

THESIS

CONSTRUCTING THE POLAR WORLD:
THE GERMAN ENCOUNTER WITH THE ARCTIC AND ANTARCTIC

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WE HEREBY RECOMMEND THAT THE THESIS PREPARED UNDER OUR SUPERVISION BY BRANDON LUEDTKE ENTITLED "CONSTRUCTING THE POLAR WORLD: THE GERMAN ENCOUNTER WITH THE ARCTIC AND ANTARCTIC" BE ACCEPTED AS FULFILLING IN PART THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS.

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ABSTRACT OF THESIS

CONSTRUCTING THE POLAR WORLD: THE GERMAN ENCOUNTER WITH THE ARCTIC AND ANTARCTIC

This thesis examines how Germans invested the polar environment with both metaphorical and scientific meaning between 1865 and 1914. It argues that German nationalists put the Northern environment to use toward the process of German nation-building in the nineteenth century and maintains that German polar protagonists promoted travel to the Far South for primarily imperial purposes in the early twentieth century. During these years Germans used narratives of travel, science, and industry in various ways to support both the Arctic and Antarctic project.

Further, this research contends that doing environmental history of the German exploration of the Polar Regions can reveal wider social, economic, and political priorities pressurizing the German state. By tracing, then, the German construction and representation of polar nature across the late nineteenth century and through the twentieth-century's turn, this thesis insists that German priorities shifted over time as domestic and international circumstances changed.

In investigating how the polar environment became increasingly subject to nationalist motivations and imperial ambitions, this thesis hopes to exhibit the earth's Poles as regions where several national destinies run alongside one another. To this end, it forwards the Polar Regions as particularly useful sites for examining the intersection of nation-building, empire, and the environment.

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INTRODUCTION: RECOVERING THE GERMAN POLAR NARRATIVE

In 1898 the German geographers Alfred Kirchoff and Rudolf Fitzner introduced their “Bibliothek der Länderkunde” (Library of Regional Studies). A professor at the University of Halle, in Prussian Saxony, who combined scientific education with popular interests, Kirchoff hoped the collection of monographs would offer the German public “a complete picture of a given country under all its aspects.”¹ For the introductory volume of the series, the editors asked the German historian Karl Fricker to compile a text on the Antarctic regions. The decision to open the series in the Far South was a calculated one: the Sixth International Geographical Congress in London (1895) had recently reignited interest in the Antarctic, opening what would become the Heroic Era of Antarctic Exploration (1901-1922).² The resulting text, entitled *The Antarctic Regions*, was just one of many attempts to mobilize national support for a German expedition to parallel those being mounted by rival European powers. “Will the German nation be mindful of what it still owes to science if it would retain its designation of the ‘Nation of Thinkers and Investigators’,” wrote Fricker in the conclusion. “Or will it once more allow itself to be outstripped even by smaller European nations?”³

It was an appeal to national pride familiar to those Germans who had backed Arctic exploration three decades earlier. “German prosperity is advancing on all sides,” pressed Fricker, “it is assuredly much greater than it was when the *Germania* and the *Hansa* set out for East Greenland [in 1869], *not* at the charge of any government, but supported by the contributions of private individuals of all

¹ “Obituary: Dr. Alfred Kirchoff,” *The Geographical Journal* 29, no. 4 (Apr., 1907): 465.

² It is generally accepted that the Heroic Era began with the launching of the British *Discovery* expedition and culminated with the death of Ernest Shackleton.

³ Karl Fricker, *The Antarctic Regions*, trans. Adolf Sonnenschein (London: Swan, Sonnenschein and Co., 1900), 280. Originally published in German in 1898 under the title *Antarktis* (Berlin: Schall and Grund).

classes.”⁴ Fricker’s closing words drove the message home by asserting that there existed a link between the unified German nation and the unveiling of the nature of the polar worlds: “Not merely the rich, but everybody who possesses knowledge of, and interest in, this undertaking can contribute his mite [sic] and aid in the realization of this aspiration.”⁵

Many of the German polar protagonists are forgotten: August Petermann’s theorized open sea leading to the North Pole proved nonexistent; Georg Neumayer’s suspicion of a warm current cutting a navigable waterway to the South Pole invalidated; the North Polar ventures of Karl Koldewey were usurped by the glorious achievements of the Norwegian Fridtjof Nansen and the Americans Richard Byrd and Robert Peary; and the South Polar endeavors of Erich von Drygalski and Wilhelm Filchner were superseded by the heroic feats of the Norwegian Roald Amundsen and the Britons Robert F. Scott and Ernest Shackleton. Those individuals who have endured in the popular polar memory have done so not simply because of their contribution to the opening of the Poles but also for the sensational character of their exploits. These men – for the project of polar exploration and promotion was exclusively male – led expeditions to the Arctic and Antarctic during the ‘heroic’ age of polar exploration, an era typified by traits seen neither before or after: enthusiastic public attention, intense international competition, rampant patriotism, and, in general, the desire to display one’s flag and do so with gusto or die trying and do that with honor.⁶ The trials and tribulations of these explorers in pursuing recondite goals have become the substance of an expansive (and growing) body of polar literature.⁷

⁴ Ibid., 281. Emphasis in the original.

⁵ Ibid., 281.

⁶ The high-water mark of Arctic exploration was reached in the mid-1800s when, among other goals, expeditions sought out a navigable Northwest Passage. Roald Amundsen, who later became the first to reach both the South and North Pole, was the first to traverse the Northwest Passage between 1903 and 1906. And though Antarctic interest had arisen in the late 1700s, exploration of the region climaxed in the early 1900s during the period commonly referred to as the Heroic Era of Antarctic Exploration.

⁷ Though much too large to cover in full, this body includes both the narratives of polar explorers [see, for example, Apsley Cherry-Garrard, *The Worst Journey in the World*, 2 vols. (London: Constable and Co. Ltd, 1922) and Fridtjof Nansen, *The Farthest North*, 2 vols. (New York: Harper and Brothers Publishers, 1897)] as well as studies analyzing those stories and their cultural impact [see, for example, Roland Huntford, *The Last Place on Earth: Scott and Amundsen’s Race to the South Pole* (New York: The Modern Library, 1999) and Francis Spufford, *I May be Some Time: Ice and the English Imagination* (London: Faber and Faber, 1996)].

This research, however, intends to look beyond those vaunted polar ‘firsts’ (first to the Poles by land, sea, and air) attained by Germany’s English, American, and Scandinavian rivals. Inasmuch, it displaces the all-too-common revelry in the epic, sometimes mortal, struggles of those men who claimed for their nations the great prizes of polar exploration. Instead, this thesis tells the story of how Germans discovered and constructed the polar natural world in the popular imagination and how they put that image to use toward particular cultural, political, economic, and environmental ends. It tracks both the turning of German popular interest toward the high latitudes as well as the contribution of German science to the apprehension of polar nature. In doing this, it shows how the polar environment shaped the formation of a modern German self-understanding. It is a history that stretches from the early modern period – marked by ambiguous conceptions of the ends of the earth – into an age of Enlightened optimism – branded by the belief in the capability of science to discover the secrets of the Earth – over a period of industrial and technological appropriation of the Poles, and, finally, to a phase of nationalistic expansion into polar space. This thesis seeks, then, to examine how the Polar Regions came to be known to the German people; its primary concern is the ways in which the Poles became increasingly subject to nationalist motivations and their material environments scrutinized by science within the context of competing imperial ambitions.

In a forum on the status of German environmental history published in 2009, the German historian Bernhard Gissibl suggested that scholars of German history must “bring nature back in by drawing the ‘naturalness’ out of history.”⁸ “How, for example,” questioned Gissibl, “have ideas and conceptions of nature and the natural been used to legitimize social and political constellations in the course of German history?”⁹ Following Gissibl’s lead, my main preoccupation is to investigate how late-nineteenth- and early-twentieth-century environmental and scientific discourses surrounding the Polar Regions informed pre- and post-unification German concerns over national identity, fin-de-siècle Germany’s anxiety over its place in the world order, and the German

⁸ Bernhard Gissibl quoted in Thomas Lekan, ed., “Forum: The Nature of German Environmental History,” *German History* 27, no. 1 (Jan., 2009): 115.

⁹ *Ibid.*, 115.

environmental sensibility emerging at this time. It has been suggested, most notably by environmental historian Mark Cioc, that German environmental history has lagged behind its American counterpart because “The impact of human activity over the past two millennia in Central Europe is so conspicuous that German [historians] have not been tempted by the ‘wilderness debate’ that animates so many scholars in the United States.”¹⁰ Yet few scholars of German environmental history have directed their gaze to those landscapes beyond German borders; they have, instead, confined their studies to the geographical and political boundaries of the German nation-state.¹¹ In this way, the German story has most commonly concentrated on industrial transformation,¹² the landscape preservation movement,¹³ and debates about the Nazi’s environmental legacy.¹⁴

This history, therefore, views the Polar Regions as an arena in which to pursue Gissibl’s recommendation: unlike the German environment, the earth’s Poles were relatively untouched into the nineteenth century. The Far North and South remained a blank canvas upon which to project German desires and aspirations. I mean to suggest, here, that it is not only in German landscapes or the tropical environments of German colonies but also in polar nature that German cultural, political, and environmental impulses can be located. This thesis aims to uncover how the Polar Regions were conceptualized and contextualized by Germans through narratives of nationalism as well as scientific

¹⁰ Mark Cioc, “The Impact of the Coal Age on the German Environment: A Review of the Historical Literature,” *Environment and History* 4 (1998): 106. See also Joachim Radkau, *Nature and Power: A Global History of the Environment*, trans. Thomas Dunlap (Cambridge, UK: Cambridge University Press, 2002) as well as Dorothee Brandt’s comments in “Forum: The Nature of German Environmental History,” 114.

¹¹ A few outstanding examples of studies that have gone beyond Germany include Rolf Peter Sieferle’s comparative study of industrialization in Britain and Germany *The Subterranean Forest: Energy Systems and the Industrial Revolution*. (Cambridge, UK: The White Horse Press, 2001), originally published in German in 1982; Thaddeus Sunseri’s body of work on German colonialism in Africa, including *Wielding the Ax: Scientific Forestry and Social Conflict in Tanzania, c. 1820-2000* (Athens, OH: Ohio University Press, 2009); and Kai F. Hünemörder’s investigation of the international context for German environmental policies *Die Frühgeschichte der globalen Umweltkrise und die Formierung der deutschen Umweltpolitik (1950-1973)* [The Early History of the Global Environmental Crisis and the Formation of German Environmental Policy (1950-1973)] (Stuttgart: Franz Steiner Verlag, 2004).

¹² For example, see David Blackbourn, *The Conquest of Nature: Water, Landscape and the Making of Modern Germany* (New York: W.W. Norton, 2006) and Mark Cioc, *The Rhine: An Ecobiography, 1815-2000* (Seattle: University of Washington Press, 2002).

¹³ See especially Celia Applegate, *A Nation of Provincials: The German Idea of Heimat* (Berkeley: University of California Press, 1990), Raymond Dominick III, *The Environmental Movement in Germany: Prophets and Pioneers, 1871-1971* (Bloomington: Indiana University Press, 1992), and William Rollins, *A Greener Vision of Home: Cultural Politics and Environmental Reform in the German Heimatschutz Movement* (Ann Arbor: University of Michigan Press, 1997).

¹⁴ See here Franz-Josef Brüggemeier, Mark Cioc, Thomas Zeller, eds., *How Green were the Nazis?: Nature, Environment, and Nation in the Third Reich* (Athens, OH: Ohio University Press, 2005) and Thomas Lekan, *Imagining the Nation In Nature: Landscape Preservation and German Identity, 1885-1945* (Cambridge, Mass: Harvard University Press, 2004).

practice, and how this construction helped, during the period of unification (1865-1880), to mold the German nation and how it later (1895-1914) aided in the expression of Germany's imperial ambitions.

Central to the argument and approach adopted is an understanding of how the German nation came to care about the polar world. In the 1860s, much of world continued to be a mystery to Western intellectuals. Much of Australia was not explored until John McDowell Stuart's four-year sojourn, from 1858 to 1862, across the interior of the continent; the source of the Nile was not located by John Speke until 1862; and South America remained equally veiled into the early 1900s. The most glaring blank spaces remaining on Western maps, however, were the Polar Regions. The Arctic archipelago Franz Josef Land was discovered by Karl Weyprecht only in 1873, and no human even set foot on the Antarctic continent until 1895.¹⁵ Gradually, then, Western scientists began to appeal to their nations' sense of duty to improve the knowledge of the Polar Regions.

Sensibly, the first priority of mid-nineteenth-century geographical discovery was the delineation of the coastlines in the unknown polar areas of the world. As Urban Wråkberg has pointed out, "To discover new land and islands in the Arctic and Antarctic seas represented not only a highly prestigious contribution to geographical knowledge but also the first step in a territorial claim on the land."¹⁶ Indeed, the production of scientific knowledge on the distribution of land and sea was not only an academic undertaking aimed at winning personal honor for oneself and international recognition for one's country, it also held significant nautical and economic repercussions. The charting of coastlines aided in navigation, making travel easier and trade more reliable, and the mapping and inventory of new territory opened that land's resources for extraction. The polar

¹⁵ In 1895 Carsten Borchgrevink became the first human being to step on the Antarctic mainland. Though others had claimed the distinction of being the first to land on the continent, including among them the American whaler John Davis who reportedly landed on the Antarctic Peninsula in 1821, many historians recognize Borchgrevink as the first definitive landing.

¹⁶ Urban Wråkberg, "The Politics of Naming," in *Narrating the Arctic: A Cultural History of Nordic Scientific Practices*, eds. Michael Bravo and Sverker Sörlin (Canton, MA: Watson Publishing International, 2002): 157.

exploration that began around 1865 must be seen, then, in the context of international rivalries: competing ambitions spurred the exploration and investigation of polar nature.¹⁷

This competition generated the cultural, political, and economic forces necessary for raising national expeditions. Enthusiastic nationalists tied polar research to the honor inherent in knowledge production so characteristic of western European liberalism, urging their fellow countrymen to not be left behind in polar exploration. “Will Germany and German science again commit the oft-repeated mistake of being too late, and be content to accept the leavings of others?” Fricker demanded of his compatriots in 1898.¹⁸ Others defended the polar project as a matter of national duty, a contest of national character. Nor did politicians ignore the polar world. With most of the Americas, Asia, and Africa already parceled out by the late 1800s, polar territory emerged as the last imperial land grab. Additionally, entrepreneurs eyed polar lands for their potential commercial value – many believed mineral deposits lay hidden there – and military men saw the earth’s Poles as sites in which to hone skills and test equipment. It was through these narratives of science, nationalism, imperialism, and utility that polar nature was mapped on the German consciousness.

Framing this derivation of meaning from polar nature was a German environmental sensibility that had grown up around the early-nineteenth-century invention of a connection between the natural world and national character. Thanks to the work of German nationalists Johann Gottfried Herder and Ernst Moritz Arndt, the German public had begun to link nature and Germandom. In his 1815 essay entitled “A Word about the Care and Preservation of the Forests and the Peasants in the Consciousness of a Higher, i.e. More Humane, Law,” Arndt suggested that the preservation of nature was a patriotic task: “the axe that is laid on the tree frequently becomes an axe that is laid on the

¹⁷ Not only does Urban Wråkberg make this argument about the motivation for polar research, so too does the environmental historian Stephen Pyne in *The Ice: A Journey to Antarctica*, rev. ed. (Markham, Ontario: Fitzhenry and Whiteside, 1999) make a similar contention.

¹⁸ Fricker, *The Antarctic Regions*, 280.

entire nation.”¹⁹ German journalist and theater director Wilhelm Heinrich Riehl similarly tied Germanic character to contact with pristine wilderness in his mid-nineteenth-century opus *The Natural History of the German People*. “We must preserve our forests not only so that our stoves shall not be cold in winter,” thundered Riehl, “but also that the pulse of the nation’s life shall continue to throb on warmly and cheerfully – in short, so that Germany shall remain German.”²⁰ And as the pace of German industrialization intensified over the course of the nineteenth century, gradually consuming “the woodland,...the sand dunes, the moors, the heath, the tracts of rock and glacier, all wildernesses and desert wastes” Riehl had marked as so important to the maintenance of Germanness, anxieties about national identity heightened.²¹

Gradually, Germans endowed the untouched nature of the earth’s Poles with the same character-shaping qualities held by the rapidly disappearing German wilderness. The polar environment, just as the forests, rivers, and mountains before it, became a site that drew out specifically (and ideally) German characteristics. At the Third German Geographical Congress held in Frankfurt in 1883, Friedrich Ratzel, the German geographer who popularized the geopolitical concept of *Lebensraum*, extended the relationship between Germanness and nature to the earth’s Poles in his appeal for the renewal of German polar exploration. “The resumption of Polar research by the German government,” resolved Ratzel, “is equally in the interest of geographical science and of the German nation.”²²

Likewise, overcoming the difficulties of polar nature became a measure of testing German cultural might. Just as early-nineteenth-century German scientists, engineers, and politicians had won honor through their conquest of the German landscape (the draining of marshes, the straightening of rivers, and the clearing of forestland), by the mid-nineteenth century open confrontation with the

¹⁹ Ernst Moritz Arndt quoted in Dominick, *The Environmental Movement in Germany*, 22.

²⁰ Wilhelm Heinrich Riehl, “Field and Forest,” trans. Frances H. King, in *The German Classics of the Nineteenth and Twentieth Centuries*, vol. 8, ed. Kuno Francke (Albany, N.Y.: J.B. Lyon Company, 1913): 417-418. This essay originally appeared in Riehl’s volume entitled *Land and Leute* [Land and People] published in 1854 as part of his larger work *Die Naturgeschichte des deutschen Volkes* [The Natural History of the German People] released between 1851 and 1855.

²¹ *Ibid.*, 416.

²² Friedrich Ratzel quoted in “Geographical Notes,” *Nature* 27, no. 703 (19 April 1883): 589.

polar natural world provided a ready outlet for a new generation of German researchers, inventors, and explorers eager to prove their masculinity through struggle with an unfamiliar, hostile environment.

Underlying this cultural confidence was technological innovation. Through the 1850s and 1860s, steam power had largely eliminated reliance upon winds and currents and had made navigation through polar ice fields much easier. Polar expeditions armed with this improved marine technology served to further prove that the constraints of the natural world could be overcome by German technology, industry, and ingenuity. Moreover, German expeditions to the high latitudes left with a battery of scientific instruments. As such, German polar travelers would not only be expected to confront the hostile and exotic polar environment, they would be charged with carrying out scientific investigation under these terrible conditions. By the 1860s, the polar environment had become a truly German national landscape, endowed with character-shaping qualities. Moreover, it symbolized a challenge to German science; success in the high latitudes promoted Germany as a scientific and industrial powerhouse. Owing to the environmental discourse swirling around the polar lands, German exploration of the Far North and South would come to shape German self-understanding while scientific apprehension of polar nature served to celebrate German technical invention and win the nation global recognition.

To be sure, the question of 'who or what is German' has been marked by centuries of uncertainty. In the late 1700s, poet Goethe questioned, "Germany? But where is it? I don't know how to find such a country." Heinrich Heine, in the mid 1800s, similarly grappled with the idea of a German national identity: "Where does the *German* begin? Where does it end? May a German smoke? The majority says no. May a German wear gloves? Yes, but only of buffalo hide...But a German may drink beer, indeed as a true son of Germanias he should drink beer." Thus, as historian James Sheehan emphasized twenty-five years ago, there has never been a common, single, or static German

identity.²³ At the same time, it would seem that much of the problem surrounding definitions of German national identity owes to the import modern German historians have placed on the role of the 'nation' as the standard conceptual unit around which to organize the German experience. These historians have accepted that German unification in 1871 under Prussian leadership 'settled' the German question, and, therefore, German history should be the story of how that Reich came to be. It is an interpretation of the German past narrowly framed around politics, a history that highlights Bismarck's top-down approach to unification as having fulfilled the desires of the German people.

More recently, however, social, cultural, and environmental historians have brought new categories of analysis to bear on the question of German nation-building. No longer accepting Bismarck's Prussian-led state as the natural, even inevitable, solution to the contemporaneous German question, these historians have looked to cultural symbols in the attempt to mark when the German people actively involved themselves in the process of national unification. In doing this, they have begun to illuminate how the German people, not simply the state, formed national connections, how they began to coalesce around the idea of a unified German nation, and how, from this, a German identity emerged. Martin Kitchen's *A History of Modern Germany, 1800-2000*, epitomizes this trend. Rather than holding the formation of the Reich as part of some natural destiny of the German *Volk*, Kitchen presents the result of the *Kleindeutsch/Großdeutsch* debate as the product of 'struggle,' both political and cultural. As Kitchen insists, only in 1866, following Prussia's defeat of Austria, did it become clear that the *Kleindeutsch* idea of a Prussian-led 'Lesser Germany,' and the exclusion of Austria, would prevail.²⁴

²³ Goethe and Schiller quote from *Die Xenien aus Schiller's Musenalmanach für das Jahr 1797* (Danzig: Ewert, 1833), 109 and Heinrich Heine, "Ufber Ludwig Borne" (1840) in *Werke*, 2nd ed., ed. M. Greiner (Berlin and Cologne: Kiepenheuer & Witsch 1962), 752-3, quoted from James Sheehan, "What is German History? Reflections on the Role of the Nation in German History and Historiography," *The Journal of Modern History* 53, no. 1 (Mar., 1981): 1-2. See also James Sheehan, "The Problem of the Nation in German History," in Otto Biisch and James J. Sheehan, eds., *Die Rolle der Nation in der deutschen Geschichte und Gegenwart* [The Role of the Nation in German History and the Present] (Berlin: Colloquium Verlag, 1985), 3-20.

²⁴ Martin Kitchen, *A History of Modern Germany, 1800-2000* (Malden, Mass: Wiley-Blackwell, 2006).

If, the Bismarckian state drew the official boundaries of the new German nation, to what degree did individual citizens forge a German people? To answer this we must move beyond the understanding of 'Germany' as merely a political unit: nation-state boundaries are arbitrary, they are violations of topography and they ignore the force of the nation as a cultural development and an individual experience. In short, we must abandon the notion of cartographical cohesion; people were not endowed with a national bond simply by having being drawn into the German state. Accordingly, this thesis attempts to show how polar promoters, following Prussia's victory in 1866, constructed the polar environment as one useful to the wider project of consolidating and redirecting diverse regional, social, political, and religious loyalties toward the pursuit of national cohesion. I argue that polar protagonists found in polar exploration a project that transcended the still-fresh fissures between a German people only recently sketched into existence under a Prussian-led Lesser Germany. Thus, by looking beyond the boundaries of the nation-state, we might locate how North Germans and South Germans actively involved themselves in the process of unification and identity formation.

Importantly, then, this thesis contributes to the historical literature on the ways that individuals and voluntary associations stepped in to enact the vision of this national task: working through networks of civil society, polar promoters stimulated in German communities and German peoples throughout the Western world an attachment to the polar endeavor.²⁵ In fact, during the organization of the First German Arctic Expedition in 1867, "over 2,700 groups and individuals gave

²⁵ Many historians, environmental and non-environmental alike, have suggested that the process of imagining the nation need not depend on official government bodies. Often highlighting the work of individuals, operating within networks of civil society, in fashioning identities and ordering loyalties, these histories contend that consciousness of belonging can be done outside of the state apparatus. Though the historiography on civil society is both extremely expansive and extraordinarily contentious, it is most commonly agreed to be a site of social engagement both outside the state and beyond the individual where people participate in spontaneous and voluntary forms of association. In short, unlike the state which is driven by formal, official authority, civil society is a collective of individuals pursuing "great aims in common." Alexis de Tocqueville, *Democracy in America* ed. J.P. Mayer (New York: Doubleday, 1969), 520. It is to this network of civil society actors that this paper will, in part, turn attention to. For more on civil society, nature, and the construction of the German nation see David Blackbourn and James Retallack, eds., *Localism, Landscape and the Ambiguities of Place: German-Speaking Central Europe, 1860-1930* (Toronto: University of Toronto Press, 2007); and Geoff Eley and James Retallack, eds., *Wilhelmism and its Legacies: German Modernities, Imperialism, and the Meanings of Reform, 1890-1930* (New York: Berghahn Books, 2003). For more on the definition and reach of civil society see T.M. Know, trans., *Hegel's The Philosophy of Right* (London: Oxford University Press, 1967) and Robert Putnam, *Bowling Alone: The Collapse and Revival of American Community* (New York, NY: Simon and Schuster, 2001).

to the polar cause,” including German geographical societies, scientific unions, and youth groups, cultural associations across Europe, and immigrant clubs in the Americas. Moreover, polar enthusiasts sought funding for the expedition from the Deutscher Nationalverein (German National Union), a Liberal, Prussian patriotic organization that supported the *Kleindeutsch* scheme of German unification.²⁶ Additionally, following the completion of the Second German Arctic Expedition in 1870, Petermann expressed his gratitude through worldwide outlets, recognizing that “Germany, through the generous contributions of her citizens, [has] sent into these fields two national expeditions.”²⁷ In the polar environment was found an invocation of something peculiarly German and, as such, exploration and scientific exploitation of it became “a means by which the new German nation could assert itself in the world.”²⁸ I mean to suggest, here, that the German nation was imagined in the natural processes of the polar environment, not simply the political processes of the state.

That is not to say that the German state didn’t wrest some polar initiative from private promoters and civil society. Following the reversal of his anti-colonial stance in 1884, Bismarck became a champion of the polar project. Indeed, during this time imperial expansion became a mechanism through which to advertise to the world the success of German nation-building. Furthermore, the German state’s overseas interest advanced their desire to assert themselves as a world naval power. This desire is rooted firmly in the German-Anglo imperial rivalry. It follows that by the late-nineteenth century, it was the German state, having realized the Polar Regions as perhaps the final colonial frontier, which took the lead in whipping up support for a German Antarctic Expedition. The

²⁶ Incidentally, the league turned them down citing financial pressures. The Nationalverein itself had dissolved shortly after, becoming defunct by 1868. Petermann, “Die Deutsche Nordpol-Expedition,” 212, quoted in Murphy, *German Exploration of the Polar World*, 26.

²⁷ August Petermann, “The North Pole,” *Milwaukee Weekly Sentinel*, 21 November 1871, col. H.

²⁸ Matthew Fitzpatrick, *Liberal Imperialism in Germany: Expansionism and Nationalism, 1848-1884* (New York: Berghahn Books, 2008), 54. Fitzpatrick contends that, far from a divergence from nationalist ideals, expansionism and naval exploration were closely tied to the aspiration for creating a united and powerful German nation. Furthermore, Fitzpatrick follows the abovementioned work of David Blackbourn and Geoff Eley in suggesting middle-class Germans took an active role and interest in the project of German expansion, a suggestion that is played out in his analysis of the work was done by private organizations and, what the terms, “private-sector expansionism” (p.90). Fitzpatrick’s argument focuses upon the German expansion into African and Latin American colonies. I intend to propose through this thesis that the German polar project be added to this understanding of national unification through civil-society promoted exploration beyond state borders.

German polar project intersects critical literatures on the development of the German nation.

Inasmuch, it is the intent of this thesis to not only add to the historiography on the post-1866 organization of the German people around a Prussian-led *Kleindeutsch* state, but also to suggest how the Polar Regions became a crucial facet of the German state's official imperial policy.

Important to this study is a definition of the boundaries of the polar world. Though modern science and politics has provided a delineation of what is to be considered 'polar land,' – those regions that fall within the Arctic and Antarctic circles, measured in 2010 at 66°33' north and south of the equator – this definition is largely a scientific and technocratic abstraction. In reality the concept marks little more than the points at which one encounters uninterrupted sunlight and, oppositely, continuous darkness for one or more days per year. The demarcation does little to account for the appearance of Arctic flora, fauna, and climatic conditions in southern Greenland (a full 6° south of the boundary), not to mention the problem of the various chunks of the Antarctic continent that straddle or lie north of this arbitrary latitudinal line (portions of both the Antarctic Peninsula below South America as well as stretches of Enderby Land and Wilkes Land in East Antarctica lie beyond the 66°33'S terminus).

