island of Mauritius off the coast of faraway East Africa.¹⁸⁸ In that process, some African groups became dependent on poorly paid and dangerous wage labor. As outlined by John Kinahan, “The decline of nomadic pastoralism began in the eighteenth century and involved a rapid depletion of the herds, combined with a disruption of pastoral alliances and renewed dependence on hunting and gathering for subsistence.” In his view, “the removal of livestock from circulation by translating them into beads” became a problem, especially for nomadic herders working within arid environmental conditions that required “highly mobile herding patterns.”¹⁸⁹ An ecological revolution tied to trade for commodities like ivory and ostrich feathers, as well as the increasing arrival of hunting expeditions, “undermined the earlier, more sustainable use of resources,” to follow historian Christo Botha.¹⁹⁰ In that sense, existing economies and social systems had to adapt to ever-shifting trade patterns and the fluctuating demands in faraway places, and it is in this process that local groups got the shorter end of the stick. The arrival of traders also impacted ecosystems. Whales soon avoided the area, it seems, as did seals and birds. As outlined by Snyders, on Ichaboe Island, “This led to the departure of a large number of birds and the killing of an equally high number of fur seals, which fundamentally disrupted natural life there.”¹⁹¹ The scraping of surfaces, noise pollution, and constant movement of workers frightened seabirds, disrupted their nesting and breeding habits, and forced them to migrate elsewhere. The removal of guano, which served “as a stimulant for the growth of phytoplankton,” also upset the ecosystem.¹⁹² In this sense, nature shaped human interactions in this frontier landscape and the other way around.

Newcomers brought along lasting governmental structures. Once there was a demand for oils, baleen, seal skins, pelt, and guano then those plun-

dering these resources descended onto the area in a mad rush. Commercial enterprises, traveling along increasingly well-established trade routes, soon directly competed for resources. In that process, traders as well as their financial backers began claiming certain areas to hunt and mine. Ivory hunts in the northwestern region of Namibia, for instance, further entangled that area with global commodity markets while devastating the elephant population by the 1890s.¹⁹³ Disputes had initially played out in that frontier space along the coast, which called for efforts to regulate otherwise potentially precarious commercial enterprises. The British most notably saw themselves as a police force, especially regarding guano mining. As the region got sucked into the world's commodity trade system, elements of colonial control showed up as well, primarily around Walvis Bay, Sandwich Harbor, and Angra Pequena. One morning in March of 1878 that development came to a logical conclusion: a group of armed men from the *Industry* landed at Walvis Bay. Commander Richard Cossantine Dyer hoisted the Union Jack, thus proclaiming the annexation of this natural harbor. A statement was read to the few white inhabitants and “some of the neighboring Hottentot and Damara tribes,” to follow Dyer's report. He also claimed the Africans “appeared well-pleased with the Imperial Government's action.”¹⁹⁴ By then Walvis Bay had long become the prized possession and key for controlling commodities and access. Existing environmental infrastructure, namely around Walvis Bay, had thus stacked the deck against later colonial powers aiming to find a footing in the region, and in a way the die had already been cast well before German businessman Adolf Lüderitz ever arrived in Southwest Africa.

Notes

1. *Windhuker Anzeiger*, “Aus dem Schutzgebiet,” 17 August 1899.
2. David Willem Krynauw, *Das Kreuzkap*, trans. Fritz Gaerdes (Windhoek, 1970), 37.
3. Peter Bridgeford, *Cape Cross: Past and Present* (Walvis Bay, 2002), 20. About thirty African inhabitants from the Brandberg and its surrounding areas also worked on site.
4. Lynn Harris, Jennifer Jones, and Kate Schnitzer, “Monuments in the Desert: A Maritime Landscape in Namibia,” *Journal of Maritime Archeology* 7, no. 1 (2012): 111–40, here 111.
5. Krynauw, *Das Kreuzkap*, 50 and 37. Bridgeford, *Cape Cross*, 26–27.
6. Brenda Bravenboer and Walter Rusch, *The First 100 Years of State Railway in Namibia* (Windhoek, 1999), 11.
7. Jill Kinahan and John Kinahan, “A Thousand Fine Vessels are Ploughing the Main...: Archaeological Traces of the 19th Century ‘Guano Rage’ on the South-Western Coast of Africa,” *Australasian Historical Archaeology* 27 (2009): 43–54, here 43.
8. John Kinahan, “From the Beginning: The Archeological Evidence,” in *A History of Namibia: From the Beginning to 1900*, Marion Wallace, 15–43, here 37–38 (Oxford, 2013).
9. Steinmetz, *The Devil's Handwriting*, 75.

10. John Kinahan, *Pastoral Nomads of the Central Namib Desert: The People History Forgot*. (Windhoek, 1991), 1.
11. Sian Sullivan, "Towards a Non-Equilibrium Ecology: Perspectives from an Arid Land," *Journal of Biogeography* 23 (1996): 1–5, here 2.
12. Wallace, *A History of Namibia*, 57.
13. Kreike, "Environmental and Climate Change in Africa," 74–75.
14. Jennifer Jones, "On Desolate Sands: Beached Shipwrecks in the Namibian Coastal Landscape," in *Sea Ports and Sea Power: African Maritime Cultural Landscapes*, ed. Lynn Harris, 89–100, here 90 (New York, 2017).
15. "Namibia Finds Treasure Ship Wreck," *BBC*. Retrieved 11 April 2021 from <http://news.bbc.co.uk/2/hi/africa/7376259.stm>.
16. Gabriel Samuels, "Miners Find 500-year-old Shipwreck Filled with Gold Coins in the Namibian Desert," *The Independent*, 9 June 2016. Retrieved 20 April 2021 from <https://www.independent.co.uk/news/world/africa/miners-find-500-year-old-shipwreck-filled-with-gold-coins-in-namibian-desert-a7072221.html>. See also Christopher Torchia, "In Namibia, 1533 Shipwreck's Relics Hidden Away," *AP News*, 15 September 2017. Retrieved 20 April 2021 from <https://www.apnews.com/e407ec90485d4b06ac63037740460233>; Andreas Hauptmann, Gabi Schneider, and Christoph Bartels, "The Shipwreck Bom Jesus, AD 1533: Fugger Copper in Namibia," *Journal of African Archaeology* 14, no. 2 (2016): 184–207; Christopher Trochia, "Bom Jesus' relics treasure at Oranjemund," *The Namibian*, 19 September 2017.
17. Andrew Goudie and Heather Viles, *Landscapes and Landforms of Namibia* (Dordrecht, 2015), 18. See also C. D. Hutchings et al., "The Benguela Current: An Ecosystem of Four Components," *Progress in Oceanography* 83 (2009): 15–32, here 15.
18. Aquarium in Swakopmund, visited 1 June 2019. For a detailed discussion, see Jochen Kämpf and Piers Chapman, *Upwelling Systems of the World: A Scientific Journey to the Most Productive Marine Ecosystems* (New York, 2016), chapter 7. The Benguela Current is the only upwelling system with warm water at both the equatorward and poleward ends; upwelling is an extreme example for an unstable environment. See A. L. Sakko, "The Influence of the Benguela Upwelling System on Namibia's Marine Biodiversity," *Biodiversity and Conservation* 7 (1998): 419–33, here 419.
19. Kämpf and Chapman, *Upwelling Systems of the World*, 24.
20. Karl Gotthilf Büttner, *Walfischbai und Angra Pequena* (Heidelberg, 1884), 6. See also Karl Gotthilf Büttner, "Angra Pequena," *Über Land und Meer: Allgemeine Illustrierte Zeitung* 52, no. 45 (1884).
21. Bruno E. J. S. Werz, "Not Lost Without a Trace: The DEIC Ship Vlissingen, Assumed to Have Foundered Near Meob Bay in 1747," *Journal of Namibian Studies* 4 (2008): 47–74, here 50. See also Bruno E. J. S. Werz, "The Vlissingen: A Dutch East India Company Ship that Perished along the Namibian Shore in 1747," in *Namibia and The Netherlands: 350 Years of Relations*, ed. Huub Hendrix (Windhoek, 1999), 21–29, here 27.
22. Nick Middleton, *Deserts: A Very Short Introduction* (Oxford, 2009), 11.
23. John J. Grotpetter, *Historical Dictionary of Namibia* (Metuchen, NJ, 1994), 332–33. See also John Kinahan, "The Impenetrable Shield: HMS Nautilus and the Namib Coast in the Late Eighteenth Century," *Cimbebasia: Journal of the State Museum*, Windhoek 12 (1990): 23–61.

24. Mary Seely, *The Namib: Natural History of an Ancient Desert*, 3rd ed. (Windhoek, 2004), 17.
25. *Ibid*, 15.
26. Hungiree Wilson Billawer and Muriel Samé Ekobo, *A Human Geography Atlas of Walvis Bay: Beyond the Reintegration* (Windhoek, 2002), 18. A German traveler later described it as a “geographical curiosity.” *Deutsche Kolonialzeitung*, “Drei Tage in Südwestafrika,” 11 November 1893. See also Nicole Grünert, *Namibia—Fascination of Geology: A Travel Handbook*, 8th ed. (Windhoek, 2017), 152.
27. *Globus: Illustrierte Zeitschrift für Länder- und Völkerkunde*, “Ein Ausflug zu den südwestafrikanischen Guanoinseln,” 20 August 1898 (Passarge).
28. Brigitte Lau and Peter Reiner, *100 Years of Agricultural Development in Colonial Namibia: A Historical Overview of Visions and Experiments* (Windhoek, 1993), 3.
29. Kinahan, “From the Beginning,” 34–35. See also John Kinahan, *Pastoral Nomads of the Central Namib Desert*, 98; Peter Mitchell, *The Archeology of Southern Africa* (Cambridge, 2002), 246–47.
30. Seely, *The Namib*, 45. See also Melinda Silverman, *Between the Atlantic and the Namib: An Environmental History of Walvis Bay* (Windhoek, 2004), 14; Ursula Dentlinger, “The !Nara Plant in the Topnaar Hottentot Culture of Namibia: Ethnobotanical Clues to an 8,000-Year-Old Tradition,” *Munger Africana Library Notes* 38 (1977): 1–39.
31. Silverman, *Between the Atlantic and the Namib*, 14.
32. Kuno F. R. Budack, “A Harvesting People on the South Atlantic Coast,” *Suid-Afrikaanse tydskrif vir etnologie/ South African Journal of Ethnology* 6, no. 2 (1983): 1–7, here 2; Kuno F. R. Budack, “The Aonin or Topnaar of the Lower Khuseb Valley and the Sea,” *Khoisan Linguistic Studies* 3 (1977), 1–42, here 12–13.
33. John Parkington, *Shorelines, Strandlopers, and Shell Middens* (Cape Town, 2006), 7. See also M. L. Wilson, “The ‘Strandloper’ Concept and Its Relevance to the Study of the Past Inhabitants of the Southern African Coastal Region,” *Annals of the South African Museum* 103, no. 3 (1993): 293–382.
34. Budack, “A Harvesting People on the South Atlantic Coast,” 2. See also Kinahan, *Pastoral Nomads of the Central Namib Desert*, 125 and 134; Kämpf and Chapman, *Upwelling Systems of the World*, 255.
35. Budack, “The Aonin or Topnaar of the Lower Khuseb Valley and the Sea,” 1.
36. Jill Kinahan, *Cattle for Beads: The Archaeology of Historical Contact and Trade on the Namib Coast* (Uppsala, 2000), 94.
37. Henrichsen, “Herrschaft und Identifikation im vorkolonialen Zentralnamibia,” 140.
38. Henning Melber, “Economic and Social Transformation in the Process of Colonisation: Society and State before and during German Rule,” in *State, Society and Democracy: A Reader in Namibian Politics*, 2nd ed., ed. C. Keulder, 16–48, here 19 (Windhoek, 2010).
39. Jan-Bart Gewald, *Herero Heroes: A Socio-Political History of the Herero of Namibia, 1890–1923*. (Oxford, 1999), 26.
40. Dag Henrichsen, “Imperial Imaginations and Local African History,” *The Namibian*, 20 November 2020.
41. Bridgeford, *Cape Cross*, 4–11. See also Lisa Gebhardt, “Sandwich Harbour: A Sanctuary in the Dunes,” *SWA Annual* (1973): 97–103, here 97. They named it the port of islets or islanders (Port d’Ilhéus).

42. Roger Crowley, *Conquerors: How Portugal Forged the First Global Empire* (New York, 2015), 11–12.
43. Walter Rusch, Edda Schoedder, and Antje Otto, *Lüderitzbucht: Damals und gestern* (Windhoek, 1983), Vorwort. See also Eric Axelson, “Prince Henry the Navigator and the Discovery of the Sea Route to India,” *The Geographical Journal* 127, no. 2 (1961): 145–55.
44. Crowley, *Conquerors*, 20–21.
45. Eric Axelson, *Congo to Cape: Early Portuguese Explorers* (London, 1973), 85.
46. Olusoga and Erichsen, *The Kaiser’s Holocaust*, 17.
47. Heinrich Vedder, *South West Africa in Early Times*, trans. Cyril G. Hall (London, 1966), 8. Vedder’s descriptions are German-centric and he does not reference his sources. See Jill Kinahan, “Heinrich Vedder’s Sources for his Account of the Exploration of the Namib Coast,” *Cimbebasia: Journal of the State Museum*, Windhoek 11 (1989): 33–39.
48. Axelson, *Congo to Cape*, 87.
49. Olusoga and Erichsen, *The Kaiser’s Holocaust*, 18. On the history of that term, see Budack, “The Aonin or Topnaar of the Lower Khuseb Valley and the Sea,” 6–7.
50. Kinahan, “The Impenetrable Shield,” 25. See also David MacKay, *In the Wake of Cook: Exploration, Science and Empire, 1780–1801* (Wellington, 1985), 35–36.
51. Kinahan, *Pastoral Nomads of the Central Namib Desert*, 99. See also Jill Kinahan, ed., *By Command of Their Lordships: The Exploration of the Namibian Coast by the Royal Navy, 1795–1895* (Windhoek, 1992), 39.
52. Popham’s Narrative as quoted in “The Impenetrable Shield,” 58. See also Kinahan, *Pastoral Nomads of the Central Namib Desert*, 118.
53. Hans M. Verheye et al., “Plankton Productivity of the Benguela Current Large Marine Ecosystem (BCLME),” *Environmental Development* 17 (2016): 75–92, here 75. See also Kinahan and Kinahan, “A Thousand Fine Vessels Are Ploughing the Main...,” 44; John M. Mendelsohn, *Atlas of Namibia: A Portrait of the Land and its People* (Cape Town, 2002).
54. Felix Schürmann, *Der graue Unterstrom: Walfänger und Küstengesellschaften an den tiefen Stränden Afrikas (1770–1920)* (Frankfurt am Main, 2017), 53.
55. *Ibid.*, 84.
56. Felix Schürmann, “Die Wale, ihre Jäger und der Strand von Annobón,” in *Afrikanische Tierräume: Historische Verortungen*, ed. Winfried Speitkamp and Stephanie Zehnle, 34–76, here 50–51 (Cologne, 2014).
57. Schürmann, *Der graue Unterstrom*, 96. See also Joost C. A. Schokkenbroek, *Trying-Out: An Anatomy of Dutch Whaling and Sealing in the Nineteenth Century, 1815–1885* (Amsterdam, 2008), 41–42.
58. Wolfram Hartmann, “Early Dutch-Namibian Encounters,” in *Namibia and The Netherlands: 350 Years of Relations*, ed. Huub Hendrix, 9–19, here 11 (Windhoek, 1999).
59. Gebhardt, “Sandwich Harbour,” 97. Hartmann notes that the local population “reacted aggressively.” Hartmann, “Early Dutch-Namibian Encounters,” 11. Scholars have long speculated about the specific group Europeans encountered. See Budack, “The Aonin or Topnaar of the Lower Khuseb Valley and the Sea,” 5.
60. Schürmann, *Der graue Unterstrom*, 96. See also Budack, “The Aonin or Topnaar of the Lower Khuseb Valley and the Sea,” 5.

61. Schürmann, *Der graue Unterstrom*, 54–56. See also Pieter Dekker and Cornelius De Jong, “Whaling Expeditions of the West India Company to Walvis Bay,” *Namibia Scientific Society Journal* 46 (1998): 47–63, here 50–61.
62. Schürmann, *Der graue Unterstrom*, 78–79.
63. Popham’s Narrative as quoted in “The Impenetrable Shield,” 54.
64. Emma Christopher, *A Merciless Place: The Lost Story of Britain’s Convict Disaster in Africa* (Oxford, 2011), 327–28.
65. “Kurzer Bericht Schmelens über sein (sic) Reise nach der Walfischbai,” in *Die ältesten Reiseberichte über Namibia 1482–1852, Teil I: Die 25 frühesten Landreisen 1760–1842*, ed. Eduard Moritz, 145–46, here 146 (Windhoek, 1999). See also Alan R. Booth, “American Whalers in South African Waters,” *South African Journal of Economics* 32, no. 4 (1964): 278–82, here 278–79; Schürmann, *Der graue Unterstrom*, 62.
66. Schürmann, *Der graue Unterstrom*, 83. See also Edward A. Stackpole, *Whales & Destiny: The Rivalry between America, France, and Britain for Control of the Southern Whale Fishery 1785–1825* (Amherst, MA, 1972), 315–17.
67. Schürmann, *Der graue Unterstrom*, 63.
68. Greg Denning, *Beach Crossings: Voyaging Across Time, Cultures, and Self* (Philadelphia, PA, 2004), 116, as quoted in Schürmann, “Die Wale, ihre Jäger und der Strand von Annobón,” 53. Schürmann outlines that seafarers and workers on whaling ships made less money compared to those working on trade ships. Schürmann, “Die Wale, ihre Jäger und der Strand von Annobón,” 52–53.
69. Harris, Jones, and Schnitzer, “Monuments in the Desert,” 118.
70. Schürmann, *Der graue Unterstrom*, 85.
71. Schürmann, “Die Wale, ihre Jäger und der Strand von Annobón,” 47.
72. *Ibid.*, 51.
73. Schürmann, *Der graue Unterstrom*, 94. See also “Tagebuch über die Fahrt des Schiffes ‘Meermin’ von Sebastiaan Valentijn van Reenen,” in *Die ältesten Reiseberichte über Namibia 1482–1852, Teil I: Die 25 frühesten Landreisen 1760–1842*, ed. Walter Moritz, 77–92, (Windhoek, 1999). See also Lynn Berat, *Walvis Bay: Decolonization and International Law* (New Haven, CT, 1990), 17–18.
74. Schürmann, *Der graue Unterstrom*, 94.
75. Thompson, *Narrative of a Voyage Performed in His Majesty’s Sloop Nautilus* (1786), as quoted in “The Impenetrable Shield,” 44. See also Schürmann, *Der graue Unterstrom*, 94.
76. Alexander, *An Expedition of Discovery into the Interior of Africa*, vol. 2 (London, 1838), 100 and Owen, *Narrative of Voyages to Explore the Shores of Africa, Arabia, and Madagascar*, vol. 2, 135, as referenced in Schürmann, *Der graue Unterstrom*, 94.
77. *HMS Grecian*, 1851, in Kinahan, *By Command of Their Lordships*, 110.
78. Lisa Gebhardt, “Sandwich Harbour,” 99; *HMS Grecian*, 1851, in Kinahan, *By Command of Their Lordships*, 95.
79. Kinahan, *By Command of Their Lordships*, 110.
80. Edmund Gardner (1803) as quoted in “The Impenetrable Shield,” 50. See also Schürmann, *Der graue Unterstrom*, 92; Kinahan, *Pastoral Nomads of the Central Namib Desert*, 99.
81. In one instance, local fishermen (likely “beach dwellers”) and sailors from the *Meermin* clashed when they earlier attempted to seize the fishing nets of the Dutch. Ran-

- dolph Vigne, "The Hard Road to Colonization: The Topnaar (Aonin) of Namibia, 1670–1878," *Journal of Colonialism and Colonial History* 1, no. 2 (2000): n.p.
82. John Kinahan, "Human and Domestic Animal Tracks in an Archaeological Lagoon Deposit on the Coast of Namibia," *The South African Archaeological Bulletin* 51, no. 164 (1996): 94–98, here 94.
83. John Kinahan, "Cattle Paths and the Choreography of Late Pre-Colonial Trade on the Namib Desert Coast," *The South African Archaeological Journal* 69, no. 199 (2014): 96–102, here 99.
84. Kinahan, "Human and Domestic Animal Tracks," 94.
85. Kinahan, "Cattle Paths and the Choreography," 96.
86. *Ibid.*, 101; Moritz, *Die ältesten Reiseberichte über Namibia, 1482–1852, Teil I*, 87.
87. Kinahan, "Cattle Paths and the Choreography," 101.
88. Dening, *Beach Crossings*, 16. Schürmann relies Dening's concept. See Schürmann, *Der graue Unterstrom*, 39.
89. Thompson's Narrative as quoted in "The Impenetrable Shield," 43; Popham's Narrative as quoted in "The Impenetrable Shield," 56.
90. Kinahan, "Cattle Paths and the Choreography," 101.
91. Alvin Kienetz, "The Key Role of the Orlam Migrations in the Early Europeanization of South-West Africa (Namibia)," *The International Journal of African Historical Studies* 10, no. 4 (1977), 553–72, here 557.
92. Schürmann, *Der graue Unterstrom*, 74.
93. Vigne, "The Hard Road to Colonization," n.p.
94. According to Budack, due to "inadequate tackle and hunting methods," Topnaar were never able to kill whales. See Budack, "The Aonin or Topnaar of the Lower Khuseb Valley and the Sea," 25.
95. Francois Duminy, Kapitän niederländische Fregatte *Meermin*, Feb 1793, in Walvis Bay, as quoted in Schürmann, *Der graue Unterstrom*, 120.
96. Alexander, *An Expedition of Discovery into the Interior of Africa*, 84, as quoted in Schürmann, *Der graue Unterstrom*, 120.
97. Seaman Choyce, *The Log of a Jack Tar*, 4, as quoted in Schürmann, *Der graue Unterstrom*, 120.
98. Kinahan. "From the Beginning," 37–38. See also Vigne, "The Hard Road to Colonization," n.p.; Kinahan, *Cattle for Beads*.
99. Benjamin Morrell, *A Narrative of Four Voyages to the South Sea, North and South Pacific Ocean, Chinese Sea, Ethiopic and Southern Atlantic Ocean, Indian and Antarctic Ocean* (New York, 1831), 294.
100. *Ibid.*
101. Bering Strait Tribunal of Arbitration, ed., *Fur Seal Arbitration. Proceedings of the Tribunal of Arbitration Convened at Paris*, Volume II (Washington, 1895), 403.
102. Morrell, *A Narrative of Four Voyages*, 294.
103. Curtis Marean, "Seasonality and Seal Exploitation in the Southwestern Cape, South Africa," *African Archaeological Review* 4 (1986): 135–49, here 135.
104. Budack, "The Aonin or Topnaar of the Lower Khuseb Valley and the Sea," 28–29.
105. Olusoga and Erichsen, *The Kaiser's Holocaust*, 16.
106. Richard Ellis, *The Empty Ocean* (Washington, DC, 2003), 170.
107. *Ibid.*
108. Victoria Dickenson, *Seal* (London, 2016), 112.

109. "Tagebuch über die Fahrt des Schiffes 'Meermin' von Sebastiaan Valentijn van Reenen," 78. See also Bering Strait Tribunal of Arbitration, *Fur Seal Arbitration*, 403. The records kept by the vessel *Sylvia* referenced one man who had been sealing nearly every year for twenty-three years. See Kinahan, *By Command of Their Lordships*, 148.
110. Kinahan, *By Command of Their Lordships*, 35. Hydrographic information collected by British ships (1797–1895) also include such references.
111. Morrell, *A Narrative of Four Voyages*, 306.
112. Kinahan, *By Command of Their Lordships*, 138.
113. "Tagebuch über die Fahrt des Schiffes 'Meermin' von Sebastiaan Valentijn van Reenen," 79.
114. Morrell, *A Narrative of Four Voyages*, 305.
115. *Deutsch-Südwestafrikanische Zeitung*, "Die Robben an der deutsch-südwestafrikanischen Küste, Teil II," 2 October 1907 (Tismer).
116. *Ibid.* See also *Deutsche Kolonialzeitung*, "Deutsch Südwestafrika," 11 December 1897.
117. The sloop *Princess of Wales*, which wrecked on Crozet Island in 1821, was a cutter meant for sealing. See Charles Medyett Goodridge, *Narrative of Voyages to the South Seas, and the Shipwreck of the Princess of Wales Cutter*, 2nd ed. (Exeter, 1852).
118. Schürmann, *Der graue Unterstrom*, 87.
119. "Tagebuch über die Fahrt des Schiffes 'Meermin' von Sebastiaan Valentijn van Reenen," 78.
120. Thomas Boulden Thompson, *Narrative of a Voyage Performed in His Majesty's Sloop Nautilus* (1786), as quoted in "The Impenetrable Shield," 39.
121. Kinahan, *By Command of Their Lordships*, 61.
122. Bering Strait Tribunal of Arbitration, *Fur Seal Arbitration*, 404.
123. See BArch-B, R 1001/ 1824 Guanogewinnung in DSWA, Brief vom Kaiserlichen Gouvernement Südwest Afrika, 26. Aug. 1903.
124. Morrell, *A Narrative of Four Voyages*, 293.
125. *Ibid.*, 294.
126. Kinahan and Kinahan, "A Thousand Fine Vessels Are Ploughing the Main..." 45; Snyders, "Stinky and Smelly," 43.
127. "African Guano Trade," in *The Nautical Magazine and Naval Chronicle for 1845. A Journal of Papers on Subjects Connected with Maritime Affairs* (London, 1845), 617–66, here 622. See also Kinahan, *By Command of Their Lordships*, 64; Günther Niethammer, *Die wertvollsten Vögel der Welt. Interessantes über Guanovögel* (1969), as quoted in Sigrid Kube, "Das Gold der Kormorane," in *1884–1984: Vom Schutzgebiet bis Namibia*, ed. Klaus Becker and Jürgen Hecker, 98–101 (Windhoek, 1958).
128. Kämpf and Chapman, *Upwelling Systems of the World*, 298.
129. Journal of Washington Fosdick, 1843–44, as referenced in Arthur C. Watson, "The Guano Islands of Southwestern Africa," *Geographical Review* 20, no. 4 (1930): 632–41, here 631.
130. Forrester 1845 [Log 508, Manuscript Collection] Mystic Seaport Museum, Mystic, as quoted in "A Thousand Fine Vessels Are Ploughing the Main..." 45. See also Lieutenant Ruxton, "Notes on the South-West Coast of Africa," *The Nautical Magazine and Naval Chronicle* (1846): 4–16, here 10.
131. Edward D. Melillo, "The First Green Revolution: Debt Peonage and the Making of the Nitrogen Fertilizer Trade, 1840–1930," *The American Historical Review* 117, no. 4 (2012): 1028–60, here 1028.

132. Ibid. The historiography focuses mostly on the coast of Chile. See Gregory T. Cushman, *Guano and the Opening of the Pacific World: A Global Ecological History* (New York, 2014); R. J. M. Crawford and J. Jahncke, "Comparison of Trends in Abundance of Guano-Producing Seabirds in Peru and Southern Africa," *South African Journal of Marine Science* 21, no. 1 (1999): 145–56.
133. Hendrik Snyders, "From Peru to Ichaboe: The Dynamics of a Shifting Guano Frontier, 1840–5," *African Historical Review* 48, no. 2 (2016): 1–23, here 5.
134. Ibid. See also Lance van Sittert and Rob Crawford, "Historical Reconstruction of Guano Production on the Namibian Islands 1843–1895," *South African Journal of Science* 89 (2003): 13–16, here 13.
135. Kinahan, *By Command of Their Lordships*, 64; Kinahan and Kinahan, "A Thousand Fine Vessels Are Ploughing the Main..." 45.
136. Watson, "The Guano Islands of Southwestern Africa," 634–35.
137. Kinahan and Kinahan, "A Thousand Fine Vessels Are Ploughing the Main..." 43. See also Kinahan, *By Command of Their Lordships*, 63.
138. Snyders, "Stinky and Smelly," 44.
139. James Thompson, "To the Editor, Liverpool 31 July 1844," *Nautical Magazine and Naval Chronicle* XIII (1844), 568–569, here 569.
140. Kinahan and Kinahan, "A Thousand Fine Vessels Are Ploughing the Main..." 45.
141. Kinahan, *By Command of Their Lordships*, 64.
142. Robert Craig, "The African Guano Trade," *Mariners Mirror* 50, no. 1 (1964), 25–55, here 35, as referenced in "A Thousand Fine Vessels Are Ploughing the Main..." 47. See also Watson, "The Guano Islands of Southwestern Africa," 640; Kienetz, "The Key Role of the Orlam Migrations," 557.
143. *Kolonie und Heimat* IV, no. 31, "Die Guano-Gewinnung," 1911.
144. Kinahan, *By Command of Their Lordships*, 64.
145. Forrester (Brig) of Mystic Seaport, USA, 1845, as quoted in "A Thousand Fine Vessels Are Ploughing the Main..." 45.
146. Kinahan and Kinahan, "A Thousand Fine Vessels Are Ploughing the Main..." 45.
147. Ibid., 43. See also *Nautical Magazine*, "The African Guano Trade," London 1845, 616–66, here 647; T. E. Eden, *The Search for Nitrate and the True Nature of Guano. Being an Account of a Voyage to the South-West Coast of Africa, Also a Description of the Minerals Found There, and of the Guano Islands in that Part of the World* (London, 1846), 43.
148. Eden, *The Search for Nitrate and the True Nature of Guano*, 12.
149. Kinahan and Kinahan, "A Thousand Fine Vessels Are Ploughing the Main..." 46.
150. Watson, "The Guano Islands of Southwestern Africa," 638.
151. Kinahan and Kinahan, "A Thousand Fine Vessels Are Ploughing the Main..." 46.
152. Hendrik Snyders and Sandra Swart, "'Discontented Scoundrels Who Crowd the Mercantile Marine Today': Labour Relations Regimes of the Cape and Ichaboe Guano Trade, c. 1843–1898." *Historia* 58, no. 1 (2013): 51–73, here 54. See also Snyders, "Stinky and Smelly," 156–57.
153. Snyders, "Discontented Scoundrels Who Crowd the Mercantile Marine Today," 55. Workers from the Namibian mainland, including women, were directly targeted for employment by the end of the century. Snyders, "Discontented Scoundrels Who Crowd the Mercantile Marine Today," 62.

154. Snyders, “Stinky and Smelly,” 155.
155. Kinahan, *By Command of Their Lordships*, 64–65.
156. Kinahan and Kinahan, “A Thousand Fine Vessels Are Ploughing the Main...,” 45. See also *Nautical Magazine* (1845), 623; Kinahan, *By Command of Their Lordships*, 64–65.
157. Snyders and Swart, “Discontented Scoundrels Who Crowd the Mercantile Marine Today,” 54–56.
158. *Globus: Illustrierte Zeitschrift für Länder- und Völkerkunde*, “Ein Ausflug zu den südwestafrikanischen Guanoinseln,” 20 August 1898 (Passarge). See also Snyders, “Stinky and Smelly,” 158.
159. Ruxton, “Notes on the South-West Coast of Africa,” 4.
160. W. S. Fletcher, “The African Guano Islands,” *The Cape Illustrated Magazine*, September, 1897, 21, as quoted in Snyders, “Stinky and Smelly,” 156.
161. “African Guano Trade,” 623.
162. Snyders and Swart, “Discontented Scoundrels Who Crowd the Mercantile Marine Today,” 55.
163. Snyders, “Stinky and Smelly,” 156. See also Kinahan, *By Command of Their Lordships*, 65.
164. Kinahan and Kinahan, “A Thousand Fine Vessels Are Ploughing the Main...,” 45.
165. Watson, “The Guano Islands of Southwestern Africa,” 638.
166. Snyders, “Stinky and Smelly,” 154. See also Snyders, “Stinky and Smelly,” 159–164.
167. Kinahan, *By Command of Their Lordships*, 66/67.
168. Watson, “The Guano Islands of Southwestern Africa,” 635.
169. *Emeline* (Schooner) of Mystic Seaport, USA, 1844, as quoted in “A Thousand Fine Vessels Are Ploughing the Main...,” 45.
170. *Ibid.*
171. Snyders, “Stinky and Smelly,” 46–50. See also Kinahan and Kinahan, “A Thousand Fine Vessels Are Ploughing the Main...,” 45.
172. Snyders, “Stinky and Smelly,” 52.
173. Snyders and Swart, “Discontented Scoundrels Who Crowd the Mercantile Marine Today,” 57–58. See also *Nautical Magazine and Naval Chronicle* XIV, “The African Guano Trade,” 652–66; *The Illustrated London News*, “Mutiny at Ichaboe,” 21 September 1844; Watson, “The Guano Islands of Southwestern Africa,” 638–39; Kinahan and Kinahan, “A Thousand Fine Vessels Are Ploughing the Main . . .,” 46.
174. *Globus*, “Ein Ausflug zu den südwestafrikanischen Guanoinseln,” 20 August 1898 (Passarge). See also Kinahan and Kinahan, “A Thousand Fine Vessels Are Ploughing the Main . . .,” 47.
175. Kinahan, *By Command of Their Lordships*, 99.
176. Snyders, “From Peru to Ichaboe,” 13.
177. Ruxton, “Notes on the South-West Coast of Africa,” 4–5. See also Watson, “The Guano Islands of Southwestern Africa,” 640.
178. Kinahan and Kinahan, “A Thousand Fine Vessels Are Ploughing the Main...,” 47. See also Robert Craig, “The African Guano Trade,” *Mariners Mirror* 50, no 1 (1964): 25–55, here 54; Watson, “The Guano Islands of Southwestern Africa,” 640.
179. Kinahan, *By Command of Their Lordships*, 99. Control later passed over to Cape businessmen. See Snyders and Swart, “Discontented Scoundrels Who Crowd the Mercantile Marine Today,” 60.

180. Kinahan, *By Command of Their Lordships*, 107; Snyders and Swart, “Discontented Scoundrels Who Crowd the Mercantile Marine Today,” 63.
181. Snyders, “From Peru to Ichaboe,” 13.
182. R. W. Rand, “Guano Enterprise in South West Africa,” *Ostrich* 23, no. 3 (1952), 169–85, here 169.
183. Kinahan, *By Command of Their Lordships*, 67.
184. Brigitte Lau, *Namibia in Jonker Afrikaner’s Time* (Windhoek, 1987). See also Brigitte Lau, “The Emergence of Kommando Politics in Namaland, Southern Namibia 1800–1870” (PhD diss., University of Cape Town, 1982); Kinahan and Kinahan, “A Thousand Fine Vessels Are Ploughing the Main . . .,” 53.
185. Kienetz, “The Key Role of the Orlam Migrations,” 556. See also Kinahan, *Pastoral Nomads of the Central Namib Desert*, 117.
186. Kienetz, “The Key Role of the Orlam Migrations,” 560.
187. Gebhardt, “Sandwich Harbour: A Sanctuary in the Dunes,” 99–100.
188. Kinahan and Kinahan, “A Thousand Fine Vessels Are Ploughing the Main . . .,” 47. See also Jill Kinahan, “The Historical Archaeology of Nineteenth Century Fisheries at Sandwich Harbour on the Namib Coasts,” *Cimbebasia: Journal of the State Museum*, Windhoek 13 (1991): 1–27; BArch-B, R 1001/1863, Häfen an der südwestafrikani-schen Küste, Der Sandwichhafen.
189. Kinahan and Kinahan, “A Thousand Fine Vessels . . .,” 44.
190. Botha, “People and the Environment in Colonial Namibia,” 172.
191. Snyders, “From Peru to Ichaboe,” 19.
192. Snyders, “Stinky and Smelly,” 11–12.
193. Bollig, *Shaping the African Savannah*, 54–55. See also Bollig, *Shaping the African Savannah*, 351.
194. C. 2144 at 6, Further Correspondence Respecting the Affairs of South Africa, Dyer to Foreign Secretary of the Admiralty, March 28, 1878, as quoted in Lynn Berat, *Walvis Bay: Decolonization and International Law*, 37. See also PRO Adm 53/11246 Tuesday 12 March 1878, as referenced in *By Command of their Lordships* (New Haven, CT, 1990), 116. According to the *Western Morning News*, local Herero and Oorlam were sent away after having become “most zealous and loyal British subjects.” See also Buda-ck, “The Aonin or Topnaar of the Lower Khuiseb Valley and the Sea,” 11.



Accessing Arid Lands

“Quite like a grave.”¹ These were the words of German Missionary Johannes Olpp when describing his experiences in the hinterlands of Angra Pequena. After boarding the steamer *Maria Johanna*, and following a long journey, he reached the small coastal settlement in 1865. Like many after him, he could not hide his disappointment. What he saw was not really a settlement; it was at best a clutter of run-down shacks located at the end of the world. Although guano traders working in the region at times frequented the outpost, it had taken until 1860 for the first European, English trader David Radford, to permanently settle there.² African societies in the region generally moved on. Olpp himself faced numerous logistical difficulties: first, and following a long journey, he had to get ashore. Angra Pequena was a natural harbor that provided some safety. Still, shallow waters and hidden cliffs forced him to rely on a surfboat. Once ashore he faced a lack of shelter. Camping on the beach turned out to be a terrible idea. As he put it, a major storm left me “dumbfounded.”³ Olpp had been aware of the desert landscapes that would await him. Yet seeing it all firsthand still stunned him: “There it lay in front of me, in the desert. In vain does one’s eyes search for a blade of grass. One can barely envision anything less dismal than this waded steppe land, in which even a three to four-day journey does not unearth even the littlest of vegetation. This land I am supposed to become fond of?”⁴ A sketch Olpp added to his volume paints a picture of a remote and godforsaken outpost, a frontier environment imprisoned between ever-encroaching dunes on one side, and the ice-cold treacherous waters of the Atlantic Ocean on the other.

Questions around access defined German colonial affairs in Southwest Africa. When German businessman Adolf Lüderitz claimed Angra Pequena in 1883, he wanted guano, furs, ivory, and cattle; more importantly, he hoped for the discovery of copper, gold, and certainly diamonds. Reaching such potential treasures, however, was a whole other story. As illustrated in chapter 1, those who had come before him had already looted many commodities. Plus, and as Lüderitz had written to the German Foreign Office in 1882, “Of the best bays the British have already taken possession, and so I have to be content with

some fitting landing spot.”⁵ With Walvis Bay snatched up he was at least able to claim the other entry point, Angra Pequena, later known as Lüderitzbucht. German Missionary Johannes Olpp called it “Without a doubt . . . the best among those few along the coastline.”⁶ Once German Chancellor Otto von Bismarck decided to grant governmental protection, Angra Pequena developed into what colonists ended up calling “the only entry portal for Germandom into Southwest Africa.”⁷ Over time, and within the context of nationalism and industrialization long defining European affairs, administrators and all kinds of experts arrived from beyond the horizon. For some early dreamers, this seemed like a good start. However, dangerous ocean currents remained difficult to navigate, the arid Namib Desert with its high desert dunes was hard to cross, and a lack of drinking water in and around Angra Pequena greatly limited possibilities for settlements. Central Namibia, an area situated on the central plateau and characterized by somewhat more water and more fertile lands, offered better opportunities for transformations into a settlement colony. Without claims to Walvis Bay, however, German colonists had to look for their own entry point, a logistical endeavor that defined the early years of colonial rule. In that sense, infrastructure defined rule, as did geopolitical circumstances and local resistance.

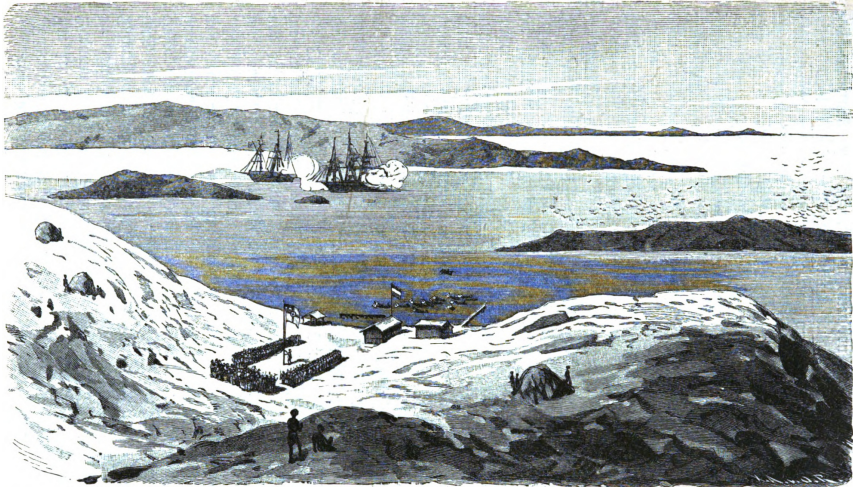
These early quests for entry points, understood as environmental infrastructure, are front and center in chapter 2. Again, aware of the fluidity between precolonial and colonial logistics, the first section begins with the creation of a German protectorate in Southwest Africa. Apart from introducing Adolf Lüderitz and broader political decisions, this part centers natural forces and existing African environmental infrastructure; it also explores the growth of missionary structures. The second section then explores changes in traffic flows following the creation of the German protectorate. After Lüderitz’s arrival in Angra Pequena efforts to find safe landing places and ways to cross the desert became essential for the future of the colony. Whereas newcomers could rely on existing animal engineering and the Bay Road, reaching beyond the Namib Desert remained a challenge. The third section then focuses on efforts to establish a beachhead in Angra Pequena. The search for an additional harbor and the subsequent reorientation toward central Namibia, discussions about the acquisition of Walvis Bay, and the foundation of Swakopmund speak volumes about the importance of a reliable gateway.

Our Place in the Desert

A telegram dated 24 April 1884, a Thursday, marked the inauguration of German colonialism. Colonial fantasies and stints in empire had, of course, long defined German history.⁸ But that day an endorsement of activities in South-

west Africa marked the official beginning of the Second Reich's colonial efforts. That had all to do with the fact that the German Imperial government granted businessman and adventurer Adolf Lüderitz its protection. Based in Bremen, Northern Germany, and following the death of his father, Lüderitz had been mostly interested in the acquisition and trade of guano and tobacco. By 1881 he already owned a trading post in the port of Lagos in British West Africa.⁹ In April 1883, his twenty-two-year-old agent Heinrich Vogelsang then cruised into the bay of Angra Pequena on the brig *Tilly*. Rhenish missionary and supporter of German colonialism Johannes Bam accompanied Vogelsang as the latter negotiated a treaty with Captain Joseph Fredericks.¹⁰ A group of Oorlam-Nama, later known as Bethany people, had settled in the region. They had migrated between the coastline and the Fish River around 1780. Some, the !Nami-Inūs, had stayed temporarily near the bay.¹¹ According to one settler *storie*, local groups wondered why Germans would build a house where there is no water. "They will die quickly."¹² In any case, Lüderitz "bought" the land by agreement on 1 May 1883. He knew about the rich guano deposits on the coast and had a report pointing to copper deposits; he also wanted gold and was confident that he could find diamonds.¹³ The German flag was thus raised on 12 May 1883. About a year later, in April 1884, the endorsement of the German government would provide the needed protection. Two ships, the *Leipzig* and *Elizabeth*, arrived in the harbor, and soon surfboats pushed toward the shoreline. The family magazine *Daheim* later described the scene in detail, including the proclamation declaring the takeover of the area and the twenty-one-gun salute that echoed over a seemingly empty bay (Figure 2.1).¹⁴

Several weeks after the initial German proclamation, Captain Fredericks agreed to a second sale. For the price of 600 pounds, probably paid in goods, and 260 rifles, that treaty included territory stretching from the Orange River, the border to the neighboring Cape Colony in the south, all the way north to the 26th parallel, and inland for twenty geographical miles. There had been no explanation that a geographical mile is about 4.5 times the size of an English mile. According to two scholars, "Even by the low standards of European colonialism, . . . [this agreement] was exploitative and one-sided. It is even suggested that Vogelsang may have plied Joseph Fredericks with liquor during the negotiations."¹⁵ Merchant and agent Theophilus Hahn, the son of Rhenish missionary Johannes Samuel Hahn, had acquired a doctorate on the Nama language. He now advised Vogelsang on how to best gain such concessions. In October 1884, Fredericks signed a treaty of "friendship and protection" with Gustav Nachtigal, at the time the German Consul-General for the west coast of Africa. Fredericks was the first African leader in the region to sign such a treaty, soon followed by Chief Haibib of the Topnaar Nama and Hermann von Wyk of the Rehoboth Basters. Nachtigal, prior to his death at sea in 1885, appointed Vogelsang temporary German consul, later replaced by jurist Heinrich



Kaufstation der deutschen Flagge in Angra Pequena, am 7. August 1884 durch S. M. Schiffe „Elisabeth“ und „Leipzig.“ Nach der Spitze eines Augenzeugen vom Bord der „Elisabeth.“

Figure 2.1. “Hoisting of the German flag in Angra Pequena, 7 August 1884,” Reinhard Zöllner, *Der schwarze Erdteil und seine Erforscher* (1887), 386, HathiTrust/public domain.

Ernst Goering, the father of the Nazi Hermann Goering. As the first imperial commissioner of Southwest Africa, Goering concluded additional “protective treaties” with leaders at Warmbad, Keetmanshoop, Berseba, Hoachanas, Rehoboth, Omaruru, and Okahandja.¹⁶ One protection treaty signed by Herero leader Kamaharero in 1885 included a valley known by its Dutch name Windhoek (windy corner). Located at a strategic juncture between north and south, German commander of the colonial troops, Curt von François, saw the whole area as “deserted,” empty of people.¹⁷ Of course different groups had long lived there. At the time Oorlam captain Jonker Afrikaner, known among the Herero as Kakuuko Kamukurouje, settled “at the fountains of Otjomuise ([Klein-]Windhoek)” in 1840.¹⁸ In that sense, these were not empty spaces, no *terra nullius*, although colonial discourses at times saw them as exactly that or at least did not think the inhabitants mattered much.¹⁹ At the same time, Africans had their own motives for working with the Germans. Herero Maharero, son of Tjamuaha, had originally expected help from the British against Nama groups; by 1885 he eventually accepted German “protection.” His son Samuel later aimed to extend his power with the help of the Germans by becoming the next Herero paramount chief. To succeed in this ploy he welcomed German assistance on some level, and that came at a price: land, labor, cattle.²⁰ For the Herero, trade also mattered, especially during ecological crises such as drought. At those times they more directly depended on the export of

indentured labor for goods and firearms.²¹ Others resisted. Nama chief Hendrik Witbooi, for example, forced Germans to rethink and reorganize their attempts to wedge their way into Southwest Africa after refusing to surrender to German control.²² Of course, German claims to large territories, more than 2.5 million square kilometers by the end of 1884,²³ meant little on the ground even if officially endorsed by the Berlin Conference in February 1885.

Individuals such as Englishman William Coates Palgrave had long framed the potential for transforming the region into a productive settler space. Heading the Palgrave Commission instituted by the Cape Colony government to hear from local leaders in Southwest Africa, he had traveled to central Namibia first in 1876. Whereas the reluctance to sign protection treaties with Maharero were in large part tied to differences in the vision of the empire between the Cape Colony and the British government, his Photo Album offers insights into outside fantasies about the region. Made up of snapshots taken by an experienced photographer,²⁴ the album sketches out potential transformations. Take one photo showing a barren, partially rocky, and arid desert landscape. A closer look reveals a small figure with his rifle gazing toward the horizon of this unknown and seemingly endless hostile land at the edge of civilization; a similar image showcases the rocky, sandy, and barren panorama much closer yet with a similar underlying message.²⁵ In contrast, we also see roads crossing those landscapes. According to historian Jeremy Silvester, that dichotomy points to larger opportunities for development.²⁶ The same applies to water. Silvester claims that “Palgrave’s argument that the land has the potential for agricultural development required an emphasis on the water sources that could be tapped in an arid land.”²⁷ A stunning nineteen of the eighty-five photographs show rivers or some watering hole, an emphasis neglecting realities on the ground and inviting Western colonial fantasies tied to future development.

Missionaries within the region had shaped environmental infrastructure in an effort to make such transformation a reality. The London Missionary Society, which employed missionaries from England, Scotland, the Netherlands, and Germany, originally moved into the area north of the Orange River in 1805–1806. According to one contemporary voice, the Society carried God’s word “in a waterless world where they were expected to become self-supporting little havens of piety.”²⁸ By the 1840s, the German-based Rheinische Missionsgesellschaft (Rhenish Mission Society, RMG) took over, quickly becoming the largest organization in Southwest Africa. Soon missionaries such as the aforementioned Johannes Olpp became the first German “experts” regarding place, people, and potential transformations. Take Carl Hugo Hahn, who worked for the RMG in central Namibia between 1842 and 1873. As visible in his writings, he saw himself as a pioneer at the frontier not just regarding religious work but also when it came to logistics and the cultivation of landscapes.²⁹ According to fellow missionary Carl Gotthilf Büttner, not magic but persistence and hard

work were required for transforming the land and turning an arid wasteland into spaces with hundreds of thousands of date trees.³⁰ “Therefore this desert, which one has to cross before reaching the rich interior, offers people a variety of rich and desirable products, plus that the mountain ranges, whose naked rocks lay exposed westward towards the coast, still have some treasures in ores and rocks in their interior to retrieve.”³¹ Once Lüderitz arrived later on, Büttner stated that missionaries, just like Robinson Crusoe, had for fifty years colonized what they saw as the *Urzustand* (primitive or original state).³² Büttner, like other missionaries, had a complex view of Africans, and he actually supported intermarriage.³³ Plus, and as some of the scholarship indicates, missionaries were also not too enthusiastic about the German colonial project.³⁴ Yet colonial narratives more broadly soon spoke of a local African population as nomadic, without religion, and disconnected from trade. One report noted, “The Hottentots are . . . nomads, but they are not even competent herdsmen. . . . Their instability [*Unbeständigkeit*] . . . [is due especially to the fact] the Namaquas don’t know how to make anything orderly out of their country.”³⁵ In a sense, such rhetoric was not surprising. For one, missionaries had to learn, and that took time. And, misrepresentation of sophisticated pre-colonial structures in a way justified missionary and colonial presence. Missionaries also began pushing local populations to become sedentary farmers. Johannes Samuel Hahn, for instance, wrote after nine months, “The economic endeavor has not worked in our favor” given cold weather and African laziness.³⁶ Many local populations had little interest in such systems. Those reactions then frustrated missionaries, confirmed their existing biases, and only motivated them to expand their efforts. And although sources remain largely silent about what Germans learned from the local population in that process, it is clear that missionaries “appropriated ‘heathen’ cultures through their studies of cultural artifacts” such as language, rituals, religious beliefs, myths, oral history, and natural environment,³⁷ learning much about locality and environment along the way.

Discussions around the potential for transforming nature are most visible in descriptions of environmental infrastructure such as missionary stations. By the end of 1883, the RMG had a total of sixteen mission stations in Namibia, eight each in Namaqualand and Hereroland.³⁸ In their view, and in line with colonial officials later on, missionaries had created little hubs in the middle of hostile, harsh, uncivilized, and ungodly environments, doing pioneering work at the frontier.³⁹ These “islands of the civilized,” to follow such narratives, those lonely outposts days if not weeks away from fellow countrymen, were made-up of European-style houses and shined like beacons of light within inhospitable sceneries. Missionary Olpp’s journey inland tells such a story: “I told myself that older brethren and profit-searching traders existed in the interior, once shaking my head when looking at the monotony of the



Bethanien.

Figure 2.2. “Bethanien,” Olpp, *Erlebnisse im Hinterlande von Angra-Pequena*, 2nd ed. (1896), 14, HathiTrust/public domain.

sand desert.”⁴⁰ A couple of sketches illustrate his trek, with one capturing the remoteness as he traveled along barren rocks. A second one then displays the mission station of Bethanien as an island in this sea of emptiness: a church and a home, like an oasis, surrounded by trees and bushes, beautifully embedded into its surrounding landscape (Figure 2.2). “Most pleasing to me was the nice little church with its two little towers and within that a devotional parish [that had been] summoned.”⁴¹ Countless other accounts highlight the lush green of trees and bushes calling travelers from afar. Carefully tended vegetable gardens, providing sustenance for mind, body, and soul, formed repeating themes and pillars in such colonial frontier narratives. An article in a geography bulletin pointed to the labor put into the creation of such a garden after describing the difficulties in crossing the Namib Desert: “It must be pointed out that figs, pomegranates, grapes, apples, pears, peaches and more thrive in the missionary garden here; even corn, grain, vegetables and more are grown there. The lack of water in the area makes large scale cultivation of the mentioned crops impossible though the soil would be perfect for it.”⁴² A British explorer noted that missionary Heinrich Schmelen “labored upwards of thirty years in the wilderness.”⁴³ Expeditions commented on these hubs as well. Take Francis Galton, a half-cousin of Charles Darwin, who described the missionary station Schepmansdorf as “prettily situated on a kind of island in the middle of the Kuisip [Khuseb] River bed near a clump of fine trees, somewhat resembling elms.” Two houses and “the white-washed chapel” marked the center of this

hub.⁴⁴ “The lot of a missionary in Africa is a hard one,” commented explorer James Chapman, defined by trial, self-denial, and deprivation.⁴⁵ Over time, descriptions and sentiments of missionaries as creators of civilized spaces within hostile environments became a stable reference in most European travel accounts, often hiding existing environmental infrastructure while serving as markers that pointed toward a promising future.

The inception of German colonialism in 1884 marked somewhat of a turning point. Bismarck seemingly had little interest regarding German involvement in Southwest Africa. For him, and to follow historian Christoph Nonn, this episode had all to do with domestic politics. The chancellor hoped to box in a more liberal and Anglophile Friedrich, the successor of Wilhelm whom the iron chancellor feared. A geopolitical moment defined by the Three Emperor’s Agreement, Russian and British rivalries in Asia, and conflicts between France and Britain regarding Africa gave Bismarck the opportunity to act. The chancellor’s move excited the masses, increased frictions with the British thereby limiting Friedrich’s policy options, and gave Bismarck the chance to burnish his own image of an honest broker at the Berlin Conference. In this sense, the chancellor achieved his objectives.⁴⁶ His disinterest and lack of support to colonial investments and endeavors thereafter has to be understood in this context. Of course what might have been a shrewd and successful domestic ploy in line with Bismarck’s overall *Realpolitik* would have real consequences in Southwest Africa. After all, Lüderitz, along with many in the German public saw the government’s protection of German interests just as the beginning.

Reaching Southwest Africa

Landing in Angra Pequena could be a nightmare. The harbor consists of two natural bays: Robert Harbor and the bay of Angra Pequena, later known as Lüderitz Harbor. Both can provide safe refuge from unpredictable ocean waters. Yet reaching them was not child’s play. In 1884, Adolf Lüderitz, accompanied by Swiss botanist Hans Schinz, a mining inspector, and a couple of others had begun taking stock of the region. On the hunt for diamonds, they hoped for easy access along inlets such as the Orange River in the south. One such inventory trip fell short: a captain simply refused to steer the ship into the rough waters and land at the river’s mouth.⁴⁷ In a letter to his mother, Schinz spoke about the dangers to life and limb once landing in Angra Pequena: hurricane-like winds had “ripped our sail while the angry ocean waters hid the underwater cliffs.”⁴⁸ German reports soon collected all kinds of knowledge about natural forces shaping the region. “The approach of the coastline is made more difficult due to the foggy air along exactly that,” noted a maritime bulletin in 1884. “The impact of cold southern winds with the exceedingly warmed land

form very intensely moist precipitation which concentrates along the coastline into fogbanks and lingers above the water, making estimates of the distance away from the beach impossible, meanwhile the mountain ridges and peaks are visible, soon the latter are hidden, only freeing reefs and surf along a rather uniform shore [to the viewer's gaze], based on which again any orientation turns out to be rather difficult, most of the time impossible. A lack of sea markers and identifiers of any kind makes all that even more apparent."⁴⁹ Whereas that publication added that Angra Pequena provides "suitable anchorage for larger ships,"⁵⁰ approaching the harbor remained tricky. On 1 February 1885, Lüderitz's brig *Tilly* ran into reefs nearby. Fully loaded with drilling devices, agricultural equipment, and other resources, it sank quickly right behind Penguin Island.⁵¹ This loss was a devastating blow, leaving expert hydrologist Ludwig Conradt stranded.⁵²

Those safely entering the colony described Germany's only beachhead and supposed gateway to colonial glory with mixed feelings. At least Ernst Walter Wegner, an employee of Lüderitz who spent about six years in the area, was not impressed. In a letter home dated June 1883 he wrote, "The land in which we currently live is a complete desert. As far as the eye can see it only spots rocks and sand, and we have to get any drop of water from Cape Town. It only rains here about once a year and of actual vegetation there can be no say anywhere. Just a few dry bushes and cacti make a scrawny living. It really does look like as if a curse of the Lord is laying on this land."⁵³ Drinking water was simply not available in Angra Pequena. As Olpp had pointed out, "One is looking for a water source along the beach in vain and yet water is the main need for settlers. It has to be brought in from Cape Town."⁵⁴ He had added elsewhere, "With a continuing lack of rain these [river beds] run dry completely and the amount of constant [flows of water] in the land is so little that no 1,000 European settlers, all of whom need [water for] their own and for their cattle, could exist. Deep interior ponds, that never run dry, are missing completely."⁵⁵ Riverbeds nearby only held a brackish and salty liquid. Without water holes or springs on the west side of the Namib Desert newcomers had to bring it in all the way from far away Cape Town, a logistical nightmare and expensive undertaking. Explorer archeologist and chemist Waldemar Belck, who arrived in the region in 1884, still remained confident in German ingenuity when noting that "Mr. Lüderitz is already digging wells energetically, and even if accessing water that way should not work, installing larger cisterns and reservoirs should solve the misery completely or at least in part."⁵⁶

Whereas access to drinking water might have been solvable, having to cross the Namib Desert seemed a terrifying prospect with less apparent answers. Belck wrote in 1884, "In the surroundings of the bay absolutely nothing is growing."⁵⁷ Mine manager Hermann Pohle noted in his early descriptions that "the eye is searching in vain for a green spot, even just a bush or a tree. A

dismal wasteland, just tempered by a moving yet always beautiful ocean.”⁵⁸ Schinz painted a similar picture when writing, “So we were now at the edge of the wilderness . . . —if calling sand and rocks allows for such a description.”⁵⁹ That expedition had brought water from Cape Town for a whopping 30 Marks per barrel only to then get stranded in Angra Pequena: crossing the Namib Desert in January, the hottest time of the year, was impossible.⁶⁰ At that time, ox wagons, which had been imported from the Cape Colony, widely defined transport inland. Those animals seemed the only ones capable of making the arduous journey. Whereas horses and maybe donkeys were at times also available, those were much more prone to diseases and certainly more expensive.⁶¹ German newcomers were often skeptical. Max Buchner, for instance, was uncertain about such means of transport but quickly convinced otherwise once he saw the abilities of these animals.⁶² As a geologist and mining expert exclaimed when talking about oxen, “which other animals would be capable of dealing with such a harsh land!”⁶³ Finding healthy oxen and a four-wheel cart was difficult, however. Treks generally relied on sixteen to twenty oxen to pull one wagon, with at least a couple as potential replacements coming along as well. With little knowledge about these animals, local traders at times took advantage of German newcomers by selling them less healthy animals.⁶⁴ The wagon itself was made out of massive wood and required axles strengthened with iron. Described as “traveling apartments,”⁶⁵ the carts carried virtually everything: kitchenware, food, clothing, weapons, bedding, along with much else, and, of course, water. For contemporaries these vehicles felt more like locomotives or chariots than carriages.⁶⁶ Although able to handle a lot, problems with axles and wheels still slowed down treks: sinking into desert sands or crossing rocky surfaces did much to wear out even the sturdiest of materials. Such animal structures, in themselves sophisticated environmental infrastructure, did certainly not please German ambitions. The timing of a journey mattered as well. During the summer months heat and a lack of water made travel increasingly difficult. Countless accounts describe “screaming oxen” desperately trying to reach the water, or dying of thirst in the desert.⁶⁷ “Animals have no place in your heaven,” noted one ox in Uwe Timm’s novel *Morenga*.⁶⁸ The expertise of local guides, familiar with landscapes, water holes, wagons, and animals, was essential. Not that newcomers acknowledged it much. To the contrary, many German descriptions questioned local manners, their treatment of the animals, and even overall abilities of drivers and herders. There are many early firsthand accounts that capture the dangers of such treks, with one German magazine later quoting Gustav Nachtigal, “I’d rather travel through the desert where I can at least find oases than travel through this land [Southwest Africa] again.”⁶⁹ Most point to the need to move quickly once allowing the oxen their last drink of water at the coastline—otherwise the trek might not reach the next watering hole in time. An account from 1887 points

to the steep path into the dunes from here forward; it also underscores how easily inexperienced travelers could get lost in the ever-changing Namibian desert landscapes.⁷⁰ “Masses of flying sand have created the chaos of water and mainland,” wrote a geologist and mining expert in this context, a trek into a “horrific landscape” and “the world of death.”⁷¹ Once travelers had crossed the Namib then they reached an arid landscape, still far away from the central plateau and more fertile lands. It was thus not surprising that some reports about the area that reached Germany were kept secret for some time.⁷²

Early concerns about access to and transportation from the coastal outpost of Lüderitzbucht were somewhat defused with hopes of what lay inland. Wegner, for example, pointed to a promised land beyond the dunes, ostensibly shielded from the gaze of European empires: “Roughly 80 (Engl.) miles away from the coast, however, it is very different. The land is fertile and fresh water widely available and those tribes living there, own thousands of cattle and horses.”⁷³ Famed German explorer and one of the founders of the Colonial Society, Gerhard Rohlfs, agreed with the assessment when stating that “anything that grows in temperate and subtropical zones could be grown further inland.”⁷⁴ For some proponents, Angra Pequena seemed to provide the doorway to colonial glory. Many opportunities were virtually awaiting any persistent colonist just beyond the sand.⁷⁵ Soon speculations about hidden treasures ran wild. Yet according to one description published in the magazine *Globus*, “The complete absence of atmospheric precipitation and the lack of drinking water only available at some spots limits any effort at colonization. The survey of mineralogical correlations provided entirely no yield worth mentioning to make the transport to Germany worthwhile because only precious metals such as gold, silver, platinum—and those are available also only in very little amounts—would give a monetary profit.”⁷⁶ Then, in 1887, came the news: gold had been discovered! But such rumors turned out to be a fraud, likely pressed by a colonial proponent who had loaded a musket and fired small pieces of gold into a rock.⁷⁷ Countless *stories* speak of similar tales as seemingly unwitting fools got sucked into the purchase of worthless lands and rocks over a beer.⁷⁸

For Lüderitz himself dreams of riches beyond the dunes turned into a nightmare. Put simply, he overly invested in exploring the area. Then, the loss of the brig *Tilly* set him back even more; delays in the discovery of raw materials did not help either. Although efforts tied to copper mining had gone on for some time,⁷⁹ the Germans had little role in that. Speculations about additional deposits or the discovery of silver, gold, and diamonds, did not materialize either. Lüderitz’s financial troubles grew. By 1885 he faced bankruptcy. Bismarck’s efforts to assist somewhat resulted in the creation of a consortium, the Deutsche Kolonialgesellschaft für Südwestafrika (German Southwest Africa Company), an organization supported by leading German businessmen that would profit greatly from colonialism in future years. Bismarck’s maneuver

had much to do with his belief in private entities as the driving force behind the development, exploitation, and even administration of the protectorate. In April 1885, the German Southwest Africa Company acquired Lüderitz's assets. A year later, Lüderitz drowned somewhere on the Orange River.⁸⁰ That he was trying to determine if that inlet could serve as a shipping route speaks volumes about the role of logistics and access for early colonialists.

Meanwhile the types of investments needed to deal with natural forces and improvements to animal transport were apparent, at least to those that would listen: European and maybe specifically German expertise, technology, hard work. Steeped in white supremacy and a broader belief in progress, numerous accounts speak about German abilities to turn outwardly arid and barren wastelands into blooming *Kulturlandschaften* (man-made cultivated and cultured productive landscapes). Belck noted that “[t]he soil is not infertile, [and] the reasoning for this drought is rather the lack of rain.” Wells, cisterns, and reservoirs would easily solve the issue. In a different section, Belck wrote that “with ease, a significant amount [of trees] can be planted.”⁸¹ That would help provide shade and firewood; it would also protect water sources and boost the groundwater. Others agreed and pointed to the need for drilling as the solution to what soon became known as the *Wasserfrage* (water question).⁸² Rohlf's approved, stating, “And if until now there has been no drinking water then that has to do with the fact that no one has seriously looked for it.” Dry riverbeds must surely yield water, if only one dug deeply enough, he believed. “Where there is a sun in Africa, water and soil, even if ‘desert sand,’ anything grows.” Germans could easily construct wells as they had done in French Algeria. That would certainly “uncover the loveliest and cleanest spring water.”⁸³ The *Deutsche Kolonialzeitung* newspaper tried its best to defuse concerns about a lack of water by simply noting that colonists could easily employ condensers to “make” their own.⁸⁴ As the mouthpiece for colonial interests, that paper most loudly pushed for investments. In 1887, it referred to Heinrich Petersen as “one of the first German pioneers along the right riverbank of the Orange River”; it also directly questioned the “sad image” presented by some voices about that region. In Petersen's experiences, so the story went, setting up irrigation systems for cattle farming and agriculture offered endless possibilities.⁸⁵ These were “healthy lands” with lots of opportunities, another voice added.⁸⁶ In 1890 the same paper stated that “There is no lying about the fact that nature has put up enormous barriers between Angra Pequena and the hinterland”—a lack of water, a sixty or so kilometer desert strip, and elevated table-mountain ranges. Yet the same article also pointed to steam condensation machines to get drinking water, the digging of wells along the route to the interior, and even the blasting away of whatever barriers. “With a goodwill and prudent cooperation, all these hurdles are easy to overcome,”⁸⁷ especially for Europeans, and more so for Germans. As early as 1884 the *Deutsche Kolonialzeitung* newspa-

per also blazed ahead when featuring an article by a California-based expert writing about “the value of artificial irrigation of West Africa.”⁸⁸ Some had long seen what seemed possible when visiting Farmer Hällich: clean and organized vegetable beds, a sophisticated irrigation system, cultivated garden spaces full of onions, cucumbers, potatoes, lettuce, peas, beans and more, all reminders of places close to his heart back home.⁸⁹ Optimism defined discussions to such an extent that those just describing landscapes as arid were at times defamed as spreading British propaganda and conspiracies meant to keep German colonists at bay.⁹⁰ The way forward thus became clear: “Everything must be awakened and created,” noted Rohlf, ⁹¹ a task that would not be easy but rewards would be plenty.

But major investments were hard to come by. There had certainly been public support for colonial endeavors back home in Germany—even if views evolved as more information trickled in. One contemporary summarized the mood when writing, “Like a spring breeze full of excitement it blew through the nation. Dreams of golden mountains; the stream of emigration would be steered into that direction now; jabbering about a German India.” That source added how “[d]isillusionment set in right away” once more information became available, mentioning public warnings “that instead of an Indian paradise Angra Pequena is almost a completely barren sand desert, in which it never rains and as a result drinking water has to be brought in with [their] own small ship *Meta* from Cape Town, resulting in costs per ton of around 30 marks.”⁹² Some wondered if Germany had just acquired a “colonial *Streusandbüchse* (sandbox).”⁹³ At least the satirical weekly magazine *Kladder-datsch* noted shortly after Lüderitz’s original acquisition that interested settlers should bring everything with them, including flora and fauna.⁹⁴ The *Deutsche Kolonialzeitung* newspaper responded to such critics that the true benefits of this German acquisition would be its “raw materials.”⁹⁵ Maybe the British had just overlooked an opportunity? Missionary Büttner at least wrote that “The ‘sandbox’ of Angra Pequena had been missed or [the British] [were] . . . under the impression, that no one would dare to grab it because the English colonies were ‘nearby.’”⁹⁶ A binary took shape, to follow historian Birthe Kundrus: on the one side stood proponents of colonialism such as Adolf Lüderitz and Heinrich Goering. For them, Southwest Africa, defined by a mountain climate and virtually free of tropical diseases, might become a wonderful spot for agriculture in some regions, but certainly cattle farming. The area had a suitable climate for Europeans for settlements and the space to deal with a growing German population. They pointed to missionaries and their gardens, as well as Herero, Boers, and neighboring South Africa, to sustain their claims. On the other side stood skeptics such as Gustav Nachtigal, Hans Schinz, meteorologist Karl Dove, among others. They dismissed such possibilities. For them, the arid and desert landscapes spoke to broader problems.⁹⁷ Some voices even

advocated for abandoning Germany's claims to the protectorate altogether. To them, the sands of the Namib Desert seemed not worth the effort. Belck just hoped to cut through colonial fantasies about the creation of an agricultural colony around Lüderitzbucht. Experienced men know better, he stated.⁹⁸ Perceptions of landscapes, and imperial fantasies more broadly, would continue to play a major role in the colony's future.

In the late nineteenth century such muddled mindsets and understandings of the colony also shaped views in Germany. Diplomatic relations and international politics of course played an important role for decision-makers. How should Germany position itself in the world? Some saw the early years still as an "experimental phase."⁹⁹ Neither Bismarck nor his successor Leo von Caprivi had much interest in direct government investments. Instead, both favored the British model, defined by private corporations such as the German Colonial Society. The influence of the Chief of the General Staff Alfred von Waldersee on Emperor Wilhelm II, and discussions around trades involving Zanzibar, Heligoland, and possibly other possessions, did not help either.¹⁰⁰ As a result, it was left to private companies to invest. According to historian Dirk van Laak it is not quite clear if those did not want to or could not develop what the German government had hoped for.¹⁰¹ And so German colonialism was off to a rough start. With a protectorate forming between the Cape Colony, British Bechuanaland, and Portuguese Angola, access remained arduous and crossing the Namib Desert difficult, all but making Southwest Africa a colony on paper only.

Germany's Own Entrance

A high-ranking British administrator in Cape Town knew the value of Walvis Bay. One of the only two natural harbors along a rugged coastline, German colonialism had turned this British possession into an enclave surrounded by German Southwest Africa. Yet to officials in Cape Town ceding the harbor did not make much sense. The said official wrote in 1891, "My belief is that the time is coming when Germany will recognise that the interior [of Southwest Africa] without the port [of Walvis Bay] is of no value. That the two should belong to one Power is manifest; and that the Cape Colony will never surrender Walwich Bay [*sic*] is absolutely certain."¹⁰² At the time the local Magistrate in Walvis Bay, John James Cleverly, agreed. With a front row seat to German efforts in the region, he was well aware "of the value of Walfisch Bay [*sic*] to the [Cape] Colony"; he also became increasingly assertive that there was "no intention whatever of relinquishing possession of Walfisch Bay [*sic*]."¹⁰³ German efforts to acquire Walvis Bay ultimately failed,¹⁰⁴ which meant that for the time being new arrivals hoping to reach central Namibia were at the mercy of the British.

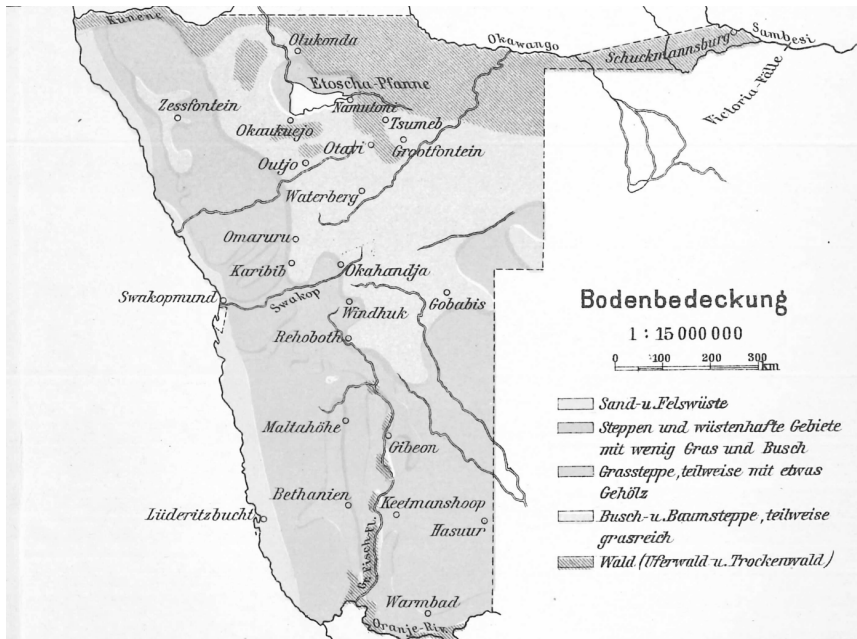


Figure 2.3. “Ground cover,” *Deutsches-Kolonial-Lexikon*, 1920, courtesy of the Universitätsbibliothek J. C. Senckenberg, Frankfurt am Main.

German colonialists were fully aware when it came to the importance of accessing the high plateau. Namibia is generally categorized along three main geographical regions: the Namib Desert, the Kalahari Desert, and the Great Escarpment (Figure 2.3).¹⁰⁵ With fertile parts namely located in Central and Northern Namibia, aridity is widespread along the coastline and in the south and east. Unreliable and seasonal precipitation rates tend to rise moving north and east. Although maximums of 550–660 millimeters in the wettest areas are possible, most of the country receives much less.¹⁰⁶ More fertile areas generally exist in central Namibia. Angra Pequena (renamed Lüderitzbucht), although a good harbor, thus had little value when trying to reach such prized lands. A lack of water in Germany’s only entry point further narrowed settlement possibilities. As a result, few ships stopped for long. Why would they? Without water and opportunities for trade given difficulties crossing desert landscapes, it made little economic sense to anchor on site. According to one estimate, in the 1890s at best thirty to forty oxen wagons of missionaries, traders, farmers, and locals arrived each year to trade goods in Lüderitzbucht. More of them picked the British competitor farther south, the harbor of Port Nolloth. That landing space also had a more stable water supply along the route inland.¹⁰⁷

Meanwhile, the British enclave of Walvis Bay developed into the main entry point into central Southwest Africa. The lagoon harbor is protected by a peninsula and Pelican Point. The Khuseb River also forms a delta just south of town. Plus, there was drinking water at nearby Sandfontein.¹⁰⁸ Natural forces—primarily “bothersome West and Southwest winds so prominent on all other locations, including Angra Pequena”¹⁰⁹—also made logistics easier. Even Hugo von François eventually had to admit that. As a result, and well before German arrival, Walvis Bay had already begun shifting into a trade hub.¹¹⁰

Environmental infrastructure linking Walvis Bay to the interior sustained commerce. African societies previously connected to the Cape Colony by inland trade across the Southern border had established a transportation system linking to its natural bay. Oorlam Jonker Afrikaner, who resided in the area of Windhoek, decided to construct a road from his domicile on the central plateau, the area best suited for cattle farming and agriculture, to Walvis Bay. This was by no means the only route.¹¹¹ Yet it increasingly became an important connection to the coast, especially once Oorlam migration had introduced the ox wagon as a means of transport to the region.¹¹² According to scholar Henning Melber, the so-called Baiweg (Bay Way or Bay Road) “was one of the more prominent examples of ‘modernisation’ brought about by a modification of the local economy through interethnic and external trade relations.”¹¹³ Reaching that point in 1844 had not been easy. According to historian Brigitte Lau, “construction of roads was time-consuming and labour-intensive,” yet necessary to facilitate trade.¹¹⁴ Roads such as this one became essential. To follow Melber again, the export of cattle and the import of commodities such as guns and ammunition dominated trade; such trade also underscores the importance of cattle for groups such as the Herero when it came to maintaining “a dominant position in the local economy.”¹¹⁵ Copper mining defined this main route as well. San had long mined copper in Tsumeb in the north, which later resulted in the short-lived creation of the Republic of Upingtonia by Boer groups known as Thirstland Trekkers.¹¹⁶ Other locations had easier access to the Baiweg. Melber mentions one mine under operation in 1840 and run by South Africans on concession by Jonker Afrikaner that was “allowed use of this innovative infrastructure to transport ore to the coast. In return for this service the South African concessionaires, including those miners who had assisted in the construction of the road by lending appropriate tools, had to pay taxes to Jonker Afrikaner.”¹¹⁷ That Afrikaner had long initiated the cultivation of plants such as figs further underscores pre-colonial efforts and disrupts colonial narratives of introducing “advanced agriculture.”¹¹⁸ The Baiweg constituted a sophisticated environmental infrastructure, about seven and a half to nine meters wide, extraordinary, to follow missionary Carl Hugo Hahn, who described it in his diary. “I must admit that even in the Colony (Cape) I have never seen such ‘a marvelous piece of road construction.’”¹¹⁹ Other newcom-

ers spoke of a “masterpiece” when describing other routes, adding “that one cannot justly agree any more that the Namaquas . . . are [supposed to be] stupid and lazy.”¹²⁰ German newcomers, who later belittled precolonial efforts,¹²¹ were thus delighted to use such arteries, especially once the death of Jonker Afrikaner and his Herero ally Tjamuaha in the early 1860s began disrupting established hegemonies.¹²²

Meanwhile the German quest for an alternative landing spot had brought mixed results. There simply were not many natural harbors to work with. Colonial officials searched relentlessly, surveying the coastline up and down, repeatedly. In 1890, the German ship *Habicht* succinctly outlined the limits of locations such as Lüderitzbucht: it was not a closed harbor, travel inland was difficult given desert and dunes, and there was no water.¹²³ The report also emphasized the lack of options when trying to access central Namibia, with the exception of Walvis Bay, of course: “Nowhere does the landscape become any better. Everywhere does the gaze meet sand dunes, occasionally broken up by loose piles of sand rocks; there is also no harbor to protect or land ships until Walvis Bay,”¹²⁴ none for 350 nautical miles, complained one newspaper. Locations such as Cape Frio, Ogden Rocks, and even the previously considered Cape Cross, the report continued, were of little use. One expedition pointed to the benefits of Tiger Bay. Silting-in, a process tied to the movement of sand along the coastline thanks to ocean currents, would only be a minor issue. Previous maps of the area might have been grounded in the mistakes by a British lieutenant from 1852, that expedition hoped.¹²⁵ For some time Sandwich Harbor south of Walvis Bay seemed promising as well. The landing spot located astride the Tropic of Capricorn had played a vital role in early interactions and trade. Plus, the Germans had utilized it when unloading cargo. In 1889 a description noted that the harbor itself was good and “a tightening of the entrance into the harbor was not to be expected”—though the water level had been falling constantly.¹²⁶ That year a meat-canning company, put in business by the German and English Southwest Africa Company, had already stopped working: exhausted animals arrived on site and desert sands repeatedly found their way into the building, interfering with the canning process.¹²⁷ A year later the *Deutsches Kolonialblatt* newspaper saw problems when noting, “While the harbor was still considered good and safe in the year 1884,” even by 1888, by 1889 it had silted and shrunk dramatically.¹²⁸ Expeditions surveyed shifts in the following years and some even proposed the assistance of a small dredger.¹²⁹ Whereas the remoteness of the area made such propositions unlikely, further silting-in soon limited the harbor’s use anyway.¹³⁰ By 1896, Hugo von François summarized the situation when noting, “The harbor completely silted in, the entry barely usable for barges; we already ran aground with a steam pinnace [a light boat]. Due to that, but also because the connection to the interior is evidently the most difficult—the belt of dunes is getting wider southward—it

use as a location is actually impossible forever.”¹³¹ Alternative landing spots were hard to come by.

The British were content to watch as the Germans struggled with logistics. Media outlets from the Cape Colony, with at times immediate commercial and colonial interests in the region, saw little reason to help the Germans. According to the *Cape Times*, “The reason for a colonial force at Walfish [*sic*] Bay was not to take care of Germany, but was there to protect colonial interests.”¹³² There had been some voices in the press speculating about the possibility of making a deal and swapping territories with Germany. An article in *The Times*, at least, acknowledged that “Walvis Bay is absolutely useless to us now that the German possessions in South-West Africa surround it.” At the same time, it continued, as “the only good harbour” it is “indispensable to the proper development of the German colony, and as such might be to us the means of effecting a profitable arrangement with Germany.” Discussions of a trade for German possessions in Togo followed—“of no use to Germany, but a great source of annoyance to our Gold Coast colony.”¹³³ The colonial records underscore that British officials awaited the abandonment of the colony. They were not wrong. In February 1892, a telegram from Berlin pointed to Caprivi’s continuing “indifference” concerning German colonial possession.¹³⁴ Caprivi’s predecessor Bismarck had declared himself weary of colonies; Leo von Caprivi had originally agreed. Those in favor of German colonialism would not gain the upper hand until maybe mid-1892.¹³⁵ Plus, the British understood that some within the German administration had “been disappointed in the great expectations that had been formed as to the wealth of South-West Africa.” Their prediction in 1891 was thereby that “Damaraland will probably be evacuated in 1892.”¹³⁶ Although rumors and speculations dominated the press for some time,¹³⁷ Magistrate Cleverly became increasingly vocal about the importance of Walvis Bay. In his view, there was little to gain from giving it up, an argument that soon defined overall policy.¹³⁸

For the Germans the situation on the ground had only gotten worse. Warfare and shifting alliances had resulted in the death of Afrikaner. Over time, Herero and Nama, the latter under the leadership of Hendrik Witbooi, then increasingly gained influence. Still unwilling to relinquish his power to German rule, Witbooi in particular openly challenged German dominance in the region. His efforts primarily focused on the main artery, that vital Bay Way between Windhoek and Walvis Bay. Witbooi began attacking German convoys and effectively threatened Windhoek’s supplies.¹³⁹ In early 1893, he even struck out against an early experimental farm run by the German South West Africa Company at Kubub.¹⁴⁰ Both Walter Matthews, who later ran the guano operation at Cape Cross, and representative of the German colonial society Ernst Hermann, barely got away alive.¹⁴¹ The British tried to stay out of the conflict, clinging to neutrality and prohibiting any arms trade through Walvis Bay.¹⁴² In

at least one instance, local magistrate Cleverly seized German military equipment and cargo. This interference angered the German colonial troops under the command of Curt von François.¹⁴³ The German media equally cried foul and added pressure on decision-makers when writing that “the great power Germany is dependent on the permission and the international courtesy of England if it wants to bring weapons and supplies into its protectorate!”¹⁴⁴ Neutrality ended as British meddling ceased overall, a decision that all but wrecked the resistance of Witbooi. For him, supplies were hard to come by, and efforts to play colonial powers off each other now began to falter. Now supplies were hard to come.¹⁴⁵ German commander Curt von François used the moment and attacked Witbooi’s headquarters in Hornkranz or Hoornkrans in April 1893, slaughtering and massacring men, women, and children.¹⁴⁶ Witbooi retreated into the Naukluft Mountains, but had little option other than to submit to German rule. For the Germans, the short standoff around Walvis Bay stressed the value of owning their own entry point into central Namibia.

On 1 March 1893, Chancellor Leo von Caprivi announced to parliament a shift in policy. Apparently reeling from Witbooi’s resistance, and pointing to the “*Dreistigkeiten* boldness” of the Herero against Germans in Central Namibia, Caprivi saw the need for additional German troops—not to make war, but “to become masters of the country and consolidate our sovereignty without bloodshed.”¹⁴⁷ “We possess South-West Africa once and for all,” he continued, “it is German territory and must be preserved as such.”¹⁴⁸ Representatives in parliament seemed to agree, with many yelling Bravo! Caprivi, who seemed aware of the challenges that lay ahead, emphasized the lack of harbors and access. At the same time, and because it was British, he demeaned Walvis Bay as that “scraggy harbor with its half a dozen dirty huts and 36 inhabitants, or however many there might be.”¹⁴⁹ He then talked about alternative landing spots along the coastline to solve issues concerning access. By then initial efforts north of the Swakop River seemed promising—and encouraged Caprivi to lay out his vision for the future: “We cherish the hope that the settlement companies are able to bring more and more whites into the land. We believe, even if things move forward very slowly in Southwest Africa, that they will move ahead farther.”¹⁵⁰ Although decision-makers in Berlin would remain “of two minds” for some time,¹⁵¹ to borrow historian Horst Drechsler’s phrase, Caprivi’s decision led to more organized efforts regarding the development of a German access point.

