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Rust and Dust: The Vestigial Heritage of German Phosphate Imperialism on Nauru and Angaur

Nauru (Fig. 1) is a 21-square-kilometre island republic in Micronesia that frequently appears on lists of the world's least visited countries.[1] It is a raised coral atoll formed by the erosion of a large volcanic seamount over millions of years. As sea levels dropped, the coral reef became dolomitised by seawater and eroded in the tropical conditions, leaving large limestone pinnacles mounding to around fifty metres to form the central plateau of the island, known today as Topside. These pinnacles were filled in by humus and seabird excrement over millennia to create vast rock phosphate deposits up to several metres deep covered by dense jungle. Following their discovery in 1900, when Nauru formed part of the German Marshall Islands, the Anglo-German Pacific Phosphate Company (PPC) was established to extract the island's phosphate, used to manufacture the chemical fertiliser superphosphate. Within a decade, the PPC was exporting hundreds of thousands of tons of rock phosphate from Nauru, extracted and processed by thousands of indentured labourers and bound for ports in Australia and New Zealand.

Nauru and Angaur (Fig. 2) in Palau are linked both by the historical phosphate industry and the evolving administrative form of German imperialism in the Pacific. As the legal historian Cait Storr has observed, the legal instrument of the *Schutzgebiet* (protectorate) was central to this evolution. "Whereas classical conceptualisations of protectorate status arose from an agreement between unequal sovereigns for 'protection' of the weaker party," argues Storr, "in the late nineteenth century the label was increasingly used to describe a variety of imperial arrangements in which concepts of sovereignty, territory and property remained ambivalent, if not incoherent." This enabled the German state to conduct a "unique imperial experiment" in which its consular jurisdiction was territorialised as minimally as possible, "with delegated executive control vesting in German companies themselves, with minimal subsidisation and little to no legislative oversight."[2] The *Schutzgebiet* became the de facto manner in which German colonies were established into the 20th century, incentivising the extraction and circulation of commodities and labour by German corporations as a basis for raising tax revenue rather than incentivising migration and settler-colonialism. The rapidly deteriorating infrastructure of phosphate mining on Nauru and Angaur – its vestigial industrial heritage – is, in this sense, also evidence of the preferred political form of German colonialism in which sovereignty was premised on a particular brand of infrastructuralism and vice versa. My travels to both islands were an attempt to encounter this history amidst the rusty and dusty layers of phosphate imperialism—German, British, Australian, New Zealander, Japanese, American—I found there.

Fig. 1 Satellite image of Nauru, 2002

An important document in recovering the industrial heritage of German colonialism on Nauru was Paul Hambruch's 1910 map of the island, first drawn three years after the PPC had exported its initial shipments of phosphate rock (Fig. 3). A dashed line delineates the boundary of the earliest areas worked by the company, extending eastward from the Island Ring Road up the steep incline onto the raised plateau overlooking the loading facilities below. At the outer edges of the line, a maze of overgrown paths wends its way around countless limestone pinnacles. These were once the tramways along which phosphate carts were shunted by small steam locomotives (Figs. 4–5), filled by labourers who had pried the rock from the razor-sharp pinnacles by hand. Dispersed around this area is the disarticulated detritus of a century-old mining operation: rusting tracks, cogs, ducts and implements too disassembled to properly identify. Further east, on Topside, a much larger railway embankment runs towards the centre of Nauru, falling away on either side to a landscape comprehensively stripped back by mining. Large steel structures line the embankment, possibly remnants of the aerial cableway that once conveyed mined rock from Topside to the processing and port facilities further downhill (Fig. 6).