However, where twenty-first century academics and politicians have failed to clearly define the reach of the polar world, late-nineteenth- and early-twentieth-century science found little problem. Given that the ends of the earth above roughly 60° latitude remained largely unexplored and near-completely unmapped into the twentieth century, 'polar lands' began where detailed cartographic knowledge ceased. Perhaps unsurprisingly, early German definitions of the Polar Regions were based on just such negative geographical knowledge. As an illustration of this, expeditions to terra incognita were often outlined in vague terms. The First German Arctic Expedition in 1868 was instructed simply "to attempt to attain the highest possible latitude at some point between

Greenland and Novaya Zemlya.”²⁹ With no detailed topographical knowledge of the Far North, the directions could hardly have been more precise. Even the First German Antarctic Expedition in 1901 sailed under a murky charge: “The point which the German Expedition has in view for commencing the penetration of the Antarctic region is the still hypothetical Termination Land.”³⁰ In this way, the turn-of-the-century German definition of the Polar Regions was operational, understood as those regions beyond 60° latitude where more-detailed geographical work remained to be done.³¹

Yet for all that remained unknown about polar geography, Germans did know something about the general environmental qualities of the Arctic and Antarctic. It is prudent to mention here that what we in the late twentieth and early twenty-first century have come to identify as ‘the environment’ was understood through different visual, experiential, and conceptual techniques by late-nineteenth- and early-twentieth-century polar explorers and scientists. For them the ‘polar environment’ coalesced around ideas of climate (temperature, weather, and atmosphere), natural history (ecology, biology, and geology), landscape, and scenery. These ideas, then, helped polar travelers to articulate the character, as well as map the radius, of the Polar Regions: constantly cold, devoid of vegetation, and largely covered in ice. “It is impossible,” as Fricker explained, “to assign limits to polar regions by a mere mathematical line, and they must be taken to include all regions having, in the first and foremost place, an essentially polar climate.”³²

Equally common was the definition of polar lands as those absent of human inhabitation and influence. The Polar Regions in the German imagination, then, were those stretches where nature assumed an active hostility toward the presence of man. “The object of the following pages,” wrote German author Georg Hartwig in 1869, “is to describe the Polar World in its principal natural features, to point out the influence of its long winter-night and fleeting summer on the development

²⁹ August Petermann, “Instruktion für den Oberbefehlshaber der Expedition” [Instructions for the Commander of the Expedition], printed in “Die deutsche Nordpol-Expedition,” 214-218. All translations from German are the work of the author, unless either otherwise indicated in the notes or quoted from an English-language source.

³⁰ Erich von Drygalski, “The German Antarctic Expedition,” *Nature* 61, no. 1579 (1 February 1900): 319.

³¹

³² Fricker, *The Antarctic Regions*, 2.

of vegetable and animal existence, and finally to picture man waging the battle of life against the dreadful climate of the high latitudes of our globe.”³³ It was this tendency to ascribe polar nature with malignant intent that made it so very appealing to German nationalists. In the Far North and South, confrontation with nature became more trying, more ultimate. The polar environment became an arena in which character could be tested, duty attended to, courage proven, and honor won. More so, an appreciation for the aesthetic qualities – the inordinate majesty, the haunting beauty, and the extraordinary solitude – of the polar natural world fed into the German sentimental naturalism that had emerged by the mid-nineteenth century behind the influence of Romantic nationalists such as poet Heinrich Heine and artist Caspar David Friedrich.

In short, the Arctic and Antarctic resisted strict definition based both on lack of sound geographical knowledge as well as on convictions about the natural world and what ‘nature’ was. Central, then, to the argument adopted here is the understanding that polar nature was a product of German knowledge; it was created within particular contexts for particular purposes. As British historian Simon Schama remarks, “Even the landscapes that we suppose to be most free of our culture may turn out, on closer inspection, to be its product.”³⁴ This is not to suggest, however, that the German polar world, like large tracts of the German landscape itself, was a carefully manicured space. Rather, as American environmental historian William Cronon explains, “the way we describe and understand [the nonhuman] world is so entangled with our own values and assumptions that the two can never be fully separated. What we mean when we use the word ‘nature’ says as much about ourselves as about the things we label with that word.”³⁵

Thus, this history acknowledges and embraces the fact that Germans brought to the Poles expectations, sensibilities, and styles of observation with which they were familiar. It follows that

³³ Georg Hartwig, *The Polar World: A Popular Description of Man and Nature in the Arctic and Antarctic Regions of the Globe* (London: Longmans, Green, and Co., 1869). Text originally appeared in German in 1858 under the title *Der Hohe Norden im Natur- und Menschenleben* (Weisbaden: Kreidel and Niedner).

³⁴ Simon Schama, *Landscape and Memory* (New York: Alfred A. Knopf, 1995), 9.

³⁵ William Cronon, ed., *Uncommon Ground: Rethinking the Human Place in Nature* (New York: W.W. Norton and Company, 1996), 25.

the polar environment was evaluated through ideas and methods external and alien to itself. It will be the goal of this thesis to examine the German cultural production of polar nature. It must accept not only the environment as a cultural agent, awarded character-shaping powers, but, conversely, must recognize culture as an environmental agent with the power to influence perceptions of the natural world. This is a tale of how culture shaped nature and how nature shaped culture.

However carefully constructed by German polar protagonists, the hostile image of the polar environment was based in the hard reality of experience. And for all the comparisons between the Arctic and Antarctic, Germans also recognized and acknowledged crucial differences between the two environments. Erich von Drygalski, a veteran of both Poles, admits as much following his voyage to Antarctica between 1901 and 1903, writing plainly “The circumstances in the south Polar Regions are not quite the same as in the north.”³⁶ Modern science has since proven and clarified Drygalski’s impression. The Antarctic is a great land mass trimmed by oceans. With no underlying body of water to moderate its climate, the Antarctic continent, roughly the size of the United States and Canada combined, is famously referred to as “the windiest, coldest, highest, and driest continent on Earth.”³⁷ The Antarctic is bitterly cold, more than 98 percent of its surface covered in nearly three thousand meters of ice. The average annual temperature is a frigid -49°C and the average wind speed hovers around 67 kilometers per hour. Though high winds create near-constant blizzard conditions, Antarctica is a vast desert averaging less than one inch of rainfall per year. Aside from those marine animals and birds that inhabit the ice-rimmed coastal waters, the Antarctic continent proper sustains little life. The approach to the landmass is no less forgiving: girded by the Antarctic Convergence, the continent is fortified by high winds, strong storms, and fierce currents generated by the mixing of the cold Antarctic water and the comparatively warm sub-Antarctic water.

³⁶ Erich von Drygalski, *The Southern Ice-Continent: The German South Polar Expedition aboard the Gauss, 1901-1903*, trans. M.M. Raraty (Norfolk: Erskine Press, 1989), 136.

³⁷ Quote from William Fox, *Terra Antarctica: Looking into the Emptiest Continent*, rev. ed. (Berkeley, CA: Shoemaker and Hoard, 2007), 2.

Whereas Antarctica is a continent beset in the Southern Ocean, the Arctic is an ocean dotted with floating ice and surrounded by a region of treeless permafrost. While temperatures in the southern reaches can creep above freezing in the summer months, the winter average across the vast icebound ocean is -34°C. Most of the region receives less than twenty inches of annual precipitation. The Arctic climate, unlike the Antarctic, however, is moderated by the presence of ocean water. Owing to its milder conditions, the Arctic supports a variety of flora and fauna, including marine animals as well as non-aquatic birds and mammals. For all their differences, however, both the Arctic and Antarctic are home to eerie visual phenomena. References to brilliant colors, blinding whiteness, and disorientating visual contrasts appear regularly in polar literature. In addition to these unnerving experiences, many explorers note the pervasive gloom of the atmosphere and the exhausting monotony of gray on gray. Without a doubt, the German definition of the high latitudes as “awful solitudes” was not far from the truth.³⁸

In studying the German encounter with the polar world between 1865 and 1914, we see that specific understandings of nature and broader power relationships have shaped the construction of the polar environment. A passing glance at the literature on German environmental history reveals the link between the German people and nature. This historiography suggests that the German nation has sylvan, fluvial, and, even, alpine roots. This thesis supposes ice also became part of the German national landscape. Its focus is the cultural construction of polar nature yet it is framed by the scientific apprehension of the polar material environment. Chapter I examines the origins of German perceptions of polar nature (Middle Ages-mid-1800s). It suggests there was nothing specifically German about these constructions of the high latitudes. Instead, the German conceptualization of the Poles followed wider European cultural, economic, scientific, and artistic trends. This construction of the polar world responded to the European curiosity and desire to explain, map, and catalogue the earth’s surface and natural systems.

³⁸ Hartwig, *The Polar World*, 11.

Chapter 2 contends that by 1865 the character of this construction had changed; the North, for the first time, had become a landscape of widely-felt national interest to Germans. This chapter investigates the German Arctic encounter to get at both how the German conception of the Far North a product of particular social contexts as well as how this construction was put to use toward particular purposes. By accepting that the Arctic was a carefully-constructed landscape, it explores the connections between nation-building and nature in Germany during the period of unification (1865-1880). It supposes that polar enthusiasts promoted the construction of nationhood and national identity by envisioning in the Arctic peculiarly Germanic qualities. More so, the North Polar research program invented a German national Arctic narrative, offering the Arctic as a proper focus for German loyalty.

Chapter 3 insists that, whereas the German image of the Arctic was bound up in identity-shaping, the image of the Antarctic was wrapped up in character-proving. Influenced by growing imperial rivalry around the turn of the century (1895-1914), Germans increasingly visualized the Antarctic as an arena in which to prove their place in the global order. However, having little success in achieving spectacular Antarctic 'firsts,' German polar protagonists turned instead to Antarctic science, and the German contribution to it, as a way to win international recognition and national glory. Public approval came less readily; as the sensational exploits of rival nations filtered back, the solely scientific achievements of German Antarctic expeditions were viewed as a disappointment. Thus, polar promoters were also faced with the task of convincing the German people of the national importance of the Antarctic landscape.

The epilogue reviews the environmental legacy of a half-century (1865-1914) of German contact with the polar world, suggesting that the polar environment remains important to the German national identity. It takes the opportunity to probe, at times hypothetically, the polar environment's connection to Ernst Haeckel's 1866 'invention' of ecology. It also considers polar nature's wider connection to the rampant degradation of the environment in the rapidly-industrializing fin-de-siècle

Germany. In no way, however, did the German polar project end with the First World War. Instead, the German imperial loss following the war motivated an, arguably, more-exclusively nationalist-oriented period of polar contact.

Nature is just as much real as it is imagined. Although the focus of this study is on how Germans invested the polar environment with metaphorical and scientific meaning, it hopes to engage wider debates currently being raised by modern European and environmental historians. When this study opens, no unified Germany yet existed and an overseas German empire was still far off.

“Constructing the Polar World” describes the relationship between environmental perception, scientific discovery, and political and cultural change. In doing this, it tries to show how the polar environment is linked to German nationalism in the nineteenth century and German imperialism in the twentieth century. It is a story about how, in the process of exploring the earth’s Poles, the German nation itself was discovered.

CHAPTER 1: GERMANS ENCOUNTER THE EARTH'S POLES

The project of constructing a German polar world had begun before the latter half of the nineteenth century. Though no unified German state existed prior to 1871, Germans had long been producing literary and visual representations of both Polar Regions: narratives of mythic odysseys and actual voyages, economic treatises, scientific texts, and landscape paintings. While some of these images arose from direct polar contact – Germans frequently accompanied other nations' expeditions in a technical capacity – others were imaginings, cobbled together from sailors' recollections, natural histories, and a measure of creativity.³⁹ It follows that from the Middle Ages to the mid-nineteenth century, the polar reaches were invented in the German mind as much as they were encountered by the German people. Often trivialized, or outright overlooked, in the recent literature concerning German polar exploration, these early attempts by German explorers, whalers, scientists, and artists to bring the Poles within comprehension set in motion the subjection of that world to motivations, sentiments, and cultural identities wholly external to it.⁴⁰ Both German polar travelers and enthusiasts, finding little recognizable in the high latitudes, turned to sensibilities with which they were familiar in their response to the polar natural world. This early discourse surrounding the polar environment reveals much about German ideas of space, place, land, and landscape across the second millennium.

Polar nature, then, must be understood as a product of knowledge, something created within particular social contexts, an environment defined by and understood through established and

³⁹ For more on this distinction between imaging and imagining, see Bernard Smith, *Imagining the Pacific: In the Wake of the Cook Voyages* (New Haven: Yale University Press, 1992).

⁴⁰ Little mention of these early ideas of polar nature is given by David Thomas Murphy, *German Exploration of the Polar World, A History, 1870-1940* (Lincoln: University of Nebraska Press, 2002), Reinhold Krause, *Die Gründungsphase deutscher Polarforschung, 1865–1875*, *Berichte zur Polarforschung*, vol. 114. (Bremenhaven: Alfred-Wegener-Institut für Polar- und Meeresforschung, 1992), or Christine Reinke-Kunze, *Aufbruch in die weisse Wildnis: die Geschichte der deutschen Polarforschung* (Hamburg: Kabel, 1992).

practiced conceptual systems. Some of these cultural imaginations were nebulous, others derived from more utilitarian passions, while still others from emotional cognition; all, however, were rooted in the European conventions of science and art.⁴¹ On the one hand, these responses to an unfamiliar environment were the precedent for many nineteenth- and early-twentieth-century German perceptions of the polar world as an object of fear and fascination, a site of practical and scientific utility, and an environment of overwhelming abundance and aesthetic brilliance. On the other hand, there was nothing specifically 'German' about this early construction of polar nature. For example, when the German natural historian Johann Reinhold Forster journeyed to the Far South in 1772, he did so aboard a British vessel, the *Resolution*; he traveled in the company of Britons and under a British commander; and, employed as a Fellow of the Royal Society of London, his work served the cause of expanding Western scientific knowledge on the region.⁴² Further, when Forster published in 1784 a compendium of discoveries made in the Far North, he did so with respect to the contributions of all European nations.⁴³ In both of these cases, Forster based his appropriation of the polar environment on direct experience as well as on the wide canon of European travel writing and scientific texts concerning the high latitudes. His production of polar nature, then, is a reiteration of familiar tropes and images: Forster diffused the polar environment with nothing particularly German, rather the impulses underlying his descriptions were commonplace, and oft-expressed, European aesthetic and scientific values.

This chapter will explore German representations of the polar natural world during the period in which the Poles were opened to European travel, observation, and, eventually, science (roughly the late-Middle Ages to the mid-1800s). It will trace the lineage of the German construction of polar

⁴¹ This argument is similarly demonstrated in Bravo and Sörlin, eds., *Narrating the Arctic*, Pyne, *The Ice*, and Fox *Terra Antarctica*. Each work contends that Western civilization brought to the Poles the nodes through which to contextualize and conceptualize the natural world. As such, these established European intellectual systems were tasked with mapping the polar environment on the popular European imagination.

⁴² Johann Reinhold Forster, *Observations Made During a Voyage 'Round the World*, eds. Nicholas Thomas, Harriet Guest, and Michel Dettelbach (Honolulu: University of Hawai'i Press, 1996). Forster's work was originally published as a popular travel narrative in 1778.

⁴³ Johann Reinhold Forster, *Geschichte der Entdeckungen und Schiffahrten im Norden* [History of the Voyages and Discoveries in the North] (Frankfurt: Carl Gottlieb Strauss, 1784).

nature from the transformation of empty space into polar place, through the tendency to apprehend that place as a useful site for both economic exploitation and scientific activity, into Enlightenment science's role in describing the environment and humans' place in it, and, finally, to the transformation of polar land (and ice) into polar landscape (and icescape).

In many ways, the opening of the Poles in the German mind was done in a profoundly pragmatic manner. Widely understood as a supreme site of exploration, polar nature represented an important commercial and scientific frontier, and, as such, conceptualizations of it were overwhelmingly practical. As polar narratives became increasingly commonplace across the late-eighteenth and early-nineteenth centuries, the popular imagination allowed room for more emotional renderings of that desolate environment. No longer did the polar environment need to be subjected to scientific explanation and no longer was it captured only through utilitarian ethos. Instead, conceptions were informed by more abstract notions – such as Sublime Nature – and endowed with culture-shaping qualities.⁴⁴ Polar images became useful tools through which to comment on European culture. Though not uniquely 'German,' each of these early representations, practical and imaginary, built upon the other. And when the period of truly German polar enthusiasm opened in the 1860s, sailors' and scholars' perceptions of the polar world relied, in part, on expectations informed by these earlier constructions.

THE POLAR ENIGMA: AN EARLY ARCTIC VENTURE

The German cleric Adam of Bremen, writing around 1072, recounts in his *History of the Archbishops of Hamburg-Bremen* an Arctic voyage undertaken by Frisian noblemen in the year 1040. Born sometime before 1040 in Meissen, Saxony, Adam arrived in Bremen in 1067 and was straightaway made a Church canon. Anxious to express his gratitude "for having been granted so great a favor," the medieval historian promptly set about chronicling the Church of Hamburg-Bremen's tumultuous

⁴⁴ For more on pragmatism and emotion in responses to the Arctic environment, see Chauncey Loomis, "The Arctic Sublime," in *Nature and the Victorian Imagination*, ed., U.C. Knoepfelmacher and G.B. Tennyson (Berkeley: University of California Press, 1977), 96-102.

past. Through equal parts history, biography, and ethnography, the four-book volume recounts the deeds of his predecessors and, on the whole, celebrates the “greatness of his archbishopric...and the importance of Hamburg.”⁴⁵ Adam’s most specific concern, however, was exalting the Church’s missionary project in the North. To this end, the fourth book, separately titled “A Description of the Northern Islands,” accommodates both a systematic ethnography of the Scandinavian world as well as a geographical account of the Far North.

It becomes evident through Adam’s description that the Arctic at this point was understood through both geographical as well as enigmatic conceptualizations. Just as the Romans had defined the territory to the north of their border (Germanic lands) as a not-Rome – an expansive wilderness so large that no man could claim to have reached its boundary, a region filled with “wild beasts not seen in any other places” – medieval Germans defined their Northern periphery through similar notions of limitlessness.⁴⁶ “By a direct course toward the North from the mouth of the Weser River,” writes Adam, “one meets with no land, but only that sea called the Libersee.”⁴⁷ For Germans, the North began, quite simply, at the terminus of their territory. In addition to its indefinite reach, the Arctic was also apprehended as a strange and hostile environment. Historian Simon Schama has suggested, referring to the Roman representation of northern lands, that “There is in this description a note of awestruck admiration as well as repugnance that exactly reflected Rome’s mixed feelings about the forest.”⁴⁸ The German opinion of the North echoed the fickleness of their Roman forbearers. “That unsown crops also abound on that island we have ascertained not from fabulous

⁴⁵ Adam of Bremen, *History of the Archbishops of Hamburg-Bremen*, trans. Francis J. Tschan, rev. ed. Timothy Reuter (New York: Columbia University Press, 2002), xi-xii. This is an English translation of Adam von Bremen, *Hamburgische Kirchengeschichte*, ed. Bernard Schmeidler (Hannover : Hahnsche Buchhandlung, 1917), which is itself a German translation from the original Latin version printed in Germany in 1846 under the title *Adami Gesta hammaburgensis ecclesiae pontificum*, ed. Georg Heinrich Pertz (Hannover: Hahn). A detailed history of the manuscript can be found in the English preface to Adam von Bremen, *Adami Bremensis Gesta Hammaburgensis Ecclesiae Pontificum Codex Havniensis*, ed. C. A. Christensen (Copenhagen: Rosenkilde and Bagger, 1948).

⁴⁶ See Julius Caesar, *The Gallic War, Book 3*, trans. Henry John Edwards (London: William Heinemann, 1919), 350-353. The Roman author and natural philosopher Pliny the Elder similarly described the German North, writing ““In the same northern region is the vast expanse of the Hercynian oak forest, untouched by the ages and coeval with the world, which surpasses all marvels by its almost immortal destiny.” Pliny, *Natural History*, vol. 4, trans. Harris Rackham (London: William Heinemann Ltd., 1967), 391.

⁴⁷ Adam of Bremen, *History of the Archbishops of Hamburg-Bremen*, trans. Francis J. Tschan (New York: Columbia University Press, 1959), 215.

⁴⁸ Schama, *Landscape and Memory*, 83.

reports but from the trustworthy relation of the Danes," writes Adam, describing one Arctic stretch; "Beyond that island," he continues, "no habitable land is found in that ocean, but every place beyond it is full of impenetrable ice and intense darkness."⁴⁹

It is amidst this more general survey on the "nature of the northern regions" that Adam inserts his account of Bremen seamen who "spread sail to the North for the purpose of ranging through the sea."⁵⁰ Adam's description of the lands encountered by the expedition, details of which he acquired from a range of second- and third-hand recollections, stands as one of the earliest German attempts to apprehend a vast and unknown Northern space where many believed "you will find no human habitation, nothing but ocean, terrible to look upon, and limitless, encircling the whole world."⁵¹

In the ensuing account of the Frisian crew's voyage, Adam presents the Arctic as a truly enigmatic realm. "Of a sudden they fell into that numbing ocean's dark mist which could hardly be penetrated with the eyes," records Adam, "and, behold, the current of the fluctuating sea whirled back to its mysterious fountainhead and with the most furious impetuosity drew the unhappy sailors...on to chaos; this they say is the abysmal chasm." The sailors, having been alternately sucked into and spit out of "that deep in which report has it that all the back flow of the sea...is absorbed and in turn revomited," then stumbled upon an island rich in precious metals and inhabited by extremely tall people. Here the Frisians plundered as much treasure as possible and, escaping the angered giants with only one horrific casualty, returned to Bremen laden with riches.⁵²

Adam's hyperbolic story of an Arctic venture replete with an endless ocean of thrashing whirlpools and an imposing island populated by menacing cyclopes suggests that German speakers have long been keen to explain both the unknown North and the strange conditions therein through reference to the fantastic. And it would seem natural that interested parties, relying only on speculation in the absence of direct experience, groped mightily to fill in the blank ends of the earth.

⁴⁹ Adam of Bremen, *History of the Archbishops of Hamburg-Bremen.*, (1959), 219.

⁵⁰ *Ibid.*, 215 and 222.

⁵¹ *Ibid.*, 215.

⁵² *Ibid.*, 220-221.

Indeed, it is this eagerness to conceptualize heretofore undiscovered Northern spaces that drives Adam's geography. Though further investigation into Adam's worldview suggests the seamen, in all likelihood, got only as far as the Faroe Islands, Adam's matter-of-factness implies reality – and too few had visited the Arctic themselves to dispute his representation.⁵³ Adam's polar narrative, then, was more than documentation of Arctic exploits; it was a pragmatic response to the need for mapping the unknown North, a way to contextualize the Church's missionary zeal.

Hence, Adam's account can be read as an attempt to transform unknown space into place: his geographical representation of an icy Northern region allowed some, however limited, cognition of that previously alien (or blank) expanse. Keeping in mind that the earth's Poles would not be fully unveiled until deep into the twentieth century, not only would conjectural geography, mainly the phenomena of an open polar sea, persist into the nineteenth-century through the hypothesizing of August Petermann, so too would supposition of who resided at the Poles dominate the twentieth-century polar fantasizing of Georg Biedenkapp.⁵⁴

In addition to providing a geographical description of the region, Adam's narrative attempts to make sense of the mysteries of the Arctic. Adam's distribution of mythical creatures over unknown northern regions is similar to the tendency of early cartographers, detesting blank spaces on their maps, to draw sea monsters and other beasts over areas either seldom visited or which they knew little of. Adam's recourse to fantasy to explain the wonders of the unknown North suggests, then, that "even the natural philosophers who search out the secrets of such things fall into doubt about phenomena of which they do not know the origin."⁵⁵ Adam himself confesses that much regarding

⁵³ For more on Adam's worldview, see G.A. van der Toorn-Piebenga, "Adam of Bremen: Account of a Journey to the Arctic Region in the Eleventh Century," *Circumpolar Journal* 2, no. 1 (1987): 18-30. August Petermann insisted, as had Adam of Bremen, upon the existence of an open sea at the top of the earth, while German author and nationalist Georg Biedenkapp maintained that Germany's ancestral founders resided at the North Pole. See Georg Biedenkapp, *Der Nordpol als Völkerheimat* [literally, The North Pole as People's Homeland] (Jena: Hermann Costenoble, 1906).

⁵⁴ See both Toorn-Piebenga, "Adam of Bremen," and A.A. Bjørnbo, "Adam of Bremen's Nordens Opfattelse," *Aarbøger for Nordisk Oldkyndighed og Historie* 24, (1909): 120-224 for investigations into how Adam most likely conceived northern geography as well as conclusions regarding the actual islands visited by the Frisian voyage.

⁵⁵ Adam of Bremen, *History of the Archbishops of Hamburg-Bremen*, (1959), 222.

the nature of the Northern regions remained simply “incomprehensible.”⁵⁶ It is in this admission that we see both the attraction and the limits of allusion to the fantastic as a tool for conceptualizing the polar environment. Where the philosophy of nature failed, largely because it relied on experience and few had experienced the polar environment, in explaining some atmospheric effect, chimerical descriptions could succeed. For example, in Adam’s chronicle the Bremen seafarers most probably fell upon a dangerous maelstrom commonly whipped up from strong tidal currents beating against ice-fields.⁵⁷ Because natural philosophers were unaware of this curious occurrence, Adam took to recounting it though the more lucid, vastly more mystical, image of an ‘abysmal chasm.’⁵⁸

Enigma, however, for all its usefulness in apprehending a world far beyond human scale, failed as a tool for those who had actually confronted the place. And by the 1500s, European whalers began frequenting the region more than ever before. Such direct contact with the polar world encouraged, even demanded, a more intense grappling with the environment and conditions encountered: polar rendezvous required the traveler to come to terms with a reality rather than resort to reporting it through myth. Though considerable geographical work would have to be done before fully exposing polar space, faced with comprehending a now decidedly existing place, travelers to the region increasingly responded to the environment in utilitarian terms. In short, they began to present the Polar Regions as they found them rather than as they might be.

THE POLAR ENVIRONMENT AS RESOURCE FRONTIER: FRIEDRICH MARTENS’ WHALING VOYAGE

After having “escaped the peril of darkness and the land of frost,” Adam reports the Frisian seaman drifted to a treasure-laden island whereupon they gathered up riches before returning to Bremen.⁵⁹ This is evidence that, more than an endless expanse full of curious stimuli, the earth’s Poles could be

⁵⁶ Ibid., 222.

⁵⁷ Toorn-Piebenga, “Adam of Bremen,” 27-28.

⁵⁸ Francis J. Tschan further suggests that the island’s inhabitants may have appeared gigantic only because of the thick, disorientating fog. Adam of Bremen, *History of the Archbishops of Hamburg-Bremen*, 221, footnote 145.

⁵⁹ Adam of Bremen, *History of the Archbishops of Hamburg-Bremen*, (1959), 221.

conceptualized as places of practical utility.⁶⁰ More than six centuries after Adam of Bremen recounted the Frisian venture, Friedrich Martens published an account of his own voyage to the North. A surgeon and native of Hamburg, Martens' *Spitzbergische Reise Beschreibung* (Spitsbergen Travel Account) presents the Arctic environment in just such a utilitarian manner.⁶¹ He visited the Arctic archipelago in 1671 while sailing aboard the whaling vessel *Jonas im Walfisch* (Jonah in the Whale). Apart from observing and reporting on the workings of the Northern fishery and the commercial harvesting of the Arctic's biological resources, Martens, "an intellectual who participated in European scientific reporting about distant regions," also dutifully noted the weather conditions encountered throughout the voyage – these, almost habitual, notations range from "bright sunshine" to "cloudy sunshine" to "gloomy sunshine," and from "dark and foggy" to "exceedingly cold" to "severe frost".⁶² In short, Martens' text presents the Arctic through a characterization of the extractive commercial enterprises being practiced there as well as a detailed description of the flora and fauna found there. Therefore, Martens conceptualized the Arctic pragmatically, being most concerned with presenting the North as a site of potential profit and an arena important to the production of knowledge on the Earth's natural systems.