At the mouth of the Swakop River, German colonists seemingly had found what they were looking for: a location for a harbor that allowed access into central Namibia. Outwardly this was a good spot to gain control of trade inland. For one, it was located between Hereroland and Walvis Bay, and adjacent to the existing Bay Road. Early descriptions gazing inland come from the British. In 1848, Lieutenant Ruxton noted that the Swakop River “must *once* ha[ve]

flowed with great force.”¹⁵² He did notice some vegetation. Regardless, the British seemed to have little interest in general. Now, almost four decades later, the British observed German endeavors in the same stretch. In 1884, the *Africa Pilot*, a bulletin published by the hydrographic office that was housed under the authority of the Royal Navy, described the location “Swakop or Swachaub River” when noting, “This river discharges into the sea almost regularly every year for one or two months in the summer; for the remaining ten months its course is dry (with the exception of a place just below Nxonidas where there is running water all the year around), and its mouth is blocked by a sand bar.” It added that a “German flagstaff and notice board beacon stand near the northern bank of the Swakop, and English beacons near the southern bank; the boundary line is midway between, in the bed of the river.”¹⁵³ By then most German reports and surveys had already hinted at the potential value of this location. The ship *Habicht* had few problems when landing a surfboat in April 1886.¹⁵⁴ It did seem like a sound option: there was access to good drinking water and a slight gap through the Namib Desert along the Swakop Riverbed allowed travel inland—unlike in Lüderitzbucht. Plus, and at least according to one report, “Breakers were not considered too strong [and] it will be possible, to land cargo with surf boats.”¹⁵⁵ Colonial authorities were also confident that thanks to the eventual construction of landing structures it would become a “rather easy task to create a good harbor.”¹⁵⁶ At the same time, the location had some issues. Take the experience of the gunboat *Wolf*. In late 1884, its crew had the mission to raise flags on numerous spots along the coastline. The usual thick fog and treacherous waters made that a difficult endeavor. Travelers at the time found themselves smothered in a white blanket of low-lying fog, limiting sight, hiding dangerous currents and surf, even the coastline.¹⁵⁷ North of the British enclave Walvis Bay near the mouth of the Swakop River the operation got into even more trouble. As outlined in a German newspaper later on, “The breakers off [the coast of] Swakopmund were impassable. The few German colonial inhabitants [living in Walvis Bay] had to return in their little boats back to Walvis Bay, and the ship *Wolf* had to wait for a weakening of the breakers.”¹⁵⁸ Only in the evening had it been possible to raise the imperial flag, then without the desired presence of the German inhabitants.

Without landing structures in place it was African labor that moved newly arriving cargo. Comparable to porters in other colonies, such human carriers compensated for difficulties unloading. Soon steamers on their way to the colony picked up Kru men in Monrovia to do such work.¹⁵⁹ These West African men could be Vai, Gola, Dei, Kpelle, Kru, Glebo, Bapo, Nyambo, or Sabo in ethnicity; they generally originated from eastern Liberia and the Ivory Coast.¹⁶⁰ German officials saw them as experienced and skilled professionals when it came to navigating dangerous waters; African oral histories speak of men “who chew off white people.”¹⁶¹ More recently scholars have described

them as intermediaries, “a social construct that has emerged out of various social and economic processes that occurred during a period of European colonial activity in West Africa.”¹⁶² In any case, these men soon steered and shuttled surfboats, filled with cargo and passengers, back and forth between steamers and the beach. This meant crossing strong currents and breakers, a dangerous task even for experienced workers. They were certainly experts in the handling of landing boats. According to Curt von François, “When on 26 January 1893 the cruiser *Falke* brought eleven Kru negroes to Swakopmund my sense of the western landing spot as more favourable was confirmed.”¹⁶³ A report much later referred to them as “rather versed and prudent boats men,” adding that they were “the only diligent and persistent workers of the west coast.”¹⁶⁴ The official foundation of Swakopmund took place on 12 September 1892. Kru men participated in the first noteworthy landing on 23 August 1893 when the vessel *Marie Woermann* brought in 120 soldiers, forty settlers, and all kinds of materials—including cattle.¹⁶⁵ Unfortunately, to follow Hugo von François, the climate in the region was too harsh for them, even when supplied with Manchester corduroy wear and military coats. Instead of staying on site permanently—as colonial authorities had originally envisioned—steamships from namely the Woermann-Line would pick them up on their way south and later drop them off once they returned.¹⁶⁶ Historian William Blakemore Lyon estimates that 500–600 such migrant contract laborers kept the landing process going prior to 1904; an additional 1,000 would be employed during the war.¹⁶⁷ In his view, “for approximately the first 10 years of Swakopmund’s existence, almost all supplies and people entering or leaving the settlement via the Atlantic Ocean needed to be transported from the beach to ships, anchored offshore, via surfboats manned by skilled workers”—and those laborers came from West Africa.¹⁶⁸

Although experienced and skilled workers were now on site, landing efforts remained precarious. The surf and waves were perilous and unpredictable, fog made it difficult to see much on most mornings, and large vessels could not come close to the shoreline. On 4 June 1895, a boat capsized. German landing official Ludwig Koch had granted its request to help unload the steamer *Carl Woermann*. These were experienced men, he thought. According to an article in the newspaper *Deutsche Kolonialzeitung*, the boat had no issues in its first run out to sea. All went well on the way back, too. On their second tour, however, when the boat was only partially loaded with cargo, a wave caught it from behind. “Barrels swam away, as did officer Schlüter along with two seamen. They swam back to the boat . . . trying to bring the boat ashore.” Their efforts were in vain and neither of them could grab the straps before another wave capsized the boat. All but one died in the ice-cold ocean waters.¹⁶⁹ Colonialist Kurd Schwabe, who observed the situation unfold that day, noted in this context, “It was a sad day, all the more so because we had been completely pow-

erless from ashore when it came to helping the swimmers.”¹⁷⁰ A report from December 1894 by a certain captain Meinertz from the Woermann-Line that had stated that “the surf would not provide any difficulties”¹⁷¹ did apparently not match what many experienced in those early years. Much still had to be done to turn Swakopmund into a safe and reliable entry point.

The incubation period of German colonialism was a muddled affair. Triggered by domestic quarrels, desires for imperial glory, and the commodification of nature, natural forces, animal transport, existing structures, and imported labor defined the access question. The treacherous ocean waters and the Namib Desert, plus a lack of water, made getting on good footing difficult. Hopes of what lay behind the desert rarely materialized and high officials in Berlin were at times not certain about the value and future of the protectorate. Investments from private companies in line with the British model provided few ways forward. Plus, central Namibia and the area around Windhoek lay in many ways beyond the reach of Lüderitzbucht. In 1894, ten years after the official German claim to the region, the colonial government stationed four military men in Lüderitzbucht. Meant to control the flow of goods into the harbor, they had little to do.¹⁷² Few things changed in the coming years, especially once the center of German interests moved toward the development of central Namibia. According to the *Deutsche Kolonialzeitung* newspaper, even if Lüderitzbucht was a good landing spot, travel costs were simply too high.¹⁷³ By then German newcomers found themselves dependent on the British enclave of Walvis Bay, challenged by Witbooi’s resistance, and pushed to consider alternative landing spots. A multiplicity of agents—imperial policies, local resistance, natural circumstances—had pointed them toward a reorientation northward. Lüderitzbucht, on the other hand, became a backwater. As one contemporary summarized much later, “Despite its good natural predisposition this harbor space [Lüderitzbucht] has only been visited and utilized sporadically in the subsequent times. Outwardly, the interior gave a dismal sight, so entry or even settlement seemed not inviting.”¹⁷⁴

German colonial storylines tied early efforts to missed opportunities, anti-British sentiments that spoke at times to admiration, and the conquest of nature. Colonialists such as Lüderitz certainly hoped to get on equal footing with the British empire. Along with others, he saw lots of untapped opportunities in Southwest Africa. Raw materials could be mined, and maybe nature could be conquered, shaped, and molded through hard work and the use of technology. If anyone, according to this mindset, the Germans would have the ingenuity and work ethic needed to build landing structures, cross arid landscapes with railways, and develop water sources. Hugo von François certainly

called for craftsmen and technology when noting that “The connection in the interior and the connection of the interior with the ocean are the most prominent weaknesses of the colony. Plus, there is the meager connection with the motherland, which almost solely connects via Walvis Bay—Cape Town and which requires the transfer of German money to English interests and forces the withdrawal of English goods into German spheres.”¹⁷⁵ The foundation of Swakopmund in 1892, and the construction of a harbor, was supposed to solve that issue. That could surely give Germany its very own entry port and put the colony on a path toward future development.

Notes

1. Johannes Olpp, *Erlebnisse im Hinterlande von Angra Pequena*, 2nd ed. (Barmen, 1896), 5. See also Johannes Olpp, *Angra Pequena und Gross-Nama-Land: Auf Grund vieljähriger Beobachtung kurz geschildert* (Eberfeld, 1884), 7.
2. Rusch, Schroedder, and Otto, *Lüderitzbucht damals und gestern*, Vorwort; Olusoga and Erichsen, *The Kaiser's Holocaust*, 28.
3. Olpp, *Erlebnisse im Hinterlande von Angra Pequena*, 8.
4. *Ibid.*, 10.
5. Eingabe von Ad. Lüderitz an das Auswärtige Amt vom 23.XI.1882, as quoted in C. A. Lüderitz, ed., *Die Erschliessung von Deutsch-Südwest-Afrika durch Adolf Lüderitz: Akten, Brief und Denkschriften* (Oldenbourg, 1945), 14.
6. Olpp, *Angra Pequena und Gross-Nama-Land*, 8.
7. August Seidel, *Deutschlands erste Kolonie: gesammelte Erfahrungen und Erlebnisse während eines Aufenthaltes von 9 Jahren in Deutsch-Südwest-Afrika* (Hamburg, 1898), 6. See also Carl Hessler, *Die deutschen Kolonien: Beschreibung von Land und Leuten unserer auswärtigen Besitzungen*, 2nd ed. (Metz, 1889), 6. Contemporaries repeatedly spoke about entry ports *Eingangspforten* or portals *Thore*. Carl Gotthilf Büttner, *Das Hinterland von Walfischbai und Angra Pequena* (Heidelberg, 1884), 3; *Globus*, “Aus allen Erdtheilen,” no. 15, 1884.
8. Zantop, *Colonial Fantasies*. Prussia held a colonial possession in West Africa from 1682 to 1721. For the telegram see Lüderitz, *Die Erschliessung von Deutsch-Südwest-Afrika durch Adolf Lüderitz*, 72–73.
9. Gründer, *Geschichte der deutschen Kolonien*, 88; Olusoga and Erichsen, *The Kaiser's Holocaust*, 31.
10. Wallace, *A History of Namibia*, 116–17.
11. *Lüderitzbucher Zeitung*, “Fünfzig Jahre Lüderitzbucht,” 8 April 1933, Vorwort, as referenced in *Lüderitzbucht damals und gestern: ein Bildband*, ed. Edda Schroedder, Antje Otto, and Walter Rusch (Windhoek, 1983).
12. Hans Grimm, *Afrikafahrt West* (Frankfurt am Main, 1913), 94.
13. Press, *Blood and Diamonds*, 17–20; Erichsen and Olusoga, *The Kaiser's Holocaust*, 32.
14. *Daheim: Ein deutsches Familienblatt mit Illustrationen*, “Die deutsche Besitzergreifung von Lüderitzland: Geschildert von einem Augenzeugen,” 18 October 1884.
15. Olusoga and Erichsen, *The Kaiser's Holocaust*, 36–37. See also Wallace, *History of Namibia*, 117–19.

16. Grotpeter, *Historical Dictionary of Namibia*, 175.
17. *Deutsches Kolonialblatt*, “Die Landschaft um Windhoek (Südwest-Afrika) nach einem Bericht des Lieutenants v. François,” 15 August 1891. See also Curt von François, *Deutsch-Südwest-Afrika. Geschichte der Kolonisation bis zum Ausbruch des Krieges mit Witbooi April 1893* (Berlin, 1899), 58 and 63.
18. Alex Kaputu, “The War Between the Nama and Herero,” Windhoek, October 1984, in *Warriors Leaders Sages and Outcasts in Namibian History: Narratives Collected from Herero Source for the Michael Scott Oral History Project (MSORP) 1985–6*, ed. Annemarie Heywood, Brigitte Lau, and Raimund Ohly, 1–49, here 3 (Windhoek, 1992). See also Julius Baumann, *Van sending tot kerk: 125 jaar Rynse Sending-arbeid in Suidwest-Afrika, 1842–1967* (Karibib, 1967), 23.
19. For discussions focusing on German narratives and spatiality, see John K. Noyes, *Colonial Space: Spatiality in the Discourse of German South West Africa 1884–1915* (London, 1991); Elizabeth Roberts Baer, *The Genocidal Gaze: From German Southwest Africa to the Third Reich* (Detroit, 2017).
20. Gewalt, *Herero Heroes*, 61.
21. *Ibid.*, 64.
22. Adam A. Blackler, “From Boondoggle to Settlement Colony: Hendrik Witbooi and the Evolution of Germany’s Imperial Project in Southwest Africa, 1884–1894,” *Central European History* 50, no. 4 (2017): 449–70.
23. Olusoga and Erichsen, *The Kaiser’s Holocaust*, 41.
24. E. L. P. Stals, *The Commissions of W. C. Palgrave Special Emissary to South West Africa 1876–1885* (Cape Town, 1991), xxi. See also William Coates Palgrave, *Report of W. Coates Palgrave, Report of W. Coates Palgrave . . . of his mission to Damaraland and Great Namaqualand in 1876* (Cape Town, 1877). For the album see NAN, A.0068, Palgrave Album 1876.
25. Jeremy Silvester, “Portraits of Power and Panoramas of Persuasion: The Palgrave Album at the National Archives of Namibia,” in *Hues between Black and White: Historical Photography from Colonial Namibia, 1860s to 1915*, ed. Wolfram Hartmann, 131–60, here 143 and 145 (Windhoek, 2004).
26. *Ibid.*, 146.
27. *Ibid.*, 145.
28. Cecil Northcott, *Robert Moffat: Pioneer in Africa* (London, 1961), 42, as referenced in Gilbert I. Schrank, “German South West Africa: Social and Economic Aspects of its History, 1884–1915” (PhD diss, New York University, 1974), 17.
29. Carl Hugo Hahn, *Tagebücher, Diaries, 1837–1860: A Missionary in Nama- and Damaraland*, ed. Brigitte Lau (Windhoek, 1985). See also Heinrich Beiderbecke, *Life Among the Hereros in Africa: The Experiences of H. Beiderbecke, Lutheran Pastor* (New York, 1924), 57–64.
30. Carl Gotthilf Büttner, “Vereinsnachrichten: Die natürlichen Hilfsquellen von Südwest-Afrika und die Möglichkeit ihrer Verwertung, (Schluß)” *EXPORT, Organ des Centralverein für Handesgeographie etc.* 18 November 1884, as accessible in BArch-B, R 1001/1501, Geographie und Kartographie.
31. Büttner, *Walfischbai und Angra Pequena*, 20.
32. *Ibid.*, 38, 3, and 18. See also Carl Gotthilf Büttner, “Angra Pequena,” *Über Land und Meer: Allgemeine Illustrierte Zeitung* 52, no. 45 (1884). On different ways of seeing land-

- scapes, see Anette Hoffmann, "Since the Germans Came It Rains Less: Landscape and Identity of Herero Communities in Namibia" (PhD diss., University of Amsterdam, 2005), 20. See also Noyes, *Colonial Space*.
33. Lora Wildenthal, *German Women for Empire 1884–1945* (Durham, NC, 2001), 87.
 34. Alvin Kienetz, "Nineteenth-Century South West Africa as a German Settlement Colony" (PhD diss., University of Minnesota, 1975), 3–4. For a more recent discussion, see Adam Blackler, "Heathens, 'Hottentots', and *Heimat*."
 35. "Unsere Namaqua- und Herero-Mission," Bericht der RMG 36 (5, 1880): 142, as quoted in Steinmetz, *The Devil's Handwriting*, 116.
 36. Julius Baumann, "Die Missionare–Europa kommt nach Afrika," in *1884–1984: Vom Schutzgebiet bis Namibia*, ed. Klaus Becker and Jürgen Hecker, 87–96, here 93 (Windhoek, 1958). See also Büttner, *Walfischbai und Angra Pequena*, 65.
 37. Glen P. Ryland, "Translating Africa for Germans: The Rheinisch Mission in Southwest Africa, 1829–1936" (PhD diss., Notre Dame, 2013), 19.
 38. Jahresberichte der RMG 1883, 51, as referenced in Sena Yawo Akakpo-Numado, "Mädchen- und Frauenbildung in den deutschen Afrika-Kolonien (1884–1914)" (PhD diss., Ruhr-University Bochum, 2005), 60.
 39. *Deutsche Kolonialzeitung*, "Aus Lüderitzland," no. 3, 1885. See also *Deutsche Kolonialzeitung*, "Deutschland und Angra Pequena," no. 14, 1884; Gründer, *Geschichte der deutschen Kolonien*, 126.
 40. Olpp, *Erlebnisse im Hinterlande von Angra Pequena*, 12.
 41. *Ibid.*, 13.
 42. *Petermanns geographische Mitteilungen*, "Das Gebiet zwischen Angra Pequena und Bethanien. Vorläufige Mitteilungen aus Lüderitzland von Dr. Adolf Schenck," 31 (1885), 132–36, here 135.
 43. Sir James Alexander, *An Expedition of Discovery into the Interior of Africa* (London, 1938), I, 90, as quoted in "German South West Africa: Social and Economic Aspects of its History, 1884–1915," 18.
 44. Francis Galton, *The Narrative of an Explorer in Tropical South Africa* (London, 1853), 29.
 45. James Chapman, *Travels in the Interior of South Africa Comprising Fifteen Years' Hunting and Trading* (London, 1868), 338. For a similar narrative, see Thomas Baines, *Explorations in South-West Africa: Being an Account of a Journey in the Years 1861 and 1862* (London, 1864), 23.
 46. Christoph Nonn, *12 Tage und ein halbes Jahrhundert. Eine Geschichte des deutschen Kaiserreiches 1871–1918* (Munich, 2020), 218–22; Christoph Nonn, *Bismarck: Ein Preuße und sein Jahrhundert* (Munich, 2015), 310. For earlier discussions, see Winfried Baumgart, "Bismarck und der deutsche Kolonialerwerb," in *Die Deutschen und ihre Kolonien: Ein Überblick*, ed. Horst Gründer and Hermann Hiery, 45–61 (Berlin, 2017); Gründer, *Geschichte der deutschen Kolonien*, 55–65.
 47. *Petermanns geographische Mitteilungen*, "Bericht über die von Herrn Lüderitz ausgerüstete Expedition nach Südwestafrika, 1884–5," by H. Pohle, 32 (1886): 225–38, here 225.
 48. Angra Pequena, 28 October 1884, as referenced in Hans Schinz, *Bruchstücke: Forschungsreisen in Deutsch-Südwestafrika* (Basel, 2012), 15. See also Hans Schinz, *Deutsch-Südwest-Afrika: Forschungsreisen durch die deutschen Schutzgebiete Gross-*

- Nama- und Hereroland, nach dem Kunene, dem Ngami-See und der Kalahari, 1884–1887* (Oldenburg, 1891).
49. *Annalen der Hydrographie und maritimen Meteorologie*, XII, no. 3, “Kleine hydrographische Notizen,” 1884.
 50. *Ibid.* Captain Aschenborn of the ship *Nautilus* submitted a report as well. *Annalen der Hydrographie und maritimen Meteorologie* XII, no. 5, “Reisebericht S. M. Kbt. ‘Nautilus,’” 1884.
 51. *Lüderitzbucher Zeitung*, “Fünzig Jahre Lüderitzbucht,” April 8, 1933, as referenced in *Lüderitzbucht damals und gestern*. See also *Petermanns geographische Mitteilungen*, “Bericht über die von Herrn Lüderitz ausgerüstete Expedition nach Südwestafrika, 1884–5,” 229; Ludwig Conradt, *Erinnerungen aus zwanzigjährigem Händler- und Farmerleben in Deutsch-Südwestafrika*, ed. Thomas Keil (Göttingen, 2006), 31.
 52. *Petermanns geographische Mitteilungen*, “Bericht über die von Herrn Lüderitz ausgerüstete Expedition nach Südwestafrika, 1884–5,” 229; *Deutsche Kolonialzeitung*, “Koloniale Chronik,” 15 June 1887. See also Ursula Massmann, “Laien, Forscher, Wissenschaftler,” in *1884–1984: Vom Schutzgebiet bis Namibia*, ed. Klaus Becker and Jürgen Hecker, 249–54, here 250 (Windhoek, 1958).
 53. Walter Wegner, *Aus Deutsch-Afrika! Tagebuch-Briefe eines jungen Deutschen aus Angra Pequena* (1882–1884) (Leipzig, 1885), 11/12.
 54. Olpp, *Angra Pequena und Gross-Nama-Land*, 8. See also Hahn, 1885, 263 and Hahn, 1887, 841, as referenced in Martin B. Schneider “Bewässerungslandwirtschaft in Namibia und ihre Grundlagen in der Kolonialzeit” (PhD diss., Johann Wolfgang Goethe-University Frankfurt am Main, 1990), 114.
 55. Olpp, *Angra Pequena und Gross-Nama-Land*, 11.
 56. Belck, (1885), 128, as quoted in Schneider “Bewässerungslandwirtschaft in Namibia und ihre Grundlagen in der Kolonialzeit,” 114.
 57. *Deutsche Kolonialzeitung*, “Was haben wir von Lüderitzbucht zu erwarten?” no. 5, 1885.
 58. *Petermanns geographische Mitteilungen*, “Bericht über die von Herrn Lüderitz ausgerüstete Expedition nach Südwestafrika, 1884–5,” 226.
 59. Angra Pequena, 28 October 1884, as referenced in Schinz, *Bruchstücke*, 16.
 60. Gross-Namaqualand, Aus 19. November 1884, as referenced in Schinz, *Bruchstücke*, 18. See also *Petermanns geographische Mitteilungen*, “Bericht über die von Herrn Lüderitz ausgerüstete Expedition nach Südwestafrika, 1884–5,” 227; Schinz, *Bruchstücke*, x.
 61. Klemens Wedekind, *Impfe und herrsche. Veterinärmedizinisches Wissen und Herrschaft im kolonialen Namibia 1887–1929* (Göttingen, 2020), 45–46.
 62. Max Bremer, “Reitochsen in Südwest-Afrika,” *Die Gartenlaube* 26 (1885).
 63. Bernhard Schwarz, *Im deutschen Goldlande: Reisebilder aus dem südwestafrikanischen Schutzgebiet* (Berlin, 1889), 58.
 64. *Ibid.*, 56.
 65. Kurd Schwabe, *Mit Schwert und Pflug in Deutsch-Südwestafrika* (Berlin, 1899), 9.
 66. Schwarz, *Im deutschen Goldlande*, 49. See also Olpp, *Hinterland Angra Pequena*, 114; Peter Möller, *Resa i Afrika, genom Angola, Ovampo och Damaraland* (Stockholm, 1899), as referenced in Klaus Dierks, *Namibian Roads in History: From the 13th Century till Today* (Frankfurt am Main, 1992), 43–46.

67. Wegner, *Aus Deutsch-Afrika!* 20 (letter 15 August 1883); Schwabe, *Mit Schwert und Pflug*, 117.
68. Uwe Timm, *Morenga*, trans. Breon Mitchell (New York, 2003), 106.
69. *Globus: Illustrierte Zeitschrift für Länder- und Völkerkunde*, “Aus allen Erdtheilen,” no. 14, 1886.
70. Ludwig Worthmann, *Die Deutschen Kolonien in Westafrika* (Schweidnitz, 1887), 26–27.
71. Schwarz, *Im deutschen Goldlande*, 47 and 65.
72. Gustav Nachtigal’s disillusioned report from early December 1884 was not passed on. Gründer, *Geschichte der Deutschen Kolonien*, 56.
73. Wegner, *Aus Deutsch-Afrika!* 12 (letter 6 June 1883). This comment was based on hearing about Vogelsang’s initial journey. See Wegner, *Aus Deutsch-Afrika!* 12 (letter 15 August 1883).
74. Gerhard Rohlfs, *Angra Pequena: Die erste deutsche Kolonie in Afrika*, 2nd ed (Bielefeld, 1884), 10.
75. Karl Emil Jung, “Deutschlands Colonialbestrebungen: Deutsche an der Westküste von Afrika,” *Die Gartenlaube* 37 (1885). See also Johannes Baumgarten, *Deutsch-Afrika und seine Nachbarn im schwarzen Erdteil: eine Rundreise in abgerundeten Naturschilderungen, Sittenscenen und ethnographischen Charakterbildern*, 2nd ed (Berlin, 1890), 423–503.
76. *Globus*, “Aus allen Erdtheilen,” no. 14, 1886.
77. Olusoga and Erichsen, *The Kaiser’s Holocaust*, 52; Horst Drechsler, “*Let Us Die Fighting*: The Struggle of the Herero and Nama against German Imperialism (1884–1915) (London, 1980), 35; Conradt, *Erinnerungen aus zwanzigjährigem Händler- und Fram-erleben in Deutsch-Südwestafrika*, 90–91.
78. Ernst Rudolf Scherz, *Südwesten Geschichten am Lagerfeuer* (Basel, 2005), 8. In another instance the illegal disposal of used oil made some believe they found this precious resource. Scherz, *Südwesten Geschichten am Lagerfeuer*, 9.
79. Mining efforts emerged with the Great Namaqualand Mining Company (1854/1855), a South African company. Ovambos had long smelted copper in Ondangwa. See Grot-peter, *Historical Dictionary of Namibia*, 76–77.
80. *Globus*, “Aus allen Erdtheilen,” no. 11, 1887; *Petermanns geographische Mitteilungen*, “Geographischer Monatsbericht: Afrika,” 33 (1887): 122–26, here 124.
81. *Deutsche Kolonialzeitung*, “Was haben wir von Lüderitzbucht zu erwarten?” no. 5, 1885.
82. Baumgarten, *Deutsch-Afrika und seine Nachbarn im schwarzen Erdteil*, 450; *Deutsche Kolonialzeitung*, “Das Hinterland von Angra-Pequena und Walfischbay,” 1 July 1887 (Conradt).
83. Rohlfs, *Angra Pequena*, 6 and 9.
84. *Deutsche Kolonialzeitung*, “Die Angra Pequena-Frage,” no. 14, 1884.
85. *Deutsche Kolonialzeitung*, “Kolonisatorische Vorgehen in Deutsch-Südwestafrika,” no. 3, 1887.
86. Gustav Leipoldt, *Die Leiden des Europäers im afrikanischen Tropenklima* (Leipzig, 1887), 108.
87. *Deutsches Kolonialblatt*, “Das Namaqualand, dessen Bewohner und wirthschaftliche Verhältnisse,” 1 August 1890.

88. *Deutsche Kolonialzeitung*, “Der Wert künstlicher Bewässerung,” no. 12, 1884 (Hemler).
89. Schwarz, *Im deutschen Goldlande*, 108 and 113.
90. *Deutsche Kolonialzeitung*, “Eine deutsche Niederlassung am Oranienflusse,” 23 March 1889.
91. Rohlfs, *Angra Pequena*, 10.
92. Worthmann, *Die Deutschen Kolonien in Westafrika*, 13–14.
93. *Deutsche Kolonialzeitung*, “Die Angra Pequena-Frage,” no. 14, 1884. See also *Deutsche Kolonialzeitung*, “Die Angra Pequena-Frage,” no. 13 1884; *Daheim: Ein deutsches Familienblatt mit Illustrationen*, “Aus Deutsch-Südwestafrika, 6 February 1886; Kundrus, *Moderne Imperialisten*, 28 and 47.
94. *Kladderdatsch, humoristisch-satirisches Wochenblatt*, “Kleiner Anzeiger,” 15 June 1884.
95. *Deutsche Kolonialzeitung*, “Was haben wir von Lüderitzbucht zu erwarten?” no. 5, 1885. See also *Deutsche Kolonialzeitung*, “Die koloniale Entwicklung Südwestafrikas,” no. 2, 1886.
96. *Deutsche Kolonialzeitung*, “Deutschland und Angra Pequena,” no. 14, 1884.
97. Kundrus, *Modern Imperialisten*, 45. For different proposals put to the Auswärtige Amt (Kolonial Abteilung) Foreign Office in 1894–95 see BArch-B, R 1001/6492, Berichte von Dr. Hindorf, Dr. Dowe [sic] und Dr. Sander über den landwirtschaftlichen Wert und die Möglichkeiten zur Besiedelung Südwestafrikas (Dez. 1894—Febr. 1895).
98. *Deutsche Kolonialzeitung*, “Die koloniale Entwicklung Südwestafrikas,” no. 2, 1886.
99. Kundrus, *Modern Imperialisten*, 29.
100. John C. G. Röhl, *Wilhelm II: The Kaiser’s Personal Monarchy, 1888–1900* (Cambridge, 2017), 149.
101. Dirk van Laak, *Imperiale Infrastruktur: Deutsche Planungen für die Erschließung Afrikas 1880 bis 1960* (Paderborn, 2004), 109–10.
102. The National Archives of the UK (TNA), CO 879/34/4, African (South), no. 407, Further Correspondence Relating to Anglo-German Claims in the Neighbourhood of the Settlement Walfisch Bay, no. 12, Sir Gordon Sprigg, 22 Jan. 1891.
103. TNA, CO 879/34/4, African (South), no. 407, Further Correspondence Relating to Anglo-German Claims in the Neighbourhood of the Settlement Walfisch Bay, Enclosure No. 284, John J. Cleverly, 31 Oct. 1893. For debates tied to Walvis Bay over the years, see also BArch R 1001/8847–8848, Walfischbai. Allgemeines. and BArch-B R 1001/8849–8850, Verhandlungen mit England über die Abtretung der Walfischbai.
104. Jan Rüger, *Heligoland: Britain, Germany, and the Struggle for the North Sea* (Oxford, 2017), 80–81.
105. Goudie and Viles, *Landscape and Landforms of Namibia*, 3.
106. Wallace, *A History of Namibia*, 2.
107. *Lüderitzbuchter Zeitung*, “Fünfzig Jahre Lüderitzbucht,” April 8, 1933, as referenced in *Lüderitzbucht damals und gestern*.
108. Schwabe, *Mit Schwert und Pflug*, 4.
109. François, *Nama und Damara*, 5.
110. Schürmann, *Der graue Unterstrom*, 125. See also Richard Moorsom, *Walvis Bay: Namibia’s Port* (London, 1984).
111. Lau, *Namibia in Jonker Afrikaner’s Time*, 61–62.
112. Kienetz, “The Key Role of the Orlam Migrations,” 565–69.

113. Melber, "Economic and Social Transformation in the Process of Colonisation," 24. See also Heinz Walter Stengel, "Der Baiweg," *Namib und Meer* 3 (Oct., 1972), 5–20.
114. Lau, *Namibia in Jonker Afrikaner's Time*, 61. See also Dierks, *Namibian Roads in History*, 23.
115. Melber, "Economic and Social Transformation in the Process of Colonisation," 25.
116. Grotpeper, "Upingtonia, Republic of," 544–45.
117. Melber, "Economic and Social Transformation in the Process of Colonisation," 24–25.
118. *Ibid.*, 25.
119. Dierks, *Namibian Roads in History*, 24. See also Kienetz, "The Key Role of the Orlam Migrations," 561.
120. Lau, *Namibia in Jonker Afrikaner's Time*, 61–62.
121. Dove, "Baiweg," *Deutsches Kolonial-Lexikon*, Band I, 118.
122. Melber, "Economic and Social Transformation in the Process of Colonisation," 27.
123. *Deutsches Kolonialblatt*, "Die Häfen der Südwestafrikanischen Schutzgebiete," 1 June 1890.
124. *Deutsche Kolonialzeitung*, "Beschreibung der Küste zwischen Mossamedes und Port Nolloth," 15 November 1890 (Bokemeyer).
125. Max Esser, *An der Westküste Afrikas. Wirtschaftliche und Jagd-Streifzüge* (Berlin, 1898), 211.
126. *Annalen der Hydrographie und maritimen Meteorologie*. "Kleine Notizen," XVII, no. VI (1889).
127. Conradt, *Erinnerungen aus zwanzigjährigem Händler- und Framerleben in Deutsch-Südwestafrika*, 111; Gebhart, "Sandwich Harbour," 101 and 103; François, *Nama und Damara*, 11.
128. *Deutsches Kolonialblatt*, "Die Häfen der Südwestafrikanischen Schutzgebiete," 1 June 1890.
129. *Annalen der Hydrographie und maritimen Metereologie*, "Hydrographische Notizen von der Westküste von Afrika," XX, no. XII (1892).
130. *Annalen der Hydrographie und maritimen Metereologie*, "Aus dem Reiseberichte S. M. Knbt. 'Hyäne,' Kommandant Kapt.-Lieut. Zeye," XVIII, no. VI (1890).
131. François, *Nama und Damara*, 11. See also Goudie and Viles, *Landscape and Landforms of Namibia*, 20.
132. *Cape Times*, 27 July 1888, as accessible in R 1001/8849, Verhandlungen mit England über die Abtretung der Walfischbai.
133. *The Times*, 22 August 1888, accessible in R 1001/8849, Verhandlungen mit England über die Abtretung der Walfischbai.
134. TNA, CO 879/34/4, African (South), no. 407, Further Correspondence Relating to Anglo-German Claims in the Neighbourhood of the Settlement Walfisch Bay, no 30, "Telegram German South-West Africa," 5 February 1891. See also TNA, CO 879/34/4, African (South), no. 407, Further Correspondence Relating to Anglo-German Claims in the Neighbourhood of the Settlement Walfisch Bay, no. 14, Colonial Office R. H. Meade, 7 January 1891.
135. Wallace, *History of Namibia*, 125–26. Scholarship generally points to a slightly later point, often chancellor Bernhard von Bülow's 1897 speech in parliament where he spoke about "a German place in the sun."

136. TNA, CO 879/34/4, no. 30, "Telegram German South-West Africa," 5 February 1891. See also TNA, CO 879/34/4, African (South), no. 14, "Colonial Office to Foreign Office," 7 January 1891.
137. TNA, CO 879/34/4, African (South), no. 407, Further Correspondence Relating to Anglo-German Claims in the Neighbourhood of the Settlement Walfisch Bay, no. 93 and no. 94, translations, *Reichsanzeiger, Times, Daily Telegraph*, April 1891.
138. TNA, CO 879/34/4, African (South), no. 407, Further Correspondence Relating to Anglo-German Claims in the Neighbourhood of the Settlement Walfisch Bay, no. 139, John J. Cleverly, 6 January 1892.
139. Drechsler, "Let Us Die Fighting," 72. See also Blackler, "From Boondoggle to Settlement Colony."
140. *Deutsches Kolonialblatt*, "Deutsch-Südwestafrika," 1 January 1894. See also Rudolf Bittrolff, *Der Krieg in Deutsch-Südwestafrika* (Karlsruhe, 1895), 26; Drechsler, "Let Us Die Fighting," 73.
141. Krynauw, *Das Kreuzkap*, 35–36.
142. TNA, CO 879/34/4, African (South), no. 407, Further Correspondence Relating to Anglo-German Claims in the Neighbourhood of the Settlement Walfisch Bay, no. 253, Marquess of Ripon, 23 August 1893.
143. TNA, CO 879/34/4, African (South), no. 407, Further Correspondence Relating to Anglo-German Claims in the Neighbourhood of the Settlement Walfisch Bay, Enclosure no. 236, 8 June 1893 (John J. Cleverly, "Artillery for German Troops") and 14 June 1893 (John J. Cleverly, State of Affairs Walfisch Bay). See also François, *Nama und Damara*, 15.
144. *Süd-Afrikanische Zeitung*, "Deutschland und England in Walfischbai" 2 August 1893, as accessible in BArch-B, R 1001/8849, Verhandlungen mit England über die Abtretung der Walfischbai.
145. Helmut Bley, *South-West Africa under German Rule 1894–1914*, translated by Hugh Ridley. (Evanston, 1996), 30; Ulrike Lindner, *Koloniale Begegnungen: Deutschland und Großbritannien als Imperialmächte in Afrika 1880–1914* (Frankfurt am Main, 2011), 117.
146. Brigitte Lau, ed., *The Hendrik Witbooi Papers*, 2nd ed., trans. Annemarie Heywood and Eben Maasdorp (Windhoek, 1996), 207–10; Drechsler, "Let Us Die Fighting," 54; Steinmetz, *The Devil's Handwriting*, 151.
147. Caprivi, 1 March 1893, 55. Sitzung, Stenographischer Bericht des deutschen Reichstags (SBRT), vol. 128, 1539. Retrieved 1 April 2021 from www.reichstagsprotokolle.de. See also Oskar Hintrager, *Südwestafrika in der deutschen Zeit* (Munich, 1955), 31.
148. Caprivi, 1 March 1893, 55. Sitzung, SBRT, vol. 128, 1539, as translated in Bley, *South-West Africa under German Rule 1894–1914*, 3.
149. Caprivi, 1 March 1893, 55. Sitzung, SBRT, vol. 128, 1359. Retrieved 1 April 2021 from www.reichstagsprotokolle.de.
150. *Ibid.*, 1360.
151. Drechsler, "Let Us Die Fighting," 44. Bley speaks of "Berlin's ambiguity towards the colony" in the early years. Bley, *South-West Africa under German Rule 1894–1914*, xxvi.
152. Ruxton, "Notes on the South-West Coast of Africa," 12.
153. Hydrographic Office, ed., "Chapter VI," 21, in *Supplement Relating to Africa Pilot*.

154. *Annalen der Hydrographie und maritimen Metereologie*, “Rekognoscirungsfahrt S.M.Kr. ‘Habicht’, Kommandant Korv.-Kapt. von Schuckmann I., an der Westküste Afrikas von Walfisch-Bai bis Kap Frio,” XIV, no. XI (1886). See also Becker, “Bericht des Kommandanten S.M. Krzr. Falke über Landungsplätze bei Kap Cross und an der Swachaub-Mündung,” 1894 (University Library Frankfurt, Afrikabibliothek, S 17/9991); *Deutsches Kolonialblatt*, “Verschiedene Mitteilungen. Bericht des Kommandanten S.M. Kreuzer ‘Falke’ über Landungsplätze bei Kap Gross und an der Tsoakhaub-Mündung,” 1 May 1893.
155. *Deutsche Kolonialzeitung*, “Beschreibung der Küste zwischen Mossamedes und Port Nolloth,” 15 November 1890.
156. *Deutsches Kolonialblatt*, “Die Häfen des südwestafrikanischen Schutzgebietes,” 1 June 1890.
157. Olusoga and Erichsen, *The Kaiser’s Holocaust*, 40/41.
158. *Deutsche Kolonialzeitung*, “Erinnerung an die Gründung und Flaggenhissung in Swakopmund 1884,” 14 August 1909. It is striking that some German voices spoke about “overtaking” (*überflügeln*) Walvis Bay by 1896. See *Deutsche Kolonialzeitung*, “Kleine Mitteilungen,” 18 January 1896.
159. Andreas Massing, “Kru,” in *The Oxford Encyclopedia of Maritime History*, vol. 2 (New York, 2007), 306–9, here 307. See also George Brooks, *The Kru Mariner in the Nineteenth Century: An Historical Compendium* (Newark, DE, 1972).
160. Jane Martin, “Krumen ‘Down the Coast’: Liberian Migrants on the West African Coast in the 19th and Early 20th Centuries,” *The International Journal of African Historical Studies* 18, no. 3 (1985): 401–23, here 401–2.
161. *Ibid.*, 404.
162. Diana Frost, *Work and Community among West African Migrant Workers since the Nineteenth Century* (Liverpool, 1999), 8. See also William Blakemore Lyon, “From Labour Elites to Garveyites: West African Migrant Labour in Namibia, 1892–1925,” *Journal of Southern African Studies* 47, no. 1 (2021): 37–55, here 42.
163. François, *Deutsch-Südwest-Afrika*, 157. Local groups, described by German newcomers as “Topnaar-Hottentots,” helped carry those landing ashore. Emil Eisinger, *Im Damaraland und Kaokofeld: Erinnerungen aus Südwest-Afrika* (Bühl, 1913), 5; Hintrager, *Südwestafrika in der deutschen Zeit*, 32. See also *Deutsche Kolonialzeitung*, “Drei Tage in Südwestafrika,” 7 October 1893.
164. NAN, HBS, St. Unit 1, File 1/2, Bericht 31 March 1901.
165. Lyon, “Namibian Labor Empire”; Bravenboer and Rusch, *The First 100 Years of State Railways in Namibia*, 10.
166. François, *Nama und Damara*, 15–16. See also Karl Brackmann, *Fünfzig Jahre deutsche Afrikaschiffahrt: Die Geschichte der Woermann-Linie und der Deutschen Ost-Afrika-Linie* (Berlin, 1935), 71; Jeffrey S. Gaydish, “‘Old Swakopmund’ Reexamined: German Labor Mobilization Practices in Colonial Namibia” (MA thesis, Arizona State University 2001), 24–36.
167. Lyon, “From Labour Elites to Garveyites,” 42.
168. *Ibid.*, 41. According to Lyon, “West African migrant labourers who came to the colony in the 1890s were essential to the development and maintenance of the German colonial infrastructure before the First World War.” Lyon, “From Labour Elites to Garveyites,” 54.

169. *Deutsche Kolonialzeitung*, “Kleine Mitteilungen,” 24 August 1895.
170. Schwabe, *Mit Schwert und Pflug*, 263.
171. BArch-B, R 8023/1078, Landungsverhältnisse an der Swakop-Mündung, Brief, 14 December 1894.
172. Wilhelm Külz, *Deutsch-Südafrika im 25. Jahre deutscher Schutzherrschaft: Skizzen und Beiträge zur Geschichte Deutsch-Südafrikas* (Berlin, 1909), 46. See also *Deutsche Kolonialzeitung*, “Koloniale Rundschau,” 11 November 1893; *Deutsche Kolonialzeitung*, “Zur Lage in Südwestafrika,” 21 July 1894. The average population of around ten whites and 150 natives underscores that little trade had materialized. Külz, *Deutsch-Südafrika im 25. Jahre deutscher Schutzherrschaft*, 47.
173. *Deutsche Kolonialzeitung*, “Gross-Namaland,” 21 June 1890. See also *Deutsche Kolonialzeitung*, “Einiges über die Küste des südwestafrikanischen Schutzgebietes und den Verkehr an derselben,” 8 December 1894.
174. Külz, *Deutsch-Südafrika im 25. Jahre deutscher Schutzherrschaft*, 44. Külz speaks about a “illusion-like shortsightedness.” See Külz, *Deutsch-Südafrika im 25. Jahre deutscher Schutzherrschaft*, 47.
175. Francois, *Nama und Damara*, 307.



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

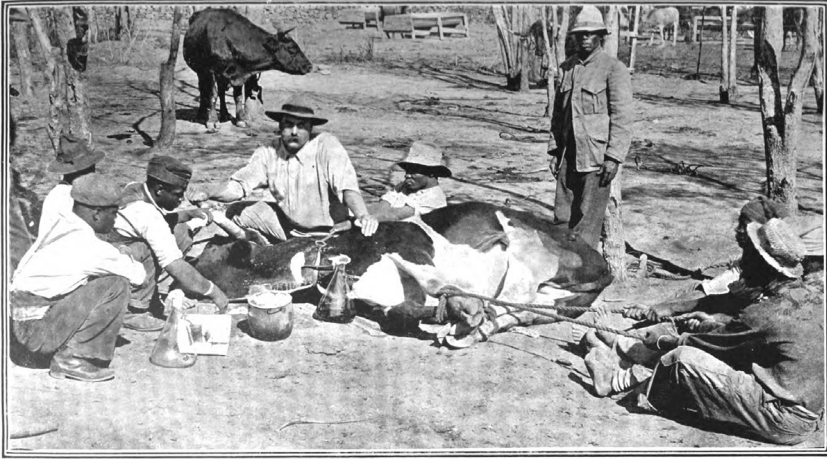


Photo: Dugmore.

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 *Lüderitzbucht Zeitung*, "Fünfzig Jahre Lüderitzbucht," April 8, 1933, as included in *Lüderitzbucht damals und gestern*.
23. *Deutsches Kolonialblatt*, "Deutsch-Südwestafrika. Zum Hafenubau in Lüderitzbucht," 1 October 1900. See also Hafenbautechnische 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 Adaschmidt 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. BAArch-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, Strafakten 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.



Solving Aridity

Water had transformed Klein-Windhoek. Now a more affluent suburb of Namibia's capital, the settlement is located on the central plateau east of downtown Windhoek. In the 1890s, it grew steadily as more and more German settlers arrived. According to some estimates, between February 1892 and September 1894 seven steamships brought twenty-five families, or a total of fifty-five individuals (thirty-three of them men) mainly to that region. They joined twenty-two former colonial soldiers and five settlers with German origins. The latter had migrated to the area from neighboring South Africa.¹ Soon the region turned into a *Kleinsiedlung*, a small-scale settlement best described as a self-sufficient agricultural homestead. To incentivize settlement, prices for land were kept low.² Plus, organizations such as the *Südwestafrikanische Siedlungssyndikat* (Southwest African Settlement Syndicate), founded in 1892 and tied to the German Colonial Society, supported settlements and gardens.³ In 1893, one newspaper noted, "German Southwest Africa is, there can be no doubt anymore, the only one among our colonies that appears suitable to satisfy one of the main demands of the creators of Germany's colonial movement, namely to possess our very own overseas territory that is partially capable of absorbing the stream of German emigration."⁴ Between 1898 and 1902, just the government alone sold 1,093,694 hectares of land to settlers.⁵ Concession companies sold even more. Such transactions meant a permanent loss for Herero in central Namibia. The first two German settlers in Klein-Windhoek had received their land in 1892; ten years later an official counted forty-three white settlers and between 200 and 250 black workers. The availability of water had made the location desirable. By 1902, settlers could count on about 670 cubic meters of water per day from surrounding springs. That was enough to sustain fifteen hectares of vineyards and twelve hectares of gardens cultivating vegetables, fruits, and grain.⁶ Yet water was not endless. In 1892, Geographer Karl Dove had already warned that Klein-Windhoek could at best sustain seven to eight families.⁷ Some wondered about investments. Traveler Baron Edgar von Uechtritz und Steinkirch outlined that just a little work tied to digging irrigation channels would go a long way to possibly sustain forty-five families.⁸ By

then it was clear that any future growth, or even sustaining Klein-Windhoeck long-term, required irrigation structures.

Solving the water question was essential for the transformation of South-west Africa into a sustainable settler colony. African societies had long navigated arid spaces. Later, Europeans saw only problems. According to a British description from 1884, “The whole of the territory, excepting the beds of the Kuisup [*sic*] and Swakop rivers, is an arid and sandy desert, with no appreciable rainfall, and almost entirely devoid of vegetation. Rain only falls for 5 to 6 days in the year (between November and April), and probably does not amount to one inch.”⁹ As a result, concerns around water fundamentally shaped colonial thinking and overall activities. After all, to follow such rhetoric and narratives, once the *Mole* allowed people to land in Swakopmund and a train reached the central plateau the transformation of arid landscapes into a settlement colony for Germans could begin. Water was essential for that. Efforts fully took off once experts such as Hydrologist Engineer Theodor Rehbock and Engineer Alexander Kuhn surveyed the region; both also provided decision-makers with an array of photographic evidence, elaborate blueprints, endless reports, and specific proposals. All of such documents envisioned a white settler future. Their ingenuity, it seemed, could squeeze water out of even the most arid landscapes, creating structures that turn existing wastelands into a German settler paradise.

Organized chronologically, chapter 4 focuses on environmental infrastructure meant to unearth water. It begins with existing understandings and structures before exploring early efforts at entry ports and along main access routes. In line with scholarship discussing irrigation, the mastery of nature, and broader transformations, German colonialists believed in progress, technology, and their own superiority.¹⁰ Their dismissal of pre-colonial environmental infrastructure, African expertise, and a general misunderstanding of natural forces partially explains repeated setbacks. The chapter then follows German attempts to make sense of arid lands. The expeditions of Theodor Rehbock and Alexander Kuhn, two experts personifying certain imperial mentalities and mindsets, are front and center. Their proposals capture visions of the colony as storylines of conquering and transforming nature yet again defined colonial minds and stories.

Existing Structures

Oral histories and traditions speak volumes about the importance of water in Namibia's past. Legends point to its significance—such as one about a crying princess forming the Fish River.¹¹ When interviewed for the Michael Scott Oral History Project in December 1985, interviewee Kenapeta Tjatindi out-

lined the significance of rain for Herero culture. “In times of drought people would come to him [the head of the Mbanderus, the late Kahimemua Nguvauva] to beg him to pray for rain. He asked for the rain, and it did rain.”¹² Others sharing their recollections talked about similar rituals: “A sheep had to be slaughtered and the fat put in the fire: and then they called God: the smoke used to go up as a sign that their request would be answered: the rain came.”¹³ Places with water mattered greatly as well. Tjiponda of Kamarenga, for instance, spoke about the journey home from the sea when noting, “The place where he turned back is called Ekotokero, meaning the place of return where he got fresh water.”¹⁴ The Herero had long dug up drinking water here and rested before moving on with their cattle. The description became a kind of praise poem used by subsequent travelers to orient themselves. According to Henrichsen, the *omutandu* (pl. *omitandu*), or song of praise, a genre tied to a specific space and role for Herero history, marks places of water that are essential for cattle.¹⁵ Henrichsen points to an extensive network or topography of wells among the Herero: *Otjizeva* (waterholes), *Otjondjomboimue* (single wells), *Oviombo* (large wells), *Ombujomatemba* (well of water trough), and *Otjiamangombe* (the place where cattle are kept).¹⁶ Imperative markers etched onto the landscape, like gravesites, could also help find the precious liquid.¹⁷ Within Herero culture, geographies, directions, and spatial knowledge are deeply intertwined with this source of life.

Herero had lots of experiences and expertise around the construction of wells and how to access water. According to Henrichsen, and based on the descriptions of individuals like Missionary Büttner, they were the most famous *Va-Schimba* (well-diggers) in central Namibia in the nineteenth century.¹⁸ Büttner, who at one point described the social structure of Africans as a “quaint mixture of social democracy and feudalism,”¹⁹ demeaned such environmental infrastructure as no more than “pits . . . which with the most primitive of methods water is ladled-up.”²⁰ African societies long employed iron tools acquired through trade networks to dig their wells. According to oral interviews and other records, the Herero generally picked locations for settlements near or in dried up riverbeds. Known as *ondjombo* (singular) or *ozondjombo* (plural), those wells were about three to five meters deep though could reach up to twenty.²¹ Use was communal. Construction was a collective effort, both the digging process and then getting the water out of the well. Büttner at one point described the process of retrieving the water noting that it generally involved five to six men lowest on the social hierarchy passing along buckets to the top while “singing and having fun.”²² Such structures even reached into the Kalahari Desert. There, the Herero had created up to twenty so-called field and sand wells (sg. *ombu*; pl. *ozombu*). These were about seven-meter-deep clay-made pools meant to collect groundwater.²³ German Missionary Heinrich Vedder wrote that the Herero “dug wells untiringly with a pointed stick hard-

ened in the fire, and drew water from a depth of fifteen feet [about 4.5 meters] and more, pouring it into wooden troughs for his thirsty animals.”²⁴ Whereas disputes over water could lead to broader conflicts,²⁵ wells were “points of intersection (*Schnittpunkte*) of economic and social (male) life.”²⁶

Other groups equally made use of landscapes that seemed empty and hostile to outsiders. Archaeologist John Kinahan has written extensively about groups living near the Hungorob Ravine and the Khuseb River Delta, both areas that have become case studies for further investigations surrounding settlement, trade, and pastoralism.²⁷ As noted in chapter 1, close adaptations to existing environmental conditions required groups like the Topnaar to settle in small homesteads a few kilometers away from a reliable water supply.²⁸ Other Nama were also experts and had long manipulated nature. According to one oral history describing Nama migration into modern-day Namibia, “The southern deserts are pitted with deep canyons and pockmarked with mountains and extinct volcanoes. Human life is made possible only by the existence of underground water. As the Nama trekked north into this unknown territory, they were guided by dogs trained to sniff out hidden waterholes. Where the dogs stopped the Nama dug their wells and built their settlements.”²⁹ Historians Brigitte Lau and Christel Stern noted broadly that Nama used water resources “extremely successful and in careful harmony with patterns of natural renewal.”³⁰ The use of rain- and groundwater resources was certainly widespread in the earlier part of the nineteenth century. Of course, those home in the region had expertise regarding climate, underground water in dry river beds, or the proximity of certain plants to water. As described by Vedder, “What really mattered [to the Nama-Witboois] was not the outside limits of the territory, but the river courses, on the banks of which wells could easily be made to provide water for man and beast.”³¹ German Missionary Büttner made similar observations about the Damara when writing, “Besides it is to be remarked that the Berg-Damara have rather an inclination for gardening, and if they can get somewhere a secure spot which offer them some garden land and water, they are soon ready to make a small garden, to plant tobacco, dacha, pumpkins, and melons.”³² Knowing where to find and accessing water had long mattered in Southwest Africa.

German newcomers often belittled such environmental infrastructure and overall ingenuity, or at least favored their own observations and efforts. That response was in line with settler colonialism more broadly. Historian David Lowenthal, who writes about the Americas, noted that “[a]t the outset, imperial settlers were hardly aware of indigenous impacts, blind to signs of non-European occupation. They assumed that they saw virtually untouched virgin lands, ‘almost fresh from the Maker’s hands.’”³³ Missionary Vedder described existing footpaths as primitive and outdated when claiming, “There were no roads in South West Africa in those days; there were just narrow footpaths, which very often coincided with the tracks made by elephants.”³⁴ At least he

added the voice of old Tjimba of the Kaokoveld and realized that those were connections between different water holes that humans had long depended on in search of water.³⁵ Nonetheless, for Vedder these paths were useless because they were much too narrow and mountainous for ox wagons. Other newcomers seemed intrigued by the abilities of San to survive in barren landscapes; but they too remained dismissive in their descriptions or failed to include their voices.³⁶ According to Kreike, “to colonial observers, ‘native’ constructions were of little value and hardly, if at all, transformed a wilderness environment (for the better).”³⁷ Racist undertones at times surely prevented settlers from learning from local groups. One German farmer dismissed the indigenous population’s settlement near water, commenting that “enemies of any physical labor they only believed those places to be of value, where water comes to the surface or can be dug up easily.”³⁸ Sometimes German officials also rejected local ingenuity simply because it did not fit into colonial topographies and plans. For them, waterholes away from German travel routes eventually became spaces just for nomads, not for white settlers.³⁹ Of course, and as the colonial presence increased, the local population became increasingly secretive toward intruders. Settler Margarethe von Eckenbrecher wrote about how local groups survived in arid landscapes by eating certain plants and roots—and adding that they would not share this knowledge with the Germans.⁴⁰

The inability or unwillingness of newcomers to see existing structures and modifications of landscapes were not surprising. As more broadly discussed by Lowenthal, “Any impacts that settlers did note seemed to them trivial, wasteful or unproductive. Indigenous unable or unwilling to abandon ‘primitive’ practices for permanent settlement were thus held doomed to give way to superior races with advanced technologies.”⁴¹ In Namibia, Herero had long moved their cattle along with ecological patterns. German encouragement to settle down made little sense to them. Their minds were not changed once they saw repeated crop failures by those newcomers that themselves misunderstood rain patterns, soil, and climate.⁴² A far cry from the artificial division between nature and culture that lay at the heart of colonial narratives around development and progress, they had their own modern structures. German colonists, on the other hand, looked down on semi-nomadic traditions. Maybe, at best, they pointed to previous efforts by Herero as the baseline for much-needed development and technology.⁴³ One commentator in a German colonial newspaper spoke about “decades of mismanagement” by Herero when describing the work that lay ahead for German colonizers;⁴⁴ individuals such as geographer Karl Dove later used the word *Pfütze* (puddle) to belittle existing structures.⁴⁵ Already in February 1888, a sequence of articles in one newspaper had blamed the indigenous population for not maintaining wells before outlining a bright future under German rule.⁴⁶ More often than not, an underlying ethnocentrism left little room for anything non-German.⁴⁷ After all, African landscapes

in no way matched long cultivated German *Kulturlandschaften*. To Germans, this indicated that Africans had done little to make the area habitable, sustainable, or profitable. Curt von François encapsulates some of these attitudes. Steeped in Prussian military traditions, a colonial mindset, and a good dose of racial supremacy, he pointed to the wide availability of water to easily grow corn, wine, and even rice.⁴⁸ In his view, Africans had simply not done enough to make use of the “waterless steppe of Namaland.”⁴⁹

For the Germans such attitudes had drawbacks as well as benefits. For one, it resulted in several mishaps. According to two scholars, missionaries at times “diverted and destroyed springs by unskilled experimentation with dynamite to establish agricultural settlements.”⁵⁰ Take the mission station in Keetmanshoop. Built in a dry riverbed that newcomers either knew little about or could not fathom would ever become a problem, it washed away during heavy rains in 1890. Head missionary Tobias Fenchel had to rebuild on a hill nearby.⁵¹ Another missionary, who had pushed the local population toward gardening and agriculture, saw his dam in the Nossob riverbed washed away.⁵² But for colonists the inability to see transformations of landscapes also had its upsides. According to Lowenthal, “it suited colonial incomers to overlook signs of native alteration: the apparent absence of indigenous ‘improvements’ helped justify the removal of indigenous tribal lands.”⁵³ By the 1890s German authorities certainly employed different avenues to strengthen their colonial rule—and access to water mattered greatly in that context. As outlined by Gewald, Herero pastoralists living in Okombahe and Berg-Damara farmers had been within a rich symbiotic relationship for some time. However, the Germans believed the Herero had subjugated and enslaved Berg-Damara.⁵⁴ Efforts framed as “help” became useful avenues for German colonists when trying to divide and conquer, limit Herero power, restrict overall movement, and gain access to labor, land, and water. Local groups, on the other hand, tried to situate themselves within shifting power structures. That turned out to be a complex process, particularly in times of divisions among the Herero. German authorities removed gardens, lands, and Berg-Damara from the Herero.⁵⁵ For them, that opened up spaces for settlers to transform landscapes while ending a supposed waste of resources. After all, for colonialists this was a struggle against destructive forces.⁵⁶ Agriculturalist Richard Hindorf, who spent about a year in Southwest Africa, pointed to the need to transform and improve upon nature with wells, dams, and all kinds of irrigation systems, all to easily sustain agriculture.⁵⁷ That there would be no room for the existing population within such transformation was implied or sometimes stated directly. To follow a popular German novel about German Southwest Africa by Gustav Frenssen published later, “These blacks have deserved death before God and man not because they murdered 200 farmers and rose up against us [Germans in 1904] but because they have built no houses and have dug no wells.”⁵⁸



Figure 4.1. “Spring in the Grootfontein region,” Scheel, *Deutschlands Kolonien*, 83, HathiTrust/public domain.

Nonetheless, African environmental infrastructure provided the foundation for the German settler topography. Expeditions used existing routes like the Baiweg or dry riverbeds both for convenience and the potential of underground water.⁵⁹ Since there existed few reliable maps of the interior they also trusted local guides both when searching for water and when scouting out new travel routes.⁶⁰ Although “[t]he great variety of toponyms did not satisfy the Europeans’ demand for geographical unambiguity,” to follow one scholar,⁶¹ such indigenous knowledge still influenced German understandings of their surroundings, of course without giving Africans much if any credit. Key German writers such as Victor Franke and Heinrich Vedder built on the knowledge of Kakurukouye (alias Kasupi) from the western Kaokoveld in Ombepera and the “big man” Tjongoha of Kaoko Otavi, respectively.⁶² Similarly, missionaries out to convert generally settled next to indigenous groups that themselves had taken root near sources of drinking water.⁶³ Take Winterhoek, as Jonker Afrikaner called it, today’s Klein-Windhoek and a location known for its hot springs.⁶⁴ There and elsewhere missionaries built small dams and dug wells, thereby adding to existing structures.⁶⁵ Nomenclature of certain topographies, or simple terms such as *Fontein* (spring) or *Vley* (waterhole or pond), spoke about such a transfer of knowledge as well (Figure 4.1). Klipfontein (now Bethanie), a village located in the south originally known as Ui- \neq gandes, got its name due to the discovery of water (*fontein*) under a rock (*klip*).⁶⁶ Franz-

fontein, to follow a farmer in a magazine later on, was an area that used to be inhabited by a Khoikhoi group. It soon housed the farm of Hubertus Janson and Carl Schlettwein.⁶⁷ A quick look at the list of German settlements included in the 1901 German Colonial Handbook outlines numerous imposed features that took over existing waterholes.⁶⁸ Indigenous water topographies were thus the unsung heroes at the heart of German settler structures.⁶⁹

From a German perspective, real development began with their arrival. Missionaries had done some work already, of course; but real improvement defined by broader national and colonial efforts took off in 1884. “Certainly, the possibility of well systems is an extremely important factor concerning the cultural development of the country,”⁷⁰ noted Hugo von François. Soon soldiers worked on the improvement and new construction of water holes along major travel routes, especially the Baiweg.⁷¹ A report by François illustrated some underlying misconceptions of original observations concerning rivers—it turned out that in several instances previously described streams were no more than “unimportant sidearms” and rivulets, or were not even connected to other rivers.⁷² The seasonal character of rivers, and their force once flushing down a long-dried up riverbed, surprised Germans as well. As François noted at one point, “Southwest Africa’s rivers have the odd peculiarity that they hold no water in the dry time of the year. And even in the rainy season they only flow at times.”⁷³ A lack of knowledge did not hold back bold claims, however, including that certain springs could easily sustain “an infinite number of cattle.”⁷⁴ Reports mostly published in the *Deutsches Kolonialblatt* newspaper gave potential newcomers the impression that these were sustainable locations for German settlements.⁷⁵ Even Hugo von François pushed such claims. “It is a misconception to apply the traditional understandings of arid barren Africa readily to our protectorate,” he noted. “Southwest Africa has lots of water; one just has to learn how to find and develop it.”⁷⁶

Western experts also began studying ways to solve the perceived waterlessness. In 1892, geographer Karl Wilhelm Dove surveyed “the climatic and hydrological circumstances with attention to the possibility for more intensive soil utilization”⁷⁷ for the German Colonial Society. In his view, a network of measuring stations and rain gauges easily manned by citizen scientists doing their patriotic duty could provide essential data regarding temperatures, precipitation, and more. Dove’s overall report, published in sections in a bulletin later, included some cautionary tales concerning the limits to agriculture.⁷⁸ Though his assessment disrupted some initial fantasies regarding the potential for large scale settlement ploys namely around Windhoek,⁷⁹ Dove actually saw the problem not with aridity. In his view, the issues lay with a lack of scientific ingenuity. He compared the region to neighboring South Africa, noting that in Southwest Africa scientific research “plays the role of a maker, pushing this landscape towards happiness and prosperity, and maybe that one towards the silence of the death.”⁸⁰

Meanwhile farmers had already begun dealing with aridity; they also framed their efforts as fights against nature. Farmer Ludwig Dominikus, who had owned Farm Stolzenfels since 1871, claimed that the alluvial soil along the riverbed is excellent. He added that “it will be up to the available means whether agricultural endeavors at the Orange River will be profitable” or not—he certainly needed more financial resources to expand his efforts.⁸¹ In 1891, he wrote to a colonial newspaper demanding support for drilling, reservoirs, and dams.⁸² Missionary Büttner had by then mentioned efforts at Stolzenfels, including a pump powered by a donkey that sustained the cultivation of tobacco.⁸³ Carl Schlettwein, who came to the colony in 1896 and became an important voice for farmers throughout the colonial period, pointed to the use of domesticated animals for pumping up water efficiently at Groot Spitzkop in 1899.⁸⁴ A certain Mr. Nitze, “in tireless diligence” and lots of hard work, had turned a wasteland into a blooming garden elsewhere.⁸⁵ According to the already mentioned Dominikus, examples of newly built water reservoirs or dams near Ukamas (Walser), near Arris (Rautenbach), or at the Bakflus showcased further possibilities.⁸⁶ German farmer Petersen, who settled at Außenker along the Orange River by 1885, emphasized the lack of labor when trying to build any irrigation structures and also saw a bright future.⁸⁷

Berlin’s growing commitment to the protectorate eventually brought a somewhat more comprehensive approach to the solution of the water question. The appointment of Governor Theodor Leutwein in 1894 transferred naval staff surgeon and veterinary expert Ludwig (Louis) Sander to the colony. Leutwein himself had explained that there was “an urgent need for improvement as far as water supplies and pasture land are concerned.”⁸⁸ He also saw the issue of water in the context of a potential war with the Bondelswarts. “The country is so deficient in water and pasture land that a force of 100 men would pose an almost insoluble supply problem. We would be defeated not by the people, but by Nature, to say nothing of the fact that our headquarters at Windhoek are a long way off.”⁸⁹ In any case, Sander accompanied the governor on several expeditions. Although mostly focusing on animal diseases and pandemics, his publications also touched on water issues. His *Proposal for the Development of Southwest Africa* in particular outlined that this is a land “that struggles with a massive shortage of water under its natural conditions.”⁹⁰ Apart from pointing to the scarcity of that resource and the limits imposed on agriculture, cattle farming, settlements, and exports, Sander discussed the fertile soil within the region. In his view, it is full of mineral nutrients. “Just resolving the water [issue] is missing to make it accessible for plants.”⁹¹ There seemed to be little to learn from African societies. At least Sander did not point to them. In his view, German colonists could learn much from the experiences and successes around irrigation schemes in the neighboring Cape Colony. Regarding costs, he simply suggested doubling regular expenditures given anticipated “African

difficulties.”⁹² The *Deutsches Kolonialblatt* newspaper certainly endorsed such optimism when noting that the colony “was far from being arid.”⁹³ Sander was particularly confident about the future of dams and other structures meant to support the cultivation of potatoes, barley, legumes, and turnips, reforestation and even the introduction of fish.⁹⁴ Newcomers should also begin growing wheat, corn, and rye given “that the population is largely German.”⁹⁵ This last comment plainly outlined his vision for a productive *white* settler space.

Such calls for action faced support and criticism. Georg Hartmann, who had arrived in the protectorate in 1893 and traveled extensively for several private companies, confidently pointed to “an abundance of water laying in the ground;” he also saw a need for infrastructure to access it, specifically wind power: “There is enough water around. It is just resting in the depth and must just be unearthed by force. Nature with its year-round winds already provides the power to do so.”⁹⁶ In his view, much is possible in this only outwardly arid landscape. Early settlers like August Seidel also chimed in. He claimed that the colony had been underestimated in value and that settlers just needed to start digging for water: “I myself already built four wells and always strike water.”⁹⁷ Seidel also referred to dams and other infrastructure. An article in the *Deutsche Kolonialzeitung* newspaper pointed to problems that Sander might have underestimated. Overall, however, that paper also supported irrigation schemes.⁹⁸ At the same time calls for investments into irrigation structures, or at least the employment of an actual hydrology engineer expert, met concerns. According to the *Deutsches Kolonialblatt* newspaper, decision-makers wondered about “profitability.”⁹⁹ Governor Leutwein, forced to work with a tight budget, had to weigh costs and benefits of any major investment. Uncertain about future settlements, and receptive to the anxieties of local farmers, he favored private irrigation initiatives. Those had materialized in the Keetmanshoop district on the farms Ukamas, Kais, Nonchas, Klipdamm, Jamahaalen, Korzibib, and Aronab. Plus, some farmers like Mr. Brand had built dams already, in his case in Mariental.¹⁰⁰ For those awaiting government assistance regarding irrigation at least the formation of the *Kolonialwirtschaftliches Komitee* (Colonial Economic Committee) in 1896, meant for “the economic elevation of the protectorates,”¹⁰¹ gave some hope.

Yet it took massive lobbying efforts and broader shifts in colonial policies to move forward. The Colonial Department of the Foreign Office, the Colonial Society, and several well-known private entities got involved. On 14 June 1895, those entities formed a syndicate in Berlin, the *Syndikat für die Bewässerungsanlagen in Deutsch-Südwest-Afrika*.¹⁰² Ernst Vohsen, a well-connected former German consul in Sierra Leone, together with Sander, took the lead. Vohsen had an impressive resume. After working for the French company *Compagnie du Sénégal* in Freetown, Sierra Leone, he became German consul on site. He later worked for the East African Society in Zanzibar before taking over as di-

rector from Carl Peters in 1888. Three years later he stepped down to run the publishing house Ernst Reimer. Vohsen was also part of the German Colonial Society, which channeled funds to the syndicate right away—including 20,000 Marks for irrigation systems in German Southwest Africa.¹⁰³ Sander, who broadly sketched out the creation of the syndicate in the press, pushed for scientific expeditions to evaluate potential locations for large structures near Rehoboth, Otjimbingue, Seeis, and Hatsamas.¹⁰⁴ He was certainly excited about the syndicate's prospects. And, he was confident that forthcoming investments would generate a report indicating “that it was not legitimate at all to decry Southwest Africa as a desert.”¹⁰⁵

Water Structures

Sander's call for experts found a good fit in hydrology engineer Theodor Rehbock. Often described as a pioneer, his resume outlined his expertise when it came to all things water.¹⁰⁶ Later to follow in the footsteps of renowned hydrology engineer and straightener of the Rhine River, Johann Gottfried Tulla, he was born the son of a businessman in Amsterdam in 1864. Rehbock studied civil engineering at the Technical University in Munich and Berlin-Charlottenburg. He worked in Berlin, including for architect Paul Wallot in the final stages of the construction of the Reichstag parliament building.¹⁰⁷ He also spent two years as the assistant of renowned hydrology engineer Ludwig Franzius in Bremen, a position that shifted his interests toward hydrology. After a research trip tied to irrigation that included visits to the American Southwest, Rehbock eventually moved to Berlin to open an agency. Such experiences and interests made him a perfect candidate for a stint to Southwest Africa funded by the syndicate.¹⁰⁸

Rehbock's expedition to the colony faced numerous delays and challenges. In his travel descriptions, he wrote about “a rather pleasant” journey aboard the steamer *Mexican*.¹⁰⁹ He arrived in Cape Town on 20 August 1896. With a working space in the German consulate, Rehbock hired Chemist James Charles Watermeyer as his assistant. At the time working in the agricultural ministry in Cape Town, the latter had “been highly recommended to him” not least because he had helped in previous endeavors tied to what contemporaries referred to as civilizing structures.¹¹⁰ While Watermeyer waited to get approval for release time, Rehbock spent his days studying everything related to water, exploring town, and entertaining all kinds of dinner invitations. He saw an aged Theophilus Hahn, in Rehbock's view “the best expert on the country I have ever met.”¹¹¹ He got around, traveling first to Port Elizabeth, later to Oudtshoorn to see the Grobbelaars River and maybe the large ostrich farms, and ultimately on to the Touwsrivier. After boarding the steamer *Leutwein*

to Southwest Africa on 7 October he made a rare admission of ignorance: he had envisioned conditions in the Cape Colony “from Europe in a rather incorrect manner.” Rehbock added, “I had anticipated finding an abundantly rich land and instead, I found a sterile soil, that only strenuous work can get meager fruits out, because for the largest part of the land the nourishing water is missing completely.”¹¹² Maybe fittingly, a drought then welcomed both him and Watermeyer when landing in Swakopmund. They could not find anyone willing to take them inland and thus stayed busying trying to find ways to sustain the growth of the town. It took five and a half weeks until they finally had horses as well as the help of five Berg-Damara to leave the coast. Rehbock later complained about a lack of wells and watering holes along the Baiweg, their route to the interior prior to any railway.¹¹³ Once the rainy season caught up with them the expedition suddenly faced flash floods. In one instance at the Khan River the situation got dangerous: “One of the oxen would have certainly drowned if it was not for the help of some of the Herero, at the risk of their own lives, saved it,” he wrote.¹¹⁴ The trek finally reached Windhoek with “its cultivated gardens and numerous shady trees,” as Rehbock would later describe it to an audience in Berlin.¹¹⁵ It was the day before Christmas Eve.

Rehbock’s expedition was elaborate. According to his own report, they covered a stunning 8,000 kilometers by ox wagon and horse.¹¹⁶ First, he and Watermeyer spent time in the area around Windhoek. Apart from meeting with local colonial officials and farmers, including Sander, they also assessed options tied to large dams near Awispoortand in Hatsamas.¹¹⁷ In Rehbock’s view, “Based on this kind of climate Europeans are not just able to do intellectual work but are also able to do extensive physical labor. Given the small number of natives and the inability of a large part of them when it comes to ongoing physical labor the development of the country will need to be based primarily on a white labor force.”¹¹⁸ Second, the expedition visited structures meant to solve the water question. With little interest in engaging with African experts long familiar with existing landscapes, Rehbock and Watermeyer only spent time with German settlers and farmers. The recent 1896 drought had brought some careless settlers to their senses, Rehbock commented, and farmers “have begun to take better advantage of their surroundings by digging wells and by building small dams, which will prevent the repetition of major losses in the future.”¹¹⁹ Mr. Wheeler of Farm Seeheim, for one, presented a plan that included a centrifugal pump, powered by two oxen, for irrigation of grain, fruit, and vegetables.¹²⁰ Several settlers had since gotten to work: Farmer C. Walser of Ukamas in district Keetmanshoop had built a dam in a dry riverbed by the mid-1890s;¹²¹ Farmer Voigtland of the company Wecke & Voigts near Windhoek, and the Farms Hoffnung (hope) and Unverzagt (undismayed) of the settlement society, and Farmer Gessert of Inachab near Bethanien had begun building earth dams.¹²² Farmer Hermann Brandt of Marienthal, who had emi-

grated to Namibia from Germany via South Africa, had anticipated damming a lake of 39,200,000 cubic meters. He planned to irrigate an area of 1,000 hectares.¹²³ The Wecke & Voigts company also had irrigation setups that relied on a Bakkiespump (a bucket-and-chain setup) on their farm near Okahandja.¹²⁴ Plus, there had been efforts to drill for water and install pumps along main trade routes.¹²⁵ Settler Farmer Ferdinand Gessert, who at one point traveled to Egypt to study irrigation, particularly dominated early discussions surrounding irrigation schemes in Southwest Africa.¹²⁶ Seen by many contemporaries as an independent mind and pragmatist with deep German roots and pride, Gessert believed that dams and wells would turn the colony into an oasis for all kinds of fruits such as figs and grapes.¹²⁷ Although Rehbock himself was more interested in larger projects, like a dam at the gap of the Löwenfluss,¹²⁸ conversations with locals such as Gessert influenced his plans. On the surface, this showcases the role of German knowledge. However, such expertise was, in the end, grounded in existing African understandings and experiences. After all, German newcomers had originally relied on the help of their workers, guides, and other Africans when trying to make sense of their surroundings. Apart from the reliance on German settler knowledge, British South Africa remained Rehbock's main point of reference. While waiting in Cape Town, Rehbock had studied local hydrology literature, especially an array of blue books tied to land management; he had also visited some actual sites, including the last remaining forest areas, Knysna Forest and Titsikamma Forest. He would later talk about intricate irrigation systems and dams, as well as fruit trees, gardens full of grass, clover, grain, and bamboo.¹²⁹ "The blessing of artificial irrigation in arid areas is apparent with surprising clarity," he outlined to an audience in Berlin.¹³⁰ Eleven months later he made time to return to Cape Town. There, he visited what he described as "the biggest and most famous dam of South Africa, the van Wyks Vley."¹³¹ Barely in use due to the ongoing drought, Rehbock later pointed to "faulty assumptions" regarding its construction.¹³² He concluded without much humility that if South Africa, "which has also not been blessed any more by nature," can provide a comfortable life for many, then German Southwest Africa could certainly do so.¹³³

Once back in Germany, an elaborate marketing campaign pushing for investments into large-scale structures took off right away. It all began with a presentation in Berlin on 26 November 1897, a Friday. Many attended the gathering taking place in the big ballroom of the exquisite Hotel Kaiserhof.¹³⁴ With little time to analyze his findings, as Rehbock himself readily admitted, his talk was no more than an overview of the journey to the local chapter of the Colonial Society. Soon articles about specific opportunities in Hatsamas and elsewhere popped up.¹³⁵ In 1898, Rehbock then published a massive volume about the potential for the economic development of Southwest Africa. Of course, he emphasized large-scale irrigation projects. Organized in ten sections, and full



Figure 4.2. 116-357-028, Theodor Rehbock, March 1897, courtesy of the Bundesarchiv Koblenz.

of beautifully illustrated color sketches of proposed setups, the volume packaged main findings and vision for transforming the land. Accompanied by numerous articles in the press,¹³⁶ photographs sustained Rehbock's claims and overall narrative that these were far from arid wastelands. That storyline also defined a larger photo book published the same year.¹³⁷ Beautifully bound and containing a total of ninety-six snapshots, it disclosed Rehbock's own viewpoint and perspective. Photos show roadways, means of transportation, structures, panoramic outlooks onto landscapes, and domesticated animals—and one photo of a man, likely Rehbock himself, gazing onto water ready for use (Figures 4.2 and 4.3). Such a standpoint was meant to outline the dynamism and potential of this German colonial space, a storyline soon slopped all over the media.¹³⁸ The local African population, on the other hand, remained little more than a backdrop, situated within untamed, arid landscapes or in group photos and close-ups that have long defined the imperial gaze.

This promotion of what Rehbock called “Germany’s duties in Southwest Africa”¹³⁹ pushed two main points. First, water can be accessed with little effort by drilling wells or by constructing dams, all of which could lead to “extensive livestock breeding”: cattle in Hereroland and sheep, horses, and ostriches in Namaland.¹⁴⁰ Second, several locations in the Herero and Namaland are suitable for larger dams. That infrastructure could easily become the basis for



Figure 4.3. 116-357-067, Theodor Rehbock, June 1897, courtesy of the Bundesarchiv Koblenz.

broad irrigation schemes feeding fertile alluvial soils. As a result, expansive agricultural production could sustain inhabitants in several centers (Figure 4.4).¹⁴¹ Rehbock specifically proposed the construction of six major dams, four of them near Windhoek and two further south—the largest of those should hold 67 million cubic meters of water.¹⁴² Watermeyer agreed with Rehbock’s endorsement of drilling crews, pumping stations, wind power, dams, and irrigation systems.¹⁴³ It was equally clear to him “that gardening and agriculture can only be successful on alluvial soil or in completely leveled terrain on prime soil that can be watered extensively,” and that the solution of the water question—including along major travel routes—was vital for the future development of the colony.¹⁴⁴ In that sense, neither Rehbock nor Watermeyer believed that natural forces and circumstances could hold back the economic development of the colony once investments into infrastructure materialize. In their view, and in the view of the Syndicate more broadly, “diligence and care,”¹⁴⁵ so German ingenuity in the conquest of nature, could transform wastelands into blooming agricultural spaces.

These proposals saw widespread support among other experts. Geographer Karl Dove largely agreed with Rehbock or at least saw his contributions as essential for the development of the colony. In 1899, he outlined the need for dams and irrigation systems for agriculture and farming; he also pointed to the importance of small private dams.¹⁴⁶ Support also came from professor

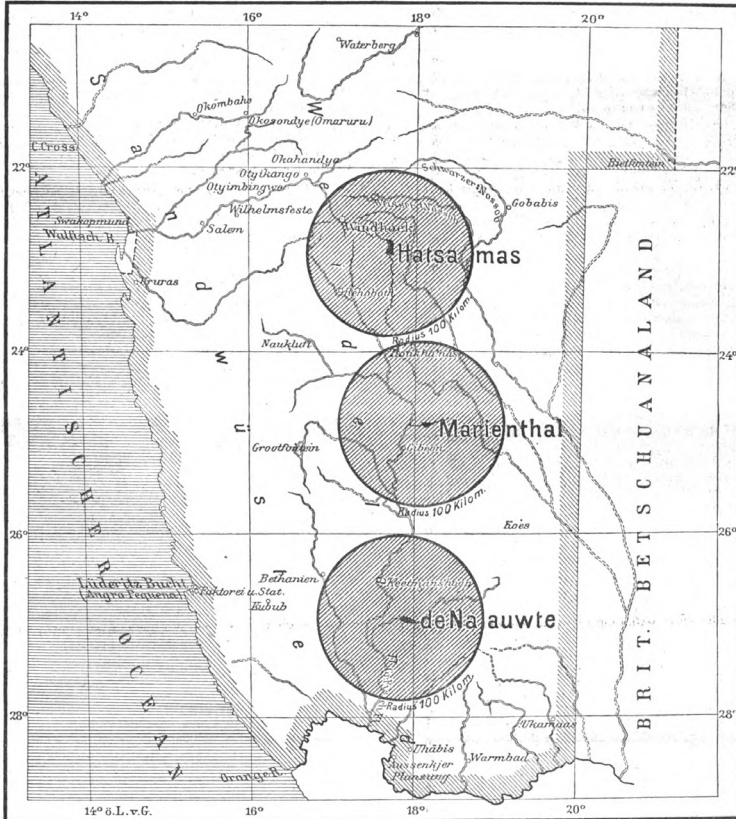
auch sonst im südlichen Hererolande die günstigsten örtlichen Verhältnisse für die Bewässerung bietet.

Am Ramalande würde dann ferner für die Gründung landwirtschaftlicher Kolonien zunächst die Form Marienthal ins Auge zu fassen sein, die eine für die Anlage eines großen, wenn auch etwas flachen Staueses besonders geeignete Stelle besitzt, dessen Zuflußgebiet freilich nur auf 225 qkm angegeben wird, und eine

von den bewässerbaren Alluvialflächen entfernt liegen, sobald kostspielige Zuleitungen erforderlich werden.

Sollten genauere Untersuchungen gegen Erwarten ein ungünstiges Resultat ergeben, so müßten Nachforschungen nach anderen geeigneteren Stellen im Ramalande vorgenommen werden.

Selbstfalls haben aber die in Deutsch-Südwestafrika ausgeführten Untersuchungen bereits den Nachweis erbracht, daß es in diesem



Die Bewässerung von Deutsch-Südwestafrika.

Stelle am Löwenfluß oder Chamob bei de Naauwte, die ein sehr bedeutendes Speisungsgebiet von 6000 qkm aufweist und ebenfalls für die Herstellung eines billigen Staueses vortrefflich geeignet ist.

An diesen beiden letzten, auf der Kartenskizze angegebenen Stellen sind bisher eingehende technische Vorarbeiten noch nicht angestellt worden. Es ist indessen mit ziemlicher Bestimmtheit anzunehmen, daß sie alle Vorbedingungen für die Gründung von landwirtschaftlichen Kolonien besitzen, wenn auch die Staualanlagen etwas weit

Schutzgebiete an Vertikalitäten, welche die Anlage landwirtschaftlicher Kolonien begünstigen, nicht fehlt.

Es verbleibt noch die Aufgabe zu zeigen, in welcher Weise die Verwirklichung der besprochenen landwirtschaftlichen Kolonien herbeigeführt werden kann.

Da das Reich nicht gewillt sein wird, die bedeutenden einmaligen Ausgaben für die Gründung solcher Kolonien, auch wenn auf eine angemessene Verzinsung gerechnet werden kann, selbst zu tragen, wird es erforderlich sein, hierzu Gesellschaften heranzuziehen,

Original from

Figure 4.4. "The irrigation of German-Southwest Africa," *Deutsche Kolonialzeitung*, "Die Besiedelung Deutsch-Südwestafrikas, III," 4 October 1900 (Rehbock), Hathi-Trust/public domain.