As soon as the Pacific Phosphate Company had been established to work the Nauruan phosphate deposits the Hamburg-Altona construction and engineering firm F. H. Schmidt was contracted to supply industrial equipment and facilities for a company settlement on the island. F. H. Schmidt had built houses, harbours, bridges and maritime infrastructure around Hamburg since the 1840s, portraying its engineering and logistical achievements as part of a wider narrative of German colonial ascendancy: "Since Germany has acquired its own colonies," a promotional pamphlet from 1906 observed, "the company has substantially developed its activities in turn."[3] In German East Africa, F. H. Schmidt provided prefabricated government dwellings. In the German concession of Qingdao in China, it employed a large local labour force, designing and constructing the barracks, government buildings, brewery, hospitals, factories, offices and villas, as well as much of the civic and maritime infrastructure. For Nauru, F. H. Schmidt supplied the prefabricated timber staff houses for PPC employees, a mess hall, labourers' barracks, hospitals, docking and loading facilities, locomotives and railways, as well as the construction of the island's harbour, all of which was overseen by F. H. Schmidt's engineer, Wilhelm Schönian (Figs. 7 and 8). By 1913, Nauru was a heavily engineered environment, visited regularly by increasingly large steamers bound for the fertiliser markets in Australia and New Zealand and overseen by a large and permanent population of white managers and officials accountable to the German Imperial Government. The redefinition of Nauru after World War One, from Germany colony to UN Trust Territory under the League of Nations' mandate system, involved a joint payment of £3,500,000 to the PPC from the governments of the United Kingdom, Australia and New Zealand for the Company's existing rights, titles and industrial plants. Henceforth, the phosphate operations were managed by the British Phosphate Commission.

Getting to Angaur by boat involves heading south from the capital Koror through German Channel, blasted out of the coral reef in the early twentieth century when Palau was a German colony, to facilitate a quicker connection with Angaur (Fig. 9). It was here that District Commissioner Arno Senfft first discovered phosphate in 1905, six years after Palau had been sold to Germany by Spain as part of the Caroline Islands following the Spanish-American War. The deposits Senfft unearthed boasted two distinct types of phosphate: a reddish-brown and grainy variety located close to the surface, between the island's limestone pinnacles; and a white phosphate found in continuous blankets beneath its swamps.[4] As on Nauru, Angaur's phosphates were the product of a fusion between limestone, soil and seabird excrement, formed over millennia and to an extremely high grade.

In the year after Senfft's discovery, the Bremen-based *Norddeutscher Lloyd* shipping company arranged for an inspection of the island by Wilhelm Schönian—the same mining engineer who had overseen the development of the PPC's early facilities on Nauru. The Angaur deposits were estimated at around 2.5 million tons of eighty-six percent phosphate of lime, speaking favourably for a mining venture. The *Deutsche Südseephosphat Aktiengesellschaft* [*German South Sea Phosphate Company Limited, DSPAG*] was subsequently formed by the Lloyd in 1908 with Schönian as its technical director.[5] A contract soon followed that at once transferred the ownership of Angaur from eight "island chiefs" to the treasury of German New Guinea, while also granting the DSPAG exclusive mining and settlement

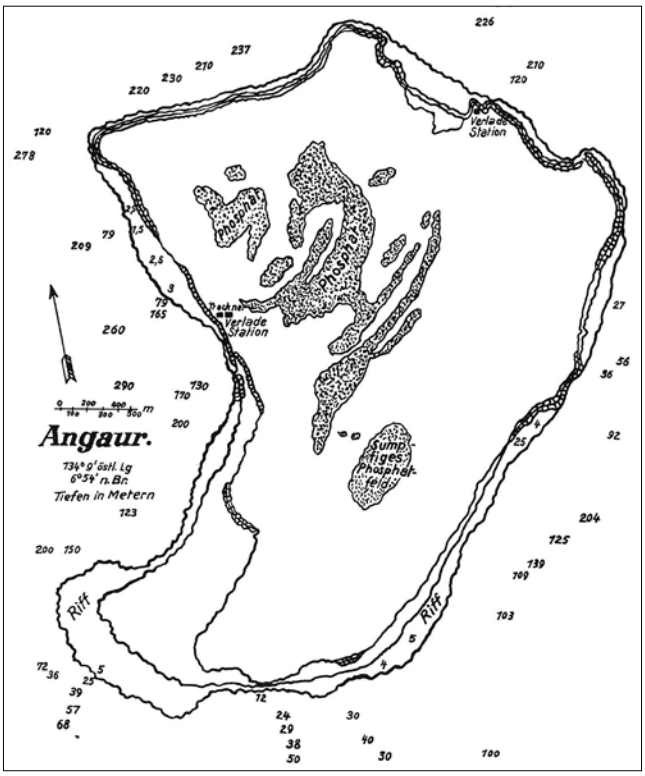

Fig. 2 Map (1913) of Angaur showing the different phosphate deposits on the island (hatched)