The Germans were second only to the Dutch in the Arctic whaling industry. The industry had launched in earnest in the late-1500s behind European demand for whale oil and whalebone. And as Arctic natural resources began to turn up on the streets of European cities, so too did an awareness of the Arctic materialize in the European consciousness. Beginning in the 1640s, German whalers sailed north from Hamburg, Bremen, and Emden, the fleet doing especially well in the latter quarter

⁶⁰ It was not until J.G. Kohl's 1869 article published in *Petermanns Geographische Mitteilungen* that such an interpretation of the Arctic as encountered by the Frisian noblemen appeared in print. Kohl writes, "The Frisian nobles themselves may even, in addition to the geographical question which they wrote on their banners, have had in mind a little occasional trade or other income and booty," clearly insisting that the Arctic lands, even in the 11th century, offered some commercial promise. J.G. Kohl, "Die erste Deutsche, von der Weser aus um das Jahr 1040 veranstaltete, Entdeckungsreise zum Nordpol," *Petermanns Geographische Mitteilungen* 15, (1869), 13.

⁶¹ Friedrich Martens, *Spitzbergische Reise Beschreibung* [Spitsbergen Travel Account] (Hamburg: Gottfried Schulzen, 1675).

⁶² John F. Richards, *The Unending Frontier: An Environmental History of the Early Modern World* (Berkeley: The University of California Press, 2003), 600 and Friedrich Martens, "Voyage into Spitzbergen," in *A Collection of Documents on Spitzbergen and Greenland*, ed. Adam White (New York: Burt Franklin, 1855), 6-12. This is an English translation of Martens' German text.

of the seventeenth century when each boat averaged from seven to eleven whales.⁶³ In the narrative of his Spitsbergen voyage, Martens catalogues each facet of commercial whaling, from an account of those vessels that operated near the ice pack catching the whale, to a depiction of the coastal stations built to boil the blubber, to a survey of the eventual sale and use of the harvested parts. In this way, Arctic nature is presented as a set of resources, evaluated, in part, by their economic usefulness: “We brought the whale to the ship [and] the same day we cut the fat from it, and filled with it seventy barrels.” “The train-oyl [sic] of the whale,” continues Martens, “is used by...the *frize-makers, curriers, cloth-workers, and soap-boilers*, but the greatest use that is made of it is to burn it in lamps instead of other oyl [sic].”⁶⁴ And upon realizing that German whalers were not utilizing the whale to its full advantage, Martens’ admits he “is of opinion that one might use whalebone in any thing [sic] that we use boards for,” further suggesting “that out of the hair of the fish might be made something,...like flax or hemp.”⁶⁵

But Martens saw in the Arctic environment commercial potential beyond whaling. In the northern seas their lived such an abundance of seals “that if the master of the ship should not catch whales enough, they might lade their ships with seals only...whose fat yields the best train-oyl [sic].”⁶⁶ The polar bounty did not stop there: walrus were harvested “only for their teeth;” myriad fish could be caught simply by towing a hook and line behind the ship; and even polar bears, though far less marketable, afforded potential in that many “skippers melt [their fat] out there, and bring it home with them to sell it for train-oyl [sic].”⁶⁷ More than noting the many sources of blubber, bone, and baleen to be had, Martens gruesomely recalls recreational hunting and the almost regular slaughter of Arctic fauna: “For sports sake I went once along with them [seals] upon the ice and run one

⁶³ J.T. Jenkins, *A History of the Whale Fisheries from the Basque Fisheries of the Tenth Century to the Hunting of the Finner Whale at the Present Date* (London: H.F. and G. Witherby, 1921), 155. For more on the early history of Arctic whaling and Germany’s place in that industry, see Richards, *The Unending Frontier*, especially note chapter 16, “Whales and Walrus in the Northern Oceans. On p.597, Richards notes “In the 1669 season, 37 whaling ships left Hamburg for the waters off Spitsbergen and returned with blubber from 260 whales. In the peak year of 1684, German whalers brought 57 ships to the north, which killed 227 whales.”

⁶⁴ Martens, “Voyage into Spitzbergen,” 6 and 133. Emphasis in original.

⁶⁵ *Ibid.*, 107-108. Martens notes on p.129 “The whalebone doth only belong to the owners of the ship.”

⁶⁶ *Ibid.*, 83-85.

⁶⁷ *Ibid.*, 81 and 89 and 98.

through the body with my sword several times.”⁶⁸ In this way, Martens conceives of the Arctic as a resource frontier to be exploited. Constructing the poles as a reservoir of abundant natural wealth would return in Moritz Lindeman’s nineteenth-century evaluation of the Arctic fishery, the twentieth-century literature of Gustav Braun, and, more generally, in the German tourist industry that valued as a resource the beauty of the polar environment.⁶⁹

Driving Martens’ inventory of Arctic natural resources was an interest in natural history. Sailing during the waning years of the Scientific Revolution – that broadly conceived sixteenth- and seventeenth-century European paradigm shift transforming how people secured knowledge of the natural world – Martens encountered the Arctic armed with, above all, a belief in the need for empirical and sensory verification of natural processes. Much has been written on the scientific revolution and its prominent figures; hence, its historiography is both expansive and contentious.⁷⁰ However, hard to disentangle is the pursuit of scientific certainty and the subsequent utility of that knowledge. Indeed, there is no denying the connection between economic appraisal and scientific activity: in order to evaluate the commercial potential of a region, its resources needed to be identified, catalogued, and quantified.⁷¹

Martens, aboard the commercial vessel as the ship’s doctor, embodied the Scientific Revolution’s quest for solutions to practical problems. In his assessment and evaluation of the Northern fisheries, Martens necessarily took inventory of the Arctic flora and fauna; thus, the Arctic also proved useful as a site for producing scientific knowledge, even if in the service of capitalism. To this end, Martens closely monitored the process of hunting, harpooning, flensing, and discarding of Arctic wildlife. Upon returning to Europe, Martens organized these observations so as to both satisfy scientific

⁶⁸ Ibid., 86.

⁶⁹ Braun’s popular polar literature drove home the point that the Arctic and Antarctic offered vast stores of unexploited resources. Gustav Braun, *Die Erforschung der Pole* [The Exploration of the Poles] (Liepzig: Thomas Thomas, 1912.).

⁷⁰ For an introduction to the literature, consult S. A. Jayawardene, *The Scientific Revolution: an Annotated Bibliography* (West Cornwall, CT: Locust Hill Press, 1996) and Marcus Hellyer, ed. *The Scientific Revolution: the Essential Readings* (Malden, MA: Wiley-Blackwell, 2003). For a revisionist history of the Scientific Revolution, see Steven Shapin, *The Scientific Revolution* (Chicago: University of Chicago Press, 1996).

⁷¹ For more on the reciprocal relationship between Arctic science and the exploitation of natural resources see Sverker Sörlin, “Rituals and Resources of Natural History: The North and the Arctic in Swedish Scientific Nationalism,” in Bravo and Sörlin, eds., *Narrating the Arctic*, 73-122.

inquiries as well as inform future economic exploitation of the Arctic: whales could be located by identifying the presence and multitude of their primary food sources; the best place to shoot a whale, based upon their behavior after having been struck, was in shallow water away from the ice pack so they could not dive and disappear under the ice; the best fat to harvest was yellow – white or red offered less oil per pound upon reduction; and boiling, rather than drying, spermaceti afforded the best preservation of this delicacy. In addition to this register, Marten’s observation of Arctic vegetation led him to conclude “that on these rough, barren, and cold mountains, there yet grow some plants for the nourishment both of man and beast.”⁷² The Scientific Revolution and the practice of the field sciences, then, found expression in the cameralist interest in the practical applicability of the Arctic’s bounty.⁷³

Martens’ dedication to empiricism also encouraged him to both give a detailed geographical and geological account of the Arctic as well as to describe the many disconcerting visual phenomena manifest there. “We sailed to the eighty-first degree,” writes Martens, mapping Spitsbergen as a place on the globe, “the country is stony, and quite throughout it are high mountains and rocks,” he concludes, etching the place on the German mind.⁷⁴ Accompanying this topographical report is Martens’ preoccupation with familiarizing the oddities of the Arctic sea and atmosphere. Not only does he describe icebergs as “mountains, steeples, chapels, tables, and all sorts of beasts,” but he makes clear the contrast between the extreme Arctic cold and that of the European continent, noting, “the frost is unconstant [sic] in our country, but it is not so in Spitzbergen.”⁷⁵ Regarding visual effects, Martens notes “When the ice is fixed upon the sea, you see a snow white brightness in the skies,” referring here to the polar ice-blink, “but at a distance you see the air blew [sic] or blackish.”⁷⁶ Martens also comments on the equally common appearance of a mock-sun, writing “in

⁷² Martens, “Voyage into Spitzbergen,” 45-46.

⁷³ See Richard Drayton, *Nature’s Government: Science, Imperial Britain, and the ‘Improvement’ of the World* (New Haven: Yale University Press, 2000), 55-60.

⁷⁴ Martens, “Voyage into Spitzbergen,” 16-18.

⁷⁵ *Ibid.*, 32 and 38.

⁷⁶ *Ibid.*, 32.

the clouds near the sun, a very bright light is seen, like a parelion.”⁷⁷ In Marten’s physiographic response to Arctic nature, similar to his mercantilist response, there lies a pragmatism aimed at making the material environment useful. For Martens, the Arctic was a very real place and it needed to be constructed as such; to do this, he relied on factual presentation, framing the Arctic as a resource frontier.

THE POLAR ENVIRONMENT AS SCIENTIFIC LABORATORY: THE FORSTERS’ ANTARCTIC JOURNEY

As had Martins, it was not uncommon to make the uncomfortable journey to the high latitudes by enlisting to serve aboard a vessel in some technical capacity. Such was the position of the father-and-son team of naturalists Johann Reinhold Forster and George Forster aboard the *Resolution*. Born on 22 October 1729, Johann had studied theology at the University of Halle, later serving as a Lutheran minister. Dissatisfied with the constraints of his pastoral duties, the German polymath relocated to London in 1766 where he eked out a living as a private tutor, a writer on natural science, and a translator before being elected a Fellow of the Royal Society of London in 1771.⁷⁸ He had for company in England his twelve-year-old eldest son, George. Born on 27 November 1754, George had already established himself as something of a child prodigy. He had accompanied his father on a Russian expedition a year earlier and during the pair’s brief time in London had proven himself a capable teacher and academic.⁷⁹

The two embodied the breed of Enlightenment scholars emanating out from Europe during the eighteenth century. They spoke a host of foreign languages; their interests ranged across theoretical inquiries and subjects; and they were crafty enough to carry out interdisciplinary fieldwork. The encyclopedic character of their texts exhibits this hodgepodge of interests; they are stuffed with everything from measurements of sea depth to lyrical observations of ice formations. The natural world for them was a scientific riddle, a multilayered intellectual challenge that required the

⁷⁷ Ibid., 42.

⁷⁸ Michael Edward Hoare, *The Tactless Philosopher: Johann Reinhold Forster, (1729-98)* (Stroud, UK: Hawthorn Press, 1976).

⁷⁹ Thomas Saine, *George Forster* (New York: Twayne Publishers, 1972).

observer to blend perception and experience with observation and reflection. The Enlightenment science of the Forsters was less a quest for certainty and truth – as was the method adopted during the Scientific Revolution – than it was an effort at reasoned synthesis. Science had by the mid-1700s methodically classified the forms of nature, and it now fell to rational thought both to understand how these forms interact and to decipher the place of humans within this milieu.⁸⁰

George was just sixteen when, in 1772, Captain James Cook offered Johann the post as ship naturalist aboard the *Resolution*. The expedition, Cook's second circumnavigation of the globe, aimed to build upon the achievements of the first – primarily searching for the existence of an enormous, heretofore hidden, southern land by traveling as close as possible to the South Pole. The out-of-work German naturalist agreed, on one condition: that his son be allowed to accompany him. Thus, the duo brought to the Antarctic their expansive set of interests informed by their passion for empirical observation. Though most often read for their detailed anthropological reflections on South Pacific peoples, the travel narratives published by the Forsters also stage the Southern environment more broadly as a site of scientific activity. These early examples of travel writing helped to turn the European gaze toward the coastal waters off the Antarctic continent.⁸¹

Inspired in part by their anthropological observations, the natural history conducted by the Forsters was more than a descriptive process, it was a theoretical discipline. This meant they not only responded pragmatically to the Antarctic (measuring, recording, and describing what they found on islands in the South Atlantic in order to produce an understanding of Nature), they also reflected philosophically on the region's more unexplainable qualities (the extreme conditions and strange visual phenomena especially seemed to exceed human comprehension) in order to further understand the place of humans within the natural world. Where Martens had simply surveyed Arctic nature and assessed its economic usefulness, the Forsters grappled with the human role and

⁸⁰ For more on the character of Enlightenment science, see Thomas Hankins, *Science and the Enlightenment* (Cambridge, UK: Cambridge University Press, 1985).

⁸¹ See Bernard Smith, *European Vision and the South Pacific* (New Haven: Yale University Press, 1985); Smith, *Imagining the Pacific*; and Harry Liebersohn, *The Travelers' World: Europe to the Pacific* (Cambridge, Mass: Harvard University Press, 2006).

experience in the polar environment. Hence, the Far South constructed by the Forsters is on the one hand a place of infinite abundance, a truly endless scientific frontier. On the other hand, their Antarctic is a place defined by the difficulty of incorporating it into European concepts of Nature –its adverse climate, peculiar phenomena, and, most strikingly, the absence of human life.

Because the Antarctic in the eighteenth century was, similar to the Arctic of the sixteenth century, an unknown space, much of the Forsters' scientific work focused on mapping and describing the characteristics of "the southern frigid zone, which had hitherto remained impenetrable to all navigators."⁸² Not only were the two concerned with noting latitudinal position throughout the voyage, they frequently checked the air temperature, gauged wind speed, sounded to determine ocean depth, recorded the presence and multitude of "ice floating in the sea," and described the hilly topography of the islands seen "in these cold, dismal regions."⁸³ The Forsters' archive of objective information made the empty Southern space into a place with a discernable environment and describable features. In addition to actively mapping the Far South in the European imagination, the Forsters conducted experiments on the current and the temperature of the sea, they gathered soil and rock samples, they studied the composition of sea ice, and they dissected nearly anything that came within range of their guns or lances. It is in this pursuit of collecting, examining, and describing, as well as in the subsequent reflection on this data, that can be found the Forsters' attempt to fit the Antarctic into the more general European understanding of Nature.

For all their success in understanding and assimilating the Antarctic environment through their work as natural historians, the Forsters struggled to conceptualize and contextualize the human relationship to the polar world. The elder Forster writes:

However, as if nature meant to convince us of her power of producing something still more wretched, we found a land [New Georgia]...absolutely covered with ice and snow and in all probability incapable of producing a single plant. Wrapt [sic] in almost continual fogs, we could only now and then have a sight of it...as though the sight of all its horrors would be too

⁸² George Forster, *A Voyage Round the World*, vol. 1, ed. Nicholas Thomas and Oliver Berghof, (Honolulu: University of Hawai'i Press, 2000), 71. Forster's work was published in German between the years 1778-80.

⁸³ *Ibid.*, 64 and Johann Forster, *Observations Made During a Voyage 'Round the World*, 27.

tremendous for mortal eyes to behold. The mind indeed, still shudders at the idea, and eagerly turns from so disgusting an object.⁸⁴

Johann's son offers a similar estimation of disgust when describing the southernmost island encountered on the voyage, declaring "The whole country had the most desolate and horrid appearance which can possibly be conceived; not a single grass could be discerned upon it, and it seemed to be forsaken."⁸⁵ What, then, was the human place in a land that failed to support even plant life?

Beyond his grumbling about a derelict land, the younger Forster repeatedly deplores the "gloomy uniformity" and the "severities of a rigorous climate."⁸⁶ "We were almost perpetually wrapped in thick fogs, beaten with showers of rain, sleet, hail, and snow," recounts George, "the temperature of the air being constantly about the point of congelation in the height of summer."⁸⁷ In characterizing these dangers, George hints at the unique struggle to be had with a malevolent polar natural world: "The ocean about us had a furious aspect, and seemed incensed at the presumption of a few intruding mortals."⁸⁸ The menace and desolation of the Far South is further driven home through Johann's overtly deterministic conclusion that "the rigors of the extremities of our globe renders the fibers and whole frame of our bodies more harsh, rigid, and insensible."⁸⁹

In the Antarctic environment, the Forsters also confronted strange atmospheric phenomena. Again, the naturalists' skills of observation and desire to subject the natural world to scientific observation and reasoned meditation were pressed by such perplexing visual effects. While drifting through the Antarctic ice Johann writes:

I must confess that though I had read a great many accounts on their nature, figure, formation, and magnitude, I was however very much struck by their first appearance. The real grandeur of the sight by far surpassed anything I could expect; for we saw sometimes

⁸⁴ Johann Reinhold Forster, *Observations Made During a Voyage 'Round the World*, 119.

⁸⁵ George Forster, *A Voyage Round the World*, vol. 2, ed. Nicholas Thomas and Oliver Berghof, (Honolulu: University of Hawai'i Press, 2000), 650.

⁸⁶ George Forster, *A Voyage Round the World*, vol. 1, 70 and 78.

⁸⁷ *Ibid.*, 70.

⁸⁸ *Ibid.*, 293.

⁸⁹ Johann Reinhold Forster, *Observations Made During a Voyage 'Round the World*, 198.

islands of ice of one or two miles extent, and at the same time a hundred feet or upwards above water.⁹⁰

George, too, found himself both bewildered and amazed by the icy horizon that lay before the ship, suggesting “the whole scene looked like the wrecks of a shattered world, or as the poets describe some regions of hell; an idea which struck us the more forcibly, as execrations, oaths, and curses re-echoed about us on all sides.”⁹¹ The Enlightened scholars’ dedication to accurate measurement and systematic inquiry were confounded by this violent symphony, and they often struggled to conjure an objective interpretation of such displays.

Thus, while slicing through the debris of disintegrating icebergs near the edge of the pack, George abandoned the science of the Enlightenment in favor of a more emotive form of representation to record his polar experience. Painting in opaque watercolor, Forster’s *Ice Islands with Ice Blink* dramatically represents conditions peculiar to the polar environment. In the foreground of the picture waves lap against dissolving icebergs, in the middle ground two ships plod through the rough seas, and in the background the reflection of the sunlight off the pack ice illuminates an ambiguous horizon. Most conspicuously, for all the faunal abundance he had noted throughout the *Resolution’s* southerly voyage as “affording momentary relief from the gloomy uniformity,” George’s visual representation of the Far South is devoid of life.⁹² In his attempt to represent the grotesque beauty of a bizarre polar environment of misshapen forms and distorting atmospheric effects, George relied upon art as record.

Antarctic art demonstrated the range of human response to the polar environment: not only did paintings allow for the mechanical depiction of the character of the Antarctic sea and skies, they provided room for more emblematic representation.⁹³ While Enlightenment science had helped to bring the Antarctic within cognitive reach, landscape art gave outlet to metaphysical sensibilities:

⁹⁰ Ibid., 61.

⁹¹ George Forster, *A Voyage Round the World*, vol. 1, 291.

⁹² George Forster, *A Voyage ‘Round the World*, vol. 1, 70.

⁹³ See Fox, *Terra Antarctica*, especially Chapter 6: “Navigating Nature,” 89-106 as well as Pyne, *The Ice*, especially Chapter 4: “Heart of Whiteness,” 149-205.

Nature was found to harbor not only the physical data and matter upon which life is based, so too did it bear information relevant to the human condition. The Forsters use of science sought to offer a pragmatic presentation of the Antarctic environment as a site of bountiful scientific opportunity. Yet in their grappling with the strangeness of Antarctic nature, the conventions of science alone proved inadequate. As environmental historian Stephen Pyne has suggested, “Natural history became all the rage among the sciences, and Romanticism emerged as its artistic counterpart.”⁹⁴

POLAR LAND BECOMES POLAR LANDSCAPE: THE VISUAL ART OF CASPAR DAVID FRIEDRICH

As polar accounts and narratives became more commonplace during the 1800s, so too did the European fascination with polar lands permit progressively more emotive renderings of that strange environment. Gradually polar land was infused with cultural and spiritual value; polar Nature became a challenge to man’s strength and courage. Less concerned with mapping the natural scene and topography of the place or evaluating its economic and scientific potential, these images evoked, instead, the Romantic notion of sublimity. Increasingly, Germans discovered polar nature – its vastness, grandeur, solitude, and beauty – not through systematic, rational description of the land’s component parts, but through highly subjective compositions of its whole. No longer was polar land scientifically deconstructed and assimilated through collecting, sketching, measuring, and classifying, but rather it was presented as a metaphorical landscape that symbolized the wider struggle of humanity against Nature.⁹⁵

An exemplary German image of the polar sublime is Caspar David Friedrich’s 1823-1824 painting *The Polar Sea*. The sixth of ten children, Friedrich was born on 5 September 1774, on Rügen, a small island off Germany’s northern coast. In 1790 Friedrich enrolled at the University of Greifswald as a private student of drawing master Johann Quistorp. Having come of age during a European cultural shift from materialism to spiritualism, Friedrich reveled in Quistorp’s dedication to landscape and his

⁹⁴ Pyne, *The Ice*, 161.

⁹⁵ Chauncey Loomis, “The Arctic Sublime,” 103.

emotive approach to representing Nature.⁹⁶ Quistorp's influence is evident in *The Polar Sea*. The piece, shown originally at the exhibition of the Prague Academy in 1824 under the title *Imagined Scene of an Arctic Sea: A Wrecked Ship on the Towering Masses of Ice*, is thought to be patterned off an even earlier work, now lost, bearing the title *The Wreck of the "Hoffnung."* In 1820, the collector J.G. von Quandt commissioned a pair of pictures showing the contrast between the worlds of the South and the North. Assigning the South to Martin von Rohden, Quandt asked Friedrich to portray "the nature of the North in all its terrifying beauty."⁹⁷

The Polar Sea presents two Arctics: one, a vast, frozen waste; the other an incomparably beautiful, pristine place. More than art of record, factually presenting natural conditions in order to facilitate comprehension, Friedrich's painting depicts an idealized scene, a landscape through which events, beliefs, and values could be expressed. Whereas earlier representations had evoked polar strangeness matter-of-factly, Friedrich's painting endowed the mysterious polar land with moral significance and spiritual consequence. *The Polar Sea* gave life and expression to the European public's involvement and interest in nineteenth-century polar exploration, their amazement at the immensity of the polar world, and their alarm towards repeated polar failure (especially the inability to find the Northwest Passage).

In Friedrich's painting, the ice layer has cracked, its splinters forming a jagged pyramidal heap which towers over the stern of a ship that is, itself, fast disappearing into the frozen sea. This jumbled mess foregrounds an expansive sheet of ice dotted with equally serrated protrusions that runs to a hazy blue-gray sky. To be sure, Friedrich has not depicted the Arctic environment from direct observation – though he had "sought to adapt the experiences of scientific investigators and fellow artists to his own purposes" – but rather has interpreted what the "Arctic was becoming in the minds of many imaginative persons."⁹⁸ The painting is most probably based upon Friedrich's reading

⁹⁶ William Vaughan, *Friedrich* (London: Phaidon Press Ltd., 2004).

⁹⁷ Wieland Schmied, *Caspar David Friedrich*, trans. Russell Stockman (New York: Harry N. Abrams, Inc., 1995), 108.

⁹⁸ Vaughan, *Friedrich*, 218 and Loomis, "The Arctic Sublime," in U.C. Knoepfelmacher, ed., *Nature and the Victorian Imagination*, 103-104.

of William Edward Parry's Arctic narrative, his viewing of Johann Carl Enslin's popular polar panorama displayed in Dresden in 1822, and his observation of ice blocks breaking up on the Elbe. *The Polar Sea* presents an Arctic nightmare in a strangely serene and peaceful manner; it was, as one reviewer called it, "one of Friedrich's most unusual and most appealing compositions."⁹⁹ Most notably, Friedrich's Arctic scene is lifeless, suggesting that the polar environment was no place for humankind. This painting, then, broke from the tradition of presenting the polar world in a mechanical fashion as a measured reality. Friedrich embraced a more emotive response to the Arctic environment, in turn, transforming the land (and ice) into a (frozen) landscape. From here it was a short step to imbuing the earth's Poles with the ability to expose specifically German qualities.

In 1858 Georg Hartwig published the first edition of *Der hohe Norden im Natur und Menschenleben* (The High North in Nature and Human Life).¹⁰⁰ Drawing its content from a steadily burgeoning body of polar memoirs and travel narratives, some genuine and some fabricated, Hartwig's popular natural history ranged seamlessly from artful description of atmospheric effects to scientific record of weather patterns and climatic conditions, from academic inventory of vegetation and animal life to utilitarian commentary on the state of the northern fisheries. The author of several such "works of a semi-scientific character," Hartwig's erudite skill lay in disseminating comprehensible images of incomprehensible wildernesses – be they endless oceans, tropical paradises, or frozen realms – to the overwhelming majority of Germans who would never experience them.¹⁰¹ Hartwig's collection of polar miscellany, melding, as it did, an Enlightenment matter-of-factness with a Romantic keenness to portray through emotion Nature's terrifying beauty, marks, in some ways, a culmination of earlier strategies of representing the reach, substance, and strangeness of the high latitudes.

⁹⁹ Schmied, *Caspar David Friedrich*, 108.

¹⁰⁰ Georg Hartwig, *Der hohe Norden im Natur und Menschenleben* [The High North in Nature and Human Life] (Wiesbaden: Kreidel und Niedner, 1858).

¹⁰¹ D.F., "Hartwig's Subterranean World," *Nature* vol. 5, (1872): 305. See also Georg Hartwig, *Das Leben des Meeres* [Marine Life] (Frankfurt am Main: Meidinger Sons and Company, 1857) and Georg Hartwig, *Die Tropenwelt im Thier und Pflanzenleben* [The Tropical World in Animal and Plant Life] (Wiesbaden: Kreidel und Niedner, 1860).

Hartwig at once constructed an enigmatic Arctic “belonging to the unreal world of dreams,” a resource frontier offering potential for fishing, hunting, mining, cultivation, and trade and a scientific frontier that could aid in the production of knowledge.¹⁰² Hartwig’s book transformed Arctic space into place by defining the region geographically: he supposes the “limits of the Arctic lands...[to be] as low as latitude 60° or even 50°,” further dividing the Arctic into “two principal and well-marked zones – that of the forests, and that of the treeless wastes.”¹⁰³ And though he never travelled to the High North, Hartwig describes the Arctic land using natural history as much as he crafts it using imagination: “Dingy mosses and grey lichens form the chief vegetation and a few scanty grasses or dwarfish flowers that may have found a refuge in some more sheltered spot are unable to relieve the dull monotony of the scene.”¹⁰⁴ In this way, Arctic flora and fauna stands as constituent parts of Hartwig’s more fully conceived northern landscape.¹⁰⁵

In a revised edition of his polar natural history released in 1869, Hartwig broadens his scope to include the Antarctic. In it, he conceptualizes this more broadly conceived polar world as a “vast region over which the frost-king reigns supreme,” insisting that, though “man styles himself lord of the earth,... in these desolate tracts which are winter-bound during the greater part of the year, he is generally a mere wanderer over its surface.”¹⁰⁶ Written just as a slowly consolidating German nation began sending expeditions to the Far North, Hartwig could not have been more predictive in his construction of the earth’s Poles as sites of exploration. Future German polar ‘wanderers’ would encounter the place armed with images, conventions, and expectations informed by earlier representations of the environment. These representations, first and foremost, dealt with *a* land. They were concerned both with manipulating a diverse, unknown region into a geographical place.