Ferdinand Wohltmann, who later became deeply involved in colonial agriculture. According to him, Rehbock and Watermeyer had brought light into “the mysterious darkness” that had long characterized the colony. Their proposal might solve the water question altogether. After all, he continued, the soil samples they had submitted “downright invited” the transformation into valuable agricultural lands.¹⁴⁷ Although he later acknowledged that all that might not turn Southwest Africa into a major settler colony due to broader “natural circumstances,”¹⁴⁸ addressing the issue of water would finally make up for previously missed opportunities. Organizations such as the Hatsamas-Gesellschaft society, which was grounded in Rehbock’s ideas, soon became the venue meant to implement proposals.¹⁴⁹ Chairman Consul Vohsen in Berlin took the lead again. Rehbock himself worked out the charter. Soon supporters approached the imperial government hoping for an interest guarantee of 3 million Reichsmark joint capital for the society.¹⁵⁰ Rehbock’s vision of large-scale irrigation schemes supporting broad settlements seemed to come together.

However, there had been some criticism as well, especially from farmers in Southwest Africa. One voice saw Rehbock’s proposal as “a remarkable submission” yet pointed to more cost-efficient earth-dams given financial implications; others outlined broader misconceptions about the region.¹⁵¹ In 1899, Rehbock had responded to criticism from Georg Hartmann in a thirty-two-page memorandum.¹⁵² Now settler and farmer Ernst Hermann from Nomtsas (formerly Kubub) criticized the “rosy calculations” put forward by the syndicate.¹⁵³ In his view, it was simply too early for large-scale dams. He also worried about the sole reliance on such structures.¹⁵⁴ Hermann had traveled throughout the colony for the German Colonial Society for Southwest Africa before settling down to breed sheep in 1890. His farm was destroyed during the war led by Hendrik Witbooi.¹⁵⁵ When it came to Rehbock’s broader proposal tied to irrigation, farming, and settlement he had concerns about costs and viability.¹⁵⁶ Rehbock, on the other hand, defended the need for adequate preliminary surveys, technical expertise, and, engineers;¹⁵⁷ he also claimed that farmers simply feared competition.¹⁵⁸ Yet funding did not materialize. Governor Leutwein, likely influenced by local sentiments against large-scale projects, ultimately did not endorse the proposal.¹⁵⁹ Whereas the governor emphasized “technical concerns,”¹⁶⁰ in a letter to Rehbock dated August 1899 he also outlined “that there is no market for settlers” to sell their products.¹⁶¹ Fears of failures, and the potential creation of “an unhappy proletariat” that no one will then be responsible for, loomed large as well.¹⁶² In the end, high officials in Berlin, including Kaiser Wilhelm II, seemed to be swayed by those concerns and denied the request of interest guarantees.¹⁶³ Although some funding into small-scale drilling efforts spearheaded by Watermeyer did come through,¹⁶⁴ only additional examinations and data by experts could possibly save large-scale projects.

Engineering Water

“The Country Needs Engineers!”¹⁶⁵ These were the words Alexander Kuhn wrote to consul Vohsen in July 1901, just three and a half months after arriving in Swakopmund. Although the government had hesitated to invest in large-scale projects, another expedition had made its way to the colony. Kuhn, an engineer himself, had been put in charge. Getting to that point had not been easy. Only once concerns about neglected responsibilities began haunting some officials did the expedition get funding.¹⁶⁶ The syndicate wasted little time in finding an engineer. They approached Philipp Holzmann AG, a Frankfurt-based construction company, to come up with a proposal; that company was also to suggest an engineer. Several months passed before formal recommendations brought Engineer Alexander Kuhn into the limelight. He was a good fit. Born in 1853 in St. Pölten, Lower-Austria, Kuhn had received a technical education. He later joined the Austrian civil service before starting to work for Philipp Holzmann AG in 1896.¹⁶⁷ After some delays tied to finalizing a contract, Kuhn got to work. Together with Engineer Skutari, who had been part of a survey for the infamous Baghdad Railway project,¹⁶⁸ their overall instructions were clear. As outlined by none other than Theodor Rehbock, “The reason for the expedition is to supplement already existing preliminary work for dam structures near Hatsamas, Marienthal and de Naauwte”; it also included efforts to work on broader irrigation systems for agriculture.¹⁶⁹ Apart from suggested readings by Dove, François, Sander, Rehbock, and others, that plan proposed an ambitious schedule: arrival in Swakopmund 5 February and return to Berlin 10 September.¹⁷⁰ According to Kuhn, the mission was about “sending an engineer with practical building experience to Southwest Africa, and based on the survey and assessment of that expert, make a binding proposal for the construction of a larger dam at Hatsamas.”¹⁷¹ In early February 1901, with concerns regarding the *Rinderpest* still lingering, Kuhn and Skutari traveled to the colony to complete “extensive preliminary work for promising . . . irrigation systems”—especially tied to the large dam system and its connection to the agricultural colony near Hatsamas.¹⁷² Their mission ultimately had three distinct objectives. First, Kuhn was to figure out possibilities tied to the construction of a large dam near Hatsamas. Second, he was to complete and expand the earth dam of Farmer Brandt in Marienthal (District Gibeon). Finally, Kuhn was to look into options tied to a large dam near Naauwte along the Löwenfluss southwest of Keetmanshoop.¹⁷³ Such efforts were meant to decisively dispel all those still following the “sandbox-theory,”¹⁷⁴ or the view that the colony had nothing to offer but desert.

Kuhn’s letters to Consul Vohsen and Theodor Rehbock buried in an archive in Karlsruhe showcase the engineer’s ambitious vision for transforming the colony. Running well behind schedule, Kuhn arrived in Swakopmund on 12 March. He had read much about the area beforehand—and there “was thus no

surprise once presented with the dismal sand desert of Swakopmund.¹⁷⁵ Kuhn met with long time farmer, trader, and ‘old African’ Gustav Voigts; he also listened to Governor Leutwein’s concerns.¹⁷⁶ Kuhn saw the *Rinderpest* as a warning regarding large-scale cattle-farming.¹⁷⁷ And he understood complaints, quarrels, and disagreements among settlers as a sign that honest, hard-working settlers, and “please no colonial soldiers” should settle the land.¹⁷⁸ Engineers instead of lawyers, judges, and administrators, he proclaimed.¹⁷⁹ Once he got to work, his surveys concluded that both the Hatsamas and the Naauwte dam were feasible large-scale projects.¹⁸⁰ He imagined much broader transformations of nature, however. “Once the dynamos are running and the first arc lamps of the whole protectorate blink in the silent hermitage,” he stated, “then peace and solitude of this valley are surely gone forever.”¹⁸¹ Elsewhere he painted a similar picture regarding the makeover of colonial spaces when stating that “[i]t would be of great lament if this by nature so favored a spot within a by nature so neglected land would not initiate a path towards more sensible conditions.”¹⁸² Private dams, he claims, were “primitive,”¹⁸³ and would do little to alter the region.

Kuhn’s findings eventually initiated another expedition. But first he published an extensive report following his return to Frankfurt in December 1901. Kuhn outlined “the necessity for irrigation schemes on a grand scale.”¹⁸⁴ In his view, this was the government’s job, not that of private entities.¹⁸⁵ “Either one creates larger irrigation systems in German Southwest Africa and with that, the opportunity for dense settlement by non-adventurers as well as the sustainable productivity of the land—or one stands at the same point fifty years from now where we are today granted the government and the Reichstag are willing to pay 8–10 million a year for the ‘protection’ of the land. There is not a third [option]!”¹⁸⁶ A whole wish list referencing projects and investments followed. Kuhn even outlined ways to harness the forces of nature with hydropower. First, however, surveys finding worthy locations for dams as well as observation posts collecting more data tied to climate, precipitation, and flash floods would be needed.¹⁸⁷ “The land is worth it that something happens!”¹⁸⁸ A second part then offered detailed reports, blueprints, and calculations regarding costs for the Hatsamas, Mariental, and Naauwte projects, all ventures he supported. Rehbock quickly endorsed the publication. In his view, the colony needed a dose of “American boldness” as embodied by Kuhn and his ideas.¹⁸⁹ Yet the acquisition of investments from parliament remained difficult. A working group had at least approved additional surveys in Southwest Africa and support for local dam-building projects; that entity had noted that expeditions to South Africa, Egypt, and North America could be useful to learn more about large irrigation schemes.¹⁹⁰ An official in the foreign office eventually approached the *Wohlfahrtslotterie* (charity lottery) for funding.¹⁹¹ Thankfully for those hoping for investments, it financed another expedition, this time to the Fish River. Kuhn’s second trip had three objectives: First, the creation of

a geographical map of the entire Fish River area at 1:100,000. Second, a cost estimate tied to damming structures in that region. Finally, and arguably most importantly, the expedition was to provide “encouragement and instruction” to farming associations and local authorities.¹⁹²

The Fish River Expedition ultimately sketched out even more extensive structures and investments. Beginning in 1903, and widely reported on at the time,¹⁹³ Kuhn first traveled to South Africa. He saw much potential when visiting Worcester. “The neighborhood is held up as a surprising example of what is and what might be done once employing irrigation.”¹⁹⁴ He was also excited about a specific crop when noting, “I was rather pleased from what I had seen in the last three weeks, and mainly overwhelmed by the success of alfalfa [also known as lucerne] cultivation, that I decided to initiate the development of a medium-sized dam system meant for alfalfa cultivation”—the area near Keetmanshoop seemed to be fitting for that purpose.¹⁹⁵ Joined by Rehbock’s former travel companion Watermeyer for parts of the journey,¹⁹⁶ Kuhn frequently compared what he saw in the Cape Colony with the German protectorate: “The development that the German Protectorate has gone through in the last twenty years since its takeover has certainly been comparatively quicker.”¹⁹⁷ At the same time, he acknowledged that more unfavorable climatic circumstances in German Southwest Africa were a problem—although “the higher intelligence of the average German settler compared to the majority of English [settlers]” could in his view easily make up for that.¹⁹⁸ Kuhn arrived in German Southwest Africa in early May. He was slightly deflated when he landed in Lüderitzbucht: “I thought I would return differently: with a plethora of artisans and workers, with a ship full of tools, construction equipment, locomotives, and dynamos.”¹⁹⁹ Instead, it was yet another expedition meant to collect mostly information. From the Atlantic coastline, the expedition moved inland, trekking through the Namib Desert by horse. Extensive travels to Gabachab, Itsabisis, Bethanien, Bersaba, Seeheim, and other locations along and near the Fish River defined the coming months. Apart from gathering intelligence tied to geographical, topographical, and environmental factors Kuhn commented on future possibilities. At Farm Seeheim he noted that a garden located on an island in the middle of the Fish River had long relied on a natural dam to cultivate orange trees as well as tobacco, various vegetables, barley, melons, and corn. Investments into a steam-engine pump, small mills, and another natural rock barrier further downstream could easily expand such schemes.²⁰⁰ Elsewhere the expedition began planting alfalfa, an effort settlement commissioner Rohrbach later described as a distraction from the needed hydrology work.²⁰¹ Of course, and as Kuhn readily acknowledged, the time on the ground was again “much, much too short.”²⁰²

Kuhn’s second expedition accomplished its objectives. The mission ended up completing topographical records of more than 1,900 kilometers and a map became available quickly.²⁰³ Kuhn also outlined a variety of additional prospects

pointing to earth dams with an overflow area as the most promising setup for farmers.²⁰⁴ For the Fish River he had a larger irrigation scheme in mind, a ploy meant to sustain “space for thousands of German emigrants.”²⁰⁵ His overall vision of transforming presumed wastelands into productive landscapes also included the cultivation of alfalfa and afforestation.²⁰⁶ An understanding in line with those long dreaming about the “greening of Southwest Africa,”²⁰⁷ supporters of these efforts such as Hans Schinz, Moritz Eduard Pechuel-Loesche, and Karl Dove tended to blame Herero for deforestation and overgrazing.²⁰⁸ Desiccation followed, they argued, “the drying up of surface water, a declining ground water level and a decrease in rainfall; all this was a result of human misuse of natural resources.”²⁰⁹ Thankfully, they claimed, German ingenuity, specifically engineers, would be able to re-green arid landscapes. Finally, the expedition had reached out to local farmers. Kuhn thus became aware of practical concerns and issues, including the need for tools like scrapers and plows.²¹⁰ This realization encouraged him to broadly sketch the basics for “an effective assistance” that included financial support from the government;²¹¹ it also helped him to more directly address their needs in his reports.

There had been some movement toward the support of solving the water issue up until that point. Sure, and to follow Lehmann, by the early 1900s, “the German administration had built only a single dam thirty-five kilometres east of Windhoek,” Neudamm.²¹² However, the apparent need for watering places had increasingly made boring for water a priority. That in turn led to the installation of the first drilling crew funded by the charity lottery.²¹³ According to one estimate, the crew would drill fifty-two holes by early 1904 with twenty-one considered a success.²¹⁴ By then the colonial administration had also begun compiling lists of existing farms to get a sense of locations, size, and sources of water.²¹⁵ The arrival of settlement commissioner Paul Rohrbach in 1903 and geologist Heinrich Lotz a year later also pointed toward forthcoming efforts regarding irrigation.²¹⁶ Whereas some of Kuhn’s more elaborate proposals still remained a hard sell at the time, the charity lottery ended up earmarking 2 million Marks for water development in Southwest Africa.²¹⁷ Kuhn remained optimistic, writing to Rehbock in late January 1904, “Came back from Southwest Africa, to where I plan to return to for maybe a longer time soon after the end of the stupid shootout and for the realization of construction, I am currently busy completing the report.”²¹⁸

Although the 1904 war disrupted such momentum, and ultimately put Kuhn’s proposals on ice,²¹⁹ the debate about solving aridity lingered for some time. Those in favor of massive investments as well as large-scale irrigation schemes and settlements did not give up easily. Rehbock complained in January 1904 that “again nothing will come from [the latest expedition] except paper.”²²⁰ In his view, “The whole story [of irrigation] will become rather important soon after the end of the Herero-shootout because the indigenous question may certainly not be solved comfortably with powder and lead,

but as a serious social problem, which elegant instrument includes work and pay.”²²¹ Rehbock also believed that “fresh life” would be put into economic development after the war.²²² He already begun planning for it. Deeply worried about losing Kuhn’s expertise in the meantime, he left no stone unturned to speak favorably about the engineer.²²³ Both Rehbock and Kuhn also continually published in newspapers.²²⁴ Meanwhile settlers such as Carl Schlettwein and Gustav Voigts argued against large-scale investments and questioned the credentials of outsiders. In their views, those without personal experience of living in the colony should not be taken seriously.²²⁵

Yet an array of setbacks ultimately disrupted the work of irrigation proponents. For one, Watermeyer, who worked for drilling operations on the ground in Southwest Africa, died in the war.²²⁶ As that conflict dragged on it also became more and more difficult to hold on to Kuhn. By April 1904 he had agreed to work for the colonial government in Southwest Africa. According to his contract, he was to project and estimate irrigation systems, oversee construction, and further support economic development—all beginning by December 1904.²²⁷ By February 1905, Kuhn wrote to a high official in Southwest Africa that he planned to come to the colony by the end of April.²²⁸ Apart from avoiding a still conflict-ridden colony, that deferment allowed him to travel to North America to learn more about irrigation schemes, specifically in the American Southwest.²²⁹ At that point he chimed in on the indigenous question. Unlike many of his contemporaries, and in line with some comments in his letters from Southwest Africa,²³⁰ Kuhn pushed for a trade education system similar to what he saw in the United States. Not all graduates will turn into a Booker T. Washington, he noted, yet decent, reasonable, and useful citizens capable of doing trade jobs could certainly emerge.²³¹ Another delay until June 1906 then gave Kuhn a window to travel to South America.²³² His sudden death likely due to meningitis in Chile that year came as a shock. As noted in one obituary, this tragedy robbed the government yet again of a man many hoped would solve Southwest Africa’s water question.²³³ Rehbock, by now heading the River Hydrologic Laboratory in Karlsruhe, tried his best to carry on the torch.²³⁴ In subsequent years he would repeatedly push for the implementation of existing proposals; he also continued to write directly to Colonial Secretary Bernhard Dernburg. Engineers are needed, he argued tirelessly, to avoid mismanagement and financial waste in the future.²³⁵

The water question defined Southwest Africa. Long before the arrival of German colonists Herero, Nama, and other African societies had relied on ways to survive in outwardly arid and hostile wastelands. German newcomers generally dismissed their local expertise and environmental infrastructure—though both

spilled into emerging colonial topographies. Efforts to solve the water issue took off with the installment of Governor Leutwein in 1894. Yet initial surveys, expeditions, and reports lacked coherence. It took experts such as Sander, Rehbock, and Kuhn to formulate German visions. The latter two in particular outlined large-scale transformations of the colony and showcased a belief in massive irrigation schemes. In their view existing desert wastelands in Southwest Africa were just awaiting German investments, awakening, and makeover.²³⁶ Until 1903, progress was slow, to follow Helmut Bley.²³⁷ At the same time, pressure to invest seemed to build. In 1902, for instance, the withdrawal of funds earmarked for dams to sustain Windhoek resulted in a media outcry.²³⁸ Plus, momentum increased following Kuhn's second expedition. The 1904 war disrupted all of that—"what had been created has been largely destroyed," to follow one commentator that year.²³⁹ By then there had been 276 farms, 200 wells, and 40 dams. To quote a colonial official later on, "All of these efforts were destroyed by the indigenous rebellion, yet at the same time exactly that showcased the necessity to put forward larger means for the development of water sources."²⁴⁰

The presumed conflicts between human ingenuity and natural forces shaped colonial narratives. Initial German water topographies more or less built on indigenous understandings and environmental infrastructure. However, grand narratives of German conquest silenced such inputs to claim ingenuity and superiority. Colonial storylines defined progress and development based on the creation of a profitable or at least self-sustaining settlement colony comparable to neighboring South Africa. Rehbock and Kuhn, who most directly encapsulate the imperial expert as drivers of modernization, pointed to technology and willpower. In their view, only major investments and large transformations of existing landscapes would solve the water question and make deserts bloom. Part of a global network that repeatedly referenced the American Southwest, they clashed with settlers in Southwest Africa. Schlettwein, Voigts, and Brandt saw themselves as the real experts, with knowledge about natural forces and actual experience working the land. For them, small dams would be needed, not large projects. Although such disagreements and broader hesitations stalled initial investments, these views agreed on the need to solve the water question to allow for the creation of living space for white settlers; they also all framed it as a battle against nature.

Notes

1. Kundrus, *Moderne Imperialisten*, 49.
2. Daniel Joseph Walther, *Creating Germans Abroad: Cultural Policies and National Identity in Namibia* (Athens, 2002), 10.
3. Gerstenhauer 1903, 217, as quoted in Schneider, "Bewässerungswirtschaft in Namibia und ihre Grundlagen in der Kolonialzeit," 124.

4. *Deutsche Kolonialzeitung*, “Die Lage in Deutsch-Südwestafrika,” 19 August 1893. See also Walther, *Creating Germans Abroad*, 9.
5. Walther, *Creating Germans Abroad*, 17.
6. *Der Tropenpflanzer*, “Siedlungsgesellschaft für Deutsch-Südwestafrika,” no. 8 (August 1902).
7. Kundrus, *Moderne Imperialisten*, 50.
8. Edgar von Uechtritz und Steinkirch, *Berichte des Barons Edgar von Uechtritz und Steinkirch aus Windhoek, Hoachanas und Tinkas 1891–92* (Berlin, 1892), 5.
9. Hydrographic Office, ed., “Chapter VI,” 21. See also *Petermanns geographische Mitteilungen* 33, “Karte des unteren !Khusebthales,” 1887, 202–14 (Stapff).
10. Donald Worster, *Rivers of Empire: Water, Aridity, and the Growth of the American West* (Oxford, 1985), 11; Blackbourn, *The Conquest of Nature*, 191–92.
11. Martha Hyman, “The Legend of the Fish River Canyon,” 13–15, here 15, in *Muzimbikana and other Namibian Adventures*, ed. Namibia Oral Tradition Project (Windhoek, 1997). See also Schneider, “Bewässerungswirtschaft in Namibia und ihre Grundlagen in der Kolonialzeit,” 111–16.
12. Kenapeta Tjatindi, “Kahimemua,” 123–33, here 124, *Michael Scott Oral History Project*.
13. Willy Njanekua and Kasisanda Muuondjo, “Herero Clans and Customs,” 28 January 1986, 134–149, here 148, in *Michael Scott Oral History Project*.
14. Njanekua and Muuondjo, “Tjiponda, Kahivesa, and the Wars of the Hereros,” 28 January 1986, 168, in *Michael Scott Oral History Project*.
15. Henrichsen, *Herrschaft und Alltag im vorkolonialen Zentralnamibia*, 7–8.
16. *Ibid.*, 3–5. See also Christel Stern and Brigitte Lau, *Namibian Water Resources and Their Management* (Windhoek, 1990), 4–5; Hoffmann, “Since the Germans Came It Rains Less,” 24–29. Some research even outlines abilities to sustain a pastoral lifestyle in the Omaheke (Otjikerero for “sand field”) Desert. Karl-Johan Lindholm, “Wells of Experience: A Pastoral Land-Use History of Omaheke, Namibia” (PhD diss., Uppsala University, 2006).
17. Henrichsen, *Herrschaft und Alltag im vorkolonialen Zentralnamibia*, 10.
18. *Ibid.*, 3.
19. Büttner, *Walfischbai und Angra Pequena*, 21.
20. *Deutsche Kolonialzeitung*, “Deutschland und Angra Pequena,” no. 14, 1884.
21. Interview no. 26 (Viruuo Gotthard Yoshua Kamberipa, 2.4.1990, WDH, translator Ebson Kapuuo), as referenced in Henrichsen, *Herrschaft und Alltag im vorkolonialen Zentralnamibia*, 3.
22. Büttner, 1883a, 533, as quoted in Henrichsen, *Herrschaft und Alltag im vorkolonialen Zentralnamibia*, 6.
23. Henrichsen, *Herrschaft und Alltag im vorkolonialen Zentralnamibia*, 4. See also Lindholm, “Wells of Experience,” 20–21; Karl-Johan Lindholm, “A New Approach to the Archaeology of Livestock Herding in the Kalahari, Southern Africa,” *Antiquity* 83 (2009): 110–24, here 118.
24. Heinrich Vedder, *South West Africa in Early Times*, trans. Cyril G. Hall (London, 1966), 47.
25. Chief Omusindi’s neighbor Kambungu agreed to the construction of a well in a riverbed near their own. Whereas both groups got along originally, the proximity eventu-

- ally resulted in conflict, at least according to Vedder. See Vedder, *South West Africa in Early Times*, 159.
26. Henrichsen, *Herrschaft und Alltag im vorkolonialen Zentralnamibia*, 6.
 27. Kinahan, *Pastoral Nomads of the Central Namib Desert*, 87.
 28. Kinahan, "From the Beginning," 34–35, in Wallace, *A History of Namibia*.
 29. Oral history interviews with various Nama elders (NAN, NiD/NaDS Accession) as referenced in *The Kaiser's Holocaust*, 23. See also Casper W. Erichsen, *What Elders Used to Say: Namibian Perspectives on the Last Decade of German Colonial Rule* (Windhoek, 2008). Nama oral traditions speak widely about water as "the centre of everyone's life in this dry land." See Braam Naude, "The Young Girl of Ani-Abes," 16–18, here 16, in Namibia Oral Tradition Project, *Muzimbikana and Other Namibian Adventures*.
 30. Stern and Lau, *Namibian Water Resources and Their Management*, 5.
 31. Vedder, *South West Africa in Early Times*, 364. See also Brigitte Lau, "Conflict and Power in Nineteenth-Century Namibia," *The Journal of African History* 27 (1986): 29–39.
 32. Büttner 1879, 285–294, as quoted in Schneider, "Bewässerungslandwirtschaft in Namibia und ihre Grundlagen in der Kolonialzeit," 109.
 33. David Lowenthal, "Empires and Ecologies: Reflections on Environmental History," in *Ecology and Empire: Environmental History of Settler Societies* (Seattle, 1997), 229–36, here 234.
 34. Vedder, *South West Africa in Early Times*, 191.
 35. Ibid. See also Klaus Dierks, "Pfade, Pads und Autobahnen: Verkehrswege erschließen ein menschenleeres Land," in Becker and Hecker, *1884–1984*, 25–34, here 27; Dierks, *Namibian Roads in History from the 13th Century till Today*.
 36. *Petermanns geographische Mitteilungen* 33, "Karte des unteren !Khuseibthales," 1887, 202–14, here 213 (Stapff).
 37. Emmanuel Kreike, *Re-Creating Eden: Land Use, Environment, and Society in Southern Angola and Northern Namibia* (Portsmouth, NH, 2004), 13.
 38. Schlettwein, *Der Farmer in Deutsch-Südwest-Afrika*, 16–17.
 39. François, *Nama und Damara*, 40.
 40. Eckenbrecher, *Was Afrika mir gab und nahm*, 51.
 41. Lowenthal, "Empires and Ecologies," 235.
 42. Schneider, "Bewässerungslandwirtschaft in Namibia und ihre Grundlagen in der Kolonialzeit," 111–12.
 43. Schöllnbach, *Die Besiedelung Deutsch-Südwestafrikas bis zum Weltkriege*, 58.
 44. *Deutsche Kolonialzeitung*, "Zur Wasserfrage in Deutsch-Südwestafrika," 2 April 1892 (Schweinitz-Dieban).
 45. Karl Dove, "Südwestafrika in wirtschafts-geographischer Hinsicht," in Schwabe, *Mit Schwert und Pflug*, 374–83, here 378.
 46. *Deutsche Kolonialzeitung*, "Zur Wasserfrage in Südwestafrika," 4 and 11 February 1888 (Nolte).
 47. Germans assumed superiority "manifested in material, technological, managerial, and disciplinary preeminence over non-Europeans." Hull, *Absolute Destruction*, 34.
 48. *Deutsches Kolonialblatt*, "Gesundheitszustand der Schutztruppe und Landesverhältnisse im südwestafrikanischen Schutzgebiet," 1 April 1890. See also *Deutsches Kolonialblatt*,

- “Die Landschaft um Windhoek (Südwest-Afrika) nach einem Bericht des Lieutenants v. François,” 15 August 1891.
49. François, *Deutsch-Südwest-Afrika*, 112.
 50. Stern and Lau, *Namibian Water Resources and Their Management*, 5.
 51. Baumann, *Van sending tot kerk*, 117; Michael Hofmann, *Deutsche Kolonialarchitektur und Siedlungen in Afrika* (Peterberg, 2013), 177.
 52. Baumann, “Die Missionare–Europa kommt nach Afrika,” 93, in Becker and Hecker, *1884–1984*.
 53. Lowenthal, “Empires and Ecologies,” in *Ecology and Empire: Environmental History of Settler Societies*, ed. Tom Griffiths and Libby Robin, 234 (Seattle, 1997).
 54. Gewalt, *Herero Heroes*, 93. A colonial official reported in 1912 that “[t]he residents of Okombahe have been cultivating crops for a long time already, some by irrigating the alluvial land, others in the riverbed itself after the river has come down in flood.” See ZUB W.II.n.4., as quoted in Lau and Reiner, *100 Years of Agricultural Development in Colonial Namibia*, 23. See also Baumann, *Van sending tot kerk*, 134–41.
 55. Gewalt, *Herero Heroes*, 93–94.
 56. Bülow, *Deutsch-Südwestafrika*, 358.
 57. Richard Hindorf, *Der landwirtschaftliche Werth und die Besiedlungsfähigkeit Deutsch-Südwestafrikas* (Berlin, 1895), 21–22.
 58. Gustav Frenssen, *Peter Moors Journey to Southwest: A Narrative of the German Campaign*, trans. Margaret May Ward (London, 1908), 236. Some of these colonial narratives were internalized. One San individual belittled her account when noting, “black people know nothing. Here we are sitting on top of water, but we are too stupid to drill it even on our own land.” Magdalena/Oxurus in Erichsen, *What the Elders Used to Say*, 35.
 59. *Deutsches Kolonialblatt*, “Deutsch-Südwestafrika. Anlage von Brunnen,” 15 January 1895; François, *Nama- und Damara*, 165, as quoted in Henrichsen, *Herrschaft und Alltag im vorkolonialen Zentralnamibia*, 27. See also Schneider, “Bewässerungslandwirtschaft in Namibia und ihre Grundlagen in der Kolonialzeit,” 107.
 60. Isabel Voigt and Kathrin Fritsch, “Transcultural Aspects of Exploring and Mapping South West Africa between 1850 and 1914,” *Journal of Namibian Studies* 9 (2011): 61–83, here 62.
 61. *Ibid.*, 70.
 62. Bollig, *Shaping the African Savannah*, 86/87.
 63. Schneider, “Bewässerungslandwirtschaft in Namibia und ihre Grundlagen in der Kolonialzeit,” 107. See also Hindorf, *Der landwirtschaftliche Werth und die Besiedlungsfähigkeit Deutsch-Südwestafrikas*, 19.
 64. Baumann, *Van sending tot kerk*, 23.
 65. Henrichsen, *Herrschaft und Alltag im vorkolonialen Zentralnamibia*, 25; Schneider, “Bewässerungslandwirtschaft in Namibia und ihre Grundlagen in der Kolonialzeit,” 109–11.
 66. Jonathan Solomons, “Exploring the Historically Rich South,” *The Namibian*, 2 July 2019.
 67. *Kolonie und Heimat*, “Aus dem Farmerleben in Südwest,” 2 August 1908 (Jason).
 68. *Deutsches Kolonial-Handbuch*, vol. 1, 2nd ed. (Berlin, 1901), 167–204.
 69. Henrichsen, *Herrschaft und Alltag im vorkolonialen Zentralnamibia*, 32.

70. François, *Nama und Damara*, 44. His brother also described early efforts tied to accessing water for the military. See François, *Deutsch-Südwestafrika*, 77 and 79. See also Otto Wipplinger, "Grenzen des Wachstums? Die Wasserversorgung eines Wüstenlandes," 80–86, here 80, in Becker and Hecker, *1884–1984*.
71. François, *Deutsch-Südwestafrika*, 102. See also *Deutsche Kolonialzeitung*, "Koloniale Aufgaben in Südwestafrika," 17 August 1895 (Dove). Early on, drilling expert Conradt writes about problems when dealing with sand constantly filling up boreholes. Conradt, *Erinnerungen aus zwanzigjährigem Händler- und Framerleben in Deutsch-Südwestafrika*, 65.
72. "Bemerkungen zu der Karte der von Hauptmann v. François und Lieutenant v. François gemachten Aufnahmen in dem deutsch-südwestafrikanischen Schutzgebiete," in *Mittheilungen von Forschungsreisenden und Gelehrten aus den deutschen Schutzgebieten*, ed. Freiherrn von Danckelman, 72–73, here 73 (Berlin, 1892).
73. von François, *Nama und Damara*, 29.
74. "Bericht des Hauptmanns v. François über eine Reise zwischen Windhoek und Gobabis," in Danckelman, *Mittheilungen von Forschungsreisenden und Gelehrten aus den deutschen Schutzgebieten*, 97–100, here 98.
75. Schneider, "Bewässerungswirtschaft in Namibia und ihre Grundlagen in der Kolonialzeit," 123.
76. François, *Nama und Damara*, 39.
77. *Deutsches Kolonialblatt*, 1893, 363, as referenced in Uwe-Ulrich Jäschke, "Wasserschließung und Wassermanagement in der Deutschen Period," *Namibia Wissenschaftliche Gesellschaft/ Namibia Scientific Society* 44 (1993/94), here 71. See also Karl Dove, *Über meteorologische und verwandte Beobachtungen in Südwestafrika* (Berlin: Sittenfeld, 1893); Karl Dove, *Südwest-Afrika: Kriegs und Friedensbilder aus der ersten Deutschen Kolonie*, 2nd ed. (Berlin, 1896), 1.
78. Karl Dove, "Beiträge zur Geographie von Südwest-Afrika, Fortsetzung," *Petermanns geographische Mittheilungen* no. 41 (1895): 92–96, here 93. See also Karl Dove, "Deutsch-Südwest Afrika: Ergebnisse einer wissenschaftlichen Reise im südlichen Damara-Lande," *Petermanns geographische Mittheilungen* (Ergänzungsheft), 1896; BArch-B, R 1001/1502, Geographie und Kartographie.
79. Schwabe, *Mit Schwert und Pflug*, 367. Traveler, writer, and farmer Joachim Pfeil agreed. Schwabe, *Mit Schwert und Pflug*, 368.
80. *Deutsche Kolonialzeitung*, "Koloniale Aufgaben in Südwestafrika," 10 August 1895 (Dove).
81. *Deutsche Kolonialzeitung*, "Deutsche Kolonie Stolzenfels am Oranjeßuß," 15 June 1887.
82. *Deutsches Kolonialblatt*, "Wasserbeschaffung in Südwest-Afrika," 15 March 1891. See also *Deutsche Kolonialzeitung*, "Ueber die Entwicklung des Südlichen Theils Südwestafrikas," 7 February 1891; Jäschke, "Wasserschließung und Wassermanagement in der Deutschen Period," 70.
83. *Deutsche Kolonialzeitung*, "Deutsche Kolonie Stolzenfels am Oranjeßuß," 15 June 1887 (Büttner). See also Schneider, "Bewässerungswirtschaft in Namibia und ihre Grundlagen in der Kolonialzeit," 118.
84. *Windhoeker Anzeiger*, "Ein Ersatz für die Pumpe im Farmbetrieb," 2 March 1899 (Schlettwein).

85. *Windhoeker Anzeiger*, "Locale Nachrichten," 24 November 1898.
86. *Deutsches Kolonialblatt*, "Wasserbeschaffung in Südwest-Afrika," 15 March 1891. Dominikus showed Consul Goering future investments possibilities in July 1890. See *Deutsche Kolonialzeitung*, "Mitteilungen aus der Gesellschaft," 21 June and 4 October 1890.
87. Petersen 1889, 90–92, as reference Schneider, "Bewässerungslandwirtschaft in Namibia und ihre Grundlagen in der Kolonialzeit," 119–20.
88. Imp. Col. Off. File 2100, 101, Leutwein to Hohenlohen-Schillingsfürst, 13 Dec. 1894, as quoted in Drechsler, "Let Us Die Fighting," 85.
89. Imp. Col. Off. File No. 1566, 39–46, Leutwein to Hohenlohen-Schillingsfürst, 2 April 1895, as quoted in Drechsler, "Let Us Die Fighting," 83.
90. Sander, *Ein Vorschlag zur wirtschaftlichen Erschließung Deutsch-Südwestafrikas* (Berlin, 1895), 1.
91. *Ibid.*
92. *Ibid.*, 8.
93. *Deutsches Kolonialblatt*, "Brunnenbau in Südwestafrika," 1 September 1898.
94. Sander, *Ein Vorschlag zur wirtschaftlichen Erschließung*, 11 and 13. He favored *Fangdämme* coffer dams. Sander, *Ein Vorschlag zur wirtschaftlichen Erschließung*, 2.
95. Sander, *Ein Vorschlag zur wirtschaftlichen Erschließung*, 10.
96. Georg Hartmann, *Deutsch-Südwestafrika im Zusammenhang mit Süd-Afrika* (Berlin, 1899), 9. See also "Hartmann, Georg," 41, *Deutsches Kolonial-Lexikon, II*; Georg Hartmann, *Meine Expedition 1900 ins nördliche Kaokofeld und 1901 durch das Amboland* (Berlin, 1903).
97. Seidel, *Deutschlands erste Kolonie*, 21. See also Hartmann, *Deutsch-Südwestafrika im Zusammenhang mit Süd-Afrika*, 11.
98. *Deutsche Kolonialzeitung*, "Künstliche Bewässerung in Südwestafrika," 17 August 1895.
99. *Deutsche Kolonialblatt*, "Deutsch-Südwestafrika. Künstliche Bewässerung," 1 March 1896.
100. Jahresbericht 1896/1897, 119, as referenced in Jäschke, "Wassererschließung und Wassermanagement in der Deutschen Periode," 72.
101. Busse, "Kolonialwirtschaftliches Komitee," 346, in *Deutsches Koloniallexikon II*. See also Laak, *Imperiale Infrastruktur*, 122–23. By 1902, the Committee turned into an advising body of the German Colonial Society.
102. Theodor Rehbock, *Deutsch-Südwest-Afrika: Seine wirtschaftliche Erschließung* (Berlin, 1898), IX.
103. BA Abt. Berlin-Lichterfelde, Deutsche Kolonialgesellschaft, R 8023 Nr. 249 Bl 1–12: Bericht über Vorstandssitzung vom 3. Dez. 1896, as referenced in Laak, *Imperiale Infrastruktur*, 116. Support also came from the Siedlungsgesellschaft settlement society. See Ernst Vohsen, *Denkschrift über die bisherige Thätigkeit der Siedlungsgesellschaft für Deutsch-Südwestafrika* (Berlin, 1902), 13.
104. *Deutsche Kolonialzeitung*, "Das Syndikat für Bewässerungsanlagen in Südwestafrika," 13 March 1897 (Bauer). See also Sander, *Ein Vorschlag zur wirtschaftlichen Erschließung*, 5.
105. *Deutsche Kolonialzeitung*, "Der Landbau in Südwestafrika," 8 August 1896 (Sander).

106. *Badische Presse*, “Zum 75. Geburtstag und 40-jährigen Dozenten Jubiläum: Ein Pionier des Wasserbaues wird geehrt,” 15 April 1939. See also *Deutsche Kolonialzeitung*, “Pioniere der deutschen Kolonialpolitik,” 11 January 1900; *Karlsruher Journal: Wegweiser durch Karlsruhe—Chronik*, “Vor 50 Jahren gestorben: Theodor Rehbock war ein Pionier des Wasserbaus,” as accessible in KIT, Nachlass, 27025, 385.
107. Peter Larsen, “Theodor Rehbock,” 224–27, in *Badische Biographien Neue Folge, Band IV*, ed. Bernd Ottnad (Stuttgart, 1996); Institut für Wasserwirtschaft und Kulturtechnik, ed., “100 Jahre Forschung im Wasserbau—das Vermächtnis von Theodor Rehbock,” Festschrift zur Jubiläumsveranstaltung 5./6. Oktober 2000 (Karlsruhe, 2001); Helmut H. G. Müller, “Theodor Rehbock: Ein Leben für den Wasserbau,” 157–76, in *Heimatbuch Landkreis Raststatt* 36 (1997); A. P. Larsen and H.H. Bernhart, “Theodor Rehbock, 1856–1950,” in *Hydraulics and Hydraulic Research: A Historical Review*, ed. Günther Garbrecht (Boston, 1987), 281–91.
108. Geographer Ferdinand von Richthofen (1833–1905) seemed to have recommended him. Retrieved 3 April 2021 from https://www.leo-bw.de/web/guest/detail/-/Detail/details/PERSON/kgl_biographien/11752140X/biografie.
109. KIT, 27025, 18, Kolonialsachen. Beschreibung der Reise-Etappe Southampton Congo Caves-Swakopmund 19.09.1896–12.10.1896 (Afrika I, 23. August 1896). See also Theodor Rehbock, “Reisebilder aus Deutsch-Süd-West-Afrika. Vortrag,” in *Verhandlungen der Abteilung Berlin-Charlottenburg 1897/98*, ed. Deutsche Kolonialgesellschaft, 1–38, here 11 (Berlin, 1898).
110. KIT, 27025, 18, Kolonialsachen. Beschreibung der Reise-Etappe Southampton Congo Caves-Swakopmund 19.09.1896–12.10.1896 (Afrika I, 23. August 1896). See also Rehbock, “Reisebilder aus Deutsch-Süd-West-Afrika,” 4.
111. KIT, 27025, 18, Kolonialsachen. Beschreibung der Reise-Etappe Southampton Congo Caves-Swakopmund 19.09.1896–12.10.1896 (Afrika I, 9. September 1896).
112. *Ibid.*, (Afrika II, 10. Oktober 1896).
113. Rehbock, “Reisebilder aus Deutsch-Süd-West-Afrika,” 8–11.
114. *Ibid.*, 15.
115. *Ibid.*, 16.
116. KIT 27025, 2, Personalia. Liste der empfangenen Auszeichnungen, diverse Lebensläufe, 1892–1946 (Lebenslauf von Professor Theodor Rehbock).
117. Rehbock, “Reisebilder aus Deutsch-Süd-West-Afrika,” 16 and 20.
118. *Ibid.*, 34.
119. *Ibid.*, 26.
120. *Ibid.*, 29–30.
121. *Windhoeker Anzeiger*, “Die Dammanlage bei Marienthal,” 11 April 1900. See also Schöllnbach, *Besiedelung Deutsch-Südwestafrikas bis zum Weltkriege*, 59. The dam of Farmer Brandt in Marienthal, District Gibeon, became a repeated reference point. See Schöllnbach, *Besiedelung Deutsch-Südwestafrikas bis zum Weltkriege*, 60.
122. *Der Tropenpflanzer* I, no. 5, “Stauanlagen in Südwestafrika,” May 1897. See also *Illustrierte Beilage zur Deutschen Kolonialzeitung*, “Bilder aus Südwestafrika,” 26 January 1899; *Illustrierte Beilage zur Deutschen Kolonialzeitung*, “Wasser in Südwestafrika,” 30 March 1899 (KD); *Windhoeker Anzeiger*, “Die Stauanlagen bei Windhoek,” 3 August 1900; *Der Tropenpflanzer* II, no. 3, “Die deutsch-afrikanischen Schutzgebiete im

- Jahre 1896/97," March 1898; Vohsen, *Denkschrift über die bisherige Thätigkeit der Siedlungsgesellschaft für Deutsch-Südwestafrika*, 2.
123. *Windhoeker Anzeiger*, "Die Dammanalage bei Marienthal," 11 April 1900. See also *Windhoeker Anzeiger*, "Noch einmal Hatsamas," 31 January 1901; *Windhoeker Anzeiger*, "Hatsamas," 25 April 1901; *Windhoeker Anzeiger*, "Die Stauanlage im Lichte süd-afrikanischer Verhältnisse," 18 July 1901.
124. *Windhoeker Anzeiger*, "Windhoeker Brief," 17 January 1900.
125. Schwabe, *Mit Schwert und Pflug*, 415.
126. Ferdinand Gessert, "Zur Aufforstungsfrage in Südwestafrika," *Globus* 85 (1904), 134–36, as quoted in Siiskonen, "The Concept of Climate Improvement," 294. See also KIT, 27025, 32, (*Zeitschrift für Kolonialpolitik, Kolonialrecht und Kolonialwirtschaft, Sonderabdruck*, "Die mutmasslichen klimatischen Folgen einer Kunene-Ableitung," von Ferdinand Gessert, Deutsch-Südwestafrika). Gessert published widely in the magazine *Der Tropenpflanzer*.
127. Johannes Semler, *Meine Beobachtungen in Südwestafrika Tagebuchnotizen und Schlußfolgerungen* (Hamburg, 1906), as quoted in Sigrid Kube, "Hier könnten wogende Weizenfelder blühen . . . Farm Sandverhaar bei Goageb," 60–67, here 60–62, in Becker and Hecker, 1884–1984. See also Schneider, "Bewässerungsländwirtschaft in Namibia und ihre Grundlagen in der Kolonialzeit," 137.
128. Rehbock, "Reisebilder aus Deutsch-Süd-West-Afrika," 30.
129. *Ibid.*, 5. He would equally comment on the use of service water for railways. Rehbock, "Reisebilder aus Deutsch-Süd-West-Afrika," 6.
130. Rehbock, "Reisebilder aus Deutsch-Süd-West-Afrika," 5.
131. *Ibid.*, 32.
132. *Ibid.*, 33.
133. *Ibid.*, 34.
134. *Deutsche Kolonialzeitung*, "Deutsch-Südwestafrika," 11 December 1897.
135. *Deutsche Kolonialzeitung*, "Die Anlage einer landwirtschaftlichen Kolonie in Deutsch-Südwestafrika," 25 August 1898 (Sander). See also *Deutsche Kolonialzeitung*, "Die Besiedelung Deutsch-Südwestafrikas, I–III," 20 September 1900/ 27 September 1900, and 4 October 1900 (Rehbock); *Deutsche Kolonialzeitung*, "Die Anlage einer landwirtschaftlichen Kolonie bei Hatsamas," 1 September 1898 (Rehbock).
136. *Globus: Illustrierte Zeitschrift für Länder- und Völkerkunde*, "Die wirtschaftliche Erschliessung Deutsch-Südwest-Afrikas," 25 February 1899.
137. Rehbock, *Deutsch-Südwest-Afrika*.
138. *Deutsche Kolonialzeitung*, "Bilder vom deutschen Ufer des Oranjeflusses," 28 September 1899 (Rehbock). The Syndicate also published materials in support of Rehbock. Syndikat für Bewässerungsanlagen in Deutsch-Südwest-Afrika, ed., *Die Landwirtschaftliche Kolonie bei Hatsamas in Deutsch-Südwest-Afrika* (Berlin, 1899); Syndikat für Bewässerungsanlagen in Deutsch-Südwest-Afrika, ed., *Die Landwirtschaftliche Kolonie bei Hatsamas in Deutsch-Südwest-Afrika*, II (Berlin, 1899).
139. *Deutsche Kolonialzeitung*, "Deutschlands Aufgaben in Südwestafrika," 13 September 1900 (Rehbock). Reviews of his work appeared widely. See *Petermanns geographische Mitteilungen*, no. 45 (1899), 122.
140. Theodor Rehbock, "Vorwort," IV, in Alexander Kuhn, *Bericht über die von der Deutschen Kolonialgesellschaft dem Kolonial-Wirtschaftlichen Komitee übertragene Fischflus-*

- Expedition. Reisen und Arbeiten in Deutsch-Südwestafrika im Jahre 1903* (Berlin, 1904). See also Alexander Kuhn, "Die Fischfluss Expedition," in *Beiheft zum Tropenpflanzer* V, no. 3 and 4 (June 1904).
141. Rehbock, "Vorwort," IV, in *Die Fischfluss-Expedition*.
 142. Kaulich, *Die Geschichte der ehemaligen Kolonie Deutsch-Südwestafrika*, 436. See also Otto Wipplinger, "Grenzen des Wachstums? Die Wasserversorgung eines Wüstenlandes," in Becker and Hecker, *1884–1984*, 80–86, here 82.
 143. James C. Watermeyer, *Deutsch-Südwest-Afrika: Seine landwirtschaftlichen Verhältnisse* (Berlin, 1898), 24. See also James C. Watermeyer, "Notes on a Journey in German South-West Africa," *Transactions of the South African Philosophical* XI, part 1 (1900), 19–33.
 144. Watermeyer, *Deutsch-Südwest-Afrika*, 13–14.
 145. *Ibid.*, 5.
 146. Karl Dove, "Südwestafrika in wirtschafts-geographischer Hinsicht," in Schwabe, *Mit Schwert und Pflug*, 374–83, here 378–79. Schwabe agreed with these sentiments. *Ibid.*, 391–93. See also Karl Dove, *Deutsch-Südwest-Afrika* (Berlin, 1903), 65.
 147. *Der Tropenpflanzer* III, no. 3, "Böden aus Deutsch-Südwestafrika," March 1899 (Wohltmann).
 148. *Der Tropenpflanzer* VII, no. 2, "Die wirtschaftliche Entwicklung unserer Kolonie," February 1903.
 149. *Deutsche Kolonialzeitung*, "Die Besiedelung Deutsch-Südwestafrikas, III" 4 October 1900 (Rehbock).
 150. Kuhn, *Bericht über die von der Deutschen Kolonialgesellschaft dem Kolonial-Wirtschaftlichen Komitee übertragene Fischfluss-Expedition*, 12. See also A. Schenck, "Kleinere Mitteilungen: Bewässerungsanlagen und landwirtschaftliche Kolonien in Deutsch-Südwestafrika," *Geographische Zeitschrift* 5, no 12 (1899), 706–8.
 151. *Deutsche Kolonialzeitung*, "Zur Anlage einer landwirtschaftlichen Kolonie in Südwestafrika." 25 August 1898 (Sander).
 152. NAN, ZBU, 1402 P.III.F.2 Hatsamasprojekt, 1896–1899, Rehbock, Die Landwirtschaftliche Kolonie bei Hatsamas in Deutsch-Südwest-Afrika, 10 February 1899.
 153. *Deutsche Kolonialzeitung*, "Zur Wasserversorgung Südwestafrikas," 24 July 1902 (Hermann). See also *Deutsche Kolonialzeitung*, "Der untere Lauf des Oranjefflusses," 15 March 1900 (Hermann); Schneider, "Bewässerungslandwirtschaft in Namibia und ihre Grundlagen in der Kolonialzeit," 120. For other criticisms, see *Deutsche Kolonialzeitung*, "Zur Besiedlungsfrage von Deutsch-Südwestafrika," 10 January 1901 (Stephan).
 154. Ernst Hermann, *Viehztucht und Bodenkultur in Südwestafrika. Ratgeber für Auswanderer* (Berlin, 1900), 71–73.
 155. Franz Giesenbrecht, ed., *Die Behandlung der Eingeborenen in den deutschen Kolonien: Ein Sammelwerk* (Berlin, 1898), 121.
 156. *Deutsche Kolonialzeitung*, "Deutschlands Aufgabe in Südwestafrika," 13 September 1900 (Rehbock); *Deutsche Kolonialzeitung*, "Die Besiedelung Deutsch-Südwestafrikas, I–III," 20 September 1900/ 27 September 1900, and 4 October 1900 (Rehbock). See also *Deutsche Kolonialzeitung*, "Südwestafrika," 27 December 1900 (Dove).
 157. *Deutsche Kolonialzeitung*, "Die Anlage einer landwirtschaftlichen Kolonie bei Hatsamas," 1 September 1898 (Rehbock); *Deutsche Kolonialzeitung*, "Die Staudämme des südlichen Namalandes," 14 June 1900 (Rehbock).

158. *Deutsche Kolonialzeitung*, “Landbau in Deutsch-Südwestafrika,” 25 July 1901.
159. Kuhn, *Bericht über die von der Deutschen Kolonialgesellschaft dem Kolonial-Wirtschaftlichen Komitee übertragene Fischfluss-Expedition*, 12. See also NAN, ZBU, 1403, P. III. F.7 Kuhn’sche Fischfluss Expedition (1902–05); *Der Tropenpflanzer* (June 1904).
160. KIT, 27025, 21, Kolonialsachen. Korrespondenz betr. die Erschließung Deutsch-Südwestafrikas, 1894–1900 (Band I, Brief Ernst Vohsen, 29. November 1899). See also Kuhn, *Bericht über die von der Deutschen Kolonialgesellschaft dem Kolonial-Wirtschaftlichen Komitee übertragene Fischfluss-Expedition*, 2.
161. Vohsen, *Denkschrift über die bisherige Thätigkeit der Siedlungsgesellschaft für Deutsch-Südwestafrika*, 14. The governor also worried about precipitation, locusts, fungus, and frost.
162. KIT, 27025, 21, Kolonialsachen. Korrespondenz betr. die Erschließung Deutsch-Südwestafrikas, 1894–1900 (Band I, Auszug vom 27. Februar 1900). See also *Deutsche Kolonialzeitung*, “Südwestafrika: Warnung vor Entsendung unbemittelter Ansiedler,” 15 January 1903 and 22 January 1903.
163. Kuhn, *Bericht über die von der Deutschen Kolonialgesellschaft dem Kolonial-Wirtschaftlichen Komitee übertragene Fischfluss-Expedition*, 1–2.
164. *Deutsches Kolonialblatt*, “Deutsch-Südwestafrika: Bohrungen mit dem Diamantkronenbohrer,” 1 June 1899.
165. KIT, 27025, 22, Kolonialsachen, Korrespondenz betr. Erschliessung Deutsch-Südwestafrikas, 1901–1918 (29 July 1901).
166. KIT, 27025, 21, Kolonialsachen. Korrespondenz betr. die Erschließung Deutsch-Südwestafrikas, 1894–1900 (Band I, 24 April 1900, Brief Vohsen an Rehbock). Government and syndicate split the bill.
167. BArch-B, R 1002/1066, Alexander Kuhn, Personal-Nachweisung. See also BArch-B, R 1001/1472, Fischflußexpedition des Ingenieurs Alexander Kuhn.
168. Little is known about Skutari (Scutari). He had previously worked for the Holzmann company and later tried to plant cotton in German East Africa. Keller, “Die Aufgabe der Technik in den deutschen Kolonien,” *Zeitschrift für Kolonialpolitik, Kolonialrecht und Kolonialwirtschaft* VI, no. 2 (1904); Moritz Schanz, “Die Baumwolle in den Vereinigten Staaten von Amerika,” *Beiheft zum Tropenpflanzer* XII, no. 3 (1908), 164–65.
169. KIT, 27025, 22, Kolonialsachen. Korrespondenz betr. Erschliessung Deutsch-Südwestafrikas 1901–1918 (18 January 1901, Brief Vohsen). See also KIT, 27025, 22, Korrespondenz betr. Erschliessung Deutsch-Südwestafrikas, 1901–1918 (Instruktion, Rehbock, 10 February 1899); NAN, ZUB, 1402 P.III.F.2 (vol. 2), Hatsamasprojekte, 1899–1908, Instruktion.
170. KIT, 27025, 22, Kolonialsachen. Korrespondenz betr. Erschliessung Deutsch-Südwestafrikas, 1901–1918, 27025, 22 (18 January 1901, Brief Vohsen). See also *Deutsche Kolonialzeitung*, “Rundschau: Südwestafrika,” 2 May 1901.
171. Kuhn, *Bericht über die von der Deutschen Kolonialgesellschaft dem Kolonial-Wirtschaftlichen Komitee übertragene Fischfluss-Expedition*, 2.
172. Rehbock, V, “Vorwort,” in *Bericht über die von der Deutschen Kolonialgesellschaft dem Kolonial-Wirtschaftlichen Komitee übertragene Fischfluss-Expedition*.
173. KIT, 27025, 22, Kolonialsachen. Korrespondenz betr. Erschliessung Deutsch-Südwestafrikas 1901–1918 (18 January 1901, Brief Vohsen). See also Kuhn, *Bericht über die von*

der Deutschen Kolonialgesellschaft dem Kolonial-Wirtschaftlichen Komitee übertragene Fischfluss-Expedition, 2.

174. *Deutsche Kolonialzeitung*, "Wasser in Südwestafrika," 30 March 1899 (Dove).
175. KIT, 27025, 22, Kolonialsachen. Korrespondenz betr. Erschliessung Deutsch-Südwestafrikas, 1901–1918 (Bericht 24 April 1901, Brief Kuhn an Vohsen).
176. KIT, 27025, 22, Kolonialsachen. Korrespondenz betr. Erschliessung Deutsch-Südwestafrikas, 1901–1918 (Bericht 24 April 1901, Brief Kuhn an Vohsen).
177. *Ibid.*, (22 June 1901, Brief Kuhn an Vohsen). See also KIT, 27025, 22, Kolonialsachen. Korrespondenz betr. Erschliessung Deutsch-Südwestafrikas, 1901–1918 (4 July 1901, Brief Kuhn an Rehbock).
178. KIT, 27025, 22, Kolonialsachen. Korrespondenz betr. Erschliessung Deutsch-Südwestafrikas, 1901–1918, (23 May 1901, Brief Kuhn an Vohsen).
179. *Ibid.*, (22 June 1901, Brief Kuhn an Vohsen).
180. *Ibid.* Logistical issues due to a lack of tools and workers limited his abilities to survey the area at the Naauwte in a meaningful way. KIT, 27025, 22, Kolonialsachen. Korrespondenz betr. Erschliessung Deutsch-Südwestafrikas, 1901–1918 (29 July 1901, Brief Kuhn an Vohsen). Vohsen wrote to Rehbock 19 September 1901 outlining that Kuhn seems convinced that the Naute project is feasible. KIT, 27025, 22, Kolonialsachen. Korrespondenz betr. Erschliessung Deutsch-Südwestafrikas, 1901–1918, (19 September 1901, Brief Vohsen an Rehbock).
181. KIT, 27025, 22, Kolonialsachen. Korrespondenz betr. Erschliessung Deutsch-Südwestafrikas, 1901–1918, (22 June 1901, Brief Kuhn an Vohsen).
182. *Ibid.*, (4 July 1901, Brief Kuhn an Rehbock).
183. August Fitzau, "Geographische Neuigkeiten: Bericht über die Fischflußexpedition," *Geographische Zeitschrift* XI (1905), 410.
184. Kuhn, *Bericht über die im Jahre 1901 nach Deutsch-Südwestafrika entsendete technische Studien-Expedition für Bewässerungs-Anlagen* (Berlin, 1904), 5. See also Kuhn, *Bericht über die von der Deutschen Kolonialgesellschaft dem Kolonial-Wirtschaftlichen Komitee übertragene Fischfluss-Expedition*, 2–5; BArch-B, R 151, Stau- und Grunddämme (microfilm roll 83002).
185. Kuhn, *Bericht über die im Jahre 1901 nach Deutsch-Südwestafrika entsendete technische Studien-Expedition für Bewässerungs-Anlagen*, 9.
186. *Ibid.*, 8. See also Vohsen, *Denkschrift über die bisherige Thätigkeit der Siedlungsgesellschaft für Deutsch-Südwestafrika*, 15.
187. Kuhn, *Bericht über die im Jahre 1901 nach Deutsch-Südwestafrika entsendete technische Studien-Expedition für Bewässerungs-Anlagen*, 9. See also Kuhn, *Bericht über die von der Deutschen Kolonialgesellschaft dem Kolonial-Wirtschaftlichen Komitee übertragene Fischfluss-Expedition* 5.
188. Kuhn, *Bericht über die im Jahre 1901 nach Deutsch-Südwestafrika entsendete technische Studien-Expedition für Bewässerungs-Anlagen*, 19
189. KIT, 27025, 22, Kolonialsachen. Korrespondenz betr. Erschliessung Deutsch-Südwestafrikas, 1901–1918 (19 November 1901, Brief Rehbock an Vohsen).
190. NAN, ZBU, 1403, P. III. F:7 Kuhn'sche Fischfluss Expedition (1902–05), Verhandlungen des Arbeitsausschusses vom 30. Oktober 1902. Georg Hartmann and Farmer Gustav Voigts had been present during the meeting. See also Kuhn, *Bericht über die von*

- der Deutschen Kolonialgesellschaft dem Kolonial-Wirtschaftlichen Komitee übertragene Fischfluss-Expedition*, 2; Jäschke, "Wassererschließung und Wassermanagement in der Deutschen Period," 74.
191. Golinelli was that official. Kuhn, *Bericht über die von der Deutschen Kolonialgesellschaft dem Kolonial-Wirtschaftlichen Komitee übertragene Fischfluss-Expedition*, 92.
 192. Kuhn, *Bericht über die von der Deutschen Kolonialgesellschaft dem Kolonial-Wirtschaftlichen Komitee übertragene Fischfluss-Expedition*, 92. See also *Deutsch-Südwestafrikanische Zeitung*, "Aus dem Schutzgebiet: Fischfluss-Expedition," 1 January 1903; Jäschke, "Wassererschließung und Wassermanagement in der Deutschen Period," 74.
 193. *Deutsche Kolonialzeitung*, "Kolonial-Wirtschaftliches Komitee," 13 November 1902. See also *Globus*, "Kleine Nachrichten," 8 January 1903; *Globus: Illustrierte Zeitschrift für Länder- und Völkerkunde*, "Kleine Nachrichten," 2 July 1903; *Globus*, "Deutsch-Südwestafrika im Jahre 1903," 1 April 1904 (Seidel). Kuhn also communicated with Vohsen and Rehbock. See KIT, 27025, 22, Kolonialsachen. Korrespondenz betr. Erschliessung Deutsch-Südwestafrikas, 1901–1918 (10 July 1903, Brief Kuhn an Vohsen; 5 September 1903, Brief Kuhn an Rehbock).
 194. Kuhn, *Bericht über die von der Deutschen Kolonialgesellschaft dem Kolonial-Wirtschaftlichen Komitee übertragene Fischfluss-Expedition*, 10.
 195. *Ibid.*, 31. Efforts to cultivate alfalfa go back to the mid-1890s. See also *Deutsches Kolonialblatt*, "Anbauversuche mit Luzerne," 1 November 1895.
 196. Kuhn, *Bericht über die von der Deutschen Kolonialgesellschaft dem Kolonial-Wirtschaftlichen Komitee übertragene Fischfluss-Expedition*, 37–38.
 197. *Ibid.*, 51.
 198. *Ibid.* See also Jahresbericht 1902/03 and 1903/04 based on Jäschke, "Wassererschließung und Wassermanagement in der Deutschen Period," 75.
 199. Kuhn, *Bericht über die von der Deutschen Kolonialgesellschaft dem Kolonial-Wirtschaftlichen Komitee übertragene Fischfluss-Expedition*, 54.
 200. *Ibid.*, 62–63.
 201. Paul Rohrbach, *Deutsche Kolonialwirtschaft, I, Südwest-Afrika* (Berlin-Schöneberg, 1907), 479.
 202. BArch-B, R 1001/1472 Fischflußexpedition des Ingenieurs Alexander Kuhn (Brief 7 April 1903, Kuhn an Kolonial-Wirtschaftliches Komitee).
 203. Kuhn, *Bericht über die von der Deutschen Kolonialgesellschaft dem Kolonial-Wirtschaftlichen Komitee übertragene Fischfluss-Expedition*, 39.
 204. *Ibid.*, 98.
 205. *Ibid.*, 108.
 206. BArch-B, R 1001/1472, Fischflussexpedition des Ingenieurs Alexander Kuhn (Kuhn, "Aphoristische Gedanken").
 207. Siiskonen, "The Concept of Climate Improvement," 291.
 208. See *Deutsche Kolonialzeitung*, "Zur Bewirtschaftung Südwest-Afrikas," 11 February, 18 August, and 25 August 1888 (Pechuel-Loesche); *Deutsche Kolonialzeitung*, "Zur Bewirtschaftung Südwest-Afrikas, Fortsetzung," 18 August 1888 (Pechuel-Loesche).
 209. Siiskonen, "The Concept of Climate Improvement," 289.
 210. Kuhn, *Bericht über die von der Deutschen Kolonialgesellschaft dem Kolonial-Wirtschaftlichen Komitee übertragene Fischfluss-Expedition*, 109–12.
 211. *Ibid.*, 114.

212. Lehmann, "Between Waterberg and Sandveld," 542–43, Kaulich, *Die Geschichte der ehemaligen Kolonie Deutsch-Südwestafrika*, 437.
213. Paul Range, "Zur Wasserwirtschaft in Deutsch-Südwestafrika," 133–47, here 133, in *Beiträge zur Kolonialforschung*, Band V, ed. Günter Wolff (Berlin, 1943). See also *Deutsches Kolonialblatt*, "Deutsch-Südwestafrika. Anmeldungen auf Wasserbohrungen," 1 April 1901; *Deutsche Kolonialzeitung*, "Die Wasserversorgung Deutsch-Südwestafrikas," 19 September 1901; *Deutsche Kolonialzeitung*, "Deutsch-Südwestafrika: Bohrkolonne," 10 July 1902; Paul Range, "Wassererschließung in den Trockengebieten der deutschen afrikanischen Schutzgebiete," *Tropenpflanzer* 43 (1940), 1–7, here 4. *Deutsch-Südwestafrikanische Zeitung*, "Bohrkolonne nach Deutsch-Südwestafrika," 22 January 1902.
214. Kaulich, *Die Geschichte der ehemaligen Kolonie Deutsch-Südwestafrika*, 437.
215. BArch-B, R 1001/1200, Kaiserliches Gouvernement Windhoek, Bericht 30 September 1903 See also Bley, *South-West Africa under German Rule*, 133.
216. Ousago and Erichsen, *The Kaiser's Holocaust*, 111; Schöllnbach, *Die Besiedelung Deutsch-Südwestafrikas bis zum Weltkriege*, 62. It appears that Schöllnbach is referencing Lotz here. See also *Deutsche Kolonialzeitung*, "Erwiderung: Zur Wasserversorgung in Deutsch-Südwestafrika," 30 April 1903.
217. KIT, 27025, 32, Kolonialsachen. Box mit 59 Veröffentlichungen Dritter zu Fragen der Erschliessung insbes. Deutsch-Südwestafrikas sowie Geschäftsberichte von Kolonialgesellschaften (Jahresbericht der Deutschen Kolonialgesellschaft 1904).
218. KIT, 27025, 22, Kolonialsachen. Korrespondenz betr. Erschliessung Deutsch-Südwestafrikas, 1901–1918 (24 January 1904, Brief Kuhn an Rehbock).
219. Jahresbericht 1903/04, 79, reference in "Wassererschließung und Wassermanagement in der Deutschen Period," 75.
220. BArch-B, R 1001/ 1472 Fischflußexpedition des Ingenieurs Alexander Kuhn (Brief, Kuhn, 15 January 1904).
221. KIT, 27025, 22, Kolonialsachen. Korrespondenz betr. Erschliessung Deutsch-Südwestafrikas, 1901–1918 (24 January 1904, Brief Kuhn an Rehbock).
222. *Ibid.*, (25 January 1904, Brief Rehbock an Kuhn).
223. *Ibid.*, (see, for instance, 4 March 1904, Brief Rehbock).
224. *Deutsche Kolonialzeitung*, "Zur Frage der Wassererschliessung in Deutsch-Südwestafrika," 23 October 1904 (Rehbock); *Deutsche Kolonialzeitung*, "Bewässerungsanlagen in Deutsch-Südwestafrika," 15 September, 22 September, and 29 September, 1906 (Rehbock); *Der Tropenpflanzer* IX, no 7, "Wassernutzung in subtropischen Ländern," July 1905 (Rehbock); *Deutsche Kolonialzeitung*, "Zur Frage der Wassererschliessung in Deutsch-Südwestafrika," 2 February 1905 (Kuhn). See also Schneider, "Bewässerungslandwirtschaft in Namibia und ihre Grundlagen in der Kolonialzeit," 141–43.
225. Carl Schlettwein, "Ackerbau in Südwestafrika. Contra Rehbock," *Zeitschrift für Kolonialpolitik, Kolonialrecht und Kolonialwirtschaft* VI, no. 11 (November 1904); Carl Schlettwein, "Ackerbau in Deutsch-Südwestafrika," *Zeitschrift für Kolonialpolitik, Kolonialrecht und Kolonialwirtschaft* VI, no. 7 (July 1904); Gustav Voigts, "Einige Bemerkungen über Alexander von Kuhns Bericht 'Fischfluß-Expedition' und zu der Frage der Ursachen des Hereroaufstandes," *Zeitschrift für Kolonialpolitik, Kolonialrecht und Kolonialwirtschaft* VI, no. 10 (October 1904). In 1904–5 broader debates took place primarily in the *Deutsche Kolonialzeitung*.

226. *Deutsche Kolonialzeitung*, “J.C. Watermeyer †,” 25 February 1904 (Rehbock).
227. BArch-B, R 1002/1066, Alexander Kuhn, Vertrag 30 April 1904.
228. BArch-B, R 1002/1066, Alexander Kuhn, Brief 25 February 1905. See also BAarch-B, R 1002/1066, Alexander Kuhn, Vertrag 28 February 1905.
229. *Deutsches Kolonialblatt*, “Personal-Nachrichten. Nachruf,” 1 March 1906.
230. KIT, 27025, 22, Kolonialsachen. Korrespondenz betr. Erschliessung Deutsch-Südwestafrikas, 1901–1918 (23 May 1901, Brief Kuhn an Vohsen).
231. Alexander Kuhn, *Zum Eingeborenenproblem in Deutsch-Südwestafrika: ein Ruf an Deutschlands Frauen* (Berlin, 1905), 38.
232. BArch-B, R 1002/1066, Alexander Kuhn, Brief 19 May 1905. See also *Deutsch-Südwestafrikanische Zeitung*, “Aus dem Schutzgebiet,” 31 January 1906; *Deutsches Kolonialblatt*, “Personal-Nachrichten. Nachruf,” 1 March 1906.
233. *Deutsche Kolonialzeitung*, “Ingenieur Alexander Kuhn,” 10 February 1906. See also *Deutsche Kolonialzeitung*, “Alexander Kuhn †,” 3. February 1906; *Deutsches Kolonialblatt*, “Personal-Nachrichten. Nachruf,” 1 March 1906; *Native American* 9, no. 13, “Death of Alexander Kuhn,” 4 April 1908.
234. Engineer Skutari had become part of other projects, most notably the Baghdad train construction. Kuhn actually hoped to hire him—but that was not possible. BArch-B, R 1001/ 1472 Fischflußexpedition des Ingenieurs Alexander Kuhn (Brief 7 April 1903, Kuhn an Kolonial-Wirtschaftliches Komitee).
235. KIT, 27025, 22, Kolonialsachen. Korrespondenz betr. Erschliessung Deutsch-Südwestafrikas, 1901–1918 (13 November 1906, Brief Rehbock an Dernburg).
236. Alfred Hanemann, *Wirtschaftliche und politische Verhältnisse in Deutsch-Südwest-Afrika* (Berlin, 1900), 3–7.
237. Bley, *South-West-Africa under German Rule*, 133.
238. Wolfgang Uwe Eckert, *Medizin und Kolonialimperialismus: Deutschland 1884–1945* (Paderborn, 1997), 258–59.
239. *Der Tropenpflanzer* IX, no. 1, “Neujahrsgedanken 1905,” January 1905.
240. Range, “Zur Wasserwirtschaft in Deutsch-Südwestafrika,” 133, in *Beiträge zur Kolonialforschung*.



Access and Destruction

It all took place at a location the Herero refer to as “by the waterholes of Otjozongombe.”¹ A space of deep cultural meaning with fertile lands and sufficient water, its location at the edge of the Omaheke sand field also made it a relatively safe and useful spot during the war.² Here, at the Waterberg (literally water mountain), the Herero and their livestock awaited the end of the war with the Germans. General Lothar von Trotha, the commander of the colonial troops and virtual dictator of the colony following the demotion of Governor Leutwein,³ had other plans. With the support of the high military command in Berlin, and driven by a deep racial hatred that widely defined German mentalities, he was unwilling to engage in any peace negotiations. Instead, and shortly after his arrival in German Southwest Africa in June 1904, he pushed for a decisive battle in the form of encirclement.⁴ His strategy was to destroy, exterminate, annihilate the opponent. Later to formulate the war aims in the infamous *Vernichtungsbefehl* (extermination order) that called for the destruction or removal of all Herero from central Namibia, logistics disrupted his plans. The Germans had underestimated the terrain and availability of water.⁵ Supplies soon lagged behind. At times, resources awaited landing in Swakopmund for days before hauled inland on a narrow-gauge railroad. It got even more difficult once trying to move supplies beyond the reach of railway lines. In preparation for the Battle at the Waterberg (Battle of Ohamakari) that began 11 August 1904, “Everything the soldiers needed had to be transported by oxwagon,” to follow one historian, “a fact that was soon to pose serious problems for the Germans.”⁶ Isaac Magadi, an ox-driver from the Cape Colony employed by the Germans during the war, described his experiences of trekking to the battle site. “We travelled two months before we reached the scene of war, water was very scarce and we were often delayed four or five days at a time resting the oxen.”⁷ Without a railway reaching beyond Windhoek, it took German forces a remarkable three months to reach the Waterberg.⁸ Plus, sustaining soldiers required additional resources. A British observer put his finger on von Trotha’s dilemma when noting, “The more troops that are sent out, the more transport they want and the more men die.”⁹

The 1904 war exposed Germany's logistical problems. After countless small revolts, Herero and later Nama groups openly challenged the German Empire in a large-scale rebellion.¹⁰ The Germans were caught by surprise. For them, problems tied to access initially defined their response: all resources had to come through the bottlenecks in Lüderitzbucht and Swakopmund, a dynamic that put existing structures to the test. Although military leadership was generally confident, interruptions soon strained reinforcements and supplies. For one, Herero actively disrupted supply lines, especially railway tracks. Such attacks were part of their strategy to weaken German military efforts at the outset of the war. Moreover, natural forces threatened infrastructure. Flash floods in particular destroyed railways while a silting in process tied to the movement of sand along Namibia's coastline north of the Swakop River disrupted landings in Swakopmund. In line with Emmanuel Kreike's framework, chapter 5 centers environmental infrastructure as an instrument of war. Discussions again emphasize multiple agencies and broader colonial narratives. And again, this chapter moves beyond seeing nature merely as a backdrop for human actions. Instead, and in line with more recent scholarship focusing on sizeable territory, unfamiliarity with hostile climates, and unfamiliar diseases in this theater of war,¹¹ this approach incorporates the impact of the environment onto warfare. After all, to follow historian Isabel V. Hull, "the difficulties of the desert and the climate, limited options for transportation and communication, [and] the shortage of water"¹² defined warfare. Scholars long highlighted how nature helped the Herero;¹³ historian Matthias Häussler more directly underscored how logistical and on some level environmental factors shaped war and warfare, and fueled German brutality.¹⁴ Or, to follow Lehmann's more direct claim, "Environmental conditions and cultural perceptions produced the extreme violence that the German army used against the Hereros, whom many soldiers treated on par with—and as a part of—the alien environment."¹⁵

Environmental infrastructure in war, initially defined by *Mole* and *Staatsbahn*, organizes this chapter. Both structures supplied the war effort and became key to defeating the Herero. The first section focuses on this early phase of the war, highlighting the role of resistance and flash floods. Germans landed supplies in Swakopmund before putting them on railways to reach their troops. Torrents washed away train tracks as Herero attacked Germans; those waters then flushed into the Atlantic Ocean and ultimately began silting in the harbor. The second section then explores German efforts to address disruptions of their structures. Improvisation and exploitation, visible in the use of rafts, dredgers, and Herero forced labor, compensated for such breakdowns. The last section then explores the consequences of these developments. Apart from delaying operations at the Battle of Waterberg and leading at least in part to the replacement of Governor Leutwein, logistical issues helped shape colonial violence. Colonial experiences and narratives certainly speak to Ger-

man soldiers repeatedly fighting against nature *and* people, a mentality that in their view justified brutality. The use of Kreike's concept of environmental infrastructure, employed to incorporate an array of human agents *and* natural forces, to underscore entangled agencies, and to explore links between logistics and genocide, helps wrestle with such stories.

Supplying War

For the Germans the war came at an inopportune moment. When the shooting began 12 January 1904 in Okahandja, most of about seven hundred colonial soldiers were with Governor Leutwein in the south dealing with a smaller rebellion by the Bondelswarts. It would take a quick peace and about a month for him to get to Swakopmund. According to Hull, this left the "4,640 German colonialists amid an estimated sixty thousand to eighty thousand Herero."¹⁶ At the time Captain Gudewill, a local commander, painted a gruesome picture: "confirmed losses—murdered and mostly mutilated: 44 settlers, women and children; 26 [soldiers] fallen; 50 others dead."¹⁷ On 14 January, Local Windhoek District Judge Richter sent a desperate message to the German Foreign Office in Berlin. It read, "All farms in the vicinity of Windhuk plundered by the Herero. Whites living on isolated farms murdered. Situation very grave."¹⁸ Few German settlers would thus ever forget the moment when they "spotted the masts of the slim ship appear on the horizon and come towards us," to quote one newspaper later on. "What a relief," it added.¹⁹ News about the war had reached the German vessel *Habicht* in Cape Town just in time. About ready to leave South Africa following its yearly inspection, it rushed to Swakopmund instead, fully loaded with resources and supplies. "Our spirits rose after hearing that we were to be put ashore," noted one of the fifty-five seamen on board at the time.²⁰ After bringing supplies ashore using *Mole* and Kru men, the real challenge still lay ahead: protecting the vital railway route from Swakopmund to Windhoek.

German rescue expeditions quickly faced Herero resistance and flash floods. An initial effort to reach Okahandja from Windhoek under Lieutenant Voigts had to be aborted: Herero resistance had been too strong plus the only machine gun failed.²¹ A mission led by Lieutenant Zülow and railway assistant Walter Paschasius then left Swakopmund on 12 January; it reached Okahandja three days later. "The fort had not been overtaken," Paschasius wrote later on in a heroic tone, "and its occupants, mainly numerous women and children of murdered farmers and traders that had escaped here, had been saved just in time."²² The subsequent journey by sailors meant to stabilize supply lines from Swakopmund ran into bigger problems. Their way forward up to the Khan River Valley about forty kilometers inland had gone more or less according to

plan. Then the situation changed. “It had not been the 60 cm gauge, not the materials used for the train,” to reference one military bulletin later. Instead, it had been “the water situation.”²³ According to the official military report of the expedition, “The natural flow of water runoff had not been taken into account enough” during construction.²⁴ Torrential rains had ensued in flooding that now washed away dams and bridges, neither of which had been built to withstand such an onslaught. Further inland groups of Herero had also destroyed tracks and railway lines, thus further disrupting potential supplies traveling to the interior. To quote one marine, “What the blacks did not destroy the rain did.”²⁵ Josef Bendix, an engineer formerly employed at the construction of the Otavi railway line, had been called upon to rebuild “the railway that had been destroyed by downpours and the Herero,” to quote him directly.²⁶ He described what happened in several letters home. “I let the crew of sailors push one car at a time across a stretch of five kilometers by hand all in the darkest night. The machine that was last had to be left behind. Everything worked out. Nothing happened.”²⁷ Although African workers helped with such efforts they rarely showed up in colonial narratives.²⁸ Instead, tales speak of engineers going to work to repair lines and adding culverts so that water could rush under the tracks—in heavy rain and at times under heavy fire. This struggle against nature and Herero fighters defined the way forward. In several instances barely repaired segments washed out again.²⁹ All of this took time and energy, even without working in the midst of Herero attacks. The elevation did not help either. Railways had to be divided into sections to make it up the hill, a time-consuming process.³⁰ Eventually, the unit was able to rebuild certain parts before securing the railway line until Karibib. Nonetheless, problems with wash-outs continued to delay their mission, at times resulting in the locomotive derailing. After days, reinforcements for the fight against the Herero finally reached Okahandja.

Whereas colonial narratives spoke about heroic civil engineers and brave sailors overcoming both aggressors and nature to protect innocent settlers, for Herero the arrival of railways brought very different outcomes. There had been some criticism of early efforts in this colonial war in Germany at the time. The satirical magazine *Kladderdatsch*, for instance, underscored the logistical issues at hand. That magazine commented on injuries to a white man and three or four blacks as a train derailed; it sarcastically added that at least there is a train running now.³¹ For Herero, on the other hand, the railway left little room for laughter. For them, it increasingly meant destruction. Niklaas Tsam, a San born in 1914 and one of the few voices commenting on events from a non-German perspective, noted, “I understand that the Hereros tried to stop the train from going north. During this encounter, many Herero were killed by the train.”³² Moses Maharero, who shared the words of his great-grandfather, the paramount chief Samuel Maharero, noted that for the Herero “the whole

war is just coming from Swakopmund.”³³ The detailed account by one marine leaves little doubt about the orders at hand: the further inland the Germans got the less likely they took prisoners,³⁴ rolling over Herero land *and* people.³⁵

An array of reasons had resulted in the rebellion, not least of which was the overly zealous junior officer Lieutenant Ralf Zürn. Jan-Bart Gewalt convincingly argues that “the origins of the war are to be found in the interpretations and perceptions of the German settlers and missionaries, rather than those of the Herero.”³⁶ In simple terms, more and more newcomers competed for the same resources—land and water.³⁷ As outlined by much of the scholarship, settlers’ indiscriminate use of violence, especially in more remote locations and by private entities, was widespread. “A whip and sjambok,” to quote one historian, “were always to hand, and were all too often used out of misunderstanding or sudden fear by settlers surrounded by Africans on a lonely farm.”³⁸ Additionally, a shift in power structures due to the consequences of *Rinderpest* and the reach of capitalistic tentacles stretching deeper and deeper into central Namibia fueled conflicts.³⁹ That a white settler had murdered the daughter of an Herero leader only to be acquitted by a local court became just another example of everyday colonial violence. With Governor Leutwein in the south dealing with a smaller rebellion, it fell to District Administrator Ralf Zürn to defuse an increasingly tense situation. Yet the young lieutenant’s aggressive behaviors and his deep distrust of Herero eventually pushed the colony into war at an inopportune moment,⁴⁰ catching German authorities by surprise.

Resources to sustain a war in central Namibia had to come through Swakopmund, a coastal town that had just experienced a “coming off.” In late 1903 and early 1904, lots of rain from the interior had collected in generally dry riverbeds. High waters of the Swakop River certainly became a barrier for Victor Franke trying to reach Okahandja in late January.⁴¹ Water and debris then flushed downstream until eventually reaching the Atlantic Ocean, a process locally known as *abkommen* (coming off). Captain Hugo von François had described a similar situation in 1896. “Dirt, rocks, mud, muck, and such, not very pleasantly mixed, fill the actual riverbed, and then the brew widened to both sides over the inundation area at great speed, wherever there was space. A couple of days later, of course, one does see little more than some marks, the sand barely a couple of feet deep soaked with water.”⁴² Such flash floods had reached the ocean before. In one instance observers had pointed to “massive coastal shifts of the sandbanks located” at the mouth of the river.⁴³ The Nama words *Tsoa* (anus) and *Xou* (excrement), the basis for naming river and town, colorfully outline what “coming off” is all about.⁴⁴ An undated photograph accessible in the colonial records in Windhoek provides some insights into what it all looked like this time around.⁴⁵ There is little to see apart from some cloudy waters. Locals certainly did not seem alarmed whatsoever. If anything, they welcomed the rain with “excitement,” saddened to see the precious water

lost to the ocean.⁴⁶ And so few worried about it at the time, especially since all that “sand, mud, rocks, brush, and such” was gone just a couple of days later.⁴⁷

But all that debris did not simply disappear. A military report from November 1900 had on some level anticipated what might happen with it—“marshland on the southern side [of the *Mole*] has been forming since the beginning of construction in 1898, that now steadily follows the progression of the *Mole*, [and] even after its completion will with a high probability expand to the head of the *Mole* and will silt in the entry.”⁴⁸ By referencing the situation in nearby Sandwich Harbor the author underscored concerns regarding shifting sands. And exactly that became a reality now. By December 1903, a local newspaper reported on a brown sandy substance making its way up the coastline, eventually reaching the *Mole*. These were the sands that had just been flushed into the ocean.⁴⁹ By then local German inhabitants worried more about how to keep access to drinking water segregated for whites and blacks given disruptions to the water supply than what this could mean for the harbor.⁵⁰ Several sketches by Captain Connemann later published in the journal *Marine-Rundschau* illustrated what happened next (Figure 5.1): in February of 1904 much of the sand that had been pushed into the ocean was still located near the mouth of the Swakop River. By May, currents had carried it northward near the *Mole*, where it began assembling on its outside wall. In June, it began forming a sandbank at the tip of the *Mole*.⁵¹ Traffic meanwhile continued.⁵² It had to, especially in the wake of preparations for the Battle at the Waterberg.