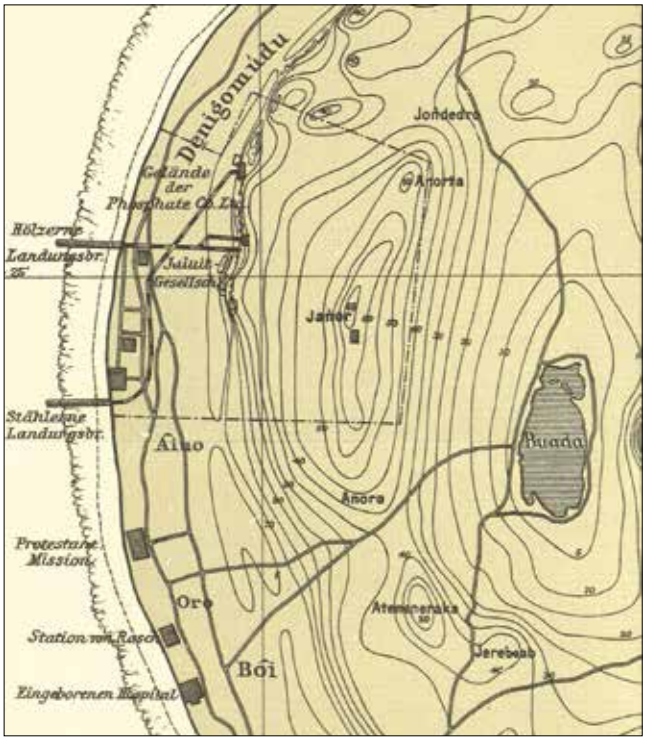

Fig. 3 Detail of Hambruch's map of Nauru (1914) depicting timber and steel jetties within the PPC's original mining lease

Fig. 4 A former tramway cut through coral pinnacles at the site of the PPC's earliest mining activities on Nauru, 2023

Fig. 5 Steam locomotive on Nauru, c. 1915

Fig. 6 Steel structure lining the main embankment at Topside on Nauru, likely the base for the aerial cableway designed by the engineers J. M. and H. E. Coane of Melbourne, 2023

rights over 80 percent of the island. This confined the local population to a 150-hectare reserve in the southeastern corner of the island in return for a one-off payment of £60.[6] Thus supposedly unencumbered, the DSPAG commenced its operations on the island in February of 1909, bringing 23 European employees, 55 contracted Chinese craftsmen and 98 indentured labourers from Yap. This involved dividing the island into thirds and moving the local population from numerous villages – Ngerbelau, Ngebeanged and Rois – to the reserve established in the Ngermasech region in the southwest.[7]

A further 126 men were indentured from the Central Caroline Islands over the course of 1909, tasked with erecting the prefabricated facilities manufactured by F. H. Schmidt and with commencing the mining operations (Fig. 10).[8] The initial shipments of equipment and materials from Bremen and Hamburg amounted to a full arsenal of locomotives, wagons, rails and sleepers, water treatment facilities, as well as the electrical and transmission devices required to establish a radio connection with Yap. In addition, F. H. Schmidt provided a suite of prefabricated timber buildings including a director's house, houses for the managers of the phosphate works, government officials, overseers, workers' dormitories, transportable warehouses, a hospital, a separate mess hall for DSPAG officials and workers, a kitchen, office building, laboratory and goods stores.[9] A casino was also erected for the entertainment of the officers in the evenings, containing a bowling alley, billiard table and piano. Within a year of securing a mining lease over Angaur, the DSPAG had therefore established a large company settlement and a functional phosphate mine on the most remote island in the Palau archipelago.

The largest remnant of the German phosphate industry on Angaur is the so-called *Gute Hoffnungshütte*, a hulking 18-metre-wide by 18-metre-high, 100-metre-long, two-storey integrated processing facility prefabricated in Germany and erected on Angaur by the DSPAG around 1912 (Figs. 11 and 12). It now sits in disrepair, comprising wafer-thin corroded steel members, collapsing brick kilns, rusting rotary dryers and disintegrating conveyor systems for moving the phosphate through the facility to the port. Old phosphate is still stuck to the fins inside the rotating drums of the dryers. Staghorn grows from the chutes and buckets lying around. On the ground, it is difficult to distinguish the different infrastructural layers from the collapsed mess. Damp phosphate was conveyed to the upper level of the *Hoffnungshütte* by a cable railway before being dropped into large driers heated by furnaces from the level below, fuelled using felled timber from the old growth forest on the island. Once dried, the export-ready product was stored in the enclosed structure, alongside workshops, a forge and storage space for the DSPAG's five locomotives, which plied around ten kilometres of tracks on the island leading from the mining sites in the interior to the processing facilities and ultimately to the harbour installations on the coast. North of the processing facilities, towards the centre of the island, are the former mining pits, the largest of which was known as Doresha, reaching up to 30 metres deep (Fig. 13). Previously, the village of Eche had occupied the area but was destroyed after its inhabitants were relocated to a reserve in the south of the island.[10]