¹⁰² Hartwig, *Der hohe Norden*, 20-22.

¹⁰³ *Ibid.*, 1.

¹⁰⁴ *Ibid.*, 2.

¹⁰⁵ *Ibid.*, 2. It is important to note that in 1869, Hartwig released a revised edition of his popular work entitled *The Polar World*, which included a description of the Antarctic. “The Antarctic regions are far more desolate and barren than the Arctic,” writes Hartwig, “all is one dreary, uninhabitable waste.” Though comparatively more harsh than the Far North, the Far South was conceived in a manner similar to the North – a site of fantasy, commercial potential, and scientific activity.

¹⁰⁶ Georg Hartwig, *The Polar World: A Popular Description of Man and Nature in the Arctic and Antarctic Regions of the Globe* (Wiesbaden: Kreidel und Niedner, 1869).

So too were these representations concerned with understanding *the* land; with collecting, measuring, and describing the material environment.¹⁰⁷ In doing this, the Polar Regions were interpreted in relation to interests and values external to them: polar nature lent itself to nebulous conception, economic exploitation, scientific activity, and artistic imagination.

By the 1860s, polar nature had become more than simply a product of Western European conceptual systems; it acquired purchase in more profoundly German ways. Knowledge of the polar environment was no longer formulated to assuage some curiosity but to cultivate national interest and to express national ambition. During this period, German polar protagonists vested in the polar world Germanic qualities, thereby thus mustering images of polar nature in the service of a national agenda. In this way, the newly forming German nation would put the polar world to use – both tangibly and imaginatively – towards particular cultural, economic, political, and environmental ends.

¹⁰⁷ This distinction between *a land*, as a geographic entity, and *the land*, as tangible environment, is borrowed from David Arnold, *The Tropics and the Traveling Gaze: India Landscape, and Science, 1800-1856* (Seattle: University of Washington Press, 2006).

CHAPTER 2: THE NORTH BECOMES A GERMAN LANDSCAPE

In April of 1866 August Petermann (1822-1878), German geographer, cartographer, and polar enthusiast, published the article “Die deutsche Nordfahrt, Aufruf an die deutsche Nation” (The German northern voyage, appeal to the German nation) in his *Geographische Mittheilungen* (Geographical News).¹⁰⁸ According to one twentieth-century commentator, it was an “uncommonly impressive...plea for implementation of an expedition as a sign of the will to unity of the ‘Germans of all countries’.”¹⁰⁹ Recalling the nationalist feeling of Friedrich Schiller’s 1804 fragment of a poem “Deutsche Größe” (German Greatness) – a sketch asking the German people to “salvage their respect in the face of victorious nations” – Petermann’s article proposes that Germans, though not yet politically united under the auspices of a single German state, support a national expedition to the Arctic.¹¹⁰ The article not only summarizes the petition Petermann made in Frankfurt one year earlier at the German Geographical Congress of 1865. It also lists the names of prominent Germans already in favor of such an undertaking and, on the whole, exploits an emerging sense of German patriotism (“even in Sweden” such efforts are supported) in an attempt to arouse national

¹⁰⁸ August Petermann, “Die Deutsche Nordfahrt, Aufruf an die deutsche Nation” [The German northern voyage, appeal to the German nation], *Petermanns Geographischen Mittheilungen* [Petermann’s Geographic News] 12 (1866): 144-62.

¹⁰⁹ The most thorough analysis of the events leading to the opening German Arctic exploration is Reinhold Krause, *Die Gründungsphase deutscher Polarforschung, 1865–1875* [The Period of Founding of the German Polar Research, 1865-1875], *Berichte zur Polarforschung*. Vol. 114 (Bremenhaven: Alfred-Wegener-Institut für Polar-und Meeresforschung, 1992), 55.

¹¹⁰ Lesley Sharpe, *Friedrich Schiller: Drama, Thought, and Politics* (Cambridge, UK: Cambridge University Press, 1991), 317. Schiller’s fragment locates the German nation outside of the Empire’s, then rapidly declining, political power, and suggests the national idea be realized through literature and the arts: “May Germany, at a moment when she issues without glory from a terrible war, when two arrogant nations have set their feet upon her neck, when the victor rules her fate – may she feel herself? May the German take pride in his name? May he lift his head, and with firm step appear in the company of nations? Yes, he may. He has been unsuccessful in the fight; but that which makes his worth he has not lost. The German Empire and the German nation are two different things. Bereft of political power, the German has found his worth in another sphere, a sphere of his own; and even if the Empire were to crumble to pieces, German greatness would remain unimpaired.” Petermann’s article echoes this sentiment to uphold the virtues of the German nation in its demand for the German people to support Arctic exploration that (1) other nations were engaging in and (2) German state sponsorship was not forthcoming for. So too, then, did Petermann locate the German nation in the morals of the German people not the official political bodies of the Empire. Poem printed in Kuno Francke, “German Ideals of To-day,” *Atlantic Monthly* 96 (1905): 783.

interest in organizing a Northern voyage.¹¹¹ In short, the article bound the Arctic to the German nation just as Prussia under Bismarck was launching its unification effort to resolve the German question once and for all.

Though the Austro-Prussian War in the summer of 1866 sidelined, however briefly, this budding national commitment to the polar project, because the conflict, and eventual Prussian victory, stood as a “triumphant demonstration of national virtue,” so too did it serve to bolster support for German Arctic exploration.¹¹² Viewed as an affirmation of Prussia’s industrial, economic, and scientific might, the swift victory over Austria decided the German question in favor of the *Kleindeutsch* solution. More, it awakened a long-dormant patriotic nationalism that understood unification as the fulfillment of the cultural and political hopes of all German people. Petermann moved quickly to capitalize on this momentum, publishing a series of articles in the *Geographische Mitteilungen* aimed both at mobilizing the German public’s aroused sense of national pride toward the realization of an Arctic expedition as well as at convincing German scientific and industrial communities of the practical utility – geography, geology, whaling, shipbuilding, etc... – inherent in exploration of the North. “It is high time that we Germans at last begin to show interest in the highly important subject of marine fisheries,” Petermann wrote, highlighting the economic appeal of the Arctic; suggesting elsewhere that Northern travel could benefit the German sciences – especially geography, “which may very properly be characterized as a German science,” – inasmuch as the disciplines “culminate in their most fascinating problems precisely in the Polar region.”¹¹³

¹¹¹ Petermann, “Die Deutsche Nordfahrt, Aufruf an die deutsche Nation,” 149.

¹¹² Murphy, *German Exploration of the Polar World*, 25.

¹¹³ August Petermann, “Nordseefischereien” [North Sea Fisheries], *Petermanns Geographische Mitteilungen* 12 (1866): 401 and August Petermann, “Die Deutsche Nordpol-Expedition, 1868” [The German North Polar Expedition, 1868], *Petermann’s Geographische Mitteilungen* 14 (1868): 207; See also August Petermann, “Das nördlichste Land der Erde, eine Abhandlung über die Entdeckungsgeschichte und die allgemeine geographischen und kartographischen Resultate der Expeditionen von 1616 bis 1861 unter Bylot, Baffin, Ross, Inglefield, Kane, and Hayes” [The Northernmost Land on Earth, A Treatise on the Discovery, History, and the General Geographic and Cartographic Results of the Expeditions from 1616 to 1861 under Bylot, Baffin, Ross, Inglefield, Kane, and Hayes], *Petermanns Geographische Mitteilungen* 13 (1867): 176-85 and August Petermann, “Der Walfischfang und die Robbenjagd im europäischen Eismeer” [Whaling and Seal Hunting in the European Polar Sea], *Petermanns Geographische Mitteilungen* 13 (1867): 413-22.

The articles in *Petermanns Geographische Mittheilungen* epitomized the spirit of a German people enlivened by patriotism and the prospect of nationhood. In this way, the Arctic environment became one dimension of the resolution of the German question. As recent literature on the formation of national identities has suggested, European nations were actively constructed, they were products of cultural imagination and symbolic articulation.¹¹⁴ German polar protagonists participated in this cultural invention of nationhood by modeling the Arctic as an arena in which to negotiate the differences between regional and local identities in German society. The unifying character of a national Arctic expedition aimed to knit together the disparate German nation through images of the Northern landscape.

The German Arctic story, then, is framed by an overarching question: how did the Arctic landscape come to help people feel German?¹¹⁵ Indeed, German territorial aspirations in the North were never realized, and no piece of the Arctic ever became part of the Second German Empire. Instead, we must deal with how the Arctic environment became important to shaping German identity, and, more specifically, we must explore the invention of this symbolic importance. Undeniably, the history of German interaction with the Arctic between 1865 and 1880 is one of human mastery over the natural world. By overcoming environmental hardships and constraints in the Arctic, expeditions proved the worth of the German people, validated German scientific inventions, and fulfilled a German Northern destiny. As laid out in the previous chapter, the German construction of the polar world was far from a new project; this lineage was solidly anchored in older mythology, scientific practice, and artistic tradition. What was unique by 1865 was its derivation from a new situation – the push for German unification by liberals and Bismarck – and its attachment to explicitly nationalist undertakings. No longer did Germans accompany the voyages of other nations, but rather they led

¹¹⁴ I rely here both on the concept of the social construction of community as well as the concept that the nation-state is not the only framework under which national sentiment can be expressed: There can be national feeling and identification without the political entity of the nation-state. Benedict Anderson, *Imagined Communities: Reflections on the Origin and Spread of Nationalism*, rev. ed. (London: Verso, 2006).

¹¹⁵ I attempt, here, to fit the German story alongside the historiography on how the ice both fascinated the British public and came to symbolize many facets of British culture. See Spufford, *I May be Some Time*; Robert David, *The Arctic and the British Imagination, 1818-1914* (Manchester: Manchester University Press, 2000); and Jen Hill, *White Horizon: The Arctic in the Nineteenth-Century British Imagination* (Albany, NY: State University of New York Press, 2008).

German national voyages, and upon the return of these expeditions German explorers, German science, and German industry created images and representations of the Arctic environment correlative to the ideals and aspirations of the German people. The Arctic environment was fabricated during this decade of German exploration by travel narratives, scientific terminologies and texts, and technological interventions. In this way, it fell victim to both German sensibilities and expectations. An examination of the environmental discourse surrounding the German engagement with the Arctic reveals larger concerns over unification and connections between Arctic nature and German nation-building.

AUGUST PETERMANN: ARCTIC GEOGRAPHER AND ARMCHAIR EXPLORER

August Petermann was born in 1822 in the village of Bleicherode in Thuringia. The second child of an impoverished family of six children, he “was at first intended for the Church.”¹¹⁶ However, having shown geographical proclivities in Grammar School, Petermann was instead adopted by the noted German cartographer Heinrich Berghaus. Entering Berghaus’ geographical school in Potsdam in 1839, Petermann quickly gained recognition for his work on various projects, including designing the maps to accompany Alexander von Humboldt’s account of his journey through central Asia. Moving to Scotland in 1845, Petermann’s attention quickly shifted to the geography of the Polar Regions.¹¹⁷ In quick succession, Petermann took part in Alexander Keith Johnston’s compilation of *The Physical Atlas* (1848) next aiming his geographical enthusiasm toward the efforts to solve the mysterious disappearance of Sir John Franklin.¹¹⁸ Proclaimed as one of England’s greatest explorers, Franklin vanished in the Canadian Arctic in 1845, inducing a string of unsuccessful, often ill-conceived, search expeditions as well as a host of theories and explanations regarding the crew’s fate. While in Britain,

¹¹⁶ “Obituary: Dr. Augustus Petermann,” *Proceedings of the Royal Geographical Society and Monthly Record of Geography*, New Monthly Series 1, no. 2 (Feb., 1879): 133.

¹¹⁷ Hugo Ewald Weller, *August Petermann: Ein Beitrag zur Geschichte der geographischen Entdeckungen und der Kartographie im 19. Jahrhundert. Anhang I: Petermanns Schule and Anhang II: Bibliographie* [A Contributor to the History of Geographical Discoveries and Cartography in the 19th Century. Appendix I: Petermann’s School and Appendix II: Bibliography] (Liepzig: Otto Wiegand, 1911).

¹¹⁸ August Petermann, *The Search for Franklin: A Suggestion Submitted to the British Public* (London: Brown, Green and Longmans, 1852) and August Petermann, “Sir John Franklin, the Sea of Spitzbergen, and Whalefisheries in the Arctic Regions,” *The Journal of the Royal Geographical Society* 23 (1853): 129-136.

Petermann also served as the head of the geographical department of the journal *Athenaeum*. This post afforded him contact with well-known British geographers and lent him access to the expansive geographical holdings of various London libraries.

Accepting an appointment at the Geographical Institute in Gotha, Petermann returned to Germany in 1854 and, one year later, founded *Petermanns Geographische Mittheilungen*. The *Geographische Mittheilungen* quickly acquired a reputation as Europe's cardinal organ for the publication of geographical articles, reviews, maps, and all things pertaining to exploration. Attesting to its wide prestige, many of the journal's thousands of subscribers were non-German, helping to make the magazine into "an influential force in European geography."¹¹⁹ Owing in part to his Continental notoriety, Petermann was named an Honorary Fellow and Correspondent to the Royal Geographical Society in 1864. "There was at that time no man in Europe who knew better than Petermann the problems that were still awaiting their solution in the unknown parts of the globe," writes one reviewer of Hugo Weller's 1911 biography of Petermann, "nor which of these problems must be attacked next, nor who would be the best man for the one which happened to be under consideration."¹²⁰

Yet for all his international acclaim and ambition, Petermann held deep nationalist sympathies, expressing no greater hope than to excite African and Arctic explorations in Germany, "where the geographical interest had long been dormant owing to her deplorable political condition."¹²¹ An active organizer, promoter, publicist, and author of more than 600 articles on polar exploration, Petermann's success awarded him the title of "the spiritual father and tireless recruiter of German polar research."¹²² Though Petermann's passion for scientific exploration won him praise around the world, the same geographical instincts that contributed to the founding of so many Arctic expeditions, would eventually be proven wrong by those same expeditions. "Convinced that the top

¹¹⁹ Murphy, *German Exploration of the Polar World*, 18.

¹²⁰ Martha Krug Genthe, "August Petermann: A Review," *Bulletin of the American Geographical Society* 43, no. 11 (1911): 845.

¹²¹ *Ibid.*, 845.

¹²² Ulrich Hübsch, "August Petermann," *Polarforschung* 48, no 1/2 (1978): 187.

of the globe was covered by an ice-free, navigable ocean,” Petermann was not only certain of the navigability of the polar seas during the summer months but also that this route offered a convenient maritime shortcut over Russia, a northeast passage.¹²³ “The ice pack as a whole forms a mobile belt on whose polar side the sea is more or less free of ice,” wrote Petermann. “Ships that break through this ice belt will find a sea navigable to the highest latitudes and to the Pole itself.”¹²⁴ But Petermann’s polar hypothesizing did not stop with the mythical ‘open polar sea.’ He also believed that Greenland extended to the North across the top of the world, that the Antarctic region was composed of mostly water and harbored no continent, and that, if not an entirely ice-free polar sea, the warm waters of the Gulf Stream current must surely shoot up from the south carving a navigable polynya through the Arctic Ocean ice pack – a belief later investigated by the American explorer Isaac Israel Hayes.¹²⁵

In fairness to Petermann, these now seemingly counterintuitive theories found grounding in the scientific understandings and observations of the time.¹²⁶ As German polar historian David Thomas Murphy points out, “Many explorers had noted patches of open water in the Far North, and the great dream of the Northwest Passage, and ice-free route over Canada, tantalized explorers from Hudson’s day to that of Franklin and beyond.”¹²⁷ Validity aside, Petermann’s hypotheses both mark a tremendous increase in polar exploration on account of the many attempts to either disprove or authenticate them as well as “embody the transition from the old speculative to the new empirical method in geography.”¹²⁸ Pushing beyond the generalized claims and cosmic speculations indicative of Humboldtian science, Petermann increasingly tried to base his work on scientific accuracy,

¹²³ Murphy, *German Exploration of the Polar World*, 18.

¹²⁴ August Petermann, “Die Eisverhältnisse in den Polar-Meeren und die Möglichkeit des Vordringens in Schiffen bis zu den höchsten Breiten,” [The Ice in the Polar Seas and the Likelihood of Ships Progressing to the Highest Latitudes] *Petermanns Geographische Mittheilungen* 11 (1865): 136-140.

¹²⁵ See Isaac Hayes, *The Open Polar Sea: A Narrative of a Voyage of Discovery Towards the North Pole* (London: Sampson Low, Son, and Marston, 1867) and Sherard Osborn, Richard Wells and August Petermann, “On the Exploration of the North Polar Region,” *Proceedings of the Royal Geographical Society of London* 12, no. 2 (1867-68): 92-113.

¹²⁶ Petermann admits as much in a letter to the Royal Geographical Society in which he writes “The foregoing points...have not only not been controverted, but more and more corroborated by recent research and the testimony of British seamen.” *Proceedings of the Royal Geographical Society of London* 9 (1865): 93.

¹²⁷ Murphy, *German Exploration of the Polar World*, 19.

¹²⁸ Genthe, “August Petermann: A Review,” 847.

presenting the actual conditions of nature in its most diverse and complete manifestation. Indeed, it seems safe to say that though based on “very scarce data,” Petermann’s concept of physical geography was informed by some amount of observational evidence; thus, investigation of his various claims required extensive exploration into the Arctic reaches.¹²⁹ Petermann’s passionate defense of his views instigated, between 1865 and 1880, a public call for a German-sponsored Arctic voyage.

ARCTIC EXPLORATION AND THE NATIONAL NARRATIVE

“What a triumph for Germany,” wrote Petermann in 1868, “if the seas and lands beyond 80° north latitude received a *German* nomenclature, if a *German* mariner first advanced there, if a *German* keel first furrowed the floods of the North Pole!”¹³⁰ Here, Petermann appealed to German patriotic duty, framing the Arctic as a space in which Germans could not only formulate but also display their national character. If, indeed, a sense of belonging had to be refocused from earlier allegiances – confessional, regional, or political – onto a new ‘German’ ideal, Petermann offered the Arctic environment, and the glories to be achieved there, as an appropriate object against which such a unified identity could be modeled. Crucial to this project, Petermann tried to distinguish the potential German contribution to the Arctic tradition from that of other nations. By claiming that Germans held unique qualifications readying them for confrontation with the forces of climate and nature in the Arctic, Petermann rallied public support: “In such undertakings other, less cultivated, nations have already hurried far ahead of us...We see that even in France the idea of a northern voyage has found support, and a great national collection has been created.”¹³¹

The plea worked and with monies flooding in from German communities across the Western world, Petermann put to organizing a German national Arctic expedition. Almost immediately he found a suitable leader in Capt. Karl Koldewey, an energetic thirty-one-year-old civilian navigator

¹²⁹ E. Tammiksaar, N.G. Sukhova, and I.R. Stone, “Hypothesis Versus Fact: August Petermann and Polar Research,” *Arctic* 52, no. 3 (Sept. 1999): 241.

¹³⁰ Petermann, “Die deutsche Nordpol-Expedition,” 208, emphasis in the original.

¹³¹ *Ibid.*, 212 and 209.

who had been studying a series of courses on mathematics, physics, and mechanics at the University of Göttingen in order to receive certification as an instructor of navigation. Born in Bücken, Lower Saxony, on 26 October 1837, Koldewey enlisted as a sailor immediately following Grammar School at the age of sixteen. At age twenty-two he enrolled in naval school in Bremen, receiving there the nautical training that would later qualify him as a captain. Described as willing “to sacrifice all his hopes to take part in the North Polar expedition, even if it costs his life, since one knows one dies for the renown of the German name,” Koldewey’s patriotism and enthusiasm fit perfectly with the wider tone of the undertaking.¹³²

Eager to set sail before the German public lost interest in the Arctic venture, Petermann next compiled a crew of experienced seamen consisting of ten Germans and two Norwegians – no scientists accompanied the expedition. At the same time, Koldewey secured a vessel, the Norwegian yacht *Grönland*, noting later that “Through the purchase of the ship, we were granted the right to carry the German flag,” and promptly set about adapting the vessel for icy conditions by attaching iron plating to the hull and reinforcing its internal structure.¹³³ The newly outfitted, and newly christened, *Germania* departed Bergen, Norway, on 24 May 1868, under instructions that their chief aim was “the attainment of the highest possible latitude”.¹³⁴

The First German Arctic Expedition lasted 140 days. Crossing the Arctic Circle on 28 May, just four days into their voyage, would be the greatest practical accomplishment of the expedition. Throughout the following four months the crew experienced a series of setbacks: impenetrable ice floes, strong winds and high seas, and tedious plodding through dense, seemingly endless, fog. “A sadder and more barren region cannot easily be imagined,” Koldewey reported of the Northern landscape. “Everywhere, naked, dark stones, thrown wildly over one another, without a trace of soil

¹³² Breusig cited in Petermann, “Die deutsche Nordpol-Expedition,” 212 and 213, quoted in Murphy, *German Exploration of the Polar World*, 27.

¹³³ Karl Koldewey and August Petermann, “Die Erste Deutsche Nordpolar-Expedition im Jahre 1868” [The First German North Polar Expedition in 1868], *Petermanns Geographische Mittheilungen, Ergänzungsheft* 28 (1871), 2.

¹³⁴ August Petermann, “Instruktion für den Oberbefehlshaber der Expedition” [Instructions for the Commander of the Expedition], printed in “Die deutsche Nordpol-Expedition,” 214-218.

or vegetation. All was dead and barren.”¹³⁵ Returning to German waters at Bremerhaven on 10 October 1868, the expedition had managed little in the way of its expressed instructions. It had failed to reach the coast of Greenland; had done only occasional investigation into the phenomenon of an ice-free polar sea; brought back a meager scientific booty; and had pushed the highest latitude attained by boat to only 81° north. This register of already dismal achievements was further humbled by the comparative success of the simultaneous Swedish exploration of Greenland under Nils Adolf Erik Nordenskjöld, which had not only landed on Greenland but had trekked nearly 52 kilometers inland.

However, even given its failing to execute the intended goals, the First German Arctic Expedition “was a smashing public relations success.”¹³⁶ The crew members of the *Germania* were celebrated as national heroes upon their return, and were treated to banquets and speeches in their honor. Recalling this glorious welcome in his official expedition report, Koldewey noted “it is success enough to have held upright in every respect the honor of our young German flag.”¹³⁷ The captain had remarked throughout the voyage on the crew’s willingness to struggle with the hardships encountered in the Arctic environment: “People work willingly and with great effort.”¹³⁸ “The vessel shows abundant marks of heavy collision with the ice, but is still perfectly seaworthy,” Koldewey commented to a correspondent of the London *Daily News* upon arrival in Bremen. “And the crew are in an enviable state of robust health and vigorous strength.”¹³⁹ Arctic exploration, then, by matching man against the harsh polar environment, had affirmed the fortitude and courage of the German people and had legitimated the German social and cultural norms under which those qualities were sharpened. Furthermore, the first German ramble into the Arctic wilderness had proven the ability for exploration of Northern space to elicit public interest and participation on a

¹³⁵ Karl Koldewey, *Die erste deutsche Nordpolar-Expedition im Jahre 1868* [The First German North Polar expedition, 1868] (Gotha: Justus Perthes Verlag, 1871), 48.

¹³⁶ Murphy, *German Exploration of the Polar World*, 32.

¹³⁷ Koldewey, *Die erste deutsche Nordpolar-Expedition im Jahre 1868*, 54.

¹³⁸ Koldewey and Petermann. “Die Erste Deutsche Nordpolar-Expedition im Jahre 1868,” 19.

¹³⁹ “The German Arctic Expedition,” *Boston Daily Advertiser*, 10 November 1868, col. E.

national, unified scale. Having been received at Bremerhaven by a multitude of maritime luminaries, political dignitaries, and scientific representatives, not to mention an enthusiastic public, no time was wasted in laying out plans and allocating funds for a return voyage.¹⁴⁰

* * *

Koldewey, “whose character for courage, perseverance, and self-sacrifice in the cause” embodied all that polar promoters believed the Arctic challenge could activate in the German people, was awarded the captaincy of the Second German Arctic Expedition. Resolving that this second voyage must reach and explore the eastern coast of Greenland, a new steamship, the *Germania*, was ordered to be built in Geestemünde (located on the North Sea coast near Bremen). The steamship had, by the 1860s, become both a symbol of progress as well as the ultimate marker of German mastery over nature. The power of steam had not only shrunk the globe by making the forty-four day sojourn across that Atlantic a mere two week jaunt, but had also eliminated ocean travel’s dependency on inconsistent winds and currents. And the North Sea port city of Bremen was on the forefront of this innovation. Offering regular service to the United States starting in 1847, Bremen had become the point of departure for many German emigrants and the point of entry for cotton, tobacco, coffee and rice.¹⁴¹ In 1869, the same year the Second German Arctic Expedition set sail from Bremerhaven, the German physicist and physiologist Hermann von Helmholtz delivered the opening address at the Association of German Natural Scientists and Physicians. Claiming that through scientific advances like the steamship Germans could “make the reasonless forces of nature subservient to the moral purposes of humanity,” Helmholtz patriotically insisted that “all cultivated

¹⁴⁰ “On the 24th of October, 1868, a number of gentlemen were assembled at Bremen, to celebrate the happy return of the members of the First German Arctic Expedition, including their commander Captain Karl Koldewey, and its scientific originator, Dr. A. Petermann. It was on this occasion that expression was first given to the idea of another expedition to this inhospitable region.” August Petermann, “Introduction,” in Karl Koldewey, *The German Arctic Expedition of 1869-70 and Narrative of the Wreck of the "Hansa" in the Ice*, vol. 1, ed. Henry Walter Bates, trans. Lewis Page Mercier (London: S. Low, Marston, Low & Searle, 1874), 1-2. This work is a translation and abridgement of the German edition published one year earlier: Verein für die deutsche Nordpolarfahrt in Bremen, *Die zweite deutsche Nordpolarfahrt in den Jahren 1869 und 1870 unter Führung des Kapitän Karl Koldewey*, vol. I, (Leipzig: F. A. Brockhaus, 1873).

¹⁴¹ Blackbourn, *The Conquest of Nature*, 173-75.

classes of the nation...have an interest in our labors; they look to us for further progress in civilization, further victories over the powers of nature.”¹⁴²

Agreed that a German-built steamship would serve as the primary exploratory vessel, a second ship, the schooner *Hansa*, was employed to serve as a supply boat for the overwintering party. Needing now a second pilot, Petermann posted Captain Friedrich Hegemann of Oldenburg, a civilian with prior Arctic experience as a whaling captain, to the helm of the *Hansa*. Furthermore, having insisted that “The aim of the expedition should be scientific, as well as nautical,” Petermann set about recruiting a team of specialists to accompany the Arctic voyage – the *Germania* contingent was headed by Dr. Karl Børgen, a Schleswig-born, German-educated, ex-North German Alliance army volunteer, and the *Hansa* pair led by Dr. Reinhold Buchholz, a Frankfurt-born, Berlin-and Königsberg-trained surgeon who had served in the Prussian Army in 1866.