Silting in resulted in delays right away. According to the *Deutsch-Südwestafrikanische Zeitung* newspaper, which counted an astounding six steamships waiting to land in late June, “Existing infrastructure are not sufficient to address military needs, to say nothing about the supply of the civilian population.”⁵³ While the paper called for the extension of the *Mole* already, the situation only worsened by July.⁵⁴ According to another paper, “If this situation would have been sad enough during peace times, then today, when in a short period 7,000 German soldiers will be in Southwest Africa, it takes on a rather menacing character.”⁵⁵ It referenced a telegram from von Trotha, the commander overseeing German military efforts. The general certainly demanded improvements on the *Mole* as soon as possible. He was not alone. As one German colonial official noted a little later, the silting in of the *Mole* in Swakopmund “severely endangered”⁵⁶ reinforcements and supplies, turning Swakopmund into a chokepoint and logistical nightmare. The colony had turned even more into Germany’s *Schmerzenskind* mischief-maker.⁵⁷

In desperate need of supplies, German ingenuity—or maybe more so despair and improvisation—relied on using rafts. Early trials took place in late July, and did not go well. For one, cargo transported on wooden rafts got wet, eventually rotting on the beach. Landing animals was even more tricky. Oxen and horses were put onto a raft before they were dragged as close to the shore-

line as possible. Then they were pushed into the ocean waves. Officials on site could only hope and pray the animals would reach the beach. One can only imagine the terror of such creatures, first traveling for weeks aboard some ship only to be shoved overboard into the cold and hazardous waters of the Atlantic Ocean. The animals arrived exhausted, if alive.⁵⁸ As one newspaper noted when describing an early effort, “Only two arrived where they were supposed to, on land, the other three were carried away along the *Mole* with the strong current and had to be towed by boats towards the crane before dragged on land.”⁵⁹ Although the newspaper concluded that repetitions were not encouraged, strained landing structures left officials with few alternatives. Resources had to land—German troops awaited them when closing in on the Waterberg. As the same newspaper blatantly put it a couple months later, “[i]t is indeed striking that the unloading process relies on rather primitive means,—but what can one do; most importantly, one achieves their objectives in the end.”⁶⁰ The use of rafts thus continued. In one instance, several frightened horses jumped into the waves too early. “One of them drifted towards the *Mole* due to the strong current, and it seemed unavoidable that it would be thrown by the surf onto the cliffs and blocks surrounding concrete structure and be killed there. The horse came close to those cliffs yet then turned around and swam through an unforgiving surf away from the *Mole*. Instead of turning towards the shore, however, it continued to swim against the breakers further into the ocean.”⁶¹ In this case, the exhausted animal survived. With somewhat better rafts and a steam engine, the situation improved slightly over time. Soon around thirty terrified animals could be loaded on each raft, a couple of kilometers off the coast, with a crane. Horses dangled high up in the air, “screaming terribly and kicking,” an “amusing site,” to quote one unfazed observer.⁶² Still, and as apparent in photographs (Figure 5.2), much of the work fell to West African Kru men, “the lifeblood that ensured that the veins of commerce that coalesced at Swakopmund and Lüderitzbucht functioned,” to follow one scholar.⁶³ On 7 September 1904, a stunning 277 animals came ashore that way; five days later it was 326. Whereas the latter number seemed to have been a high point and only short by six compared to the best days of the *Mole*,⁶⁴ it became clear that something had to be done.

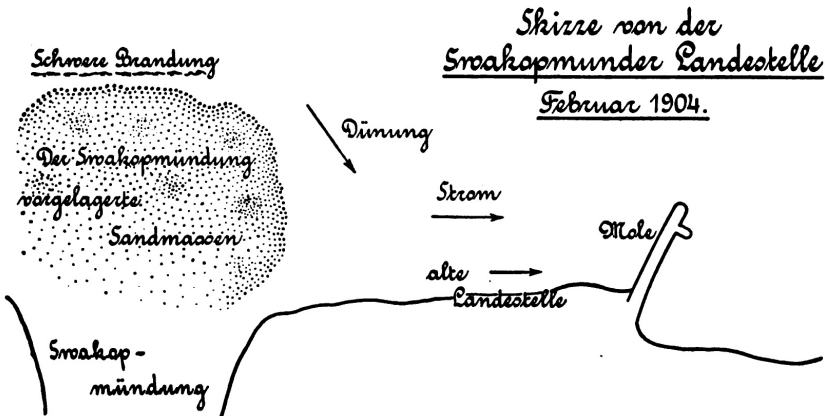
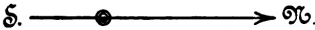
Maintaining Access

File number 509 can tell readers much about the situation in Swakopmund. Published on 29 November 1904 and part of the German parliament records, this particular document is a supplementary budgetary proposal put forward by Chancellor Bernhard von Bülow. In office since October 1900, Bülow was an ardent supporter of Wilhelm II’s *Weltpolitik* (world policy). In 1897 he had

gefüllt, und gleichzeitig hatte sich an der Molenspitze eine Barre gebildet, die anscheinend in ihrer Richtung vom Lande ab zeigte. Die Einfahrt bis hinter die Mole wurde hierdurch nur wenig behindert, da die Dampfer einfach um die Barre herumfahren konnten.

Ende Juni 1904. (Skizze 3.)

Die Versandung am Strande südlich der Mole hatte wenig zugenommen, der südliche Winkel der Mole war ziemlich ausgefüllt, die Lotungen ergaben bereits eine Skizze 1.



Skizze 2.



allgemeine Verflachung seawärts der Mole und nördlich und südlich davon. Die Barre nahm an Ausdehnung zu und verlief in ihrer weiteren Fortentwicklung nicht mehr von der Küste ab, sondern parallel oder sogar etwas auf die Küste zu, so daß die Gefahr einer Schließung der Moleneinfahrt zu der Zeit bereits drohte.

Von Juli 1904 an. (Skizze 4.)

Es zeigte sich, daß die Bildung der äußeren Barre nur eine primäre Erscheinung war, der bald eine zweite, das Hineinschieben der Sandmassen vor die

Figure 5.1. “Sketches at Swakopmund’s landing spot, February to July,” in *Marine-Rundschau*, “Meinungsaustausch,” June 1908, HathiTrust/public domain.

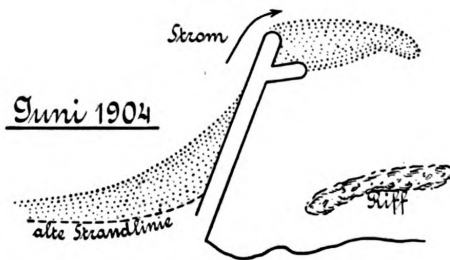
758

Marine-Rundschau, Juni 1908.

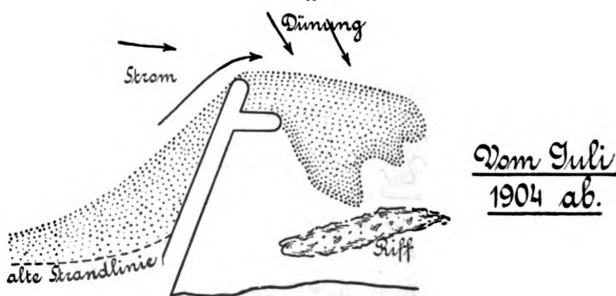
Hafeneinfahrt, folgte. Dieses Hineinschieben wurde durch die von Südwest herankommende Brandung verursacht und trat besonders stark nach Tagen mit schwerer Brandung auf. Es ließ sich dies mit Hilfe der Lotungen, die stets nach dem Verlaufe einiger schwerer Brandungstage gemacht wurden, gut verfolgen: Die äußere Barre hatte durch die Brandung abgenommen, die innere war gewachsen.

Trat nun auf einige Tage oder Wochen ruhiges Wetter mit geringer Brandung ein, so wuchs die äußere Barre (Nehrung) durch die sandführende Strömung wieder an, während die innere ziemlich unverändert blieb. Sobald wieder schwere Brandung einsetzte, wurde der ganze Sand nach der Küste zu, das heißt, vor die Moleneinfahrt

Stizze 3.



Stizze 4.



gewachsen. Hier blieb er selbstverständlich liegen, da er im Schutze die Mole von der Strömung nicht weiter fortgetragen werden konnte.

Da vor der Hand keine Gegenmaßnahmen ergriffen werden konnten (Bagger waren draußen nicht vorhanden und konnten für diese außergewöhnlichen Verhältnisse auch nicht kurzerhand beschafft werden), so wiederholte sich das Spiel so lange, bis das Hafenbecken durch eine vom Molentopf im Bogen auf die Küste zu sich hinziehende Barre (Nehrung) so gut wie abgeschlossen war.

Art der natürlichen Versandungsercheinungen an der südwestafrikanischen Küste.

Dieser bei der Mole beobachtete Vorgang deckt sich aber auch mit den sonstigen Versandungsercheinungen an der Küste.



Figure 5.2. NAN 05040, “Kru workers pull a raft with baled hay to the shore, Swakopmund 1904,” courtesy of the National Archives Windhoek.

famously demanded Germany’s own place in the sun in parliament. Now, in 1904, his proposal pointed to expenditures. One item had been earmarked “For the operational restoration of the harbor structure in Swakopmund, first installment”—a stunning 2.2 million Marks. A more detailed explanation referenced the construction of another breakwater, the acquisition of two steam dredgers meant to keep access open to the *Mole*, and the expansion of the concrete structure; the proposal also included materials and machinery for the assembly of a wooden jetty meant to serve as a second landing spot. The situation tied to silting in had become a major problem, a summary explained, and something had to happen. After all, Swakopmund was “the only German entry into the middle and northern parts of the Southwest Africa,” a gateway that had to be kept open “under all circumstances.”⁶⁵

The acknowledgement that the *Mole* was failing took some time. As late as August 1904 some voices still praised the concrete landing structure.⁶⁶ At that point the satirical magazine *Klatterdatsch* already commented on the constant problems and setbacks at the *Mole* in a poem.⁶⁷ A month later one report then admitted that the sand that had flushed down the Swakop River had brought considerable problems: “During many days the traffic has to be stopped due to unfavorable [conditions of the] ocean.”⁶⁸ By then the concrete landing structure could only be used four to five hours a day, at high water—instead of

twelve to fourteen hours.⁶⁹ The situation became all the more complicated as the season began to change. On 3 November the wind and current caught the tugboat *Südwest* and pushed it into the *Mole*. Whereas all passengers were saved, the boat was lost—“already the next day it looked like a wreck,”⁷⁰ to quote one newspaper. From this point silting-in continued, even worsened. By early 1905 it became clear that the rafts could only be a “makeshift” solution.⁷¹ What was there to do? By August 1904, a commission assessing the situation in Swakopmund had already arrived on site.⁷² Hydrology engineers and other specialists were certainly required. However, as one local newspaper pointed out, the experts had spent little time in Swakopmund; they also only saw good weather.⁷³ In any case, that commission proposed a three-part plan that called for the use of dredgers, the construction of a jetty including a breakwater, and the extension of the *Mole*. With just the first installment requiring a payment of 2.2 million Marks,⁷⁴ it became clear that keeping Swakopmund’s harbor viable would be an expensive endeavor.

The removal of sand was no easy task. Two thick folders of Swakopmund’s harbor administration give a sense of the problems at hand.⁷⁵ Newspapers also reported on efforts to reverse silting-in, with one article describing how logistical nightmares delayed the arrival of one dredger from far away Stettin.⁷⁶ Several times the topic even came up in German parliament. There had been a debate on 1 February about the harbor and dredgers;⁷⁷ it was on the agenda again in March.⁷⁸ Delays meanwhile piled on. For one, authorities of *Kaiser-Wilhelm Kanal* (channel) in the north of Germany could not give up the only useable dredger. A different machine thus had to be organized and outfitted for the long journey to Swakopmund. That took months.⁷⁹ One dredger finally arrived on 3 March 1905.⁸⁰ Delays due to strong currents cost additional time. Once on site “the loaded [dredging] vehicles could not cross the breaking surf anymore,” to quote one internal report.⁸¹ This now required small crafts, machinery not readily available in Swakopmund.⁸² In the meantime, the dredger started “digging out a channel through the tidal bore to ensure the *Mole* could be used without disruption,” one newspaper noted.⁸³ Representatives in Berlin were happy that these expensive tools would at least be used to some extent.⁸⁴ Yet much of what was removed silted in again shortly thereafter.⁸⁵ German shipping engineer and globetrotter Gustav Buß described the situation in Swakopmund in late 1904 in detail, including how a dredger silted in altogether.⁸⁶ The mere presence of such large machinery within the busy loading zone also caused problems. In May 1905, for example, strong currents pushed one machine against other ships before it was almost completely lost.⁸⁷ At that point, the Woermann-Line, the main logistics company responsible for landing supplies, threatened officials that it would stop using the *Mole* altogether.⁸⁸ Whereas such warnings increased speculations about a forthcoming upgrade of harbor structures,⁸⁹ the blame game had begun as well. One repre-

sentative in parliament noted that the harbor in Swakopmund is certainly no “glorious chapter in the history of our colonial administration;”⁹⁰ other voices pointed to environmental factors and outlined that it had just been an “exceptional year” regarding the movement of sand.⁹¹ With worries about future flash floods lingering, officials seemed to be unsure how to proceed. And so the situation got worse and worse every day,⁹² with newspapers soon updating readers on the slow death of the “unfortunate Mole.”⁹³

German authorities increasingly forced prisoners of war to replace machines and animals. It had taken pressures from Berlin to bring some sort of negotiations to the war, the first genuine effort coming from Major Ludwig von Estroff in December 1904.⁹⁴ By that point other groups had joined the war and few Herero had survived the German onslaught. Missionaries thus eventually set up collection points. Those spots were not meant to provide support. Instead, they became ways to pull those that surrendered into a large-scale concentration camp system. Missionary documents are frank about the state of captives. According to the chronicle of Omaruru, “Most people that come from the fields were miserable figures so one had to ask oneself: how could they even make it here. Small children in particular brought pity. The body is often reamed to disfigurement, the rest of the body is completely haggard and coated with withered skin. It is often heart-warming to see how the starving mother is still caring about its child plagued by diarrhea with affectionate concern. . . . Miserable figures like this are likely never to be seen again in life.”⁹⁵ In Windhoek a similar description spoke of skeletons clothed in rags.⁹⁶ Those collected in the interior by missionaries generally ended up on the coast. As outlined by Horst Drechsler, “Prisoners of war were immediately carted off to Swakopmund to perform slave labour, the most gruelling jobs on the railway line under construction there being assigned to them.”⁹⁷ In Swakopmund, workers helped unload supplies pouring into a still inadequate harbor. According to statistics put forward in the *Deutsche Kolonialzeitung* newspaper in fall 1904, the harbor alone employed a total of 1,200 laborers to unload cargo: 500–600 Kru men, 400 likely white seamen, 80 white workers on the land, and about 80 black workers.⁹⁸ In 1905, and according to another newspaper, the 130 Kru men and 443 Herero toiled in the harbor.⁹⁹ A German account from September 1904 described the hard work of “negroes” in Swakopmund, “the whole day in water, where it is hardly 13 degrees (Celsius) and one must work in heavy surf;” that voice also added that “many die from pneumonia.”¹⁰⁰ Apart from compensating for missing machines and failing landing structures forced laborers also completed the work of draft animals. Herero women formed teams of eight to pull cars on the narrow-gauge railway.¹⁰¹ Hendrik Fraser, a worker from South Africa, described the situation as women loaded and unloaded hand-carts and wagons. “They even had to pull fully laden donkey-carts to Nonidas [nine to ten kilometers from Swakopmund] where there



Figure 5.3. NAN 29871, “Herero women (prisoners of war) pulling loads in Swakopmund, 1905?” courtesy of the National Archives Windhoek.

was a depot. Some eight women were harnessed to a donkey-cart and had to pull it like draft oxen,” he added, before describing their total exhaustion and the brutal punishments with a sjambok whip.¹⁰² James Tolibadi, a worker from the Cape Colony employed in both Windhoek and Swakopmund, described women “compelled to work and carry heavy articles.”¹⁰³ A photograph taken in Swakopmund around that time shows several women hauling wooden crates on their shoulders (Figure 5.3).¹⁰⁴ Missionary Vedder, who visited prisoners several times, added that “[h]undreds were driven to their deaths like cattle and like cattle they were buried.”¹⁰⁵

The situation for workers housed in Swakopmund was brutal. Apart from the Woermann-Line’s own private camp,¹⁰⁶ most prisoners ended up in a concentration camp. “*Ombepera I koza*” (the cold is killing me).¹⁰⁷ These were the words of Herero prisoners to German missionary Vedder in 1905. Vedder described the circumstances on site in great detail, including the cold that led to pneumonia overnight and death by the next morning.¹⁰⁸ The camp was located near the harbor to have easy access to the pool of labor. According to Vedder, newly arriving inmates “were placed behind double rows of barbed wire fencing, which surrounded all the buildings of the harbor department quarters, and housed in pathetic structures.”¹⁰⁹ Work shifts were from early morning until late at night, every day. Food was scarce, especially given that most inmates had already been weakened by life in the field. Miserable spaces, made up only

of sackcloth and laths, to still follow Vedder, as prisoners worked beyond exhaustion, with little food but brutal punishments.¹¹⁰ The cold and damp maritime climate made survival even more difficult. Diseases ran rampant.¹¹¹ The personal photos of Nuremberg native and captain Friedrich Stahl depict barely clothed and haggard bodies of Herero lying in the dirt without any protection.¹¹² As a result, and to follow another observer, “the Herero in Swakopmund were dying at an alarming rate due to “inadequate facilities.” The poor conditions were made worse by the “raw, uncommon ocean climates and the weakened state in which they [the prisoner] arrived.”¹¹³ Between 29 January and 12 June 1905, 583 Herero men, women, and children died.¹¹⁴ At the worst period, thirty people perished each day.¹¹⁵ A quick look into the death register of Swakopmund confirms high mortality rates: “death through exhaustion, bronchitis, heart disease or scurvy.”¹¹⁶ Historian Joachim Zeller estimates that in the camp in Swakopmund alone 2,000–2,500 individuals died—1,811 are recorded until March 1906 alone.¹¹⁷ Between October 1904 and March 1907, 7,682 out of 17,000 inmates (15,000 Herero and 2,000 Nama) lost their lives, which is a death rate of 45.2 percent.¹¹⁸

Overworked, exhausted, exposed, freezing, and undernourished inmates had little left to resist—although some tried.¹¹⁹ Escape to nearby Walvis Bay seemed most promising and resulted in diplomatic entanglements with the local British magistrate, especially once German troops entered British territory or harassed African-British subjects. Take the German arrest of a postal runner and British subject by the name of Jacob in Swakopmund. As outlined in the colonial records, “The next morning he was taken to the ‘Mole’ and flogged in the presence of the same officer who assured him that he would be conveyed to Windhoek and then hanged.”¹²⁰ Although locked up again he managed to escape to Walvis Bay, resulting in complaints from British authorities. In another instance, nine prisoners had dug up the cement floor in one of the barracks and slipped out under desert sands. “Pursuing them, of course, is useless,” a German newspaper commented, “because the escapees have turned towards Walvis Bay, which begins just ten minutes outside of Swakopmund.”¹²¹ In response to such defiance, the German colonial government felt it had to implement even more drastic responses, moving from corporal to capital punishment.¹²² For German officials the lack of labor had been upsetting already;¹²³ that workers escaped to the German competitor nearby made them livid. Yet escapes continued, such as in November 1906, when Timotheus Hipangua fled with his wife, child, and many others, as one missionary noted. “Many preceded and many would follow him, to swap their toiling existence here for an existence of tedium in the mines of South Africa.”¹²⁴ That would not end until the forced labor system shut down in 1908, after three years and five months, and many lives lost.¹²⁵

Fighting Nature and People

“So we stood by the hour at the bow, looking out; but a fog lifted, and we saw on the horizon some great steamers and behind them an endless strop of reddish-white sand lifting itself out of the ocean.” These are the words of Peter Moors, the main protagonist of Gustav Frenssen’s novel *Peter Moors Journey to Southwest* upon his arrival. Grounded in experiences of returning veterans, and a colonial narrative par excellence, the author described the arrival of soldiers in Swakopmund. He notes, “The harsh, glaring sun burned down on the dunes and sea, and we thought at first that was a bar which lay off the shore so that the great city of Swakopmund and the palms and lions wouldn’t get their feet wet, but soon, when the fog had entirely receded, we saw in the glittering light some white houses and barracks and a lighthouse on the bare sand. Then all stood amazed and delivered their opinions. Many looked silently and soberly upon the inhospitable, barren land; others jeered and said: ‘To come so far for a country like that!’”¹²⁶ For many what they were about to see would be “the most desolate region in Africa, yes truly in the entire world,”¹²⁷ to follow another account. As his ship steamed into the region of Swakopmund one German soldier thought he spotted some familiar green, maybe even trees, from afar. He was disappointed once he realized that all this was just sand lingering behind the city.¹²⁸ “That is land,” exclaimed one arriving soldier, “Lord is that barren!”¹²⁹ There was simply no lion along with submissive Africans paying homage to a heroic knight-like German figure as outlined in the satirical magazine *Simplicissimus*.¹³⁰ According to another commentator, “How many of our people arrive naïvely, to hunt lions and to dream under palm trees, only to learn to capture their wild fantasies while making bricks.”¹³¹ Birthe Kundrus, who has analyzed such descriptions in detail, noted that for German newcomers these were open and empty spaces, dismal and barren landscapes, vermin, diseases, periods of drought.¹³² None of that was the norm back in Germany. Whereas later on German accounts of nature became somewhat romanticized,¹³³ at the time descriptions painted a picture of some unexpected Other. The landing then underscored the overall shock of this space. One newcomer captured how he got soaking wet in the landing process in Swakopmund. He had expected a much more advanced and sophisticated German outpost, adding that he eventually traveled inland in a cheaply built train across “sand dune upon sand dune.”¹³⁴ Expectations in the metropole and realities in Southwest Africa rarely matched.

Some volunteers had signed up enthusiastically to defend German settlers abroad against what they saw as criminal Herero slaughtering innocent German women and children. Accounts speak widely about such patriotism and the supposedly defensive nature of the war.¹³⁵ Of course these heroic tales

generally emerged after the war. Women at the frontier like Margarethe von Eckenbrecher also contributed to such narratives. She found that she was “*mutterseelenallein* (all by her lonesome self)” at the frontier facing deceptive, cruel, and bloodthirsty black warriors.¹³⁶ Such storylines portrayed the Herero as beasts. In February 1904, Curt von François wrote “[s]urprised, dismayed, originally helpless regardless of feeling our authority, we saw the bestial anger of this black tribe mangle our defenseless fellow countrymen.”¹³⁷ Now, help and reinforcements were on the way, meant to maintain German presence and defeat local resistance. Hauptmann Maximilian Bayer compared it all to a “crusade” and “knights” going into battle;¹³⁸ he also saw the conflict as a struggle according to “the laws of nature” as “the weak and purposeless will perish in favour of the strong.”¹³⁹ Racism and Social Darwinism were thus key ingredients of German mentalities. According to two historians, “Although some overconfidence can be explained by the inordinate faith they placed in artillery and the Maxim gun, their readiness to discount the military and strategic abilities of the Herero also points to deeply held racial suppositions.”¹⁴⁰ Germans indeed saw their opponents as racially inferior, a people that had been incapable of harnessing and managing nature.¹⁴¹

Feelings of German superiority quickly clashed with the abilities of Herero fighters. Häussler recently underscored the difference between “old Africans” that had been in the colony for some time and oblivious newcomers just arriving on site; he also underlined how high expectations in Berlin raised all kinds of challenges on the ground.¹⁴² The initial phase of the war certainly highlighted the abilities and capabilities of the Herero as they attacked railway and telegraph lines; they had also lashed out against farmers found in more remote areas. During that phase Herero efforts to control strategic locations could barely be averted. Take the situation of Okahandja in January 1904. Located along the vital train route from Swakopmund to Windhoek, Herero control effectively disrupted this supply line. Victor Franke, the officer in charge, faced a skilled opponent making use of their surroundings, thick thorn bushes and difficult terrain. It was the use of a mobile gun that gained colonial troops control of the area. Herero resistance then moved eastward, taking further advantage of terrain and German inexperience. For weeks German patrols found themselves exposed while Herero warriors seemingly blended into their surroundings. German confidence and belief in technology increasingly faltered in thick and thorny bushes waiting for backup or losing their opponents in endless chases.¹⁴³ According to historian Marion Wallace, “During March and April 1904 the Herero forces pursued a largely successful military campaign, making skillful use of their mobility and knowledge of the ground by repeatedly ambushing the Germans and drawing men into fighting in areas of dense bush, where heavy guns were of the least use.”¹⁴⁴ A Herero group ambushed German soldiers desperately moving toward the waterhole called Owumbo

in early April.¹⁴⁵ Such asymmetric tactics, or “small wars,” to follow Häussler, increasingly frustrated the Germans.¹⁴⁶ For them, who were unprepared for these conflicts, the fighting style of the Herero was lazy and cowardly. Eventually, a period of waiting followed this early chapter of the war. Governor Leutwein, who by then had returned from the south of the colony, had initiated negotiations. He seemed willing to make peace. Awaiting potential talks, and given previous examples of peace agreements, the Herero retreated to the area of the Waterberg. But negotiations were cut short: decision-makers in Berlin had other plans. They replaced Leutwein with Lothar von Trotha, the latter unwilling to entertain negotiations. His plan was to encircle and annihilate the Herero, an effort that took shape with the Battle of the Waterberg.¹⁴⁷

Even without Herero fighters, the environment greatly worried German soldiers. Anxieties generally grew once newly arriving soldiers left hubs and main travel routes on their journey inland. Away from structures and supplies in Swakopmund or Windhoek, horses and ox wagons, not railways, defined the conflict. That there had been little penetration beyond such settlements now became blatantly apparent. In a way, colonial topographies could be compared to castles in the Holy Land during the crusades. In Namibia, and outside certain settler spaces such as Keetmanshoop, forts littered along major trade routes and in the proximity of strategically important sections. Few patrols ever left these strongholds beyond so-called punitive expeditions.¹⁴⁸ As a result, there had been a surprisingly small presence of German authorities inland. As historian Susanne Kuss observed, “Those living beyond the reach of the station were viewed almost as part of the wilderness and were described as being shy and frightened.”¹⁴⁹ Besides, there were few options to make use of indigenous knowledge. According to one report, local inhabitants knew about water along some routes but “they keep it a secret among themselves.”¹⁵⁰ To still follow Kuss, “No official maps existed with information regarding altitude, the course of the rivers, the nature of the watering holes, or the land cover to the degree of accuracy necessary to enable the planning and evaluation of military operations. The areas away from the major routes were entirely blank.”¹⁵¹ Widespread fears of poisoned water holes, a real or imagined threat, thus only underscored German anxieties around this precious good. These logistical challenges directly defined the conflict. One military pamphlet spoke of “[t]he incalculability of the environment and the insecure nature of communications in South-West Africa.”¹⁵² Besides, such local circumstances, combined with German racist mentalities, made those living beyond the grasp of German structures part of nature. One contemporary commented that “[t]he extraordinarily confusing character of the land, the curious water conditions, the, at times, faulty knowledge regarding parts of this colony make fighting a war rather difficult and our good soldiers were put in a difficult position. Since the enemy was difficult to catch and stood still nowhere, so the war turned

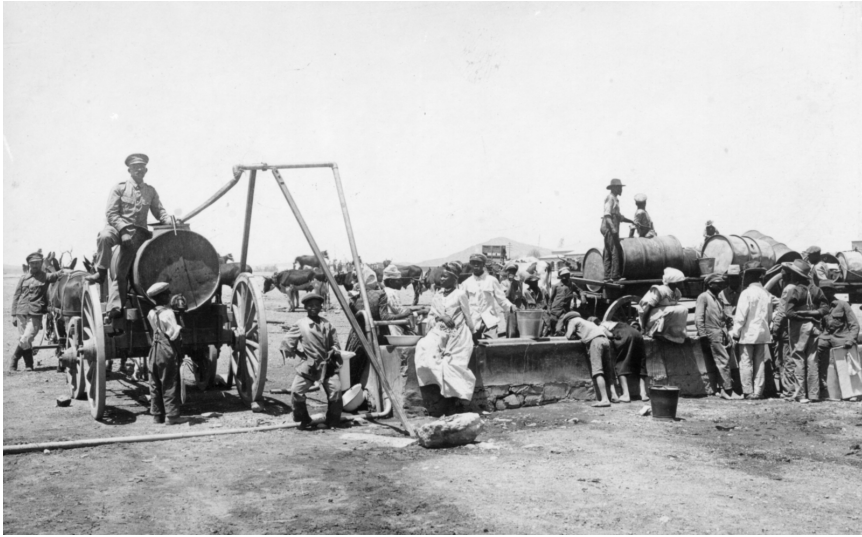


Figure 5.4. NAN 02438, “Schutztruppe water carts being filled from well (water trough), Windhoek, people standing around waiting their turn,” undated, courtesy of the National Archives Windhoek.

into a battle, in which the blacks are again and again able to break through somewhere with the masses and thereby escape from the vengeful nemesis.”¹⁵³

The water problem most directly shaped logistics and German anxieties; it also defined subsequent colonial narratives. *Südwester* (Southwesterner) folk tales capture the early experiences of German newcomers. According to one such *storie*, a soldier rode into the Kalahari Desert, got off his horse without taking his water along and saw the animal run away. Luckily a patrol found him before he died.¹⁵⁴ Gustav Frenssen noted, “We had no moisture in our mouths to wet our lips a little. Our breath came dry and hot through our parched mouths and the burning dryness penetrated, as though with spurs and prickles, ever deeper into our throats.”¹⁵⁵ Damara on some level served as paramilitary units and played a supporting role in the field and when it came to finding water. According to the oral history of !Kharuxab, “When they first began fighting, [the Germans] did not know how to find water.”¹⁵⁶ Yet discovering water remained difficult in a country where it is as rare as champagne elsewhere, to follow one description.¹⁵⁷ At times, “where there ought to have been water there was not always any there. Then, suffering terribly from thirst, we had to dig holes to see if we could find a little water slowly filtering through. Often it was salt or milky from lime, or smelled vile; and oftener we didn’t find even this miserable, loathsome water, and we had to go on again, thirsty, far into the night.”¹⁵⁸ Elsewhere faded photographs showcase efforts

to dig for water—one with the caption “Digging for water in vain.”¹⁵⁹ At the same time, soldiers also described the joy of returning to Windhoek (Figure 5.4) or finding water—“It quenches not just thirst but gives life.”¹⁶⁰ In many instances, newcomers could not fully grasp the aridity of their surroundings. “Here is Otjikuoko!’ ‘Where? I do not see it!’ ‘The place, where we are now, is called that,’ he noted dryly, ‘there is nothing else around.’ I looked around. All around me there was nothing but thorn bushes, some taller trees were scattered around. White sandy surfaces shined through the undergrowth. Nothing to see of a settlement, negro huts, of water, trees, houses, people.”¹⁶¹

A small biological agent equally shaped war, especially when conditions in the field turned unsanitary. Although widely described as typhus at the time, contemporaries tracked the spread of typhoid fever in some detail, a bacterium related to salmonella food poisoning known as *Salmonelle typhi*. Presumably introduced to the area from the Cape Colony during the construction of the railway line from Swakopmund to Windhoek, typhoid had ravaged the country since 1898.¹⁶² A highly contagious disease, those infected can pass it on through their stool or urine. Since unwashed hands resulting in contaminated water are thereby a major concern, a Medical Ordinance from summer 1904 emphasized the need to be careful. “It is strictly forbidden to drink unboiled water. The use of a filter is to be viewed as a duty [of every soldier] and should be used only to clean cloudy water; the water must then be boiled. Wherever possible, washing water should also be boiled. Typhoid prevention is the primary task of all health measures. The troops are to be instructed in these tasks; officers and medical officers are to ensure that the provisions are maintained.”¹⁶³ Although soldiers had to follow these instructions, epidemics plagued different areas and groups throughout the war. Assistant physician Ernst August Kaerger, who was part of the expedition forces, observed the situation among the German troops in Southwest Africa in February and March 1905. He emphasized issues surrounding water and sanitation; Kaerger also pointed to an increase in “personal disposition,” a phrase utilized to capture the difficult circumstances grounded in a lack of supplies and overall support when fighting in Southwest Africa.¹⁶⁴ Soldiers that got the bacteria had to deal with headaches, stomach pain, constipation or diarrhea, as well as high fever. Without access to microscopes doctors initially tended to prescribe quinine, which helped decrease a patient’s temperature but did little otherwise.¹⁶⁵ Once a diagnosis based on clearer symptoms had been established, then getting the individual to a faraway hospital became the issue.¹⁶⁶ Although some fully recovered, others dealt with subsequent episodes. Medical magazines later reported widely on the situation, comparing the spread to similar situations in British and US colonies and blaming it on “the undeveloped state of the country in German Southwest Africa.”¹⁶⁷ One recent estimate counts 1,613 casualties with only 88 based on combat or accidents among German soldiers; 725 fatalities were tied to illnesses (450 of

them from typhus).¹⁶⁸ By mid-January alone the German troops had lost fifteen out of 247 men from typhoid fever.¹⁶⁹ The study and use of early vaccines during the conflict helped on some level and speaks to the opportunities some in the medical field saw when it came to colonial playgrounds.¹⁷⁰

Other diseases equally shaped the war. As one anonymous contemporary voice summarized the situation, “Almost worse than enemy bullets are the typhoid, malaria and scurvy decimating the rows of German soldiers.”¹⁷¹ A report captured the German mindset at that time when noting, “The land itself provides nothing which one can use to restrict the spread of the epidemic; our actions cannot be measured against peace-time or European standards. Everything out there is different to that at home; even the use of familiar names rarely refers to a familiar phenomenon.”¹⁷² Of course, such diseases impacted Africans as well—yet apart from references to Krumen supposedly spreading certain diseases colonialists seemed to worry little about them.¹⁷³ For Germans, fears about soldiers losing their minds played a role as well. The climate was much better in Southwest Africa compared to the so-called tropics. Nonetheless, sun and heat could presumably turn upright men into lunatics. Contemporaries referred to that as *Tropenkoller* (colonial madness), a state officials also frequently tied to sexual promiscuity, especially in the context of relations with African women.¹⁷⁴ At least in response to his efforts to help imprisoned African women and children, the main protagonist in Uwe Timm’s novel *Morenga* hears his superior respond by shouting “Jungle fever!”¹⁷⁵ In that sense, numerous threats defined the war and Germany’s response, and scholars have noted that two typhoid epidemics in 1904, one in summer, one in fall, contributed to Leutwein’s delayed response to the war and brought about his replacement with the ruthless Lothar von Trotha.¹⁷⁶

A struggle-against nature narrative in line with the survival of the fittest also defined warfare. From the German point of view, a nature people living in a preindustrial and maybe even a prehistoric age tried to upend the natural order.¹⁷⁷ According to the German high command, “The struggle with these hard and worn out *Naturvolk* nature people in a land lacking culture has showcased that the German people have regardless of their cultural achievements not lost their warlike value.”¹⁷⁸ A German soldier fighting in Southwest Africa noted along similar lines that a “*Naturvolk* had dared to do whatever it would like.”¹⁷⁹ Although the Germans had long worked with different African societies and understood their opponents’ heterogeneity, the war increasingly overshadowed such nuances. Instead, accounts of soldiers describing the war made Herero and later Nama repeatedly part of the natural environment. Audiences could thus read about encounters in difficult terrain, hostile environments, and arid landscapes, all factors that brought Social Darwinist tales even more into the limelight. Later Farmer Schlettwein wrote that this was “[n]ot a war against men but beasts, worse than the animals of the wild.”¹⁸⁰

Failure to completely destroy the Herero at the Battle of Waterberg, and subsequent efforts to end the war, underscore the nature of this conflict. Complete destruction in a single battle, the African-Sedan some had hoped for, had not materialized.¹⁸¹ Many Herero had fled into the Omaheke desert to escape German annihilation. Herero had long traveled through these spaces; they also relied on water structures as described in chapter 4. Yet this was different. Instead of migrating along with yearly weather cycles in small groups now thousands together with their remaining cattle tried to cross that strip of land. Existing environmental infrastructure could not sustain such efforts. “The land had lots of sand,” recalled Herero Andreas Kukuri in 1953, “but green trees and water were not there. And we moved in vain into the center of the Veld, that had no water, until all living beings, that is cattle and humans died of thirst.”¹⁸² This “desperate exodus”¹⁸³ took Herero from empty waterhole to waterhole in the hottest time of the year.¹⁸⁴ The timing had worked out for the Germans, and von Trotha turned the failure of his troops to fully encircle into a ploy of war. Now, the desert would “do the killing for him,” to follow one historian.¹⁸⁵ Oral histories outline the devastation.¹⁸⁶ Major von Estorff, who vividly described the situation and later complained that he was simply playing the role of a “hangman,”¹⁸⁷ underscores that General von Trotha wanted “total extermination.”¹⁸⁸ On 2 October 1904, the latter had published his infamous *Vernichtungsbefehl* extermination order.¹⁸⁹ Widely referenced as showcasing the intent to exterminate the Herero people in the first genocide of the century, it simply codified long-standing German behaviors. Herero’s oral histories outline malnutrition and exhaustion during their escape. German soldiers, on the other hand, sustained by bases outside the Omaheke, had a somewhat easier time when chasing after Herero men, women, children, and their cattle. At times, they stumbled across “spots where the Herero had burrowed desperately for water,” to quote Lieutenant Maximilian Bayer. “There was not a single drop of liquid in these sand holes.”¹⁹⁰ Some Herero later surrendered; many “had to run,” as oral histories have it.¹⁹¹ Countless died in the desert, struggling to move on, falling behind, left behind. “The wind has blown sand over the tracks and tears, one can’t narrate how it was,” one survivor noted to a missionary later on.¹⁹² Few made it across this desert to safety. One who did was Samuel Maharero, who according to oral traditions was “riding with horses of hunger” into neighboring British Bechuanaland (modern-day Botswana).¹⁹³ Yet most perished in a desert landscape, chased out by German soldiers, cut off from accessing waterholes, and hindered from returning home.

Colonial narratives framed these moments as struggles against nature. Missionary Jakob Irle described how the war “turned Hereroland into a desert, full of human corpses and the cadavers of livestock.” He did not distinguish between perpetrators and victims when continuing, “Everywhere we encounter the bleaching bones of the Herero and the graves of brave German soldiers.

The country has become a giant cemetery in which whites and blacks rest facing one another.”¹⁹⁴ For him, and many other German accounts, the torment of Germans due to a lack of water is central to the storyline.¹⁹⁵ Logistics had certainly strained German troops. Yet they were still the ones doing the chasing. In that sense, and along with the official order to not take prisoners, the reversal of suffering became a way to deflect any responsibility or blame for the destruction of the Herero. Instead, Germans pointed to nature. As outlined by one eyewitness, “Sick and helpless men, women and children who had collapsed with fatigue, lay in masses in the bush . . . , parched with thirst, lacking all will-power and awaiting their fate.”¹⁹⁶ Later descriptions began emphasizing the German suffering even more, with one noting, “On our thirsting, starving horses, we thirsting and starving men rode on. At some distance crouched a crowd of old women who stared in apathy in front of them. Here and there were oxen, bellowing. In the last frenzy of despair man and beast will plunge madly into the bush, somewhere, anywhere to find water, and in the bush they will die of thirst.”¹⁹⁷ Moments of empathy for opponents shift into passive voice, and blame harsh desert landscapes for the tragedy. “Just like a hounded animal,” to follow the official history of the war put forward by the German military in 1906, colonial soldiers chased the Herero from waterhole to waterhole “until he finally became a will-less victim of nature in his own country.”¹⁹⁸ Soon the Herero became no more than a faraway sight, according to some void of any humanity, as the Germans seemed to be no more than bystanders in all of this—“From a hill we saw two mighty clouds of dust moving rapidly to the north and north-east, toward a certain death from thirst.”¹⁹⁹

The *Rinderpest* pandemic, the tentacles of railway lines, and the increasing German takeover of land and water disrupted and destroyed pastoral livelihoods; it also brought the war and the subsequent genocide. Early on Herero targeted railway and telegraph lines, and focused on frontier settlements and farms situated beyond the reach of German defense lines. The destruction of farmhouses, wells, and experimental stations, all of which the Herero saw as signifiers of a future without African agents, made sense to them. For German settlers this was unfathomable. As reinforcements landed in Swakopmund and traveled along the railway, natural forces added pressure to their efforts, crushing expectations that this would be quick war. Apart from facing Herero fighters, battalions had to rebuild whole sections of a railway not meant to supply large scale operations during wartime. German ingenuity, or more so improvisation and desperation, was to keep environmental infrastructure open. Yet natural forces in the form of silting-in also shaped landing structures, forcing the Germans to yet again play it by ear. Rafts and Krumen picked up the slack,

to land supplies and keep the war effort on track. Over time, and as the war progressed, forced laborers equally compensated for failed structures. Apart from shaping access, human agents in the form of Herero resistance as well as natural factors such as aridity, difficult terrain, and diseases also shaped logistics and warfare. Racist mindsets and the unwillingness of decision-makers to make peace only worsened the situation. To follow Häussler, and as the war progressed, “the lower the potential to still catch and decisively defeat the Herero the more categorically German violence targeted *every* individual Herero.”²⁰⁰ Delays and anxieties, apparent once exploring the role of the multiple agents that shaped environmental infrastructure in times of war, thus complicated and brutalized warfare, especially once soldiers found themselves away from sustaining structures. In frontier spaces removed from supply lines, where opponents used terrain to mess with Germans that were unfamiliar, unprepared, and unwilling to engage in such skirmishes, extreme violence became acceptable. To follow Lehmann, “The alien and dangerous environment . . . heightened the feeling of the German soldiers that they were not dealing with an ordinary enemy, but with hostile *nature* above all else.”²⁰¹

German narratives soon packaged their military experiences into colonial frameworks. The struggle of sailors rebuilding railways and dredgers fighting against silting-in tell some of these tales. Nature has agency as an opponent worth wrestling. African fighters in the war, or African bodies repairing, maintaining, or expanding landing structures and railways, on the other hand, are either not seen as worthy opponents or completely silenced. That the exploitation of African labor meant systematic extermination, a final solution as discussed further in chapter 6, became a backstory.²⁰² Natural forces, of course, shaped the war. However, such agents did not work in a vacuum. After all, and certainly after the replacement of Governor Leutwein, German leadership did not consider a peace settlement. Instead, German troops pushed Herero into the desert, von Trotha encouraged extermination as decision-makers in Berlin cared little about African populations. Efforts to deflect such responsibility as apparent in some apologetic narratives thus have little to do with the desire to underscore the multitude of agencies that are at play here.²⁰³

Notes

1. Willy Njanekua and Kasisanda Muuondjo, “Tjiponda, Kahivesa, and the Wars of the Hereros,” 28 January 1986, 154–217, here 154, in *Michael Scott Oral History Project*. See also Katharina von Hammerstein, “Kriegs-Schau-Platz Omaheke: Multiple Perspektiven auf den Völkermord an den Herero,” *Acta Germanica* 45 (2017): 29–44, here 35.
2. Baumann, *Van sending tot kerk*, 150; Olusoga and Erichsen, *The Kaiser’s Holocaust*, 140. See also Hammerstein, “Kriegs-Schau-Platz Omaheke.”

3. Bley, *South-West Africa under German Rule*, 159. See also Lukas Grawe, “The Prusso-German General Staff and the Herero Genocide,” *Central European History* 52, no. 4 (2019): 588–619, here 593.
4. Kriegsgeschichtliche Abteilung I des Grossen Generalstabes, ed., *Die Kämpfe der deutschen Truppen in Südwestafrika. Auf Grund amtlichen Materials*, vol. 1 (Berlin, 1906), 156–59. See also Gerhardus Pool, *Samuel Maharero* (Windhoek, 1991), 251–53; Wallace, *A History of Namibia*, 163.
5. Häussler, *Der Genozid an den Herero*, 164. Häussler follows Lundtofte’s point that developments during the Battle of Waterberg shaped von Trotha’s decisions. Häussler, *Der Genozid an den Herero*, 184. See also Hendrik Lundtofte, “I believe that the nation as such must be annihilated . . . : The Radicalization of the German Suppression of the Herero Rising in 1904,” in *Genocide: Cases, Comparisons and Contemporary Debates*, ed. Stephen B. Jensen, 15–53, here 34–35 (Copenhagen, 2003).
6. Drechsler, “*Let Us Die Fighting*,” 153. See also Häussler, *Der Genozid an den Herero*, 158.
7. TNA, CO 879/86/4, Further Correspondence [1905] relating to the Affairs of Walfisch Bay and the German South-West-African Protectorate, enclose no. 59, enclosure 1, Isaac Magadi, affidavit sworn 22 April 1905.
8. Timothy J. Stapleton, *A History of Genocide in Africa* (Santa Barbara, CA, 2017), 16. See also Häussler, *Der Genozid an den Herero*, 79.
9. TNA, CO 879/86/4 Further Correspondence [1905] relating to the Affairs of Walfisch Bay and the German South-West-African Protectorate, no. 36, enclosure (11 April 1905, Gleichen, Lieutenant-Colonial Military Attache, report).
10. Groups included Nama under Hendrik Witbooi, the Franzman people under Simon Kooper, the Red Nation under Manasse Noroseb, and the Veldschoendragers under Hans Hendrik, among others. The Basters at Rehoboth fought with the Germans. Wallace, *A History of Namibia*, 166–67.
11. Kuss, *German Colonial Wars*, 7–8. See also Hammerstein, “Kriegs-Schau-Platz Omaheke.”
12. Hull, *Absolute Destruction*, 13.
13. Nuhn called nature an “ally” of the Herero. Walter Nuhn, *Sturm über Südwest: Der Hereroaufstand von 1904—ein düsteres Kapitel der deutschen kolonialen Vergangenheit* (Koblenz, 1989), 75.
14. Häussler, *Der Genozid an den Herero*. See also Matthias Häussler, “From Destruction to Extermination: Genocidal Escalation in Germany’s War Against the Herero, 1904,” *Journal of Namibian Studies* 10 (2011): 58–81.
15. Lehmann, “Between Waterberg and Sandveld,” 536. See also Kuss, *German Colonial Wars*, 7.
16. Hull, *Absolute Destruction*, 7. The Herero were also unprepared. See Gewalt, *Herero Heroes*, 165–67.
17. Gudewill to Col. Dept., tel. Nr. 26, Feb. 3, 1904, BArch-B, R 1001, Nr. 2111, 177, as quoted in Hull, *Absolute Destruction*, 10. The exact numbers vary depending on account.
18. District Judge Richter Windhuk, 14. Jan. 1904, BArch-B, R 1001, Nr. 2111, 22, quoted in Hull, *Absolute Destruction*, 7.
19. *Deutsch-Südwestafrikanische Zeitung*, “Aus Swakopmund,” 3 August 1904. See also *Kolonie und Heimat*, “Der Krieg in Deutsch-Südwestafrika 1904–07,” 23 May 1908; Kurd

- Schwabe, "Deutsch-Südwestafrika. Geschichte-Völker- und Landeskunde: Das Groß-Namaland und das mittlere Schutzgebiet," in *Die Deutsche Kolonien, Band 1: Togo-Kamerun-Deutsch-Südwestafrika*, ed. Kurd Schwabe, 75–138, here 95 (Berlin, 1909).
20. G. Auer and M. Unterbeck, eds., *In Südwestafrika gegen die Hereros: Nach den Kriegstagebüchern des Obermatrosen G. Auer* (Berlin, 1911), 28, as quoted in Kuss, *German Colonial Wars*, 96.
 21. Pool, *Eisenbahnen in Deutsch-Südwestafrika*, 105.
 22. Paschasius, *Die Militäreisenbahn Swakopmund-Windhuk*, 7. See also Walter Paschasius, *Die Befreiung Okahandjas während des Herero-Aufstandes* (Windhoek, 1951); *Deutsch-Südwestafrikanische Zeitung*, "Der Zug der Abteilung v. Zülow von Swakopmund nach Okahandja," 26 January 1904; "Beiträge zur militärischen Geschichte des Jahres 1904, Dritter Teil, Bericht über die kriegerischen Ereignisse in den deutschen Kolonien," 447–88, here 455, in V. Löbell's *Jahresberichte über die Veränderungen und Fortschritte im Militärwesen*, ed. Gerhard von Pelet-Narbonne (Berlin, 1905). For broad summaries see Pool, *Eisenbahnen in Deutsch-Südwestafrika*, 104–14; Bravenboer and Rusch, *The First 100 Years of State Railways in Namibia*, 62–64; Nuhn, *Sturm über Südwest*, 77–84; Häußler, *Der Genozid an den Herero*, 139–41.
 23. R. Boethke, "Verkehrstruppen in Südwestafrika," *Militär-Wochenblatt* (1906), 39–56, here 41.
 24. Admiralstab der Marine, ed., *Die Tätigkeit des Landungskorps S. M. S. 'Habicht' während des Herero-Aufstandes in Süd-West-Afrika, Januar/ Februar 1904* (Berlin, 1905), 6.
 25. Auer and Unterbeck, *In Südwestafrika gegen die Hereros*, 32.
 26. Hartmut Bartmuß, "Primary Source Josef Bendix: Briefe und Feldpostkarten aus Deutsch-Südwestafrika Oktober 1903 bis März 1904," *Journal of Namibian Studies* 19 (2016): 109–22, here 114 (letter 17 January 1904). Bendix later died in combat near Owikokorero. See also Hartmut Bartmuß, *Joseph Bendix: Regierungsbaumeister, Ingenieur und Offizier in Deutsch-Südwestafrika* (Berlin, 2015); Conrad Rust, *Krieg und Frieden im Hereroland: Aufzeichnungen aus dem Kriegsjahre 1904* (Leipzig, 1905), 220.
 27. "Primary Source Josef Bendix," 118 (letter 2 March 1904).
 28. Admiralstab der Marine, *Die Tätigkeit des Landungskorps S. M. S. 'Habicht' während des Herero-Aufstandes in Süd-West-Afrika*, 7.
 29. "Primary Source Josef Bendix," 118 (letter 2 March 1904). See also Admiralstab der Marine, *Die Tätigkeit des Landungskorps S. M. S. 'Habicht'*, 8; Bravenboer and Rusch, *The First 100 Years of State Railways in Namibia*, 62–63.
 30. Hermann Schwabe, "Ueber die Hafен- und Eisenbahnbauten in Deutsch-Südwest-Afrika," *Deutsche Bauzeitung* XXXIX, no 10 (4 February 1905): 63–66, here 66.
 31. *Kladderdatsch, humoristisch-satirisches Wochenblatt*, "Erfreuliches," 17 January 1904.
 32. Niklaas Tsam, 36, in Erichsen, *What the Elders Used to Say*.
 33. Moses Maharero, 52, in Erichsen, *What the Elders Used to Say*.
 34. Auer and Unterbeck, *In Südwestafrika gegen die Hereros*. Bendix describes hanging opponents on the spot. See "Primary Source Josef Bendix," 119 (letter 2 March 1904).
 35. Gewalt, *Herero Heroes*, 164–65.
 36. *Ibid.*, 142.
 37. Schneider, "Bewässerungslandwirtschaft in Namibia und ihre Grundlagen in der Kolonialzeit," 128; Gewalt, *Herero Heroes*, 123; Drechsler, "Let Us Die Fighting," 132.
 38. Bley, *South-West Africa under German Rule*, 96.

39. German businessmen and traders at times took advantage of local groups, claimed their land and access to water. See Njanekua and Muuondjo, "Tjiponda, Kahivesa, and the Wars of the Hereros," 154–73, here 162, *Michael Scott Oral History Project*. See also Silvester and Gewalt, *Words Cannot be Found*, 84.
40. Erichsen, *What the Elders Used to Say*, 47; Gewalt, *Herero Heroes*, 150–51; Wallace, *A History of Namibia*, 157.
41. Nuhn, *Sturm über Südwest*, 88.
42. François, *Nama und Damara*, 37. See also Moritz Eduard Pechuel-Loesche, "Das Abkommen des Riviers," in *Deutsch-Südwestafrika: Land und Leute: eine Heimatkunde für Deutschlands Jugend und Volk*, ed. Bernhard Voigt, 24 (Stuttgart, 1913); Schwabe, *Mit Schwert und Pflug*, 419.
43. *Deutsche Kolonialzeitung*, "Swakopmund einst und jetzt," 31 October 1901.
44. Goudie and Viles, *Landscapes and Landforms of Namibia*, 12. See also Walter Moritz, "Zur Geschichte und Bedeutung des Names Swakop und Swakopmund," *Namib und Meer* 3 (Sonderdruck) (1972), 37–41, here 39. Namibian oral traditions tell larger stories about the reason for such floods. See Muzumi Roberts, "The Story of Muzimbikana," in Namibia Oral Tradition Project, *Muzimbikana and Other Namibian Adventures*, 31–33, here 33.
45. 1748, T.VII.F. 3 (vol 5) Hafen von Swakopmund Bau einer Mole Specialia Alte Akten. (1904–1905), Abkommen des Swakopmund, undated.
46. *Deutsch-Südwestafrikanische Zeitung*, "Das Abkommen des Swakop," 12 February 1903. See also *Deutsch Südwestafrikanische Zeitung*, "Aus Swakopmund," 20 December 1903; *Deutsch Südwestafrikanische Zeitung*, "Aus Swakopmund," 22 December 1903; *Deutsches Kolonialblatt*, "Die diesjährige Regenzeit," 15 February 1904.
47. Rudolf Fitzner, *Deutsches Kolonial-Handbuch*, vol. 1, 2ed (Berlin, 1901), 127.
48. NAN, HBS, St. Unit 1, File 1/2, Allgemeiner generelle Verhandlungen und Verfügungen dn Hafenbau betreffend, 1898–1902, "Militärischer Bericht" der S.M.S. Wolf, 9 November 1900.
49. *Deutsch-Südwestafrikanische Zeitung*, "Aus Swakopmund: Das Abkommen des Swakop," 22 December 1903.
50. *Deutsch-Südwestafrikanische Zeitung*, "Das Abkommen des Swakop: Störung der Wasserleitung," 29 December 1903. The drinking water had its starting point in the riverbed of the Swakop River.
51. Connemann, "Meinungsaustausch," *Marine-Rundschau* (June 1908), 756–70, here 756–58.
52. *Deutsches Kolonialblatt*, "Lösch- und Ladeverkehr in Swakopmund," 1 June 1904.
53. *Deutsch-Südwestafrikanische Zeitung*, "Aus Swakopmund," 29 June 1904. See also *Deutsch-Südwestafrikanische Zeitung*, "Aus Swakopmund," 10 August 1904.
54. Connemann, "Meinungsaustausch," *Marine-Rundschau* (June 1908), 756–70, here 756–58. See also *Deutsch Südwestafrikanische Zeitung*, "Aus Swakopmund," 13 July 1904; *Deutsch-Südwestafrikanische Zeitung*, "Aus Swakopmund," 6 July 1904.
55. *Deutsche Kolonialzeitung*, "Die Landungsverhältnisse in Swakopmund," 21 July 1904.
56. Hintrager, *Südwestafrika in der deutschen Zeit*, 61.
57. *Deutsch-Südwestafrikanische Zeitung*, "Der deutsche Reichstag und das südwestafrikanische Schmerzkind," 11 May 1904. See also Nuhn, *Sturm über Südwest*, 188–89.

58. Erich von Salzmänn, *Im Kampfe gegen die Herero*, 2nd ed. (Berlin, 1905), 35. Salzmänn's publication includes a handful of photographs that capture the fright of the animals. Salzmänn, *Im Kampfe gegen die Herero*, 35 and 38. Horses had been brought in from all over the world, few in good shape in the first place. Nuhn, *Sturm über Südwest*, 208 and 215; Häussler, *Der Genozid an den Herero*, 248.
59. *Deutsch-Südwestafrikanische Zeitung*, "Aus Swakopmund," 3 August 1904. See also Conrad Rust, *Krieg und Frieden im Hereroland: Aufzeichnungen aus dem Kriegsjahre 1904* (Leipzig, 1905), 336–37; *Deutsche Kolonialzeitung*, "Ueber die Truppen- und Pferdetransporte nach Swakopmund und deren Landung daselbst," 4 August 1904.
60. *Deutsch Südwestafrikanische Zeitung*, "Aus Swakopmund," 17 August 1904. See also *Deutsch-Südwestafrikanische Zeitung*, "Aus Swakopmund," 7 September 1904; *Deutsches Kolonialblatt*, "Hafenverkehr in Swakopmund," 15 April 1905. See also Bravenboer and Rusch, *The First 100 Years of State Railway in Namibia*, 98.
61. *Deutsch-Südwestafrikanische Zeitung*, "Aus Swakopmund," 7 September 1904.
62. BArch-F, Militärgeschichtliche Sammlung (MSG) 2/12682, Lieutenant Eberhard von Hagen, "Auf der Fahrt von Swakopmund nach Lüderitzbucht," 24 September 1905.
63. Lyon, "From Labour Elites to Garveyites," 37–55, here 42.
64. *Deutsch-Südwestafrikanische Zeitung*, "Aus Swakopmund," 14 September 1904. See also *Deutsche Kolonialzeitung*, "Südwestafrika: Hafenverkehr in Swakopmund," 22 April 1905. According to one account, 11,065 horses were brought ashore that way, from 1904 to 1906. See Kirsten Kraft, *Wo einst der Fuß des Kriegers trat, wächst heute Kopfsalat: Swakopmunder Geschichte(n)* (Windhoek, 2014), 16.
65. Aktenstück Nr. 509 (Zweiter Nachtrag zum Haushalts-Etat für die Schutzgebiete für 1904), 2670–2701, here 2677, accessible at www.reichstagsprotokolle.de, last accessed 11 March 2021.
66. *Archiv für Post- und Telegraphie*, "Kleine Mitteilungen," August 1903, 481–483, here 483.
67. *Kladderdatsch, humoristisch-satirisches Wochenblatt*, "Mein Aerger," 7 August 1904. See also *Kladderdatsch, humoristisch-satirisches Wochenblatt*, "Ein Vorschlag," 4 December 1904.
68. BArch-B, R 1001/1865a, Hafenanlagen in Swakopmund (Vorschläge zum Ausbau des Hafens). There were no significant changes until April 1903; by 4 May 1904, there was already too much sand, however. BArch-B, R 1001/1865a, Hafenanlagen in Swakopmund, (Anlage).
69. NAN, HBS, St. Unit 2, File 1/8, Vorschläge zum weiteren Ausbau des Hafens in Swakopmund, September 1904; BArch-B, R 1001/165a, Vorschläge zum weiteren Ausbau des Hafens in Swakopmund, September 1904; *Deutsch-Südwestafrikanische Zeitung*, "Aus Swakopmund," 4 January 1905.
70. *Deutsch-Südwestafrikanische Zeitung*, "Aus Swakopmund," 9 Nov. 1904.
71. *Deutsch-Südwestafrikanische Zeitung*, "Aus dem Schutzgebiet," 4 January 1905. See also Schwabe, "Ueber die Hafen- und Eisenbahnbauten in Deutsch-Südwest-Afrika," 62–63.
72. *Deutsch-Südwestafrikanische Zeitung*, "Aus Swakopmund," 24 August 1904.
73. *Deutsch-Südwestafrikanische Zeitung*, "Aus Swakopmund," 14 September 1904. See also NAN, HBS, 2, Baggararbeiten im Hafen Swakopmund, 1904–06 (Vorschläge zum weiteren Ausbau des Hafens in Swakopmund, 14 September 1904).

74. Schwabe, "Ueber die Hafen- und Eisenbahnbauten in Deutsch-Südwest-Afrika," 63. See also *Deutsch-Südwestafrikanische Zeitung*, "An den Herausgeber," 24 August 1904; Bravenboer and Rusch, *The First 100 Years of State Railway in Namibia*, 98.
75. NAN, HBS, 2, Baggerarbeiten im Hafen Swakopmund, 1904–06.
76. *Deutsch-Südwestafrikanische Zeitung*, "Aus Swakopmund," March 29, 1905. See also *Deutsch-Südwestafrikanische Zeitung*, "Aus Swakopmund," 4 January, 1905.
77. Reichstag, 131. Sitzung, 1 February 1905. Retrieved 11 March 2021 from www.reichstagsprotokolle.de.
78. Reichstag, 167. Sitzung, 18 March 1905. Retrieved 11 March 2021 from www.reichstagsprotokolle.de.
79. Reichstag 74. Sitzung, 24 March 1906. Retrieved 11 March 2021 from www.reichstagsprotokolle.de.
80. *Deutsch-Südwestafrikanische Zeitung*, "Aus dem Schutzgebiet," 8 March 1905. Efforts continued to have two functional dredgers on site. See NAN, HBS, 2, Baggerarbeiten im Hafen Swakopmund, 1904–06 ("Der Königliche Maschineninspektor, 5 June 1905).
81. BArch-B, R 1001/1865a, Hafenanlagen in Swakopmund (Aufzeichnungen betreffend die Beschaffung von Baggerprähmen für Swakopmund). See also *Deutsch-Südwestafrikanische Zeitung*, "Aus Swakopmund," 29 March 1905; *Deutsch-Südwestafrikanische Zeitung*, "Aus dem Schutzgebiet," 5 April 1905.
82. *Deutsch Südwestafrikanische Zeitung*, "Aus Swakopmund," 26 April 1905. See also *Deutsch Südwestafrikanische Zeitung*, "Aus Swakopmund," 29 March 1905; *Deutsch-Südwestafrikanische Zeitung*, "Aus dem Schutzgebiet," 6 April 1905. Additional parts had to be ordered and took time to arrive on site. NAN, HBS, St. Unit 2, File 1/8, St. Unit 2, File 1/8, Brief, Der Königliche Maschinenbauinspektor, 31 May 1905.
83. *Deutsches Kolonialblatt*, "Hafenverkehr in Swakopmund," 15 April 1905.
84. Reichstag 74. Sitzung, 24 March 1906. Retrieved 11 March 2021 from <http://www.reichstagsprotokolle.de>.
85. NAN, HBS, 2, Baggerarbeiten im Hafen Swakopmund, 1904–0 ("Auf das Telegramm Nr. 17, 10 June 1905).
86. Cb 83 Gustav Buß, *Der Globetrotter*, 25, Schleswig-Holsteinische Landesbibliothek Kiel. See also Semler, *Meine Beobachtungen in Süd-West-Afrika*, 53.
87. *Deutsch Südwestafrikanische Zeitung*, "Aus Swakopmund," 17 May 1905.
88. NAN, ZBU, 1751, T.VII. F.4 Hafen von Swakopmund Molenbetrieb Specialia Akten (1903–1906), Woermann Linie, 4 May 1905.
89. *Deutsche Kolonialzeitung*, "Swakopmund," 20 May 1905.
90. Reichstag 74. Sitzung, 24 March 1906. Retrieved 11 March 2021 from <http://www.reichstagsprotokolle.de>. See also *Deutsch Südwestafrikanische Zeitung*, "Aus Swakopmund," 29 March 1905.
91. Connemann, "Hafenanlage in Swakopmund," *Marine-Rundschau*, June 1910, 304–6, here 305.
92. *Deutsche Kolonialzeitung*, "Deutsch-Südwestafrika. Landungsverhältnisse in Swakopmund," 8 July 1905. See also *Deutsch-Südwestafrikanische Zeitung*, "Aus Swakopmund," 16 August 1905.
93. *Deutsche Kolonialzeitung*, "Südwestafrika: Die unglückselige Mole," 23 September 1905. See also *Deutsche Kolonialzeitung*, "Südwestafrika: Die unglückseligen Swakopmunder-Hafenverhältnisse," 18 November 1905; *Deutsche Kolonialzeitung*, "Südwest-

- afrika: Wieder die Mole,” 9 December 1905; *Deutsche Kolonialzeitung*, “Südwestafrika: Immer noch die unglückselige Mole,” 30 December 1905.
94. Gewalt, *Herero Heroes*, 183.
 95. Ortschronik Omaruru, Archives of the Evangelical-Lutheran Church in the Republic of Namibia (ELCRN), V. 23.1., 312, as quoted in Kreienbaum, “*Ein trauriges Fiasko*,” 223.
 96. Ortschronik Windhoek, ELCRN, V. 37.2., 27, as quoted in Kreienbaum, “*Ein trauriges Fiasko*,” 223.
 97. Drechsler, “*Let Us Die Fighting*,” 207. Steinmetz speaks about “slavelike forced labor after 1904.” Steinmetz, *The Devil’s Handwriting*, 197. In some instances, local inhabitants chose domestic servants. Maria Muschalek, “Violence as Usual: Everyday Police Work and the Colonial State in German Southwest Africa,” in *Rethinking the Colonial State*, ed. Søren Rud and Søren Ivarsson, 129–50, here 141. Bingley, UK, 2017.
 98. *Deutsche Kolonialzeitung*, “Südwestafrika: Landungsverhältnisse in Swakopmund,” 6 October 1904.
 99. *Deutsch-Südwestafrikanische Zeitung*, “Aus Swakopmund,” 14 June 1905.
 100. Werner Haak, *Tagebuchblätter aus Südwest-Afrika* (Berlin, 1906), 12, as quoted in Lyon, “Namibian Labor Empire.”
 101. Olusago and Erichsen, *The Kaiser’s Holocaust*, 167.
 102. Report on the Natives of South West Africa and Their Treatment by Germany (London, 1918), 100, as quoted in “Ombepera i koza—The Cold Is Killing Me,” 70, in Zimmerer and Zeller, *Genocide in German South-West Africa*. See also Zeller, “Wie Vieh wurden Hunderte zu Getriebenen und wie Vieh begraben: Fotodokumente aus dem deutschen Konzentrationslager Swakopmund/ Namibia 1904–1908.” *Zeitschrift für Geschichtswissenschaft* 49, no. 3 (2001): 226–43, here 235–36. Fraser also described sexual violence. Report on the Natives of South West Africa and Their Treatment by Germany (London, 1918), 100, as quoted in Zimmerer and Zeller, *Genocide in German South-West Africa*.
 103. TNA, CO 879/91/4, Further Correspondence [1906] relating to the Affairs of Walfisch Bay and the German South-West African Protectorate, no. 291, enclosure (James Tolibadi, signed/ sworn 11 August 1906).
 104. Zeller, “Wie Vieh wurden Hunderte zu Getriebenen und wie Vieh begraben,” 235.
 105. Zeller, “Ombepera i koza—The Cold Is Killing Me,” 64, in Zimmerer and Zeller, *Genocide in German South-West Africa*. See also Casper W. Erichsen, “*The Angel of Death Has Descended Violently among Them*”: *Concentration Camps and Prisoner-of-War in Namibia, 1904–1908* (Leiden, 2005), 84.
 106. Zimmerer, “War, Concentration Camps and Genocide in South-West Africa,” 53, in Zimmerer and Zeller, *Genocide in German South-West Africa*, 53. See also ELCIN, Ortschroniken Swakopmund, as quoted in Gewalt, *Herero Heroes*, 188; Steinmetz, *The Devil’s Handwriting*, 205.
 107. Zeller, “Ombepera i koza—The Cold Is Killing Me,” 67, in Zimmerer and Zeller, *Genocide in German South-West Africa*.
 108. Letter Heinrich Vedder to Johannes Spiecker, 26 May 1905, Archiv der Vereinigten Evangelischen Mission (AVEM), Rheinische Missionsgesellschaft (RMG) 1.660a, Bl. 64–67, quoted in Kreienbaum, “*Ein trauriges Fiasko*,” 228. For his visit of the camp more specifically, see AVEM, RHG, C. V. 31, Gemeinde-Chronik Swakopmund, 220,

- as quoted in Zeller, “Wie Vieh wurden Hunderte zu Getriebenen und wie Vieh begraben,” 227.
109. ELCIN, Ortschroniken Swakopmund, as quoted in Gewalt, *Herero Heroes*, 188. See also Steinmetz, *The Devil’s Handwriting*, 205; Olusoga and Erichsen, *The Kaiser’s Holocaust*, 163.
 110. AELCRN, Windhoek, C.V. 31, Gemeinde Chronik [Community Records], Swakopmund, 6f, as quoted in “Omberpera i koza—The Cold Is Killing Me,” 64, in Zimmerer and Zeller, *Genocide in German South-West Africa*.
 111. Olusoga and Erichsen, *The Kaiser’s Holocaust*, 165.
 112. Abb. 6, as referenced in “Wie Vieh wurden Hunderte zu Getriebenen und wie Vieh begraben,” 233.
 113. ZBU 454, D. IV.1.3, vol. I, pp. 58–9, as quoted in Olusoga and Erichsen, *The Kaiser’s Holocaust*, 169.
 114. AELCRN, Windhoek, C.V. 31, Gemeinde Chronik [Community Records], Swakopmund, 6f, quoted in “Omberpera i koza—The Cold Is Killing Me,” Zimmerer and Zeller, *Genocide in German South-West Africa*, 64.
 115. Vedder, *Kurze Geschichten*, 138, as quoted in “Omberpera i koza—The Cold Is Killing Me,” 69, in Zimmerer and Zeller, *Genocide in German South-West Africa*.
 116. Olusoga and Erichsen, *The Kaiser’s Holocaust*, 171.
 117. Zeller, “Wie Vieh wurden Hunderte zu Getriebenen und wie Vieh begraben,” 241. See also Gesine Krüger, *Kriegsbewältigung und Geschichtsbewußtsein: Realität, Deutung und Verarbeitung des deutschen Kolonialkriegs in Namibia, 1904–1907* (Göttingen, 1999), 130.
 118. Zeller, “Omberpera i koza—The Cold Is Killing Me,” 78, in Zimmerer and Zeller, *Genocide in German South-West Africa*.
 119. Gewalt, *Herero Heroes*, 190.
 120. BArch-B, R 1001/1808, Grenzverletzungen, Okt. 1906–Okt. 1911, letter, Berlin 20 December 1906 (Lasalles).
 121. *Deutsch-Südwestafrikanische Zeitung*, “Aus Swakopmund,” 22 June 1904. See also NAN, BSW, 107, UA.10/2 Entlaufen von Eingeborenen nach Walfischbay, 1904.
 122. Kreienbaum, “*Ein trauriges Fiasko*,” 270.
 123. *Deutsch-Südwestafrikanische Zeitung*, “Aus Swakopmund,” 22 June 1904. In some instances, this resulted in shortages of workers for the Woermann-Line. See: Gewalt, *Herero Heroes*, 190; Zeller, “Wie Vieh wurden Hunderte zu Getriebenen und wie Vieh begraben,” 238–39.
 124. ELCIN, V. Ortschroniken, Swakopmund 1906, as quoted in Gewalt, *Herero Heroes*, 190.
 125. Erichsen, *What the Elders Used to Say*, 49.
 126. Frenssen, *Peter Moors Journey to Southwest*, 36–37.
 127. Fritz Maywald, *Südwest und seine Helden* (Berlin, 1934), 9, as quoted in Kundrus, *Moderne Imperialisten*, 146.
 128. Eisinger, *Im Damaraland und Kaokofeld. Erinnerungen an Südwest-Afrika*, 5–6. See also Philaethes Kuhn, *Gesundheitlicher Ratgeber für Südwestafrika* (Berlin, 1907), 223, as quoted in Kundrus, *Moderne Imperialisten*, 170; Max Belwe, *Gegen die Herero 1904/1905 Tagebuchaufzeichnungen* (Berlin, 1906), 8.

129. Salzmann, *Im Kampfe gegen die Herero*, 30. See also Kundrus, *Moderne Imperialisten*, 146; Kuss, *German Colonial Wars*, 7.
130. *Simplicissimus: Illustrierte Wochenschrift*, "Entwurf eines Wandgemäldes für das Regierungsgebäude in Windhuk," 1 April 1907 (Spezial-Nummer, Erster April).
131. Simplex Africanus, "Deutsch-Südwest-Afrika," in *Mit der Schutztruppe durch Deutsch-Afrika*, ed. Simplex Africanus, Lieutenant Laasch, and Hauptmann Leue, 1–71, here 51 (Minden i. W., 1905).
132. Kundrus, *Moderne Imperialisten*, 152. See also Kundrus, *Moderne Imperialisten*, 145–46.
133. Friedrich Zöllner, *Als Arzt in Deutsch-Südwest* (Magdeburg, 1939), 33–35, as quoted in Kundrus, *Moderne Imperialisten*, 151.
134. Franz Henkel, *Der Kampf um Südwestafrika* (Berlin, 1908), 4.
135. Hermann Alverdes, *Mein Tagebuch aus Deutsch-Südwest*; Belwe, *Gegen die Herero*; Henkel, *Der Kampf um Südwestafrika*; Salzmann, *Im Kampfe gegen die Herero*. See also Frenssen, *Peter Moors Journey to Southwest*, 6.
136. Eckenbrecher, *Was Afrika mir gab und nahm*, 186.
137. Curt von François, "Der Herero-Aufstand, II," *Militär-Wochenblatt* no. 18, 11 February 1904.
138. BArch-K, N 1101/7, Nachlass Franz Ritter von Epp, Helden-Epos von Hauptmann Bayer. See also Africanus, Laasch, and Leue, *Deutsch-Südwest-Afrika*, 1. Public opinion and overall expectations "demanded a quick victory." Hull, *Absolute Destruction*, 13.
139. Maximilian Bayer, *Der Krieg in Südwestafrika und seine Bedeutung für die Entwicklung der Kolonie* (Leipzig, 1906), 9, as quoted in Olusoga and Erichsen, *The Kaiser's Holocaust*, 133.
140. Olusoga and Erichsen, *The Kaiser's Holocaust*, 135.
141. Kuss, *German Colonial Wars*, 143.
142. Häussler, *Der Genozid an den Herero*, 142, 157 and 151.
143. *Ibid.*, 148–49, 152 and 247.
144. Wallace, *A History of Namibia*, 161. For instance, in one skirmish near Omaruru the Herero took advantage of the rocky terrain. See Kriegsgeschichtliche Abteilung I Großer Generalstab, eds., *Die Kämpfe der deutschen Truppen in Südwestafrika, Erster Band, Der Feldzug gegen die Hereros* (Berlin, 1906), 50. See also Nuhn, *Sturm über Südwest*, 336–37; Gerhardus Pool, *Die Herero-opstand, 1904–1907*, 2nd ed. (Pretoria, 2016).
145. Kirsten Alnaes, "Living with the Past: The Songs of the Herero in Botswana." *Africa* 59, no. 3 (1989): 267–99, here 281–83.
146. Häussler, *Genozid an den Herero*, 233–34. See also Nuhn, *Sturm über Südwest*, 322–23.
147. Gewalt, *Herero Heroes*, 170.
148. Kuss, *German Colonial Wars*, 165.
149. *Ibid.*, 168.
150. *Deutsche Kolonialzeitung*, "Südwestafrika. Belohnung für den Nachweis von Wasser," 23 June 1904.
151. Kuss, *German Colonial Wars*, 158.
152. *Praktische Erfahrungen aus Deutsch-Südwestafrika* (Berlin, 1904), point 43, as quoted in Kuss, *German Colonial Wars*, 123.

153. Jean Gümpell, *Die Wahrheit über Deutsch-Südwest-Afrika* (Cassel, 1905), 9.
154. Scherz, *Südwestener Geschichten am Lagerfeuer erzählt*, 65.
155. Frenssen, *Peter Moors Journey to Southwest*, 45.
156. Erichsen, *What the Elders Used to Say*, 16. Those Damara groups that joined the rebellion would of course use their knowledge against the Germans—like Benjamin/Howaseb, who shared how a group under the leadership of Gariseb used mountains and rocks to target the Germans pursuing them. Erichsen, *What the Elders Used to Say*, 18.
157. Auer von Herrenkirchen, *Meine Erlebnisse während des Feldzuges gegen die Hereros und Witboois nach meinem Tagebuch* (Berlin, 1907), 19.
158. Frenssen, *Peter Moors Journey to Southwest*, 68/69.
159. Herrenkirchen, *Meine Erlebnisse während des Feldzuges*, 81. For the importance of waterholes in general, see also Ada von Liliencron, *Heiße Arbeit unter heißer Sonne: Bilder aus dem Südwestafrikanischen Feldzug* (Berlin, 1907), 64.
160. Conrad Rust, *Krieg und Frieden im Hereroland: Aufzeichnungen aus dem Kriegsjahre 1904* (Leipzig, 1905), 323.
161. *Deutsche Kolonialzeitung*, “Südwestafrikanische Kriegsbilder,” 26 October 1907. See also Simplex Africanus, Leutnant Laasch, and Hauptmann Leue, eds., *Mit der Schutztruppe durch Deutsch-Südwest-Afrika* (Minden i. W., 1905). Frenssen wrote extensively about these situations, with some hindsight. Frenssen, *Peter Moors Journey to Southwest*, 52–53 and 168.
162. Ernst Kaerger, “Der Typhus in Südwestafrika [Ostabteilung (Major von Glasenapp) und Marine-Expeditionskorps] Februar 1904 bis März 1905” (PhD. diss., Königl. Christian-Albrechts-University Kiel, 1905), 5. See also Karla Poewe, *The Namibian Herero: A History of Their Psychological Disintegration and Survival* (Lewiston, 1985), 86.
163. *Sanitätsordnung während des Kriegszustandes in Deutsch-Südwest-Afrika*, 1 July 1904, sec. 14, emphasis in the original, as quoted in Kuss, *German Colonial Wars*, 192. See also “Diary of Heinrich Geisel, Sanitary Sergeant in the Kaiserliche Schutztruppe for South West Africa, January 1905–October 1906,” transcribed by Hartmut Bartmuß, *Journal of Namibian Studies* 21 (2017): 117–34, here 119; Hans Berthold, “Vom Kriegsschauplatz in Südwest: Von einem alten Afrikaner,” *Kolonie und Heimat*, 1 October 1907. Margarethe von Eckenbrecher included a photograph showing a soldier “boiling water.” Eckenbrecher, *Was Afrika mir gab und nahm*, table 6.
164. Kaerger, “Der Typhus in Südwestafrika,” 8–10.
165. *Ibid.*, 12.
166. *Ibid.*, 7.
167. Major F. F. Russel, “The Prevention of Typhoid Fever by Vaccination and Early Diagnosis and Isolation,” *The Military Surgeon* XXIV, no. 6 (Jun., 1909): 479–518, here 485.
168. Kuss, *German Colonial Wars*, 193. Kreienbaum and Bley speak of over 2,000 casualties. Kreienbaum, “*Ein trauriges Fiasko*,” 84; Bley, *Kolonialherrschaft*, 193. Leutwein later noted that typhus “demand[ed] more victims than the Hereros.” Leutwein, *Elf Jahre Gouverneur in Deutsch-Südwestafrika*, 507.
169. Lukas Grawe, “The Prusso-German General Staff and the Herero Genocide,” *Central European History* 52, no. 4 (2019): 588–619, here 609n168.
170. Eckert, *Medizin und Kolonialimperialismus*, 277–78.

171. Deutschlands koloniale Wehrmacht in ihrer gegenwärtigen Organisation und Schlagfähigkeit: Auf Grund der neuesten amtlichen Dokumente bearbeitet von einem höheren Offizier, Hermann von Wissmann (Berlin, 1906), 94, as quoted in Kuss, *German Colonial Wars*, 203.
172. Schian, "Die Bekämpfung des Typhus unter der Schutztruppe in Südwestafrika im Hererofeldzug 1904/05," *Deutsche Militärärztliche Zeitschrift* 34 (1905): 593–604, here 594, as quoted in Kuss, *German Colonial Wars*, 192.
173. Eckert, *Medizin und Kolonialimperialismus*, 278. Of course, officials knew about the impact of diseases onto prisoners of war. Eckert, *Medizin und Kolonialimperialismus*, 283–90.
174. Werner, "Nervenkrankheiten," in *Deutsches Kolonial-Lexikon*, Band II, 628. See also Daniel J. Walther, *Sex and Control: Venereal Disease, Colonial Physicians, and Indigenous Agency in German Colonialism, 1884–1914* (New York, 2015). Although it played a larger role in German East Africa, at times it became part of a defense in court in German Southwest Africa. See *Windhuker Nachrichten*, "Der Strafprozess Wiehager," 28 February 1907.
175. Baer, *The Genocidal Gaze*, 71.
176. Kuss, *German Colonial Wars*, 193. See Sanitäts-Bericht über die Kaiserliche Schutztruppe für Südwestafrika, vol. 2, 2, 402, as referenced in Kuss, *German Colonial Wars*, 202. Major Estroff had hoped to attack the Herero at the Waterberg before the arrival of von Trotha fearing the further spread of typhus among his troops—a request von Trotha declined. Herrenkirchen, *Meine Erlebnisse während des Feldzuges*, 8.
177. "Völkerkunde," 630, in *Deutsches Koloniallexikon*, III. "Until now everything Naturvölker needed grew for them." Karl Dove, *Deutsch-Südwest-Afrika*, 187. See also Gründer, *Geschichte der deutschen Kolonien*, 237–52.
178. Kriegsgeschichtliche Abteilung I des Großen Generalstabes, ed., *Die Kämpfe der deutschen Truppen in Südwestafrika. Auf Grund amtlichen Materials*, vol. 2 (Berlin, 1907), 302.
179. Max Belwe, *Gegen die Herero 1904/1905. Tagebuchaufzeichnungen* (Berlin, 1906), 115.
180. Carl Schlettwein, *Der Herero-Aufstand, was hat ihn veranlaßt und was lehrt er uns?* Vortrag (Wismar, 1905), 14.
181. Walther Rathenau used such language while also condemning "the greatest atrocity that has ever been brought about by German military policy." Walther Rathenau, *Industrialist, Banker, Intellectual, and Politician: Notes and Diaries 1907–1922*, ed. Hartmut Pogge von Strandmann (Oxford, 1985), 81.
182. Andreas Kukuri, *Herero-Texte: Erzählt von Pastor Andreas Kukuri* (Berlin, 1983), 51, as referenced in Hammerstein, "Kriegs-Schau-Platz Omaheke," 36.
183. Erichsen, *What the Elders Used to Say*, 44.
184. Gesine Krüger, "Beasts and Victims: Women in the Colonial War," 170–92, here 170, in Zimmerer and Zeller, *Genocide in German South-West Africa*.
185. Steinmetz, *The Devil's Handwriting*, 194.
186. Raimund Ohly, *Herero Ecology: The Literary Impact* (Warsaw, 2000), 131. See also Alnaes, "Living with the Past," 267–99.
187. Telegram from Oberleutnant Estorff to Foreign Office in Berlin, 10 April 1907, BArch-B, RKA, vol. 2140, 88v, as quoted in Steinmetz, *The Devil's Handwriting*, 11. See

- also Ludwig von Estorff, *Wanderungen und Kämpfe in Südwestafrika, Ostafrika und Südafrika 1894–1910*, ed. Christoph-Friedrich Kutscher, 2nd ed. (Windhoek, 1979), 117, as quoted in “War, Concentration Camps and Genocide in Southwest Africa,” 48–49, in Zimmerer and Zeller, *Genocide in German South-West Africa*, 48–49; Steinmetz, *The Devil’s Handwriting*, 194.
188. Estorff, *Wanderungen und Kämpfe in Südwestafrika, Ostafrika und Südafrika*, 117, as translated in Zimmerer and Zeller, *Genocide in German South-West Africa*, 48–49. See also Ludwig von Estorff, *Kriegserlebnisse in Südwestafrika* (Berlin, 1911).
189. Jan-Bart Gewald, “The Great General of the Kaiser,” *Botswana Notes and Records* 26 (1994): 67–76, here 68. See also Erichsen, “*The Angel of Death Has Descended Violently among Them*,” 11; Erichsen, *What the Elders Used to Say*, 44–45.
190. Maximilian Bayer, *Mit dem Hauptquartier in Südwestafrika* (Berlin, 1909), 195, as quoted in Steinmetz, *The Devil’s Handwriting*, 193–94.
191. Alnaes, “Living with the Past,” 275.
192. VEM C/o.5 Joh. Neitz: Reise zu Samuel Maharero, Makapaanspoort, 8.11.1907, as quote in Pool, *Samuel Maharero*, 276.
193. Alnaes, “Living with the Past,” 276.
194. Jakob Irle, *Die Herero* (Gütersloh, 1906), 344, as quoted in Steinmetz, *The Devil’s Handwriting*, 195.
195. Belwe, *Gegen die Herero*, 104–5. See also Hintrager, *Südwestafrika in der deutschen Zeit*, 63.
196. Zimmerer, “War, Concentration Camps and Genocide in Southwest Africa,” 47, in Zimmerer and Zeller, *Genocide in German South-West Africa*.
197. Frenssen, *Peter Moors Journey to Southwest*, 193. See also Baer, *The Genocidal Gaze*, 50.
198. Kriegsgeschichtliche Abteilung I des Grossen Generalstabes, ed., *Die Kämpfe der deutschen Truppen in Südwestafrika*, 207. See also Zimmerer, *Deutsche Herrschaft über Afrikaner*, 39; Krienbaum, “*Ein trauriges Fiasko*,” 69; Bley, *South-West Africa under German Rule*, 162.
199. Frenssen, *Peter Moors Journey to Southwest*, 226.
200. Häussler, *Der Genozid an den Herero*, 190.
201. Lehmann, “Between Waterberg and Sandveld,” 553. See also Häussler, *Der Genozid an den Herero*.
202. Olusoga and Erichsen, *The Kaiser’s Holocaust*, 215, “systematically worked to death” Nama in Shark Island. Both scholars speak of Governor von Lindequist’s final solution. Olusoga and Erichsen, *The Kaiser’s Holocaust*, 206. As historian Zeller concludes, “It is therefore possible to see the treatment of prisoners in the camps as a continuation of the policy of extermination introduced by General Lothar von Trotha.” Joachim Zeller, “Ombepera i koza—The Cold Is Killing Me,” 78, in *Genocide in German South-West Africa*.
203. References to nature as the culprit still masks some colonial apologetics. See Martin Kalb, “Reprinting German Colonial Settler Narratives in Namibia Today,” in *Archiving Colonialism: Culture, Space and Race*, ed. Yu-Ting Huang and Rebecca Weaver-Hightower, 221–237 (New York, 2018).