Fig. 7 Prefabricated buildings on Nauru manufactured by F. H. Schmidt of Hamburg-Altona. Depicted are an officer's dwelling (top left), the "Coolie Barracks" (top right), the island hospital (bottom right) and the mess hall (bottom left), 1907

One photograph in particular captures the difficulty of locating and analysing German colonialism on Angaur. Its subject is an unusual control tower (Fig. 14), built to manage air traffic on the island once it had fallen under US control during World War Two. The caption indicates that the tower was constructed by Air Force engineers using steel repurposed from the phosphate mill on the island. The tower thus embodies the material continuities of imperialism in Palau: steel originally prepared in Hamburg to construct the *Gute Hoffnungshütte* on Angaur during the period of German colonial rule, extended by the *Nan'yo Kohatsu* when Palau fell within the Japanese South Seas Mandate, and incorporated into one of the earliest structures of the American occupation of Palau, under which phosphate mining would continue un-

Fig. 8 Steel cantilevers sit collapsed on the coral reef, 2023

Fig. 9 A marker indicates the entry to German Channel on the way to Angaur from Koror, 2023

Fig. 10 Prefabricated housing for the European employees of the DSPAG on Angaur, supplied by the Hamburg-Altona-based company F. H. Schmidt, c. 1909

Fig. 12 Remnants of the former phosphate mill and dryer on Angaur, 2023

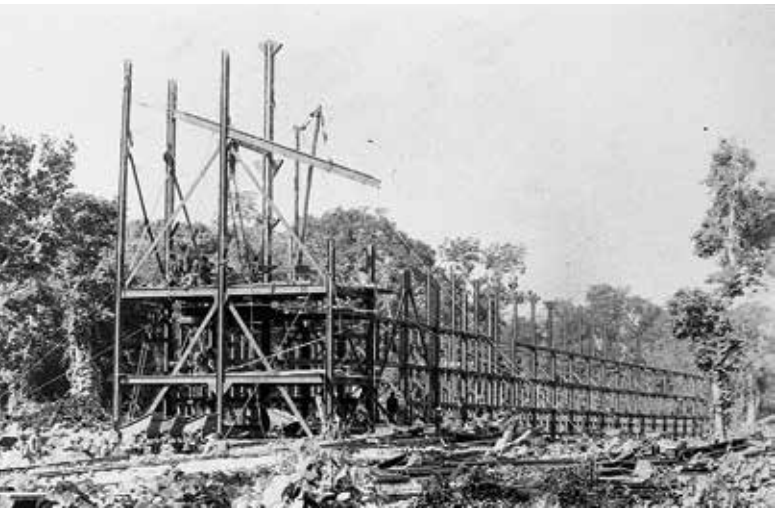

Fig. 11 The *Gute Hoffnungshütte* under construction in c. 1912

Fig. 13 The entire surface level in parts of Angaur has dropped by approximately 30 metres as a result of phosphate mining, 2023

til 1955. By the time mining was discontinued on Angaur, close to 3.75 million tons of phosphate ore had been exported from the island—representing around one percent of global annual phosphate production—used to manufacture in excess of seven million tons of superphosphate fertiliser at ports around the world.[11] However, while continuity implies linearity – an unbroken sequence of events – this fails to capture the political ruptures and breaches that characterise Palau's modern history across Spanish, then German, then Japanese, then American rule. In this sense, rather than searching for an exclusively *German* colonial heritage, the tower suggests an understanding of imperialism attuned to the pervasive logic of extractivism, registering the administrative layering of multiple imperial forms within the continuity of the wider hegemonic order of global capitalism. The same applies to Nauru where the material histories of German colonialism were similarly incorporated into British and then Australian phases of phosphate imperialism (Fig. 15).