With a crew secured, Koldewey went immediately to work awakening interest in the program by “undertaking circuits through Germany,” emphasizing, once again, the “great national importance of the undertaking.”¹⁴³ In addition to this lecture tour, a series of “invitations for subscriptions were published and sent to private individuals, as well as to corporations, to the representatives of Germany in foreign countries, and also to the magistrates of many German towns.”¹⁴⁴ One such pamphlet distributed throughout Berlin appealed, in no uncertain terms, to both national pride and the reenergized ancient dreams of nationhood:

Fellow Germans! The question whether the sea around the North Pole of our globe bristles with eternal ice, or if there too creative nature has spread life on unknown shores, is still unsolved...German explorers have already brought high honor to the German name in all the zones of our globe, but in the solving of this question Germany has recently played little part. Thanks to the national rebirth of our Fatherland, it is appropriate that it here takes its place among the other seafaring nations. The affair is a truly German matter, since the first

¹⁴² Hermann von Helmholtz, *Popular lectures on Scientific Subjects*, ed. Edmund Atkinson (New York: D. Appleton and Company, 1897), 366-68.

¹⁴³ *Ibid.*, 3-4. The call for support once again reached out to the German Diaspora: “We call the attention of our German fellow-residents to the call of the North-German Consul, for contributions towards defraying the expenses of the above-mentioned [Second German Arctic] Expedition.” *Hawaiian Gazette* (Honolulu, HI), 3 November 1869, col. D. And the plea was a resounding success, encouraging “Donations...from all sides from Germans in foreign lands, even from Honolulu and Tahiti, South America, the East Indies, and China” Petermann, “Introduction,” in Koldewey, *The German Arctic Expedition of 1869-70*, 23.

¹⁴⁴ Petermann, “Introduction,” in Koldewey, *The German Arctic Expedition of 1869-70*, 22.

exploratory voyages in those icy districts of the North Pole proceeded from Germany more than eight hundred years ago.¹⁴⁵

A similar bulletin appeared on the streets of Bremen, asserting “we will not be behind in promoting this national work. It rests for German inquiry to open up new domains, in order to show that German sailors are as qualified, as bold, and as persevering as those of other nations.”¹⁴⁶ These appeals framed not only exploration, but exploration of the Arctic as part of the German past, suggesting that Germany’s destiny lay in the North. Throughout the 1850s and 1860s Germany had acted upon its fascination of the exotic by sending expeditions to Africa: Heinrich Barth explored Northern Africa between 1849 and 1855 and Gerhard Rohlfs crossed the Sahara from 1865-67. It was only logical, then, that this expeditionary enthusiasm and success be directed toward the equally unfamiliar Arctic, a landscape wherein Germany had a long exploratory tradition. It was believed that the power of steam navigation and the fortitude of the German spirit would unveil the unexplored Arctic regions, just as they had done in Africa; and, in so doing, Arctic exploration would fulfill a German destiny that stretched from the Northern venture recalled by Adam of Bremen to the whaling excursions that sailed from German ports.

Canvassing across the many German states and enquiring, too, for support from the German Diaspora, the expedition gained backing from members of the German nobility as well as numerous German expatriates around the globe. “By degrees the interest of the nation and the whole of the country began to warm more and more,” Petermann later recalled. “New [fundraising] committees were formed in Oldenburg, Emden, and Leer, in Rheinhessen (Worms and Oppenheim), at Karlsruhe, Lubeck, Konigsberg, and Rostock” in addition to those already established in Bremen, Berlin, Munich, and Hamburg.¹⁴⁷ It seemed increasingly clear that the Second German Arctic Expedition would be a pan-German endeavor and, recognizing as much, “An account of the position of the undertaking was

¹⁴⁵ Murphy, *German Exploration of the Polar World*, 36.

¹⁴⁶ Petermann, “Introduction,” in Koldewey, *The German Arctic Expedition of 1869-70*, 6.

¹⁴⁷ Petermann, “Introduction,” in Koldewey, *The German Arctic Expedition of 1869-70*, 7.

spread over the whole of Germany by thousands of circulars, and even among the Germans in foreign towns and in Transatlantic lands.”¹⁴⁸

On 15 June 1869, the day of departure, in the presence of the King of Prussia, the Grand Duke of Mecklenburg-Schwerin, and Count Bismarck, Alexander Mosle, president of the Bremen Committee for the German North Polar Journey, praised the “greatness and importance of the object.” Making clear the notion that through struggle with and mastery over Arctic nature a German identity might be cast, Mosle went on to remind the crews of the *Germania* and *Hansa* of the “self-denial, difficulties, and dangers which lay before them, but which they all willingly braved for the honor of their native land.”¹⁴⁹ Indeed, when just minutes into the expedition the tow-cable attaching the *Hansa* to its tug snapped, Koldewey took the opportunity to extol in his official report the character of the German expeditionaires, suggesting of the incident, “had we been superstitious, we should have drawn a bad augury. But this weakness, so much indulged in by seamen of all nations, was wanting in our community.”¹⁵⁰ By 5 July the two vessels had crossed into the Arctic Circle, and, having passed “day after day...with the interesting variations of fog, thicker fog, thickest fog,” encountered ice for the first time on 15 July.¹⁵¹ Five days later on 20 July, still slicing through heavy fog and drift ice, the *Hansa* misunderstood the *Germania*’s approach signal, instead sailing off into the night. It would be the last time the two ships sailed together.¹⁵²

Koldewey continued on alone with the *Germania*, steering northwestward toward the eastern coast of Greenland. Upon reaching latitude 75°31’ north, the *Germania* found its way blocked by impenetrable ice floes, forcing a retreat south to Sabine Island, just one of a group of islands off Greenland’s eastern coast. Anchoring on 13 September in a small harbor on the south side of the

¹⁴⁸ Ibid., 23.

¹⁴⁹ Ibid., 25. See also Bremischen Comite, ed., *Die zweite deutsche Nordpolar-Expedition* [The Second German North Polar Expedition], (Braunschweig: Georg Westermann, 1870), 44.

¹⁵⁰ Ibid., 27.

¹⁵¹ Ibid., 60.

¹⁵² “Journal of Captain Friedrich Hegemann of the Ship *Hansa* During the German Expedition to East Greenland, 1869-1870” from *Tagebuch geführt während der Reise der “Hansa” und der Schollenfahrt, 2. Deutschd Nordpolarexpedition von Kaptain Fr. Hegemann* [Journal kept by Captain Fr. Hegemann during the voyage of the *Hansa* and the ice-drift, Second German North Polar Expedition], *Polar Geography and Geology* 17, no. 4 (1993): 271-72.

enclave, the crew prepared to spend the winter of 1869/70 in this snug bay. They converted their vessel to a home by dismantling the rigging, roofing and insulating the deck, and then built up windbreaks of snow and ice around the entire camp.¹⁵³ Meanwhile, Hegemann, commanding the *Hansa*, headed westward, hoping to locate the *Germania* along the Greenland coast. Encountering on its way the same ice floes that blocked Koldewey's northern passage, the *Hansa*, lacking the benefit of steam power, was gradually immobilized by the encroaching coastal ice pack. By early September 1869, the *Hansa* crew found themselves trapped in the ice, drifting southward. Taking quick appraisal of the situation, Hegemann ordered the crew to transform the ship into a winter shelter and to begin hunting Arctic game so as to ensure a steady food supply through the winter. On 19 October, however, the ice field in which the ship was locked began to shift and crack, the violent reverberations compressing the ship's hull. By the next morning the *Hansa* had been almost entirely consumed by the ice pack and its crew left stranded with only three lifeboats and an assortment of supplies salvaged from the flooded decks of the sinking vessel.¹⁵⁴ It was this winter of mutual isolation and constant battle with the Arctic elements, the crew of the *Germania* exploring by foot and by boat the icy nodes of Greenland's eastern archipelago and the epic trials of the crew of the debilitated *Hansa* – though now far more obscure than the well-known fatalism of the polar expeditions of Franklin and Scott, and Shackleton's heroism in face of disaster – that most constituted the construction of the German national identity in the ensuing travel narratives.

Most common in these northern narratives was the allusion to the extraordinary harshness of Arctic nature and the German resolve in the face of these environmental extremities. "Nowhere does Nature show herself with greater power and expression than in the Arctic regions," wrote Koldewey, noting especially the disorientating effect of the "impervious veil of fog," the invasive cold and damp, and, perhaps most horrifying, the "peculiar unearthly moaning and groaning of the ice-floes." At times nature was even thought to be conspiring against the expedition and the nation, as

¹⁵³ Koldewey, *The German Arctic Expedition of 1869-70*, 288-97.

¹⁵⁴ "Journal of Captain Friedrich Hegemann of the Ship *Hansa*," 287-88.

evidenced in Koldewey's reference to these ice floes as "obstinate companions that impeded the progress of our *Germania*."¹⁵⁵

The crew members of the *Germania* similarly recalled the malice of Greenland's environment: "Besides the cold," wrote Dr. Adolphus Pansch, surgeon aboard the ship, "wintering in the North has another enemy awaiting, which often brings on illness; this enemy is the damp."¹⁵⁶ Yet, as Capt. Hegemann notes of the *Hansa's* experience, "Throughout all the discomfort, want, hardship, [and] danger of all kinds, the frame of mind among the men was good, undaunted, and exalted." Adding further, "we were always actively employed, and daily order and regularity were rigidly kept up" despite "the monotony of the landscape which surrounded us at the end of the year."¹⁵⁷ Even Dr. Gustav Laube, who admitted to frequent "dark times," found in the survival of the *Hansa's* crew proof of the strength of the German character, claiming "why shouldn't it be possible to overcome the risk? God never forsakes a good German!"¹⁵⁸ Koldewey, too, commended the German spirit in the face of environmental obstacles, suggesting, in a decidedly less ambiguous manner, how the encounter with Arctic nature helped to bring out the bravery and resourcefulness of the German crew.

We stood and felt that we were at the entrance of a new world, whose whole enchantment had thus burst upon us. At first there was an impenetrable struggle with the mighty powers of nature; but now we were thoroughly prepared for anything that might turn up, and looked forward with impatience to our advancing westward... A way for the *Germania* must and should be found.¹⁵⁹

Not only did the German Arctic explorers portray themselves as victorious in a tussle against nature at its most hostile, so too do their descriptions present the polar environment as an unconquered wilderness. "No more exciting situation can be imagined than that of an explorer in unknown lands," boasts Koldewey, "more especially when nature seems to have surrounded them

¹⁵⁵ Koldewey, *The German Arctic Expedition of 1869-70*, 54, 71, 292, 320.

¹⁵⁶ Adolphus Pansch quoted in Koldewey, *The German Arctic Expedition of 1869-70*, 338.

¹⁵⁷ Friedrich Hegemann quoted in Koldewey, *The German Arctic Expedition of 1869-70*, 134 and 117-18.

¹⁵⁸ Gustav Laube, *Reise der Hansa ins nördliche Eismeer* [Journey of the Hansa in the Polar Sea] (Prague: J.G. Calve, 1871), 52.

¹⁵⁹ Koldewey, *The German Arctic Expedition of 1869-70*, 73-74

with an impenetrable wall, and the earth is as yet untrodden by the foot of man.”¹⁶⁰ In presenting the Far North as a space of purity, devoid of human presence or control, expeditions to these desolate tracts could serve to showcase the German ability to master an unconquered wilderness, and the cultural validation this provided. Because so few natural landscapes remained in Germany, the unknown Arctic regions provided the most convenient outlet through which the German people could experience the positive impacts afforded by the struggle with pristine nature.¹⁶¹ The unique environment of the North became a blank canvas upon which to design a national identity in the German imagination. Koldewey presents the Arctic landscape in just this way: “The eyes of all rested with amazement on this grand panorama: it was a glorious but serious moment, stirred as we were by new thoughts and feelings, by hopes and doubts, by bold and far-reaching expectations.”¹⁶²

Indeed, this Arctic narrative reveals wider German priorities. Both the crew of the *Hansa* – who had been housed by Moravian missionaries on the southeast coast of Greenland, carried to Copenhagen via a Danish vessel, and transported back to German soil by rail – and the *Germania* – which slipped into Bremerhaven more than a week after the *Hansa’s* men – returned in the fall of 1870 to a Germany mired in conflict and, yet again, alive with nationalist fervor. During the summer of 1870, France, agitated over the balance of power in Europe, declared war on Prussia, who, in turn, had quickly received the support of both the North German Confederation, a military alliance of twenty-two states including Saxony, as well as the South German states of Baden, Württemberg, and Bavaria. Fighting as one nation, not only were the Germans victorious, but the close of the Franco-Prussian War brought the unification of the German Empire by proclamation on 18 January 1871.

The accounts of the Second German Arctic Expedition, having been finalized and published after Germany’s unification in 1871, expose the influence of wider cultural happenings. “Flags were everywhere displayed,” recalls Hegemann of the return trip to Germany. “In the evening, every

¹⁶⁰ Ibid., 353.

¹⁶¹ For more on environmental control projects, the transformation of nature, and the lack of purely natural landscapes in Germany see Blackbourn, *The Conquest of Nature*.

¹⁶² Koldewey, *The German Arctic Expedition of 1869-70*, 68.

suburb we reached was illuminated, until we entered Hamburg in time to witness the great illumination in celebration of the victories, and thus greeted our country, as it were, in triumph.”¹⁶³ Aside from mirroring the nation’s pulsating patriotic sentiment, throughout the subsequently written polar accounts the expeditionaries recall in the Arctic environment reflections of the newly consolidated German nation. One Arctic scene encouraged Koldewey to reminisce about the crew’s time in a North German town: “We think of the last time we were on land, of the wonderfully beautiful and warm summer day at Eutin, with all the brightness of the rose-blossom and the song of the nightingale.” A pair of ice forms amidst the ice floe in which the *Hansa* was stranded sparked in Hegemann a similar recollection, motivating him to eulogize Berlin: “Two other colossal masses of ice, between which lay a picturesque narrow pass, we called the Brandenburg Gate.” In addition, Hegemann, having remembered the place where the *Hansa* sank, writes “We distinctly saw its cliffs and mountains, which...resembled the Chalky Alps near Munich.” Finally, Dr. Gustav Laube was, in the same way, moved to situate the German nation in the environment of the Far North: “The view from the summit of the mountain is extensive and beautiful. Over the bald mountain chain, strewn with giant rocks, and its neighbors beyond (which remind one of the Brockenfeld of the Hartz) the eye strays, until the far distant mountains of the island with their glaciers set the last boundaries.”¹⁶⁴

In some, perhaps small, way, then, this locating of German landscapes in the Arctic environment aimed to link the local to the national, thereby reconciling the fissures in German identity by giving all Germans a sense of belonging to polar nature.¹⁶⁵ To explain, it asserted an organic link between the German people and the Arctic landscape. While the pasting of various German landscapes unto the Arctic environment, in a sense, defined that space as German, so too did the mapping of German

¹⁶³ Hegemann quoted in Koldewey, *The German Arctic Expedition of 1869-70*, 264.

¹⁶⁴ Koldewey, *The German Arctic Expedition of 1869-70*, 58-59; Hegemann quoted in Koldewey, *The German Arctic Expedition of 1869-70*, 95, and 113; Gustav Laube quoted in Koldewey, *The German Arctic Expedition of 1869-70*, 242.

¹⁶⁵ I am not suggesting this envisioning of the German landscape in the Arctic as a precursor to the *Heimatschutz* and *Naturschutz* organizations of the late-nineteenth century. Those organizations directed their efforts at preserving and protecting specific local or regional environments with the aim of linking the community to their local environment. Recently literature on this phenomenon has suggested it was this mosaic of unique landscapes that collectively made up and provided strength to the German nation. Instead, I wish to argue simply that the incorporation of all German landscapes into the Arctic lent a sense of belonging to the national project of Arctic exploration. For more on German landscape protection see Applegate, *A Nation of Provincials*; Lekan, *Imagining the Nation in Nature*; and Rollins, *A Greener Vision of Home*.

geographic features onto the Arctic natural world lend the German nation a semblance of longevity in the Far North. It imaginatively extended German territorial boundaries to the Arctic space, a region outside of and above German class, religious, and regional divisions. In this way, the Arctic narrative acknowledged that Germans had regional affiliations, but it also allowed them participation in a national project by equating those various local environments to the image of the Arctic environment which had just been conquered by a German expedition.

Thus, a sense of belonging to a national project was not at odds with a connection to local landscape; the Arctic environment, then, became a fundamental element to the cultural construction of a German national identity. Furthermore, in a strictly symbolic manner, the expedition had left a piece of the German nation in the Arctic environment: “We left the ship at two o'clock, and pressed forward to within sixteen nautical miles of the land. Passed a peculiar icy formation, which we named the Flower-basket. Saw the coast very distinctly from a tall hummock, which we climbed, and hoisted the German flag upon it.”¹⁶⁶

Through this Arctic narrative of nationalism, German polar promoters and explorers located in the Northern environment the German nation. The prospect of a German voyage to the North had excited Germans across the globe and, by both feeding off of and fueling patriotic energy, the project of building a German nation became tied to the project of exploring the Far North. The cruelties of the Arctic environment provided instances for individual expression of “what man's nature can bear, and what man's strength and perseverance can accomplish.”¹⁶⁷ And travel narratives worked to construct from such encounters a German identity. At the same time, these travel accounts were influenced by German unification, envisioning in the Arctic landscape the mosaic of environments and identities that now made up the German Empire. To this end, Arctic exploration facilitated a two-way transfer of specifically German values and sentiments: Germans carried to the Arctic

¹⁶⁶ Hegemann quoted in Koldewey, *The German Arctic Expedition of 1869-70*, 87.

¹⁶⁷ Gustav Laube quoted in Koldewey, *The German Arctic Expedition of 1869-70*, 264.

environmental expectations and bombastic patriotism, and carried back from the Arctic description of that place and the qualities that would come to define the German character.

PRACTICAL INTEREST IN THE ARCTIC: THE SCIENTIFIC AND ECONOMIC NARRATIVE

Alongside the cultural rhetoric about the Arctic as a national landscape ran a parallel national quest to technically comprehend the Arctic environment. Standing along the banks of the Weser on 15 June 1869, Alexander Mosle, channeling the passion of August Petermann, had bid farewell to the *Germania* and the *Hansa* by reminding the crew members that

The success of the mission depends upon you participants in the expedition, representatives of German science and German maritime affairs. You have committed yourselves to your entire nation, to wager everything to reach the goal. Through you, knowledge of the North Polar sea shall be made accessible to all peoples, to the honor of the fatherland, to the honor of the young German flag, to the honor of German science and German navigation.¹⁶⁸

When Petermann sat down in June of 1869 to draw up the “Instructions for the Second German Arctic Expedition of 1869-70,” he decided the first two aims of this ‘national undertaking’ should be scientific: “First, the solving of the so-called Arctic question; second, the discovery, surveying and investigation of East Greenland...the measuring of degrees in East Greenland, and ascents of the glaciers of the interior.”¹⁶⁹ It is clear that the prestige of German science rested on the success of the expedition. More so, it is evident that the German program of polar research was decidedly patriotic. As historian David Blackbourn points out, this German pride in scientific accomplishment and human mastery over nature was nothing peculiar to German Arctic exploration, rather it found unique expression in the extension of the German reach to unexplored, unfamiliar regions of the globe. “Germany had long seen itself and been view by others as the ‘land of poets and thinkers,’” writes Blackbourn. “Brash celebration of science and technical innovation was a reaction against this stereotype.”¹⁷⁰

¹⁶⁸ Mosle cited in Bremischen Comite, ed., *Die zweite deutsche Nordpolar-Expedition*, 44, quoted in Murphy, *German Exploration of the Polar World*, 42.

¹⁶⁹ Petermann, “Introduction,” in Koldewey, *The German Arctic Expedition of 1869-70*, 19-20.

¹⁷⁰ Blackbourn, *The Conquest of Nature*, 176.

Petermann's program for the Second German Arctic Expedition not only elicited support from geographical circles across the German nation, so too did German physicists, astronomers, and naturalists commend "The scientific and maritime importance of the undertaking." Wilhelm von Freeden, mathematician, oceanographer, and founder of the North German Marine Observatory, pledged the support of his scientific academy as did the directors of many other German scientific societies.¹⁷¹ In addition to both moral and financial support, these societies also determined the outfitting of the expedition with scientific equipment should be a German task. As such, the Royal Prussian Observatory, among several other German scientific departments and companies, provided for the *Germania* and *Hansa* a "first-rate collection of astronomical and physical instruments."¹⁷² And to use all this equipment, Petermann selected six scientists – Karl Börgen, Ralph Copeland, Julius Payer, Adolphus Pansch, Reinhold Buchholz, and Gustav Laube – who, though not all German (Payer and Laube were Austrian and Copeland an Englishman), had all received their scientific training at German institutions. From all corners it appeared that German Arctic science was infused with nationalism.

The hope was that German scientific work in the North would bolster the project of nation-building by providing, through the practice of the field sciences, "the means of knowing and describing" the Arctic environment. In this way, Arctic nature came to be present in the national consciousness through scientific description.¹⁷³ In 1874, the Bremen Committee for the North Polar Journey published the second volume of their official report of the expedition, the scientific findings. The 936-page tome contained catalogues of flora and fauna found, registers of temperature, weather, nautical position, sea depth, and current velocity, and records of astronomical

¹⁷¹ Koldewey, *The German Arctic Expedition of 1869-70*, 6-7.

¹⁷² William Henry Adams, *Recent polar voyages: a Record of Discovery and Adventure, from the Search after Franklin to the British Polar Expedition, 1875-1876* (London: Thomas Nelson and Sons, 1877), 386.

¹⁷³ For more on the concept of a scientific narrative driving the creation of a national past and destiny, see Michael Bravo and Sverker Sörlin, *Narrating the Arctic: A Cultural History of Nordic Scientific Practices* (Canton, MA: Science History Publications, 2002), quote from page 18.

observations, magnetic readings, and ice composition.¹⁷⁴ It was a thorough summation of the German scientific achievement in the Arctic: through the practice of collecting, observing, and measuring German science had comprehended the Arctic environment; and through diligent classifying, sketching, and recording German science had described the space to the German people. For example, in his account of the expedition, Koldewey not only communicates technically the composition of northern waters (“We were in that part of the somewhat changing boundary where the warm Gulf Stream coming up from the south and the cold Arctic current coming down from the north just meet. This Gulf Stream is known not only by its relative warmth, but by the greater saltness [sic] and deep blue color of its waters.”), but also waxes poetic about their appearance (“The beautiful blueness of the sea struck us as soon as we left the North Sea. But from this time until we reached the ice the colors change continually, and sometimes very quickly, from dirty blue, light blue, greenish blue, bluish green, clear and transparent green, grayish green, and so on, so that our attempts at representing a series of these colors became a failure.”). More, Koldewey notes all the while that this description of the environment owes to scientific method (“A glance at the surface is not sufficient to decide the real color of the water, as it is affected by the reflected color of the heavens. The influence of the latter must therefore be excluded and we therefore examined the water through a tube. A convenient arrangement for the purpose offered itself in the opening for hauling in the screw”).¹⁷⁵

The details of scientific investigation in the Arctic held little purchase for the general public. Rather, it was the actual practice of German science and the subsequent accomplishments of that practice that encouraged German pride. By choosing the then unexplored coast of East Greenland, this unknown Arctic environment became a frontier on which German science could win glory for the German nation. “Even under the greatest difficulties,” writes Petermann, “the results from an

¹⁷⁴ See Verein für die deutsche Nordpolarfahrt in Bremen [Bremen Committee for the North Polar Journey], *Die zweite deutsche Nordpolarfahrt in den Jahren 1869 und 1870 unter Führung des Kapitän Karl Koldewey* [The Second German North Polar Journey in 1869-70 under the Leadership of Captain Karl Koldewey, vol. II, (Leipzig: F. A. Brockhaus, 1874).

¹⁷⁵ Koldewey, *The German Arctic Expedition of 1869-70*, 50-51.

investigation of East Greenland, and an extended knowledge of that still unknown coast, might be expected to mark an epoch in the history of science.”¹⁷⁶ In his forward to the chapter on the expedition’s botanical report, Bremen naturalist Dr. Franz Buchenau expressed a similar sentiment regarding the honors achieved by German science in the Arctic: “The botanical collections of the Second German Arctic Expedition offer, both through their utter extent as well as their variety, a special interest. Until this Expedition, our knowledge of the flora of the Arctic East Greenland was deficient.”¹⁷⁷

If German discovery of the secrets of this Arctic landmass aroused national pride, so too did international rivalry spur this national scientific quest. Though the eastern coast of Greenland had been sighted by Henry Hudson in 1607, by the time the Germans arrived in 1869 it had not been visited for forty years. The unknown, unmapped character of the region allowed for German scientists to pioneer the understanding of Arctic nature upon which other nations would then base their own investigations. It follows that German scientific analysis of the Arctic environment was published (conveniently, often in Petermann’s journal) and presented for an international audience, thereby bringing glory to the German nation.

In addition to the scientific findings gaining the German nation international notoriety, the program was also patriotic in the sense that it acknowledged the environmental knowledge brought by the crew – a coincidence of their residing in the various German states – as having helped them to better understand the various Arctic phenomena.¹⁷⁸ Of particular import was prior experience in the Alps. “In our Alps primary glaciers end as soon as they come into the region of 41° Fahr. mean temperature,” reports Dr. Adolphus Pansch, “in Greenland, on the contrary, this isothermal line

¹⁷⁶ Petermann, “Introduction,” in Koldewey, *The German Arctic Expedition of 1869-70*, 20.

¹⁷⁷ Buchenau in Verein für die deutsche Nordpolarfahrt in Bremen, *Die zweite deutsche Nordpolarfahrt*, II: 3.

¹⁷⁸ The data and reports earned numerous citations in Thomas Rupert Jones, *Manual of the Natural History, Geology, and Physics of Greenland, and the Neighboring Regions: Prepared for the Use of the Arctic Expedition of 1875, under the Direction of the Arctic Committee of the Royal Society* (London: H.M. Stationery Off., printed by G.E. Eyre and W. Spottiswoode, 1875). An article in the *Milwaukee Sentinel* reads: “The German Arctic Expedition which returned from the Polar Sea this fall, has published the result of its researches...The geological, zoological, and botanical collections brought home are of a rare and valuable character.” 30 December 1870, col. F.

nowhere exists, and the reaching the level of the sea and the extent of the ice is their only limit.”

This ability to draw on prior knowledge of Alpine conditions continued throughout the expedition.

Furthermore, in our Alps the slightest covering of snow on the summit of the glaciers does not fall until the beginning of September. In Greenland, again, this does not happen until a month and a half later. Some nautical miles upwards from the mouth of the glacier streams in the Fjord the ice was strikingly transparent, light blue, and peculiarly smooth. This was evidently fresh-water ice from the falling torrents, and turned by degrees into the steel-green salt-water ice.¹⁷⁹

More than providing an ample scientific base upon which to understand the Arctic, prior experiences with German nature provided the scientists a ready comparison through which to make the Arctic understandable in the German imagination.

The prevailing colour of the ice here is whitish green; the ice layers the same as those under similar circumstances in the Alps. Very different, however, is the surface of a Greenland glacier... Our ice, exposed to greater periodical and daily differences of atmospheric temperature, becomes very much denser than can be the case in Greenland, where, for the greater part of the year, the low temperature is stationary.

The assumption that knowledge of the German environment both readied explorers to face the Arctic and provided handy scenes against which to describe the Arctic environment to the German people runs throughout the scientific narrative.

Closely connected to scientific methodology was scientific travel; to carry out research one had to survive the journey. Indeed, the two-volume official report missed no opportunity to belabor the hardships, dangers, and distances traveled in the name of German science. Repeatedly throughout the texts, mention is made of the hazardous terrain, extreme Arctic cold, incessant dampness, perpetual winter fog and darkness, and, at times, savage attacks by Arctic wildlife, that plagued the crew on the journey. But even given all these handicaps, the expedition managed to accomplish an impressive amount in the way of “meteorological observations, soundings...magnetic observations, photographing, fishing, and so on.”¹⁸⁰ In addition, though the *Hansa* was lost to the ice, the crew received commendation for their efforts in not only salvaging the meteorological and hydrographical

¹⁷⁹ Pansch quoted in Koldewey, *The German Arctic Expedition of 1869-70*, 366.