Expanding War and Death

The Kaiser's telegram had reached the returning troops at the edge of the Kalahari Desert. It had taken some time before news from the Battle at Seatsub deep in British Bechuanaland east of German Southwest Africa had made it to Berlin. Now, in mid-March 1908, a note from Wilhelm II spoke of his majesty's "great pride, accompanied by profound grief given the loss of officers and men." The emperor highlighted that the Germans had defeated the enemy and died as heroes. One of the dead he mentioned by name, Hauptmann Friedrich von Erckert. He was, to follow the note, "one of the best and knightly officers of the colonial troops."¹ Countless newspapers agreed, publishing heroic obituaries and stories of bravery in a faraway desert space.² Erckert, a logistical mastermind in the opinion of many contemporaries, had relied on camels to reach into the Kalahari Desert. There, one of the last insurgents still fighting against German control, the captain of the Franzman (or Fransman) Nama, Simon Kooper (also Kopper, Cooper), had found hideouts. Reluctantly supporting the Germans in the late 1800s, Kooper had joined the rebellion of Hendrik Witbooi and others. They had witnessed Germany's brutal warfare against the Herero. Whereas Witbooi died in battle in 1905, and although the war had officially ended in March 1907, Kooper continued his raids from bases deep in the desert. In June 1905 he presumably attacked a small group of Germans and killed the guide Robert Duncan. Erckert thus prepared to reach him, relying on more than seven hundred camels in the so-called Kalahari Expedition. Leaving in early March, they trekked eastward, eventually crossing the border into British Bechuanaland. They did not care. After some time they found one of Kooper's *werfts* and attacked in the morning hours of March 13.³ Newspapers saw the battle as a success against nature and its people, with one publication speaking of "a major but dearly bought victory."⁴ The official military history portrayed von Erckert as a martyr.⁵ German writer Hans Grimm, the author of *Volk ohne Raum*, a book that later fueled Nazi visions of living space, later immortalized that heroic narrative.⁶ The Germans had indeed killed fifty-eight Franzman, including women and children; the rest fled, leaving behind live-

stock the Germans then killed as well. Yet the fact that Kooper had escaped prior to the actual battle indicated that war would drag on even longer.

The events that unfolded in the Kalahari Desert in March 1908, including how those would be framed within colonial narratives, are at the center of chapter 6. The shift of the war southward yet again exposed German logistical problems. The Battle of Waterberg and German efforts to push the Herero population into the desert defined the early part of the war; the resistance of Nama groups, among others, then gave Germans additional headaches. A non-human agent in the shape of a shipworm disrupted access once again while African forced labor continually compensated for such disturbances. The war in the south then more directly exposed German inabilities to supply their troops. To follow Kuss, as the war shifted, fighters could more easily melt “into the apparently never-ending hinterland, where they could survive for long periods.”⁷ According to other historians, “Many mornings the Germans would wake to discover that the trails left by the Nama’s horses had been blown away by the strong winds that always seemed to accompany sunset.”⁸ The construction of a railway, built through mobile sand dunes and arid desert landscapes by forced laborers shows the role of multiple agents. War then officially ended in March 1907. Yet some African groups continued to operate, and the Germans eventually employed camels to reach them. “The import and breeding of these animals,” to follow one scholar, “was one of the few attempts made to adapt the equipment of the Schutztruppe to the demands of the land.”⁹ Yet it also captured German desperation at a time when African combatants employed inaccessible mountains and arid borderlands to sustain themselves. The focus thus remains on environmental infrastructure as an instrument of war and resistance, shaped by ingenuity, labor, non-human agents, and natural forces.

Chapter 6 is divided into three parts. The first section continues to track the struggles surrounding access. With debates lingering among decision-makers about the future of the *Mole*, locals officials on site eventually decided to build a wooden jetty. Described as remarkably effective at the time, the arrival of the naval shipworm soon underscored the vulnerability of this new landing spot. First detected in Lüderitzbucht, a space of increasing importance given the shift of the war southward, it also disrupted the landing process in Swakopmund. The next section then explores efforts to supply troops in the south. With few updates to Lüderitzbucht since the early days of German colonialism, war served as “a catalyst” for the expansion of railways.¹⁰ Natural forces, specifically mobile sand dunes, became a factor soon shaping this instrument of war. African bodies, exploited to build the railway in an effort to reach inland, now also completed the Sisyphean task of removing the sand from the tracks. The last section then traces African ingenuity, or German logistical problems, as colonial troops tried to reach Jakob Marengo and Simon Kooper. Whereas

both individuals operated in British-Cape Colony-German borderlands and have seen some scholarly attention,¹¹ they were also holding out thanks to their use of precolonial environmental infrastructure. The German colonial government relied on the help of the Cape Colony to kill Marengo, a storyline that has seen some scholarly interest thanks in part to a novel and TV mini-series.¹² Officials then employed camels to get a hold of Kooper. Colonial narratives framed both struggles in large part as a battle against nature, a dynamic that yet again underscores efforts to minimize the agency of Africans.

Drilling Wood

A couple of sentences uttered during a debate in German parliament warned the audience of the naval shipworm. As part of larger discussions surrounding the situation of the harbor in Swakopmund in March 1906, politicians reviewed disruptions and miscalculations that long haunted Germany's main entry point. Conversations outlined the challenges that had emerged when it came to silting-in as well as the described role of dredgers; they also already pointed to the construction of a wooden jetty and other potential investments. Government Building Officer August Wiskow, who had experience overseeing constructions in German East Africa,¹³ at one point elaborated on such issues in more detail. Along the way, and only in passing, he mentioned the shipworm and its potential role in Southwest Africa. Merely a couple of sentences overall, Wiskow outlined that the mollusk had been widespread along the West African coastline. Employing the passive voice, he then stated that "[i]n Togo back then the wooden landing pier, now replaced by a metal jetty, was destroyed within three months." Luckily, he added, there had been no shipworm in Swakopmund. Yet Wiskow warned his audience to be diligent, adding that "the danger for the wooden pier is not barred."¹⁴

At the time of Wiskow's comments, little had changed in Swakopmund. Although African labor had provided help unloading, military necessity still required a solution when it came to landing supplies. Speculations about the said commission's proposal tied to investments into the harbor would run wild for years. Even suggestions about larger investments, or the takeover of Walvis Bay from the British, pop up.¹⁵ On the ground, the construction of a wooden jetty had seemed like the best solution. On 10 September 1904, the military railway construction battalion had been dispatched to the colony.¹⁶ It arrived aboard the steamer *Ernst Woermann* in late October. Construction began quickly thereafter¹⁷—several months before the dredger would even show up. Although everything had to be brought in, assembly moved along quickly. The structure relied on sixty-six wooden beams, around thirty centimeters in diameter each, mostly out of pinewood. Iron rods provided additional sta-



Figure 6.1. 026-0401-48/ 041-0241-52, “Cargo train on the jetty in Swakopmund,” undated, courtesy of the Universitätsbibliothek J. C. Senckenberg, Frankfurt am Main.

bility. A steam engine drove beams two-and-a-half to four meters deep into the ocean floor. In some instances, the rocky ground required detonations.¹⁸ Such tasks, and the project overall, were dangerous, making the use of forced labor come in handy. Workers connecting different beams were exposed to cold ocean waters. Only a foreman warned them to hold on tight before seven to ten-degree centigrade waves crashed over them. As one report further described, “The continual work within the cold ocean wind, in soaked clothing, was no fun at all, but could not be avoided. There were also stark differences in climate [throughout any given day], with cold fog in the morning and evening, yet around noon the heat was often burning hot.”¹⁹ Not surprisingly, the workers’ state of health was generally terrible, with lots of sicknesses and several casualties due to typhoid.²⁰ The pier was scheduled to open on 1 February 1905; however, a shift in the war southward required a temporary movement of materials to Lüderitzbucht.²¹ The jetty finally opened 29 April 1905, just in time given widespread disruptions of the landing process at the *Mole* and the failures of dredgers (Figure 6.1).²²

The wooden pier, grounded in African exploitation though sold as a sign of German ingenuity in the face of adversity, brought praise from all around. It was 275 meters long, with approximately seventy-five on land. It held a rotary steam crane that was able to lift seven to ten tons as it unloaded ships.²³ Settler and writer Clara Brockmann, who had come to the colony intending to write a novel, voiced her relief: “Up to recent years,” she wrote, “passengers were carried on land by natives.” Africans thereby literally served as landing structures—“[t]wo black arms slinging around the new arrival, and a sturdy

negro waded away with them through the water.”²⁴ Captain of the German ship *Sperber*, Wilhelm Bertram, described the wooden jetty as “an excellent construction.”²⁵ The *Deutsche Kolonialzeitung* newspaper agreed. That newspaper proclaimed in early 1906 already that it “had proven itself.”²⁶ Even those voices still debating and hoping for additional investments increasingly acknowledged its success. The jetty had indeed endured heavy weather, most notably in mid-1906. According to one vivid description, “The sight of the breakers was of overwhelming magnificence. Far out the sea was covered by a white foam. In-between long-winding waves are rolling in, always three-wave mountain chains close together, reared up with a thunder-like roar overturning on the beach, blinding-white foam climbing up like a wall and below, blotching up the beach and here leaving little puddles that at the same time are prevented from draining back into the sea.” The description continued noting that “The landing jetty at times completely disappeared in the rolling waves crashing over it, through the wooden panels white foam splashed up.” However, and in the colonial spirit of withstanding anything, “it again held steady.”²⁷ For the fiscal year 1906 alone, and just for Swakopmund, the expenditures were enormous: 130,000 Marks to keep the *Mole* running on some level, 200,000 Marks for dredgers, and 100,000 Marks for sustaining the wooden jetty.²⁸ Proposals now calling for a metal jetty referenced another 207,000 Marks and those wishing for a larger harbor budgeted an additional 1.4 million Marks.²⁹ Guaranteeing access to the colony would remain an expensive endeavor.

So-called *Bohrwurmtagebücher* disclose the agency of non-human protagonists soon interfering with wooden structures in Swakopmund and Lüderitzbucht. Best translated as shipworm diaries, these hand-written files are housed in the National Archives in Windhoek.³⁰ Mostly charts, the documents showcase ways authorities on site tried to understand what was happening after the arrival of the *Bohrwurm* (literally borer worm). How far has that antagonist drilled into wooden landing structures? What type of wood is more resistant? Would it be worthwhile to bring in turpentine-wood all the way from South America?³¹ One report outlined past mishaps, current issues and future investments; it also included carefully labeled photos of riddled pieces of wood (Figure 6.2). Such artifacts showcase the efforts of non-human agents: slick and naked worms; damaged pieces of wood. Without the voice of the shipworm in the historical record otherwise, these journals give this non-human protagonist some agency, illustrating in text and image how those worm-like creatures began disrupting German logistics.³²

The naval shipworm is not even a worm. Generally known as *Teredo navalis*, it is a highly specialized bivalve mollusk adjusted for drilling into and living in submerged wood. To follow writer Joan Wickersham’s poem from several years ago, “You, shipworm, *Teredo navalis*, less than a tenth of an inch / from end to end, blind and mindless, / relentlessly debauched or relentlessly



Figure 6.2. “Longitudinal cut through a beam of the main jetty destroyed by the shipworm,” NAN, ZBU 1762 T.VII.G I (vol 2), “Denkschrift über den Neubau der Hauptlandungsbrücke und die weitere Behandlung der Hafenerfrage in Lüderitzbucht,” April 1908, courtesy of the National Archives Windhoek.

industrious—.”³³ Early descriptions saw its long and naked body to resemble worms.³⁴ Swedish botanist and zoologist Carl Linnaeus categorized over thirty species under “*teredo navalis*,” or naval shipworm.³⁵ To quote Wickersham again, “Your name shows up in every *Vasa* story, / both names: ‘Shipworm (*Teredo navalis*);’ / the Linnaean taxonomic like a graduate degree / trailing your name so that we will take you seriously.”³⁶ Warnings were warranted. Although a small protagonist, the naval shipworm, colloquially known as an ocean termite, has had a major impact on maritime history. “Plenty of other shipwrecks in other oceans, / seasoned just the way you like them,” Wickersham continues.³⁷ As a typical marine mollusk, it first lives like a tadpole in open waters. Once the size of a pinhead, it digs itself into wooden hulls, poles, and beams that are surrounded by water, leaving behind only tiny entry holes. As Wickersham writes, “Your life is tunnels. You borrow in, / eat your way home, eliminate, fornicate, / all in the same wet den. You’re a fraternity boy / who never leaves the house, / eating, drinking, shitting, releasing sperm.”³⁸ Difficult to detect, the shipworm employs its tiny sharp teeth to drill, or better, grate and rasp. Over time, it forms and expands a honeycomb of passages, while itself, a husk-like creature, stays glued to the actual entryway.³⁹ For wooden structures in Lüderitzbucht and Swakopmund, *Teredo navalis* meant disaster.

The arrival of the shipworm brought numerous problems. It is not quite clear where it originated.⁴⁰ In the satirical magazine *Kladderdatsch* it already had a column in 1869. There, the mollusk pointed to man and his structures, built against bullets and opponents, strengthened with metal and might, and meant to dominate the ocean. “I have toppled him!” the column read, before adding, “What are you, man, you poor, weak earth worm against me—the shipworm!”⁴¹ Since then it had arrived in Lüderitzbucht, likely as a stowaway traveler. On site it found a perfect habitat. It seems that by mid-1906 the mollusk had created some damage. According to a memorandum submitted to parliament, the mollusk had settled in wooden rafts first before moving into landing structures. Early on the impact “had not been substantial.”⁴² Yet by November 1906 surveys of wooden parts of jetties showed clear shipworm infestation. Managing director of construction Kummer feared “that one must anticipate the destruction of the three wooden jetties.”⁴³ According to two scholars, “By mid-February 1907, the damage done by the borers was so substantial that considerable repair work had to [be] undertaken.”⁴⁴ The *Deutsche Kolonialzeitung* newspapers certainly came to a similar conclusion by fall that year.⁴⁵ The Woermann-Line eventually stopped using the wooden jetties altogether. Similar to the situation in Swakopmund, landing now relied even more on surf boats and rafts. “Hopefully this unsustainable situation lasts only a little more time!” exclaimed one magazine.⁴⁶ Frustration set in. “One should have not thought possible,” noted one account, “that after the embarrassing experiences with the *Mole* in Swakopmund again a situation would emerge with landing facilities in the protectorate as those are now visible at the main landing structure in Lüderitzbucht. The naval shipworm in the jetty has expanded further and further. Just recently one of its beams simply broke off when a small lighter hit it and [that] exposed that the naval shipworm had eaten away at it. Without doubt, the bearing capacity of the jetty has been cut in half.”⁴⁷

Renovations brought little relief. Workers started replacing infested beams with impregnated wood; they also used iron sheets to protect the jetty from the mollusk.⁴⁸ Forced labor again came in handy, further weakening prisoners housed nearby on Shark Island, if not killing them. Prior to that the jetty had to shut down completely, at least until an expert could evaluate the damage and soundness of the structure.⁴⁹ Locals at the site had long monitored the situation. At one point, worries increased when reports outlined that a structure can only remain in operation for about three months after the shipworm had infested it.⁵⁰ Discussions had already begun with all kinds of proposals regarding possible replacements, including metal jetties and concrete structures. As Kummer noted in November 1906, “While with relative few expenditures could turn Lüderitzbucht and Robert Harbor from a nautical point of view in the best harbor of German Southwest Africa, two essential demands of any harbor are still completely lacking, [and] that is a good connection with the

producing and consuming backcountry as well as the supply with key resources from across the sea, namely useful fresh [drinking] water.⁵¹ Delays in funding would force supplies over increasingly decrepit wooden jetties for several more years while the Woermann-Line continually pushed for a replacement.⁵²

The situation in Lüderitzbucht gave officials in Swakopmund ample warning. To follow one early report, “When assessing its safety there are three elements to consider: silting, the ocean, and the naval shipworm.”⁵³ Many officials held on to the idea that cold currents might prevent the arrival of this mollusk. Such optimism turned out to be an illusion.⁵⁴ Yet even experts noted, “The use of wood to build the pier was considered unavoidable given the need for speedy construction, [and that] did not seem precarious either, because the naval shipworm had not been sighted in Swakopmund and the neighboring coastline.”⁵⁵ Soon observations tracked the progress of the infestation—still confident that little destruction had occurred so far.⁵⁶ Newspaper articles meanwhile described how the mollusk riddled poles and beams long-ways like a sieve.⁵⁷ “Those frenzied wooden Gomorrahs,” to quote Wickersham’s poem once more, “are really testaments to your efficiency—.”⁵⁸ At first, there seemed to be no imminent danger—but that changed quickly. According to one report, “If a swarm of naval shipworm larvae extensively attacks the pole woods, then the shipworm can develop in such a manner in the wood, that according to present—possibly pessimistic assumptions—within three months the wood fiber would be destroyed to such an extent, that the stability of the beams sinks to zero.”⁵⁹ A slightly less pessimistic account stated, “The beams of the pier are exposed to the attack of the naval shipworm. Although beams are mostly not protected, destruction has been limited. The highest number of worms found in a beam has been twelve. . . . During monthly tests, young animals are often found, a sign, that there is now a fresh attack.”⁶⁰ One German building officer now admitted to the role of the naval shipworm in the destruction of a similar project in the German colony of Togo in the recent past. In his view, other arrangements for sites in Swakopmund must be considered.⁶¹ Concerns spiraled, and reports soon spoke about a destructive force and the “danger of collapse.”⁶² The shipworm in Swakopmund, to quote one newspaper, had raised yet again the “harbor question.”⁶³

After monitoring the situation for some time officials on site decided to start replacing parts of the structure. Such work meant widening the pier by one-third, a process one colonial report described as a “vigorous interference” against this pest.⁶⁴ Ultimately completed in 1907, this update still left room to shut down sections of the jetty without disrupting operations.⁶⁵ Confident this would save the jetty, paid workers and forced laborers replaced riddled beams and poles with impregnated materials; they also protected some structures with sheet iron. Such work was a tedious and costly. Just arming one beam could require an astonishing 3,000 nails.⁶⁶ Similar to the construction

process, workers found themselves exposed to crashing waves and ice-cold waters.⁶⁷ In the end, their efforts were in vain. Whereas sheet iron and some imported Australian woods replaced infected materials to provide more stability, overall this achieved little when it came to the prevention of ongoing decay. “The danger,” to quote from one newspaper, “that an extraordinary rough sea could suddenly take away for Swakopmund and the whole central and northern part of the protectorate the most important organ for the acceptance of imports is growing steadily.”⁶⁸ Debates about the construction of a metal jetty, and once again calls for the purchase of Walvis Bay, made discussions predictable.⁶⁹ Meanwhile, colonial narratives characterized the wooden jetty built by the railway battalion as “an honorable monument to the diligence of those troops and its officers,”⁷⁰ a colonial narrative that once again silenced the roles of Africans.

Accessing the South

Another natural force to wrestle with is perhaps best exhibited by figures hauling sand across railway tracks in the middle of the Namib Desert. Crossing the high dunes right outside Lüderitzbucht had always been an issue, not just due to a lack of water. Barchans, linear dunes, and star dunes are visible in the Namib, and many of them are active.⁷¹ According to two scholars, “they have steep slopes (c 32°) on their lee sides and gentler slopes (2–10°) on their windward (stoss) sides, they have an ellipsoidal shape in plan-view, and have formed in response to the strong unidirectional (SSW) wind regimes that are prevalent in the coastal zone.”⁷² These mounds are mobile, able to bury much of anything in their way. Houses and homes could get covered. Travelers feared their movement and ability to change landscapes. People got lost because of them. With stretched supply lines, a shift of the war southward, and repeated border closures to the south by the Cape government, military necessity seemingly dictated the construction of a railroad right through them. The assembly in itself was already a daunting endeavor. Contracted workers and prisoners of war, the latter held in the infamous concentration camp Shark Island in Lüderitzbucht, provided the labor to make it happen. Yet problems with mobile dunes persisted, and manually transferring the yellowish substance—basically carrying sand across the tracks one shovel at a time—became the most workable solution.⁷³

Prior to thinking about travel inland authorities first had to worry about landing materials nearby. The war had swung south as Nama rose up. Yet border openings into South Africa remained unreliable.⁷⁴ Plus, supply lines in the north had been overstretched already.⁷⁵ Thus, more had to come through Lüderitzbucht. A backwater awaiting reawakening, that location still dealt with

a lack of drinking water. By December 1904 a drillmaster and his assistants arrived on site. They hoped to find fresh water nearby. Such efforts resulted in wells in Klein Kubub, Aus, and Gauamses, all locations at least thirty kilometers away from town.⁷⁶ By 1906 the Lüderitz Condenser had been replaced by a larger plant, the so-called Government Condenser.⁷⁷ However, even the representative for the company installing the machine soon acknowledged “that the new condensation machine . . . does not meet the guaranteed performance.”⁷⁸ Although the quality of the water itself was good, sand plugged it up repeatedly.⁷⁹ According to one government official, and future governor, Theodor Seitz, this was expensive for three reasons: water had to be shipped in from Cape Town, high wages of experts had to be paid, and the old condenser had to be overworked, which hurt that machine.⁸⁰ More problematic were the limitations of the harbor overall. The bay was still shallow in several places. And, to follow two scholars, “the existing jetty situated on the lagoon side off Lüderitzbucht was not of such quality that it could cope with the increasing amount of military goods which were handled there.”⁸¹ In early November 1904, a representative of the Woermann-Line had assessed the harbor. He noted that the jetty had been built in the wrong location. Soon landing operations shifted to the more protected neighboring Robert Harbor instead, a location without a jetty.⁸² As the town saw a wartime boom similar to that in Swakopmund better landing structures made sense.⁸³ The assembly of the eighty meters long and five meters wide wooden jetty began in November 1904. It was completed quickly.⁸⁴ With demand still on the rise, a second such structure, 125 meters long and eight meters wide, had been completed by October 1905.⁸⁵ At least the landing process had become a little easier.

Similar to the situation in Swakopmund, officials also widely relied on forced labor to compensate for existing limitations and expand operations. According to German missionary Laaf, efforts to occupy prisoners began with extensive blasting operations. “The aim was to construct a quay on the side of the island facing the Robertshafen. Almost 500 men were initially employed in the blasting operations.”⁸⁶ Moreover, and as outlined by historians, Nama prisoners had to construct a pier and a wave-breaker.⁸⁷ Both of these projects “involved standing in ice-cold water, picking up rocks, and dumping them in the sea,” as historian Casper W. Erichsen writes.⁸⁸ Plus, and just like in Swakopmund, prisoners served as pack animals and machines when loading, unloading and moving around all kinds of cargo. To follow one newspaper article from South Africa at the time, “The loads . . . are out of all proportion to their strength. I have often seen women and children dropping down [in Lüderitzbucht], especially when engaged on this work, and also when carrying very heavy bags of grain, weighing from 100 to 160lbs.”⁸⁹ Nama Anna Frederick shared the experiences of her great-grandparents who were imprisoned on Shark Island in an oral interview: “They carried soil and stones on their heads to fill this island

up. They died from hunger and cold.⁹⁰ Between August and November 1906, more than 2,000 Nama arrived on Shark Island, a camp located right next to the harbor.⁹¹ There, on a space that measured barely over a kilometer from end to end and about three hundred meters at the thickest point, surrounded by the ice-cold waters of the Atlantic Ocean, they tried to cling on to life.⁹² Samuel Isaak, imprisoned on Shark Island, remarked that to last the prisoners ate anything edible they could find—mussels and other sea life.⁹³ There was also not enough firewood to keep at least a little warm.⁹⁴ “It is difficult for me,” wrote camp prisoner Samuel Kariko. “My body is weak, and it is very cold. I do not know how I can stay here.”⁹⁵ Inmate Edward Fredericks, who survived to tell his story under oath in 1917, stated that “[l]ots of my people died on Shark Island.”⁹⁶ Diary entries and progress reports by Richard Müller, a German harbor engineer supervising projects in Lüderitzbucht, speak volumes about the conditions and the overall destruction of African lives.⁹⁷ According to a report from Christmas Eve 1906, workers died so quickly that authorities ran out of them. “If measures are not actively taken to acquire labourers,” as one official writes, “I fear the work will not be completed.”⁹⁸ With a mortality rate of 77.5 percent,⁹⁹ that camp soon became known as the “island of Death.”¹⁰⁰ “Notwithstanding the economic purposes of ruling the camps,” however, to follow Häussler, “guards went forward altogether uneconomically, yes even wasteful with the human labor force.”¹⁰¹ Or, as Zimmerer put it, “Not even the demand for labour led to better treatment for the prisoners. Rather was it seen as preferably [*sic*] to halt the building work.”¹⁰² The angel of death, as a German clerk wrote in passive voice, would visit the island many times.¹⁰³

Shark Island was a death camp and most knew that. According to missionary Vedder, “One account from Swakopmund in 1905 tells of a group of Herero assembled on the waterfront. Shortly after they had been informed that they were to be sent to Lüderitz, one prisoner fell to the ground, bleeding profusely, having drilled his fingers into his own neck in a desperate attempt to commit suicide.”¹⁰⁴ The officer was angry and ordered him to get up immediately—to no avail. The man had opened the veins in his neck and was bleeding to death. Erichsen references a similar example when noting that the Arthur Koppel Company, one main contractor that employed forced labor, explained to German officials that many prisoners had run away from the railway works “solely out of fear that they might be sent to the South.”¹⁰⁵ Whereas neglect at times has been cited to dismiss intent, efforts to deliberately kill off the local population are visible in the historical record. Governor von Lindequist was in no way shy about his objectives: “Since the Hottentots are at present safely confined to Shark Island where they are performing very useful work(?). I feel that their deportation may still be postponed somewhat. Perhaps one should wait and see first how the situation will develop and whether the numbers to be deported might be reduced so as to cut down the cost incurred.”¹⁰⁶ In

another instance described by missionary August Kuhlmann, overseer Benkesser shot a sick Herero woman five times and left her laying there. She bled to death.¹⁰⁷ In that sense, the intent was not only to provide cheap labor to conquer nature; such labor and overall conditions also became ways to kill the native population. Both death and development, intricately intertwined, were part of the colonial project.

Whereas for Germans such investments promised at least some relief when it came to landing, reaching beyond desert dunes was still a problem. The lack of a stable supply of water widely impacted efforts to cross the roughly eighty mile stretch of waterless desert with ox carts. In 1906, one commentator wrote about “[t]housands of bleached oxen skeletons covering the path, herald death and danger, step by step.”¹⁰⁸ A poem titled *Death in the Dunes* later illustrated the challenges when noting, “Lord, our days are numbered, God give us to drink!”¹⁰⁹ Ways to improve travel had long circulated within the colony. For some, a railway would do the trick.¹¹⁰ One commentator from Southwest Africa had captured the dangers of ever-shifting sands when writing, “These [wandering dunes] are blown together by the wind, often resounding mountains of fine sand, that today block access and force freight carriers to take detours with their heavy oxcarts through deep, loose sand, [while] tomorrow the following [wagon] trailing in their steps face a high unscalable wall.”¹¹¹ In his view crossing the dunes by train would not be an issue—the bigger concern was that few products required a train. Experts continued to argue, with some even proposing the construction of an elevated train scaling the dunes or a tunnel going right under them.¹¹² One military report put forward by the *S.M.S. Wolf* in November 1900 claimed that “[c]rossing the belt of wandering dunes with a railway will not be possible without major problems and costs and the completion of similar projects, as will be needed for Lüderitzbucht, where first the construction of a tunnel through twelve-kilometer wide dunes had been planned, that a project of an elevated train going over the dunes has recently been pursued.”¹¹³ Without demand, however, such proposals went nowhere.

The war changed calculations and resulted in the return of animal transfer, especially given the growing demand to supply troops inland. In early 1905, Lothar von Trotha sent a telegram to Berlin endorsing the import of a hundred camels from Tenerife and five hundred from neighboring South Africa—to help with logistics on the stretch Lüderitzbucht–Keetmanshoop.¹¹⁴ Yet camels were hard to come by, and it took some time to get them. The purchase of originally seventy-six camels at Port Said in Somalia, followed by another 403 later on (accompanied by sixty experienced Arab camel handlers) eventually increased the use of such animals in Lüderitzbucht and Swakopmund.¹¹⁵ Next to animal transfers von Trotha also called for the construction of a railway. As summarized by Horst Drechsler, “This call went unheeded, however, because the authorities in Berlin were only too aware of the extraordinary technical difficulties posed by

such a project and because they reckoned that the war in the south would not last very long and might be over before the railway would make itself felt.”¹¹⁶ A more detailed proposal put forward in December 1905, combined with the continuation of the war in the south, got parliament to agree. The plan called for a line of about 140 kilometers from Lüderitzbucht to Aus. Tracks would be in Cape gauge (3.6 feet, about one meter) to possibly connect to neighboring South Africa later. The projected cost was estimated at around 9.5 million Marks, presumably about a quarter of the current annual cost for such travel.¹¹⁷

Natural forces and broader logistics shaped construction. The building process began quickly, led by military headman Captain Schulze.¹¹⁸ Apart from determining the route and overseeing the building process, Schulze laid out ways to cross the dunes. In his view, rocks would not give moving sand any grip, thus keeping tracks “dune free.” “At those locations where there is a danger for the railway to be covered by wandering dunes later on,” he added, “one has to roof [it] [the railway] like a tunnel with corrugated sheet iron. These protective structures and detonations within dunes will result in a good amount of labor that has to be taken into account especially since the rest of the way to Kubub requires virtually no other works of civil engineering.”¹¹⁹ Judging the situation in the colony from faraway Germany had always been an issue, a point that at least Johannes Semler, a member of parliament visiting German Southwest Africa, readily admitted when discussing harbor installations in Lüderitzbucht.¹²⁰ The magazine *Kladderdatsch* had long noted in its satirical tone that thankfully even a railway could do little to make things worse in Southwest Africa.¹²¹ In any case, the company Lenz organized the construction of what became known as the *Südbahn* (southern railway). As usual, landing materials in Lüderitzbucht was tricky, especially larger machinery. Plus, drinking water was still expensive. Crossing hostile landscapes and dealing with heat was not easy either and further delayed the project. As one newspaper later summarized, “Due to the terrain and weather the construction of bridges brought problems and held back the quick progress of the building process.”¹²² Camels also played a role—the German government by then had imported an astonishing 2,000 animals. Their initial purpose was to help transport materials for the construction of the *Südbahn*.¹²³ “Provisions of those [workers] more or less united at the front end of the construction site was particularly difficult,” noted one observer, “especially when it came to water. The transport of all materials and foods was done originally by donkey cart and via camel, soon with track maintenance trains.”¹²⁴ Photographs portraying structures in Lüderitzbucht and desolate landscapes in the interior showcase the scale of the project. In a way, the pace of construction tells that story. Early on, and due to the Namib Desert, crews only covered between three hundred and four hundred meters a day; later that process sped up to almost nine hundred meters. Construction reached Aus on 10 October 1906, allowing the railway to open on 1 November

1906.¹²⁵ By then Schulze's colonial narrative of fighting against desert sands, heat, and aridity already referenced German character and ingenuity, just like Ortloff had done when describing the construction of the *Mole*.

Forced laborers actually built the *Südbahn*. As outlined in the *Deutsche Bauzeitung* newspaper, "Excavation employed several hundred European workers and Kapboys [derogatory term for workers from the Cape Colony] as well as around 1,000 forced laborers"—the men of the railway brigade only completed work tied to the superstructure.¹²⁶ Member of parliament Semler, who visited the construction site, described Herero workers hauling iron ties while the hands of white workers did the fitting—a smooth process, in his view.¹²⁷ By January 1908, and according to recent scholarship, 503 whites and 1,859 blacks worked on the construction of the railway.¹²⁸ One of the few photographs capturing the work along the *Südbahn* gives viewers an idea of the strenuous task: desert sands, high temperatures, blazing sun, backbreaking labor.¹²⁹ The route from the coast to Aus called for hundreds of workers laying heavy steel rails and prefabricated steel ties. British military attaché to Southwest Africa, Frederick Trench, reported in April 1907 that there were nine hundred prisoners of war working there. He added, "The Hottentots are poor labourers, though troublesome guerrilla warriors, and I think that there is a general hope that they will soon die out."¹³⁰ Trench had already described the situation in a concentration camp stating "It is not easy to avoid the impression that the extinction of the tribe would be welcomed by authorities."¹³¹ The local newspaper *Deutsch-Südwestafrikanische Zeitung* at one point mentions that concentration camp labor from the nearby camp Shark Island built the southern line, one of only a couple of references in the press.¹³² According to historians, "it was the construction of the railways, by far the biggest public-works project attempted in the colony, that became the engine driving the whole concentration camp system."¹³³ Private companies such as the Woermann-Line thus employed forced laborers in Swakopmund and Lüderitzbucht to compensate for the shortcomings of landing structures; other companies now relied on such labor for the construction of railways. The idea that corporations running their own camps would take care of their workers did not pan out whatsoever.¹³⁴ The private sector as much as the colonial government worked Herero and Nama to death and ultimately profited greatly from these forced labor archipelagos. Overall, and as one summary pointed out later, "The statistics of the railway project are frightening. According to numbers kept in the records of the German Colonial Administration, a total of 2,014 concentration camp prisoners were used for the railway construction between January 1906 and June 1907. From these prisoners 1,359 died while working on the line: a 67 percent mortality rate. This means that every hundred metres of the railway line from Lüderitz to Aus account for one dead Namibian Shark Island prisoner."¹³⁵ The southern railway sits on the bodies and bones of Africans.

Reaching Beyond

Jakob Marengo's revival of a "hidden retreat"¹³⁶ delayed German efforts to end the war. As the conflict had expanded deeper into the south, Marengo, the son of a Herero mother and a Nama father, hid in spaces Germans knew little about. Borderlands became useful in this context, a factor widely discussed in the scholarship.¹³⁷ Yet Marengo also relied on precolonial environmental infrastructure when disappearing into the Karras Mountains. According to scholar Klaus Dierks, a structure known as "||Khauxa!nas certainly appears, with its extensive protective walls, to have served a defensive purpose. The town within the protective walls was big enough to accommodate a large number of people and probably livestock as well."¹³⁸ Plus, a deep natural well provided water.¹³⁹ Dierks argues that the site was potentially built between 1796 and 1798 "as a secret refuge against the threat from the south."¹⁴⁰ In his view, Jonker Afrikaner's foundation of Windhoek in the early 1840s "could be seen as a successor to ||Khauxa!nas."¹⁴¹ For Marengo the space was perfect. Here, he could hide from colonial troops. A German report speaks about a discussion with Marengo in one of his hideouts that references stone fortifications.¹⁴² Whereas this turned ||Khauxa!nas "a fitting symbol of Namibian resistance,"¹⁴³ for the German military the existence of such remote spaces made a quick end to the war more and more unlikely.

It did not help that efforts to expand the railway southward all the way to Keetmanshoop had resulted in a political crisis in Germany. Calls for such an extension had increased given the continuation of the war in the south; there was also the potential for using such structures to settle the area after the war. In May 1906, an article on the front page of the *Deutsch-Südwestafrikanische Zeitung* newspaper argued in favor of expanding railways from the south all the way to Windhoek. "Such a train connection," to quote directly, "would just like that . . . assist in the settlement of the land much more than any other measures ever could."¹⁴⁴ That year a memorandum made similar claims.¹⁴⁵ Even General Helmuth von Moltke the Younger chimed in from far away Berlin in support of the route.¹⁴⁶ Yet criticism of colonial endeavors had long been apparent in some political circles. Center Party politician Matthias Erzberger most directly pointed to financial strains and colonial fiascos in 1906.¹⁴⁷ It took until the dissolution of parliament in the infamous "1907 Hottentotten elections" before funds poured in. At that point, assembly moved forward. The route to Keetmanshoop included the construction of a dam to deal with washouts in the Sandverhaar River; it also meant crossing the Fish River with a steel bridge consisting of three thirty-five-meter spans.¹⁴⁸ Plus, there were the usual issues with accessing water. Geologists Paul Range and his drilling crew thankfully worked along that route. At least one borehole provided sufficient water near Garub, which somewhat alleviated potential delays.¹⁴⁹ Again, forced labor



Figure 6.3. NAN 28671, “Construction of the railway line Lüderitzbucht-Keetmanshoop, 1906. Female workers (probably prisoners of war) carrying stones for railway dam on their heads,” courtesy of the National Archives Windhoek.

completed much of the work. One of the few photographs showcases “female workers (probably prisoners of war) carrying stones for railway embankments on their heads” in 1906 (Figure 6.3).¹⁵⁰ The extension from Aus all the way to Keetmanshoop opened 21 June 1908, much sooner than had been anticipated; it cost 27.6 million Marks.¹⁵¹

Shifting sands covering tracks remained a problem well beyond the official opening of the *Südbahn*. Complications emerged in a section of about six to seven kilometers right outside of Lüderitzbucht.¹⁵² A member of parliament visiting the site early on saw few issues; he also reported that a concrete covering meant to protect the tracks was not required. Instead, and in his view, there were cheaper options to solve the problem.¹⁵³ Early efforts had included embankments meant to elevate the tracks; piles of rocks stacked to protect track against shifting dunes were another way to keep sand out.¹⁵⁴ A detailed newspaper article with photos described the situation in 1908. One caption simply read, “A wandering dune in dangerous proximity to the railway.”¹⁵⁵ Over time more sophisticated responses included the use of indigenous sand grass (*Eragrostis*) and German grass types; there was also the fixation of dung.¹⁵⁶ Workers tried using mats made out of jute sacking and placed them on one side of the tracks hoping to hold down the sand, all to provide stability for the growth of

different vegetation.¹⁵⁷ Mostly completed during months with less wind (May until October), sand grass seemed to be the only useful plant. However, shrubs withered away without water, “never awoke to life and just lingered as a dead arrangement,” as one magazine noted.¹⁵⁸ Experimental stations in the middle of desert landscapes were supposed to help with the transfer and cultivation of plants that could presumably withstand heat and fix sand in place.¹⁵⁹ Experiments with acacias (*Acacia cyclops*) and Naras (*Acanthosicyos horrida*) showed the best results.¹⁶⁰ Whereas managing director Kummer remained confident,¹⁶¹ British colonel and military attaché Trench was less so. In his view, “to shovel the sand off the line about twice a week” was the only workable solution.¹⁶² Yet hopes to solve this problem continued for years to come.¹⁶³ In fact, at one point plans even involved grasses used to fix shifting dunes along the faraway Trans-Siberian Railway.¹⁶⁴ Throughout all that time, and as captured by a grisly photograph published in the magazine *Kolonie und Heimat*, forced laborers did the Sisyphean task of moving sand with shovels across the tracks, one scoop at a time.¹⁶⁵

Colonial narratives meanwhile painted a rosy picture of development and progress. “Now it is done,” proclaimed the magazine *Kolonie und Heimat* in 1908, “despite natural forces that had destroyed the site at the end of February [1907] in numerous locations and other technical difficulties.”¹⁶⁶ The magazine had described the fight against desert sands. It now concluded its plot with a happy ending. There had been numerous of those by then. Ortloff had defeated ocean waters when constructing the *Mole*. Engineers had scaled hostile landscapes when building the *Staatsbahn*. And “our heroes in German Southwest Africa” constructed two jetties as well as a condenser for making drinking water in Lüderitzbucht.¹⁶⁷ Now, and according to this narrative, Germans also had defeated mobile sand dunes. Two photographs from 1909 give a sense of this supposed battle against the desert. One photo titled “dune protection wall” shows the wooden planks supposed to hold back sand (Figure 6.4); another snapshot titled “Inspection of railway tracks threatened by sand dunes” captures German officials wandering along the desert line surrounded by sand (Figure 6.5). Officials seem to inspect the frontline like military generals observing a trench of some battle. For contemporaries it certainly felt like a war, a war meant to hold back the enemy again and again. In 1911, one estimate noted that 100,000 Marks were “thrown away” to irrigate plants meant to hold back sand; that year operations to keep the track clear cost the government more than 170,000 Marks.¹⁶⁸ Some officials would later even consider expanding efforts when proposing the use of a giant vacuum, a *Sandsauge-Maschine* (sand sucking machine). This piece of technology would certainly solve remaining problems, they claimed.¹⁶⁹ According to such rhetoric, it had always been German ingenuity, willpower, and hard work that had conquered and defeated nature. Natural forces, on the other hand, were at best adversaries,



Figure 6.4. NAN 28723, “Construction of the railway line Lüderitzbucht-Keetmanshoop. Dune protection wall: Lifting the wall planks, 1909,” courtesy of the National Archives Windhoek.

and African workers, ninety to a hundred forced laborers in the case of dune operations along the *Südbahn* alone,¹⁷⁰ had no voice at all.

Elsewhere African ingenuity, as well as natural forces, continued to define logistics. Take Simon Kopper’s escape into the Kalahari Desert. A borderland between Southwest Africa, the Cape Colony, and British Bechuanaland,¹⁷¹ Kopper employed San knowledge to find water. More importantly, and given long stretches without any available drinking water, Kopper and his people relied on the seasonal *Tsamma* melon (*Citrullus lanatus*). Its wide availability in some areas, combined with its high liquid content, could sustain whole groups with their cattle.¹⁷² As Jan N̄arewe Kundeb, born in Otjomungwindi in 1920 to !Xoon and Naro ancestors, recalled, “When the water in the pan was finished, we got water from tsamma melons and wild cucumbers. They were our water.”¹⁷³ Careful animal adaptation allowing ungulates to digest the fruit was required and speaks volumes about the skills of those Africans covering larger distances in desert environments on horseback. Kopper and his men could thus use seemingly remote desert spaces as bases for raids into the colony; they could also escape across the border into neighboring British Bechuanaland or the Cape Colony. German colonial troops, on the other hand, had to work with camels yet again. In March 1907, a small group under the leadership of Major Pierer reached Kopper. The latter agreed to give up. However, once pressed for water the patrol had to go ahead and return quickly, which once again gave Kopper the opportunity to escape.¹⁷⁴ A vast operation then took shape. Spearheaded by Friedrich von Erckert, months went into preparations. Cam-

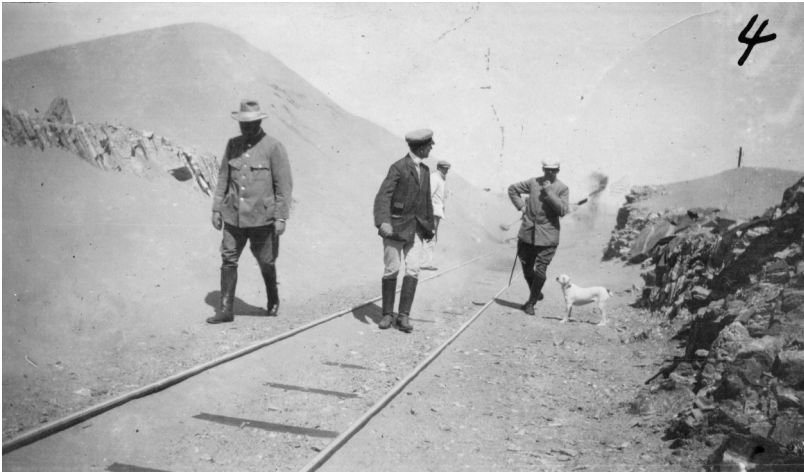


Figure 6.5. NAN 28724, “Construction of the railway line Lüderitzbucht-Keetmanshoop. Inspection of railway tracks threatened by sand dunes, 1909,” courtesy of the National Archives Windhoek.

els mostly employed for transport from Lüderitzbucht inland, and originally imported by Hagenbeck, were now to serve von Erckert. The latter then oversaw the training of both animals and soldiers. “Mainly introducing them to the nature of the Kalahari and how to defeat its peculiar difficulties” was on the agenda, according to von Erckert’s superior, Ludwig von Estroff.¹⁷⁵ Few soldiers had any experiences with camels. Many times that resulted in the mistreatment of these animals. Descriptions of stubborn beasts thus likely speak much more to German impatience rather than actual animal behavior. Yet such obstinacy also underscores how animal agents shaped environmental infrastructure. For Germans, after all, these creatures were just tools employed to deal with an opponent. Early on most camels refused to get up or move once overloaded. At times they also screamed persistently until they got a more patient handler or less cargo. Since few of these pack animals were meant for riding, the Germans also had to spend weeks on increasing their pace.¹⁷⁶ It ultimately took months before German animal engineering had the caravan ready, by then consisting of more than seven hundred camels. Aforementioned colonial narratives described the exhausting journey defined by thirst and uncertainty; those tales also credit von Erckert for using camels, praise him for thinking ahead when it came to travel routes, and turned him into a martyr. Kooper, on the other hand, is characterized as a lazy coward given that he would not face Germans in open battle.¹⁷⁷ That the Franzman had created elaborate infrastructure in desert environments, and protected and sustained themselves against German extermination for months, did not seem to matter.

The war by then had already ended. Officially concluded in March 1907, fights against individuals such as Marengo and Kooper continued to frustrate officials. At the same time, those conflicts also allowed German colonialists to request more troops and resources for years to come. In September 1907 the Cape Mounted Police patrolling across the border from Southwest Africa then riddled Marengo with bullets. They had cooperated with the Germans. Marengo and several of his companions died on the spot.¹⁷⁸ Efforts to capture Kooper failed. The captain preferred to stay in an inhospitable environment rather than surrender. Thanks to such spaces, and combined with the British acknowledgment that it is more efficient to pay off opponents than invest into large military operations, the Germans dejectedly granted Kooper a pension.¹⁷⁹ The captain of the *Franzman* and the rest of his people thus settled in British Bechuanaland, displaced by war and genocide, and only after promising not to return to Southwest Africa.

The expansion of the war and the shift southward increased logistical issues for the German military. Lüderitzbucht had seen few investments. That made landing supplies a nightmare, especially once the shipworm further disrupted landing. Efforts to build a train across the Namib Desert brought additional challenges, overcome in large part on the backs of African forced labor. The import of camels, again meant to offer sustainable travel into arid landscapes, became essential for reaching Kooper.¹⁸⁰ Meanwhile mobile sand dunes continued to disrupt entry. Broader political disagreements resulted in the repeated closures of the border to South Africa, another way to get in supplies. African leaders, on the other hand, continued to resist German control by harassing patrols in arid landscapes—only to quickly disappear into inaccessible regions such as the Karras Mountains or the Kalahari Desert. Border crossings into the Cape Colony or British Bechuanaland gave such insurgents room to evade German capture and destruction. Such partisan warfare and guerilla tactics worried the Germans and postponed the end of the war.¹⁸¹ And that in turn further delayed efforts to finally begin transforming Southwest Africa into a white settler colony.

Colonial storylines, many times devoid of African agency, meanwhile spoke of a struggle against nature. Narratives saw the mollusk as much as an opponent as mobile desert dunes and aridity. Defeat and setbacks were at best temporary, as German ingenuity, determination, and hard work would certainly overcome any adversary. If anyone, according to that storyline, it would be the Germans who could conquer nature in Southwest Africa. That African labor began replacing the wooden jetty, kept harbor operations running, and built as well as maintained the railway was not of interest. Nature was the opponent of

German greatness, a backdrop to be taken over and reshaped. Africans as individuals, on the other hand, were barely mentioned. As demonstrated by historian Gesine Krüger, colonial diaries speak to Germans denying the strength of their opponents, their fears of thirst, hunger, disease, and ambush; those publications also capture underlying racism.¹⁸² According to German colonial narratives Africans had no abilities in traditional warfare. They were cowards for shying away from open battle and cunning for making use of the territory. At the same time, German soldiers had some self-doubt, frustrations, and irritations, and their anxieties grew over time as opponents seamlessly melted into desert wastelands. One soldier described an incident near Otjasusu when noting, “If one could only see one of those black beasts! One is fighting against invisible ghosts of hell . . .”¹⁸³ Again, Germans compared them to animals and beasts, called their opponents malicious, like hyenas, to follow the description of settler Conradt Rust.¹⁸⁴ In that context and mindset, and as emphasized in the scholarship more recently, indiscriminately murdering Africans seemed only logical.¹⁸⁵

As the end of the conflict came near colonial narratives also increasingly framed the war as a turning point. By 1907/8, a colony presumably slumbering like sleeping beauty could be awakened for good. As outlined in much of the scholarship, dispossession, expulsion, and extermination became prerequisites for the making of a German settler colony and society in Namibia. Equally, and as Miescher writes, “the development of such a settler society was influenced by the massive influx of funds for infrastructure and administration that poured into the colony after 1904.”¹⁸⁶ To contemporaries, development was always just around the corner.¹⁸⁷ In 1905, colonial proponent August Seidel already laid out his vision of the colony’s future. In his view, investments in Swakopmund, the solution of the water question, and the expansion of settlements would be essential; he also wanted the remaining Herero to become workers and called for the takeover of the Ovambo in the north.¹⁸⁸ Such sentiments and hopes for the future were widespread. After all, the empire had just spent around 585 million Marks to crush the rebellion.¹⁸⁹ The 1907 elections marked a particular shift away from a previously schizophrenic colonial policy as more money began pouring in.¹⁹⁰ More so, and as outlined in numerous accounts, “all that German blood that drenched the sand steppes of Southwest Africa, better not [have] been spilled in vain.”¹⁹¹ Such bloodshed must have had a purpose, it must have been for something. According to one colonial administrator, “the blood of their sons has been spilled for us. The Southwest African soil has been soaked with it. And since the lifeblood of so many children of German mothers has trickled into the sand the land has truly become German.”¹⁹² The war became yet another foundational myth,¹⁹³ a “rise like a Phoenix from the ashes.”¹⁹⁴ The money spent and the lives lost now meant Germany had a responsibility to the land, to follow the rhetoric of

one contemporary.¹⁹⁵ How could anyone argue with that? By 1905, Ferdinand Wohltmann, agriculturalist and colonial proponent, had already called on Germany's honor: "A soil, that cost us much concern and sweat, that is soaked with blood, that has become to so many Germans, even if an unhappy, then certainly a lovely Heimat homeland, such a soil has become a piece [of the] *Vaterland* (fatherland). . . . To give up and leave such a piece of land now would be treason against the *Vaterland*."¹⁹⁶ In Southwest Africa, blood and soil, terms deeply ingrained in discussions of settler colonialism, war, and genocide, went hand in hand. A 1908 publication further summarized such sentiments when stating, "Again and again, well-meaning men raise the question if Southwest Africa was worth these sacrifices of resources and blood. Well, apart from the Namib Desert we can respond with an exultant yes. What the Cape land with its half a million whites is worth for the English that is what our South West Africa will be worth for us sometime, once we extract the values from the soil, which are in there."¹⁹⁷ The author continued by pointing to existing cattle farming, copper mining, and the exploitation of guano deposits; he also laid out a future of agriculture and raw materials such as gold and diamonds.¹⁹⁸ The settlement of farmers, the construction of railways, and the digging of wells would make up the future of Southwest Africa.¹⁹⁹

Going hand in hand with development came the destruction of Herero, Nama, and other groups. That had meanwhile reached its climax. German troops killed many in war; they also pushed survivors into the desert where many died of thirst and exhaustion. Policies of extermination continued well beyond the departure of von Trotha and the shift of the war elsewhere. In need of labor to maintain, repair, and expand landing structures and railways, or just to replace draft animals, the German colonial government soon housed workers in concentration camps all over the colony. Gewalt notes that there were four collection and concentration camps in central Namibia: Swakopmund, Windhoek, Otjihaenena, and Omburo.²⁰⁰ The emergence of what sociologist Steinmetz has called a "spatially discontinuous, pointillistic galaxy of *werfts* . . . scattered across the map largely according to colonizers' needs" illustrates the expansive nature of this system well beyond these main sites.²⁰¹ Railway construction "saw several thousands of Herero 'accommodated' in 'Railway Concentration Labour Camps,'" to follow one report.²⁰² As outlined by Erichsen, "the main reasons for sending prisoners to Lüderitz was to prevent their escape and to provide labour for the construction of local infrastructure."²⁰³ Extermination based on labor became the name of the game, a costly game that few African captives survived. Those who did had lost their land, spaces soon deemed *herrenlos* (abandoned) in German documentation.²⁰⁴ They were now permanently trapped in a subservient role as a black proletariat. Governor von Lindequist already outlined in 1906 that he wanted to end the self-sufficiency of all indigenous groups that had been part of the rebellion;²⁰⁵ that now also

increasingly applied to groups outside direct colonial control, such as “a large number of Hai||om” from the north.²⁰⁶ In that sense, forced labor of a different kind would continue to define the postwar period, a timeframe recently described as much more than a peaceful graveyard.²⁰⁷

Notes

1. *Deutsch-Südwestafrikanische Zeitung*, “Eine Anerkennung,” 25 March 1908; *Deutsches Kolonialblatt*, “Deutsch-Südwestafrika: Der Vorstoß gegen Simon Copper,” 1 April 1908.
2. *Windhuker Nachrichten*, “Nachruf!” 21 March 1908; *Deutsch-Südwestafrikanische Zeitung*, “Nachruf,” 25 March 1908; *Deutsches Kolonialblatt*, “Nachrufe,” 1 May 1908. See also *Deutsch-Südwestafrikanische Zeitung*, “Hauptmann v. Erckert †,” 25 March 1908.
3. Kriegsgeschichtliche Abteilung I des Großen Generalstabes, eds., *Die Kämpfe der deutschen Truppen in Südwestafrika, Sechstes Heft, Der Hottentotenkrieg*, 361–82. See also Wulf D. Haacke, “The Kalahari Expedition, March 1908: The Forgotten Story of the Final Battle of the Nama War,” *Botswana Notes and Records* 24 (1992): 1–18; Andreas Bühler, *Der Namaaufstand gegen die deutsche Kolonialherrschaft in Namibia von 1904–1913* (Frankfurt am Main, 2003), 322–23.
4. *Windhuker Nachrichten*, “Ein grosser, aber teuer erkaufter Sieg,” 21 March 1908. See also *Deutsche Kolonialzeitung*, “Ein schwerer Schlag aber ein Erfolg in Südwestafrika,” 28 March 1908; *Deutsches Kolonialblatt*, “Deutsch-Südwestafrika: Der Vorstoß gegen Simon Copper,” 1 April 1908;
5. Kriegsgeschichtliche Abteilung I des Großen Generalstabes, eds., *Die Kämpfe der deutschen Truppen in Südwestafrika, Sechstes Heft*, 376.
6. Hans Grimm, *Der Zug des Hauptmanns von Erckert* (Munich, 1932). See also Adolf Fischer, *Südwestener Offiziere* (Berlin, 1935); Hans Schmiedel, *Hauptmann Friedrich von Erckert in Deutschsuedwestafrika und seine Zeit* (Ansbach, 1974); Estorff, *Wanderungen und Kämpfe*.
7. Kuss, *German Colonial Wars*, 174.
8. Olusoga and Erichsen, *The Kaiser’s Holocaust*, 180.
9. Wulf Otte, *Weiß und Schwarz—Black and White: Photos aus Deutsch-Südwestafrika/ from Namibia 1896–1901* (Wendeburg, 2007), 43.
10. Laak, *Imperiale Infrastruktur*, 127.
11. Tilman Dederling, “War and Mobility in the Borderlands of South Western Africa in the Early Twentieth Century,” *International Journal of African Historical Studies* 39, no. 2 (2006): 275–94; Mads Bomholt Nielsen, “Colonial Resistance and Anglo-German Diplomacy: The Case of Jakob Marengo,” in *Resistance and Colonialism: Insurgent Peoples in World History*, ed. Nuno Dimingos, Miguel Bandeira Jerónimo, and Ricardo Roque, 273–94 (New York, 2019); Lindner, *Koloniale Begegnungen*. See also Martin Legassick, *Hidden Histories of Gordonia: Land Dispossession and Resistance in the Northern Cape, 1800–1990* (Johannesburg, 2016).
12. Timm, *Morenga*; Egon Günther, dir., *Morenga* (Cologne, 1983). See also John Masson, “A Fragment of Colonial History: The Killing of Jakob Marengo,” *Journal of Southern*

- African Studies* 21, no. 2 (1995): 247–56; John Masson, *Jakob Marengo: An Early Resistance Hero of Namibia* (Windhoek, 2001).
13. Ariane Komeda, *Kolonialarchitektur: Kolonialarchitektur in Namibia zwischen Norm und Übersetzung* (Göttingen, 2020), 156.
 14. Reichstag, 74. Sitzung, 24 March 1906. Retrieved 12 March 2021 at www.reichstagprotokolle.de.
 15. *Windhuker Nachrichten*, “Swakopmunder Hafenbau,” 21 February 1907. See also *Deutsche Kolonialzeitung*, “Bemerkungen zu den Verkehrsverhältnissen in Deutsch-Südwestafrika,” 22 July 1905; *Windhuker Nachrichten*, “Die Hafen-Anlagen in Swakopmund,” 12 December 1907; Arthur Dix, “Landungsverhältnisse in Deutsch-Südwest-Afrika,” *Kolonie und Heimat*, 8 December 1907. Some hoped to dupe the British into giving up Walvis Bay. See BArch, R 1001/ 1865a, “Hafenanlagen in Swakopmund” (Antrag Untersuchung Hafenverhältnisse). See also *Windhuker Nachrichten*, “Swakopmund und nicht Walfischbai!” 21 February 1907.
 16. *Windhuker Nachrichten*, “Die Eisenbahntruppe in Südwestafrika,” 6 December 1906. See also *Deutsch-Südwestafrikanische Zeitung*, “Die Eisenbahntruppe in Südwestafrika,” 26 September 1906.
 17. Bravenboer and Rusch, *The First 100 Years of State Railway in Namibia*, 99. See also *Windhuker Nachrichten*, “Die Eisenbahntruppe in Südwestafrika,” 6 December 1906.
 18. Hafentechnische Gesellschaft, *Die Deutsche Kolonialhäfen*, 65. Efforts to find wood based on afforestation had brought few results See Antti Erkkilä and Harri Siiskonen, *Forestry in Namibia, 1850–1990* (Joensuu, Finland, 1992).
 19. Lengeling, “Die neue Landungsbrücke in Swakopmund,” *Zentrale Bauverwaltung*, 28 October 1905, 545–46 and 546–47.
 20. *Deutsch-Südwestafrikanische Zeitung*, “Aus Swakopmund,” 31 May 1905. See also *Deutsch-Südwestafrikanische Zeitung*, “Aus Swakopmund,” 17 May 1905.
 21. Bravenboer and Rusch, *The First 100 Years of State Railway in Namibia*, 99.
 22. *Deutsch-Südwestafrikanische Zeitung*, “Aus Swakopmund,” 31 May 1905. See also *Deutsch-Südwestafrikanische Zeitung*, “Aus Swakopmund,” 17 May 1905; *Windhuker Nachrichten*, “Die Eisenbahntruppe in Südwestafrika,” 6 December 1906.
 23. Lengeling, “Die neue Landungsbrücke in Swakopmund,” *Zentrale Bauverwaltung*, 28 October 1905, 546.
 24. Clara Brockmann, *Briefe eines deutschen Mädchens aus Südwest* (Berlin, 1912), 11. See also Africanus, *Deutsch-Südwest-Afrika*, 9; Emil Eisinger, *Im Damarland und Kaokofeld*, 5.
 25. BArch-B, R 1001/ 1864, Häfen an der südwestafrikanischen Küste (Militärpolitischer Bericht, 24 April 1906).
 26. *Deutsche Kolonialzeitung*, “Südwestafrika: Die Swakopmunder Landungsverhältnisse,” 7 April 1906. See also Berthold von Deimling, *Südwestafrika: Land und Leute, unsere Kämpfe Wert der Kolonie: Vortrag gehalten in einer Anzahl deutscher Städte* (Berlin, 1906), 5.
 27. *Deutsch-Südwestafrikanische Zeitung*, “Aus dem Schutzgebiet: Unwetter,” 13 June 1906.
 28. NAN, HBS, St. Unit 5, File 2/4, Kaiserlicher Gouverneur 24 May 1906.
 29. *Ibid.*, Bericht, Hafenfrage Swakopmund, 1907.
 30. For diaries from 1911 until 1913, see NAN, HBS, St. Unit 11, File 4/3; NAN, HBS, St. Unit 12, File 4/3.

31. NAN, ZBU, 1767 T.VII.G.5 Hafen von Lüderitzbucht Bau und Unterhaltung der Landungsbrücke. Specialia (1906–10), Reichskolonialamt Erlass, 7 July 1907. See also NAN, ZBU, 1767 T.VII.G.5 Hafen von Lüderitzbucht Bau und Unterhaltung der Landungsbrücke. Specialia (1906–10), Kaiserliches Hafenamtsamt, letter, 22 June 1907. Thirty-three wooden poles arriving from South America in January 1908 speak to broader efforts. See NAN, ZBU, 1767 T.VII.G.5 Hafen von Lüderitzbucht Bau und Unterhaltung der Landungsbrücke. Specialia (1906–10), Kaiserliches Hafenamtsamt, letter, 25 April 1908.
32. NAN, ZBU, 1884–1915, 1762 T.VII.G I (Vol 2) Hafen von Lüderitzbucht. Allgemeines (Projekte- und Vorarbeiten) (1908–11), Denkschrift über den Neubau der Hauptlandungsbrücke und die weitere Behandlung der Hafenanfrage in Lüderitzbucht, April 1908.
33. Joan Wickersham, “Shipworm (*Teredo Navalis*),” *Agni* 82 (2015): 126–127, here 127.
34. University of Michigan (Museum of Zoology). Retrieved 20 July 2017 from http://animaldiversity.org/accounts/Teredo_navalis/. See also Michael Castagna, *Shipworms and Other Marine Borers* (Washington, DC, 1961).
35. Ernst Troschel, ed., *Handbuch der Holzkonservierung* (Berlin, 1916), 208.
36. Wickersham, “Shipworm (*Teredo Navalis*),” 126.
37. *Ibid.*, 127.
38. *Ibid.*, 126.
39. Troschel, *Handbuch der Holzkonservierung*, 209–12. Troschel remarked that the naval shipworm was “particularly ravaging (*gefrässig*) and feared” in Southwest Africa.
40. Most scholars believe it originated in Europe. See Heike Lippert et al., “Schiffsbohrmuscheln auf dem Vormarsch? Holzzerstörer in der Ostsee,” *Biologie in unserer Zeit* 43, no. 1 (2013): 46–53. Retrieved 10 April 2017 from http://www.sms.si.edu/irlspec/teredo_navalis.htm; Viktoras Didžiulis (2011), NOBANIS, Invasive Alien Species Fact Sheet, *teredo navalis*. Online Database of the European Network on Invasive Alien Species (NOBANIS). Retrieved 10 April 2017 from www.nobanis.org.
41. *Kladderdatsch*, *humoristisch-satirisches Wochenblatt*, “Feuilleton,” 23 May 1869.
42. Aktenstück zu Nr. 622, Entwicklung der deutschen Schutzgebiete in Afrika und der Südsee. Retrieved 12 March 2021 from accessible at www.reichstagsprotokolle.de.
43. NAN, ZBU, 1884–1915 (Vol. 1), 1762, T.VII.G I, Hafen Lüderitzbucht, Allgemeines (Projekte- und Vorarbeiten) (1906–1908), letter 27 November 1906.
44. Bravenboer and Rusch, *The First 100 Years of State Railway in Namibia*, 110.
45. *Deutsche Kolonialzeitung*, “Aus unseren Kolonien. Südwestafrika: Der Bohrwurm in der Landungsbrücken von Lüderitzbucht,” 19 October 1907. See also *Deutsche Kolonialzeitung*, “Aus unseren Kolonien: Südwestafrika: Landungsverhältnisse in Lüderitzbucht,” 7 November 1907.
46. *Kolonie und Heimat*, “Südwestafrika,” 24 November 1907.
47. *Deutsch-Südwestafrikanische Zeitung*, “Unsere Landungsanlagen,” 18 September 1907.
48. *Deutsche Kolonialzeitung*, “Aus unseren Kolonien: Aus Lüderitzbucht,” 18 July 1908.
49. *Deutsch-Südwestafrikanische Zeitung*, “Unsere Landungsanlagen,” 16 October 1907.
50. *Deutsch-Südwestafrikanische Zeitung*, “Der Lüderitzbuchter Zwischenfall,” 19 October 1907.
51. NAN, ZBU, 1884–1915 (Vol. 1), 1762, T.VII.G I, Hafen Lüderitzbucht, Allgemeines (Projekte- und Vorarbeiten) (1906–1908), letter 27 November 1906. See also Colonial Secretary Bernhard Dernburg in this context. NAN, ZBU, 1884–1915 (Vol. 1), 1762,

- T.VII.G I, Hafen Lüderitzbucht, Allgemeines (Projekte- und Vorarbeiten) (1906–1908), letter 11 December 1906. See also NAN, ZBU, 1884–1915 (Vol. 1), 1762, T.VII.G I, Hafen Lüderitzbucht, Allgemeines (Projekte- und Vorarbeiten) (1906–1908), for instance, letter 10 November 1906; letter 27 November 1906; proposal April 1907.
52. *Die Woermann-Linie während des Aufstandes in Deutsch-Südwest-Afrika*, 39.
 53. Oscar Bongard, “Dernburgs Studienreise nach Britisch- und Deutsch-Südwestafrika!” *Deutsche Kolonialzeitung*, Sonderbeilage zur Nr. 39, 26 September 1908, 700.
 54. *Deutsch-Südwestafrikanische Zeitung*, “Aus Swakopmund,” 18 July 1906.
 55. Lengeling, “Die neue Landungsbrücke in Swakopmund,” *Zentrale Bauverwaltung*, 28 October 1905, 545. See also Semler, *Meine Beobachtungen in Süd-West-Afrika*, 54–55.
 56. *Deutsch-Südwestafrikanische Zeitung*, “Aus Swakopmund,” 18 July 1906.
 57. *Deutsche Kolonialzeitung*, “Dernburgs Studienreise durch Britisch- und Deutsch Südwestafrika!” 12 September 1908.
 58. Wickersham, “Shipworm (*Teredo Navalis*),” 126.
 59. BArch-B, R 1001/ 1865a, Hafenanlagen in Swakopmund (Antrag Untersuchung Hafenverhältnisse).
 60. *Ibid.*, (Bauprogramm für den Bau einer Landungsbrücke in Swakopmund).
 61. Reichstag 74. Sitzung, 24 March 1906, 2268 (Wislow). Retrieved 6 April 2021 from <http://www.reichstagsprotokolle.de>.
 62. *Deutsche Kolonialzeitung*, “Dernburgs Studienreise durch Britisch- und Deutsch Südwestafrika!” 12 September 1908. See also Bravenboer and Rusch, *The First 100 Years of State Railway in Namibia*, 102.
 63. *Deutsch-Südwestafrikanische Zeitung*, “Zur Swakopmunder Hafenfrage,” 18 August 1906; *Deutsch-Südwestafrikanische Zeitung*, “Noch einmal die Swakopmunder Hafenfrage,” 22 August 1906; *Deutsch-Südwestafrikanische Zeitung*, “Schifffahrt im Swakopmund Hafen,” 15 September 1906.
 64. Aktenstück zu Nr. 622, Entwicklung der deutschen Schutzgebiete in Afrika und der Südsee. Retrieved 12 March 2021 from www.reichstagsprotokolle.de. At least according to Kummer, future updates need take nature into account. See *Deutsch-Südwestafrikanische Zeitung*, “Noch einmal die Swakopmunder Hafenfrage,” 22 August 1906.
 65. *Deutsch-Südwestafrikanische Zeitung*, “Aus Swakopmund,” 6 March 1907. See also *Deutsch-Südwestafrikanische Zeitung*, “Die Landungsbrücke in Swakopmund,” 13 March 1907; *Deutsch-Südwestafrikanische Zeitung*, “Aus Swakopmund,” 6 March 1907.
 66. Jahresbericht über die Entwicklung der Schutzgebiete in Afrika und der Südsee im Jahre 1906/07, Teil E.: Deutsch-Südwestafrika (Berlin, 1908), 18–19. See also “Chronik,” *Deutsche Bauzeitung* XLI, no. 33 (24 April 1907), 66.
 67. *Deutsch-Südwestafrikanische Zeitung*, “Aus Swakopmund,” 6 March 1907.
 68. *Deutsch-Südwestafrikanische Zeitung*, “Der Swakopmunder Hafenaufbau, I,” 18 January 1908.
 69. Reichstag, 127 Sitzung, 20 March 1908. Retrieved 6 April 2021 from www.reichstagsprotokolle.de. See also *Deutsch-Südwestafrikanische Zeitung*, “Der Swakopmunder Hafenaufbau, I,” 18 January 1908; *Deutsch-Südwestafrikanische Zeitung*, “Der Swakopmunder Hafenaufbau, II,” 25 January 1908; *Deutsch-Südwestafrikanische Zeitung*, “Zum Hafenaufbau in Swakopmund, I,” 16 September 1908; *Deutsch-Südwestafrikanische Zeitung*, “Zum Hafenaufbau in Swakopmund, II,” 19 September 1908; *Deutsch-Südwestafrikanische Zeitung*, “Mole und Eisenbahn,” 12 October 1907; *Deutsch-Südwestafrikanische Zeitung*,

- “Die neusten Kabelmeldungen,” 21 March 1908; *Deutsch-Südwestafrikanische Zeitung*, “Der Swakopmunder Brückenbau,” 20 May 1908. For discussion regarding Walvis Bay see *Deutsch-Südwestafrikanische Zeitung*, “Walfischbay endlich ausgeschaltet,” 27 June 1908; Connemann, “Hafenanlage in Swakopmund,” *Annalen der Hydrographie und Maritimen Meteorologie*, June 1910, 304–6, “Häfen, Kanäle etc.,” *Schiffbau*, 25 November 1908, 142–44.
70. BArch-B, R 43/927, Bericht, von Lindequist an von Bülow, 25 October 1907.
 71. Nick Middleton, *Deserts: A Very Short Introduction* (Oxford, 2009), 36–39.
 72. Goudie and Viles, *Landscapes and Landforms of Namibia*, 122. See also Erich Krenkel, *Geologie der Deutschen Kolonien in Afrika* (Leipzig, 1939), 164.
 73. *Lüderitzbuchter Zeitung*, “Die Festlegung und Bepflanzung der Wanderdünen,” 6 January 1912. See also *Lüderitzbuchter Zeitung*, “Die Bepflanzung der Wanderdünen in der südlichen Namib,” 23 December 1911.
 74. Lindner, *Koloniale Begegnungen*, 252–53.
 75. *Die Woermann-Linie während des Aufstandes in Deutsch-Südwest-Afrika*, 31.
 76. Bravenboer and Rusch, *The First 100 Years of State Railway in Namibia*, 106; *Deutsche Kolonialzeitung*, “Deutsch-Südwestafrika. Lüderitzbucht,” 8 July 1905. See also *Deutsch-Südwestafrikanische Zeitung*, “Aus Lüderitzbucht,” 30 August 1905; *Deutsche Kolonialzeitung*, “Südwestafrika: Die Wasserversorgung von Lüderitzbucht,” 23 September 1905; *Deutsche Kolonialzeitung*, “Südwestafrika: Wasserstelle Anichab,” 21 October 1905; *Windhuker Nachrichten*, “Zwischen Lüderitzbucht und Kubub,” 25 October 1905; Hauptmann Schulze, “Zwischen Lüderitzbucht und Kubub,” in *Mitteilungen von Forschungsreisenden und Gelehrten aus den Deutschen Schutzgebieten*, ed. Freiherr von Danckelman, 257–73, here 260 (Berlin, 1906).
 77. Wipplinger, “Sea Water Distillation Plant at Lüderitz,” 281. See also Bravenboer and Rusch, *The First 100 Years of State Railway in Namibia*, 106; Press, *Blood and Diamonds*, 27.
 78. NAN, ZBU, 1454 P.V.E.3, Kondensator Lüderitzbucht 1904–1907, letter, 24 November 1906.
 79. NAN, ZBU, 1454 P.V.E.3, Kondensator Lüderitzbucht 1904–1907, report, 12 October 1906. For subsequent arguments see NAN, ZBU, 1454 P.V.E.3, Kondensator Lüderitzbucht 1904–1907, letters 28 December 1906, 29 December 1906, 14 May 1907, and 20 June 1907. See also NAN, ZBU 1454 P.V.E.3, (Vol. 2), Kondensator Lüderitzbucht 1907–1908, letters 29 July 1907; NAN, 1454 P.V.E.3, (Vol. 3), Kondensator Lüderitzbucht 1908–1909.
 80. NAN, ZBU 1454 P.V.E.3, Kondensator Lüderitzbucht 1904–1907, letter 17 February 1907.
 81. Bravenboer and Rusch, *The First 100 Years of State Railway in Namibia*, 107.
 82. *Die Woermann-Linie während des Aufstandes in Deutsch-Südwest-Afrika*, 32, accessible at the Universitätsbibliothek Frankfurt am Main.
 83. *Windhuker Nachrichten*, “Die Eisenbahntruppe in Südwestafrika,” 6 December 1906. See also *Deutsch-Südwestafrikanische Zeitung*, “Die Eisenbahntruppe in Südwestafrika,” 26 September 1906.
 84. *Deutsch-Südwestafrikanische Zeitung*, “Aus dem Schutzgebiet,” 31 May 1905. See also *Deutsch-Südwestafrikanische Zeitung*, “Aus dem Schutzgebiet,” 19 July 1905.
 85. Bravenboer and Rusch, *The First 100 Years of State Railway in Namibia*, 109. See also Schulze, “Zwischen Lüderitzbucht und Kubub (mit 1 Skizze und 38 Abbildungen),”

- 258; *Windhuker Nachrichten*, “Zwischen Lüderitzbucht und Kubub,” 25 October 1905; *Die Woermann-Linie während des Aufstandes in Deutsch-Südwest-Afrika*, 32; *Lüderitzbucht-Zeitung*, “Fünzig Jahre Lüderitzbucht,” 8 April 1933, included in *Lüderitzbucht damals und gestern*; Hafenbautechnische Gesellschaft, *Die Deutsche Kolonialhäfen*, 36; Kaulich, *Die Geschichte der ehemaligen Kolonie Deutsch-Südwestafrika*, 466.
86. Missionary Laaf’s eyewitness report, Chronicle of the Lüderitz Community, Archives of the Evangelical-Lutheran Church in the Republic of Namibia (AELCRN) V. 16, 21–26, as quoted in “War, Concentration Camps and Genocide in South-West Africa,” 54, in Zimmerer and Zeller, *Genocide in German South-West Africa*.
87. NAN, HBS 52, November 28, 1906, as referenced in Casper W. Erichsen, “Forced Labour in the Concentration Camp on Shark Island,” 91–92, in Zimmerer and Zeller, *Genocide in German South-West Africa*.
88. Erichsen, “Forced Labor in the Concentration Camp of Shark Island,” 93, in Zimmerer and Zeller, *Genocide in South-West Africa*. See also Stabsarzt Bofinger, “Einige Mitteilungen über Skorbut,” *Deutsche Militärärztliche Zeitschrift* 39, no. 15 (5 August 1910). Kreienbaum is less critical. Kreienbaum, “*Ein trauriges Fiasko*,” 242 and 247.
89. *Cape Argus*, 28 September 1905. “In German S.W. Africa: Further Startling Allegations: Horrible Cruelty: British Subjects and Combatants,” as quoted in “Forced Labor in the Concentration Camp of Shark Island,” 85, in Zimmerer and Zeller, *Genocide in South-West Africa*.
90. Erichsen, *What the Elders Used to Say*, 26–27.
91. Erichsen, “Forced Labor in the Concentration Camp of Shark Island,” 90, in Zimmerer and Zeller, *Genocide in South-West Africa*.
92. *Ibid.*, 84.
93. Rheinische Missions-Berichte (RMS), V.16, 1–31, Chronicle for Lüderitzbucht, as referenced in Erichsen, “*The Angel of Death Has Descended Violently among Them*,” 126. See also Rheinische Missions-Berichte (RMS), V.16, 1–31, Chronicle for Lüderitzbucht, as referenced in Erichsen, “*The Angel of Death Has Descended Violently among Them*,” 126.
94. Karl Laaf, Jahresbericht 1906, November 22, 1906, Archiv der Vereinigten Evangelische Mission (AVEM), RMG, 2.509a, Bl. 354–359, as referenced in Kreienbaum, “*Ein trauriges Fiasko*,” 234.
95. Letter of Samuel Kariko to Eich (in Otjiherero), March 3, 1907, ELCRN, II.1.9, as quoted in Kreienbaum, “*Ein trauriges Fiasko*,” 228.
96. Silvester and Gewalt, *Words Cannot Be Found*, 172. Although this *Blue Book* was a propaganda tool aiming to degrade German colonial rule, it is “a prime source material presenting an early African perspective on the particular features of colonial genocide.” Silvester and Gewalt, *Words Cannot Be Found*, xxxiii.
97. Olusoga and Erichsen, *The Kaiser’s Holocaust*, 215–16, reference of diary NAN, HBS, 52, 28 November 1906
98. NAN, HBS 52, 24 December 1906, as quoted in “Forced Labor in the Concentration Camp of Shark Island,” in Zimmerer and Zeller, *Genocide in South-West Africa*, 92.
99. NAN, ZBU 2369, Witbooi Geheimakten, 116, as referenced in Zimmerer and Zeller, *Genocide in South-West Africa*, 95.
100. *Ibid.*, 89. See also Caspar W. Erichsen, “Namibia’s Island of Death,” *New African* (2003): 46–49.

101. Matthias Häussler and Trutz von Trotha, "Brutalisierung 'von unten': Kleiner Krieg, Entgrenzung der Gewalt und Genozid im kolonialen Deutsch-Südwestafrika," *Mittelweg* 36 21, no. 3 (2012): 57–89, here 89.
102. Zimmerer, "War, Concentration Camps and Genocide in German South-West-Africa," 56, in Zimmerer and Zeller, *Genocide in German South-West Africa*. See also Zimmerer, *Deutsche Herrschaft über Afrikaner*, 47.
103. Casper W. Erichsen and Jeremy Silvester. Retrieved 6 April 2021 from <http://www.namibian.org/travel/namibia/luderitzcc.html>.
104. Heinrich Vedder, *Kurze Geschichten aus einem langen Leben* (Wuppertal-Barmen, 1953), 139, as quote in Olusoga and Erichsen, *The Kaiser's Holocaust*, 209–10.
105. ZBU 456, D. IV.1.3. Vol. 5, 19 June 1907, 98, as quoted in Erichsen, "The Angel of Death Has Descended Violently among Them," 76.
106. Imp. Col. Off. File No. 2090, 100, von Lindequist's memorandum of 12 Dec. 1906 cited in Drechsler, "Let Us Die Fighting," 211.
107. Kuhlmann, Bericht über eine Reise nach Lüderitzbucht, 10 August 1905, AVEM, RMG 1.644a, Bl. 33–41, as referenced in Kreienbaum, "Ein trauriges Fiasko," 259.
108. Carl Otto, *Südwest-Afrika: Wohin steuern wir? Ein nationaler Notschrei und Anderes* (Berlin, 1906), 11. See also Schanz, *West-Afrika*, 365. For an earlier description (1902), see Afrikaner, "Von Angra Pequena nach Keetmanshoop: Eine Reise in Deutsch-Südwestafrika," *Die Illustrierte Welt: Blätter aus Natur und Leben, Wissenschaft und Kunst zur Unterhaltung und Belehrung für die Familie, für Alle und Jeden* (1902), 180–82.
109. *Südwest*, "Tod in den Dünen," 7 June 1911 (Linck).
110. Quiring, *Die Eisenbahnen Deutsch-Südwestafrikas und ihre Bedeutung für die wirtschaftliche Entwicklung der Kolonie* (Borna-Leipzig, 1911), 21. Discussions often circled around the water question. See NAN, HBS, St. Unit 1, File 1/2, Bericht, 31 March 1901.
111. *Deutsche Kolonialzeitung*, "In den Wanderdünen Deutsch-Südwestafrikas," 6 March 1902.
112. *Deutsche Kolonialzeitung*, "Rundschau. Deutsch-Südwestafrika: Der Weg von Lüderitzbucht ins Innere," 28 May 1903; *Deutsch-Südwestafrikanische Zeitung*, "Aus dem Süden," 3 April 1903; Schwabe, "Ueber die Hafен- und Eisenbahnbauten in Deutsch-Südwest-Afrika," 66; NAN, HBS, St. Unit 1, File 1/2 (Allgemeiner generelle Verhandlungen und Verfügungen den Hafенbau betreff. 1898–1902), Report, 9 November 1900; Baumgarten, *Deutsch-Afrika und seine Nachbarn im schwarzen Erdteil*, 432.
113. NAN, HBS, St. Unit 1, File 1/2, Allgemeiner generelle Verhandlungen und Verfügungen den Hafенbau betreffend, 1898–1902, "Militärischer Bericht" der S.M.S. Wolf, 9 November 1900.
114. BArch-B, R 1001/8537 Kamele in Deutsch-Südwestafrika—Beschaffung von Kamelen Juni 1900—Nov. 1907, Band 3, telegram, von Trotha an Auswärtiges Amt (Kolonialabteilung), 22 Feb. 1905. See also Kaulich, *Geschichte Deutsch-Südwestafrikas*, 374.
115. Richard Trevor Wilson, "The One-Humped Camel in Southern Africa: Imports and Use in South West Africa/Namibia," *Journal of Camel Practice and Research* 19, no. 1 (2012): 1–6, here 2. See also Semler, *Meine Beobachtungen in Süd-West-Afrika*, 27–28.
116. Drechsler, "Let Us Die Fighting," 222.
117. Kaulich, *Die Geschichte der ehemaligen Kolonie Deutsch-Südwest*, 447. See also *Zeitung des Vereins Deutscher Eisenbahnverwaltungen*, "Der Bau einer Eisenbahn von

- Lüderitzbucht nach Kubub,” XLV, no. 67 (30 August 1905). One scholar estimated the price tag using the southern *Baiweg* (bay way) to about 40 million Marks per year. See Klaus Dierks, “Schmalsporeisenbahnen erschließen Afrikas letzte Wildnis: Namibia’s Schienenverkehr zwischen Aufbau und Rückgang,” in Becker and Hecker, *1884–1984*, 347–65, here 356.
118. *Zeitung des Vereins Deutscher Eisenbahnverwaltungen*, “Die Bahn Lüderitzbucht-Kubub,” XLV, no. 99 (20 December 1905). See also Bravenboer and Rusch, *The First 100 Years of State Railway in Namibia*, 111.
 119. *Windhuker Nachrichten*, “Zwischen Lüderitzbucht und Kubub,” 1 November 1906. See also *Zeitung des Vereins Deutscher Eisenbahnverwaltungen* XLVI, no. 86, “Die Bahn von Lüderitzbucht nach Kubub,” 7 November 1906.
 120. Semler, *Meine Beobachtungen in Süd-West-Afrika*, 3.
 121. *Kladderdatsch, humoristisch-satirisches Wochenblatt*, “Briefkasten,” 3 September 1905.
 122. *Deutsche Kolonialzeitung*, “Die Fischflussbrücken,” 27 February 1909.
 123. Wilson, “The One-Humped Camel in Southern Africa,” 1–6, here 2.
 124. Schwabe, “Der Eisenbahnbau in unseren afrikanischen Schutzgebieten,” 7.
 125. Bravenboer and Rusch, *The First 100 Years of State Railway in Namibia*, 113 and 119–21. See also *Zeitung des Vereins Deutscher Eisenbahnverwaltungen* XLVI, no. 71 “Eisenbahnbau Lüderitzbucht-Kubub,” 15 September 1906; *Deutsch-Südwestafrikanische Zeitung*, “Aus Lüderitzbucht,” 14 March 1906; “Zwischen Lüderitzbucht und Kubub: Von Hauptmann Schulze, Führer der ersten Eienenbahn-Baukompagnie (mit 1 Skizze und 38 Abbildungen),” 257–73, here addendum, in *Mittheilungen von Forschungsreisenden und Gelehrten* (1906).
 126. Hermann Schwabe, “Der Eisenbahnbau in unseren afrikanischen Schutzgebieten,” *Deutsche Bauzeitung* XLI, no. 1 (2 January 1907), 6–7, here 7. See also: Quiring, *Die Eisenbahnen Deutsch-Südwestafrikas*, 22–23 and 26.
 127. Semler, *Meine Beobachtungen in Süd-West-Afrika*, 12. Black workers also blasted away rocks. Semler, *Meine Beobachtungen in Süd-West-Afrika*, 13. According to one newspaper, “The demand for workers has been met by ordering indigenous people, though whites are also utilized for specific tasks.” See *Deutsches Kolonialblatt*, “Von der Lüderitzbucht-Eisenbahn in Deutsch-Südwestafrika,” 1 April 1906. See also *Deutsches Kolonialblatt*, “Von der Lüderitzbucht-Eisenbahn in Deutsch-Südwestafrika,” 1 July 1906; Erichsen, “*The Angel of Death Has Descended Violently among Them*,” 38.
 128. Quiring, *Die Eisenbahnen Deutsch-Südwestafrikas*, 26.
 129. *Deutsches Kolonialblatt*, “Deutsch-Südwestafrika. Von der Südbahn,” 15 December 1908. See also Olusoga and Erichsen, *The Kaiser’s Holocaust*, 203.
 130. TNA, CO 879/94/4 Further Correspondence [1907] relating to Affairs of Walfisch Bay and the German-Southwest African Protectorate, no. 128, enclosure (British Embassy 22 April 1907, signed Colonel F. Trench). See also Jahresbericht 1905/06, 67, as referenced in *Die Geschichte der ehemaligen Kolonie Deutsch-Südwestafrika*, 448; Silvester and Gewalt, *Words Cannot Be Found*, 171n155.
 131. F. Trench (21 November 1906), as quoted in Silvester and Gewalt, *Words Cannot Be Found*, 171n156. See also Sarkin, *Germany’s Genocide of the Herero*, 125
 132. *Deutsch-Südwestafrikanische Zeitung*, “Lüderitzbuchter Brief,” 20 April 1907. See also Semler, *Meine Beobachtungen in Süd-West-Afrika*, 7–8.
 133. Olusoga and Erichsen, *The Kaiser’s Holocaust*, 203.