Close to four decades of intensive phosphate mining and aerial bombardments left more than half of the surface of Angaur unusable for any human purpose. The island's taro patches, upon which social status and political structures were based, had been destroyed, relocated and encroached upon countless times, commencing with the occupation of the island by the DSPAG. The Angaurese had been shifted around the island in a similar fashion. Consistently denied land rights, inadequately compensated, repeatedly excluded from the economic opportunities presented by the phosphate industry, and continually subjected to arbitrary governmental regimes, the community on Angaur practised a patient and sustained resistance, ceaselessly advocating for their sovereignty and the protection of their livelihoods. "We, the Angaur people," wrote Chief Uherbelau to the US administration in 1947, "are disturbed about these things, and our heart weeps to think of them. We are most disturbed over the problem of what will become of our people when this little island that belongs to us has all been mined."[12]

Fig. 14 US Air Force control tower on Angaur, 1944

Fig. 15 One of two pivoting steel cantilevers currently used by the Republic of Nauru Phosphate Corporation to load ships in the deeper water off the coral reef , 2023

We now occupy that future. As the US returns to Angaur to ramp-up its surveillance of China, and Australia "reengages with the Pacific" by delivering energy and telecommunications infrastructure throughout Palau and signing offshore detention contracts with Nauru, it is difficult not to see these projects as yet another phase in which foreign powers are again attempting to consolidate their positions of influence within a wider global order. The dependency on foreign investment – the economic legacy of extractivism on both islands – thus secures opportunities for contemporary imperialist development. As the industrial heritage of Nauru and Angaur makes plain, these are the ongoing reverberations of German colonialism in the Pacific, which, despite its supposedly limited reach, comprehensively reorganised both islands as material repositories in service of capitalist expansion elsewhere.

Abstract

Nauru und Angaur, zwei abgelegene Inseln im Pazifik, wurden während der deutschen Kolonialherrschaft als Phosphatminen erschlossen. Heute zeugen verrostete Infrastruktur und Phosphatstaub von den einst umfangreichen Bergbauaktivitäten auf beiden Inseln, die immer wieder ausgeweitet wurden, da die industrielle Landwirtschaft zunehmend auf den chemischen Dünger Superphosphat angewiesen war. In diesem Kapitel wird das industrielle Erbe des Phosphatabbaus auf Nauru und Angaur untersucht und argumentiert, dass der deutsche Kolonialismus in seiner Kontinuität mit späteren Formen des Ressourcenimperialismus – britisch, japanisch, amerikanisch und australisch – im gesamten Pazifik nachhallte, lange nachdem Deutschland nach dem Ersten Weltkrieg seine Kolonien verlor. Die Frage der Dekolonialisierung des baulichen Erbes des deutschen Kolonialismus ist daher eine Frage des Nachspürens seiner Beziehung zu heutigen Formen des Imperialismus in der Region.

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Credits

Fig. 1: Image courtesy of the U. S. Department of Energy Atmospheric Radiation Measurement (ARM) user facility
Fig. 2: Source: Elschner, Corallogene Phosphat-Inseln, 1913
Fig. 3: Source: Paul Hambruch, Nauru, 1914
Figs. 4, 6, 8, 15: Source: Ludewig, On Form, 2023
Fig. 5: Source: Maslyn Williams, Nauru Photographs, State Library of New South Wales, PXB 293, Image 69
Fig. 7: Source: Gaze, 1907
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1 This chapter is adapted from the following reports, originally prepared as part of the Society of Architectural Historians H. Allen Brooks Fellowship: Ludewig, On Form, 2023; Idem, On Territory, 2024; Idem, On Layering, 2024.
2 Storr, International Status in the Shadow of Empire, 2020, p. 46.
3 Schmidt, Bauunternehmung, c. 1930 (My translation).
4 Rodgers, Phosphate Deposits of the Former Japanese Islands in the Pacific, p. 406.
5 Fritsch, The Manufacture of Chemical Manures, 1911.
6 The testimony of Chief Uherbelau recounts a different version of events in which German officials coerced a group of local men into signing the contract. See Wahl, Number One Pacific Island, 2000, pp. 118–20.
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8 Krämer, Palau, 1917, p. 159.
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10 Osborne, The Archaeology of the Palau Islands, 1966.
11 Arnow, Effects of Phosphate Mining on the Ground Water of Angaur, 1961, p. 14.
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