¹⁸⁰ Koldewey, *The German Arctic Expedition of 1869-70*, 269 and 312. See also Verein für die deutsche Nordpolarfahrt in Bremen, *Die zweite deutsche Nordpolarfahrt*, I and II.

observations made prior to the disaster, but also for continuing to make such observations throughout the ordeal. The German expedition had both physically as well as scientifically conquered the Arctic environment and, in so doing, German science made a valuable contribution to the world. The crew members had worked under the most terrible conditions in a truly hostile environment yet had still managed to conduct proper scientific experiments and return home to write and publish the first scientific analysis of the region.

Because mapping and inventory were prerequisites for making nature commercially productive, German science aimed to benefit the project of nation-building in a more tangible way. Since 1865, when first trying to drum up interest for a German Arctic voyage, Petermann had appealed to the growing desire to protect and expand German economic might. Stressing the “benefits and importance” of the Arctic to material relations, Petermann contended “Only a very small part of the ice sea between Jan Mayen Island and Spitsbergen has been fished by the whaling fleet, and it is with good grounds generally anticipated that an exploratory expedition will locate new and richer fishing grounds.”¹⁸¹ Though his instincts, again, proved wrong – the Northern fishery was, in fact, nearing depletion – Petermann’s desire to see German science open Arctic natural resources to German industry worked to motivate support for Arctic exploration. Petermann’s program of inventory science found support in Moritz Lindeman. Lindeman, a journalist and, along with Petermann, co-founder of the Bremen Committee for the North Polar Journey, wrote a lengthy treatise on the subject of “German arctic fishing trips.”¹⁸² By detailing the history of German fishing in the Far North as well as noting other nations’ involvement and current success in the industry, Lindeman concluded that a German North Polar expedition could only have positive benefits in the way of opening to German industry the resources of the Arctic environment. This economic optimism

¹⁸¹ August Peterman, “Aphorismen über die projektirte Deutsche Nordfahrt” [Aphorisms on the Projected German Northern Journey], *Petermanns Geographische Mittheilungen* 11 (1865): 243 and Peterman, “Die Deutsche Nordpol-Expedition,” 208, quoted in Murphy, *German Exploration of the Polar World*, 25-26.

¹⁸² Moritz Lindeman, “Die arktische Fischerei der Deutschen Seestädte, 1620-1868” [The Arctic Fisheries of the German Seaports, 1620-1868], *Petermanns Geographische Mittheilungen*, Ergänzungsband VI. (1869-71): 2.

produced a German industrial narrative of the Arctic; the North, once explored by German science, would become a site of economic interest to the nation.

Upon the return of the Second German Arctic Expedition, Alexander Mosle once again toasted the crew members: “We are now able to look with pride and joy on the achievements of the sailors and scientists, they have gloriously demonstrated German nautical proficiency, German persistence and German striving for the enrichment of science.”¹⁸³ German scientific research in the Arctic was in many ways a national undertaking. From it sprung national pride in, and international recognition of, German accomplishments. German science, both its methodology and practice, provided a discourse through which to describe not only the Arctic environment, but also the German will to carry out science against the extremities of that place. German Arctic science created national heroes: the scientist believed in progress, conquest, and technology, he evidenced the values of leadership and masculinity, and, therefore, stood as an energetic national symbol. These men had left the fatherland, endured incredible hardships in a hostile environment, and had returned safely and successfully. Many Arctic scientists and explorers, as did Koldewey who became the director of the German Marine Observatory’s section for nautical instrumentation, would become representatives of the new German nation in international scientific circles. This Arctic research effort manifested itself in a scientific narrative of the Far North whereby the German nation played a key role in the discovery and mapping of an unknown environment.

CONCLUSION: GERMAN ARCTIC INTEREST DECLINES

In 1875 Moritz Lindeman and Otto Finsch, a German ethnographer and naturalist who later became a prominent and successful colonial explorer, published their “popular edition” of the Second German Arctic Expedition. Contrary to the journey’s official two-volume account released in 1873-74 by the Bremen Committee for the North Polar Journey, a text primarily intended to “provide for the

¹⁸³ Eugen von Enzberg, *Heroen Der Nordpolarforschung: Die Reiferen deutschen Jugend und einem gebildeten Leserkreise nach den Quellen dargestellt* [The North Polar Heroes: The Mature German Youth and an Educated Readership, Represented by the Sources], (Leipzig: Reiland, 1905), 175, quoted in Blackbourn, *The Conquest of Nature*, 178.

enrichment of scientific knowledge of the Polar Regions by summarizing the results of the last German voyage,” this popular account sought to make the expedition, its findings, hardships, and success, more broadly accessible to the German people. “As the necessary conclusion to an undertaking that received contribution from all circles of the nation,” wrote Lindeman and Finsch in the introduction, the account “should be for this reason the intellectual property of the whole nation.” And echoing the nationalism that spurred the voyage, the authors encouraged young Germans to remember the work “begun by German men in the greatest spirit of sacrifice and under the most difficult conditions” so they too “might take action to continue the glory of the German name.” “Indeed, in a strong healthy nation,” admonished the authors, “deeds repeatedly lead to new deeds, and it will be necessary and appropriate for Germany to never rest on laurels won.”¹⁸⁴ It was a narrative of German success against the Arctic environment, and its tone was bombastically patriotic.

When the revised edition of Lindeman and Finsch’s national narrative was released in 1883, the tone of the introduction was decidedly different. No longer exhorting German youth to take up the yoke of the national project, the authors instead applauded Germany’s work in “promot[ing] our knowledge of the nature of the Polar Regions by setting up international stations on the frontiers of the unknown Arctic and Antarctic regions.”¹⁸⁵ Rather than a national landscape in which Germans could win glory for themselves and the nation, the Arctic environment had, by 1880, become an arena of international cooperation, with Germany at its center.

In part, this loss of national enthusiasm for the Arctic can be explained by the premature death of its greatest promoter, August Petermann. Following the return of the Second German Arctic Expedition and damaged by Koldewey’s suggestion that the voyage had “thoroughly destroyed” the

¹⁸⁴ Mortiz Lindeman and Otto Finsch, *Die zweite deutsche Nordpolarfahrt in den Jahren 1869 un 1870 unter Führung des Kapitän Koldewey* [The Second German North Polar Journey in 1869-70 under the Leadership of Captain Koldewey], (Leipzig: F.A. Brockhaus, 1875), vi-vii.

¹⁸⁵ Mortiz Lindeman and Otto Finsch, *Die zweite deutsche Nordpolarfahrt in den Jahren 1869 un 1870 unter Führung des Kapitän Koldewey* [The Second German North Polar Journey in 1869-70 under the Leadership of Captain Koldewey], rev. ed. (Leipzig: F.A. Brockhaus, 1883), vi.

notion of an open polar sea, Petermann published an article attacking the captain and his decision to not more fully explore the supposed northward route.¹⁸⁶ Petermann clung adamantly to the existence of such a passage and, even in the face of exhaustive evidence – four Swedish expeditions, two German voyages, and an Austrian contingent had all been sent to investigate the hypothesis and all had failed to find navigable waters across the top of the world – refused to let go of the notion. By 1875, despite numerous awards presented to him for his efforts in promoting both cartographic work and geographic exploration in Germany and across the Continent, Petermann fell victim to “repeated attacks of bronchitis,” and “added to the physical suffering was a mental excitement of a domestic nature, which rendered him almost frantic at times.”¹⁸⁷ Compounding this agitation, Petermann divorced his wife in 1877. Petermann, with a hereditary disposition toward depression, took his own life in September 1878 at the age of fifty-six.¹⁸⁸

To be sure, interest in the Arctic had begun to wane before Petermann’s death. Not only had the Bremen Committee for the North Polar Voyage’s push for a third expedition to the Arctic been rejected by the federal Senate in 1876, so too had the attention of the recently established German Second Empire, under the Chancellorship of Otto von Bismarck, shifted to domestic concerns. Struggling with an economic slowdown that had begun almost immediately following unification, the Bismarckian Era (1871-1890) was dominated by attempts to consolidate a national state. Bismarck instituted economic policies and tariffs protecting domestic industry, took only begrudgingly to colonial interests in Africa, and, overall, cared little for exploration of what was fast becoming to the German people a “useless polar world.”¹⁸⁹ Following 1880, then, the Northern landscape was of only little importance to the German nation.

¹⁸⁶ See Verein für die deutsche Nordpolarfahrt in Bremen, *Die zweite deutsche Nordpolarfahrt*, I: 698, quoted in Murphy, *German Exploration of the Polar World*, 62 and August Petermann, “The North Pole,” *Milwaukee Weekly Sentinel*, 21 November 1871, col. H.

¹⁸⁷ “A Great Man’s Suicide,” *Daily Arkansas Gazette*, 15 October 1878, col. G.

¹⁸⁸ *Ibid.* The article states that Petermann was “an easy prey to the hereditary self-destructing mania.”

¹⁸⁹ Hugo Wichmann, “August Petermann,” *Allgemeine Deutsche Biographie* 26 (1888): 804.

This is not to suggest that Germans were not present in the high latitudes. Rather, the German presence in and representation of the polar world had shifted from nationalist to internationalist. No longer focused on putting to use the polar environment for inventing the German nation, German polar protagonists looked to the Arctic and Antarctic as realms in which to participate in the international project of understanding the earth. Best symbolizing this cooperative spirit was the International Polar Year (1882-1883), which saw twelve nations collaborate to establish fourteen polar research stations – twelve in the Northern Hemisphere and two in the Southern. The German contribution consisted of a station erected in the Canadian North serviced by a team of six scientists led by Dr. W. Giese, a station established on the southern island of South Georgia occupied by a group seven scientists led by Dr. K Schrader, and an auxiliary expedition sent to Labrador under the direction of Dr. K.R. Koch.¹⁹⁰ Meant to usher out an era of uncoordinated, independent polar research, the IPY sought to terminate the practice of polar exploration as a means to attain national glory through geographical discovery. Though this cooperative impetus led to the gathering of an immense amount of scientific data, – a feat praised, at the time, as successful completion of the IPY's field program – the intended result of bringing to an end national competition at the Poles was not achieved. Rather than jointly publishing the findings, in the years following the IPY, nations released their findings independently. Indeed, by the close of the 1880s, the polar reaches had again become places of international competition. Spurred by the Scramble for Africa, international attention had turned to the Antarctic environment, and over the course of the next two decades the Far South became for Germany a site in which to legitimize the nation's imperial claims.

¹⁹⁰ William Barr, "Geographical Aspects of the First International Polar Year, 1882-1883," *Annals of the Association of American Geographers* 73, no. 4 (Dec., 1983): 463-484.

CHAPTER 3: THE ANTARCTIC AS INTERNATIONAL PROVING GROUND

On 29 July 1895 Georg Neumayer (1826-1909), German explorer, scientist, and Antarctic enthusiast, delivered his speech “Über Südpolarforschung” (About South Polar Research) to the representatives gathered at London’s Imperial Institute for the Sixth International Geographical Congress. The address was an attempt to “popularize the plan of a German expedition” to the Antarctic, according to a later commentator.¹⁹¹ Energized by the setting up of the German Commission for South Polar Exploration at the German Geographical Congress held in Bremen three months prior, Neumayer stood before the audience and eulogized the South Polar geomagnetic work done by the German mathematician Carl Friedrich Gauss, celebrated his own contribution and the contribution of other German geographers, astronomers, and explorers in unveiling the Far South, and, on the whole, endorsed future German exploration of the region.¹⁹² Indeed, though a spirit of international collaboration had charged the halls of the Imperial Institute influencing Neumayer’s closing sentiments, it was the expression of national pride that throughout the 1890s colored bids for Antarctic exploration.¹⁹³ Two years earlier John Murray, a Scottish-Canadian oceanographer, had petitioned the Royal Geographical Society to renew Antarctic exploration, appealing in his pitch to a

¹⁹¹ The most thorough analysis done on Georg Neumayer’s contribution to German South Polar exploration is by Cornelia Lüdecke. See especially “Exploring the Unknown: History of the First German South Polar Expedition, 1901-1903,” in *Antarctica: Contributions to Global Earth Sciences*, eds. Dieter Fütterer, Detlef Damaske, Georg Kleinschmidt, Hubert Miller, and Franz Tessensohn (Berlin: Springer-Verlag, 2006): 7-11; and “Scientific Collaboration in Antarctica (1901-04): A Challenge in Times of Political Rivalry,” *Polar Record* 39, no. 208 (2003): 35-48, quote on pg. 37.

¹⁹² Carl Friedrich Gauss, a mathematician born in Braunschweig in 1777, located the magnetic South Pole in 1838, having never set foot on the Southern Continent. His pinpointing of the site at 66° south latitude and 146° east longitude not only instigated expeditions headed by D’Urville, Wilkes, and Ross, each with the aim of determining the accuracy of the calculation, so too did it create a legacy of German interest in and authority on the Antarctic region. Neumayer’s speech is printed in full as “Über Südpolarforschung,” in J. Scott Keltie and Hugh Robert Mill, eds., *The Report of the Sixth International Geographical Congress* (London: John Murray and Berlin: Dietrich Reimer, 1896): 109-162.

¹⁹³ See “Über Südpolarforschung,” 162 for Neumayer’s comments on international cooperation. While many scholars, including Lüdecke in “Scientific Collaboration in Antarctica,” have since insisted upon the cooperative impulse behind early twentieth century Antarctic exploration, this chapter contends that national competition motivated the exploratory surveys undertaken to, the scientific work completed in, and the corresponding representations produced of the Far South. This argument is introduced more broadly in Stephen Pyne, *The Ice: A Journey to Antarctica*, rev. ed. (Markham, Ontario: Fitzhenry and Whiteside, 1999).

sense of British honor and duty: “Is the last great piece of maritime exploration on the surface of our Earth to be undertaken by Britons, or is it to be left to those who may be destined to succeed or supplant us on the ocean?”¹⁹⁴ And in 1897, two years following Neumayer’s speech, the Marquis of Lothian, adjourning an Anglo-Australian Antarctic Conference held in conjunction with the Queen’s Diamond Jubilee, insisted that “the work of Antarctic research should be done by Englishmen,” further suggesting, “I know that foreign countries are at this moment striving to inaugurate expeditions in order to discover what we ought to try and do ourselves.”¹⁹⁵ It follows that German interest in the Antarctic must be evaluated against the backdrop of competing national ambitions. Indeed, across the 1890s, competition, more so than cooperation, had motivated Belgium, Britain, France, and Norway to send independent expeditions to Antarctica.¹⁹⁶ Neumayer’s lecture marks, then, the growing sensitivity to colonial rivalry that resulted in the Antarctic becoming one dimension of the German imperialist imagination.

Following the return of the Second German Arctic Expedition in 1870 and the death of August Petermann in 1878, German polar enthusiasm had waned considerably. Though German scientists participated in the International Polar Year (1882-83) by staffing expeditions to both Arctic and Antarctic waters, proposals for national expeditions in the mold of those led by Koldewey floundered in the face of diplomatic disinterest and public indifference: the plan for a Third German Arctic Expedition was dismissed by the Federal Senate in 1876 and German Chancellor Otto von Bismarck refused the offer of German-American millionaire Henry Villard to finance one-half the cost of a German Antarctic expedition in 1888. This is not to suggest, however, that there was no German presence at the bottom of the world; German explorers and mathematicians had been active in the Far South since 1856, undertaking research in geography, marine life, and astronomy.¹⁹⁷ Rather, the

¹⁹⁴ John Murray, “The Renewal of Antarctic Exploration,” *The Geographical Journal* 3, no. 1 (Jan., 1894): 2.

¹⁹⁵ “An Anglo-Australasian Antarctic Conference,” *The Geographical Journal* 10, no. 4 (Oct., 1897): 385.

¹⁹⁶ For a comprehensive list of voyages to the South see R.K. Headland, *Chronological List of Antarctic Expeditions and Related Historical Events* (Cambridge: Cambridge University Press, 1989) and Ian Campbell, *Antarctica: The Last Continent* (Boston: Little, Brown, and Co., 1974).

¹⁹⁷ A Bavarian voyage under the leadership of Johann Meyer, and accompanied by Georg Neumayer, visited both the Heard and McDonald Islands in 1856-57. August Petermann, “Die Sogenannten ‘König Max Inseln’” [The So-Called King Max

Antarctic promoter Georg Neumayer had, by the 1890s, failed to energize state and public interest in the Antarctic in the way August Petermann had generated support for Arctic voyages.

To explain, whereas Petermann had fashioned the Arctic as a national landscape, Neumayer stubbornly represented the Antarctic as a region important solely for “understanding fluctuations in global geomagnetic fields.”¹⁹⁸ To be fair, Petermann had been able to tap a pre-unification German patriotic nationalism, while throughout the late 1870s and 1880s Neumayer ran up against the fiscal restraint of Bismarck’s post-unification domestic policy. A once proud proponent of the German Arctic voyages, Bismarck remained unwilling to grant government support for a national Antarctic expedition. Bismarck’s distaste for polar ventures paralleled his general reluctance to engage in colonial endeavors; in fact, it is this disinclination that has led many scholars to label the German Empire under Bismarck a ‘hesitant overseas colonial power.’¹⁹⁹ However, Bismarck’s dismissal in 1890 by Kaiser Wilhelm II initiated the transition from an era shaped by political unification and the quest to create a national state to a period dominated by the attempt to secure Germany’s position as a world power through overseas exploits. Just as Petermann had capitalized on the inward gaze of the German people, Neumayer would capitalize on the outward gaze of the German Empire.

German citizens seeking for their nation an international identity and status equivalent to that of other imperial powers found in the young, ambitious Wilhelm II an enthusiastic figurehead.

Islands], *Petermanns Geographische Mittheilungen* 4 (1858): 17-33. Furthermore, in 1871 the first specially designed icebreaker, *Eisbrecher I*, was dispatched to the Southern ocean from Hamburg; the *Olympia* departed for the South from the same Hanseatic City in 1872. In 1873-74 the *Grönland*, captained by Eduard Dallmann, became the first steamship to reach the coast of Antarctica while completing an expedition exploring the possibilities of reviving the southern whaling industry. In 1874-76 three German expeditions headed south to track the transit of Venus: the *Arkona* commanded by Capt. Reibnitz, the *Alexandrine* led by Lt. Beck, and the *Gazelle* under the leadership of Karl Borgen. Headland, *Chronological List of Antarctic Expeditions*, 174, and 190-97. Finally, in 1898-99 Carl Chun, aboard the *Valdivia*, supervised the German Deep Sea Expedition. “The German Deep-Sea Expedition,” *The Geographical Journal* 12, no. 5 (Nov., 1898): 494-496.

¹⁹⁸ David Thomas Murphy, *German Exploration of the Polar World, A History, 1860-1940* (Lincoln: University of Nebraska Press, 2002), 66.

¹⁹⁹ See Sara Friedrichsmeyer, Sara Lennox, Susanne Zantop, eds., *The Imperialist Imagination: German Colonialism and its Legacy* (Ann Arbor: University of Michigan Press, 1998). It is important to note here that German colonial ideology has typically been divided into two concepts. The first, the emigrationist theory, advocated overseas settlement as a solution to the massive nineteenth-century displacement and emigration of Germans on account of social and economic changes. Settlement colonies afforded protection of German culture and traditional society. The second, the economic theory, championed colonies as integral components of German commercial and industrial expansion. The German presence was to be limited in these colonies, meant only to direct and protect the state’s interest in the trade of raw material. For more on these two ideologies see Woodruff Smith, “The Ideology of German Colonialism, 1840-1906,” *The Journal of Modern History* 46, no. 4 (Dec., 1974): 641-662.

Committed to challenging the hegemony of the British Empire and dedicated to solidifying Germany's place among the world's most advanced states, the new Kaiser resolved that Germany's "future lies upon the water."²⁰⁰ To realize this vision Wilhelm II appointed Admiral Alfred Tirpitz naval secretary in 1897. The German navy developed rapidly under Tirpitz's tutelage. The Naval League was founded in 1898 to manage publicity and mobilize popular favor, a fleet of German battleships was ordered built, and the Germans became a presence abroad after a naval base was established at Kiautchou in the South Pacific.²⁰¹ Conveniently, this widespread attention paid to securing German nautical supremacy intersected the growing geopolitical importance of the Antarctic region; the Sixth International Geographical Congress had resolved that "the exploration of the Antarctic regions is the greatest piece of geographical exploration still to be undertaken."²⁰² The German naval program lent, then, the practical muscle through which to realize the desire of fin-de-siècle German sailors, scientists, and politicians to contest their national rivals in exploring the Far South. "I stress," proclaimed Deputy Gröber of the Center party, evidencing both the imperial import of the Antarctic continent and its broad appeal, "that the question of dispatching a South Polar expedition has now become a matter of national honor."²⁰³ Neumayer finally had the swell upon which to build popular support for an Antarctic expedition.

²⁰⁰ The Kaiser's belief that a world-empire went hand in hand with naval supremacy was oft-expressed in public addresses such as his September 1898 speech delivered in Stettin entitled "Our Future Lies upon the Water." This sentiment is repeated in his October 1899 address in Hamburg entitled "Bitterly we need a Powerful German Fleet": "Now our Fatherland has been newly united through Emperor William the Great and is in a position to take up its glorious outward development. And right here in this great emporium of trade we feel the sense of power and energy which the German people are capable of putting into their enterprises through the fact that they are bound together and united. But here, too, we can most readily understand how necessary it is that we should have powerful support and that we can no longer continue without increasing our fighting strength upon the seas." Wilhelm II quoted in Christian Frederick Gauss, ed., *The German Emperor as Shown in his Public Utterances* (New York: Charles Scribner's Sons, 1915), 126-27 and 150-54. For more on Wilhelm's naval policy see Cornelia Lüdecke, "Die erste Südpolar-Expedition und die Flottenpolitik unter Kaiser Wilhelm II" [The First South Polar Expedition and the Fleet Policy under Kaiser Wilhelm II], *Historisch-Meereskundliches Jahrbuch* [Historical Marine Sciences Yearbook] 1 (1992): 55-75.

²⁰¹ Lüdecke, "Scientific Collaboration in Antarctica," 35. Performing the christening of a battleship in 1895, Wilhelm II further hammered his desire for the German nation to win glory through naval exploits: "As a testimony to the industry of the Fatherland, after the diligent labors of the imperial dockyards, this vessel now stands before us ready to be given over to its element. Thou shalt be enrolled in the German navy. Thou shalt serve in the protection of the Fatherland to bring defiance and annihilation to the enemy." Wilhelm II quoted in Gauss, *The German Emperor as Shown in his Public Utterances*, 86.

²⁰² Keltie and Mill, *The Report of the Sixth International Geographical Congress*, 780.

²⁰³ Helped by prolific cultural propaganda program, the German Antarctic project gained political support from the far right and the moderate center. Gröber quoted in Eugen Oberhummer, "Die Deutsche Südpolarexpedition" [The German South Polar Expedition], *Jahresbericht der Geographischen Gesellschaft in München* [Annual Report of the Munich Geographical

In this chapter I argue that Germans found in the Antarctic between 1895 and 1914 a site in which to prove and display the power of a unified German nation on an international scale. Many German Antarctic protagonists framed the Far South as a site for German expansion, a field of “international competition” with other Western states.²⁰⁴ As one German contemporary offered,

Is Germany to limit herself, as she did in the 1840s, merely to providing the intellectual impulse, while leaving the practical application of these ideas to foreigners? At a time when Germans saw their most sublime ambition as being praised as a nation of poets and thinkers, and allowed themselves in other respects to be pushed into a corner, this was quite acceptable. Now, at the end of the nineteenth century, when we look back at 1870, and at the time when our German heroes showed to an astonished world the extent of courage and daring present in the German people, things have changed. Today it is important to show the flag, to demonstrate Germany’s might and power. We cannot allow others to carry out the plans we have formulated, plans which will benefit science and bring honor to the fatherland!²⁰⁵

The Antarctic’s relatively unexplored coastline became an especially compelling arena in which Germany could challenge Britain’s naval preeminence. In addition, at the turn of the century considerable work still remained in the way of geographically mapping Antarctic space and scientifically comprehending Antarctic nature. It became a German right and responsibility to improve this knowledge. As Erich von Drygalski, leader of the First German South Polar Expedition (1901-03), wrote: “It has always been the glory of powerful seafaring peoples to expand and deepen knowledge of the seas. And in the moment where Germany is now prepared to develop its naval might to an extent that was earlier unimaginable, an expansion of nautical knowledge in the one global region where it is still lacking would be a national deed worth the cost.”²⁰⁶ Moreover, German

Society] 18, 1898-1899 (1900): 111, and cited in Erich von Drygalski, *The Southern Ice Continent: The German South Polar Expedition Aboard the Gauss 1901-1903*, trans. M.M. Raraty (Bluntisham, U.K.: Bluntisham Books, 1989), viii. Drygalski’s account of the expedition, marketed as semi-popular narrative, was first published in German in 1904 under the title *Zum Kontinent des Eisigen Südens* [To the Southern Ice-Continent] (Berlin: Georg Reimer Verlag).

²⁰⁴ Erich von Drygalski, *Die Ergebnisse der Südpolarforschung und die Aufgaben der deutschen Südpolar Expedition* [The Results of South Polar Exploration and the Tasks of the German South Polar Expedition] (Berlin: Dietrich Reimer, 1898), 18.

²⁰⁵ See Wilhelm von Bezold’s, German physicist and meteorologist, address in “Gemeinschaftliche Sitzung der Gesellschaft für Erdkunde zu Berlin und der Abteilung Berlin-Charlottenburg der deutschen Kolonial-Gesellschaft” [Joint Meeting of the Berlin Geographical Society and the Berlin-Charlottenburg Department of the German Colonial Society], *Verhandlungen der Gesellschaft für Erdkunde zu Berlin* 26 (1899): 84-85.

²⁰⁶ Drygalski, *Die Ergebnisse der Südpolarforschung*, 18, quoted in Murphy, *German Exploration of the Polar World*, 222-23, footnote 23. Drygalski spoke similar words during a publicity stop in Munich in 1898: “And at the moment when Germany is willing to shape its naval power, which was not anticipated years ago, an expansion of naval knowledge at a place where it is mostly missing would be a national achievement worthy of its price.” Drygalski quoted in Eugen Oberhummer, “Die

colonial interests in exploiting natural resources and expanding territorial claims through discovery found renewed vigor in exploration of what was increasingly recognized as the last of the world's unexplored continents.

Importantly, African, Asian, and even Arctic training provided little in the way of a template for the Antarctic experience. As Stephen Pyne has noted, "There was no ecosystem, however threatening, that could sustain an explorer. There was no native culture, maritime or terrestrial, that could guide, inform, or assist... There was only ice and more ice."²⁰⁷ Yet as the Antarctic became by the turn of the century, as had Africa in the 1880s, another field of international competition, German polar explorers and promoters increasingly took to lauding the unique ability of Germans to withstand and prosper against the misery brought on by the isolation and unfamiliarity of the environment. Just as the North had been an arena in which to formulate the German identity, the Far South became a proving ground of it; the Antarctic environment offered Germans the opportunity to exhibit the national character the Arctic environment had helped to shape.

In the opening passage of his account of the First German South Polar Expedition, voyage leader Erich von Drygalski stresses as much: "Familiar experiences were transformed, innovation arose out of the well-tried principles we had previously worked out at home, and totally new ideas occurred to us as we observed and contended with the forces of nature."²⁰⁸ Additionally, German scientists and intellectuals at home worked diligently to present the South Polar landscape as one important to the international status of the German nation. Museums installed displays and dioramas depicting South Polar life and even Carl Hagenbeck, world-renowned German animal trader and ethnographic showman, included in his famed Hamburg *Tierpark* a "Südpolarpanorama."²⁰⁹ Therefore, even against its harshness and alienness, German explorers – by virtue of their character – and German

Deutsche Südpolarexpedition" [The German South Polar Expedition], *Jahresbericht der Geographischen Gesellschaft in München* [Annual Report of the Munich Geographical Society] 17, 1896-1897 (1898): 33.