134. Corporations did not pay their workers—they paid the local government instead, 50 Pfennig per day per worker Abschrift einer Verfügung des Etappenkommandos, 29 March 1905, NAN, BWI 406 E.V.8 Generalia, Bl. 3f, as referenced in Kreienbaum, “*Ein trauriges Fiasko*,” 250.
135. Klaus Dierks 2.0. Retrieved 20 June 2020 from http://www.klausdierks.com/Namibia_Rail/2.htm. See also Olsuoga and Erichsen, *The Kaiser’s Holocaust*, 204–5; Erichsen, “*The Angel of Death Has Descended Violently among Them*,” 59 and 133; Kreienbaum, “*Ein trauriges Fiasko*,” 249–54.
136. Klaus Dierks, *||Khauxa!nas* (Windhoek, 1992), 39.
137. Tilman Dederling, “War and Mobility in the Borderlands of South Western Africa in the Early Twentieth Century,” *International Journal of African Historical Studies* 39, no. 2 (2006): 275–94.
138. Dierks, *||Khauxa!nas*, 18. Retrieved 14 March 2021 from <http://www.klausdierks.com/Khauxanas/4.htm>. Peter Curson, *Border Conflicts in a German African Colony: Jakob Marengo and the Untold Tragedy of Edward Presgrave* (Bury St. Edmunds, 2012), 56–67.
139. Dierks, *||Khauxa!nas*, 12.
140. *Ibid.*, 42. See also Masson, *Jakob Marengo*, 28.
141. Dierks, *||Khauxa!nas*, 42.
142. Masson, *Jakob Marengo*, 35. Masson refers to Schans Vlakte nearby.
143. Dierks, *||Khauxa!nas*, 51.
144. *Deutsch-Südwestafrikanische Zeitung*, “Zur Eisenbahnfrage,” 16 May 1906.
145. BArch-B, R 34/926, Denkschrift betreffend den Weiterbau der Eisenbahn Lüderitzbucht-Aus (Kubub) bis Keetmanshoop.
146. BArch-B, R 34/926, Denkschrift des Generalstabes der Armee über den Bahnbau Aus (Kubub) Keetmanshoop. See also *Deutsches Kolonialblatt*, “Deutsch-Südwestafrika: Die dringende Notwendigkeit des Eisenbahnbaus Lüderitzbucht–Keetmanshoop,” 15 December 1906.
147. Laak, *Imperiale Infrastruktur*, 128.
148. Bravenboer and Rusch, *The First 100 Years of State Railway in Namibia*, 121.
149. *Deutsch-Südwestafrikanische Zeitung*, “Wassererschliessungsarbeiten,” 10 January 1907. See also Bravenboer and Rusch, *The First 100 Years of State Railway in Namibia*, 124. This was one of the spots marked by dowser von Uslar. See Hans Berthold, “Eine Fahrt auf der Eisenbahn Lüderitzbucht-Keetmanshoop: Reisebrief unsres nach den westafrikanischen Kolonien entsandten Berichterstatters,” *Kolonie und Heimat*, 23 May 1908.
150. NAN, 28671, Construction of the railway line Lüderitzbucht-Keetmanshoop, 1906. Female workers (probably prisoners of war) carrying stones for railway dam on their heads [1906].
151. Baltzer, *Die Kolonialbahnen*, 86–88. See also Kaulich, *Die Geschichte der ehemaligen Kolonie Deutsch-Südwestafrika*, 448–49; Jäschke, *Die polyzentrische Infrastruktur Namibias*, 143; Bravenboer and Rusch, *The First 100 Years of State Railway in Namibia*, 126–27.
152. *Lüderitzbuchter Zeitung*, “Die Festlegung und Bepflanzung der Wanderdünen,” 6 January 1912.
153. Semler, *Meine Beobachtungen in Süd-West-Afrika*, 9.

154. *Lüderitzbuchter Zeitung*, "Die Festlegung und Bepflanzung der Wanderdünen," 6 January 1912; *Deutsches Kolonialblatt*, "Von der Lüderitzbucht-Eisenbahn in Deutsch-Südwestafrika," 1 July 1906.
155. *Deutsche Kolonialzeitung*, "Der Bahnbau durch die Wanderdünen," 4 April 1908.
156. *Deutsches Kolonialblatt*, "Deutsch-Südwestafrika: Vom Bau der Lüderitzbucht-Eisenbahn," 15 September 1906. See also Berthold von Deimling, *Südwestafrika: Land und Leute, unsere Kämpfe Wert der Kolonie: Vortrag gehalten in einer Anzahl deutscher Städte* (Berlin, 1906), 26; Semler, *Meine Beobachtungen in Süd-West-Afrika*, 9.
157. Baltzer, "Dünenbefestigung," 481, in *Deutsches Koloniallexikon*, I.
158. *Der Tropenpflanzer* XI, no. 12, "Dünenbau in Deutsch-Südwestafrika," December 1907.
159. NAN, 28715, Construction of the railway line Lüderitzbucht-Keetmanshoop. Experimental garden for dune fixation at km 22, 23 Oct 1907.
160. *Der Tropenpflanzer* XI, no. 12, "Dünenbau in Deutsch-Südwestafrika," December 1907.
161. NAN, ZBU, 1884–1915 (Vol. 1), 1762, T.VII.G I, Hafen Lüderitzbucht, Allgemeines (Projekte- und Vorarbeiten) (1906–1908), letter 27 November 1906.
162. CO 879/94/4 Further Correspondence [1907] relating to Affairs of Walfisch Bay and the German-Southwest African Protectorate, 1907 (British Embassy 22 April 1907, signed Colonel F. Trench). See also Häussler, *Der Genozid an den Herero*, 35.
163. *Der Tropenpflanzer* XI, no. 12, "Dünenbau in Deutsch-Südwestafrika," December 1907.
164. Lau and Reiner, *100 Years of Agricultural Development in Colonial Namibia*, 7. See also BArch-B, R 1001/8534, Kamele in Deutsch-Südwestafrika Dez. 1902–März 1914, report, 7 May 1908.
165. *Kolonie und Heimat*, "Baut Eisenbahnen in unsern Kolonien," 29 March 1908. See also Hans Berthold, "Eine Fahrt auf der Eisenbahn Lüderitzbucht-Keetmanshoop. Reisebrief unsres nach den westafrikanischen Kolonien entsandten Berichterstatters," *Kolonie und Heimat*, 23 May 1908.
166. *Kolonie und Heimat* II, no. 1, "Zur Eröffnung der Eisenbahn Lüderitzbucht-Keetmanshoop," 1 October 1908. *Deutsche Kolonialzeitung*, "Der Bahnbau durch die Wanderdünen," 4 April 1908.
167. Paul Kolbe, *Unsere Helden in Südwestafrika* (Leipzig, 1907), 121.
168. *Lüderitzbuchter Zeitung*, "Die Bepflanzung der Wanderdünen in der südlichen Namib," 23 December 1911; *Lüderitzbuchter Zeitung*, "Die Festlegung und Bepflanzung der Wanderdünen," 6 January 1912. See also Quiring, *Die Eisenbahnen Deutsch-Südwestafrikas*, 22; *Lüderitzbuchter Zeitung*, "Die Festlegung und Bepflanzung der Wanderdünen," 6 January 1912.
169. Reichs-Kolonialamt, ed., *Die deutschen Schutzgebiete in Afrika und Südsee, 1911/12: Amtliche Jahresberichte* (Berlin, 1913), 138.
170. *Deutsches Kolonialblatt*, "Deutsch-Südwestafrika. Die Betriebsergebnisse der Südbahn in Deutsch-Südwestafrika und des Landungsbetriebes in Robertshafen im Rechnungsjahr 1910," 1 October 1911.
171. Drechsler, "Let Us Die Fighting," 203. See also Haacke, "The Kalahari Expedition, March 1908."

172. Haacke, "The Kalahari Expedition, March 1908," 2. See also Siegfried Passarge, *Die Buschmänner der Kalahari* (Berlin, 1907), 68–69.
173. Jan N̄arewe Kundeb, "Tsamma Melons and Wild Cucumbers Were Our Water," in *!Qamtee aa xanya : 'The Book of Traditions': Histories, Texts and Illustrations from the !Xoon and 'Nohan People of Namibia*, ed. Gertrud Boden, 22 (Basel, 2008). The wild cucumber could be *Cucumis africanus* or *gemsbok cucumber* (*Acanthosicyos naudinianus*).
174. Kriegsgeschichtliche Abteilung I des Grossen Generalstabes, ed., *Die Kämpfe der deutschen Truppen in Südwestafrika: Sechstes Heft: Der Hottentottenkrieg* (Berlin, 1907), 361. Walter Nuhn, *Feind überall: Der große Nama-Aufstand (Hottentottenaufstand) 1904–1908 in Deutsch-Südwestafrika (Namibia): der erste Partisanenkrieg in der Geschichte der deutschen Armee* (Bonn, 2000), 185; Bühler, *Der Namaaufstand gegen die deutsche Kolonialherrschaft in Namibia von 1904–1913*, 320.
175. Estorff, *Wanderungen und Kämpfe in Südwestafrika, Ostafrika und Südafrika 1894–1910*, 137.
176. *Ibid.*
177. Kriegsgeschichtliche Abteilung I des Grossen Generalstabes, ed., *Die Kämpfe der deutschen Truppen in Südwestafrika: Sechstes Heft*, 362.
178. TNA, CO 879/94/4 Further Correspondence [1907] relating to Affairs of Walfisch Bay and the German-Southwest African Protectorate, no. 234, enclosure 5 (Inspector Harvey, Upington, to Commissioner, Cape, Mounted Police, Cape Town telegram). See also Masson, "A Fragment of Colonial History," 247–56.
179. Häussler, *Der Genozid an den Herero*, 10.
180. Bühler, *Der Namaaufstand gegen die deutsche Kolonialherrschaft in Namibia von 1904–1913*, 322.
181. Nuhn calls it the first partisan war for the German army overall. Nuhn, *Feind überall*.
182. Krüger, *Kriegsbewältigung und Geschichtsbewußtsein*, 95–96.
183. Henkel, *Der Kampf um Südwestafrika*, 83.
184. *Deutsch-Südwestafrikanische Zeitung*, "Der deutsche Reichstag und das südwestafrikanische Schmerzenskind," 11 May 1904 (Rust).
185. Häussler, *Der Genozid an den Herero*, 68–69. See also Krüger, *Kriegsbewältigung und Geschichtsbewußtsein*.
186. Miescher, *Namibia's Red Line*, 56.
187. Gottfried Goldberg, "Die verkehrstechnische und kommerzielle Lage der deutschen Schutzgebiete in Afrika und Asien," *Verkehrstechnische Woche und Eisenbahntechnische Zeitschrift* III, no. 3 (17 October 1908). See also Fritz Emunds, *Zum Gedenkblatt. 1904–1907. Lebensdaten der auf dem Ehrenfelde D.-Südwestafrikas gebliebenen Offiziere* (Trier, 1907).
188. August Seidel, *Unsere Kolonien: Was sind sie wert und wie können wir sie erschliessen? Ein Kolonialprogramm* (Leipzig, 1905), 73–74.
189. Winfried Speitkamp, *Deutsche Kolonialgeschichte*, 3rd ed. (Stuttgart, 214), 135.
190. Bravenboer and Rusch, *The First 100 Years of State Railways in Namibia*, 131.
191. Paul Gentz, *Deutschland und England in Südafrika: Vergleich der Kriegsführung und der Erfolge beider Staaten in ihren südafrikanischen Kolonialkriegen* (Berlin, 1905), 708.
192. *Deutsch-Südwestafrikanische Zeitung*, "Nach 25 Jahren," 24 April 1908.
193. Kundrus, *Modern Imperialisten*, 56.

194. Eugen Wolf, *Deutsch-Südwestafrika: Ein offenes Wort* (Kempten, 1905), n.p.
195. Unz-Zehlendorf, *Deutschlands Pflichten in Südwestafrika* (Stuttgart, 1908), 3.
196. Ferdinand Wohltmann, *Unsere Lage und Aussichten in der Kolonie Deutsch-Südwestafrika: Ein offenes Wort* (Bonn, 1905), 40, as quoted in Kundrus, *Moderne Imperialisten*, 57.
197. Henkel, *Der Kampf um Südwestafrika*, 180.
198. *Ibid.*, 181.
199. *Ibid.*, 180.
200. Gewalt, *Herero Heroes*, 193.
201. Steinmetz, *The Devil's Handwriting*, 209.
202. Union of South Africa (1918), Report on the natives of South-West-Africa and their treatment by Germany, London, HMSO, 103, as referenced in Erichsen, "The Angel of Death has Descended Violently among Them," 49.
203. Erichsen, "The Angel of Death Has Descended Violently among Them," 120. See also Matthias Häussler, "Zwischen Vernichtung und Pardon: Die Konzentrationslager in Deutsch-Südwestafrika 1904–1908," *Zeitschrift für Geschichtswissenschaft* 61, no. 7/8 (2013): 601–20, here 607.
204. BArch-B, R 1001/1200, Landerwerbungen und Aufgebote von Landansprüchen, Auswärtiges Amt/ Kolonialabteilung, Brief 27 August 1904. See also BArch-B, R 1001/1141, Ansiedlung insbesondere deutscher Bauern, Kaisl. Dt. Gouvernement für Südwestafrika, Brief, 24 July 1906.
205. BArch-B, R 1001/1220, Entziehung von Vermögen von Eingeborenen in Deutsch-Südwestafrika. Kaiserlich Deutsches Gouvernement für Südwestafrika, von Lindequist Brief, 25 April 1906.
206. Ute Dieckmann. *Hai||om in the Etosha Region: A History of Colonial Settlement, Ethnicity and Nature Conservation* (Basel, 2007), 99. Von Lindequist's creation of a large Wildschutzgebiete game reserve in March 1907 meant to control white elephant hunters seemed to have little impact on native hunting practices. See Bollig, *Shaping the African Savannah*, 108.
207. Historian Drechsler titled the postwar period "The Peace of the Graveyard (1907–15)," a description reimagined by historian Prein. See Drechsler, "Let Us Die Fighting," 231. Philipp Prein, "Guns and Top Hats: African Resistance in German South West Africa," *Journal of Southern African Studies* 20, no 1 (1994): 99–121.



Creating a Model Colony

Little is known about Zacharius Lewala. He was a black laborer from South Africa who had worked in the diamond mines of Kimberley. That experience probably helped him recognize a shiny stone one day in April 1908. As a migrant worker, Lewala had been employed in the construction process of the rail line stretching into the desert from Lüderitzbucht. Commissioned to keep the sand off the tracks of the southern railway,¹ he found himself near the Grasplatz railway station near Kolmanskop in spring that year, about seventeen kilometers inland.² There, he spotted a one-quarter carat diamond simply laying in the hot desert sand.³ Lewala handed the stone over to his supervisor, chief railway foreman August Stauch. The latter began quietly buying up mineral rights while awaiting scientific results. He ended up with sixty-three fields for himself, soon a millionaire and “frontier tycoon.”⁴ Lewala, later portrayed as a businessman with a suit and tie in the magazine *Kolonie und Heimat*,⁵ got a job at Stauch’s company. That is it.⁶ Yet following a war that contemporaries soon defined as a necessary baptism by fire,⁷ Lewala’s discovery of diamonds marked a turning point and juncture.⁸ Now, to follow that colonial narrative, the Sleeping Beauty among the colonies could finally awake from its “deep sleep” to truly blossom.⁹ Southwest Africa was open for business.

German efforts to fully transform German Southwest Africa defined the postwar period. Grounded in *Rinderpest*, genocidal warfare, and forced labor, Germans now felt they had the blank canvas for a complete makeover. After all, the government had acquired a total of forty-six million hectares of land formerly utilized by Herero, Damara, Nama, and San people. Farms almost tripled, from 480 German farms before the Uprising to 1,331 farms by 1913.¹⁰ Investments began pouring in as well. Those funds were intended to turn barren and arid lands into productive *Kulturlandschaften* (cultural landscapes) for whites. As one narrative from the time has it, “The soil is pleading with observers to be utilized. . . . Be patient, you steppes and meadows, the culture bearer, man, will arrive.”¹¹ In that story, German blood had virtually soaked and fertilized the soil,¹² and now provided the basis for a once colonial *Sorgenkind* (problem child) to finally grow up.¹³ Chapter 7 focuses on that postwar

process: the expansion of landing structures, railways, and irrigation systems; animal transfers and engineering; as well as the cultivation of plants. While some contemporaries favored resource extraction over cattle farming or agriculture, all agreed when it came to creating reliable access and the need for solving the water question. Environmental infrastructure, defined by human agencies such as labor or the commodification of certain products, as well as natural factors, shaped processes that colonial narratives portrayed as the creation a new home abroad. After all, and according to those advertising the empire, “Southwest Africa more than any other of our colonies is suitable to become a *Heimat* homeland for families and to provide well for them.”¹⁴

The following discussion is organized along four main sections. It begins with an exploration of different visions of the colony. Debates at the time reached from prioritizing the extraction of raw materials to cattle farming and agriculture, all understandings grounded in environmental infrastructure and the exploitation of African labor.¹⁵ The next part then focuses once more on access into the colony. Germans poured millions into landing structures and railways. They were confident their ingenuity would clear up bottlenecks and allow exports to reach world markets. Efforts to solve the water question—including the use of drilling and dam-building crews—are in the center thereafter. Here, administrative energies and organizational structures are most prevalent. After all, cattle farming and agriculture in particular depended on water. A final section concentrates on livestock farming and agriculture, including the introduction of new animals, plant cultivation, and afforestation. Government-funded experimental stations and other subsidies, combined with landing structures, railways, and irrigation, increasingly promised German farmers countless new opportunities.

Visions of a Model Colony

The *Versuchsstation* (experimental station) Neudamm near Windhoek was among the most active when it came to the creation of a sustainable agricultural colony.¹⁶ Colonists had long tried to figure out what could be grown in Southwest Africa. After individualized efforts and the investments of some private entities, the late 1890s witnessed a more comprehensive approach. Efforts had come to fruition in Germany with the formation of the Deutsche Kolonialschule für Landwirtschaft, Handel und Gewerbe (German colonial school for agriculture, trade, and industry) in 1899. Characterized as promoting scientific colonialism, and meant to train farmers, cattle breeders, and agriculturalists, its curriculum had an eye on future settlements in German Southwest Africa.¹⁷ To prepare women for empire, and to help deal with a shortage of women in the colony overall, the Deutsche Kolonialfrauenschule (German co-

lonial school for women) opened in May 1908.¹⁸ Such infrastructure expanded over the years, soon reaching into Germany's settler colony. There, in Southwest Africa, all kinds of operations popped up. *Forstgärten* (forestry gardens), *Versuchsgärten* (experimentation gardens), *Versuchsstationen* (experimental stations), and *Tropengärten* (tropic gardens) opened in Windhoek, Grootfontein, Bethanien, Gobabis, and Klein Windhoek.¹⁹ In Neudamm, the colonial government contracted farmer Albert Voigts to build a dam,²⁰ the only such structure the German administration had funded by the turn of the century.²¹ After setbacks due to the 1904 war, the rebuilding process and expansion of "real experimental station" took off.²² Experiments now included a whole array of potential cash crops such as coffee, rubber, tobacco, and cotton; colonists also experimented with endemic plants such as !nara-melons, fruits from palm trees, salt bushes, and seeds from the *Weltwitschia mirabilis* plant.²³ Elsewhere stations looked specifically into afforestation—in the fiscal year 1911/12 alone, the entirety of such stations delivered 58,975 young seedlings to private entities.²⁴ The *Lehrfarm* (training farm) in Brakwater became a hub for young German women to learn about daily life in the colony.²⁵ Then there were experiments with livestock such as the sheep farm at Fürstenwalde, ostrich breeding in Otjituezu, and a veterinary institute in Gammans originally established following the *Rinderpest*.²⁶ Several editions of the "official manual for emigrants" to Southwest Africa soon gave newcomers detailed advice on settling and farming.²⁷ The Germans had big plans for the colony's future.

Discussions had long lingered around the question of what kind of colony Southwest Africa would turn into. Would its seal show an ox for cattle farming or corn for agriculture?²⁸ How would the colony become profitable? The liberal newspaper *National-Zeitung* had posed the latter question as part of a competition in its 1906 Christmas edition.²⁹ Soon experts and laymen alike chimed in and catapulted these matters further into the limelight.³⁰ Discussants wondered about priorities and proper size of farms; they also pondered the role of raw materials. In a way, three entangled visions of the colony emerged: resource extraction, cattle farming, agriculture. First, there were those dreaming of raw materials. Adolf Lüderitz had come for such riches. In 1898, some had already been certain that the discovery of diamonds was just around the corner.³¹ Descriptions of mining towns amid the Namib Desert speak volumes about such imperial fantasies. Failures, on the other hand, were generally blamed on "difficult circumstances rather than the environment of the land."³² Mining experts at times found lead, tin, and iron ore; they were also confident regarding potential deposits of coal and gold.³³ Although one publication noted that a dose of "indestructible optimism" is vital for anyone searching for raw materials in Southwest Africa,³⁴ in the end, few of such hopes materialized. Deposits were often small and problems tied to accessibility and labor made them unviable.³⁵ The extraction of marble and copper had some poten-

tial, the latter with a long history in the region.³⁶ Initially, a low copper price, cone-shaped deposits with limited depths, and expensive transport routes to Walvis Bay limited options.³⁷ The foundation of the Otavi Minengesellschaft mining company at the turn of the century, and its subsequent takeover of some copper concessions, later fueled hopes once more. The construction of a railway from Swakopmund to Tsumeb, the colony's most profitable location, had begun in 1903, disrupted briefly by the war.³⁸ Withdrawals reached 21,000 tons by 1906/7.³⁹ Yet this was not comparable to the diamond boom. Experts and prospectors had long hoped for these precious stones, especially given deposits in similar geological formations and landscapes in neighboring South Africa. After Lewala's discovery countless adventurers flooded Lüderitzbucht and turned it into a "transnational space."⁴⁰ Whereas some authorities worried about drunkenness, prostitution, and the overall deterioration of social order and racial lines,⁴¹ missing infrastructure and a lack of labor most worried those hoping to further development.

A second vision for the colony's future pushed for cattle farming. In line with historic land use, arguments circled around farm sizes, the role of water and fodder, and markets. Geographer Paul Rohrbach became its strongest and most influential advocate.⁴² Settler commissioner from 1903 to 1906, and widely involved in colonial affairs as a writer and lecturer focusing on colonial economy thereafter, Rohrbach traveled extensively throughout the protectorate during his tenure. Although he criticized Lothar von Trotha's extermination policies on economic grounds—Southwest Africa depended on cheap labor⁴³—his own vision of the colony's future also had little room for the local population. According to Rohrbach, economic prospects were deeply tied to geographic circumstances and race.⁴⁴ Since the interior provided few opportunities for large settlements, and because irrigation could at best sustain agriculture and gardening for some hundred families in small homesteads, for him the solution lay in cattle farming. In his view, large-scale estates inhabited by a new elite—middle-class and almost knight-like landlords—could also spread Germanism. Their strong cultural background and steady character could withstand foreign natures, climates, and peoples.⁴⁵ Fifty million hectares of farmland meant for three million cattle and twenty million small livestock was his vision—if the water question could be solved.⁴⁶ This "mixture of manor and farm,"⁴⁷ to borrow Kundrus's phrase, had some support among farmers.⁴⁸ Overall, it encapsulated an elitist vision of the colony's future that seemed to have much more in common with Teutonic Prussian rule in the East than with settler colonialism in Southwest Africa.

Lastly, there were voices promoting broader transformations of landscapes. Equally endorsing the importance of working the land, they felt that there were many more opportunities in Southwest Africa than met the eye. Kurd Schwabe, colonial soldier and official in Swakopmund, Otjimbingwe, and

Okahandja, spoke out against the mockery of the German colony as a desert wasteland. Although acknowledging the difficulties regarding access as well as idiosyncrasies of the region and populations,⁴⁹ Schwabe emphasized a variety of opportunities reaching from cattle farming to agriculture: “Gardening can be done with lots of success; grain only in certain areas and in the future where the suitable land can be artificially irrigated and made fertile.”⁵⁰ In his view, drilling, damming, and irrigating would do the trick, and allow for the production of fine wines, dates, figs, cotton, tobacco, wool, and more. “Sure, even German Southwest Africa extends into sterile desert regions that appear dismal,” he admitted, “but these [areas] only mark an unsightly shell of a golden core.”⁵¹ References to stories of successful transformations served as evidence to sustain these claims. At Farm Schlangkopf near Keetmanshoop a lack of water had originally crushed plans put forward by a large trading company. Two German farmers, however, who had recently migrated from Transvaal, had unearthed a source of water and built a successful farm from the ground up.⁵² It helped that colonial officials such as Deputy Governor Oskar Hintrager remained particularly dedicated to turning the colony into a white agricultural paradise.⁵³

All three visions of, or priorities for, the colony’s makeup agreed on the importance of landing structures, railway lines, irrigation schemes, and cheap labor; all also planned with government support. Copper and diamonds had to be accessible and needed to be exported. The same applied to produce and cattle. Harbors and trains were thus a must. Solving the water question was also essential, from having access to drinking water to irrigating gardens and fields. Of course, mining required much less water compared to cattle farming and certainly major agricultural operations. Still, workers needed to drink and diamonds had to be washed. “Even I,” to quote one voice from the time, “would have exchanged the most beautiful diamond for a refreshing drink of water (even if that Lüderitzbucht condenser-water).”⁵⁴ Finally, commercial farming and mining wanted cheap labor. The construction and maintenance of harbors, railways, and irrigation schemes equally needed workers. Since few settlers would leave their homeland only to scuttle on desert sands searching for diamonds, it would fall on the African population long deemed inferior to provide the needed workforce. To quote one contemporary, “Even the construction of infrastructure, that comes first in the development of the country, is only possible based on the labor of the natives.”⁵⁵

The solution to the labor question had already begun. Kru men had long unloaded ships landing in Swakopmund and Lüderitzbucht. During the Uprising, the concentration camp system had delivered African bodies to turn imperial visions into realities; the latter had also helped build landing structures and railways. Kru men stuck around after the Uprising. As outlined by one scholar, “West African migrant labourers who came to the colony in the

1890s were essential to the development and maintenance of the German colonial infrastructure before the First World War.⁵⁶ Such German dependencies gave Kru men leeway. At least one German observer was surprised to see them use the tools of the modern class struggle.⁵⁷ Yet it was the dramatic loss of life during the war that most directly resulted in labor shortages.⁵⁸ Colonial ordinances and laws tried to step in. In August 1907, the German colonial government institutionalized the *Eingeborenen-Verordnungen* (indigenous ordinances). Meant to cement the subjugation of Africans and create a permanent pool of black laborers, these laws basically barred non-whites from the ownership of cattle, land, and the freedom of movement; black Africans also had to carry so-called *Passmarken* (passes) at all times to limit what contemporaries called “vagrancy” and “vagabondage.”⁵⁹ Of course, Africans technically were allowed to choose their employer; plus, they also tried to avert and subvert government oversight, with some still owning cattle, for instance.⁶⁰ Several escaped into the veld as well, a move that largely depended on the amount of seasonal rainfall.⁶¹ According to one disgruntled farmer writing in March 1908, “from every farm people fled, after all they were allowed to do so now and were secure from punishment. Who would be so stupid under these circumstances to punish his workers. Then they really don’t want [to work], they cause trouble and harm. Finally they run away and that is the worst.”⁶² A lack of workers after the war, combined with African resistance, eventually forced the colonial government to consider importing contract labor, especially given growing demands following the discovery of diamonds, the expansion of copper mining, and the construction of railways.⁶³ Migrant workers from the British Cape Colony provided one solution. Higher pay and above-ground work compared to mines in South Africa might have pulled sixteen-year old James La Guma to work for Southwest Africa’s diamond industry.⁶⁴ Among workers from the Cape Colony he had a third party that could theoretically intervene on his behalf—a factor that probably encouraged the German colonial government to recruit labor from the north of the colony as well.⁶⁵ There, at the border with Angola, and thanks to their reliance on autarkic agrarianism, the Ovambo had so far been largely independent.⁶⁶ However, once drought, locusts, and floods brought famine to that area thousands found themselves trekking southward to work in the diamond fields.⁶⁷ According to one estimate, in 1910 alone five thousand Ovambos made that journey.⁶⁸ Many times, and given other demands and responsibilities, it seems that they only signed up for six months during the winter. Overall then, individuals such as Rohrbach and Governor von Lindequist might not have agreed on specific settlement policies, farm sizes, the prioritization of cattle farming over agricultural schemes, or the value of large-scale infrastructure projects; yet they did agree on the need to solve the labor question based on the creation of a permanent black underclass.

Constructing the Future

His visit to German Southwest Africa had been all over the news. Bernhard Dernburg, a liberal politician meant to bring a more practical mind to colonial affairs, had become Germany's first colonial minister in 1907.⁶⁹ A larger debate about funds for the colonies had led to the dissolution of the German parliament by Chancellor von Bülow and the notorious 1907 "Hottentot elections." Although willing to sustain funding for the railway expansion from Kubub to Keetmanshoop, Social Democrats and the Center Party had refused to support funds for military operations.⁷⁰ Subsequent elections and the eventual formation of the Bülow Block Coalition, which supported investments in the colonies, also brought the creation of the Imperial Office headed by Dernburg. After his initial travels to German East Africa in 1907, Dernburg came to Southwest Africa from May until August 1908.⁷¹ Accompanied by fellow banker and politician Walther Rathenau, the mission's objectives were "to study the British native police, the experiences in exploiting water resources and the possibility of reducing the colonial budget by extending the railway lines in the South West."⁷² Dernburg was a banker and economist with a background in restructuring businesses; he was also someone with an eye on protecting the diamond industry from DeBeers.⁷³ Dernburg knew that investments into "modern means of development"⁷⁴ were essential for the future of the colonies. The Colonial Institute in Hamburg, founded in January 1908 and meant to train future colonists, certainly spoke to his support for broader structures. Although his confidence seemed to wane slightly once visiting the region in person,⁷⁵ calls tied to investments into infrastructure were now heard in Berlin.

There was certainly much to do in Swakopmund. Landing structures, for once, had been an embarrassment for some time. Although increasingly described as Southwest Africa's *Haupthafenstadt* (main harbor city),⁷⁶ rafts, a silted-in concrete pier, and a wooden jetty destabilized by the shipworm painted a worrisome picture. As one traveler wrote in 1906, "The immigrant loses heart once he sees the sandy, barren coast of Southwest Africa from the ship for the first time, and that is particularly the case at the sight of Swakopmund, which makes a grim impression with its bleak sand dunes in the background and the steady raging surf in front of it. Even the courageous are captivated by the mild creeps because they have to cross with an open, shaky boat; already many happy human lives have fallen victim to it."⁷⁷ Two years later a description noted how boats were still "subject to the ocean's whims."⁷⁸ Luckily the 1907 budget had earmarked funds for Swakopmund's harbor.⁷⁹ Plus, Dernburg had outlined "an easy solution" when pointing to the continuing modification of the existing wooden pier.⁸⁰ Yet by 1908 a report in the *Deutsche Kolonialzeitung* newspaper noted that "it might be necessary to renew the pier in a couple of years because of the prevalence of the naval shipworm in the

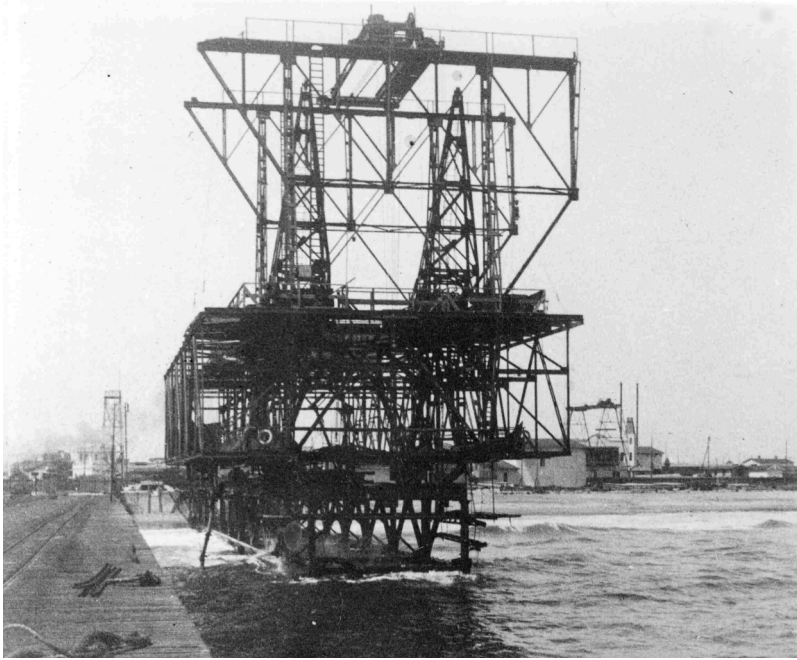


Figure 7.1. NAN 29511, “Swakopmund jetty with cranes [191?], photographer Paul Reinhard Petzold,” courtesy of the National Archives Windhoek.

harbor.”⁸¹ As indicated in chapter 5, debates about a more sustainable solution took place thereafter, including in parliament.⁸² Government building officer Kummer’s idea of a spur dike meant to divert sand gathered the most attention and support. Kummer had suggested the construction of a jetty structure that would later be converted into a spur dike to limit silting-in; an additional extension of the *Mole* could be added later as well.⁸³

Eventually officials endorsed the construction of a metal jetty.⁸⁴ Work crews arrived in November 1911 and assembly commenced in 1912. Projections estimated a timeframe of about three and a half years and costs of 3.5 million Marks.⁸⁵ Slowly and steadily, and again built in part by African labor,⁸⁶ a pier grew into the rough and sandy waters of the Atlantic Ocean. Plans envisioned reaching 640 meters into the ocean crossing breakers to ease the landing process (Figure 7.1).⁸⁷ This was a massive project, a major investment in the colony’s future. It was about time. In late July 1911, the tugboat *Windhuk* of the Woermann-Line had sunk. Three massive waves had hit it with full force, capsizing the boat rather quickly. Three men died, a machinist and two Krumen.⁸⁸ In another instance, an anchor chain had ripped due to strong currents. The

fishing boat *Möwe* was lost.⁸⁹ Just observing the “interesting spectacle” as sixty-nine Argentinian horses and 303 mules arrived using rafts gave anyone the chills.⁹⁰

A similar situation unfolded in Lüderitzbucht. Although some thought updating the natural harbor would be easy, realities on the ground turned out to be complicated, especially after the arrival of the shipworm. Countless reports and the aforementioned diaries outlined efforts put in place to monitor the infestation. By 1907 it became increasingly clear that the safety of structures was in jeopardy.⁹¹ Proposals included a metal jetty. Even the idea of building a cable-car that would reach into the ocean made the rounds.⁹² Additional surveys, delays, debates, and threats of shutting down landing structures slowed down any decisions thereafter.⁹³ In 1908, Hans Berthold, the correspondent for the magazine *Kolonie and Heimat*, pointed to the need to update landing structures to make Lüderitzbucht profitable. He stayed optimistic: “Regardless of all the suffering of the present, it is absolutely certain that the Lüderitzbucht location has still had a bright future.”⁹⁴ Yet the availability of land on the central plateau following the defeat of the Herero, lingering fears about continuing insurgencies in the south and a diamond boom that needed small volume for export fetched few investments.⁹⁵ Accidents thus continued to happen, such as in September 1911 when a German sorter and two unnamed Ovambo workers drowned at the northside of the Roberts Harbor; that same month prospector Arthur Beck and two horses also died.⁹⁶ As late as 1913 the landing situation in Lüderitzbucht remained “unsatisfactory.”⁹⁷

Diamonds helped when it came to funding investments; those also required their own structures. After the discovery of diamonds in 1908 hundreds of claims had resulted in an uncontrollable boom. For one, Lüderitzbucht changed overnight. It had consisted of “little more than a forlorn collection of corrugated iron huts clustering around two of the more important buildings, dignified by the names of ‘hotel,’ ‘store,’ and ‘custom house.’”⁹⁸ Now a haste set in. A “stream of suspicious elements” rushed into town hoping to find diamonds and make money, to follow one newspaper.⁹⁹ Water prices skyrocketed, with the price per gallon reaching one mark.¹⁰⁰ Colonial Secretary Dernburg, keen on controlling the diamond industry together with the giants of the German banking industry, issued a decree in late September 1908 that established a *Sperrgebiet* (forbidden zone). At more than 25,000 square kilometers, this strip along the coastline covered much of the Namib Desert in-between the Orange River and Lüderitzbucht.¹⁰¹ As individual prospectors diverted northward, supplies and equipment began reaching the sealed space via Sandwich Harbor, Conception Bay, and Meob Bay. Traveling along the coastline was still dangerous. Take the story of steamer *Eduard Bohlen*. Now sitting more than 390 meters in the notoriously harsh Namib Desert,¹⁰² it was originally launched in Hamburg in 1891. Built by the prestigious Blohm and Voss ship-

yard, this steel-hulled steamship had served as the first prisoner-of-war camp for those Herero living in Swakopmund during the Uprising.¹⁰³ On the way southward to deliver mining equipment in September 1909, and about ninety meters offshore near Conception Bay, it got stuck in the breakers, unable to be freed.¹⁰⁴ The abandoned wreckage, purchased and salvaged by a former passenger, later housed miners,¹⁰⁵ likely Ovambo migrant workers employed in the diamond industry.

Mining settlements such as Holsatia, Charlottenfelder, and Grillenberger, spaces still visible in the midst of the Namib Desert,¹⁰⁶ tell stories about remote places and structures where African labor yet again compensated for the lack of access. Theoretically, diamonds just laid on or near the surface. That encouraged the satirical magazine *Simplicissimus* to include a sketch showcasing that even a blind pig could find them.¹⁰⁷ Yet such work was much more difficult. In the absence of machinery, and given that wind constantly covered the prize, Africans searching for diamonds had to crawl through the hot desert and move massive amounts of sand by hand. Conditions on site were terrible. Diseases ran rampant and harsh punishments were the norm. Following a gruesome two-week journey to Lüderitzbucht, Ovambo workers from the north had to make do with little once on site. They then laid face-down more or less breast stroking like swimmers through hot sand trying to spot the precious goods (Figure 7.2). The water supply was insufficient as well, both for washing diamonds and for drinking—how to turn “our diamonds into water” was a major question at the time, to quote one contemporary observer.¹⁰⁸ For African workers that meant they had “to drink the water used for pack animals,”¹⁰⁹ to follow one scholar. All of that seemed counterintuitive given the lack of labor. However, it was not surprising when thinking about underlying racism and the history of brutality in the colony. Ruthless punishment was widespread, and many Ovambo families back north would await the return of their men in vain.¹¹⁰ Kolmanskop Diamond Mines had a death rate of about 10 percent in late 1911.¹¹¹ According to historian Steven Press, a confidential account points to a death rate of 45 percent at that site in a single year.¹¹² Not surprisingly, and in a sign of resistance, fewer workers showed up over the years, as news about the conditions in the diamond fields traveled back north.

Revenues meanwhile piled up even though smuggling remained rampant. Dernburg’s scheme and the mere value of diamonds invited illegal removal; that stones initially loitered atop sands in vastly open spaces made control all but impossible. Steven Press tells countless tales of savvy smugglers foiling local officials; he also points to the dangers of the Namib Desert. The local police at times relied on camels for that reason.¹¹³ Overall, however, millions still ended up in the coffers of a German consortium installed by Dernburg. Diamond extraction grounded in African labor was more than profitable. Up to now much more money had been flushed into Southwest African than came



Figure 7.2. 026-0362-04, “Primitive search for diamonds by indigenous people,” undated, courtesy of the Universitätsbibliothek J. C. Senckenberg, Frankfurt am Main.

back. Diamonds changed all that. Some estimates note that their extraction contributed two-thirds of revenue toward the local budget (1909–13);¹¹⁴ more recent discussions have convincingly demonstrated much more has been moved.¹¹⁵ “In contrast with the economic fiasco of its early days,” as historian Ulrike Lindner writes, “the colony was able to achieve a profit with diamonds during the last years of German colonialism.”¹¹⁶ While a few got incredibly rich thanks to Dernburg’s schemes, the revenue was used to fund landing structures, railways, and later irrigation, thus underscoring the importance of diamonds for subsequent investments.

Apart from landing structures such as the jetty, money primarily went into railways. A Railway Memorandum had brought an array of investments;¹¹⁷ there had also been a learning curve regarding structural issues, gauges, and the layout of tracks.¹¹⁸ For one, workers partially retrofitted parts of the *Staatsbahn* into Cape gauge, a process that also included some rerouting due to previous misconceptions.¹¹⁹ Elsewhere improvements came with modifications of existing structures, such as the Okahandja bridge.¹²⁰ Flash floods remained a concern, however. An entrancing black and white snapshot published in the colonial magazine *Kolonie und Heimat* in 1908 confronts readers with a lone man sitting atop washed-out railway tracks, gazing toward the onslaught of water and “cowering and dispensing any heroic pose,” to follow a recent description.¹²¹ A year later the Fish River came off “with rarely seen force,” to quote one commentator.¹²² In January 1912, two people died when a train traveling between Johann-Albrechts-Höhe and Karibib unknowingly crossed an embankment undercut by water and derailed.¹²³ The colonial records in Windhoek are filled with files discussing disruptions, accidents, and trage-

dies.¹²⁴ African labor yet again had to remedy these problems. In 1912, when water flooded the train station in Karibib it would be “blacks that carried arriving passengers to surrounding hotels,” to reference one newspaper.¹²⁵ So-called *Stopfkolonnen* (plugging crews), which had been created to fix whatever issue,¹²⁶ relied on black labor as well, as did the construction of new routes.¹²⁷ Just for a section starting from Windhoek northward, three private companies employed 110 whites, 904 Transkei (from South Africa), and 1,450 indigenous laborers; the stretch leaving from Keetmanshoop employed 120 whites, 1,230 laborers from the Cape Colony, and 1,840 indigenous workers.¹²⁸ The mistreatment of workers was widespread. Take the experiences of James La Guma, a black worker from the Cape Colony previously mentioned in the context of diamond mining. He later recalled how a “burly overseer applied the stipulated number of strokes wielding a sjambok with sadistic vigour.”¹²⁹ Some walked off the job in protest. At a construction site of the company Bachstein-Koppel in early October 1910, South African workers protested against terrible working conditions. The army ended up killing fourteen workers in what became known as the Wilhelmstal massacre.¹³⁰ By the end of 1913, there were a total of 2,104 kilometers of railway lines in use.¹³¹ According to one commentator, once the water issue was solved, settlers would finally pour into the colony to “transform the wild land into a cultural or cultivated land.”¹³²

Solving the Water Question

Jose Rafael Perfecto Antonio von Uslar believed strongly in his abilities to find water. Born to the German consul general and a Spanish woman in Mexico City, his tenure in German Southwest Africa pushed dowsing into the lime-light. At times known as water divination, dowsing refers to the employment of rhabdomancy, the use of a Y-shaped wooden stick or metal wire to find water. Although widely criticized by German geologists as a superstitious folk tradition, water divination had made a recent comeback. By 1906 none other than Kaiser Wilhelm II himself supported von Uslar’s stint to Southwest Africa.¹³³ At one point during his time in the colony, and according to local newspapers, “captain [Victor] Franke, three corporals, three carts, . . . six natives,” and four horses accompanied von Uslar.¹³⁴ The latter described his endeavors as “the life of a nomad” to friends back home.¹³⁵ He indeed traveled extensively, first in central Namibia, by October 1906 in the south before moving north again. Along the way he pointed to spots for drilling. Settlers had certainly been desperate for any help, including dowsing, thus once more underscoring the importance of the water question.

The imperial government had initiated and invested in drilling crews before von Uslar’s arrival; after the conclusion of the Uprising, those efforts ex-

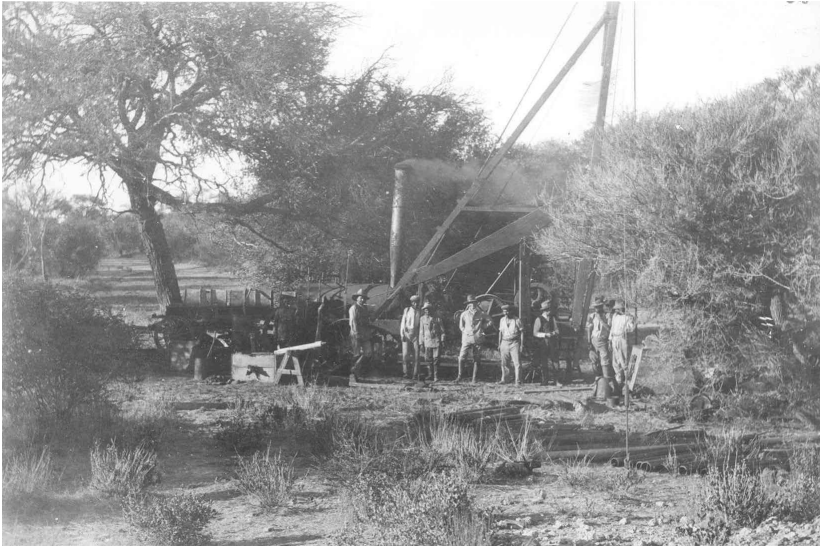


Figure 7.3. NAN 00518, “Boring for water on Farm Otjisoroe boring machine [1907],” courtesy of the National Archives Windhoek.

panded. Budgetary constraints had limited some investments before the 1907 elections.¹³⁶ Still, Governor Friedrich von Lindequist’s *Comprehensive Plan for the Development of Water Sources* got approved by April 1906.¹³⁷ That blueprint included efforts to centralize drilling by relying on two drilling crews, one for the north and one for the south. Directly under the supervision of the governor, Geographer Heinrich Lotz, employed as the first government geographer in Southwest Africa since late 1903, supervised *Kolonne Süd* (crew south). Originally based in Lüderitzbucht (later Kuibis), Lotz was eventually replaced by geographer Paul Range. Victor Franke, the aforementioned official accompanying von Uslar, led *Kolonne Nord* (crew north) (Windhoek). Each crew included about six to nine drilling squads under the supervision of a drilling inspector. A drill or boring master, an assistant, an array of indigenous workers then made up each squad.¹³⁸ Geology was supposed to determine where to dig for water—unless an overconfident von Uslar stopped by.¹³⁹ The successful discovery of drinking water then became the basis for the construction of wells and possible irrigation schemes (Figure 7.3). Funding increasingly came from the charity lottery;¹⁴⁰ some assets were also specifically earmarked for the German colonies, including the solution of the water question.¹⁴¹ Such financial assistance was desperately needed: locating water was expensive, as was getting it out of the ground.¹⁴² A 1912 estimate noted that about 59 percent of a settler’s capital alone—a whopping 6,600 Marks—went to the development

of a water source.¹⁴³ According to a newspaper article signed by “The average farmer,” the costs for drilling for water were around 30 Marks a day.¹⁴⁴ As more settlers arrived in the colony, it became even more apparent that without government subsidies the transformation of arid landscapes into productive settlements would not be possible.

Drilling crews ran into all kinds of issues. The annual report for 1907 spoke of “satisfactory progress”;¹⁴⁵ yet according to the *Deutsche Kolonialzeitung* newspaper, by 1908 initial meager investments had resulted in little overall success when it came to the solution of “one of the most important, if not the most important questions for the country.”¹⁴⁶ Funds ran out as well. By 1910, Lotz and Rohrbach, among others, called for additional investments. They noted that “half measures and false frugality regarding the most important factor, the development of water, mean mostly throwing away money altogether.”¹⁴⁷ Then there were uncertainties of where to dig. Expertise was hard to come by, particularly in remote areas. The groundwater also started to drop. According to an official bulletin, water once only “a few meters” deep now required drilling crews to dig between forty and fifty meters to find it.¹⁴⁸ One study from 1912 concluded that the whole situation tied to the solution of the water question stayed “unsatisfactory.”¹⁴⁹ Whereas between 1906 and 1911 seventy water holes were drilled in the Okahandja District alone, twenty brought no water whatsoever—and eleven less than 2.6 gallons (10 liters) per minute.¹⁵⁰ Finally, there was the issue of labor. As one young economist visiting the colony noted in 1906, “the real problem ... has always been not only how to find the white man to settle the country, but quite as much how to find coloured labourers to support them when settled.”¹⁵¹ Although few African workers wanted to travel to remote spaces under the strict and brutal supervision by German foremen, ordinances often left them with few alternatives. An incident from September 1913 vividly underscores the violence present at many work sites. According to a police report, Berseba-Nama Kakub, pass no. 4418, did not want to work. At least the report talks about his “cheeky” response when he supposedly pointed out “that is not my job but the job of the drillmaster.”¹⁵² A policeman wanted to slap him, which ensued in a brawl. Authorities punished Kakub with fifteen blows using a whip. That he showed up at work on time the next day constituted proof for officials that their measures had straightened him out. Kakub ended up in the hospital for several weeks thereafter. Only that triggered a brief inquiry and evidence in the colonial records, while leaving the drilling crew short a worker.¹⁵³

Settlers in need of water began to complain; they also increasingly started helping themselves. In 1911, an unnamed farmer noted, “The government is under the obligation to get water on those farms it had sold.”¹⁵⁴ Another writer grumbled in the newspaper *Der Südwestbote* that “[o]wners have to pay property taxes and a cattle tax, have to move around with their cattle to here

and there and still have to pay for water and rangeland.”¹⁵⁵ Making drilling equipment available for rent became one way to stretch funds. Yet that brought few results.¹⁵⁶ The local newspaper agreed with farmers’ sentiment, calling it “a cry in distress.”¹⁵⁷ Government officials, on the other hand, whined that it was mainly those who have made no effort whatsoever that ended up demanding government assistance.¹⁵⁸ Instead of waiting, some settlers also began taking matters into their own hands. Farmer Hans Lohse in Okahandja purchased his own drills.¹⁵⁹ Others called on dowsers to help. Farmer Kubisch later noted that von Uslar is “a most-respected person among farmers” in German Southwest Africa. Thanks to him, he added, dowsing is widespread and helpful for solving the water question.¹⁶⁰ Contemporary colonial publicist Clara Brockmann wrote in this context, “There are in the main two, in their way essentially different, means with which we have worked, namely the divining rod and discovery by scientific manner through geologists.”¹⁶¹ In her view, a simple farmer said it best when stating that his cattle does not care who discovered water.¹⁶² Or take the experiences of Farmer Hellmuth Forkel from Holoog in the South. In May 1911, he sent a letter to Drilling Crew South asking for geographer Range, a drill expert, and “a man with knowledge regarding the dowsing rod” as soon as possible.¹⁶³ Forkel had been awaiting tree seedlings and grapevines, and those needed water as soon as possible. But delays piled up. For one, a windmill pump he had ordered sat in Lüderitzbucht for some time. Plus, the drilling crew ran behind schedule.¹⁶⁴ By September Forkel pleaded with officials—it did not help any.¹⁶⁵ Eventually, the drilling crew arrived in Nanibis, one of two farms Forkel owned in the Keetmanshoop region. After drilling for seventy meters without finding water he requested it to move on to nearby Holoog right away.¹⁶⁶ Although the drilling crew followed his request, Forkel remained unsatisfied: the hole was in his view no more than twenty meters deep. “I now have no advantage whatsoever based on this drilling hole especially because the drilling hole does not go into the hard rock but just sits loosely so that it brings up sand.”¹⁶⁷ His threat to withhold payment might speak to the widely documented willingness of settlers to sue and complain. Walther Rathenau counted a stunning average of at least two lawsuits per settler in 1908.¹⁶⁸ Yet Forkel’s experiences also showcase the issues farmers faced when trying to access water.

The imperial government also set up dam-building crews. Publications had long pointed to the potential of dams and irrigation. According to one local newspaper, “that is how the water question would be solved in the south.”¹⁶⁹ Officials agreed. In 1911, mining assessor Hermann Nieß from District Rehoboth, for example, noted that dams would be essential.¹⁷⁰ By then farmer Hermann Brandt, the owner of a farm in Marienthal, had already built a dam to irrigate his farmland. It had a capacity of 52 million cubic yards (40 million cubic meters).¹⁷¹ Settler Maria Karow had also described an array of efforts trying

to irrigate a garden, including the construction of a protective dam to prevent flooding.¹⁷² Her brother-in-law, she added emphasizing the pioneering settler spirit, had also not shied away from toil or labor when he had constructed twelve dams meant to collect rainwater.¹⁷³ Overall, however, such constructs were few in number. Since they were generally built with little expertise, several failed, debacles that then only added to costs.¹⁷⁴ It did not help that few agreed on what constitutes the best structure. Farmer Ferdinand Gessert, an outspoken voice on all matters regarding irrigation, emphasized that smaller dams might do the trick. In his view, grain could sprout after the water evaporated.¹⁷⁵ Hydrology engineer Zwergern, on the other hand, pushed for trials with underground earth dams meant to contain the groundwater within the Swakop Riverbed.¹⁷⁶ For him, such *Grundsperrren* (ground barriers) and *Grundschwellen* (ground dikes) would be the only way to elevate the groundwater level again.¹⁷⁷ The German parliament eventually agreed to financially support the construction of dams in 1907. By January 1908 the dam-building crew began its work.¹⁷⁸ Later coordinated with drilling crews, teams were supposed to plan irrigation schemes, evaluate existing proposals, and advise private entities.

Dam-building crews had no easy task. For one, the 1909/10 annual report did not earmark specific funds for them just yet.¹⁷⁹ One million Marks was eventually set aside in the 1911 budget.¹⁸⁰ The charity lottery was supposed to help out as well.¹⁸¹ According to governmental statistics, all of that resulted in the construction of sixty-five dams by 1910. By 1912 funds ran dry.¹⁸² One government publication tried to see the silver lining: “Nonetheless lots of farmers that see the value of such dam systems constructed dams with their means without government support.”¹⁸³ On the ground, the situation was far from rosy. Take the example of farmer Otto Brinkman near the Langeberg mountain northwest of Otavi. He noted in personal correspondence from 1909 how “[w]ater dam structures here cost, if they should be useful, a grave amount of time, labor, and money; it takes years until a dam can be completed.”¹⁸⁴ He had to delay planting because existing wells were simply not sufficient to sustain his crops. Vast distances were also a problem. It took until 1913 before a dam-building crew finally reached the south of the colony.¹⁸⁵ There were also issues with property rights. Rivers often demarked borders between different owners. However, the nature of ephemeral rivers and shifting riverbeds made that tricky,¹⁸⁶ issues not really addressed until early 1913.¹⁸⁷ Farmer David Maritz of Garis Farm near Kub eventually took matters into his own hands. In the view of several observers, his dam, which did well in early 1912, outlined the potential of such projects.¹⁸⁸

Those most dependent on water had been looking into another way to make aridity work: dryland farming. “What is dryland farming?”¹⁸⁹ asked Arthur Golf, an agronomist researching colonial agriculture at Halle University. Ac-

ording to his definition, “Dryland farming means a [type of] agriculture in an arid region that is based on the conservation of moisture in the ground based on appropriate efforts regarding the soil before and during the growing season, and on the selection of such plant species and kinds that are particularly drought resistant.”¹⁹⁰ Global connections had long defined discussions. Take South African agronomist William MacDonald, who had visited the 1909 Dry Farming Congress in Wyoming and influenced discussions in German Southwest Africa. In his view, “Dry-farming is destined to revolutionize the agricultural industry of South Africa as well as to solve the profound problem of the future, namely land settlement.”¹⁹¹ References to South Australia, North Africa, and the American Southwest were also widespread. One commentator noted in the magazine *Der Tropenpflanzer* that the “situation in Southwest Africa is rather similar [compared to the American Southwest], and I am very certain that we can learn from the development of the North American stepchild.”¹⁹² Farmers were mostly working with what contemporaries called the Campbell System. This approach basically relied on a packer for proper tillage of the ground as water was more or less “forced” into the soil.¹⁹³ Some also began toying with growing alfalfa and corn.¹⁹⁴ By 1911, at least Farmer Eickhoff had some good results with dryland farming on his farm in Omantangara;¹⁹⁵ Farmer Gessert’s “great success” equally “proved that this protectorate could become a settler colony with a much larger capacity for immigrants than previously anticipated.”¹⁹⁶ The colonial government itself completed trials at its experimental farm in Neudamm.¹⁹⁷ Yet by 1913 even the most outspoken advocates had to acknowledge that experiments were still “in the initial stages.”¹⁹⁸

Large-scale irrigation structures also saw a rebirth. Discussions about the ideas put forward by Rehbock and Kuhn had never fully gone away.¹⁹⁹ At least government building officer Rudolf Schmick’s detailed report for such a project at the Naute had been calling for additional surveys into the region by 1907.²⁰⁰ Two years later, one magazine stated, “The construction of large dams has increased in importance so rapidly in the German fatherland from year to year that it should primarily play an important role in the future of our African colonies”;²⁰¹ that outlet also pointed to the Naute and Hatsamas, both locations Rehbock and Kuhn had explored much earlier. In 1907/8, a banking conglomerate had funded an expedition to examine existing proposals. Building officer Rudolf Schmick, a strong proponent of massive transformations of landscapes, was in charge. In one instance, Schmick outlined his vision “of superb vegetables such as artichokes, cucumbers, beans, tomatoes, additionally date palm trees, melons, strawberries and such, all in copious amounts” when describing successes with broader schemes in Bethanien.²⁰² A concise proposal for the construction of two dams along the Naute came out of the expedition.²⁰³ Soon calling on the government to provide the required funding,²⁰⁴ Schmick employed colonial frameworks of conquest when noting that

“pioneers willing to make sacrifices” should not have to deal with bureaucratic difficulties and limited funds.²⁰⁵ Range’s report submitted in October 1908 then concluded that “the geological conditions are generally favorable.”²⁰⁶ By the 1910s, Governor Seitz and the colonial administration in Windhoek had apparently realized that drilling and the construction of small dams would not generate enough water. Plus, some influential voices in Southwest Africa such as Gustav Voigts endorsed large-scale projects.²⁰⁷ The budget for 1911 had still been “stingy” when it came to funding for the development of water sources.²⁰⁸ Thanks to diamonds that began to change.²⁰⁹ At least state secretary Wilhelm Solf gave good prospects “for the beginning of construction of a dam in the Löwenflussnaute.”²¹⁰ Discussions around property rights, additional expeditions, and time for preliminary measurements followed.²¹¹ In late 1913, a memorandum outlined the possibilities of using the water of the Fish River by constructing three dams.²¹² A fifteen-page foldout from 1913 outlining the colonial government’s vision for transforming the Fish River near Hatsamas certainly points to big ideas being hatched in Windhoek.²¹³ For some this was only the beginning. Soon afforestation and the eventual change of the overall climate would fundamentally transform the region. In early 1914 a first of three one-million Mark installments actually came through.²¹⁴ Efforts to complete the Avispforte dam, among others, had also moved forward by then.²¹⁵ A dam-building frenzy seemed to be on the horizon.

By 1914 the solution of the water question had progressed. Scholars estimate that crews “drilled between 50 and 100 boreholes per year and provided the basics of water supply to farmers, towns, and villages.”²¹⁶ Much later Range spoke of sixty-three kilometers total when it came to drilling,²¹⁷ a number that is difficult to confirm. Farmer Carl Schlettwein, who contributed widely to debates regarding specifically the role of agriculture, noted in 1914 that “in almost all regions” water is accessible. In his view, experiences in reading “nature’s sign” would easily provide the needed water.²¹⁸ The photographs he included in his publication showcase all kinds of structures—a successful transformation, it seemed. At the same time, and as one newspaper admitted in 1912, drilling efforts could “not keep up with the settlement of the country.”²¹⁹ Besides, one commentator leaving the colony following World War I noted that farmers were still awaiting the arrival of long-promised drilling crews; he also criticized bad planning in regard to certain damming projects.²²⁰ Regardless, there was a feeling of progress among settlers. Their publications spoke about a noticeable upswing in the development of the colony by 1908, even as problems remained.²²¹ By 1914 northern districts had an average of five dams, central districts an average of thirteen dams, and the southern districts an average seven dams.²²² Support for larger projects had increased as well. Irrigation schemes indeed took shape for settlements in Windhoek (Farm Voigtsland, Hoffnung, and Neudamm) and Mariental (Figure 7.4).²²³ Whereas for Herero,



Figure 7.4. NAN 07607, “Storage dam on farm Hoffnung, 1900s,” courtesy of the National Archives Windhoek.

Nama, and other African populations existing “sustainable economic patterns were replaced by dependencies deliberately brought by the colonial state,”²²⁴ for a white settler minority the solution of the water question seemed within reach.²²⁵

Creating a Settler Paradise

The mood was good. It had been a sunny day in late May 1914 and the district administrator’s meeting in Windhoek had just concluded. Discussions around self-government had been front and center. However, the water law, the role of afforestation, and the use of small dams also came up.²²⁶ Now, it was time for the colony’s first *Allgemeine Landesaustellung* (general state exhibition) to open its gates. An agricultural exhibit in 1913 had already displayed an array of products.²²⁷ Yet his event seemed even more impressive. Fruits such as apricots, peaches, apples, and pears, as well as vegetables were on display together with all kinds of grains. The experimental station near Grootfontein received the first price for its large corn husks. John Ludwig, farming in Klein Windhoek since at least 1893, served his local wine. Others showed off their spirits and tobacco. A lot was going on at the stand of Robert Hummel who had beer.

Cattle wandered around while stands showcased leather and furs from Southwest Africa meant to conquer the world market. Even camels, now tamed by German experts like the land itself, performed by jumping over hurdles—“the high point,” to follow one description.²²⁸ Mining interests had a presence as well. There was copper, marble, and of course diamonds. The local building industry, together with countless machines for drilling, pumping, or irrigation, pointed to the development of the colony, all while a recently arrived plane circled over the fairgrounds. Elsewhere governmental statistics spoke of impressive growth when it came to the export of copper, diamonds, wools, furs, ostrich feathers, and more.²²⁹ Later on, and in line with colonial narratives, farmer Gustav Voigts would speak of “the great success of this event.” In his view all the work Germany had put into “a seemingly bleak and ignored land” had paid off.²³⁰ Former Deputy Governor Hintrager added that the event met even the most courageous expectations.²³¹

Cattle farming had certainly benefited from the availability of landing structures and railroads; it also now relied on expertise when it came to dealing with diseases. The *Rinderpest* pandemic had demonstrated the power of small pathogens and the wide dependency on animals for travel. Whereas the construction of the railway soon decreased such reliance along major travel routes, immunization had brought the pandemic under control. Of course different diseases, both threatening cattle and other livestock, still mattered. But veterinary infrastructure and a better understanding of diseases lowered dangers overall.²³² Cattle farming in particular became big business. Discussions surrounding the export of beef are a case in point. Thanks to easier access to world markets, cattle farmers increasingly thought about selling their beef in Germany, especially during the Meat Crisis. Soaring meat prices had been “less a problem of actual shortage than of meat becoming too expensive for the poor,” as one scholar writes.²³³ Regardless, the situation was socially explosive. By 1910 the German chancellor Theobald von Bethmann Hollweg opened the German market for imports. That move attracted interest among cattle farmers from around the globe. In the following years newspaper reported widely about the issue,²³⁴ with some specifically pointing to the potential of feeding Germany with beef from Southwest Africa.²³⁵ One expert from Berlin writing in the magazine *Kolonie und Heimat* acknowledged logistical issues and the comparatively poor quality of beef from that particular colony. It was just too chewy. Yet he also pointed to future possibilities when it came to feeding the metropole with surplus meat from the periphery. “Naturally and of course Southwest Africa will deliver meat to Germany,” he concluded.²³⁶ That France had been relying on her colonies only added fuel to such debates.²³⁷ Cattle farmers in Southwest Africa certainly saw the opportunity. Georg Schmidtsdorf and Otto Külbel, a butcher and an entrepreneur, invested in a meat cannery opening in Karibib in 1913.²³⁸ Problems with the quality of frozen beef leaving

Swakopmund, which persisted well into 1914, had made meat conservation a viable alternative.²³⁹ Whereas German administrative hurdles meant to limit the spread of diseases brought additional delays, expanded investments and infrastructure increasingly allowed Southwest African cattle farmers to dream about markets well beyond the horizon.

Investments into logistics also invited additional experiments with other livestock. The larger-scale introduction of sheep, an idea originally floated by Adolf Lüderitz in 1885,²⁴⁰ led Ernst Hermann to conduct trials as early as 1891. Subsidized by the government, he imported about 2,000–3,000 sheep from the Cape Colony. His efforts seemed promising. Then, in 1893, Hendrik Witbooi and his men stole 2,350 Merino sheep, 125 oxen, and 28 horses, all worth about 80,000 Marks.²⁴¹ Hermann tried again in Nomtsas—this time the formation of the Southwest African Sheep Farming Society helped.²⁴² After the 1904 Uprising such attempts finally moved forward. By 1906 one proposal already recommended the import of 20 million animals to produce 100 million kilograms of wool.²⁴³ Two years later, and with an eye on potential exports, Colonial Secretary Dernburg called on farmers to more broadly replace their goats with sheep.²⁴⁴ Hopes to break into the world market dominated by Australia and Argentina drove such propositions. Some even estimated that Southwest Africa could potentially contribute about half of the world's overall demand in wool.²⁴⁵ Even just exporting to Germany, which had a net import of slightly over 200,000 tons of wool in 1912, made sense.²⁴⁶ That year, an estimated 26,900 wool sheep lived in Southwest Africa altogether. Solving the water question, along with complaints about African labor, shaped discussions in the colony.²⁴⁷ Colonial consultant and lawyer Wilhelm Külz, who had been involved in promoting the introduction of sheep early on, meanwhile began advertising Southwest African wool in Germany; Paul Rohrbach equally pointed to the future of this industry.²⁴⁸ Subsequent efforts aimed at scaling up production by improving the organization of exports, refining the breeding process, and purchasing additional land. Next to the import of Angora and Merino sheep, Karakul sheep seemed particularly promising. Originating in central Asia, the slaughter of young lambs brought precious pelts commonly known as Karakul. In late September 1907, two bucks and ten ewes of Persian Karakul sheep landed in Swakopmund. Undersecretary and future governor Friedrich von Lindequist had bought them for 200 Marks each from Leipzig-based Paul Albert Thorer, a leading pelt businessman. Albert Voigts, who originally had little interest in these animals, took some of them, thus setting the basis for a successful industry later on.²⁴⁹ Even Kaiser Wilhelm II invested in two farms in Southwest Africa.²⁵⁰

The development of ostrich farming followed similar trajectories. Feathers, cut in pens from cornered birds in a process that generally resulted in injuring these poor creatures, had long been a highly-sought after luxury fashion item,

especially among European and American upper-class women. As outlined by historian Sarah Abrevaya Stein, this was the time for elaborately trimmed hats decorated with plumage from not just ostriches but also hummingbirds, herons, bird of paradise, and other fowl.²⁵¹ By the 1880s such trends resulted in a craze for feathers. Inventory mainly came from Oudtshoorn in South Africa, the epicenter thanks to broad irrigation schemes, an arid climate, and other suitable factors.²⁵² By the 1910s prices went through the roof. According to one estimate, “nearly a million pounds of ostrich feathers, valued at roughly £2.6million, were exported from the Cape in 1912, yielding the largest gross income for ostrich feathers yet seen.”²⁵³ A highly lucrative if ultimately short-lived boom, voices in German Southwest Africa began wondering about how to get in on commercial ostrich breeding.²⁵⁴ One debate focused on best breeding practices. While some saw wild ostriches as useful, others only wanted to rely on imported animals from South Africa—and shoot the rest.²⁵⁵ Other discussions focused on demand, irrigation, and feed. The cultivation of alfalfa, talked about like a silver bullet for turning outwardly arid landscapes into productive spaces, was often seen as a viable solution.²⁵⁶ The creation of an experimental farm for ostrich breeding at Otjituesu by 1911 underscored the role of government subsidies meant to promote overall efforts: colonial funds helped with the import of ostriches from South Africa and paid allocations for the construction of pens. Plus, German regulations prohibited the hunt of the flightless bird or the taking of their eggs. Meant to assist breeding efforts, such laws hurt African societies long relying on such practices to sustain themselves. Although repeated setbacks defined trials early on,²⁵⁷ breeding efforts began showing promise, with some rounds of “cut-ready feathers” turning out well.²⁵⁸

Plant cultivation played a major role for livestock feed such as cattle, sheep, and ostriches; it also shaped agricultural schemes hoping to move beyond self-sufficiency. Farmers had long grown grain, vegetables, and fruits. Now, the increasing availability of transport and irrigation systems invited them to think about cash crops. Early experiments regarding the cultivation of cotton had resulted in promising evaluations of samples.²⁵⁹ New sources of cotton had certainly been in high demand, with one commentator calling it “one of the most pressing questions of economic survival.”²⁶⁰ However, the lack of control over regions beyond the police zone, combined with a limited pool of labor and irrigation, delayed progress.²⁶¹ Soil and climate in Southwest Africa also made the cultivation of tobacco a possibility, a process that required experience when it came to proper curing.²⁶² Discussions exploring the potential farming of this product had long appeared in newspapers.²⁶³ Early trials then took shape mainly in the District Okahandja, with the help of an experimental station by 1911.²⁶⁴ Although experts on the ground painted a mixed picture, struggling with aridity, locusts, and difficulties in regard to curing, and al-

though actual trials rarely matched overall fantasies, government reports continually painted a “promising” picture.²⁶⁵ Farmers Karl and Gustav Holtz from Osona were equally confident when noting in 1914, “Our experiences and beautiful successes in the cultivation of tobacco in a relatively short amount of time entitle us to speak of tobacco in Southwest as an economic opportunity with a great future.”²⁶⁶

The employment of experimental stations as environmental infrastructure in its own right also defined efforts regarding afforestation. The planting of trees as a way to combat aridity, raise the water level, and influence the climate had popped up for some time.²⁶⁷ With little awareness of, or concern for, underlying indigenous understandings or long-term climatic cycles, German newcomers generally felt confident that their ingenuity could reverse supposed destructions and desiccation. By 1913 at least one farmer claimed that “human skill can restore a previous situation” and prevent the loss of water.²⁶⁸ Others took it a step further. As outlined by historian Harri Siiskonen, “Wild visions were raised: Mr Schramm, a forester of the town of Rostock in Germany, suggested the creation of artificial swamps in the valleys of the Central Highland, allowing the green zone to be extended to the slopes of the mountains.”²⁶⁹ Farmer Ferdinand Gessert pushed for “redirecting” the Kunene River altogether.²⁷⁰ A certain Mr. H. Schweichel of Berlin clearly had an even more far-fetched idea. As proposed in two letters he sent to governor von Lindequist in 1907, colonialists should transform the Namib Desert and the Central Highland by creating “green zones” every couple of kilometers.²⁷¹ The fact that this proposal was even entertained prior to being rejected by Chief Forestry Officer Hartmut Pogge highlights a certain belief in such possibilities.²⁷² That there was also a lack of wood only invited such thinking.²⁷³ Forestry stations had already popped up at the turn of the century.²⁷⁴ With plans for Okahandja disrupted due to the war,²⁷⁵ and some setbacks due to incompetence that even the colonial government acknowledged,²⁷⁶ efforts soon became much more systematic. Experts experimented with nonnative and native plants such as *Eucalyptus*, *Casuarina*, and *Acacia*;²⁷⁷ by 1910, there were also ten forest stations or nurseries in operation. According to estimates, in 1913 the station at Grootfontein alone sold 30,000 vines and Windhoek sold 12,208 wood-lot trees.²⁷⁸ Trials expanded thereafter, soon including maize, millet, mustard, all kinds of fruit trees, as well as an array of other plants.²⁷⁹ Agroforestry methods, employed to reduce costs for farmers, played an important role in a world defined by afforestation, intercropping, and irrigation.²⁸⁰ Although many of these trials failed or yielded much less than anticipated,²⁸¹ proponents remained confident in the power of trees.²⁸²

Overall then, by the 1910s the colony seemed to be on an upswing. More German settlers had arrived. In 1898, there were 1,242 German males living in Southwest Africa. Four years later that number had reached 2,595. It dou-

bled by 1908 to 6,215 (males and females), reaching 9,288 in 1909 and more than 12,000 in 1913.²⁸³ Although German immigration still fell well short of those leaving for the United States, locations such as Windhoek, Okahandja, Gibeon, and Keetmanshoop became settler hubs. “Progress in settlement,” to follow one commentator, became increasingly visible.²⁸⁴ By 1909, agricultural scientist and colonial enthusiast Ferdinand Wohltmann had already noted a “tangible turnaround”;²⁸⁵ two years later he wrote about the largest upswing in all of Germany’s colonies.²⁸⁶ In 1912 exports overtook imports for the first time.²⁸⁷ A year later Wohltmann wrote, “The early stages of agricultural development within our colonies are behind us!”²⁸⁸ By early 1907, 480 farms had been sold; by 1913, farm sales had risen to 1,331.²⁸⁹ Estimates note that in 1891/92 around 135 hectares of land were in use for agriculture; by 1912, the last year with sufficient data before World War I, it was more than 6,000 hectares. This shift also meant an increase in irrigation since most cultivations required water.²⁹⁰ Of course, and according to one scholar, “German state control resembled more ‘islands of rule’ than a net, and, until the end, its power remained arterial rather than capillary.”²⁹¹ Still, newcomers could rely on landing structures, railways, irrigation systems. Most notably, they had access to a permanent black proletariat. Whereas such workers had found ways to navigate these structures, German farmers repeatedly mistreated them. Take Ludwig Cramer at his farm in Otjisororindi. Presumably threatened by Herero workers, he lashed out, brutally punishing seven of them. Two women died. Initially sentenced to twenty months in jail, the punishment was later lessened—and his wife got to tell the story of their own suffering.²⁹² In that sense, and apart from land, labor, experimental stations, and other subsidies, settlers could take advantage of broader discriminatory policies. Whereas that did not necessarily guarantee success, newcomers generally saw a way forward. For them, the colony was finally on the right track as “old Africa” had died through investments, technology, and progress.²⁹³ Or, to quote one contemporary writing in 1913, “German Southwest Africa is a civilized land!”²⁹⁴

The period following the war saw the expansion of environmental infrastructure meant to help turn a conquered land into a white settler paradise. According to the *Windhuker Nachrichten* newspaper in 1905, settlers had dealt with all kinds of issues: “Torrential rains have filled valleys and rivers here as well and washed away dams and gardens—but we did not grumble; hail, frost, drought, and locusts have resided on fields, gardens and grazeland—yet we did not grumble. Rinderpest, horse sickness, and other pandemics have devastated our herds,” it continued, closing by noting that politicians would be at fault if after the conclusion of the Uprising all had been for nothing.²⁹⁵ And so investments into landing structures, railways and irrigation began pour-



Figure 7.5. NAN 09490, “Swimming in dam, Heusis, ca. 1912,” courtesy of the National Archives Windhoek.

ing in. Work began on a metal replacement for the failing wooden landing structure; crews helped with irrigation schemes; experimental stations provided resources and advice. Largely sustained thanks to the exploitation of diamond fields and African labor, settlers could now come into the colony to find living space. Similar to other colonial settler spaces, the subsequent commodification of lands began changing the face of agriculture. The introduction of large-scale commercial farming enterprises, for one, resulted in subsequent land alienation.²⁹⁶ In Southwest Africa, towns, settlements, and homesteads, connected by railways and sustained by wells and dams, popped up throughout a supposedly empty land. Such commodification, as Emmanuel Kreike writes, “and the imposition of colonial power also led to the colonial state’s channeling of African rural labour from pastoralism and crop cultivation into the colonial economy through forced labour, forced cultivation, and migrant labour.”²⁹⁷ It is in this context that Southwest African deserts seemingly turned into a white settler paradise, uncultivated land into productive spaces for the privileged few, as dreams of a German living space began becoming a reality.

Colonial storylines of conquest framed such experiences. Contemporaries wrote about arid frontier spaces and their pioneering spirits as they toiled to create these islands of *Heimat* abroad. Former colonial soldiers turned farmers relied on “sword and plow,” to follow contemporary Kurd Schwabe.²⁹⁸ Margarethe von Eckenbrecher and her husband “fought, worked and suffered for the

Southwest” at their farm in Okombahe.²⁹⁹ These struggles against nature at the frontier became part of a *Südwest* identity. In 1911, the *Kolonie und Heimat* magazine published a coffee table book outlining that character. Filled with 212 photographs and claiming to bring some objective knowledge to ongoing discussions about the colony, it basically portrayed Germanization in Southwest Africa.³⁰⁰ Farms, situated within harsh but managed landscapes, are at the center. Comparable to missionary hubs, sceneries showcase homesteads framed by a handful of trees and lots of greenery. A set of four photographs titled “Irrigation Systems” specifically includes dams, small lakes, and drilling efforts; other photographs capture cattle, sheep, horses, and ostriches. Germans with their “fighting spirit” had conquered harsh landscapes, to follow another contemporary.³⁰¹ Settler Clara Brockmann noted how they had followed their “duty,” returned to a romanticized nature juxtaposed against the “modern human.”³⁰² Now they posed in photographs in front of their prized possessions as lords at the frontier (Figure 7.5). Africans, at best a backdrop, showed up only as laborers processing tobacco plants, working in mines, or herding cattle. The emerging *Südwest* identity, a sense of a white self intricately wedded with colonial narratives and shaped by a larger struggle against nature, thus included the destruction of those non-whites long making a living in this land. The hymn of Southwest Africa, at times sung for the Kaiser’s annual birthday celebration in January, fits into that. It speaks of a soil soaked “with the blood of German heroes,” a baptism, it seems, as men “from the German race” and “true German women” build their new “homeland.”³⁰³ As demonstrated by historian Lora Wildenthal, the “myth of the *Farmersfrau* (colonial woman farmer),” sustained by publications and overall efforts namely in the magazine *Kolonie und Heimat*, played an important role within a context grounded in agrarian nostalgia.³⁰⁴ For contemporaries, such colonial narratives held even without Social Darwinist undertones. For them, subsidies and benefits, African labor and open lands in need of transformation, all of that seemed normal, natural, and in the great scheme of things even inevitable. Who else would improve on the land as settlers had? Who else would make this a cultivated space? And so, in the end, the image of a farm on the frontier—a German farmer toiling to get water to his cows while his wife tries to cultivate a garden—took over, a narrative structure that would haunt Southwest Africa well beyond colonial rule.³⁰⁵

Notes

1. Grimm, *Afrikafahrt West*, 98.
2. *Kolonie und Heimat* IV, no. 2, “Lüderitzbucht und seine Diamatenfelder,” 1910 (Rohrbach). See also Bravenboer and Rusch, *The First 100 Years of Railways in Namibia*, 113.
3. Press, *Blood and Diamonds*, 57.

4. Ibid., 58. See also Bravenboer and Rusch, *The First 100 Years of Railways in Namibia*, 128; Kaulich, *Die Geschichte der ehemaligen Kolonie Deutsch-Südwestafrika*, 392–99; Ulrike Lindner, “Transnational Movements between Colonial Empires: Migrant Workers from the British Cape Colony in the German Diamond Town of Lüderitzbucht,” *European Review of History* 16, no. 5 (2009): 679–95, here 682.
5. *Kolonie und Heimat* IV, no. 2, “Lüderitzbucht und seine Diamantenfelder,” 1910 (Rohrbach).
6. Press, *Blood and Diamonds*, 57–58. Popular discussions often note that he received nothing. See Olga Levinson, *Diamanten im Sand: Das wechselvolle Leben des August Stauch* (Windhoek, 2007); Zora del Buono, “Lüderitz in Namibia: Deutsche Geister in Südwest,” *Der Spiegel*, 13 January 2011.
7. Henkel, *Der Kampf um Südwestafrika*, xii.
8. *Kolonie und Heimat* II, no. 12, “Das neue Diamanten-Land. Deutsch-Südwest im Jahre 1907/08,” 28 February 1909. See also *Der Tropenpflanzer* XII, no. 8 and 10. The scholarship tends to see 1907/8 as a turning point. See Gründer, *Geschichte der deutschen Kolonien*, 283.
9. Paul Leutwein, *Du weitest deine Brust, der Blick wird freier: Kriegs- und Wanderfahrten in Südwest* (Berlin, 1909), 14, quoted in Kundrus, *Moderne Imperialisten*, 147. See also Henkel, *Der Kampf um Südwestafrika*, xii.
10. Olusoga and Erichsen, *The Kaiser’s Holocaust*, 235. See also Zimmerer, *Deutsche Herrschaft über Afrikaner*, 57–68.
11. Ernst Freimut, *Gedanken am Wege: Reiseplaudereien aus Deutsch-Südwestafrika* (Berlin, 1909), 207, as quoted in Kundrus, *Moderne Imperialisten*, 141. See also Paul Rohrbach, *Aus Südwest-Afrikas schweren Tagen* (Berlin, 1909), 54, as referenced in Steinbach, “Carved out Nature,” 47.
12. *Lüderitzer Zeitung*, 25 November 1911, no. 47 and *Südwestbote* (Windhoek), 25 December 1912, no. 154/155, as referenced in “Carved out Nature,” 67. See also Rathenau, *Industrialist, Banker, Intellectual, and Politician*, 92.
13. Henkel, *Der Kampf um Südwestafrika*, 1908, xiii.
14. *Kolonie und Heimat*, “Deutsch Südwestafrika,” 15 March 1908.
15. Zimmerer, *Deutsche Herrschaft über Afrikaner*; Muschalek, *Violence as Usual*.
16. *Jahresbericht über die Entwicklung der Schutzgebiete in Afrika und der Südsee im Jahre 1906/07, Teil E.: Deutsch-Südwestafrika* (Berlin, 1908), 19. See also Lau and Reiner, *100 Years of Agricultural Development in Colonial Namibia*, 59–60.
17. v. König, “Deutsche Kolonialschule,” in *Deutsches Kolonial-Lexikon*, Band III, 723.
18. Wildenthal, *German Women for Empire*, 166.
19. *Der Tropenpflanzer* XVII, no. 7, “Aus deutschen Kolonien. Der landwirtschaftliche Dienst und das landwirtschaftliche Versuchswesen in den deutschen Schutzgebieten,” July 1913.
20. *Deutsch-Südwestafrikanische Zeitung*, “Aus dem Schutzgebiet. Regen,” 8 January 1902. See also *Deutsche Kolonialzeitung*, “Deutsch-Südwestafrika: Regen und Wasserbeschaffung,” 30 April 1903; Semler, *Meine Beobachtungen in Süd-West-Afrika*, 44–45; Hintrager, *Südwestafrika in der deutschen Zeit*, 141; Bley, *South-West Africa under German Rule*, 205.
21. Kaulich, *Die Geschichte der ehemaligen Kolonie Deutsch-Südwestafrika*, 437. See also Lehmann, “Waterberg to Sandveld,” 542–43.

22. *Der Tropenpflanzer* XVII, no. 1, "Neujahrsgedanken 1913," January 1913.
23. Lau and Reiner, *100 Years of Agricultural Development in Colonial Namibia*, 37. Settlers spent little time thinking about, or even acknowledging, precolonial efforts tied to the cultivation of some of these plants, including tobacco.
24. *Der Tropenpflanzer* XVII, no. 7, "Aus deutschen Kolonien: Der landwirtschaftliche Dienst und das landwirtschaftliche Versuchswesen in den deutschen Schutzgebieten," July 1913.
25. Helene von Falkenhausen supervised such efforts. *Deutsche Kolonialzeitung*, "Die Lehrfarm Brakwater in Südwestafrika für junge Mädchen," 12 March 1910; *Deutsche Kolonialzeitung*, "Die Lehrfarm für gebildete junge Mädchen in Brakwater bei Windhuk," 8 July 1910.
26. *Der Tropenpflanzer* XVII, no. 7, "Aus deutschen Kolonien: Der landwirtschaftliche Dienst und das landwirtschaftliche Versuchswesen in den deutschen Schutzgebieten," July 1913; *Der Tropenpflanzer* II, no. 11, "Die landwirtschaftliche Station Spitzkoppjes in Südwestafrika," November 1898; Reichs-Kolonialamt, ed., *Die deutschen Schutzgebiete in Afrika und Südsee, 1911/12: Amtliche Jahresberichte* (Berlin, 1913), 121. See also Lau and Reiner, *100 Years of Agricultural Development in Colonial Namibia*, 15.
27. *Deutsch-Südwestafrika: Amtlicher Ratgeber für Auswanderer* (Berlin, 1907).
28. BArch-B, R 1001/1199–1202, Landerwerbungen und Aufgebote von Landansprüchen; BArch-B, R 1002/2610, Farmangelegenheiten. See also Kundrus, *Moderne Imperialisten*, 64.
29. *National-Zeitung*, 25 December 1906, as referenced in Laak, *Imperiale Infrastruktur*, 129.
30. *Deutsche Kolonialzeitung*, "Koloniales Preisausschreiben," 12 January 1907; *Koloniale Zeitschrift*, "Wie machen wir unsere Kolonien rentabel?" 12 September 1907. See also Bley, *South-West Africa under German Rule*, 107.
31. Max Esser, *An der Westküste Afrikas: Wirtschaftliche und Jagd-Streifzüge* (Berlin, 1898), 191. See also Gumpell, *Die Wahrheit über Deutsch-Südwest-Afrika*, 18.
32. Otto, *Südwest-Afrika*, 34. See also *Der Südwestbote*, "Aussichten des Bergbaues in Deutsch-Südwest," 7 March 1907; *Der Tropenpflanzer*, "Auszüge und Mitteilungen: Zinnfunde in Deutsch-Südwestafrika," 9 September 1907; *Kolonie und Heimat*, "Die Bodenschätze von Deutsch-Südwestafrika," 13 September 1908 (Kuntz).
33. J. Kuntz, "Bergbau," 200–24, in *Taschenbuch für Südwestafrika*, ed. Philalethes Kuhn and Kurd Schwabe (Berlin, 1909); Albrecht Macco, *Die Aussichten des Bergbaues in Deutsch-Südwestafrika* (Berlin, 1907).
34. Kuntz, "Bergbau," 224, in Philalethes and Schwabe, *Taschenbuch für Südwestafrika*.
35. Reichs-Kolonialamt, ed., *Die deutschen Schutzgebiete in Afrika und Südsee, 1910/11: Amtliche Jahresberichte* (Berlin, 1912), 130–31; Reichs-Kolonialamt, ed., *Die deutschen Schutzgebiete in Afrika und Südsee, 1911/12: Amtliche Jahresberichte* (Berlin, 1913), 130–31.
36. Reichs-Kolonialamt, ed., *Die deutschen Schutzgebiete in Afrika und Südsee, 1911/12: Amtliche Jahresberichte* (Berlin, 1913), 131. Copper had been mined long before the Germans arrived. See John Kinahan and J. C. Vogel, "Recent Copper-Working Sites in the !Khuiseb Drainage, Namibia," *The South African Archaeological Bulletin* 37, no. 135 (June, 1982): 44–45; Brigitte Lau, ed., *The Matchless Copper Mine in 1857* (Windhoek, 1987).

37. Conradt, *Erinnerungen aus zwanzigjährigem Händler- und Framerleben in Deutsch-Südwestafrika*, 69–70.
38. *Zeitung des Vereins Deutscher Eisenbahn-Verwaltungen*, “Eisenbahnpläne in Südwestafrika,” XLI, no. 44, 8 June 1901; *Deutsch-Südwestafrikanische Zeitung*, “Die Otavi-bahn,” 9 October 1902; Dix, *Afrikanische Verkehrspolitik*, 52; Quiring, *Die Eisenbahnen Deutsch-Südwestafrikas*, 14. See also [n.a.], “Die Otavi-Bahn und die Otavi-Minen,” *Zeitschrift für Kolonialpolitik, Kolonialrecht und Kolonialwirtschaft* VII, no. 11 (Oct. 1905); *Kolonie und Heimat* II, no. 13, “Der Kupferbergbau in Deutsch-Südwest,” 14 March 1909 (du Bois).
39. Kuntz, “Bergbau,” 208, in Philaethes and Schwabe, *Taschenbuch für Südwestafrika*.
40. Lindner, “Transnational Movements between Colonial Empires,” 679. See also Külz, *Deutsch-Südafrika im 25. Jahre deutscher Schutzherrschaft*, 48.
41. Lindner, “Transnational Movements between Colonial Empires,” 684.
42. Laak, *Imperiale Infrastrukturen*, 184.
43. Schmidt-Lauber, *Die abhängigen Herren*.
44. Paul Rohrbach, *Die Kolonie* (Frankfurt am Main, 1907); Paul Rohrbach, *Deutsche Kolonialwirtschaft: Kulturpolitische Grundsätze für die Rassen- und Missionsfragen* (Berlin-Schöneberg, 1909); Paul Rohrbach, “Deutsche Welt- und Kolonialpolitik,” in *Preußische Jahrbücher* 152 (1913), ed. Hans Delbrück, 509–25 (Berlin, 1913).
45. Paul Rohrbach, *Deutsch Südwest-Afrika ein Ansiedlungs-Gebiet?* (Berlin-Schöneberg, 1905), 26–27 and 81. See also Kundrus, *Moderne Imperialisten*, 63; Wildenthal, *German Women for Empire*, 97.
46. Rohrbach, *Deutsche Kolonialwirtschaft*, 305. See also Quiring, *Die Eisenbahnen Deutsch-Südwestafrikas*, 45.
47. Rohrbach, *Ansiedlungs-Gebiet*, 24, as quoted in Kundrus, *Moderne Imperialisten*, 71. See also Olusoga and Erichsen, *The Kaiser’s Holocaust*, 237; Laak, *Imperiale Infrastruktur*, 187.
48. Schlettwein, *Der Farmer in Deutsch-Südwest-Afrika*, 40; Joachim Pfeil, *Deutsch-Südwest-Afrika, jetzt und später* (Munich, 1905), 11; Wolf, *Deutsch-Südwestafrika*. See also Steinmetz, *The Devil’s Handwriting*, 182.
49. Kurd Schwabe, *Deutsch-Südwestafrika: historisch-geographische, militärische und wirtschaftliche Studie, Vortrag gehalten in der Militärischen Gesellschaft zu Berlin am 15. März 1905* (Berlin, 1905), 5/6 and 11.
50. *Ibid.*, 20.
51. *Ibid.*, 21.
52. Otto, *Südwest-Afrika*, 27–28.
53. *Windhuker Nachrichten*, “Ist Deutsch-Südwestafrika ein Bauernland?” 22 August and 29 August 1908 (Bonn). See also Olusoga and Erichsen, *The Kaiser’s Holocaust*, 236.
54. *Kolonie und Heimat* I, no. 26, “Diamanten aus Lüderitzbucht,” 13 September 1908 (B.S.).
55. *Koloniale Rundschau*, “Negerarbeit in Afrika,” 1909, 65–75, here 71. See also Rizzo, *Photography and History in Colonial Southern Africa*, 22; Zimmerer, *Deutsche Herrschaft über Afrikaner*, 176. See also Muschalek, “Violence as Usual,” 130.
56. Lyon, “From Labour Elites to Garveyites,” 54.
57. Hans Dominik, *Vom Atlantik zum Tschadsee: Kriegs- und Forschungserfahrungen in Kamerun* (Bremen, 1908), 13.

58. Zimmerer, "War, Concentration Camps and Genocide in South-West Africa," in Zimmerer and Zeller, *Genocide in German South-West Africa*, 29.
59. *Deutsche Kolonialzeitung*, "Arbeiternot und Eingeborenenpflege in Südwestafrika," 29 April 1911. See also Steinmetz, *The Devil's Handwriting*, 171; Zimmerer, "War, Concentration Camps and Genocide in South-West Africa," 30–35; Zimmerer, *Deutsche Herrschaft über Afrikaner*, 68–94.
60. Zimmerer, *Deutsche Herrschaft über Afrikaner*, 191. See also Prein, "Guns and Top Hats."
61. 1908/09, 1909/10 and 1911/12 provided more sustainable rains compared to 1910/11 and 1912/13. See Prein, "Guns and Top Hats," 106.
62. *Deutsch-Südwestafrikanische Zeitung*, 4 March 1908, as quote in Prein, "Guns and Top Hats," 104.
63. *Ibid.*, 105.
64. Jimmy La Guma, *A Biography by Alex La Guma*, ed. Mohamed Adhikari (Cape Town, 1997), 18–19. See also Press, *Blood and Diamonds*, 115.
65. Lindner, "Transnational Movements between Colonial Empires," 687. See also Zimmerer, *Deutsche Herrschaft über Afrikaner*, 211–42; Press, *Blood and Diamonds*, 115.
66. Press, *Blood and Diamonds*, 117.
67. *Deutsch-Südwestafrikanische Zeitung*, "Hungersnot im Ovamboland," 2 December 1908; *Südwest*, "Hungersnot im Ambolande in Sicht," 14 April 1911; *Deutsche Kolonialzeitung*, "Rundschau: Nach der Dürre Ueberschwemmungen," 8 May 1909.
68. Press, *Blood and Diamonds*, 117.
69. Otto Hammann, *Um den Kaiser* (Berlin, 1919), 13. See also Sören Utermark, "'Schwarzer Untertan versus schwarzer Bruder': Bernhard Dernburg in den Kolonien Deutsch-Ostafrika, Deutsch-Südwestafrika Togo und Kamerun" (PhD diss., University of Kassel, 2011).
70. Utermark, "'Schwarzer Untertan versus schwarzer Bruder,'" 129–30; Ulrich van der Heyden, "The 'Hottentot Elections' of 1907," 113–19, here 115, in Zimmerer and Zeller, *Genocide in German South-West Africa*.
71. BAArch-B, R 1001/ 1461, Informationsreise des Staatssekretärs Bernhard Dernburg nach Deutsch-Südwestafrika und nach Britisch-Südafrika (1908); BAArch-B, R 1001//1493, Empfehlungen für Forschungsreisende, Jan. 1907–Juni 1910, "Expeditionsüberblick"; BAArch-K, N 1130/48, Nachlass Dernburg, Reiseplan; *Windhuker Nachrichten*, "Staatssekretär Dernburg über Deutsch-Südwestafrika," 27 February 1909.
72. BA Koblenz, RKoLA, Personalakte Dernburg, 2/5, iv, Dernburg to the Duke of Mecklenburg (President of the Colonial Society), 4 May 1908, as quoted in Rathenau, *Industrialist, Banker, Intellectual, and Politician*, 60. Rathenau was rather critical when it came to the recent war and subsequent investments.
73. Laak called it a "new economic spirit." Laak, *Imperiale Infrastruktur*, 134. See also Press, *Blood and Diamonds*.
74. Bernhard Dernburg, *Zielpunkte des Deutschen Kolonialwesens. Zwei Vorträge* (Berlin, 1907), 5. See also Laak, *Imperiale Infrastruktur*, 137–38.
75. Utermark, "'Schwarzer Untertan versus schwarzer Bruder,'" 150–55.
76. *Kolonie und Heimat* II, no. 7, "Swakopmund. Bilder aus der Haupthafenstadt von Deutsch-Südwest," 20 December 1908. See also *Kolonie und Heimat* III, no. 26, "Swakopmund: Der Haupthafenplatz von Deutsch-Südwest," 11 September 1910.

77. Otto, *Südwest-Afrika*, 4.
78. *Kolonie und Heimat*, "Wieder in Südwest. Reisebriefe unsres nach den westafrikanischen Kolonien entsandten Berichterstatters," 12 April 1908 (Berthold).
79. *Deutsche Bauzeitung* XLI, no. 96, "Das Bauwesen im Deutschen Reichshaushalt 1908 (Schluss)," 30 November 1907, 674–77, here 676–77.
80. *Deutsche Kolonialzeitung*, "Dernburgs Studienreise nach Britisch- und Deutsch-Südwestafrika!" Sonderbeilage zur Nr. 39, 26 September 1908. See also Kütz, *Deutsch-Südafrika im 25. Jahre Deutscher Schutzherrschaft*, 49.
81. *Deutsche Kolonialzeitung*, "Dernburgs Studienreise durch Britisch- und Deutsch Südwestafrika!" 12 September 1908.
82. *Deutsch-Südwestafrikanische Zeitung*, "Reichstags-Verhandlungen über den Molenarm," 3 July 1909; *Windhuker Nachrichten*, "Ueber die Möglichkeit eines brauchbaren Hafens in Swakopmund," 1 September 1909.
83. Paul Rohrbach, "Eisenbahn- und Hafenfragen in unseren westafrikanischen Kolonien," *Marine-Rundschau* 18 (October 1907), 1115–38, here 1136. See also *Kolonie und Heimat*, "Landungsverhältnisse in Deutsch-Südwest-Afrika," 8 December 1907 (Dix); Rohrbach, "Eisenbahn- und Hafenfragen in unseren westafrikanischen Kolonien," 1135–36; Connemann, "Meinungsaustausch," *Marine-Rundschau* (June and October 1908); A. v. Horn, "Hafenanlage in Swakopmund," XXXVII, no. 11 (November 1909), 508–12; Conneman, "Hafenanlage in Swakopmund," *Annalen für Hydrographie und maritimen Meteorologie* XXXVIII, no. 6 and no. 12 (June and December 1910).
84. *Der Südwestbote*, "Schutzgebiets-Chronik. Eine neue Landungsbrücke für Swakopmund," 11 January 1911.
85. *Deutsch-Südwestafrikanische Zeitung*, "Aus Swakopmund: Vom Brückenbau," 3 October 1911. See also *Deutsch-Südwestafrikanische Zeitung*, "Aus Swakopmund: Vom Brückenbau," 15 December 1911; *Deutsch-Südwestafrikanische Zeitung*, "Die neue Landungsbrücke," 24 April 1913.
86. *Deutsch-Südwestafrikanische Zeitung*, "Braucht Swakopmund eine Eingeborenen-Werft?" 23 March 1911. *Deutsch-Südwestafrikanische Zeitung*, "Eingeborenenwerft für Swakopmund," 28 February 1914; *Südwest*, "Extratouren beim Brückenbau," 11 March 1913; *Deutsch-Südwestafrikanische Zeitung*, "Swakopmunder Traum," 21 June 1913.
87. Hermann Schwabe, "Die Landungsanlagen in Swakopmund," *Deutsche Bauzeitung* XLIV, no. 34 (27 April 1910), 255–56, here 256.
88. *Der Südwestbote*, "Schlepper *Windhuk* gesunken," 25 and 29 July 1911; *Deutsch-Südwestafrikanische Zeitung*, "Schweres Unglück auf der Swakopmunder Reede," 25 July 1911.
89. BAArch R 1001/ 1868, Seeunfälle (*Eduard Bohlen*, Untergang des Schleppers *Windhuk*, and Seeamt Hamburg).
90. *Deutsch-Südwestafrikanische Zeitung*, "Swakopmund: Pferde in der Brandung," 16 February 1912. See also *Deutsch-Südwestafrikanische Zeitung*, "Die alte Mole," 1 April 1913.
91. NAN, ZBU, 1767 T.VII.G.5 Hafen von Lüderitzbucht Bau und Unterhaltung der Landungsbrücke. Specialia (1906–10), Eisenbahnbattalion, letter 27 March 1907. See also NAN, ZBU, 1767 T.VII.G.5 Hafen von Lüderitzbucht Bau und Unterhaltung der Landungsbrücke. Specialia (1906–10), Untersuchung, letter, 10 June 1907.
92. NAN, ZBU, 1767 T.VII.G.5 Hafen von Lüderitzbucht Bau und Unterhaltung der Landungsbrücke. Specialia (1906–10), Eisenbahnbattalion, letter 27 March 1907; NAN,

- ZBU, 1884–1915, 1762 T.VII.G I (Vol 3) Hafen von Lüderitzbucht, Allgemeines (Projekte- und Vorarbeiten) (1912–13), report, April 1913.
93. See NAN, ZBU, 1767 T.VII.G.5 Hafen von Lüderitzbucht Bau und Unterhaltung der Landungsbrücke. Specialia (1906–10), Kaiserliches Hafenamts, letter, 22 June 1907. See also *Windhuker Nachrichten*, “Die Landungsanlagen in Lüderitzbucht,” 17 October 1907.
94. *Kolonie und Heimat*, “Lüderitzbucht: Reisebrief unsres nach den westafrikanischen Kolonien entsandten Berichterstatern,” 9 May 1908 (Berthold).
95. See NAN, ZBU, 1884–1915 (Vol. 1), 1762 T.VII.G I (Vol 3) Hafen von Lüderitzbucht, Allgemeines (Projekte- und Vorarbeiten) (1912–13), letter, 20 July 1912; *Ibid.*, (Vol 5) Hafen von Lüderitzbucht, Allgemeines (Projekte- und Vorarbeiten) (1914–15), letter, 28 March 28 1914.
96. *Deutsch-Südwestafrikanische Zeitung*, “Aus dem Schutzgebiet: Lüderitzbucht,” 28 September 1911.
97. NAN, ZBU, 1884–1915 (Vol. 1), 1762 T.VII.G I (Vol 4) Hafen von Lüderitzbucht, Allgemeines (Projekte- und Vorarbeiten) (1913–14), letter, 25 July 1913.
98. Cornell, *Glamour*, as quoted in Press, *Blood and Diamonds*, 61.
99. *Deutsch-Südwestafrikanische Zeitung*, “Diamantfund,” 24 June 1908, as quoted in Press, *Blood and Diamonds*, 65.
100. Press, *Blood and Diamonds*, 69.
101. *Ibid.*, 71–72 and 76.
102. Jones, “On Desolate Sands,” 96.
103. Hull, *Absolute Destruction*, 79. See also Zeller, “Wie Vieh wurden hunderte zu Tode getrieben und wie Vieh begraben,” 227; Jones, “On Desolate Sands,” 96; Harris et al., “Monuments in the Desert,” 127.
104. Jones, “On Desolate Sands,” 96, in *Sea Ports and Sea Power*. See also Kludas, *Die Schiffe der deutschen Afrika-Linien 1880–1945*, 20.
105. Harris et al., “Monuments in the Desert,” 112.
106. *Ibid.*, 114.
107. *Simplicissimus: Illustrierte Wochenschrift*, “Karneval 1908,” 22 February 1908 (Spezial-Nummer, Karneval).
108. Hintrager, *Südwestafrika in der deutschen Zeit*, 140. See also Lisa Kuntze, “Die große Zeit der Diamantentunden,” 449–60, here 454, in Becker and Hecker, *1884–1984: Clara Brockmann, Briefe eines deutschen Mädchens aus Südwest* (Berlin, 1910), 28.
109. Press, *Blood and Diamonds*, 121.
110. *Ibid.*, 120–22.
111. Zimmerer, *Deutsche Herrschaft über Afrikaner*, 220.
112. Press, *Blood and Diamonds*, 123. The chapter “Underworld” includes numerous examples.
113. *Ibid.*, 172.
114. Bravenboer and Rusch, *The First 100 Years of State Railway in Namibia*, 176. According to Press, by 1912 it was 75 percent of the Southwest’s budget. See Press, *Blood and Diamonds*, 200. Scholars long pointed to 52 million between 1908 and 1913. See Olu-soga and Erichsen, *The Kaiser’s Holocaust*, 241; Klaus Dierks, *Chronology of Namibian History: From Pre-Historical Times to Independent Namibia* (Windhoek, 2002), 138; Kaulich, *Die Geschichte der ehemaligen Kolonie Deutsch-Südwestafrika*, 399.

115. Press speaks about 118 million Marks for 1913 alone. Press, *Blood and Diamonds*, 89.
116. Lindner, "Transnational Movements between Colonial Empires," 683.
117. Laak, *Imperiale Infrastrukturen*, 138. See also Paul Rohrbach, "Die Eisenbahnen Afrikas," *Preußische Jahrbücher* 128 (1907), 514–29; *Zeitung des Vereins Deutscher Eisenbahnverwaltungen* XLIX, no. 96, "Die neue Kolonialbahnvorlage an den deutschen Reichstag," 8 December 1909; *Kolonie und Heimat*, III, no. 8, "Das südwestafrikanische Eisenbahnnetz," 2 January 1910; Dix, *Afrikanische Verkehrspolitik*, 60–75; Bruno Felix Hänsch, "Zur deutschen Kolonialbahnfrage in Afrika," *Geographische Zeitschrift* XIII (1907), 601–14.
118. BArch-K, N 1037/8, Nachlass Hintrager, Eisenbahn-Programm.
119. *Deutsch-Südwestafrikanische Zeitung*, "Eisenbahnen in Südwestafrika," 22 February 1905. See also *Südwest*, "Vom Stand des Bahnbaues," 20 December 1910; *Zeitung des Vereins Deutscher Eisenbahnverwaltungen* XLIX, no. 24 "Einführung einheitlicher Umgrenzungslinien des lichten Raumes und der Fahrzeuge für Eisenbahnen von Meter- und Kapspurweite in den deutschen Schutzgebieten," 24 March 1909 (Baltzer); Baltzer, *Die Kolonialbahnen*, 81; Quiring, *Die Eisenbahnen Deutsch-Südwestafrikas*, 37.
120. *Deutsches Kolonialblatt*, "Deutsch-Südwestafrika. Umbau der Okahandja-Brücke," 15 January 1912.
121. Deutsches Historisches Museum, ed., *Deutscher Kolonialismus: Fragmente seiner Geschichte und Gegenwart*, 2nd ed. (Darmstadt: Theiss, 2017), 258–59. For the photo, see *Kolonie und Heimat* II, no. 1, "Zur Eröffnung der Eisenbahn Lüderitzbucht–Keetmanshoop," 1 October 1908.
122. *Deutsch-Südwestafrikanische Zeitung*, "Aus dem Schutzgebiet," 6 March 1909.
123. *Der Südwestbote*, "Ein schweres Eisenbahnungsglück," 14 January 1912. See also *Der Südwestbote*, "Schutzgebiets-Chronik: Verkehrsstörung," 12 January 1912; *Deutsch-Südwestafrikanische Zeitung*, "Das Eisenbahnungsglück bei Johann-Albrechtshöhe," 16 January 1912; *Südwest*, "Das Eisenbahnungsglück," 12 January 1912; *Amtsblatt für das Schutzgebiet Deutsch-Südwestafrika*, "Bekanntmachung. Zugverkehr in der Regenzeit," 1 February 1912.
124. NAN, EVE 140 C.3.A. (Vol 3) Betriebsunfälle 1903–07; NAN, EVE 140 C.3.A. (Vol 4) Betriebsunfälle Entgleisung 07–09; NAN, EVE 140 C.3.A. (Vol 5) Betriebsstörungen und Unfälle Allgemeines 1909–14. See also *Der Südwestbote*, "Ein schweres Eisenbahnungsglück," 14 January 1912.
125. *Deutsch-Südwestafrikanische Zeitung*, "Vom Hochwasser," 5 March 1912.
126. That applied to track maintenance along the OMEG Line when only the track inspector, supervisors, and foremen were white. Bravenboer and Rusch, *The First 100 Years of Railways in Namibia*, 140.
127. *Ibid.*, 153–57. See also *Zeitung des Vereins Deutscher Eisenbahnverwaltungen* LII, no. 95, "Der Eisenbahnbau in den afrikanischen Schutzgebieten Deutschlands während des Jahres 1912 und sein gegenwärtiger Stand," 7 December 1912; *Deutsch-Südwestafrikanische Zeitung*, "Eisenbahnbedenken," 12 May 1909; *Der Südwestbote*, "Ein hoffungsvoller Ausblick," 21 December 1913; *Zeitung des Vereins Deutscher Eisenbahnverwaltungen* LIII, no. 92, "Südwestafrikanische Verkehrsfragen vor dem Landesrat in Windhuk," 26 November 1913.
128. Bravenboer and Rusch, *The First 100 Years of Railways in Namibia*, 153.
129. La Guma, *A Biography by Alex La Guma*, 19. It is not clear where exactly he worked.

130. Zimmerer, *Deutsche Herrschaft über Afrikaner*, 230–36.
131. Schöllnbach, *Die Besiedelung Deutsch-Südwestafrikas bis zum Weltkrieg*, Anlage 18. See also Walther, *Creating Germans Abroad*, 88. Press speaks about 2,400 miles (3,900 kilometers) by 1912. Press, *Blood and Diamonds*, 108.
132. Maria Karow, *Wo sonst der Fuß des Kriegers trat: Farmerleben in Südwest nach dem Kriege* (Berlin, 1909), vi.
133. BArch-B, R 1002/1805 (Bd. 1), Personalakte Landrat von Uslar, letters 22 January and 23 January 1906; BArch-B, R 34/926, Abschrift; National Archives Namibia (NAN), ZBN, 1410 P.IV.B.2, Aufsuchung unterirdischer Wasseradern durch Wümschelrutengänger. Specialia (1906–07), letters 22 January and 23 January 1906. See also Martin Kalb, “The Dowsing Debate: Water, Science, and Colonialism in German Southwest Africa,” *German History* 39, no. 1 (2020): 568–93.
134. *Deutsche Kolonialzeitung*, “Aus unseren Kolonien: Südwestafrika: Wassererschließung,” 18 August 1906. See also Georg Franzius, ed., *Bericht über die Tagung des Verbandes zur Klärung der Wümschelrutenfrage in Halle a.S.* (Stuttgart, 1914), 20; *Zentralblatt für Wasserbau und Wasserwirtschaft*, “Die Erfolge der Wümschelrute in Deutsch-Südwest,” 10 November 1906; NAN, BKN, 1, Acta a., Betrifft: Allgemeines der Kolonne (1906), (letter Von Lindequist, 17 May 1906).
135. *Deutsche Kolonialzeitung*, “Aus unseren Kolonien: Südwestafrika: Wassererschließung,” 18 August 1906. See also Deutscher Landwirtschaftsrat XXXIII, “Die Wasserversorgung in unseren Kolonien,” *Sonderabdruck aus dem Archiv des Deutschen Landwirtschaftsrats* (Berlin, 1909), 61–63.
136. Hintrager, *Südwestafrika in der deutschen Zeit*, 174. See also BArch-K, N 1037/8, Nachlass Hintrager, Organisationsplan für die Wassererschließung in Deutsch-Südwestafrika.
137. BArch, R 1001/1142, Ansiedlung insbesondere deutscher Bauern, Von Lindequist Denkschrift über die Besiedelung Deutsch-Südwestafrikas, 19 September 1906. See also Schöllnbach, *Die Besiedelung Deutsch-Südwestafrikas bis zum Weltkrieg*, 63; “Organisationsplan für die Wassererschließung in Deutsch-Südwestafrika,” v. April 1906, Stenographischer Bericht Reichstag, 12 LP/ 1, Sess, 1907/08, Nd. 239, Nr. 10. Nach p. 3, as quoted in *Die Geschichte der ehemaligen Kolonie Deutsch-Südwestafrika 1884–1914*, 438.
138. NAN, BKN and BKS, 1903–1915, Finding Aid, A.C. Stern (Aug. 1972); *Deutsches Kolonialblatt*, “Wassererschließung in Deutsch-Südwestafrika,” 1 and 5 November 1910. See also Schneider, “Bewässerungslandwirtschaft in Namibia und ihre Grundlagen in der Kolonialzeit,” 135.
139. *Windhuker Nachrichten*, “Jahresbericht über die Entwicklung von Deutsch-Südwestafrika im Jahre 1906/07,” 15 April 1908.
140. *Deutsche Kolonialzeitung*, “Wassererschließung in Deutsch-Südwestafrika,” 22 July 1911. Until 1911 funding did not come from a regular budget line.
141. *Deutsch-Südwestafrikanische Zeitung*, “Eine Verwendung für Mittel aus der Wohlfahrtslotterie,” 17 February 1909. See also Reichs-Kolonialamt, *Die deutschen Schutzgebiete in Afrika und Südsee, 1911/12*, 138.
142. *Lüderitzbuchter Zeitung*, “Farmer Motor-Pumpen,” 30 September 1911.
143. Johannes Gad, *Die Betriebsverhältnisse der Farmen des mittleren Hererolandes (Deutsch-Südwestafrika)* (Hamburg, 1915), 42.

144. *Südwest*, "Was wird aus der Wassererschließung im kommenden Etatsjahre?" 24 November 1911.
145. *Windhuker Nachrichten*, "Jahresbericht über die Entwicklung von Deutsch-Südwestafrika im Jahre 1906/07," 15 April 1908.
146. *Deutsche Kolonialzeitung*, "Südwestafrikanisches Allerlei," 18 July 1908.
147. NAN, BKS, 19, 8., Sammelakte betr. Bohrangelegenheiten, Etatsvorschläge, Auszüge der Schriften Dr. Ranges, Jahresberichte (1907–15), *Vorschlag* Lotz und Rohrbach, 1910. See also *Amtliche Mitteilungen*, 1910/11 (1912), 120; *Kolonie und Heimat* IV, no. 22, "Brunnenbau in Südwest," 1911.
148. *Amtliche Mitteilungen*, 1910/11 (1912), 119. See also NAN, BKN, 7, B. 3a Verzeichnis über fertiggestellte Bohrungen, Stand des Personals, Personalangelegenheiten, Zugtier (1909–13), (Bericht der Bohrkolonie-Nord über ihre Tätigkeit im Rechnungsjahr 1910, 8 April 1911).
149. Gad, *Die Betriebsverhältnisse der Farmen des mittleren Hererolandes*, 33.
150. NAN, BKN, 7, B. 3a Verzeichnis über fertiggestellte Bohrungen, Stand des Personals, Personalangelegenheiten, Zugtier (1909–13), (Verzeichnis der im Distrikt Okahandja fertiggestellten Bohrungen in der Zeit vom Jahre 1906 bis 31. März 1911).
151. Moritz Bonn, "German Colonial Policy," *United Empire Magazine* V, no. 2 (1914), 129, as quoted in Gordon, "Hiding in Full View," 32.
152. NAN, BKS, 7, B.23., Beschwerden und Reklamationen (1912–14), Kais. Distriktamt, Beglaubigte Abschrift, 17 September 1913.
153. *Ibid.*, Brief, Range, 29 September 1913. Kakub's testimony, one of the few voices available from African workers, described the situation from his perspective. See NAN, BKS, 7, B.23., Beschwerden und Reklamationen (1912–14), Kais. Distriktamt, Beglaubigte Abschrift, Protokoll, 22 September 1913.
154. *Südwest*, "Was wird aus der Wassererschließung im kommenden Etatsjahre?" 24 November 1911.
155. *Der Südwestbote*, "Besiedlung und Wassererschließung," 18 November 1911.
156. *Amtliche Mitteilungen*, 1910/11 (1912), 120. See also *Amtsblatt für das Schutzgebiet Deutsch-Südwestafrika*, "Bekanntmachung," 1 May 1911; *Amtliche Mitteilungen*, 1911/12 (1913), 118. For subsequent calls for action, see *Deutsches Kolonialblatt*, "Deutsch-Südwestafrika. Die Wassererschließung in Deutsch-Südwestafrika," 1 May 1912; *Deutsches Kolonialblatt*, "Deutsch-Südwestafrika. Bohrtätigkeit in Deutsch-Südwestafrika und Britisch-Südafrika," 1 February 1913.
157. *Der Südwestbote*, "Besiedlung und Wassererschließung," 18 November 1911. For similar complaint, see also *Lüderitzbucher Zeitung*, "Briefkasten der Redaktion," 21 October 1911.
158. NAN, BKN, 1, Akta b (Band 2): betr. Verfügung des Reichskolonialamts und Gouvernements (1908/09), (Jahresbericht, 16 July 1908).
159. *Der Südwestbote*, "Besiedlung und Wassererschließung," 18 November 1911. See also *Der Südwestbote*, "Windhuk und Umgebung. Zur Wasserfrage," 5 June 1912; *Der Südwestbote*, "Ende des Wassermangels?" 19 July 1912.
160. Franzius, *Tagung des Verbandes zur Klärung der Wünschelrutenfrage*, 27.
161. Clara Brockmann, *Briefe eines deutschen Mädchens aus Südwest* (Berlin, 1912), 30, as quoted in Udo Krautwurst, "Water-Witching Modernist Epistemologies and Dowsing

- Realities: Exporting Models of Non-Rationality Through Colonial and Development Discourses." *Anthropology Review* 21, no. 2 (1998): 71–82, here 73.
162. Brockmann, *Briefe eines deutschen Mädchens aus Südwest*, 33.
163. NAN, BKS, 4, B.8., Bohrungen für Private (1910–12), Forkel an Bohrkolonne-Süd, 13 May 1911.
164. *Ibid.*, 19 August 1911.
165. *Ibid.*, 28 September 1911.
166. *Ibid.*, 9 October 1911. See also NAN, BKS, 4, B.8., Bohrungen für Private (1910–12), Forkel an Bohrkolonne-Süd, 11 October 1911
167. NAN, BKS, 7, B.23., Beschwerden und Reklamationen (1912–14), Forkel an Bohrkolonne-Süd, 3 November 1913. See also NAN, BKS, 7, B.23., Beschwerden und Reklamationen (1912–14), Forkel an Bohrkolonne-Süd, 27 November 1913.
168. Rathenau, *Industrialist, Banker, Intellectual, and Politician*, 88.
169. *Deutsch-Südwestafrikanische Zeitung*, "Wasserfrage im Süden," 19 September 1908. See also *Deutsch-Südwestafrikanische Zeitung*, "Wasserfrage im Süden," 19 September 1908.
170. BArch-B, R F 151, Wasser-Erschliessung, P. II. C1., Band 1 (microfilm roll 82992), Bericht über eine zwecks Wassererschließung im Bezirk Rehoboth von Bergassessor Dr. Niess unternommene Dienstreise, 18 October–13 November 1911.
171. Bravenboer and Rusch, *The First 100 Years of Railways in Namibia*, 156.
172. Karow, *Wo sonst der Fuß des Kriegers trat*, 54.
173. *Ibid.*, 69.
174. Stengel, 1970, 16–20, as referenced in Schneider, "Bewässerungslandwirtschaft in Namibia und ihre Grundlagen in der Kolonialzeit," 163. See also Bravenboer and Rusch, *The First 100 Years of Railways in Namibia*, 134.
175. Ferdinand Gessert, "Ueber rationelle Bewässerung in D.-S.-W. Afrika. Saatlamm oder Talsperre," *Zeitschrift für Kolonialpolitik, Kolonialrecht und Kolonialwirtschaft* VIII, no. 2. (February, 1906). See also Semler, *Meine Beobachtungen in Süd-West-Afrika*, 19–20.
176. *Kolonie und Heimat*, "Koloniale Neuigkeiten: Südwestafrika," 2 February 1908. See also Richard Hennig, "Wasserwirtschaftliche Probleme in Deutsch-Südwestafrika," *Technik und Wirtschaft: Monatsschrift des Vereins Deutscher Ingenieure* 1, no. 6 (June 1908); Zwergern "Wasserbeschaffung in Deutsch-Südwest-Afrika," *Deutsch-Südwestafrikanische Zeitung*, 24 April 1907; NAN, ZBU, 1407, P. III. H. 2 Grundwassersperren (Grundwehre) nach der Methode des von Zwergen. Specialia (1907–14).
177. *Deutsch-Südwestafrikanische Zeitung*, "Bewässerungs-Anlagen," 29 March 1912. See also *Koloniale Rundschau*, "Ackerbau in Deutsch-Südwestafrika von Franz Kolbe, Oberleutnant a.D., Berlin," no 6 (June 1913), 332–45, here 344; *Der Südwestbote*, "Wassergewinnung in D.S.W.," 7 February 1913.
178. Reichstag 1907, as quoted in Schneider, "Bewässerungslandwirtschaft in Namibia und ihre Grundlagen in der Kolonialzeit," 135. See also NAN, BKN, 14, 40, Dammbauhilfen.
179. Reichs-Kolonialamt, *Die deutschen Schutzgebiete in Afrika und Südsee, 1909/10*, 138
180. Hintrager, *Südwestafrika in der deutschen Zeit*, 141.
181. NAN, BKN, 1, Akta b (Band 2): betr. Verfügung des Reichskolonialamts und Gouvernements (1908/09), (Brief, Hintrager, 28 October 1908). Such funds ran low various times. NAN, BKS, 18, S.10 Stauanlagen (1909–13), Kaiserlicher Gouverneur, 23 December 1909. See also *Deutsche Kolonialzeitung*, "Die Wasserführung der Flüsse in Südwestafrika und der Regen," 6 March 1909 (Dove).

182. Reichs-Kolonialamt, *Die deutschen Schutzgebiete in Afrika und Südsee, 1909/10*, 138
183. In 1912/13, the *Deutsche Kolonialgesellschaft* provided 60,000 Marks to help out. See Reichs-Kolonialamt, *Die deutschen Schutzgebiete in Afrika und Südsee, 1911/*, 138
184. BAB, PA.101, Farmarchiv Otto Brinkman, letter December 1909. See also BAB, PA.101, Farmarchiv Otto Brinkman, letter 15 April 1910.
185. *Keetmanshooper Zeitung*, “Staudämme und Dammbau-Kolonnen,” 24 April 1913. See also *Keetmanshooper Zeitung*, “Staubecken und Staudämme,” 1 May 1913; *Keetmanshooper Zeitung*, “Staubecken und Staudämme,” 8 May 1913.
186. Schneider, “Bewässerungslandwirtschaft in Namibia und ihre Grundlagen in der Kolonialzeit,” 146–47.
187. *Der Südwestbote*, “Wasserrecht für Südwest,” 29 March 1911. See also *Landwirtschaftliche Beilage des Amtsblattes für das Schutzgebiet Deutsch-Südwestafrika*, “Entwurf einer Wasserverordnung für Deutsch-Südwestafrika,” 21 February 1914; *Deutsche Kolonialzeitung*, “Rundschau: Wasserverordnung für Südwestafrika,” 18 April 1914.
188. *Südwest*, “Wassermassen im ‘trockenen’ Südwestafrika,” 9 January 1912. See also *Der Farmer*, “Wasser-Erschliessung,” 25 May 1910; *Südwest*, “Wassererschliessung und Meliorationsgesellschaft: Ein Farmerbrief,” 18 August 1911. Manuals and guides helped a little. See Steiner, “Anleitung zur Errichtung von Stauanlagen auf Farmen,” *Landwirtschaftliche Beilage des Amtsblattes für das Schutzgebiet Deutsch-Südwestafrika*, 1 December 1913; Kaiserliches Gouvernement von Deutsch-Südwestafrika, ed., *Anleitung zur Errichtung von Stauanlagen*, accessible at NAN, ZBU, 1394, P. III. A. 1 Staudämme und Grundwehre. *Generalia* (1903–14); Lotz, “Der Bau von Farmdämmen,” 226–31, in Kuhn and Schwabe, *Taschenbuch für Südwestafrika*.
189. Arthur Golf, *Ackerbau in Deutsch-Südwestafrika: Das Trockenfarmen und seine Anwendung in D.S.W.A.* (Berlin, 1911), 8. See also *Koloniale Rundschau*, “Ackerbau in Deutsch-Südwestafrika von Franz Kolbe, Oberleutnant a.D., Berlin,” no. 6 (June 1913): 332–45, here 335.
190. Golf, *Ackerbau in Deutsch-Südwestafrika*, 8–9. See also Arthur Golf, “Untersuchungen über die natürlichen Grundlagen der nordamerikanischen Bewässerungswirtschaft” (PhD diss, University of Halle, 1903); *Der Südwestbote*, “Schutzgebiets-Chronik. Ueber neue Versuche künstlicher Regenerzeugung,” 15 March 1911.
191. William MacDonald, “The Principles of Dry-Farming,” *Transvaal Agricultural Journal* 8, no. 29 (1909), 100–10, here 109. See also Heinrich S. Du Toit, *Dry-Farming* (Potchefstroom, South Africa, 1913); Sarah T. Phillips, “Lessons from the Dust Bowl: Dryland Agriculture and Soil Erosion in the United States and South Africa, 1900–1950,” *Environmental History* 4, no. 2 (1999), 245–66, here 250.
192. *Der Tropenpflanzer* XI, no. 9, “Farmbetrieb in Arizona, ein Wink für Südwestafrikaner,” September 1907. See also *Der Farmer: Mitteilungen über Farm-, Garten-, Forstwirtschaft und Bergbau*, “Farmbetrieb in Arizona, ein Wink für Südwestafrikaner,” 15 January 1908.
193. Golf, *Ackerbau in Deutsch-Südwestafrika*, 30; Thomas Shaw, *Dry Land Farming* (St. Paul, 1911), 39. See also Hardy Webster Campell, *Campell’s 1907 Soil Culture Manual: A Complete Guide to Scientific Agriculture as Adapted to the Semi-Arid Regions* (Lincoln, 1909). Discussions were widespread in the paper *Der Farmer*.
194. Golf, *Ackerbau in Deutsch-Südwestafrika*, 47–64.
195. *Südwest*, “Interessant Versuch emit Trockenfarmerei im Sandfeld,” 6 October 1911. See also *Der Südwestbote*, “Schutzgebiets-Chronik: Versuche mit Trockenfarmen im

- Sandfelde," 14 January 1912; *Koloniale Rundschau*, "Ackerbau in Deutsch-Südwestafrika von Franz Kolbe," no 6 (June 1913), 332–45, here 340–41.
196. *Deutsch-Südwestafrikanische Zeitung*, "Trockenfarmerei und Masseneinwanderung in Südwest," 15 April 1913. See also *Deutsch-Südwestafrikanische Zeitung*, "Trockenfarmerei und Masseneinwanderung in Südwest," 15 April 1913; *Deutsch-Südwestafrikanische Zeitung*, "Trockenfarmerei," 12 July 1913.
197. Reichs-Kolonialamt, *Die deutschen Schutzgebiete in Afrika und Südsee, 1911/12: Amtliche*, 125. See also *Der Südwestbote*, "Jahresbericht der Kaiserlichen Versuchstation für Trockenkultur in Neudamm 1912/13," 4 January, 11 January, and 18 January 1914; *Keetmanshooper Zeitung*, "Zur Trockenlandkultur," 31 July 1913.
198. *Koloniale Rundschau*, "Ackerbau in Deutsch-Südwestafrika von Franz Kolbe," no 6 (June 1913): 332–45, here 340.
199. Ferdinand Gessert, "Über rentable Wasserstauung in Deutsch-Südwest-Afrika," *Zeitschrift für Kolonialpolitik, Kolonialrecht und Kolonialwirtschaft* VII, no 11 (Oct. 1905). For later discussions see *Windhuker Nachrichten*, "Ackerbau und Gartenwirtschaft in Südwestafrika," 1 September 1909; *Südwest*, "Koloniale Wasserwirtschaft auf dem Kongreß," 3 March 1910; *Lüderitzbucher Zeitung*, "Mehr Wasserwirtschaft in den deutschen Kolonien," 30 September 1911 (Hennig). See also *Deutsch-Südwestafrikanische Zeitung*, "Die Talsperre der Naute," 9 August 1912; *Deutsch-Südwestafrikanische Zeitung*, "Talsperren und Dammbauten," 9 January 1913; *Deutsch-Südwestafrikanische Zeitung*, "Nautesperre bei Keetmanshoop," 23 January 1913.
200. Rudolf Schmick, *Gutachten über die Talsperrenanlage an der Naute im Löwenfluss* (Darmstadt, 1907), 28–30.
201. Richard Hennig, "Aufgaben der Wasserwirtschaft in Südwestafrika," *Die Turbine*, 1909, 332.
202. Schmick, "Die Wichtigkeit der Bewässerung in Deutsch-Südwestafrika und Deutsch-Ostafrika," in *Jahrbuch über die deutschen Kolonien, IV Jahrgang*, ed. Karl Schneider, 144–50, here 147 (Essen, 1911).
203. *Südwest*, "Koloniale Wasserwirtschaft auf dem Kongreß," 3 March 1910.
204. Schmick, "Die Wichtigkeit der Bewässerung in Deutsch-Südwestafrika und Deutsch-Ostafrika," in Schneider, *Jahrbuch über die deutschen Kolonien*, 150.
205. *Ibid.*
206. NAN, ZBU, 1402 P.III.F3 Dammbauprojekt Betr. Naute am Löwenfluss (1903–14), Range, "Untersuchung des Steinmaterials an der Naute auf die Möglichkeit zur Herstellung von Bauten," 22 October 1908. See also NAN, ZUB, 1402 P.III.F4 Dammbauprojekt Betr. Kleine Naute (1903–13), Range, Geologisches Gutachten, 1909.
207. *Südwest*, "Südwest und Südafrika," 6 February 1912 (G. Voigts). Carl Schlettwein remained critical. See Schlettwein, *Der Farmer in Deutsch-Südwest-Afrika*, 196–97; *Kolonie und Heimat* III, no. 10, "Deutsche Farmen in Südwest. Schlettweins Farm Otjitambi," 30 January 1910.
208. *Südwest*, "Wassererschliessung im Etat 1912," 19 April 1912.
209. Press, *Blood and Diamonds*, 199.
210. NAN, ZUB, 1402 P.III.F3 Dammbauprojekt Betr. Naute am Löwenfluss (1903–14), Solf, letter, 17 June 1912. Solf compared the situation in Southwest Africa to South Africa and the American West. See BArch-B, R 1001/1496, Informationsreise des Staatssekretärs Dr. Wilhelm Solf, Teile von British-Südafrika Muster für die wirtschaftliche

- Entwicklung von Südwestafrika, 1912. See also: BArch-B, R 1001/1497, Informationsreise des Staatssekretärs Dr. Wilhelm Solf.
211. NAN, ZUB, 1402 P.III.F.3 Dammbauprojekt Betr. Naute am Löwenfluss (1903–14), South African Territories Ltd., 23 August 1912; NAN, ZBU, 1404, P. III. F 10 Erkundung des Fischflusses und der Benachbarten Flüsse (1912–13).
 212. BArch-K, N 1138/59, Nachlass Ludwig Kastl, “Denkschrift betreffend den Abbau des großen Fischflusses zur Gewinnung seiner Wassermengen zu Kulturzwecken.” See also *Der Südwestbote*, “Denkschrift betreffend den Abbau des großen Fischflusses zur Gewinnung seiner Wassermengen zu Kulturzwecken,” 5 and 9 November 1913.
 213. KIT, 27025, 29, Übersichtsplan der Fischflusstalsperre I bei Komotsas in DSWA, aufgestellt vom Kaiserl. Gouvernement in Windhuk, M 1:10.000, Nov. 1913, 1913. See also *Keetmanshooper Zeitung*, “Das Fischflußprojekt im Landesrat genehmigt,” 20 November 1913; *Deutsche Kolonialzeitung*, “Rundschau: Wassernutzung im Fischfluss,” 15 December 1913.
 214. *Der Südwestbote*, “Ost- und südwestafrikanische Wasserprojekte,” 6 May 1914. See also NAN, ZBU, 1404, P. III. F 10 (vol. 2) Erkundung des Fischflusses und der Benachbarten Flüsse (1913–14), Landratsversammlung, 16 July 1914. The previous filed ends in 1914 with a call for more funds; NAN, ZBU, 1404, P. III. F 10 Erkundung des Fischflusses und der Benachbarten Flüsse (1912–13).
 215. *Keetmanshooper Zeitung*, “Das Fischflußprojekt im Landesrat genehmigt,” 20 November 1913. See also *Südwest*, “Eine große Bewässerungsanlage,” 10 June 1913; *Deutsche Kolonialzeitung*, “Rundschau: Bewässerungsanlage im Khomashochland,” 19 July 1913; NAN, ZBU, 1404, P. III. F. 9 Dammbauprojekt Bethanien (1912–14); NAN, ZBU, 1404, P. III. F 11 Dammbauprojet Aus (1912–13).
 216. Stern and Lau, *Namibian Water Resources and Their Management*, 63. See also Stern and Lau, *Namibian Water Resources and their Management*, 63. See also Bravenboer and Rusch, *The First 100 Years of Railways in Namibia*, 175.
 217. Paul Range, “Wassererschließung in den Trockengebieten der deutschen afrikanischen Schutzgebiete,” *Tropenpflanzer* 43 (1940), 1–7, here 4. See also Krenkel, *Geologie der Deutschen Kolonien in Afrika*, 210. Krenkel speaks of sixty-four kilometers total when it comes to drilling.
 218. Schlettwein, *Der Farmer in Deutsch-Südwest-Afrika*, 8. Schlettwein complained about a lack of drilling equipment in some regions. Schlettwein, *Der Farmer in Deutsch-Südwest-Afrika*, 17–18.
 219. *Deutsche Kolonialzeitung*, “Wassererschliessung in Deutsch-Südwestafrika,” 22 July 1911. See also *Amtliche Mitteilungen*, 1910/11 (1912), 119; *Deutsch-Südwestafrikanische Zeitung*, “Deutsch-Südwestafrika im Jahre 1910/11,” 23 March 1912. Schöllnbach made a similar claim in the 1920s. See Schöllnbach, *Die Besiedelung Deutsch-Südwestafrikas bis zum Weltkriege*, 67.
 220. Hennig, *Sturm und Sonnenschein in Deutsch Südwest*, 25.
 221. *Koloniale Rundschau*, “Die Entwicklung Deutsch-Südwestafrikas im Jahre 1907/08 von Dr. M. Bonn, Privatdozen in München,” 1909, 257–65, here 259–63. See also Schöllnbach, *Die Besiedelung Deutsch-Südwestafrikas bis zum Weltkriege*, 69; *Lüderitzbuchter Zeitung*, “Die große Wasserfrage,” 25 November 1911.
 222. Schneider, “Bewässerungslandwirtschaft in Namibia und ihre Grundlagen in der Kolonialzeit,” 133 (table 22).

223. *Ibid.*, 158 and 163. See also Hintrager, *Südwestafrika in der deutschen Zeit*, 140–41.
224. Erichsen, *What the Elders Used to Say*, 61.
225. *Der Tropenpflanzer* XIII, no. 3 and no. 4, “Ueber die Komponenten des Wasserbedarfs der Nutzpflanzen mit besonderer Berücksichtigung tropischer Verhältnisse,” March and April 1904 (Vageler); *Der Tropenpflanzer* XV, no. 8, “Vermischtes. Der Anbau der Luzerne mit Bewässerung in subtropischen Ländern,” August 1911 (Ludewig).
226. BArch-K, N 1037/10, Nachlass Hintrager, Protokoll über die Sitzung des Landesrats von Südwestafrika (May 1914).
227. “Koloniale Neuigkeiten,” *Kolonie und Heimat*, VI, no. 43.
228. Henning, *Sturm und Sonnenschein in Deutsch-Südwest*, 63.
229. Hintrager, *Südwestafrika in der deutschen Zeit*, 170–73.
230. Hans Grimm, *Gustav Voigts: Eine Leben in Deutsch-Südwestafrika* (Gütersloh, 1942), 73.
231. Hintrager, *Südwestafrika in der deutschen Zeit*, 169.
232. [n.a.] “Tierzucht. Aus dem amtlichen Berichten über Tierzucht,” in Kuhn and Schwabe, *Taschenbuch für Südwestafrika*, 274–86, here 282. See also Herbert Hanlenke, “Vieh-wirtschaft in Deutsch-Südwestafrika,” *Mitteilungen der Gruppe Deutscher Kolonial-wirtschaftlicher Unternehmungen* 5 (1942): 61–148, here 87–92.
233. Corinna Treitel, *Eating Nature in Modern Germany: Food, Agriculture and Environment, c. 1870 to 2000* (Cambridge, 2017), 121. See also Christoph Nonn, “Fleischteuerungsprotest und Parteipolitik im Rheinland und im Reich, 1905–1914,” in *Der Kampf um das tägliche Brot: Nahrungsmangel, Versorgungspolitik und Protest 1770–1990*, ed. Manfred Gailus and Heinrich Volkmann, 305–18 (Opladen, 1994).
234. *Allgemeine Zeitung*, “Wie ist der Fleischnot dauernd abzuhefen?” 17 December 1910; *Allgemeine Zeitung*, “Zur Frage der Fleischversorgung,” 5 January 1911, all accessible in BArch-B, R 1001/1826 and 1827, Fleisch- Ein- und Ausfuhr nach und aus Deutsch-Südwestafrika.
235. *Straßburger Post*, “Unsere Kolonien als Fleischlieferant,” 3 January 1911; *Die Post*, “Die Bekämpfung der Fleischteuerung,” 10 September 1912 (and more newspaper clippings) all accessible in BArch-B, R 1001/1826 and 1827, Fleisch- Ein- und Ausfuhr nach und aus Deutsch-Südwestafrika. *Der Tropenpflanzer* also reported extensively. See also Herbert Halenke, “Das Ringen um Märkte: Fleischwirtschaft und -industrie,” in Becker and Hecker, *1884–1984*, 233–246.
236. H. Mehner, “Ein Weg zur Verwertung des Fleischüberschusses in Südwest,” *Kolonie und Heimat* VI, no. 22.
237. *Leipziger Neuste Nachrichten*, “Frankreichs Fleischversorgung aus den Kolonien,” 31 August 1912, as accessible in BArch-B, R 1001/1826, Fleisch- Ein- und Ausfuhr nach und aus Deutsch-Südwestafrika. See also Reichstag, 30. Sitzung, 19 March 1912, 831. Retrieved 13 April 2021 from www.reichstagsprotokolle.de.
238. *Der Tropenpflanzer* XVII, no. 4, “Auszüge und Mitteilungen,” April 1913. The London-based *Liebig’s Extract of Meat Company*, tied to the *Deutsche Farmgesellschaft* (German farm society) established in 1907, had already been involved in the colony. “Deutsche Farmgesellschaft,” in *Deutsches Kolonial-Lexikon*, Band I, 300.
239. BArch-B, R 1001/1827, Begutachtung einiger Sendungen Gefrierfleisch. See also BArch-B, R 1001/1827, Fleisch- Ein- und Ausfuhr nach und aus Deutsch-Südwestafrika, Bericht 2 February 1914.

240. Helge Bei der Wieden, "Wollschafzucht in Deutsch-Südwestafrika," *Vierteljahrschrift für Sozial- und Wirtschaftsgeschichte* 58, no. 1 (1971): 67–87, here 68.
241. *Ibid.*, 69–70. See also Halenke, "Viehwirtschaft in Deutsch-Südwestafrika," 121.
242. bei der Wieden, "Wollschafzucht in Deutsch-Südwestafrika," 71. At its foundation it had 664,500 Mark in capital. See also Wedekind, *Impfe und herrsche*, 181.
243. F. Schultz, "Die Schafwolle im Hinblick auf die Schaf- und Ziegenzucht in Deutsch-Südwestafrika: Ein Beitrag zur Kenntnis unserer Kolonien," *Koloniale Abhandlungen V* (Berlin, 1906), 22, as referenced in bei der Wieden, "Wollschafzucht in Deutsch-Südwestafrika," 68. See also Dr. Schulz, "Die Schafwolle in Hinblick auf die Schaf- und Ziegenzucht in Deutsch-Südwestafrika, ein Beitrag zur Kenntnis unserer Kolonie," *Zeitschrift für Kolonialpolitik, Kolonialrecht und Kolonialwirtschaft VII*, no 11 (Oct. 1905).
244. Hintrager, *Südwestafrika in deutscher Zeit*, 110, as referenced in bei der Wieden, "Wollschafzucht in Deutsch-Südwestafrika," 69. See also Bernhard Dernburg, *Südwestafrikanische Eindrücke. Industrielle Fortschritte in den Kolonien. Zwei Vorträge* (Berlin, 1909).
245. Hermann, *Viehzucht und Bodenkultur in Südwestafrika*, 58, as referenced in bei der Wieden, "Wollschafzucht in Deutsch-Südwestafrika," 69.
246. Import was 217,977 tons; export only reached 17,198 tons. See *Statistisches Jahrbuch für das Deutsche Reich XXXVI* (Berlin, 1915), 193, as referenced in bei der Wieden, "Wollschafzucht in Deutsch-Südwestafrika," 69. See also *Der Tropenpflanzer XVIII*, no. 5, "Schafzucht und Wollproduktion in Deutsch-Südwestafrika," May 1914 (Behnsen); *Der Südwestbote*, "Zur Frage der Wollschafzucht in Südwestafrika," 19 March 1913; BArch-B, R 1001/1833, Ausfuhr von Angoraziegen, Straußen und Straußenfedern, 1904–1908, Auszug Wollschafzucht.
247. F. Hermann, "Die Wollschafzucht in Südwest und die Schäferei Nomtsas," *Kolonie und Heimat VI*, no. 33. See also bei der Wieden, "Wollschafzucht in Deutsch-Südwestafrika," 72.
248. bei der Wieden, "Wollschafzucht in Deutsch-Südwestafrika," 72–73; Paul Rohrbach, "Wollschafzucht in Südwest," *Kolonie und Heimat VII*, no. 37.
249. Raimar von Hase, "Persianer aus Afrika," 180–84, here 180, in Becker and Hecker, 1884–1984. See also Semler, *Meine Beobachtungen in Süd-West-Afrika*, 34; Leipziger, "Ueber die Einführung von Zuchtieren mit besonderer Berücksichtigung der Karakulschafe," in Kuhn and Schwabe, *Taschenbuch für Südwestafrika*, 287–93, here 290; Lau and Reiner, *100 Years of Agricultural Development*, 57; Hintrager, *Südwestafrika in der deutschen Zeit*, 169; Karl Walter Spitzner and Heinrich Schäfer, eds., *Die Karakulzucht in Südwestafrika und das Haus Thorer* (Cape Town, 1962), 4. *Der Tropenpflanzer* reported widely on this topic.
250. bei der Wieden, "Wollschafzucht in Deutsch-Südwestafrika," 72.
251. Sarah Abrevaya Stein, "'Falling into Feathers': Jews and the Trans-Atlantic Ostrich Feather Trade," *The Journal of Modern History* 79, no. 4 (2007): 772–812, here 779.
252. *Ibid.*, 780–81.
253. *Ibid.*, 773.
254. *Südwest*, "Wie fängt man eine Straußenzucht an?" 7 July 1911.
255. Wilhelm Bassermann, *Der Strauß und seine Zucht* (Berlin, 1911); Carl Schlettwein, *Der Farmer in Deutsch-Südwest-Afrika*, 169.

256. Kurt Dinter, *Anbau von Luzerne für Strauße* (Swakopmund, 1912). See also *Lüderitz-buchter Zeitung*, “Künstliche Berieselung für Luzerneland,” 14 October 1911; *Südwest*, “Künstliche Berieselung für Luzerneland,” 27 October 1911.
257. *Landwirtschaftliche Beilage des Amtsblattes für das Schutzgebiet Deutsch-Südwestafrika*, “Wie sollen wir unsere Straußenzucht in Deutsch-Südwestafrika einrichten?” 1 December 1912; H. Scherer, *Wie wollen wir unsere Straußenzuchbetriebe in Deutsch-Südwestafrika einrichten?* (Berlin, 1912). See also *Der Tropenpflanzer* XVIII, no. 7, “Straußenzucht und Straußenfeder-Handel in Südafrika und anderen Ländern,” July 1914 (Hintze).
258. *Amtliche Jahresberichte*, 1912/13, 146. By 1913, a total of 1,507 tamed ostriches lived in the colony. See *Deutsches Kolonial-Lexikon* (1920), Band III, 429 (Neumann).
259. [n.a.] “Landwirtschaft. Aus den amtlichen Berichten über Garten-, Feld- und Forstwirtschaft,” in Kuhn and Schwabe, *Taschenbuch für Südwestafrika*, 231–58, here 253–55.
260. Moritz Schanz, “Der koloniale Baumwollanbau,” in *Verhandlungen des deutschen Kolonialkongresses 1910*, 814–17, here 817 (Berlin: Reimer, 1910), as quote in Corey, *Ecology and Power in the Age of Empire*, 45.
261. *Deutsches Kolonial-Lexikon* (1920), “Baumwolle,” Band I, 147.
262. Ludwig Wunderlich, “Ueber Tabakbau,” in Kuhn and Schwabe, *Taschenbuch für Südwestafrika*, 259–74, here 261.
263. *Deutsches Kolonialblatt*, “Anleitung zum Tabakanbau in Deutsch-Südwestafrika, I,” 15 June 1902 and (II) 1 July 1902; *Deutsches Kolonialblatt*, “Deutsch-Südwestafrika. Tabakbau in Deutsch-Südwestafrika,” 15 December 1902.
264. *Deutsches Kolonial-Lexikon* (1920), Band III, 445.
265. *Amtliche Mitteilungen*, 1911/12 (1913), 126. See also *Amtliche Jahresberichte*, 1912–13, 148; *Landwirtschaftliche Beilage des Amtsblattes für das Schutzgebiet Deutsch-Südwestafrika*, “Ueber den Tabakbau in Deutsch-Südwestafrika,” 1 October 1911, 1 November 1911, and 1 December 1911. For a broader discussion see Martin Kalb, “Tobacco Fantasies? German Tobacco Cultivation in Southwest Africa” (paper presented at the workshop/conference Rethinking Tobacco History: Commodities, Empire and Agency in Global Perspective 1780–1960, online 1–4 December 2021).
266. *Landwirtschaftliche Beilage des Amtsblattes für das Schutzgebiet Deutsch-Südwestafrika*, “Der Tabakbau in Südwestafrika,” 1 March 1914. See also Lau and Reiner, *100 Years of Agricultural Development in Colonial Namibia*, 38.
267. Richard Hennig, “Aufgaben der Wasserwirtschaft in Südwestafrika,” *Die Turbine*, 1909, 333. See also *Deutsche Kolonialzeitung*, “Beschaffung von Wasser in Deutsch-Südwestafrika,” 6 August 1903; *Deutsche Kolonialzeitung*, “Zur Wasserfrage in Südwestafrika,” 20 August 1903; *Deutsche Kolonialzeitung*, “Aufforstung in Deutsch-Südwestafrika,” 26 November 1903; *Deutsche Kolonialzeitung*, “Rundschau: Die Aufforstung des Reviers von Windhuk,” 21 October 1911. For recent discussions see Lars Kreye, “*Deutscher Wald* in Afrika. Koloniale Konflikte um regenerative Ressourcen, Tansania 1892–1916 (Göttingen, 2021), 126f.
268. *Der Südwestbote*, “Wasserverhältnisse in Südwest,” 19 November 1913.
269. Siiskonen, “The Concept of Climate Improvement,” 293. See also *Deutsche Kolonialzeitung*, “Beschaffung von Wasser in Deutsch-Südwestafrika,” 29 July 1903.
270. *Globus*, “Zur Aufforstungsfrage in Südwestafrika,” 1904 (Gessert), as quoted in Siiskonen, “The Concept of Climate Improvement,” 294. See also KIT, 27025, 32, *Zeit-*

- schrift für Kolonialpolitik, Kolonialrecht und Kolonialwirtschaft, Sonderabdruck*, “Die mutmasslichen klimatischen Folgen einer Kunene-Ableitung,” von Ferdinand Gessert, Deutsch-Südwestafrika; KIT, 27025, 32, *Zeitschrift für Kolonialpolitik, Kolonialrecht und Kolonialwirtschaft, Sonderabdruck*, “Die mutmasslichen klimatischen Folgen einer Kunene-Ableitung,” von Ferdinand Gessert, Deutsch-Südwestafrika. *Der Tropenpflanzer* reported widely as well.
271. Schweichel to Governor von Lindequist, Berlin 9 Apr. 1907, NAN, ZBU 1169, M.1.a.1.Bd.1. Forstwirtschaft: (Verwaltung, Aufforstung pp.) 1886–1915, 96–99; Schweichel to Governor von Lindequist, Berlin 17 Apr. 1907, NAN, ZBU 1169, M.1.a.1.Bd.1. Forstwirtschaft: (Verwaltung, Aufforstung pp.) 1886–1915, 100–2, as referenced in Siiskonen, “The Concept of Climate Improvement,” 295.
272. Pogge’s comments on Schweichel’s proposal, Windhoek 18 Aug. 1907, 22 Aug. NAN, ZBU 1169, M.1.a.1.Bd.1. Forstwirtschaft: (Verwaltung, Aufforstung pp.) 1886–1915, 103 as referenced in Siiskonen, “The Concept of Climate Improvement.” See also Siiskonen, “The Concept of Climate Improvement,” 281.
273. *Windhuker Nachrichten*, “Nutzholzkultur,” 1 September 1909.
274. *Windhoeker Anzeiger*, “Die forstwirtschaftliche Station Brakwater,” 25 October 1900.
275. *Deutsch-Südwestafrikanische Zeitung*, “Aus dem Schutzgebiet: Aufforstung,” 18 August 1903.
276. BArch-B, R 1001/7687, Forstwesen in Deutsch-Südwestafrika. Allgemeines Gouvernement Deutsch Südwestafrika, Brief, 29 September 1908. See also BArch-B, R 1001/7688 Forstwesen in Deutsch-Südwestafrika. Allgemeines.
277. Erkkilä and Siiskonen, *Forestry in Namibia*, 94. See also [n.a.] “Landwirtschaft. Aus den amtlichen Berichten über Garten-, Feld- und Forstwirtschaft,” 231–58.
278. Bravenboer and Rusch, *The First 100 Years of State Railway in Namibia*, 175.
279. Layout of the Forest Station Grootfontein in 1914, NA ZBU I.VIII.d.5, as referenced in Lau and Reiner, *100 Years of Agricultural Development*, 88. See also “Annual Report of the Agricultural Experimental Station Grootfontein 1913/14,” as referenced in Lau and Reiner, *100 Years of Agricultural Development*, Appendix B, 65–71.
280. Erkkilä and Siiskonen, *Forestry in Namibia*, 83.
281. ZBU Nr. 156, A. VI.a.3.Bd. 18, pp. 192–194, NAW; ZBU nr. 156, A.VI.a.3.Bd. 18, 198–199, NAW as referenced in Erkkilä and Siiskonen, *Forestry in Namibia*, 92. See also *Südwest*, “Der Fluch unseres alten und neuen Baumbestandes,” 8 August 1913; *Südwest*, “Wie pflanzt man Bäume, schützt und erhält sie,” 12 August 1913.
282. *Landwirtschaftliche Beilage des Amtsblattes für das Schutzgebiet Deutsch-Südwestafrika*, “Jahresbericht des Gouvernementsgartens und des Forstgartens in Windhuk, sowie der Obstbaumschule in Klein-Windhuk 1912/13,” 1 January 1914. The *Landwirtschaftliche Beilage des Amtsblattes für das Schutzgebiet Deutsch-Südwestafrika* includes detailed annual reports focusing on forestry and other experimental stations.
283. Walther, *Creating Germans Abroad*, 24. The total white population was 14,830 in 1913. Walther, *Creating Germans Abroad*, 25. See also Drechsler, “Let Us Die Fighting,” 243–44.
284. Johannes Gad, “Besiedlungs-Fortschritt und Besitzstand der Farmwirtschaft in Deutsch-Südwestafrika,” 36–48, in, *Mitteilungen aus den Deutschen Schutzgebieten*, ed. H. Marquadsen (Berlin, 1914).

285. *Der Tropenpflanzer* XIII, no. 1, "Neujahrsgedanken 1909," January 1909. See also *Der Tropenpflanzer* XIII, no. 2, "Deutsche Kolonial-Gesellschaft für Südwest-Afrika," February 1909.
286. *Der Tropenpflanzer* XV, no. 1, "Neujahrsgedanken," January 1909. See also *Der Tropenpflanzer* XV, no. 8, "Auszüge und Mitteilungen. Entwicklung des Handels von Deutsch-Südwestafrika," August 1911.
287. Olusoga and Erichsen, *The Kaiser's Holocaust*, 238.
288. *Der Tropenpflanzer* XVII, no. 1, "Neujahrsgedanken 1913," January 1913 (Wohltmann).
289. Drechsler, "Let Us Die Fighting," 243–44. See also *Jahresbericht über die Entwicklung der Schutzgebiete in Afrika und der Südsee im Jahre 1906/07, Teil E.: Deutsch-Südwestafrika* (Berlin, 1908), 56–83.
290. Schneider, "Bewässerungslandwirtschaft in Namibia und ihre Grundlagen in der Kolonialzeit," 153.
291. Muschalek, *Violence as Usual*, 3.
292. Ada Cramer, *Weiß oder Schwarz? Lehr- und Leidensjahre eines Farmers im Lichte des Rassenhasses* (Berlin, 1913). See also Baer, *The Genocidal Gaze*, 2.
293. Steinbach, "Carved out Nature," in *Cultivating Colonies*, 64.
294. *Koloniale Rundschau*, "Der Fortschritt in der Landwirtschaft von Südwest von Dr. Josef Schneider, Wien," no. 2 (February 1913), 88–98, here 88. See also Reichs-Kolonialamt, ed., *Die deutschen Schutzgebiete in Afrika und Südsee, 1912/13: Amtliche Jahresberichte* (Berlin, 1914), 135.
295. *Windhuker Nachrichten*, "Zur Rede des Herrn Abgeordneten Erzberger," 1 April 1905.
296. Kreike, "Environmental and Climate Change in Africa," 75.
297. *Ibid.*
298. Schwabe, *Mit Schwert und Plug in Deutsch-Südwestafrika*.
299. Walther, *Creating Germans Abroad*, 92. See also Eckenbrecher, *Was Afrika mir gab und nahm*; Falkenhausen, *Ansiedlerschicksal*, 37; Karow, *Wo sonst der Fuß des Kriegers trat*, 53.
300. *Illustrierte Zeitschrift "Kolonie und Heimat,"* ed. *Eine Reise durch die Deutschen Kolonien. VI. Band Deutsch Südwest-Afrika* (Berlin, 1911), Vorwort.
301. *Kolonie und Heimat* I, no. 26, "Dernburgs Fahrt nach Südwest," 13 September 1908 (Berthold).
302. *Windhuker Nachrichten*, "Neu-Heimatliches," 23 June 1909 (Clara Brockmann).
303. Görke, "Südwestafrikanische Landeshymne," 1–2, in *Deutsch-Südwestafrika. Land und Leute: Eine Heimatkunde für Deutschlands Jugend und Volk*, ed. Bernhard Voigt (Stuttgart, 1913). See also Bley, *South-West Africa under German Rule*, 76.
304. Wildenthal, *German Women for Empire*, 151/152.
305. Jan-Bart Gewalt, "The Herero Genocide: German Unity, Settlers, Soldiers and Ideas," in *Die (koloniale) Begegnung: AfrikanerInnen in Deutschland (1880–1945), Deutsche in Afrika (1880–1918)*, ed. M. Bechhaus-Gerst, and R. Klein-Arendt 109–27, here 124 (Frankfurt am Main, 2003).



Conclusion

It was 15 September 1914 when the British ship *Armada Castle* bombarded the radio station of Swakopmund. Decorations for the celebration of Germany's victory in the Battle of Tannenberg were still up.¹ Fearful of additional attacks German officials decided to destroy the apparatus themselves.² After inhabitants wrecked water pumps and other supply structures an evacuation followed.³ Germany's entry point, the key to the colony, it seemed, turned into a "ghost town."⁴ In the early hours of 18 September, British and South African forces then slipped into Lüderitzbucht. They came with two cruisers, four torpedo boats, more than ten transport ships, and 8,000 soldiers; yet they also brought instruments meant to deal with logistical issues: 750,000 gallons of bottled water, an extra locomotive, railway tracks, thousands of pack animals.⁵ Once the remaining Germans on sight saw them, they hastily raised the white flag.⁶ What else was there to do other than maybe poison the water supply and surrender? Once on site, the occupation troops erected an evaporator and storage spaces to supply troops with drinking water.⁷ They knew water was hard to come by. Meanwhile, German forces under major Victor Franke had withdrawn inland. Maybe ironically, they now tried to turn the Namib Desert into a shield against outsiders.⁸ After dealing with delays tied to a rebellion at home, South African troops led by Boer War hero Louis Botha moved toward Windhoek. That Franke and Governor Seitz eventually surrendered at the water hole, in Khorab, near Grootfontein, 9 July 1915 seemed only fitting.⁹ On 21 October 1915, German Southwest Africa officially became the British Protectorate of South-West Africa; four years later, in June 1919 representatives of the German government—ironically none other than colonial critic Matthias Erzberger—signed the Treaty of Versailles.¹⁰ According to Article 22 of the Covenant of the League of Nations there were three types of mandates, theoretically supervised by the League's Permanent Mandates Commission.¹¹ German Southwest Africa became a class C mandate assigned to neighboring South Africa, the actual overseer of the area. Officially, at least, German colonialism had come to an end.

The war disrupted investments and turned Southwest Africa into a backwater. For one, those German settlers returning to the colony after this global conflict now had to disembark in Walvis Bay. Occupying forces had taken apart the wooden pier in Swakopmund; the metal jetty had only reached about 262 meters when the war broke out.¹² Overall, one might say, Swakopmund was left to its own devices.¹³ Soon the appearance of the coastal town began to change. As outlined by one contemporary in the 1920s, “The massive work of German engineering was now little more than Swakopmund’s landmark and promenade [meant] for those suffering of too much leisure on their hands. If someone would be enterprising enough to build a casino at its bridgehead then a completed jetty like in Nice [in France] would have emerged. But no one had the courage and so the big tower cranes whose rattles and turning gave testimony to German diligence and German hard work, rose lonely and sad into the air, unsavable [and] shortly giving in to rust, no good for anything anymore, except as resting places for seabirds.” “Today,” he added, “the jetty is gone from the townscape. With melancholy in our hearts, we had to watch how the British removed it, how it got shorter and shorter, how it was hauled away by [train] wagon-load.”¹⁴ The same applied to railways and other infrastructure projects, as well as measures around afforestation.¹⁵ The dam and irrigation system of Farmer Brand, for instance, did not deliver as anticipated. He had been unable to fully complete it.¹⁶ The same applied to the construction of dams along the Fish River as virtually everything came to a grinding halt, a storyline that of course conveniently fitted into a development-narrative long pushed by German settlers.

Environmental infrastructure had reshaped much of the region. After natural forces virtually rerouted travel away from the shoreline it became the commodification of nature that drew human agents into this borderland. Dingy structures appeared near Cape Cross, Walvis Bay, and Lüderitzbucht. These constructions were meant to help outsiders plunder. Eventually the British snatched up Walvis Bay, the key to colonizing the region. The birth of German colonialism came with the annexation of Angra Pequena in 1884, the only other entry point into the colony. Local resistance led by Hendrik Witbooi, combined with dependence on the British in Walvis Bay, encouraged Germans to create their own harbor in Swakopmund. Investments into landing structures seemed to solve the entry question, thereby providing the basis for colonization, transformation, and Germanization of the interior; the construction of a railway from Swakopmund to Windhoek followed a similar trajectory. Yet apart from German ingenuity and mostly African labor it became natural forces that defined these setups: ocean currents, flash floods, wandering dunes. Non-human agents, specifically a virus and a mollusk, further shaped emerging environmental infrastructure and with that German colonialism. Animal transfers, most notably the introduction of camels, underscored ef-

forts to rethink existing structures in the face of new challenges. Meanwhile, efforts to solve the water question meant to stabilize transport and expand settlements already hinted at broader visions of the colony. All of these factors, human and non-human, mattered when Herero and later Nama groups widely revolted against German colonial rule in 1904. Environmental infrastructure as an instrument of war, or logistics more broadly, shaped that conflict. African forced labor compensated for Germany's logistical problems and failures—and underscored the close relationship between death and development within this colonial setting. The African reliance on remote locations and hidden precolonial structures captures the importance of such setups for resistance. After *Rinderpest* and genocide, and thanks in large part to the discovery of diamonds, the colony experienced a turning point. Investments into landing structures and railways, as well as irrigation schemes, now provided German settlers with ways to potentially reach world markets; African labor, experimental stations, and other subsidies further sustained their efforts as they created a white settler colony. By 1914 it was thus not surprising that the colony seemed to be on an upswing.

Colonial narratives repeatedly constructed such efforts as the conquest of, or a struggle against, nature. Dramatic episodes such as the construction of the *Mole* became packaged as heroic tales in a faraway, hostile land. Here, the dichotomy between German culture, encapsulated in technology and science, clashed with nature—hostile ocean waters, arid landscapes, backward inhabitants. Heroic storylines of brave German pioneers weathering storms, heat, thirst, and even ambushes to transform land and people soon characterized countless tales. Prior to 1914, toward the end of German rule, such a model colony seemed on the horizon. In line with settler colonialism elsewhere, farms and homesteads, small towns made up of hard-working, pioneering, and self-sustaining *Südwester* people, characterized that vision. Novelist Gustav Frenssen captured the essence of his narrative.¹⁷ Farmer Carl Schlettwein agreed when writing in 1914 that settlers needed to have a certain “diligence and a sense of duty”; they also had to be self-sufficient in frontier environments, upright given all kinds of temptations, and hard working.¹⁸ The use of the English term farmer instead of the German word *Bauer* speaks volumes about a certain identity. They were to “domesticate the harsh nature of the land and to push for technological progress based on machines,” as Birthe Kundrus writes.¹⁹ Land and space, elbow room, according to one narrative,²⁰ or *Lebensraum* (living space) for a people without it, to follow another.²¹ For contemporaries such life meant living in a pre-industrial Germany, a better and more idyllic time, defined by middle-class values like frugality, discipline, modesty, and a certain German manliness.²² The obituary of German settler John Ludwig encapsulates this mentality when stating, “Here he realized with clear eyes what to make out of the Klein Windhuk Valley: The water sources

and the excellent soil seemed meant to create a flourishing settlement. And what moved in the mind . . . developed through iron willpower, courage, and knowledge." In this view, John Ludwig left behind "history and development," setting an example for those to come after him, before returning home in death.²³

German women played important roles in these settings, especially since there was a constant shortage of them in the colony. Similar to men, they framed their lives as struggles against nature. Take the previously mentioned Ada Cramer, wife of Ludwig at the farm Otjisrorindi. In her volume focusing on their years of "learning and suffering," she binds together the struggle against nature at the periphery of the colony with the fight against the indigenious population, all in her effort to defend her husband's brutal punishment and the subsequent death of two Herero women.²⁴ On a broader level, and as outlined by Lora Wildenthal, these colonial women were wives and mothers with the duty to ensure racial hierarchies; otherwise, miscegenation laws meant little.²⁵ Women were "to serve as a bastion of national culture, to resist the potential dangers to Deutschtum, and to ensure an enduring German presence in the region," as historian Daniel J. Walther writes.²⁶ Clara Brockmann, a settler herself, agreed: "The fact is undeniable: a farmer with a wife comes ten times farther than one without one."²⁷ Magazines like *Kolonie und Heimat* advertised the colony to women, and in that illustrated their assigned role of the "German homemaker in the colonies," as caretakers of children and overseers of domestic servants in rugged environments. However, women did not just fight nature in supporting roles. As gardeners women were supposed to wrestle flowers and vegetables from the dry arid landscape that had presumably laid barren and unused before they came.²⁸ In that sense, they fought their own struggles against nature.

Most settlers and farmers were dependent on government structures; plus, many did not even live such a "frontier fantasy" in the first place.²⁹ Much more a myth than reality, this identity was a settler narrative. German newcomers certainly faced challenges and toiled on the frontier. Yet they had an array of factors working in their favor. If anything, it had been an unexpected environmental agent in *Rinderpest* that weakened those inhabiting the land economically; that disaster also facilitated the German takeover and settlement of the interior. The German foothold then remained precarious and provisional until genocide, forced labor, and the exploitation of diamonds invited large-scale funding and a greater commitment to settlements and German living space in the metropole. At that point the continuing exploitation of labor, discriminatory laws and daily colonial violence turned the African population into a proletariat subjugated to build and maintain environmental infrastructure. They worked on farms, toiled in mines, and collected diamonds. It had been their blood, sweat, tears, pain, and lives that had created a new homeland for a white German settler minority. A dose of Social Darwinism, this struggle

between a *Kulturvolk* and a *Naturvolk*, at times became a way to justify discrimination, exploitation, and destruction. “There is a fight against sand and rocks,” noted one German contemporary, “a fight of the white race against blacks and yellows; within the white race, a battle between high and low German (Boer) and Anglo-Saxons, a fight between farmer and the big industry of mining towns. . . . This cannot be achieved without hard work, without duty, without love for *Volkstum* (people), and certainly not without Christianity. But if we utilize all moral power then we can unearth a treasure out of the stony steppe, which brings us blessings.”³⁰ Similar justifications describing the destruction of certain groups as “natural” were often added with hindsight. “Just like the times of elephants and rhinoceroses are over,” noted one voice in 1916, “the Bushmen [San] and work-shy indigenous population step aside for the value-creating *Kulturmenschen* (culture people), the days of the extensive uninhabited steppe are numbered.” That description directly tied land to people when adding, “People will come, others that you have provided a safe haven to so far. They will move into your depths and draw the exhilarating water that you have been hiding. The plow will dig wide furrows in your face. . . . Conclude your thousand-year-long dream, sleeping steppe, a young generation of hard-working people, whose homeland does not have enough space for them anymore, will ask for entry into your empire. Open your doors and give them their daily bread.”³¹ Yet many times such reasoning or rationalizing was not even necessary. The struggle to overcome nature, the struggle to transform an arid landscape, the struggle to Germanize a region, all of that had always entailed the destruction of those living there.³²

This mythical storyline was also devoid of non-human agents and natural forces. These factors were more than just passive players repeatedly overcome in some sort of endless fight. Instead, they shaped and reshaped environmental infrastructure throughout this period—and continue to do so to this day. The *Rinderpest* pandemic fundamentally remade the colony; the exploitation of diamonds, combined with other factors, provided the basis for the creation of German living space. Flash floods and mobile sand dunes, silting-in and wood-eating mollusks, all of these players actively shaped logistics and with that the colony. The loss of structures, debates about the value of the colony, calls for more funding, the employment and exploitation of African labor, and even the stress and anxieties German soldiers felt during the war, all of these dynamics speak to an array of cluttered agencies. Stories of conquest, trial-and-error narratives, references to optimistic Germans by outside observers, or the artificial division between nature and culture, do not adequately capture those nuances. Kreike’s concept of environmental infrastructure, on the other hand, the combination of human and non-human factors, can help unpack these muddled and entangled agents, and by doing so it helps deconstruct still prevalent colonial storylines of development and progress.