²⁰⁷ Pyne, *The Ice*, 88-9.

²⁰⁸ Drygalski, *The Southern Ice Continent*, 1.

²⁰⁹ For more on Hagenbeck see Eric Ames, *Carl Hagenbeck's Empire of Entertainments* (Seattle: University of Washington Press, 2008). Plate 7 on p.xvi-xvii is an 1913 illustrated map of Hagenbeck's *Tierpark* showing space for both a "Nordlandspanorama-Renntierplateau" and a "Südpolarpanorama."

science – by virtue of its modernity and ambition – conquered the Antarctic environment, mapping it on the national consciousness through both travel narrative as well as scientific description and display.

This story probes an overarching question: how did the Antarctic environment further German imperial ambitions and aid in elevating the international status of the German Empire? Indeed, no German colony ever materialized on the continent nor did much in the way of commercial resource ever make it to market. Instead, we must consider how Germans represented Antarctic space as an end itself and how mastery over it helped to legitimize Germany's imperial claims. It is no coincidence that the Deutsche Kolonialgesellschaft (German Colonial Society), along with several other colonialist circles, supported both ideologically and financially the Antarctic undertaking; as Prince von Arenberg made clear on behalf of the German Colonial Society at a joint meeting with the Berlin Geographical Society in 1899: "colonial policy is but one branch of our total overseas policy, and I think we have done right marking our lively and, at least, indirect interest in the subject [of South Polar exploration] by hosting this evening's presentation."²¹⁰

Undeniably, then, the Antarctic had become by 1895 a site of imperial import, the ultimate stage on which to assert that "Times [had] changed, and the German Empire too now had the capacity to put her ideas into practice and to extend her influence across the seas."²¹¹ No longer were Germans consigned to travel to the Antarctic, as the Forsters had, aboard the expeditions of other nations, nor were they expected simply to grind away at scientific objectives, as were those German crews sent to track the transit of Venus in 1874-76. Rather Germans were dispatched to the South on expeditions supported by the whole of the German nation – citizens and the government – and upon their return they put to formulating images of the Antarctic matching the ideals and desires of the

²¹⁰ See Prince von Arenberg's address in "Gemeinschaftliche Sitzung der Gesellschaft für Erdkunde zu Berlin und der Abteilung Berlin-Charlottenburg der deutschen Kolonial-Gesellschaft," 64.

²¹¹ Drygalski, *The Southern Ice Continent*, 6.

German Empire.²¹² In short, what was different by 1895 was the Antarctic's entanglement in a new situation – colonial rivalry – and its connection to German imperial aspirations. An examination of the discourse surrounding the German engagement with the Antarctic reveals the larger priorities of German expansion and the making of Germany into an international power.

GEORG NEUMAYER: ANTARCTIC SCIENTIST AND EXPLORATION ENTHUSIAST

Georg Balthasar von Neumayer was born on 21 June 1826 in Kirchheimbolanden in the Bavarian Palatinate. Showing at an early age “a decided predilection for scientific investigation,” Neumayer enrolled to study geophysics and hydrography at the University of Munich in the late 1840s.²¹³ Shortly after his graduation, Neumayer took a position aboard a voyage bound for South America, hoping to study en route the theory and practice of navigation on the southern seas. He returned to Germany in 1851 alive with a passion for Southern Hemispheric exploration and by the fall of 1852 had sailed once again for the southern oceans, this time to Sydney to carry out research on geomagnetism. Neumayer remained in Australia until 1854, working as a digger on the Bendigo goldfields, giving ad hoc lectures on oceanography, and, whenever possible, visiting marine observatories to conduct research.

Upon his return to Germany, Neumayer, now convinced of both the scientific and practical importance of studying the southern seas, enlisted the help of German naturalist and explorer Alexander Humboldt in persuading Maximilian II, King of Bavaria, to fund the construction of a geomagnetic observatory in Australia. Nautical instruments and, perhaps more importantly, money in hand, Neumayer returned to Australia in 1856, soon after establishing the Flagstaff Magnetical and Meteorological Observatory in Melbourne. Neumayer spent the next eight years carrying out magnetic research, eventually publishing the results of his observations in separate volumes in 1860, 1864, 1867, and 1869. Most importantly, however, the voyages to and from Australia had taken

²¹² The list of supporters published by Eugen Oberhummer in 1900 includes not only the national government and several individuals, but also scientific societies, cultural associations, and private companies. Oberhummer, “Die Deutsche Südpolarexpedition,” (1900) 95-98.

²¹³ Hy. Harries, “Dr. Von Neumayer,” *Nature* 80, no. 2066 (3 June 1909): 403.

Neumayer to the Heard and McDonald Islands, a volcanic Sub-Antarctic archipelago lying nearly 2,550 miles southwest of Perth. It was, as one contemporary noted, “From this experience he returned to Europe on fire with the desire to get up an Antarctic expedition.”²¹⁴

Indeed, as polar historian David Thomas Murphy has indicated, upon “Returning to Germany in 1864, Neumayer became a tireless promoter of exploration in the Antarctic.”²¹⁵ Convinced of the Antarctic’s importance in understanding the earth’s geomagnetic fields, Neumayer published numerous articles and delivered countless speeches across Europe lionizing the scientific potential of South Polar travel. Widely recognized for both his eloquence and expertise on matters of the Far South, Neumayer was not only elected to preside over the International Polar Conference held in Hamburg in 1879, he also collaborated closely with German polar explorer Karl Weyprecht “in securing the international agreement for circumpolar meteorological and magnetic observations” that laid the groundwork for the International Polar Year of 1882-83. By 1874 his international acclaim had earned him status as an honorary member of the Royal Meteorological Society, an accolade that would later win him an invitation from the British geographer Clements Markham, then president of the Royal Geographical Society, to deliver his aforementioned speech “Über Südpolarforschung” at the Sixth International Geographical Congress in 1895.²¹⁶ Enjoying remarkable recognition globally for his dedication to the Antarctic project, one British admirer confessed “If the name of a cherished locality is ever engraved by the earnest thought of years upon a human heart, Dr. von Neumayer’s is marked broad with the word *Südpol*.”²¹⁷

For all his international notoriety, however, Neumayer, much like his North Polar counterpart August Petermann, remained sympathetic to the endeavors of the German Empire, maintaining that his “efforts have always been solely for the advancement of science and the good of his country.”²¹⁸

²¹⁴ Hugh Robert Mill, “Obituary: Dr. Georg von Neumayer,” *The Geographical Journal* 34, no. 4 (Oct., 1909): 461.

²¹⁵ Murphy, *German Exploration of the Polar World*, 66.

²¹⁶ Mill, “Obituary: Dr. Georg von Neumayer,” 461.

²¹⁷ H.R.M., “Review: Dr. Von Neumayer and Antarctic Research,” *The Geographical Journal* 19, no. 3 (Mar., 1902): 363.

²¹⁸ Neumayer quoted from a self-compiled collection of his speeches and essays *Auf zum Südpol!: 45 Jahre Wirkens zur Förderung der Erforschung der Südpolar-Region 1855-1900* [To the South Pole: 45 Years of Work Promoting the Exploration of the South Polar Region, 1855-1900], (Berlin: Vita Deutsches Verlagshaus, 1901) in H.R.M., “Review: Dr. Von Neumayer and

Both his German pride and nautical expertise found expression when he was elected to the post of hydrographer to the Imperial Navy in 1872. Not only did he found and edit the *Annalen der Hydrographie und maritimen Meteorologie* (Annals of Hydrography and Maritime Meteorology), providing the first German outlet dedicated to publishing research on those sciences, Neumayer also served as President of both the Deutscher Geographentag (Congress of German Geographers) and the German Meteorological Society, thereby lending guidance and advice to preeminent German scientists such as Otto Krümmel, the geographer credited with popularizing the science of oceanography, and Gerhard Schott, the geographer “remembered principally as the man who brought the geographic viewpoint to the study of the seas.”²¹⁹ Furthermore, as head of the German Naval Observatory in Hamburg from its establishment in 1876 to 1903, Neumayer played an important role in directing the form and nature of oceanographic research in Germany during the final decades of the nineteenth century.²²⁰ It was his friendship and admiration for Humboldt that influenced the scientific program of the First German South Polar Expedition: following Humboldt’s philosophy of interconnectedness, the expedition planned a comprehensive investigation of the unknown Antarctic, studying not only geographical features but also the earth, water, and air.

To be sure, it was very much like Neumayer to extol the practical benefits of nautical research: his advocacy for the Antarctic project consistently returned to the potential for such investigation to “increase the certainty of navigation, and...stimulate the spirit of maritime enterprise which, from his

Antarctic Research,” 365. Note also the following passages speaking to Neumayer’s dedication to the German cause: “In the early years of the German Empire [Neumayer] strove hard to inculcate a spirit of maritime enterprise, always keeping to the front the importance of scientific observations,” Mill, “Obituary: Dr. Georg von Neumayer,” 461; and “Resolved to pursue his studies in terrestrial magnetism and in the science of the ocean, and not without the ambition of aiding a united Germany to arise and grow into a maritime power, he made a voyage to the east coast of South America in a Hamburg ship in order to acquire a practical knowledge of nautical astronomy and navigation,” H.R.M., “Review: Dr. Von Neumayer and Antarctic Research,” 363.

²¹⁹ H.R.M. “Obituary: Professor Krümmel,” *The Geographical Journal* 41, no. 1 (Jan., 1913): 72 and Max J. Dunbar, “Obituary: Gerhard Schott,” *Geographical Review* 51, no. 4 (Oct., 1961): 590.

²²⁰ Harries maintains in his obituary published in *Nature*, “To [young men entering upon a scientific career] he was the fatherly counselor who gave them every encouragement to prosecute their studies in the broadest possible manner, for he had long ago realized that science had entered upon a new era of marvelous progress. The foreign visitor to German scientific gatherings has always been struck by the universal reverence for the name of Neumayer, for there have been very few of the savants of the fatherland during the past half-century who have not been influenced, more or less, by the great personality.” “Dr. Von Neumayer,” 402.

student days, he had recognized as an indisputable element of national greatness."²²¹ In fact, much of Neumayer's work and oversight contributed to the improved navigational charts and sailing maps used by the German navy under Admiral Tirpitz.²²² Yet he also realized the value of appealing to German idealism and aspirations for global power, once reassuring an assembly of German scientists that his attention to the utility of Antarctic research "was not occasioned by the conviction that in our Fatherland a material impulse is required to promote scientific undertakings. On the contrary, I am convinced that no people on earth understands as well as the German how to cultivate research exclusively for the sake of research, intellectual endeavor solely for the sake of knowledge."²²³ Though Neumayer's call for Antarctic research won only limited success prior to the 1890s, there is no denying that his work in helping to establish the German Commission for South Polar Exploration in 1895 played a large part in "reviving interest in the subject [of Antarctic exploration] in his own country and amongst the geographers of the world."²²⁴

GERMAN IMPERIAL AMBITION AND ANTARCTIC EXPLORATION

By the time the Seventh International Geographical Congress opened on 28 September 1899 in Berlin, national rivalry had superseded international cooperation as the greatest motivator for Antarctic exploration. Increasingly, German South Polar protagonists worked to present the Southern land as an arena in which to display nationalist energies. "Once upon a time Germany could not seriously have considered sending such an expedition," boasted one polar enthusiast celebrating the power of a united Germany.

That was in the days when Germany consisted of a fragmented collection of individual states, days when our navy was underdeveloped and our overseas interests were less than

²²¹ H.R.M., "Review: Dr. Von Neumayer and Antarctic Research," 364.

²²² "The German navy and the German overseas trade are subjects which are widely discussed to-day [sic], but few recognize that the vast changes which have taken place originated in the brain of the youthful Neumayer. At a time when divided Germany had neither navy nor mercantile marine worthy of mention, Neumayer was the first to entertain the idea as to the direction in which a united Germany should advance, which was long afterwards crystallized by the present Emperor [Wilhelm II], when he declared that 'Unsere Zukunft liegt auf dem Wasser' [Our future lies upon the water]." Harries, "Dr. Von Neumayer," 403.

²²³ Georg Neumayer, "Polarexpedition oder Polarforschung?" [Polar Expedition or Polar Exploration?], *Deutsche Geographische Blätter* [German Geographical Journal – published by the Bremen Geographical Society] 3 (1880): 182.

²²⁴ H.R.M., "Review: Dr. Von Neumayer and Antarctic Research," 364.

those of other peoples. Those days are gone, thank God! Then, our German scholars were obliged to turn to others to test their theories and to conduct practical experiments. Today we can expect the aspirations of German scholars to be realized by German expeditions. Germany has today very nearly, if not quite the second most powerful navy in the world. Here is a matter on which we can all be united!²²⁵

Otto Baschin, a German geographer and meteorologist who, upon the return of the First German South Polar Expedition, helped Neumayer and Drygalski to make sense of the massive amount of data collected, further belabored the point, insisting “It was high time that Germany too should become actively involved, unless she were once again prepared to stand humbly by, leaving the glory to other nations.”²²⁶ And, though professing an air of international collaboration, even the most mundane proceedings of the Berlin Congress were strained by this prevailing animosity. The prominent British scientific journal *Nature* conveyed disgust over the decision made by the Berlin Geographical Society, hosts of the international assembly, to print the “supplementary programme of entertainments in German only.” Expressing further dissatisfaction that “German also was the one language used in the general business, all announcements were made in German only, almost all the notices exhibited were in German and sometimes even in the German script, which can scarcely be looked on as an international character.”²²⁷

Nor did the Congress’s attempts at coordinating the independent national expeditions to the Antarctic remain unaffected by this atmosphere of political tension. Most notably, British geographer and president of the Royal Geographical Society, Clements Markham’s efforts to define the fields of work of the German and British expeditions betray deeper imperial priorities. Markham, addressing the General Assembly on 29 September, divided the “unknown region” into four quadrants: the Victoria (90°E to 180°) and Ross (180° to 90°W) sections predominantly facing the Pacific Ocean and the Weddell (90°W to 0°) and Enderby Sections (0° to 90°E) accessed by voyage

²²⁵ Deputy Gröber quoted in Oberhummer, “Die Deutsche Südpolarexpedition” (1900), 111-12, and cited in Drygalski, *The Southern Ice Continent*, viii.

²²⁶ Otto Baschin, “Deutsche Südpolarexpedition” [German South Polar Expedition], *Zeitschrift der Gesellschaft für Erdkunde zu Berlin* [Journal of the Geographical Society of Berlin] 36, no. 4 (1901): 169.

²²⁷ The article drove the point home by noting “In London [at the Sixth International Geographical Congress four years earlier] the three languages [English, French, and German] were used for every written or printed notice and every important verbal announcement.” “The Seventh International Geographical Congress,” *Nature* 60, no. 1565 (26 Oct. 1899): 632.

through the Atlantic and Indian Oceans. Based upon the British tradition of Antarctic exploration – especially the expedition of British explorer James Ross with his ships the *Erebus* and *Terror* in 1839-43 – Markham assigned the Ross and Victoria quadrants to Britain and the Weddell and Enderby quadrants to Germany.²²⁸

Two things are evident in Markham’s design. First, the supposed dedication to international cooperation was more properly the splitting up of territory such that each nation’s activities (and any potential successes) would not overlap. Just as Africa had been parceled out to European powers by the Berlin conference in 1884, Markham’s distribution suggests not so much collaboration as arranged avoidance: by heading to different regions, any scientific achievements or sensational accomplishments of one nation would not be muddled with those of another. Second, this was more than an attempt to systematize the international Antarctic research program. Markham’s plan was beholden to a wider imperial scheme. To be sure, the division was not the first attempt to demarcate the spheres of influence of the German and British empires. In the wake of the German Reich’s colonial expansion under Wilhelm II – Germany had, by 1900, become not only the most visibly industrialized nation in Europe but was also threatening the British Empire’s naval dominance – the two empires had laid out, through a series of treaties, the boundaries separating the regions over which each had power.²²⁹ These myriad agreements, much like Markham’s carving up of the Antarctic space, helped to define the territorial, economic, and cultural interests of the competing empires.

By the end of the nineteenth century just as the Pacific Ocean arena held considerable priority for the British Empire, the Indian Ocean arena had become of substantial import to the German

²²⁸ Clements Markham, “The Antarctic Expeditions,” in *Verhandlungen des siebenten Internationalen Geographen-Kongresses* [Negotiations of the Seventh International Geographical Congress], vol. 2 (Berlin: W.H. Kühl: 1901), 624. Markham praises Ross’s expedition as the only true Antarctic predecessor, insisting it as the only “properly equipped Antarctic expedition. Other exploring and whaling vessels have crossed the Antarctic circle, and have gone as far as the ice allowed, or as their business seemed to require; but the ships of Sir James Ross were the only ones that were prepared for navigation in the ice, and the only ones that have penetrated through the polar pack into the true Antarctic region” (p.623). Markham’s assertion is another telling example of the political tension shaping the nature of Antarctic exploration.

²²⁹ Concerned primarily with the partitioning of African territory, agreements over boundaries and spheres of influence were made between Britain and Germany in 1885, 1886, 1890, 1893, and 1898.

Empire.²³⁰ Not only had German trade, by the 1880s, gained a firm footing on the island of Zanzibar off the coast of Tanganyika (now Tanzania), but in 1885 the German state extended its formal influence over the region by establishing the colony of German East Africa.²³¹ Over the course of the next decade, concerned over the near-constant dissolution of European protectorates in Africa and the subsequent redistribution of those colonies, the German Empire moved “to consolidate an area in Central Africa that would stretch from the Atlantic to the Indian Ocean.”²³² Control over this swath of Africa, it was believed, would provide Germany greater influence in the Indian Ocean region:

Mittel-Afrika would lie more or less in the centre of the British Empire, and Australia and India would have to reckon with this German colony in their big trade-enterprises. The policy of *Mittel-Afrika* would have a strong influence on that of Australia and India, and therefore on that of Japan too. Through *Mittel-Afrika* we should really take our place as World-Power – with great effect on South America, the Indian Ocean, and the Arab nations of North Africa; and *Mittel-Afrika* gives us a far more secure position, as against the Anglo-Saxon.²³³

The German Empire further expressed its interest in the Indian Ocean region in 1898 by laying the foundations for a rail line connecting Berlin with the Persian Gulf. While fundamentally a venture of German financial imperialism aimed at extending the German industrial influence across Eastern Europe into the Middle East, the railway was also intended to connect the German capital with a planned naval base in the Persian Gulf. More so, even prior to the sending of a German national expedition to the Antarctic, “Professor Chun of Leipzig, a prominent zoologist, had induced the Imperial German Government to supply funds” for scientific exploration in the Southern Indian

²³⁰ Niall Ferguson suggests as much in *Empire: The Rise and Demise of the British World Order and the Lessons for Global Power* (London: Penguin Books, 2002). “Not only had Britain led the Scramble for Africa,” writes Ferguson, “She has been in the forefront of another Scramble in the Far East, gobbling up the north of Borneo, Malaya and a chunk of New Guinea, to say nothing of a string of islands in the Pacific: Fiji (1874), the Cook Islands (1880), the New Hebrides (1887), the Phoenix Islands (1889), the Gilbert and Ellice Islands (1892), and the Solomons (1893)” (p.202). And, of course, Ferguson has made no mention of Britain’s Australian colony and the Empire’s interest in China and Japan. Though speculative, Germany’s increasing presence in the South Pacific may have motivated the British desire to control the Antarctic region facing the Pacific Ocean.

²³¹ John Scott Keltie, assistant-secretary to England’s Royal Geographical Society, chronicles the German interest in East Africa in *The Partition of Africa, Part 1* (London: Edward Stanford, 1895), 230-265.

²³² Edgar J. Feuchtwanger, *Imperial Germany, 1850-1918* (New York: Routledge, 2001), 171.

²³³ Emil Zimmerman, *The German Empire of Central Africa as the Basis of a New German World-Policy*, trans. Edwin Bevan (New York: George H. Doran Company, 1918), 12.

Ocean.²³⁴ On account of supporting this scientific deep-sea expedition, in the spring of 1898 alone “the German government had made a grant of 15,000£ (300,000 German marks) for oceanic research, especially in the Atlantic and Indian Oceans.”²³⁵ Indeed, the importance of the region to the German imperial plans was not lost on Drygalski who, upon returning to South Africa after wintering in the Antarctic, commented, “The extent of our overseas concerns was also apparent in Cape Town, where we had the pleasure of going aboard one of the two new Imperial Mail Steamships of the German-East African Line.”²³⁶

Within this context, it is no surprise that by April of 1899, a full five months prior to Markham’s division of Antarctica at the Seventh International Geographical Congress, the German Commission for South Polar Exploration had pinpointed both the German settlement at Cape Town, South Africa, and the Kerguelen Islands in the southern Indian Ocean as suitable sites for setting up stations to assist the German South Polar Expedition: any German voyage to the Southern Continent would go through the Indian Ocean, thereby solidifying Germany’s interest in the region and creating for the Empire a ‘Place in the Sun.’²³⁷ Deputy Gröber drew a clear parallel between the expansion of the German Empire into the Indian Ocean region and the possibilities afforded by Antarctic exploration to maintain and assert this presence, insisting “Our overseas interests are increasing from year to year in context with the development of our navy and our protectorates.”²³⁸ The partitioning of the Antarctic, then, can be likened as an extension of the Scramble for Africa and understood as a snapshot of the concerns of the British and German empires; it was another stratagem in the

²³⁴ Hugh R. Mill, *The Siege of the South Pole* (New York: Frederick A. Stokes Company, 1905), 403.

²³⁵ Notes,” *Nature* 58, no. 1491 (26 May 1898): 85.

²³⁶ Drygalski, *The Southern Ice-Continent*, 324.

²³⁷ Wilhelm II, in a speech delivered in Hamburg on 18 June 1901, summarized the German Empire’s world status as such. “In spite of the fact that we have no such fleet as we should have,” thundered the Kaiser, “we have conquered for ourselves a place in the sun. It will now be my task to see to it that this place in the sun shall remain our undisputed possession, in order that the sun’s rays may fall fruitfully upon our activity and trade in foreign parts, that our industry and agriculture may develop within the state and our sailing sports upon the water, for our future lies upon the water. The more Germans go out upon the waters, whether it be in the races of regattas, whether it be in journeys across the ocean, or in the service of the battle-flag, so much the better will it be for us. For when the German has once learned to direct his glance upon what is distant and great, the pettiness which surrounds him in daily life on all sides will disappear.” Gauss, *The German Emperor as Shown in his Public Utterances*, 181-82.

²³⁸ Deputy Gröber quoted in Oberhummer, “Die Deutsche Südpolarexpedition” (1900), 112.

ongoing imperial rivalry between the two powers, another attempt to mark off each state's region of interest by defining the area over which each served as the authority.²³⁹

When the Seventh International Geographical Congress opened in Berlin in September 1899, the German Antarctic Expedition was nearly a foregone conclusion; as one polar promoter noted in April of that year, "The three most important powers – the Government, the Reichstag, and public opinion – are favourable to the scheme."²⁴⁰ To be sure, immediately following its formation in the spring of 1895, the German Commission for South Polar Exploration – headed by Georg Neumayer and including among its members the experienced polar promoter Moritz Lindeman, the veteran polar explorers Karl Koldewey and Julius Payer, and the distinguished German geographer and President of the Berlin Geographical Society Ferdinand Freiherr von Richthofen – had begun planning the voyage. And by the spring of 1898, buoyed by enthusiastic government support and the approval of the German public (gained primarily by a nation-wide petition advocating the expedition as "a matter of national honor and duty not to lag behind other nations,"), they had determined the expedition's course, intent, and personnel.²⁴¹ At the Commission's sixth and final meeting on 19 February 1898, the Reich's support of the endeavor was made official when Rear Admiral Graf Friedrich von Baudissin became the government representative in the planning of the Antarctic expedition. Baudissin believed "that the considerable expansion that the Navy was undergoing should quite properly include active participation in scientific investigations in the ocean. Through participation in

²³⁹ My understanding of the Scramble for Africa and the interests involved comes from Thomas Pakenham, *The Scramble for Africa: White Man's Conquest of the Dark Continent from 1876 to 1912* (New York: HarperCollins, 1992). Stephen Pyne adopts a similar belief in *The Ice*, suggesting "Perhaps the most compelling cause for renewed attention [to the Antarctic] was the dangerous expansion of European colonial rivalry and the growing realization that Antarctica was the last of the world's continents not yet explored" (p.85).

²⁴⁰ Letter from Baron von Richthofen, President of the Berlin Geographical Society, to Sir Clements Markham, President of the Royal Geographical Society, quoted in "The German Antarctic Expedition," *The Geographical Journal* 13, no. 4 (Apr., 1899): 409.

²⁴¹ Quote from Drygalski, *The Southern Ice Continent*, 8.

such undertakings the great sea-powers have traditionally exercised and tested their naval strength and fostered its development.”²⁴²

Erich von Drygalski shared Baudissin’s “conviction of a national duty within an international enterprise, in which Germany could not afford to hang back.”²⁴³ A thirty-four-year-old professor of geography and geophysics at the University of Berlin who had previously guided two expeditions to Greenland (1891 and 1892-93) financed by the Berlin Geographical Society, Neumayer chose Drygalski to lead the German Antarctic mission. Born in Königsberg on 9 February 1865, Drygalski was educated in mathematics and the natural sciences, completing his PhD thesis on glacial ice in the Arctic region in 1887 under the supervision of Richthofen. Having been long considered a mere polar adventurer, Drygalski gained scientific legitimacy in 1897 following the publication of the results of his Greenland expeditions.²⁴⁴ It was Drygalski’s Arctic experience and scientific credentials that won him the job of leading the German Antarctic Expedition. One Scottish contemporary applauded the selection, commenting “we have therefore a man who has already won his spurs as a scientist, and one who, from practical experience, has an intimate knowledge of the work he has to undertake.”²⁴⁵

In April 1899 the Minister of the Interior informed Neumayer that the Kaiser had “deign[ed] to assent that the costs [of an Antarctic expedition] should be defrayed...from the Imperial internal budget.”²⁴⁶ With the approval of the public, the sponsorship of the state, and the mandate of the Kaiser in hand, Neumayer dissolved the German Commission for South Polar Exploration, turning the direction of the project over to the Imperial Department of the Interior and the planning over to Drygalski, who quickly set about equipping the expedition. As to be expected given their approval of the exploratory voyage, the German navy specially designed and built the expedition’s vessel. A product of German marine technology and craftsmanship and a model of nautical compromise, the

²⁴² Baudissin quoted in Drygalski, *The Southern Ice Continent*, 5.

²⁴³ Drygalski, *The Southern Ice Continent*, 7.

²⁴⁴ Erich von Drygalski, *Die Grönland Expedition der Gesellschaft für Erdkunde* [The Greenland Expedition of the (Berlin) Geographical Society] (Berlin: Dietrich Reimer Verlag, 1898).

²⁴⁵ William Bruce, “The German South Polar Expedition,” *The Scottish Geographical Magazine* 9 (1901): 461.