All of this matters also because such narratives did not end with Germany's loss of the colony. According to van Laak, "German colonialism as *Realgeschichte* real history ended with World War I yet not as fantasy and projection history (*Fantasie- und Projektionsgeschichte*)."³³ Once apartheid South Africa administered Southwest Africa, a nostalgic loss-of-*Heimat* narrative brought idyllic and romantic stories of a far-away paradise all the more into the light. Many government officials, travelers, and seemingly anyone with any experiences in the region began publishing their views; settlers like Voigts, Schlettwein, Falkenhausen, Eckenbrecher, and Brockmann also shared their nostalgia for a lost time and place. Lydia Höpker wrote that "Everything was so dewy fresh and untouched, roundabout loneliness and quiet; only from afar did the call of a bird resound now and again. We hiked silently through this beautiful morning. A dreamlike feeling enveloped me, and I felt enchanted, as if in another world."³⁴ A sense of accomplishment drove many of these tales. As former colonial official Oskar Hintrager wrote in the 1950s, "What the Germans have achieved in Southwest Africa has been acknowledged by leading South Africans."³⁵ After all, German colonialism had accomplished much, so the story went, disrupted only by an unnecessary war triggered in faraway Europe that settlers in Southwest Africa had little to do with. German expeditions to the region eventually resumed as well, including explorations of harbors and coastline.³⁶ Individuals previously involved with the colony stayed connected, such as geologist Range, hydrology engineer Rehbock or former settlement commissioner Rohrbach.³⁷ During the 1930s, former colonial officials actively pushed for the return of "German colonial glory."³⁸ They pointed to the past efforts and development presumably still visible in landing structures, railways, and dams to sustain their claims.³⁹ Decolonization, or even just the inclusion of subaltern voices when it comes to the acknowledgment of African labor, remained largely missing.

German perceptions of Walvis Bay, thoughts about the water question, and other discussions tied to the environment and German ingenuity are cases in point. From that German colonial perspective, a shift to the formerly British enclave just did not make sense. After all, Swakopmund was deemed clean, friendly, and orderly. That entry point included "green areas magically created from the desert along the coastline," to follow one description.⁴⁰ Walvis Bay, on the other hand, although a busy harbor, lacked streets, trees, and bushes. Plus, progress had been made regarding infrastructure thanks to German efforts. "After two decades of investigating and experimenting," to follow one publication from 1938, infrastructure projects moved forward after the war and could do so again now.⁴¹ Similar conversations emerged when it came to the water question. Take one publication from 1919 meant to showcase the current status and overall development. It acknowledged that "high expectations regarding the production of wheat and corn did not materialize due to

the brackish ground [water].” However, that failure was “solely explicable based on the fact that all works were grounded in unscientific and un-technological efforts” by laymen.⁴² Discussions of railway projects, and the role of German colonial engineers as pioneers, also speak to continuities well beyond 1915. In the 1930s, the image of the German colonial engineer as a universal authority and grantor of progress became increasingly dominant and widespread.⁴³ Still pushing colonial narratives of fighting against nature in a transportation-hostile Africa, such glorified narratives and overall hero-making thus continued well beyond 1915 without much scrutiny.⁴⁴

Continuities also define life in Southwest Africa. The South African takeover of the colony and the institutionalization of an apartheid system ultimately changed little for the white German settler community: they kept their privileges, status, and land. This lack of decolonization allowed for the continuation of cattle farming and agriculture, maybe with fewer government subsidies but still the availability of cheap labor. As several historians write, “Much native affairs legislation throughout the early South African period was, like that of the Germans before them, centred around labour procurement for white farmers and colonial industry.”⁴⁵ A rigid apartheid system meant to control black Africans elevated German interests. In the early 1920s, the South African government resettled thousands of Herero from central fertile parts of the colony into so-called Native Reserves. In a way, and to follow one historian, that move just completed their economic disenfranchisement.⁴⁶ Over time the South African government permitted some cattle ownership. However, loss—loss of home, loss of land, loss of cattle, loss of life—remained a key ingredient of Herero identity, especially since apartheid continued to push them to the margins. According to Mutjinde Katjiua, the head of the department of land and property studies at the University of Namibia, land dispossession was not simply about the loss of livestock, resource rights, and so on. “For the dispossessed communities, losing the ancestral land means that they have lost the connection to their ancestors.”⁴⁷

Experiences for German settlers in postwar Namibia were different. German business models often survived South African takeover, such as wool production. Although it became no second Australia, it was a worthwhile economic endeavor.⁴⁸ Stories about the struggles against nature remained prominent as well. In mid-December 1933, for instance, a major flood destroyed a bridge across the Swakop River. According to one recollection, “The inhabitants of Swakopmund in their struggle against the Swakop flood were an excellent example of endurance, diligence, and co-operation.”⁴⁹ *Südwester stories* speak of stranded farmers and the will to overcome nature’s onslaught.⁵⁰ They saved the metal jetty in Swakopmund from ocean currents.⁵¹ And their *Südwester*-centric stories defined textbooks for school children in which Uncle Erhard arrived in “steppe and bush, just like god had created it in primeval

times,” “looked for water,” and ultimately turned wastelands into farmland.⁵² Continuities also exist when it comes to water structures. The Avis Dam, first proposed in 1895 by Ludwig Sander to solve the water issue for a growing Klein-Windhhoek,⁵³ became a reality by 1933.⁵⁴ New “pioneers” such as Heinz Stengel already contemplated future avenues for development.⁵⁵ Such storylines of harnessing nature continue to define current projects. Take Namibia’s newest irrigation site, the Neckartal Dam. Originally envisioned by “father” Theodor Rehbock,⁵⁶ the site holding back the Fish River near Keetmanshoop is now meant to make “a desert bloom.”⁵⁷ However, “[t]he unseen costs of these dams,” according to one critique, “is that communities who traditionally sustain themselves from riverbed farming—a pre-colonial practice—cannot do this any longer.”⁵⁸ A local inhabitant by the name of Willibald Gaseb of Otjimbingwe added, “We cannot dig for the underground water anymore because the rivers are dry. It is also not possible to produce vegetables—grains, watermelons, pumpkins, carrots, those that we used to plant; we can’t do that anymore, the space is too limited and there’s no water anymore.”⁵⁹ In a sense, and in line with broader legacies of colonialism, little has changed.

Leftover colonial structures also continue to haunt modern-day independent Namibia. Land-ownership and broader settlement structures are obvious examples; the forbidden zone still off limits is another. Namibia’s tourism landscape, largely in the hands of and catering to whites, celebrates the remains of German colonialism. Environmental infrastructure still littering the country thus has taken on new meaning as tourist hotspot. Visitors travel to Etosha National Park in the north, a game reserve originally created by Governor Friedrich von Lindequist in March 1907. Like other parks, it is a space for African wilderness, a space feeding European imaginations of empty landscapes, devoid of people and history. They can walk through the abandoned diamond town Kolmanskop outside Lüderitzbucht, to marvel at German efforts to make this hostile space livable—ice was available in the desert, a guide will tell them. Their photographs then capture how sand dunes are “reclaiming” buildings and other remains of empire. Visuals that might capture the importance of African labor are rare, however, and do not play a role during tours. In the town of Lüderitzbucht, a campground now sits atop the former location of Shark Island concentration camp. It comes with a gorgeous view of a quaint bay. Gravestones tell some stories there—but a chat with a local manning the gate is needed for any unassuming traveler. Elsewhere, guest farms such as Deutsche Erde (German soil) actively sell “the good old days.” That still very much includes the struggle against nature. Whole series of publications available in bookstores in Swakopmund are aimed at German tourists and come with a dose of nostalgia.⁶⁰ Visitors of that most German place of all can wander along turn-of-the-century buildings, broad avenues, a lighthouse, and some remaining street names. A failed entry point has transformed into the perfect

seaside resort. Here, visitors can stay at the luxurious *Strand* (beach) hotel located along the silted-in *Mole*. “Where the Namib Dunes meet the Atlantic Ocean,”⁶¹ it advertises, and invites guests to gaze at the constant onslaught of ocean waves. The view inland, to the shanty towns that actually make up Swakopmund, are off tourist minds and maps. Maybe they see workers walk back to the outskirts of town on their way to eat at an upscale restaurant now sitting at the tip of the leftover metal pier. It is appropriately called *Jetty 1905*, “much more than a restaurant, it’s a landmark!”⁶² Environmental infrastructure thus lives on well beyond its intended lifespan, still defined by human and non-human actors, still taking on new meanings and uses. And in Namibia, to follow the voice of Moses Maharero, “The whole country . . . is basically full of things that were left behind.”⁶³

Notes

1. *Deutsch-Südwestafrikanische Zeitung*, “Beschiessung Swakopmunds,” 16 September 1914.
2. *Ibid.* See also W. S. Rayner and W. W. O’Shaughnessy, *How Botha and Smuts Conquered German South West* (London, 1916); Otto Reiner, *Achtzehn Jahre Farmer in Afrika* (Leipzig, 1924), 234; Hennig, *Sturm und Sonnenschein in Deutsch Südwest*, 71.
3. Bravenboer and Rusch, *The First 100 Years of Railways in Namibia*, 217.
4. Olusoga and Erichsen, *The Kaiser’s Holocaust*, 253. See also *Der Südwestbote*, “Die Räumung von Swakopmund,” 4 September 1914.
5. For numbers, see Press, *Blood and Diamonds*, 210.
6. Olusoga and Erichsen, *The Kaiser’s Holocaust*, 252–53. See also *Deutsch-Südwestafrikanische Zeitung*, “Die Besetzung Swakopmunds,” 19 September 1914.
7. Wipplinger, “Sea Water Distillation Plant at Lüderitz,” 281.
8. Hennig, *Sturm und Sonnenschein in Deutsch Südwest*, 69. See also Olusoga and Erichsen, *The Kaiser’s Holocaust*, 254; *Der Südwestbote*, “Die Briten bei Walfischbucht u. Swakopmund,” 24 January 1915.
9. Hennig, *Sturm und Sonnenschein in Deutsch Südwest*, 113–17; Bravenboer and Rusch, *The First 100 Years of Railways in Namibia*, 237. See also Hans von Oelhafen von Schöllenbach, *Der Feldzug in Südwest 1914/15* (Berlin, 1923).
10. The Treaty of Versailles. Retrieved 17 March 2021 from https://avalon.law.yale.edu/subject_menus/versailles_menu.asp.
11. The Covenant of the League of Nations. Retrieved 17 March 2021 from https://avalon.law.yale.edu/20th_century/leagcov.asp.
12. Bravenboer and Rusch, *The First 100 Years of Railways in Namibia*, 200.
13. Edgar Schultze, “Hafenbau in den Deutschen Kolonien,” *Verkehrstechnische Woche* 32, no. 24/25 (1938): 286–91, here 289. See also Ludwig Mecking, “Bau und Bild afrikanischer Küstenstädte in ihrer Beziehung zum Volkstum,” Sonderdruck *Zeitschrift für Erdkunde* 6 (22–23) (1938): 13.
14. Hennig, *Sturm und Sonnenschein in Deutsch Südwest*, 233.
15. Erkkilä and Siiskonen, *Forestry in Namibia*.

16. Franz Herrmann, *Ueber die Entwicklung, den gegenwärtigen Stand, und die Ziele und harrenden Aufgaben der Wasserwirtschaft in Südwest-Afrika* (Windhuk, 1919), 8.
17. Frenssen, *Peter Moors Journey to Southwest*, 145–47. See also Kundrus, *Moderne Imperialisten*, 67.
18. Schlettwein, *Der Farmer in Deutsch-Südwest-Afrika*, 62 and 63.
19. Kundrus, *Moderne Imperialisten*, 67/68.
20. Hennig, *Sturm und Sonnenschein in Deutsch Südwest*, 159.
21. Hans Grimm, *Volk Ohne Raum*, vol. 1 and 2 (Munich, 1926).
22. Kundrus, *Moderne Imperialisten*, 43 and 59.
23. *Der Südwestbote*, “John Ludwig †,” 2 March 1913.
24. Ada Cramer, *Weiß oder Schwarz? Lehr- und Leidensjahre eines Farmers im Lichte des Rassenhasses* (Berlin, 1913).
25. Wildenthal, *German Women for Empire*.
26. Walther, *Germans Abroad*, 46.
27. Clara Brockmann, *Die Deutsche Frau in Südwestafrika: Ein Beitrag zur Frauenfrage in unseren Kolonien* (Berlin, 1910), 6. See also Walters, *Germans Abroad*, 47.
28. *Kolonie und Heimat*, “Die deutsche Hausfrau in den Kolonien,” 10 November 1907 (Brandeis). This and similar series appeared in the magazine *Kolonie und Heimat* countless times. See also BArch-B, R 1002/2579, Besiedelung, Heraussendung von Frauen usw. durch die Deutsche Kolonialgesellschaft.
29. Olusoga and Erichsen, *The Kaiser’s Holocaust*, 237.
30. Henkel, *Der Kampf um Südwestafrika*, 181–82, as quoted in Kundrus, *Moderne Imperialisten*, 44.
31. Eugen Deitz in *Kolonial-Kriegerdank-Kalender 1916*, 71, as quoted in Kundrus, *Moderne Imperialisten*, 161.
32. Assertions about improvements, self-sufficiency, and environmental friendliness have to be contextualized with that in mind. See Botha, “People and the Environment in Colonial Namibia,” 173–74.
33. Dirk van Laak, “‘Ist je ein Reich, das es nicht gab, so gut verwaltet worden?’ Der imaginäre Ausbau der imperialen Infrastruktur in Deutschland nach 1918,” in *Phantasiereiche: Zur Kulturgeschichte des deutschen Kolonialismus*, ed. Birthe Kundrus, 71–90, here 71 (Frankfurt, 2003).
34. Lydia Höpke, *Um Scholle und Leben: Schicksale einer deutschen Farmerin in Südwest-Afrika* (Minden, 1927), 21, as quoted in Walther, *Germans Abroad*, 93.
35. Hintrager, *Südwestafrika in der deutschen Zeit*, 179.
36. Erich Obst, *Grundzüge einer Geographie der südafrikanischen Seehäfen* (Hannover, 1935), 1.
37. Paul Range, “Zur Wasserstellenkunde des Namalandes,” *Sonderabdruck aus “Mitteilungen aus den deutschen Schutzgebieten”* 32 (Berlin, 1920), 23–32; Theodor Rehbock, “Genereller Entwurf einer Talsperren Anlage bei Avisport für die Wasserversorgung von Windhoek und für die Bewässerung des Windhoeker Tals,” (manuscript; memorandum to the mayor Julius Hebenstreit, Windhoek, July 1926), 35 as referenced in Heinz Walter Stengel, *Bibliographie Wasserwirtschaft in Südwestafrika* (Basel, 1974); Paul Rohrbach, *Afrika: Beiträge zu einer praktischen kolonialkunde* (Berlin, 1943).
38. Hugo Blumenhagen, Franz von Epp, and Heinrich Schnee, *Südwestafrika einst und jetzt* (Berlin, 1934); Paul Rohrbach, *Deutsch-Afrika—Ende oder Anfang? Briefe an*

- einen Jungen Deutschen (Potsdam, 1935); Paul Leutwein, *Die deutsche Kolonialfrage* (Berlin, 1937); Paul Rohrbach, *Afrika heute und morgen: Grundlinien europäischer Kolonialpolitik in Afrika* (Berlin, 1939). For unpublished manuscripts, see BArch-K, N 1030/17, Nachlass Viktor Franke, Schreibmaschinenmanuskript; BArch-K, N 1145/4, Nachlass Paul Leutwein, *Im Banne Afrikas: Romantisches Geschichtsbild des alten Südwestafrika*; BArch-K, N 1669/1, Friedrich von Lindequist, *Südwestafrikanische Erlebnisse, 1895–1906*.
39. Wilhelm Solf, *Kolonialpolitik: Mein politisches Vermächtnis* (Berlin, 1919); Hellmuth Forkel, “Das Küstengebiet Südwestafrikas und seine wirtschaftsgeographische Bedeutung” (PhD diss, University of Rostock, 1926); Johannes Steinbach, *Die Siedlungsmöglichkeiten im ehemaligen Deutsch-Südwestafrika*, intro. Friedrich von Lindequist (Berlin, 1929); Paul Leutwein, *Afrikanerschicksal: Gouverneur Leutwein und seine Zeit* (Stuttgart, 1929); Theodor Seitz, *Vom Aufstieg und Niederbruch deutscher Kolonialmacht* (Karlsruhe, 1929); Berthold von Deimling, *Aus der Alten in die neue Zeit: Lebenserinnerungen* (Berlin, 1930); Paul Leutwein, *Die Gründung von Deutsch-Südwestafrika* (Reutlingen, 1940).
 40. Mecking, “Bau und Bild afrikanischer Küstenstädte in ihrer Beziehung zum Volkstum,” 13–14.
 41. Fr. Allmaras, “Verkehr der Kolonien,” *Verkehrstechnische Woche* 32, no. 24/25 (1938), 262–65, here 262. See also E. Randzio, “Kolonial-Bahnen,” *Verkehrstechnische Woche* 32, no. 24/25 (1938), 261–74.
 42. Herrmann, *Ueber die Entwicklung, den gegenwärtigen Stand*, 8 and 9.
 43. Edgar Schultze, “Allgemeine Verkehrsprobleme in Afrika,” *Verkehrstechnische Woche* 26, no. 24/25 (1938): 309–21; Erich Röhlke, “Ausbildung und Fortbildung von Kolonialingenieuren,” *Verkehrstechnische Woche* 24/25, no. 24/25 (1938): 300–5.
 44. Sebastian Beese, “Heroen des kolonialen Fortschritts? Praktiken der Selbstheroisierung deutscher Kolonialingenieure in der ersten Hälfte des 20. Jahrhunderts,” *helden, heroes. héros. E-Journal zu Kulturen des Heroischen* 7 (2019): 39–46, here 42–43. Actually, and as demonstrated, those storylines reached a broader audience during German colonial rule already, thus arguably forming some sort of collective identity well before the 1920s.
 45. Bernhard C. Moore et al., “Balancing the Scales,” 6. The authors specifically point to water infrastructure in this context.
 46. Erichsen, *What the Elders Used to Say*, 45.
 47. Elizabeth Kimmmerle, “The Land that Never Was,” *The Namibian*, 8 January 2020.
 48. Wieden, “Wollschafzucht in Deutsch-Südwestafrika,” 86.
 49. Heinz Walter Stengel, “Die große Flut in Swakopmund,” *Namib und Meer* 7 (1976): 47–64, here 64.
 50. Scherz, *Südwesten Geschichten am Lagerfeuer erzählt*, 59.
 51. Anonymous, “Swakopmund: Landungsbrücke vor dem Aus?” *Namibia Magazine* 14, no. 2 (2003): 4.
 52. Ernst-Ludwig Cramer, “Onkel Erhard baut eine Farm auf,” 44–46, here 44, in Tilla Kellner, ed., *Heimat Südwest: Ein Lesebuch für Südwestafrika* (Hannover, 1969). Similar storylines litter textbooks like *Heimat Südwest* as well as other *Südwesten* or *Deutsch-Namibier*. Klaus Rüdiger, *Die Namibia-Deutschen: Geschichte einer Nationalität im Werden* (Stuttgart, 1993); Walther, *Creating Germans Abroad*; Jeremy Silvester,

- “Sleep with a Southwester’: Monuments and Settler Identity in Namibia,” in *Settler Colonialism in the Twentieth Century: Projects, Practices, Legacies*, ed. Caroline Elkins and Susan Pedersen, 271–86, (New York, 2005).
53. Sander, *Vorschlag zur wirtschaftlichen Erschliessung Deutsch-Südwest-Afrikas*, 8. Plans emerged in the 1910s—*Der Südwestbote* reported widely. See also Schneider, “Bewässerungslandwirtschaft in Namibia und ihre Grundlagen in der Kolonialzeit,” 139–40 and 164–65.
 54. W. Buthut, “Wasserwirtschaft in Südwest-Afrika,” *Wasserkraft und Wasserwirtschaft* 18, no. 5 and no. 18 (1933).
 55. Margarete Kreuzberger, “Heinz Stengel—Ein Pionier der Wassererschliessung,” *Nachrichten (Gesellschaft für wissenschaftliche Entwicklung Museum Swakopmund)* 30, no. 1 (1998): 2–6, here 2. See also Heinz Stengel and Otto Wipplinger, *Wasserwirtschaft in S.W.A./Waterwise in S.W.A./Water Affairs in S.W.A.* (Windhoek, 1963).
 56. *Namibia Focus*, “Theodor Rehbock, Vater des Neckartal-Damms,” Retrieved 7 November 2021 from <https://namibiafocus.com/theodor-rehbock-vater-des-neckartal-damms/>.
 57. *We Build Value* (digital magazine), “Neckartal Dam: Making a Desert Bloom,” 7 April 2016. This publication comes from the Italian construction company. Retrieved 9 November 2019 from <https://www.webuildvalue.com/en/stories-behind-projects/neckartal-dam-making-a-desert-bloom.html>. See also *The Namibian*, “Neckartal Dam Finally Complete,” 19 October 2018; *Windhoek Observer*, “Construction Work on Neckartal Dam Now Complete,” 19 October 2018; *The Namibian*, “Neckartal Dam Completed . . . Work on Ohangwena Aquifer Begins,” 23 October 2018.
 58. Erichsen, *What the Elders Used to Say*, 62.
 59. *Ibid.*
 60. Kalb, “Reprinting German Colonial Settler Narratives in Namibia Today?”
 61. Strandhotel Swakopmund. Retrieved 24 March 2021 from <https://www.strandhotels.wakopmund.com>.
 62. Restaurant Jetty 1905. Retrieved 24 March 2021 from <http://swakopmund.life/place/jetty-1905-restaurant>.
 63. Erichsen, *What the Elders Used to Say*, 53.



Selected Bibliography

Archival and Unpublished Materials

Basler Afrika Bibliographien (BAB)

Personal Archives (PA)

16 III.1; 23; 28; 41; 52; 101

Bundesarchiv Berlin-Lichterfelde (BArch-B)

Reichskanzlei (R 43)

926–927

Kaiserliches Gouvernement in Deutsch-Südwestafrika, microfilm (R 151 F)

L. Besiedlungssachen, Farm- und Landwirtschaft; M. Forstwirtschaft, Jagd, Fischerei; N. Tierzucht; O. Tierheilverwesen; P. Wasserrecht und Wassererschliessung; R. Bergbau und Geologie; T. Öffentliche Arbeiten und Verkehrswesen;

Reichskolonialamt (R 1001)

1134e–1144; 1157–1161; 1169; 1199–1202; 1218–1220; 1461–1465; 1468–1469; 1472–1473; 1477; 1493–1497; 1501–1505; 1807–1809; 1822–1824; 1825–1828; 1831–1833; 1848–1850; 8534–8537; 1859–1864; 1865a; 1865; 1868; 1870–1871; 4581; 5492; 6492; 7686–7688; 8050–8053; 8847–8850; 9649

Gouvernement Deutsch Südwestafrika (R 1002)

21; 44; 1066; 1276; 1805–1806; 2579; 2610; 2672–2673

Deutsche Kolonialgesellschaft (R 8023)

237; 431; 1001; 1062–1063; 1078

Bundesarchiv Freiburg (BArch-F)

Militär-geschichtliche Sammlung (MSG) 2–12682

Bundesarchiv Koblenz (BArch-K)

Nachlässe (N)

1030; 1037; 1053; 1101; 1130; 1138; 1145; 1408; 1669

Karlsruhe Institut für Technologie (KIT)

Nachlass 27025

National Archives, Windhoek

German Period 1884–1915

Kaiserl. Bohrkolonie Nord (BKN); Kaiserl. Bohrkolonie Süd (BKS); Kaiserl. Bezirksamt

Lüderitzbucht (BLU); Kaiserl. Bezirksamt Swakopmund (BSW); Kaiserl.

Eisenbahnverwaltung (EVE); Kaiserl. Hafenbauamt Swakopmund (HBS); Hafenbüro

Lüderitzbucht (HBL); Zentralbureau des kaiserl. Gouvernements (ZBU);

Reichstagsprotokolle

www.reichstagsprotokolle.de

Staatsbibliothek Berlin

Kartenlesesaal

Auswärtiges Amt, Specialkarte der Küste (1885), 8° C 1512

Schleswig-Holsteinische Landesbibliothek Kiel

Nachlass

Cb 83 Gustav Buß, *Der Globetrotter*

The National Archives, Kew, London

Records of the Colonial Office (CO)

879/27/3; 879/31/12; 879/34/4; 879/40/7; 879/51/4; 879/80/6; 879/86/4; 879/91/4;
879/94/4; 897/97/8

Records of the Foreign Office (FO)

403/502

Übersee-Museum Bremen

Fotosammlung

E06772; E07517; E08440; E10142; E10760; E10016; EK00001; EK0025; EK00027;
EK00153

Newspapers, Magazines, Periodicals

- Africa Pilot: Hydrographic Office, Admiralty*
- Afrikapost: Organ für deutsche Interessen in Afrika Hamburg* (1888–1914)
- Amtsblatt für das Schutzgebiet Deutsch-Südwestafrika.*
- Annalen der Hydrographie und maritimen Meteorologie: Organ des hydrographien Bureau und der Deutschen Seewarte* (1873–1944)
- Archiv für Eisenbahnwesen* (1878–1943)
- Archiv für Post in Telegraphie: Beiheft zum Amtsblatt der Deutschen Reichs-Post- und Telegraphenverwaltung* (1876–1940)
- Daheim: Ein deutsches Familienblatt mit Illustrationen* (1864–1944)
- Der Farmer: Mitteilungen über Farm-, Garten-, Forstwirtschaft und Bergbau. Gratis-Beilage der "Windhuker Nachrichten"* (1907–1914)
- Der Tropenpflanzer* (1897–1918)
- Deutsche Bauzeitung: Zentralblatt der Bauverwaltung. Ministerium der Öffentlichen Arbeiten* (1881–1919)
- Deutsche Kolonialzeitung* (1884–1919)
- Deutsches Kolonialblatt* (1890–1915)
- Deutsches Kolonial-Handbuch* (1901–1910)
- Die Gartenlaube: Illustriertes Familienblatt* (1884–1915)
- Die Illustrierte Welt: Blätter aus Natur und Leben, Wissenschaft und Kunst zur Unterhaltung und Belehrung für die Familie, für Alle und Jeden* (1853–1902)
- Geographische Zeitschrift* (1895–)
- Globus: Illustrierte Zeitschrift für Länder- und Völkerkunde. Chronik der Reisen und geographischen Zeitung* (1862–1910)
- Jahrbuch über die deutschen Kolonien* (1908–1914)
- Keetmanshooper Zeitung* (1913–1914)
- Keetmanshooper Nachrichten* (1910–1911)
- Kladderdatsch, humoristisch-satirisches Wochenblatt* (1848–1944)
- Koloniale Rundschau: Zeitschrift für Koloniale Länder-, Völker- und Staatenkunde* (1909–1928)
- Kolonie und Heimat: Unabhängige Koloniale Zeitschrift. Organ des Frauenbundes der Deutschen Kolonialgesellschaft* (1907–1919)
- Landwirtschaftliche Beilage des Amtsblattes für das Schutzgebiet Deutsch-Südwestafrika* (1910–1914)
- Landwirtschaftliche Beilage zur Deutsch-Südwestafrikanischen Zeitung* (1903–1914)
- Lüderitzbuchter Zeitung* (1909–1914)
- Marine-Rundschau: Zeitschrift für Seewesen* (1890–1989)
- Militär-Wochenblatt* (1867–1913)
- Mittheilungen von Forschungsreisenden und Gelehrten aus den Deutschen Schutzgebieten* (1888–1906) / *Mitteilungen aus den Deutschen Schutzgebieten mit Benutzung amtlicher Quellen* (1907–1915)
- Petermanns geographische Mitteilungen* (1855–1918)
- Simplicissimus. Illustrierte Wochenschrift* (1896–1967)
- Südwest: Unabhängige Zeitung für die Interessen des gesamten Schutzgebietes* (1910–1914)
- The Illustrated London News* (1842–1914)
- The Namibian* (1985–)

- The Nautical Magazine and Naval Chronicle* (1832–1914)
Ueber Land und Meer: Allgemeine Illustrierte Zeitung (1858–1923)
Verkehrstechnische Woche: Eisenbahntechnische Zeitschrift für das Gesamtgebiet der Vollbahn, Kleinbahn und Strassenbahn (1906–1923)
Windhoeker Anzeiger (1898–1901) / *Deutsch-Südwestafrikanische Zeitung* (1901–1914)
Windhuker Nachrichten (1904–1909) / *Der Südwestbote* (1909–1915)
Zeitschrift für Bauwesen: Zentralblatt der Bauverwaltung (1881–1919)
Zeitschrift für Kolonialpolitik, Kolonialrecht und Kolonialwirtschaft (1899–1912)
Zeitung des Vereins Deutscher Eisenbahnverwaltungen (1861–1919)

Published Sources

- Admiralstab der Marine, ed., *Die Tätigkeit des Landungskorps S. M. S. 'Habicht' während des Herero-Aufstandes in Süd-West-Afrika, Januar/ Februar 1904*. Berlin, 1905.
- Africanus, Simplex, Leutnant Laasch, and Hauptmann Leue, eds. *Mit der Schutztruppe durch Deutsch-Afrika*. Minden i. W., 1905.
- Alnaes, Kirsten. "Living with the Past: The Songs of the Herero in Botswana." *Africa* 59, no. 3 (1989): 267–99.
- Andersson, Charles John. *The Okavango River*. New York, 1861.
- Ax, Christina Folke, Niels Brimnes, Niklas Thode Jensen, and Karen Oslund, eds. *Cultivating the Colonies: Colonial States and Their Environmental Legacies*. Athens, 2011.
- Axelson, Eric. *Congo to Cape: Early Portuguese Explorers*. London, 1973.
- . "Prince Henry the Navigator and the Discovery of the Sea Route to India." *The Geographical Journal* 127, no. 2 (1961): 145–55.
- Baer, Elizabeth Roberts. *The Genocidal Gaze: From German Southwest Africa to the Third Reich*. Detroit, 2017.
- Baltzer, Franz. *Die Kolonialbahnen mit besonderer Berücksichtigung Afrikas*. Berlin, 1916.
- . *Die Erschliessung Afrikas durch Eisenbahnen*. Berlin, 1913.
- Bartmuß, Hartmut. "Primary Source Josef Bendix: Briefe und Feldpostkarten aus Deutsch-Südwestafrika Oktober 1903 bis März 1904." *Journal of Namibian Studies* 19 (2016): 109–22.
- Baumann, Julius. *Van sending tot kerk. 125 jaar Rynse Sending-arbeid in Suidwes-Afrika, 1842–1967*. Karibib, 1967.
- Baumgarten, Johannes. *Deutsch-Afrika und seine Nachbarn im schwarzen Erdteil: eine Rundreise in abgerundeten Naturschilderungen, Sittenscenen und ethnographischen Charakterbildern*, 2nd ed. Berlin, 1890.
- Bayer, Maximilian. *Mit dem Hauptquartier in Südwestafrika*. Berlin, 1909.
- Becker, Klaus, and Jürgen Hecker, eds. *1884–1984: Vom Schutzgebiet bis Namibia*. Windhoek, 1958.
- Beese, Sebastian. "Heroen des kolonialen Fortschritts? Praktiken der Selbstheroisierung deutscher Kolonialingenieure in der ersten Hälfte des 20. Jahrhunderts." *helden, heroes. héros. E-Journal zu Kulturen des Heroischen* 7 (2019): 39–46.
- . "Experten der Erschliessung: Die Akteure der deutschen Kolonialtechnik in Afrika und Europa zwischen dem Ende des 19. und der Mitte des 20. Jahrhunderts." PhD diss., University St. Gallen, 2018.

- Beinart, William, and Joann MacGregor, eds. *Social History & African Environments*. Athens, 2003.
- Beinart, William, and Lotte Hughes, eds. *Environment and Empire*. Oxford, 2007.
- Belwe, Max. *Gegen die Herero 1904/1905: Tagebuchaufzeichnungen*. Berlin, 1906.
- Billawer, Hungiree Wilson, and Muriel Samé Ekobo. *A Human Geography Atlas of Walvis Bay: Beyond the Reintegration*. Windhoek, 2002.
- Blackbourn, David. *The Conquest of Nature: Water, Landscape, and the Making of Modern Germany*. New York, 2006.
- Blackler, Adam A. "From Boondoggle to Settlement Colony: Hendrik Witbooi and the Evolution of Germany's Imperial Project in Southwest Africa, 1884–1894." *Central European History* 50, no. 4 (2017): 449–70.
- . "Heathens, 'Hottentots', and *Heimat*: Colonial Encounters and German Identity in Southwest Africa, 1842–1915." PhD diss., University of Minnesota, 2017.
- Bley, Helmut. *South-West Africa under German Rule 1894–1914*, translated by Hugh Ridley. Evanston, IL, 1996.
- Blum, Otto, and Erich Giese. *Wie erschliessen wir unsere Kolonien?* Berlin, 1907.
- Bollig, Michael. *Shaping the African Savannah: From Capitalist Frontier to Arid Eden in Namibia*. Cambridge, 2020.
- Bollig, Michael, and Jan-Bart Gewald, eds. *People, Cattle and Land: Transformations of a Pastoral Society in Southwestern Africa*. Cologne, 2000.
- Booth, Alan R. "American Whalers in South African Waters." *South African Journal of Economics* 32, no. 4 (1964): 278–82.
- Botha, Christo. "People and the Environment in Colonial Namibia." *South African Historical Journal* 52 (2005): 170–90.
- Brackmann, Karl. *Fünzig Jahre deutsche Afrikaschiffahrt: Die Geschichte der Woermann-Linie und der Deutschen Ost-Afrika-Linie*. Berlin, 1935.
- Bravenboer, Brenda, and Walter Rusch. *The First 100 Years of State Railway in Namibia*. Windhoek, 1999.
- Bridgefords, Peter. *Cape Cross: Past and Present*. Walvis Bay, 2002.
- Brockmann, Clara. *Briefe eines deutschen Mädchens aus Südwest*. Berlin, 1912.
- . *Die Deutsche Frau in Südwestafrika: Ein Beitrag zur Frauenfrage in unseren Kolonien*. Berlin, 1910.
- Budack, Kuno F. R. "A Harvesting People on the South Atlantic Coast." *Suid-Afrikaanse tydskrif vir etnologie / South African Journal of Ethnology* 6, no. 2 (1983): 1–7.
- . "The Aonin or Topnaar of the Lower Khuseb Valley and the Sea." *Khoisan Linguistic Studies* 3 (1977): 1–42.
- Bühler, Andreas. *Der Namaaufstand gegen die deutsche Kolonialherrschaft in Namibia von 1904–1913*. Frankfurt am Main, 2003.
- Bülow, Franz von. *Deutsch Südwestafrika: Drei Jahre im Lande Hendrik Witboois. Schilderungen von Land und Leuten*. Berlin, 1893.
- Büttner, Gotthilf. *Walvischbai und Angra Pequena*. Heidelberg, 1884.
- Campbell, Hardy Webster. *Campbell's 1907 Soil Culture Manual: A Complete Guide to Scientific Agriculture as Adapted to the Semi-Arid Regions*. Lincoln, 1909.
- Carney, Judith, and HariPriya Rangan. "Situating African Agency in Environmental History." *History and Environment* 21, no. 1 (2015): 1–11.

- Chapman, James. *Travels in the Interior of South Africa Comprising Fifteen Years' Hunting and Trading*. London, 1868.
- Conradt, Ludwig. *Erinnerungen aus zwanzigjährigem Händler- und Farmerleben in Deutsch-Südwestafrika*, edited by Thomas Keil. Windhoek, 2006.
- Cooper, Frederick, and Ann Laura Stoler, eds. *Tensions of Empire: Colonial Cultures in a Bourgeois World*. Berkeley, CA, 1997.
- Craig, Robert. "The African Guano Trade." *Mariners' Mirror* 50, no. 1 (1964): 25–55.
- Crawford, R. J. M., and J. Jahncke. "Comparison of Trends in Abundance of Guano-Producing Seabirds in Peru and Southern Africa." *South African Journal of Marine Science* 21, no. 1 (1999): 145–56.
- Crowley, Roger. *Conquerors: How Portugal Forged the First Global Empire*. New York, 2015.
- Davis, Diana K. *Arid Lands: History, Power, Knowledge*. Cambridge, 2016.
- Dederig, Tilman. "War and Mobility in the Borderlands of South Western Africa in the Early Twentieth Century." *International Journal of African Historical Studies* 39, no. 2 (2006): 275–94.
- Deimling, Berthold von. *Südwestafrika: Land und Leute, unsere Kämpfe Wert der Kolonie: Vortrag gehalten in einer Anzahl deutscher Städte*. Berlin, 1906.
- Dekker, Peiter, and Cornelius De Jong. "Whaling Expeditions of the West India Company to Walvis Bay." *Namibia Scientific Society Journal* 46 (1998): 47–63.
- Dening, Greg. *Beach Crossings: Voyaging across Time, Cultures, and Self*. Philadelphia, PA, 2004.
- Dernburg, Bernhard. *Zielpunkte des Deutschen Kolonialwesens: Zwei Vorträge*. Berlin, 1907.
- Deutsches Historisches Museum, ed. *Deutscher Kolonialismus: Fragmente seiner Geschichte und Gegenwart*, 2nd edition. Darmstadt: Theiss, 2017.
- Deutsch-Südwestafrika: Amtlicher Ratgeber für Auswanderer*. Berlin, 1907.
- Dickenson, Victoria. *Seal*. London, 2016.
- Dieckmann, Ute. *Hai||om in the Etosha Region: A History of Colonial Settlement, Ethnicity and Nature Conservation*. Basel, 2007.
- Dierks, Klaus. *Chronology of Namibian History: From Pre-Historical Times to Independent Namibia*. Windhoek, 2002.
- . *Namibian Roads in History: From the 13th Century till Today*. Frankfurt am Main, 1992.
- . *||Khauxa!nas*. Windhoek, 1992.
- Dix, Arthur. *Afrikanische Verkehrspolitik*. Berlin, 1907.
- Dominik, Hans. *Vom Atlantik zum Tschadsee: Kriegs- und Forschungsfahrten in Kamerun*. Berlin, 1908.
- Dove, Karl. *Deutsch-Südwest-Afrika*. Berlin, 1903.
- . *Südwest-Afrika: Kriege und Friedensbilder aus der ersten Deutschen Kolonie*, 2nd edition. Berlin, 1896.
- Drechsler, Horst. "Let Us Die Fighting": *The Struggle of the Herero and Nama against German Imperialism (1884–1915)*. London, 1980.
- Eckenbrecher, Margarethe von. *Was Afrika mir gab und nahm*. Berlin, 1907.
- Eckert, Wolfgang Uwe. *Medizin und Kolonialimperialismus: Deutschland 1884–1945*. Paderborn, 1997.
- Eden, T. E. *The Search for Nitrate and the True Nature of Guano: Being an Account of a Voyage to the South-West Coast of Africa, also a Description of the Minerals Found There, and of the Guano Islands in that Part of the World*. London, 1846.

- Eisinger, Emil. *Im Damarland und Kaokofeld: Erinnerungen an Südwest-Afrika*. Bühl, 1913.
- Ellis, Richard. *The Empty Ocean*. Washington, DC, 2003.
- Erichsen, Casper W. "Namibia's Island of Death." *New African*, no. 421 (2003): 46–49.
- . *"The Angel of Death Has Descended Violently among Them": Concentration Camps and Prisoner-of-War in Namibia, 1904–1908*. Leiden, 2005.
- . *"What the Elders Used to Say: Namibian Perspectives on the Last Decade of German Colonial Rule*. Windhoek, 2008.
- Erkkilä, Antti, and Harri Siiskonen. *Forestry in Namibia, 1850–1990*. Joensuu, Finland, 1992.
- Esser, Max. *An der Westküste Afrikas: Wirtschaftliche und Jagd-Streifzüge*. Berlin, 1898.
- Estorff, Ludwig von. *Kriegserlebnisse in Südwestafrika*. Berlin, 1911.
- . *Wanderungen und Kämpfe in Südwestafrika, Ostafrika und Südafrika 1894–1910*, 2nd edition, edited by Christoph-Friedrich Kutscher. Windhoek, 1979.
- Fairhead, James, and Melissa Leach. *Misreading African Landscape: Society and Ecology in a Forest-Savannah Mosaic*. Cambridge, 1996.
- Falkenhausen, Helene von. *Ansiedlerschicksale: Elf Jahre in Deutsch-Südwestafrika (1893–1904)*. Berlin, 1905.
- Fitzpatrick, Matthew P. "Narrating Empire: 'Die Gartenlaube' and Germany's Nineteenth-Century Liberal Expansionism," *German Studies Review* 30, no. 1 (2007): 97–120.
- Forkel, Hellmuth. "Das Küstengebiet Südwestafrikas und seine wissenschaftsgeographische Bedeutung." PhD diss., University of Rostock, 1926.
- François, Hugo von. *Nama und Damara: Deutsch Süd-West-Afrika*. Magdeburg, 1896.
- Frenssen, Gustav. *Peter Moors Journey to Southwest: A Narrative of the German Campaign*, translated by Margaret May Ward. London, 1908.
- Friedrichsmeyer, Sara, Sara Lennox, and Susanne Zantop, eds. *The Imperialist Imagination: German Colonialism and Its Legacy*. Ann Arbor, MI, 1999.
- Frost, Diana. *Work and Community among West African Migrant Workers since the Nineteenth Century*. Liverpool, 1999.
- Gad, Johannes. *Die Betriebsverhältnisse der Farmen des mittleren Hererolandes (Deutsch-Südwestafrika)*. Hamburg, 1915.
- Galton, Francis. *The Narrative of an Explorer in Tropical South Africa*. London, 1853.
- Gebhart, Lisa. "Sandwich Harbour: A Sanctuary in the Dunes." *SWA Annual* (1973): 97–103.
- Gewald, Jan-Bart. "The Great General of the Kaiser." *Botswana Notes and Records* 26 (1994): 67–76.
- . "The Herero Genocide: German Unity, Settlers, Soldiers and Ideas." In *Die (koloniale) Begegnung: AfrikanerInnen in Deutschland (1880–1945), Deutsche in Afrika (1880–1918)*, edited by M. Bechhaus-Gerst and R. Klein-Arendt, 109–27. Frankfurt am Main, 2003.
- . *Herero Heroes: A Socio-Political History of the Herero of Namibia, 1890–1923*. Oxford, 1999.
- Gissibl, Bernhard. *The Nature of German Imperialism: Conservation and the Politics of Wildlife in Colonial East Africa*. New York, 2016.
- Golf, Arthur. *Ackerbau in Deutsch-Südwestafrika: Das Trockenfarmen und seine Anwendung in D.S.W.A.* Berlin, 1911.
- Goodridge, Charles Medyett. *Narrative of Voyages to the South Seas, and the Shipwreck of the Princess of Wales Cutter*, 2nd edition. Exeter, 1852.
- Gordon, Robert. "Hiding in Full View: The 'Forgotten' Bushman Genocides of Namibia." *Genocide Studies and Prevention* 4, no. 1 (2009): 29–57.

- Goudie, Andrew, and Heather Viles. *Landscapes and Landforms of Namibia*. Dordrecht, 2015.
- Grawe, Lukas. "The Prusso-German General Staff and the Herero Genocide." *Central European History* 52, no. 4 (2019): 588–619.
- Grimm, Hans. *Afrikafahrt West*. Henschels Luginsland, Heft 34. Frankfurt am Main, 1913.
- . *Der Zug des Hauptmanns von Erckert*. Munich, 1932.
- . *Gustav Voigts: Ein Leben in Deutsch-Südwest*. Gütersloh, 1942.
- Grotpeter, John J., ed. *Historical Dictionary of Namibia*. Metuchen, NJ, 1994.
- Gründer, Horst. *Geschichte der deutschen Kolonien*. 7th edition. Paderborn, 2018.
- Gründer, Horst, and Hermann Hiery, eds. *Die Deutschen und ihre Kolonien: Ein Überblick*. Berlin, 2017.
- Grünert, Nicole. *Namibia—Fascination of Geology: A Travel Handbook*, 8th edition. Windhoek, 2017.
- Gudermann, Rita. "Conviction and Constraint: Hydraulic Engineers and Agricultural Amelioration Projects in Nineteenth-Century Prussia." In *Germany's Nature: Cultural Landscapes and Environmental History*, edited by Thomas Lekan and Thomas Zeller, 33–54. New Brunswick, NJ, 2005.
- Gülland, Albert. *Das Klima von Swakopmund*. Berlin, 1907.
- Gümpell, Jean. *Die Wahrheit über Deutsch-Südwest-Afrika*. Cassel, 1905.
- Günther, Egon, dir. *Morenga*. Cologne: Westdeutscher Rundfunk, 1983.
- Haacke, Wulf D. "The Kalahari Expedition, March 1908: The Forgotten Story of the Final Battle of the Nama War." *Botswana Notes and Records* 24 (1992): 1–18.
- Haak, Werner. *Tagebuchblätter aus Südwest-Afrika*. Berlin, 1906.
- Hafenbautechnische Gesellschaft, ed. *Die Deutschen Kolonialhäfen: Ihre technische und wirtschaftliche Entwicklung nebst ihren Bauten*. Berlin, 1939.
- Hahn, Carl Hugo. *Tagebücher, Diaries, 1837–1860: A Missionary in Nama- and Damaraland*, edited by Brigitte Lau. Windhoek, 1985.
- Hammerstein, Katharina von. "Kriegs-Schau-Platz Omaheke: Multiple Perspektiven auf den Völkermord an den Herero." *Acta Germanica* 45 (2017): 29–44.
- Hanemann, Alfred. *Wirtschaftliche und politische Verhältnisse in Deutsch-Südwest-Afrika*. Berlin, 1904.
- Harris, Lynn, Jennifer Jones, and Kate Schnitzer. "Monuments in the Desert: A Maritime Landscape in Namibia." *Journal of Maritime Archeology* 7, no. 1 (2012): 111–40.
- Hartmann, Georg. *Deutsch-Südwestafrika im Zusammenhang mit Süd-Afrika*. Berlin, 1899.
- . *Meine Expedition 1900 ins nördliche Kaokofeld und 1901 durch das Amboland*. Berlin, 1903.
- Häussler, Matthias. *Der Genozid an den Herero: Krieg, Emotion und extreme Gewalt in Deutsch-Südwestafrika*. Weilerswist-Metternich, 2018.
- . "From Destruction to Extermination: Genocidal Escalation in Germany's War against the Herero, 1904." *Journal of Namibia Studies* 10 (2011): 55–81.
- . "Zwischen Vernichtung und Pardon: Die Konzentrationslager in 'Deutsch-Südwestafrika' (1904–1908)." *Zeitschrift für Geschichtswissenschaft* 61, no. 7/8 (2013): 601–20.
- Häussler, Matthias, and Trutz von Trotha. "Brutalisierung 'von unten': Kleiner Krieg, Entgrenzung der Gewalt und Genozid im kolonialen Deutsch-Südwestafrika." *Mittelweg* 36 21 no. 3 (2012): 57–89.

- Headrick, Daniel R. *The Tools of Empire: Technology and European Imperialism in the Nineteenth Century*. Oxford, 1981.
- Hendrix, Huub, ed. *Namibia and the Netherlands: 350 Years of Relations*. Windhoek, 1999.
- Henrichsen, Dag. *Herrschaft und Alltag im vorkolonialen Zentralnamibia: Das Herero- und Damaraland im 19. Jahrhundert*. Basel, 2011.
- Henkel, Franz. *Der Kampf um Südwestafrika*. Berlin, 1908.
- Hennig, Richard. "Aufgaben der Wasserwirtschaft in Südwestafrika." *Die Turbine* (1909): 332.
- . *Sturm und Sonnenschein in Deutsch Südwest*. Leipzig, 1926.
- Hermann, Ernst. *Vieh- und Bodenkultur in Südwestafrika: Ratgeber für Auswanderer*. Berlin, 1900.
- Herrenkirchen, Auer von. *Meine Erlebnisse während des Feldzuges gegen die Hereros und Witboois nach meinem Tagebuch*. Berlin, 1907.
- Herrmann, Franz. *Ueber die Entwicklung, den gegenwärtigen Stand, und die Ziele und harrenden Aufgaben der Wasserwirtschaft in Südwest-Afrika*. Windhuk, 1919.
- Hewitson, Mark. *Germany and the Modern World 1880–1914*. Cambridge, 2018.
- Heywood, Annemarie, Brigitte Lau, and Raimund Ohly, eds. *Warriors Leaders Sages and Outcasts in Namibian History: Narratives Collected from Herero Source for the Michael Scott Oral History Project (MSORP) 1985–6*. Windhoek, 1992.
- Hindorf, Richard. *Der landwirtschaftliche Werth und die Besiedlungsfähigkeit Deutsch-Südwestafrikas*. Berlin, 1895.
- Hintrager, Oskar. *Südwestafrika in der deutschen Zeit*. Munich, 1955.
- Hoag, Heather J. *Developing the Rivers of East and West Africa: An Environmental History*. London, 2013.
- Hoffmann, Anette. "Since the Germans Came It Rains Less: Landscape and Identity of Herero Communities in Namibia." PhD diss., University of Amsterdam, 2005.
- Hofmann, Michael. *Deutsche Kolonialarchitektur und Siedlungen in Afrika*. Petersberg, 2013.
- Höpke, Lydia. *Um Scholle und Leben: Schicksale einer deutschen Farmerin in Südwest-Afrika*. Minden, 1927.
- Hull, Isabel V. *Absolute Destruction: Military Culture and the Practices of War in Imperial Germany*. Ithaca, NY, 2014.
- Hutchings, C. D., et al. "The Benguela Current: An Ecosystem of Four Components." *Progress in Oceanography* 83 (2009): 15–32.
- Illustrierte Zeitschrift "Kolonie und Heimat," ed. *Eine Reise durch die Deutschen Kolonien. VI. Band Deutsch Südwest-Afrika*. Berlin, 1911.
- Irlé, Jakob. *Die Herero: Ein Beitrag zur Landes-, Volks-, und Missionskunde*. Gütersloh, 1906.
- Jäschke, Uwe-Ulrich. "Wassererschließung und Wassermanagement in der Deutschen Periode." *Namibia Wissenschaftliche Gesellschaft/ Namibia Scientific Society* 44 (1993/94): 67–83.
- . *Die polyzentrische Infrastruktur Namibias: Entstehung und Entwicklung in der deutschen Periode 1884 bis 1914/15*. Dresden, 2002.
- Jones, Jennifer. "On Desolate Sands: Beached Shipwrecks in the Namibian Coastal Landscape." In *Sea Ports and Sea Power: African Maritime Cultural Landscapes*, edited by Lynn Harris, 89–100. New York, 2017.
- Kalb, Martin. "The Dowsing Debate: Water, Science and Colonialism in German Southwest Africa." *German History* 39, no. 1 (2020): 568–93.

- . “Reprinting German Colonial Settler Narratives in Namibia Today.” In *Archiving Colonialism: Culture, Space and Race*, edited by Yu-Ting Huang and Rebecca Weaver-Hightower, 221–237. New York, 2018.
- . “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.
- Kämpf, Jochen, and Piers Chapman. *Upwelling Systems of the World: A Scientific Journey to the Most Productive Marine Ecosystems*. New York, 2016.
- Karow, Maria. *Wo sonst der Fuß des Kriegers trat. Farmerleben in Südwest nach dem Kriege*. Berlin, 1909.
- Kaulich, Udo. *Die Geschichte der ehemaligen Kolonie Deutsch-Südwestafrika 1884–1914: eine Gesamtdarstellung*. Frankfurt am Main, 2001.
- Kellner, Tilla ed. *Heimat Südwest: Ein Lesebuch für Südwestafrika*. Hannover, 1969.
- Kienetz, Alvin. “Nineteenth-Century South West Africa as a German Settlement Colony.” PhD diss, University of Minnesota, 1975.
- . “The Key Role of the Orlam Migrations in the Early Europeanization of South-West Africa (Namibia).” *The International Journal of African Historical Studies* 10, no. 4 (1977): 553–72.
- Kinahan, Jill, ed. *By Command of Their Lordships: The Exploration of the Namibian Coast by the Royal Navy, 1795–1895*. Windhoek, 1992.
- Kinahan, Jill. “Heinrich Vedder’s Sources for His Account of the Exploration of the Namib Coast.” *Cimbebasia: Journal of the State Museum*, Windhoek 11 (1989): 33–39.
- . “The Impenetrable Shield: HMS Nautilus and the Namib Coast in the Late Eighteenth Century.” *Cimbebasia: Journal of the State Museum*, Windhoek 12 (1990): 23–61.
- . *Cattle for Beads: The Archaeology of Historical Contact and Trade on the Namib Coast*. Uppsala, 2000.
- Kinahan, Jill, and John Kinahan. “A Thousand Fine Vessels Are Ploughing the Main . . . : Archeological Trace of the Nineteenth-Century ‘Guano Rage’ on the South-Western Coast of Africa.” *Australasian Historical Archaeology* 27 (2009): 43–54.
- Kinahan, John. “Cattle Paths and the Choreography of Late Pre-Colonial Trade on the Namib Desert Coast.” *The South African Archaeological Journal* 69, no. 199 (2014): 96–102.
- . “Human and Domestic Animal Tracks in an Archaeological Lagoon Deposit on the Coast of Namibia.” *The South African Archaeological Bulletin* 51, no. 164 (1996): 94–98.
- . *Pastoral Nomads of the Central Namib Desert: The People History Forgot*. Windhoek, 1991.
- Kneitz, Agnes. “German Water Infrastructure in China: Colonial Qingdao 1898–1914.” *NTM Zeitschrift für Geschichte der Wissenschaften, Technik und Medizin* 24, no. 4 (2016): 421–50.
- Krautwurst, Udo. “Water-Witching Modernist Epistemologies and Dowsing Realities: Exporting Models of Non-Rationality Through Colonial and Development Discourses.” *Anthropology Review* 21, no. 2 (1998): 71–82.
- Kreienbaum, Jonas. *“Ein trauriges Fiasko”: Koloniale Konzentrationslager im südlichen Afrika 1900–1908*. Hamburg, 2015.

- Kreike, Emmanuel. *Environmental Infrastructure in African History: Examining the Myth of Natural Resource Management in Namibia*. Cambridge, 2013.
- . *Scorched Earth: Environmental Warfare as a Crime against Humanity and Nature*. Princeton, NJ, 2021.
- . “Environmental and Climate Change in Africa: Global Drought and Local Environmental Infrastructure.” In *Environmental Change and African Societies*, edited by Ingo Haltermann and Julia Tischler, 73–97. Leiden, 2007.
- Krenkel, Erich. *Geologie der Deutschen Kolonien in Afrika*. Leipzig, 1939.
- Kriegsgeschichtliche Abteilung I des Grossen Generalstabes, ed. *Die Kämpfe der deutschen Truppen in Südwestafrika: Auf Grund amtlichen Materials*, vol. 1. Berlin, 1906.
- , ed. *Die Kämpfe der deutschen Truppen in Südwestafrika: Auf Grund amtlichen Materials*, vol. 2. Berlin, 1907.
- Krüger, Gesine. *Kriegsbewältigung und Geschichtsbewußtsein: Realität, Deutung und Verarbeitung des deutschen Kolonialkriegs in Namibia 1904 bis 1907*. Göttingen, 1999.
- Krynauw, David Willem. *Das Kreuzkap*, translated by Fritz Gaerdes. Windhoek, 1970.
- Kuhn, Alexander. *Bericht über die von der Deutschen Kolonialgesellschaft dem Kolonial-Wirtschaftlichen Komitee übertragene Fischfluss-Expedition. Reisen und Arbeiten in Deutsch-Südwestafrika im Jahre 1903*. Berlin, 1904.
- . *Bericht über die im Jahre 1901 nach Deutsch-Südwestafrika entsendete technische Studien-Expedition für Bewässerungs-Anlagen*. Berlin, 1904.
- . *Zum Eingeborenenproblem in Deutsch-Südwestafrika: ein Ruf an Deutschlands Frauen*. Berlin, 1905.
- Kuhn, Philalethes, and Kurd Schwabe, eds. *Taschenbuch für Südwestafrika*. Berlin, 1908.
- Kukuri, Andreas. *Herero-Texte. Erzählt von Pastor Andreas Kukuri*. Berlin, 1983.
- Külz, Wilhelm. *Deutsch-Südafrika im 25. Jahre deutscher Schutzherrschaft: Skizzen und Beiträge zur Geschichte Deutsch-Südafrikas*. Berlin, 1909.
- Kundrus, Birthe, ed. *Phantasiereiche: Zur Kulturgeschichte des deutschen Kolonialismus*. Frankfurt, 2003.
- . *Moderne Imperialisten: Das Kaiserreich im Spiegel seiner Kolonien*. Cologne, 2003.
- Kuss, Susanne. *German Colonial Wars and the Context of Military Violence*, translated by Andrew Smith. Cambridge, 2017.
- Laak, Dirk van. *Imperiale Infrastruktur: Deutsche Planungen für eine Erschließung Afrikas 1880 bis 1960*. Paderborn, 2004.
- La Guma, Jimmy. *A Biography by Alex La Guma*, edited by Mohamed Adhikari. Cape Town, 1997.
- Lau, Brigitte, ed. *The Hendrik Witbooi Papers*. 2nd edition, translated by Annemarie Heywood and Eben Maasdorp. Windhoek, 1996.
- Lau, Brigitte. *Namibia in Jonker Afrikaner's Time*. Windhoek, 1987.
- Lau, Brigitte, and Peter Reiner. *100 Years of Agricultural Development in Colonial Namibia*. Windhoek, 1993.
- Lehmann, Philipp. “Between Waterberg and Sandveld: An Environmental Perspective on the German–Herero War of 1904.” *German History* 32, no. 4 (2014): 533–58.
- Leutwein, Paul. *Du weitest deine Brust, der Blick wird freier: Kriegs- und Wanderfahrten in Südwest*. Berlin, 1909.
- Leutwein, Theodor. *Elf Jahre Gouverneur in Deutsch-Südwestafrika*. Berlin, 1908.

- Lindholm, Karl-Johan. "Wells of Experience: A Pastoral Land-Use History of Omaheke, Namibia." PhD diss, Uppsala University, 2006.
- Lindner, Ulrike. *Koloniale Begegnungen: Deutschland und Großbritannien als Imperialmächte in Afrika 1880–1914*. Frankfurt am Main, 2011.
- . "Transnational Movements between Colonial Empires: Migrant Workers from the British Cape Colony in the German Diamond Town of Lüderitzbucht." *European Review of History* 16, no. 5 (2009): 679–95.
- Lippert, Heike, Ronny Weigelt, Ralf Bastrop, and Michael Blumenhagen. "Schiffsbohrmuschel auf dem Vormarsch? Holzzerstörer in der Ostsee." *Biologie in unserer Zeit* 43, no. 1 (2013): 46–53.
- Lüderitz, C. A., ed. *Die Erschliessung von Deutsch-Südwest-Afrika durch Adolf Lüderitz: Akten, Briefe und Denkschriften*. Oldenbourg, 1945.
- Lyon, William Blakemore. "From Labour Elites to Garveyites: West African Migrant Labour in Namibia, 1892–1925." *Journal of Southern African Studies* 47, no. 1 (2021): 37–55.
- . "Namibian Labor Empire: Migrant Workers in Colonial South West Africa, 1892–1925." PhD diss, Humboldt University Berlin, forthcoming.
- MacDonald, William. "The Principles of Dry-Farming." *Transvaal Agricultural Journal* 8, no. 29 (1909): 100–10.
- Marean, Curtis. "Seasonality and Seal Exploitation in the Southwestern Cape, South Africa." *African Archaeological Review* 4 (1986): 135–49.
- Martin, Jane. "Krumen 'Down the Coast': Liberian Migrants on the West African Coast in the 19th and Early 20th Centuries." *The International Journal of African Historical Studies* 19, no. 3 (1985): 401–23.
- Marquardt, Gary. "Building a Perfect Pest: Environment, People, Conflict, and the Creation of a Rinderpest Epizootic in Southern Africa." *Journal of Southern African Studies* 43, no. 2 (2017): 349–63.
- Massmann, Ursula. "Kamele in Südwestafrika." *Namib und Meer* 9 (1981): 31–54.
- Masson, John R. "A Fragment of Colonial History: The Killing of Jakob Marengo." *Journal of Southern African Studies* 21, no. 2 (1995): 247–56.
- Melber, Henning. "Economic and Social Transformation in the Process of Colonisation: Society and State before and during German Rule." In *State, Society and Democracy: A Reader in Namibian Politics*, edited by Christiaan Keulder, 16–47. Windhoek, 2010.
- Melillo, Edward D. "The First Green Revolution: Debt Peonage and the Making of the Nitrogen Fertilizer Trade, 1840–1930." *The American Historical Review* 117, no. 4 (2012): 1028–60.
- Mendelsohn, John M. *Atlas of Namibia: A Portrait of the Land and its People*. Cape Town, 2002.
- Meyer, Hans. *Die Eisenbahnen im tropischen Afrika: Eine kolonialwirtschaftliche Studie*. Leipzig, 1902.
- Middleton, Nick. *Deserts: A Very Short Introduction*. Oxford, 2009.
- Miescher, Giorgio. *Namibia's Red Line: The History of a Veterinary and Settlement Border*. New York, 2012.
- Mitchell, Timothy. *Rule of Experts: Egypt, Techno-Politics, Modernity*. Berkeley, 2002.

- Möhlig, Wilhelm, ed. *Die Witbooi in Südwestafrika während des 19. Jahrhunderts. Quellentexte von Johannes Olpp, Hendrik Witbooi jun. und Carl Berger*. Cologne, 2007.
- Moore, Bernhard C., Stephanie Quinn, William Blakemore Lyon, and Kai F. Herzog. "Balancing the Scales: Re-Centring Labour and Labourers in Namibian History." *Journal of Southern African Studies* 47, no. 1 (2021): 1–16.
- Moritz, Eduard, ed. *Die ältesten Reiseberichte über Namibia 1482–1852, Teil I: Die 25 frühesten Landreisen 1760–1842*. Windhoek, 1999.
- Moritz, Walter. "Zur Geschichte und Bedeutung des Names Swakop und Swakopmund." *Namib und Meer* 3 (Sonderdruck) (1972): 37–41.
- Morrell, Benjamin. *A Narrative of Four Voyages to the South Sea, North and South Pacific Ocean, Chinese Sea, Ethiopic and Southern Atlantic Ocean, Indian and Antarctic Ocean*. New York, 1831.
- Muschalek, Marie. "Violence as Usual: Everyday Police Work and the Colonial State in German Southwest Africa." In *Rethinking the Colonial State*, edited by Søren Rud and Søren Ivarsson, 129–50. Bingley, UK, 2017.
- . *Violence as Usual: Policing and the Colonial State in German Southwest Africa*. Ithaca, NY, 2019.
- Namibia Oral Tradition Project, ed. *Muzimbikana and Other Namibian Adventures*. Windhoek, 1997.
- Naranch, Bradley, and Geoff Eley, eds. *German Colonialism in a Global Age*. Durham, NC, 2014.
- Nielsen, Mads Bomholt. "Colonial Resistance and Anglo-German Diplomacy: The Case of Jakob Marengo." In *Resistance and Colonialism: Insurgent Peoples in World History*, edited by Nuno Dimingos, Miguel Bandeira Jerónimo, and Ricardo Roque, 273–94. New York, 2019.
- Nonn, Christoph. *12 Tage und ein halbes Jahrhundert. Eine Geschichte des deutschen Kaiserreiches 1871–1918*. Munich, 2020.
- Noyes, John K. *Colonial Space: Spatiality in the Discourse of German South West Africa 1884–1915*. London, 1991.
- Nuhn, Walter. *Feind überall: Der große Nama-Aufstand (Hottentottenaufstand) 1904–1908 in Deutsch-Südwestafrika (Namibia): der erste Partisanenkrieg in der Geschichte der deutschen Armee*. Bonn, 2000.
- . *Sturm über Südwest: Der Hereroaufstand von 1904—ein düsters Kapitel der deutschen kolonialen Vergangenheit Namibias*. Koblenz, 1989.
- Obst, Erich. *Grundzüge einer Geographie der südafrikanischen Seehäfen*. Hannover, 1935.
- Ohly, Raimund. *Herero Ecology: The Literary Impact*. Warsaw, 2000.
- Olpp, Johannes. *Erlebnisse im Hinterlande von Angra Pequena*, 2nd ed. Barmen, 1896.
- Olusoga, David, and Caspar W. Erichsen. *The Kaiser's Holocaust: Germany's Forgotten Genocide*. London, 2010.
- Onselen, Charles van. "Reactions to Rinderpest in Southern Africa 1898–1897." *The Journal of African History* 13, no. 3 (1972): 473–88.
- Ortloff, Hermann Friedrich. *Landungsverhältnisse an der Küste Deutsch-Südwestafrikas*. Berlin, 1902.
- Osterhammel, Jürgen. *The Transformation of the World. A Global History of the Nineteenth Century*, translated by Patrick Camiller. Princeton, NJ, 2014.

- Otte, Wulf. *Weiß und Schwarz—Black and White. Photos aus Deutsch-Südwestafrika/from Namibia 1896–1901*. Wendeburg, 2007.
- Otto, Karl. *Südwest-Afrika: Wohin steuern wir? Ein nationaler Notschrei und Anderes*. Berlin, 1906.
- Palma, Vittoria Di. *Wasteland: A History*. New Haven, CT, 2014.
- Parkington, John. *Shorelines, Strandlopers, and Shell Middens*. Cape Town, 2006.
- Paschasius, Walter. *Die Befreiung Okahandjas während des Herero-Aufstandes*. Windhoek, 1951.
- . *Die Militäreisenbahn Swakopmund-Windhuk in den Aufstandsjahren 1904–1907*. Berlin-Steglitz, 1934.
- Passarge, Siegfried. *Die Buschmänner der Kalahari*. Berlin, 1907.
- Peraudin, Michael, and Jürgen Zimmerer, eds. *German Colonialism and National Identity*. New York, 2011.
- Pfeil, Joachim. *Deutsch-Südwest-Afrika, jetzt und später*. Munich, 1905.
- Pool, Gerhardus. *Die Herero-opstand, 1904–1907*, 2nd edition. Pretoria, 2016.
- . *Eisenbahnen in Deutsch-Südwestafrika, 1897–1915*. Windhoek, 2008.
- . *Samuel Maharero*. Windhoek, 1991.
- Prein, Philipp. “Guns and Top Hats: African Resistance in German South West Africa,” *Journal of Southern African Studies* 20, no 1 (1994): 99–121.
- Press, Steven. *Blood and Diamonds: Germany’s Imperial Ambitions in Africa*. Cambridge, 2021.
- Pugach, Sara, David Pizzo, and Adam A. Blackler, eds. *After the Imperialist Imagination: Two Decades of Research and Its Legacies*. Oxford, 2020.
- Quiring, Erich. *Die Eisenbahnen Deutsch-Südwestafrikas und ihre Bedeutung für die wirtschaftliche Entwicklung der Kolonie*. Borna-Leipzig, 1911.
- Radkau, Joachim. *Nature and Power: A Global History of the Environment*, translated by Thomas Dunlap. Cambridge, 2008.
- Rand, R. W. “Guano Enterprise in South West Africa.” *Ostrich* 23, no. 3 (1952): 169–85.
- Rathenau, Walther. *Industrialist, Banker, Intellectual, and Politician: Notes and Diaries 1907–1922*, edited by Hartmut Pogge von Strandmann. Oxford, 1985.
- Rautenberg, Hulda. *Das alte Swakopmund 1892–1919*. Neumünster, 1967.
- . “Von der Brandungsküste zum Hafen—Vom Hafen zum Badeort.” *Der Kreis II*, no. 11 (1959): 379–382.
- Rehbock, Theodor. *Deutsch-Südwest-Afrika: Seine wirtschaftliche Erschliessung*. Berlin, 1898.
- . *Deutsch-Südwest-Afrika. 96 Lichtdrucke nach Photographien aus dem Herero- und Nama-Lande*. Berlin, 1898.
- Reichs-Kolonialamt, ed. *Die deutschen Schutzgebiete in Afrika und Südsee, 1909/10: Amtliche Jahresberichte*. Berlin, 1911.
- . *Die deutschen Schutzgebiete in Afrika und der Südsee 1910/11. Amtliche Jahresberichte*. Berlin: Ernst Siegfried Mittler und Sohn, 1912.
- . *Die deutschen Schutzgebiete in Afrika und Südsee, 1911/12: Amtliche Jahresberichte*. Berlin, 1913.
- . *Die deutschen Schutzgebiete in Afrika und Südsee, 1912/13: Amtliche Jahresberichte*. Berlin, 1914.
- Reiner, Otto. *Achtzehn Jahre Farmer in Afrika*. Leipzig, 1924.

- Reinkowski, Maurus, and Gregor Thum, eds. *Helpless Imperialists: Imperial Failure, Fear and Radicalization*. Göttingen, 2013.
- Rickmann, Wilhelm. *Tierzucht und Tierkrankheiten in Deutsch-Südwestafrika*. Berlin, 1908.
- Rizzo, Lorena. *Photography and History in Colonial Southern Africa: Shades of Empire*. New York, 2020.
- . “Faszination Landschaft–Landschaftsphotographie in Namibia.” *Basler Afrikabibliographien Working Papers* 1 (2014): 1–15.
- Rohlf, Gerhard. *Angra Pequena: Die erste deutsche Kolonie in Afrika*, 2nd edition. Bielefeld, 1884.
- Rohrbach, Paul. *Deutsche Kolonialwirtschaft, I, Südwest-Afrika*. Berlin-Schöneberg, 1907.
- . *Deutsch Südwest-Afrika ein Ansiedlungs-Gebiet?* Berlin-Schöneberg, 1905.
- . *Deutsche Kolonialwirtschaft: Kulturpolitische Grundsätze für die Rassen- und Missionsfragen*. Berlin-Schöneberg, 1907.
- . *Die Kolonie*. Frankfurt am Main, 1907.
- . *Aus Südwest-Afrikas schweren Tagen*. Berlin, 1909.
- Ross, Corey. *Ecology and Power in the Age of Empire: Europe and the Transformation of the Tropical World*. Oxford, 2017.
- Rüdiger, Klaus H. *Die Namibia-Deutschen: Geschichte einer Nationalität im Werden*. Stuttgart, 1993.
- Rusch, Walter, Edda Schoedder, and Antje Otto. *Lüderitzbucht: Damals und gestern*. Windhoek, 1983.
- Rust, Conrad. *Krieg und Frieden im Hereroland: Aufzeichnungen aus dem Kriegsjahre 1904*. Leipzig, 1905.
- Sakko, A. L. “The Influence of the Benguela Upwelling System on Namibia’s Marine Biodiversity.” *Biodiversity and Conservation* 7 (1998): 419–33.
- Salzmann, Erich von. *Im Kampfe gegen die Herero*, 2nd edition. Berlin, 1905.
- Sander, Ludwig. *Die Rinderpest: Einfluß auf die wirtschaftlichen Verhältnisse in Deutsch-Südwestafrika*. Berlin, 1897.
- . *Ein Vorschlag zur wirtschaftlichen Erschließung Deutsch-Südwestafrikas*. Berlin, 1895.
- Sarkin, Jeremy. *Germany’s Genocide of the Herero: Kaiser Wilhelm II, His General, His Settlers, His Soldiers*. Cape Town, 2011.
- Schinz, Hans. *Bruchstücke: Forschungsreisen in Deutsch-Südwestafrika*. Basel, 2012.
- Schlettwein, Carl. *Der Farmer in Deutsch-Südwest-Afrika: Eine Darstellung sämtlicher für den afrikanischen Farmer in Betracht kommenden Erwerbszweige und ein Leitfaden für Anfänger*, 2ed. Wismar, 1914.
- . *Der Herero-Aufstand, was hat ihn veranlaßt und was lehrt er uns?* Vortrag. Wismar, 1905.
- Schmick, Rudolf. *Gutachten über die Talsperrenanlage an der Naute im Löwenfluss*. Darmstadt, 1907.
- Schmidt-Lauber, Brigitta. *Die abhängigen Herren: Deutsche Identität in Namibia*. Münster, 1993.
- Schnee, Heinrich, ed. *Deutsches Kolonial-Lexikon*. Leipzig, 1920. Retrieved 30 October 2021 from <http://www.ub.bildarchiv-dkg.uni-frankfurt.de/Bildprojekt/Lexikon/lexikon.htm>.
- Schneider, Herbert P. “The History of Veterinary Medicine in Namibia.” *Journal of the South African Veterinary Association* 83, no. 1 (2012): 1–11.

- Schneider, Martin B. "Bewässerungslandwirtschaft in Namibia und ihre Grundlagen in der Kolonialzeit." PhD diss., Johann Wolfgang Goethe-University Frankfurt am Main, 1990.
- Schokkenbroek, Joost C. A. *Trying-Out: An Anatomy of Dutch Whaling and Sealing in the Nineteenth Century, 1815–1885*. Amsterdam, 2008.
- Schöllenhach, Hans Oelhafen von. *Die Besiedelung Deutsch-Südwestafrikas bis zum Weltkrieg*. Berlin, 1926.
- Schürmann, Felix. *Der graue Unterstrom: Walfänger und Küstengesellschaften an den tiefen Stränden Afrikas (1770–1920)*. Frankfurt am Main, 2017.
- . "Die Wale, ihre Jäger und der Strand von Annobón." In *Afrikanische Tierräume: Historische Verortungen*, edited by Winfried Speitkamp and Stephanie Zehnle, 34–76. Cologne, 2014.
- Schwabe, Kurd. *Mit Schwert und Pflug in Deutsch-Südwestafrika: vier Jahre Kriegs- und Wanderjahre*. Berlin, 1899.
- Schwarz, Bernhard. *Im deutschen Goldlande: Reisebilder aus dem südwestafrikanischen Schutzgebiet*. Berlin, 1889.
- Scott, James C. *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*. New Haven, CT, 1998.
- . *The Art of Not Being Governed: An Anarchist History of Upland Southeast Asia*. New Haven, CT, 2009.
- Seely, Mary. *The Namib: Natural History of an Ancient Desert*. 3rd edition. Windhoek, 2004.
- Seidel, August. *Deutschlands erste Kolonie: Gesammelte Erfahrungen und Erlebnisse während eines Aufenthaltes von 9 Jahren in Deutsch-Südwest-Afrika*. Hamburg, 1898.
- . *Unsere Kolonien: Was sind sie wert und wie können wir sie erschliessen? Ein Kolonialprogramm*. Leipzig, 1905.
- Semler, Johannes. *Meine Beobachtungen in Süd-West-Afrika: Tagebuchnotizen und Schlußfolgerungen*. Hamburg, 1906.
- Seydel, E. *Die Namib-Expedition mit Schilderung der Gewohnheiten und Rechtsanschauungen der Namib-Buschleute*. Borna, 1910.
- Siiskonen, Harri Olavi. "The Concept of Climate Improvement: Colonialism and Environment in German South West Africa." *Environment and History* 21, no. 2 (2015): 281–302.
- Silvester, Jeremy, and Jan-Bart Gewald, eds. *Words Cannot Be Found: German Colonial Rule in Namibia; An Annotated Reprint of the 1918 Blue Book*. Leiden, 2003.
- Sittert, Lance van, and Rob Crawford. "Historical Reconstruction of Guano Production on the Namibian Islands 1843–1895." *South African Journal of Science* 89 (2003): 13–16.
- Snyders, Hendrik. "'Stinky and Smelly—But Profitable': The Cape Guano Trade, c. 1843–1910." PhD diss., Stellenbosch University, 2011.
- . "From Peru to Ichaboe: The Dynamics of a Shifting Guano Frontier, 1840–5." *African Historical Review* 48, no. 2 (2016): 1–23.
- Snyders, Hendrik, and Sandra Swart. "'Discontented Scoundrels Who Crowd the Mercantile Marine Today': Labour Relations Regimes of the Cape and Ichaboe Guano Trade, c. 1843–1898." *Historia* 58, no. 1 (2013): 51–73.
- Spitzner, Karl Walter, and Heinrich Schäfer, eds. *Die Karakulzucht in Südwestafrika und das Haus Thorer*. Cape Town, 1962.

- Stackpole, Edward A. *Whales & Destiny: The Rivalry between America, France, and Britain for Control of the Southern Whale Fishery 1785–1825*. Amherst, MA, 1972.
- Stals, E. L. P. *The Commissions of W. C. Palgrave Special Emissary to South West Africa 1876–1885*. Cape Town, 1991.
- Stapleton, Timothy J. *A History of Genocide in Africa*. Santa Barbara, CA, 2017.
- Steinmetz, George. *The Devil's Handwriting: Precoloniality and the German Colonial State in Qingdao, Samoa, and Southwest Africa*. Chicago, 2007.
- Stengel, Heinz Walter. "Der Bau der Mole in Swakopmund." *Die Muschel* (1967): 52–63.
- . *Bibliographie Wasserwirtschaft in Südwestafrika*. Basel, 1974.
- . "Die große Flut in Swakopmund." *Namib und Meer* 7 (1976): 47–64.
- Stengel, Heinz Walter, and Otto Wipplinger. *Wasserwirtschaft in S.W.A./Waterwise in S.W.A./Water Affairs in S.W.A.* Windhoek, 1963.
- Stern, Christel, and Brigitte Lau. *Namibian Water Resources and Their Management*. Windhoek, 1990.
- Straeten, Jonas von der, and Ute Hasenöhl. "Connecting the Empire: New Research Perspectives on Infrastructures and the Environment in the (Post)Colonial World." *NTM Zeitschrift für Geschichte der Wissenschaften, Technik und Medizin* 24 (2016): 355–91.
- Sullivan, Sian. "Towards a Non-Equilibrium Ecology: Perspectives from an Arid Land," *Journal of Biogeography* 23 (1996): 1–5.
- Sunseri, Thaddeus. "The African Rinderpest Panzootic, 1888–1897." *Oxford Research Encyclopedia, African History* (Oxford, 2018).
- Syndikat für Bewässerungsanlagen in Deutsch-Südwest-Afrika, ed. *Die Landwirtschaftliche Kolonie bei Hatsamas in Deutsch-Südwest-Afrika*. vol. 1 and 2. Berlin, 1899.
- Timm, Uwe. *Morenga*, translated by Breon Mitchell. New York, 2003.
- Troost, Edmund. *Erlebnisse einer Straßen-Lokomotive*. Hamburg, 1898.
- Uechtritz und Steinkirch, Edgar von. *Berichte des Barons Edgar von Uechtritz und Steinkirch aus Windhoek, Hoachanas und Tinkas 1891–92*. Berlin, 1892.
- Utermark, Sören. "'Schwarzer Untertan versus schwarzer Bruder': Bernhard Dernburg in den Kolonien Deutsch-Ostafrika, Deutsch-Südwestafrika Togo und Kamerun." PhD diss., University of Kassel, 2011.
- Vedder, Heinrich. *South West Africa in Early Times*, trans. Cyril G. Hall. London, 1966.
- Verheye, Hans M., Tarron Lamont, Jenny A. Huggett, Anja Kreiner, and Ian Hampton. "Plankton Productivity of the Benguela Current Large Marine Ecosystem (BCLME)." *Environmental Development* 17 (2016): 75–92.
- Vigne, Randolph. "The Hard Road to Colonization: The Topnaar (Aonin) of Namibia, 1670–1878," *Journal of Colonialism and Colonial History* 1, no. 2 (2000): n.p.
- Vohsen, Ernst. *Denkschrift über die bisherige Thätigkeit der Siedlungsgesellschaft für Deutsch-Südwestafrika*. Berlin, 1902.
- Voigt, Isabel, and Kathrin Fritsch. "Transcultural Aspects of Exploring and Mapping South West Africa between 1850 and 1914." *Journal of Namibian Studies* 9 (2011): 61–83.
- Wallace, Marion. *A History of Namibia*. Oxford, 2013.
- Walther, Daniel Joseph. *Creating Germans Abroad: Cultural Policies and National Identity in Namibia*. Athens, 2002.
- Watermeyer, James C. *Deutsch-Südwest-Afrika: Seine landwirtschaftlichen Verhältnisse*. Berlin, 1898.

- Watson, Arthur C. "The Guano Islands of Southwestern Africa." *Geographical Review* 20, no. 4 (1930): 632–41.
- Wedekind, Klemens. *Impfe und herrsche: Veterinärmedizinisches Wissen und Herrschaft im kolonialen Namibia 1887–1929*. Göttingen, 2021.
- Wegner, Walter. *Aus Deutsch-Afrika! Tagebuch-Briefe eines jungen Deutschen aus Angra Pequena (1882–1884)*. Leipzig, 1885.
- Werz, Bruno E. J. S. "Not Lost without a Trace: The DEIC Ship Vlissingen, Assumed to Have Foundered Near Meob Bay in 1747." *Journal of Namibian Studies* 4 (2008): 47–74.
- Wickersham, Joan. "Shipworm (*Teredo Navalis*)." *Agni* 82 (2015): 126–127.
- Wildenthal, Lora. *German Women for Empire, 1884–1945*. Durham, NC, 2001.
- Wilson, Richard Trevor. "The One-Humped Camel in Southern Africa: Imports and Use in South West Africa/Namibia." *Journal of Camel Practice and Research* 19, no. 1 (2012): 1–6.
- Winiwater, Verena, and Martin Knoll. *Umweltgeschichte*. Böhlau, 2007.
- Wipplinger, Otto. "Sea Water Distillation Plant at Lüderitz." *The Civil Engineer in South Africa* (1963): 281–89.
- Wolf, Eugen. *Deutsch-Südwestafrika: Ein offenes Wort*. Kempten, 1905.
- Wolfe, Patrick. "Settler Colonialism and the Elimination of the Native." *Journal of Genocide Research* 8, no. 4 (2008): 387–409.
- Worster, Donald. *Rivers of Empire. Water, Aridity, and the Growth of the American West*. Oxford, 1985.
- Zantop, Susanne. *Colonial Fantasies: Conquest, Family, and Nation in Precolonial Germany*. Durham, NC, 1997.
- Zeller, Joachim. "'Wie Vieh wurden hunderte zu Tode getrieben und wie Vieh begraben': Fotodokumente aus dem deutschen Konzentrationslager Swakopmund/ Namibia 1904–1908." *Zeitschrift für Geschichtswissenschaft* 49, no. 3 (2001): 226–43.
- Zimmerer, Jürgen. *Deutsche Herrschaft über Afrikaner: Staatlicher Machtanspruch und Wirklichkeit im kolonialen Namibia*, 3rd ed. Münster, 2004.
- Zimmerer, Jürgen, and Joachim Zeller, eds. *Genocide in German South-West Africa: The Colonial War of 1904–1908 and Its Aftermath*. Translated and Introduced by E. J. Neather. Pontypool, 2010.
- Zimmermann, Emil. *Unsere Kolonien*. Berlin, 1912.
- Zollmann, Jakob. *Koloniale Herrschaft und ihre Grenzen. Die Kolonialpolizei in Deutsch-Südwestafrika 1894–1915*. Göttingen, 2011.



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