²⁴⁶ German Minister of the Interior in a Letter to Georg Neumayer, April 1899, quoted in Drygalski, *The Southern Ice Continent*, 10. The German government donated in excess of 60,000 £ or roughly 1.2 million marks in support of the polar project. “The Plans for Antarctic Exploration,” *Nature* 60, no. 1548 (29 June 1899): 202-03.

craft, built in Kiel and christened the *Gauss* after German mathematician Carl Friedrich Gauss, sported a hull powerful enough to crash through the ice-filled Antarctic waters yet sleek enough to afford stability on the rough Southern seas. Additionally, the *Gauss* provided space enough to accommodate sailors, scientists, fuel, and a smorgasbord of provisions ranging from microscopes to a library of books to a two-year supply of German lager yet remained slender enough to navigate the narrow channels of the Antarctic ice-pack.²⁴⁷ More so, the outfitting of the expedition became a matter of national honor. Nearly all of the scientific instruments, the photographic accessories, and the sporting equipment, including snowshoes, skis, and sleds, were obtained exclusively from German suppliers. The equipping of the expedition with German products by German firms became a point of national prestige; as Drygalski later noted, “We were able to supply ourselves almost exclusively with instruments made in Germany, and had an opportunity to admire the high standards attained in these areas that have been achieved here at home.”²⁴⁸

The plan of the First German South Polar Expedition seemed straightforward enough: sail to the Kerguelen Islands via Cape Town; install there an outpost for taking meteorological and magnetic measurements; and proceed from that South Indian Ocean atoll to an unknown destination somewhere in the Indo-Atlantic sector of the Antarctic. The most immediate task, then, was to sail as far south as possible and, if reaching the Antarctic coast, the crew was to erect a scientific station and over-winter in the Antarctic ice – a feat achieved only once prior, when the *Belgica*, a Belgian vessel under the leadership of Adrien de Gerlache (1898-99), accidentally found themselves beset for 375 days in the coastal ice-pack.²⁴⁹ The daring seemed intentional; what better way to prove the power of a united Germany and legitimize the German Empire’s colonial claims than to complete a task – freezing in one’s vessel along the Antarctic coast – no nation had before even purposefully undertaken? “The plan that governs this German expedition,” boomed Richthofen at the christening

²⁴⁷ Erich von Drygalski, “The German Antarctic Expedition,” *Nature* 61, no. 1579 (1 February 1900): 318-321

²⁴⁸ Drygalski, *The Southern Ice Continent*, 13.

²⁴⁹ For the details of the expedition’s plan see Erich von Drygalski, “The German Antarctic Expedition,” *The Geographical Journal* 18, no. 3 (Sep. 1901): 279-282. For the decree of intent see “The German Antarctic Expedition,” *The Geographical Journal* 18, no. 5 (Nov., 1901): 529-530.

of the *Gauss* in April 1901, “is bolder and more comprehensive” than that of any other nation pursuing exploration in the Antarctic.²⁵⁰ Indeed, the final scientific plan, drafted by Drygalski in the spring of 1901, held to the “overall consensus that the expedition was to add to the naval prestige of the German Reich.”²⁵¹

The *Gauss* set sail on 11 August 1901, just eleven days after the departure of the British National Antarctic Expedition (*Discovery*) under Capt. Robert Falcon Scott. The ship reached Cape Town on 23 November, the late arrival owing as much to the “deep-sea fishing and many soundings and temperature measurements [that] were done in the South Atlantic” as to the failure of the *Gauss* to perform as expected.²⁵² Not only had the vessel failed to achieve its purported 7-knot speed, but while crossing the Tropics the pitch insulation had melted, a leak in the stern had led to the depletion of the coal reserves on account of forcing the constant operation of the ship’s pumps, and the boat’s captain had complained about the craft’s instability in rough seas. Despite both the *Gauss*’ disappointing performance en route to South Africa, and the expedition’s arrival amidst the ongoing brutality of the Boer War, the crew found Cape Town a welcoming community.²⁵³

Believing stalwartly that the Antarctic expedition offered an opportunity to showcase the strength of the German Empire and the character of the German people, Drygalski wasted no opportunity to emphasize this point in his popular account. During his stay in Cape Town, his patriotism was especially enlivened by the ingenuity of the German settlers of Cape Town who, then living under British rule,

²⁵⁰ Baron von Richthofen quoted in Murphy, *German Exploration of the Polar World*, 74.

²⁵¹ See Drygalski’s address in “Gemeinschaftliche Sitzung der Gesellschaft für Erdkunde zu Berlin und der Abteilung Berlin-Charlottenburg der deutschen Kolonial-Gesellschaft,” 64-84 and Drygalski, *The Southern Ice Continent*. Quote from Lüdecke, “Scientific Collaboration in Antarctica,” 40.

²⁵² Erich von Drygalski and Edwin Swift Balch, “Zum Kontinent des Eisigen Sudens” [To the Southern Ice Continent], *Bulletin of the American Geographical Society* 37, no. 9 (1905): 545.

²⁵³ “It is pleasant to read Prof. von Drygalski’s hearty appreciation of the courtesy and kindness shown to the expedition when at Cape Town, not only by their compatriots, but by the colonial and military authorities and the scientific societies.” “The Voyage of the ‘Gauss’ from Cape Town to Kerguelen,” *The Geographical Journal* 21, no. 1 (Jan. 1903): 40. This report and others are derived from the updates Drygalski periodically sent to Berlin. In an attempt to keep the nation abreast of the expedition’s progress, The Berlin Institutes for Oceanography and Geography jointly published Drygalski’s correspondences in the German Empire’s official media outlet the *Reichsanzeiger* as well as the Institutes’ annual periodical entitled *Veröffentlichungen des Instituts Für Meereskunde und des geographischen Instituts and der Universität Berlin* [Publications of the Institute for Marine Sciences and the Geographical Institute at the University of Berlin]. Drygalski later drew on these published reports in the compilation of this semi-popular account of the Antarctic voyage.

had once come out in great numbers to work on the building of a railway. When this failed, and they were left both without work and without a home, they were offered this sandy, seemingly useless ground for cultivation. By sheer hard work our Westphalian compatriots have turned this barren land into a colony of vegetable gardens and potato fields which has grown in wealth, and which supplies the city with vegetables and meat. What was once as barren as our own Lüneberg Heath, in part boggy and in winter completely waterlogged, has been transformed into numerous settlements by ploughing, mixing the peaty soil with sand, digging ditches, and laying out streets, so that the whole now forms not only a significant element in the economy of the country but also represents a distinct strand of German influence, both in Cape Town itself and consequently in South Africa as a whole.²⁵⁴

In the same way German settlers tamed an unforgiving African environment, Drygalski, owing in large part to his experience in the Arctic, knew his crew would soon battle a hostile Antarctic nature, and he took comfort knowing that the Antarctic would afford his men the opportunity to similarly display their spirit, courage, physical vigor, and their overall Germanness.²⁵⁵ The *Gauss* left Cape Town for the Kerguelen Islands on 7 December, gliding out of the harbor serenaded by German ship choirs singing “Deutschland, Deutschland über Alles.”²⁵⁶

It took the *Gauss* twenty-four days to reach the Sub-Antarctic archipelago (previously known as Desolation Island).²⁵⁷ The long duration owed, in part, to bad weather, but also to the crew’s decision to land on the Crozet Island group. On Christmas Day 1901, “it was resolved to attempt a landing on one of the group, a feat that has been rarely attempted, and still more rarely accomplished.”²⁵⁸ Lying 1800 miles southeast of Cape Town at 47° south latitude, the Sub-Antarctic Island group was discovered by the French explorer Nicholas Thomas Marion du Fresne on 24 January 1772. While the rookeries surrounding the islands saw frequent sealing activity in the early

²⁵⁴ Drygalski, *The Southern Ice Continent*, 91.

²⁵⁵ I have adopted this argument from Pyne, *The Ice*, 92-3. “The great tales of Antarctic adventure – the last real sagas in Western exploration – were stories of survival. In fact, the desire to struggle, to test oneself, was apparently one of the things Western civilization brought to The Ice... As if there were a psychological obsession among Anglo-Americans to show that they were as hardy as the explorers, pioneers, and soldiers who had first built the European empires, the heroic age was populated with sagas of a number and intensity without parallel in the exploration of other continents.”

²⁵⁶ Murphy, *German Exploration of the Polar World*, 77.

²⁵⁷ Kerguelen is often cited as straddling the Antarctic convergence, a climatic boundary between air and water masses held as the approximate northern terminus of the Southern Ocean. All land lying south of the convergence is considered Antarctic, while islands north of the boundary are classified as Sub-Antarctic. Interestingly, the British *Challenger* expedition of 1872-1876 considered this island Antarctic, hence the explorers of the time may also have considered the voyage to Kerguelen one of penetrating the Antarctic convergence. See Henry Nottidge Moseley, *Notes by a Naturalist on the "Challenger": Being an Account of Various Observations made during the Voyage of H.M.S. "Challenger" round the world, in the years 1872-1876, under the Commands of Capt. Sir G.S. Nares and Capt. F.T. Thomson* (London: Macmillan and Co., 1879), 163-215.

²⁵⁸ “The Voyage of the ‘Gauss’ from Cape Town to Kerguelen,” 40.

1800s, by the mid-nineteenth century the islands were renowned mainly for their dangerous approach causing frequent shipwrecks. Included in the tally of wrecks were the British sealer *Princess of Wales* (1821), the *Strathmore* (1875), and the French vessel *Tamaris* (1887). Indeed, disaster was so common that the British navy began stocking the island with emergency supply depots and periodically sent reconnaissance missions to the deadly waters.²⁵⁹ A correspondent on the American vessel *Swatara* sent to observe the transit of Venus in 1874 described his frustration at not being able to land on the islands:

When we arrived there we hoped to find someplace sufficiently sheltered to enable us to land; but alas, we were doomed to disappointment. The wind drew around the island in such a way that the lee was very imperfect, and to send a boat's crew ashore would have been almost equivalent to condemning them to death by drowning... To run in shore and anchored would have involved the certain destruction of the ship, and to lie off the island in such a night would have been scarcely less hazardous.²⁶⁰

It was against these odds that the German Antarctic Expedition resolved to prove their hardiness by landing on the islands. "Outside the bay we were caught by a whirlwind rushing out from the valley leading down to the bay, and lashing the water into foam," recalls Drygalski of the landing attempt. "Then we came into quiet water, between far-reaching fronds of tangle, and landed easily and safely." Having proven their worth as seamen and Germans, the men next set about exploring the rock. "We stepped into an idyll of wild creatures, which said clearly enough that no human foot

²⁵⁹ For more on the discovery of the Crozet Islands see Jules Crozet, *Crozet's Voyage to Tasmania, New Zealand, the Ladrone Islands, and the Philippines in the Years 1771-72*, trans. Henry Ling Roth (London: Truslove and Shirley, 1891), 14. Crozet writes: "At three o'clock in the morning of the 24th we saw again the same island which we had first discovered the previous day. There was little wind at the time, the sea was however rough, but it was less misty. M. Marion ordered us to approach it and circumnavigate it... At eleven o'clock M. Marion had a boat lowered and ordered me into it in order to go and take possession, in the name of the King, of the larger of the two islands... M. Marion called the island the *Prise de Possession*." For more on the prominent Crozet shipwrecks see Charles Medyett Goodridge, *Narrative of a Voyage to the South Seas: With the Shipwreck of the "Princess of Wales" Cutter on one of the Crozets, Uninhabited islands; With an Account of a Two Years' Residence on them by the Crew, and their Delivery by an American Schooner* (London: Hamilton and Adams, 1832); Ian Church, *Survival on the Crozet Islands: the Wreck of the Strathmore in 1875* (Waikanae, New Zealand: Heritage Press, 1985); Edward Dakin, "The Flight of the Albatross," *Notes and Queries: A Medium of Intercommunication for Literary Men, General Readers, Etc.*, Series 7, vol. 4 (July-December 1887): 385-86; and Charles Sears Baldwin, *Composition Oral and Written*, 3rd ed. (New York: Longmans, Green, and Co., 1911), 280-281. For more on patrols and depots around dangerous Sub-Antarctic and Antarctic islands see William Allingham, "Castaways, and their Influence on Population," *Gentlemen's Magazine* 291 (July-December 1901): 273-281.

²⁶⁰ "The Transit of Venus," *The New York Times*, 7 December 1874, pg. 5. The *Challenger* expedition (1872-76) met similar hardship in their attempts to land on the Crozets: "The place was evidently deserted. There was too much surf on the beach to allow of landing. It was late in the evening, and a bank of fog appeared to be drifting up to envelope us; so after sounding we made for Kerguelen's Land." Moseley, *Notes by a Naturalist on the "Challenger"*, 182.

had ever before trod this solitary strand.”²⁶¹ Drygalski’s report of the crew’s experience on the Crozets, circulated jointly by the Berlin Institutes for Oceanography and Geography as an update on the expedition’s progress to the public in August 1902, further illustrates the imperial character of the voyage. Not only had Drygalski celebrated the *Gauss* success where so many other had vessels met failure, so too did he represent the island as an unexplored site (though it was not) made known to the world through the courage and skill of the German expedition. And once the crew landed, they set about conquering the islands’ wildlife. “We feasted on the island in the true sense of the word,” notes Drygalski, “in that ducks, cormorants and sea-elephants all became ingredients of our meals.”²⁶² For Drygalski, landing on the Sub-Antarctic Crozet Islands was a display of both the greatness of the German spirit and the German mastery over nature, and he presented it to the German public as such.

The *Gauss* reached Kerguelen on 31 December 1901. The expedition rendezvoused there with Josef Ensenzperger, a mountaineer and meteorologist, Karl Luyken, a magnetician, and Emil Werth, a zoologist, who had been at work for two months constructing a scientific outpost on the Island. The trio had sailed from Sydney aboard the steamer *Tanglin*, carrying with them scientific equipment with which to set up an observatory and supplies for replenishing the stocks of the *Gauss*. The expedition remained on Kerguelen for nearly a month, helping to finish the building of the scientific station as well as taking on coal, wood, and the sixty-seven sled dogs provided by a German agent in Vladivostok that had been shipped to the South Indian Ocean via Hong Kong and Sydney. The *Gauss* left Kerguelen on 31 January 1902 for their “journey into the unknown.”²⁶³

The *Gauss* reached the pack-ice on 13 February. Over the course of the next eight days, the craft skirted gingerly through the ice-choked waters, following narrow leads as it snaked southwest toward terra incognita. Drygalski dutifully noted the icebergs as they passed by the vessel – “mostly pyramids, cones, and other shapes with all sorts of projections” – until the ice became endless,

²⁶¹ Drygalski quoted in “The Voyage of the ‘Gauss’ from Cape Town to Kerguelen,” 40-1.

²⁶² Drygalski, *The Southern Ice-Continent*, 103.

²⁶³ *Ibid.*, 121.

stretching to the horizon in every direction. As the ice increased, so too did the environmental difficulties. “The overall impression was that we had become the plaything of the elements,” concedes Drygalski. “The white conditions gave rise to optical illusions without number. Little floes came up on our bow, seemingly magnified into huge bergs driving down on us, threatening to overwhelm us the next instant, and to bury the ship and everything in it; then when they reached us they just vanished in the fog, or turned out to be so small as to be pushed harmlessly to one side.”²⁶⁴ The crew would frequently describe the Antarctic environment in this way: a vast, haunting land harboring both real dangers and equally disconcerting visual illusions. Such descriptions of Antarctic nature, albeit intensified by the deliberate juxtaposition of the conditions encountered on the Antarctic continent with those “idyllic paradises” and “friendly scenes” found in the Southern Indian Ocean, helped not only to highlight the unnerving experiences met by the German expedition, but also served to make more impressive their achievements.²⁶⁵ In the German imagination, then, the terrors of the Antarctic were many – dangerous isolation, menacing ice formations, terrible frigidity, and disorientating visual phenomenon – and it was against these hindrances the German expeditionaires struggled, thereby showcasing the fitness of the German nation.

On 21 February the *Gauss* crossed the Antarctic Circle, shortly thereafter reaching the terminus of a continental ice cap which halted the expedition’s southward progress. They had stumbled upon uncharted land and Drygalski designated the territory Kaiser Wilhelm II Land. At dusk he steered the vessel westwards along the coast. As the *Gauss* plodded through the ever-thickening ice, darkness set in. By morning heavy ice-blocks had enclosed the vessel. On 22 February 1902, the *Gauss* found itself beset in the Antarctic ice at 66° south latitude. Though “open water was seen in various directions” and attempts were made to free the vessel from the ice sheet – Drygalski had even

²⁶⁴ Drygalski, *The Southern Ice-Continent*, 128 and 140.

²⁶⁵ Drygalski described the Crozet Islands and other Southern archipelagos as such in *The Southern Ice-Continent*, 101 and 372. Regarding the visual phenomenon Drygalski writes: “We often had the experience of finding that the most difficult time to travel is when the sky is overcast. Under such circumstances the diffuse light conceals heights and depths, even when they are close by, so that one is continually running up against banks of snow, or, from their tops, plunging into the hollows between them, before one realizes what is happening. It is only in sunlight that contrasts appear which enable the eye to distinguish shapes... The beautiful sunny days of March had given way to dull, cloudy weather, and we often experienced the kind of light in which the ice and sky merge imperceptibly into one dull gray monotony.” *The Southern Ice-Continent*, 166.

attempted to dynamite a path to the sea – the ship proved inextricable. Accepting this misfortunate – the expedition had planned to establish their base on land not over water – the crew set to work preparing the *Gauss* for the coming winter, forming a windbreak around the vessel and constructing a scientific station, including two magnetic observatories, a meteorological station, and an astronomical observatory, on the ice field.²⁶⁶

Though the *Gauss* lay fast in the ice off the Antarctic coast, several extended journeys were made to the Antarctic mainland lying some fifty miles south. And while Drygalski had chosen to outfit the expedition with sled-dogs, at times throughout the course of their stay the Antarctic ice proved “too rough” meaning “dogs and sledges were not used” but instead “taken by the men simply as companions.”²⁶⁷ These strenuous inland sojourns provided the men, just as had the marches and overland journeys of the British South Polar expeditions, intimate contact with the Antarctic environs.²⁶⁸ More importantly, they provided the fodder, often in the form of suffering in the extreme Antarctic elements, with which to glorify German discipline and perseverance.²⁶⁹ “The difficulties of the sleighing excursions in the colder seasons of the year were not light,” admits Drygalski. “Ahead we could see the Sahara,” as Drygalski recalls another sledge expedition, “it was a

²⁶⁶ Drygalski quoted in “The German Antarctic Expedition,” *The Geographical Journal* 22, no. 2 (Aug., 1903): 197. This is a condensed and abridged translation of Drygalski’s report as published by the Berlin Institutes of Oceanography and Geography on 10 July 1903.

²⁶⁷ Drygalski quoted in “The German Antarctic Expedition,” (Aug., 1903), 198.

²⁶⁸ Robert Falcon Scott’s voyage updates convey such tales of heroism and struggle while on sledge journeys. “The journey was accomplished under trying conditions. The dogs all died, and the three men had to drag the sledges back to the ship. Lieutenant Shackleton almost died from exposure, but he has now recovered.” “The British Antarctic Expedition,” *Nature* 67, no. 1744 (2 April 1903): 516. “It was during the sledge expedition of Lieut. Armitage and Lieut. Skelton that this ice-sheet was ascended, the accomplishment of the feat entailing the greatest difficulties. The party had no dogs, and were obliged to drag their own sledges, which had to be continually unloaded, lowered down into crevasses 50 to 60 feet deep, and hauled up on the other side.” “The Antarctic Expedition,” *The Geographical Journal* 21, no. 6 (Jun., 1903): 656-657.

²⁶⁹ Huntford, in *The Last Place on Earth*, his controversial dual biography of the men challenging for the South Pole, chronicles the British equation of suffering with achievement, suggesting it was not so much the Antarctic conditions that contributed to heroic sagas of exploration but the manner in which explorers dealt with those conditions. The great tales of Antarctic exploration, then, were born from, often unnecessary, agony. In short, astonishing feats were made more outstanding, and received with greater patriotic fervor, if the explorer had endured terrible hardships (even if brought on by their own actions, most notably the refusal of later British expeditions to utilize sled-dogs). As Australian environmental historian, Tom Griffiths, succinctly puts it, these Antarctic sagas illustrated “The means could ennoble the end.” Tom Griffiths, *Slicing the Silence: Voyaging to Antarctica* (Cambridge, Mass: Harvard University Press, 2007), 11. Stephen Pyne makes a similar suggestion in *The Ice*: “It was not merely what was done but how it was done that was important” (p.94).

scene of infinite desolation that we were now crossing.”²⁷⁰ Drygalski’s comparison of the boundless white before him to the Sahara Desert is telling of the desire of German polar explorers to show their enterprise was equally as gallant as the exploits of adventurers in other reaches of the German overseas empire. In short, they meant to insist that German Antarctic travel was just as nationally prudent and indicative of physical and mental courage as was African exploration. In this way, Drygalski’s allusion to the sandy expanse of North Africa tied, once again, the Antarctic project to the wider German imperial project. After all, it was the European scramble for overseas colonies that had occasioned the *Gauss*’ trek to the Antarctic. It is no surprise, then, that the German belief that exposure to environmental extremes shaped character influenced Drygalski’s account of sledging trips: “We at least would maintain that we had pitted our strength against a chimera.”²⁷¹

Nor was German ingenuity in the face of environmental difficulty overlooked in the published accounts of the expedition. Hans Gazert, the expedition’s medical doctor, recalled the somewhat comical solution to the inability of the crew to run a dredging line beneath the ship. Sealed off by thick ice, the men could not access the vessel’s keel. Ludwig Ott, the ship’s second officer, suggested “attaching a line to an emperor penguin. After two tries, the bird actually succeeded in conveying the line from one end of the ship to the other.”²⁷² The crew found use for penguins in other, decidedly more grisly, ways. Drygalski writes, “We had penguins in abundance, and stockpiled large numbers, if only for the sake of the dogs,” further reporting that, “Soon we were able to make a technical appraisal of the penguins – for firing the boilers. The whole body burned (because of the

²⁷⁰ Erich von Drygalski, “The German Antarctic Expedition,” *The Geographical Journal* 24, no. 2 (Aug., 1904): 142 and Drygalski, *The Southern Ice-Continent*, 172.

²⁷¹ German Romantics from the days of Goethe stressed the purifying impact of struggle against an extreme environment. See Jost Hermand, *Grüne Utopien In Deutschland. Zur Geschichte des ökologischen Bewusstseins* [Green Utopias in Germany: The History of Environmental Consciousness] (Frankfurt a. Main: Fischer, 1991) and Schama, *Landscapes and Memory*. Quote from Drygalski, *The Southern Ice-Continent*, 240.

²⁷² Murphy, *German Exploration of the Polar World*, 81, citing Hans Gazert, “Gesundheitsbericht” [Health Report], in *Die unter Leitung von Erich von Drygalski. Veröffentlichungen des Instituts für Meereskunde und geographischen Instituts an der Universität Berlin* [The German South Polar Expedition on the ship ‘Gauss’ led by Erich von Drygalski. Publications of the Institute for Marine Sciences and the Geographical Institute at the University of Berlin], ed. Ferdinand Freiherr von Richthofen (Berlin: Ernst, Siegfried, Mittler und Sohn, 1903), 46-54.

high fat content) with a bright flame.”²⁷³ Yet the most impressive display of German resourcefulness came in January 1903. Desperate to free the vessel from its icy confinement before the Antarctic winter again set in – and having tried both dynamite and ice saws to no avail – the crew decided to hasten their release by scattering cinders and garbage over the ice. “Amongst these preparations was a rough rubble track,” Drygalski writes, describing the crew’s plans for release, “which we had laid down for over a mile across the ice to the position of the *Gauss* in a line with her bow, the object being to hasten the melting of the ice by the dark rubble and its greater absorption of the heat in the sun.”²⁷⁴

The tactic worked, thinning a broad lane of the five-meter thick ice by a full two meters. The stable ice field the *Gauss* once sat on fast became a soupy quagmire. On 8 February 1903, the *Gauss* broke free from her winter mooring. Released into navigable waters, Drygalski aimed the craft westward, cruising for a full two months along the Antarctic coast, probing for a channel leading to higher latitudes. It had been, at this point, Drygalski’s intent to spend a second winter in the Antarctic ice; however, having been beset a further two times during his westward jaunt, the expedition leader decided any attempt to remain “might risk everything, the existence of the expedition and every already attained success.”²⁷⁵ With that the *Gauss* headed for South Africa, arriving in the harbor of Simonstown on 9 June. There the crew learned that Josef Enzensperger, the scientist left on Kerguelen Island to gather geomagnetic and meteorological data, had become infected with Beri-Beri, a vitamin B1 deficiency, and died on 2 February 1903. Upon the boat’s arrival in Cape Town one month later, the crew received more bad news. Citing a depleted budget in addition to outstanding funds in the amount of 309,000 marks, the German Ministry of the Interior ordered the *Gauss* to return home.²⁷⁶ The vessel and crew arrived in Kiel on 25 November 1903.

²⁷³ Drygalski, *The Southern Ice-Continent*, 163.

²⁷⁴ Drygalski, “The German Antarctic Expedition,” (Aug., 1904), 144.

²⁷⁵ Drygalski quoted in Murphy, *German Exploration of the Polar World*, 81.

²⁷⁶ Lüdecke, “Exploring the Unknown,” 9-10.

Though the expedition's initial success in the Antarctic had found public and government approval, by the time the *Gauss* returned home the achievements of the British Antarctic Expedition (*Discovery*) had been released. Framed as the expeditions were by imperial rivalry, the *Discovery's* entrapment at a point further south than the *Gauss* – 76°30'S, compared to 66°02'S – and the British expedition's attainment of a record high latitude – 82°17'S – had raised the German public's expectations of what their national expedition should have accomplished.²⁷⁷ As one public judgment conveys, the criticism was harsh:

The abundant wealth of scientific material cannot hide the fact that the expedition has not completed the result that one might have wished for in the interests of the progress of South Polar exploration... In the case of the English expedition to Victoria Land, it was quite different! Toward the solution of the interesting question of whether a large contiguous land mass exists at the South Pole – an Antarctic continent – the German expedition has contributed little.²⁷⁸

With official and public disgust rampant, the crew disembarked at Kiel to little fanfare; no crowd awaited and Kaiser Wilhelm II failed to turn up for the event. The nation's disapproval was, perhaps, no more evident than in the near-immediate sale of the *Gauss* to the Canadian Coast Guard, where it received the new name *Arctic*.

Drygalski, for his part, bitterly defended both his crew and the expedition's contributions toward boosting Germany's status in the global order. As such, he directed his semi-popular account, first published in 1904, toward "more general readers," challenging the doubting German nation to "consider what our objects were and what the expedition amounted to." "In my opinion," lectured Drygalski, "the aim and results of an expedition are not to be weighed by particular scientific and

²⁷⁷ Just as Drygalski periodically updated Berlin on the progress of the *Gauss*, so too did Robert Scott correspond with officials in London. And similar to Drygalski's reports, Scott's communications were published by both national as well as international outlets. See "The British Antarctic Expedition," *Nature* 67, no. 1744 (2 April 1903): 516-17; "The British Antarctic Expedition: Return of the 'Morning'," *The Geographical Journal* 21, no. 4 (Apr., 1903): 439-41; "The Antarctic Expedition," *The Geographical Journal* 21, no. 6 (Jun., 1903): 655-58; and Robert Scott and Michael Barne, "National Antarctic Expedition: Report of the Commander," *The Geographical Journal* 22, no. 1 (Jul., 1903), 20-37. See also the German translations of these reports in *Petermanns Geographische Mittheilungen*, complete article list found in *Inhaltsverzeichnis von Petermann's Geographische Mittheilungen, 1895-1904* [Contents of Petermann's Geographic News, 1895-1904] (Gotha: Justus Perthes, 1907), 33, and the updates of the British expedition, often appearing beside those of the German expedition, printed in the popular German geographic periodical edited by Alfred Hettner, *Geographische Zeitschrift* [Geographic Magazine], 9th ed., (Leipzig: B.G. Teubner Verlag, 1903), esp. 289, 549, and 413.

²⁷⁸ "Über die deutsche Südpolarexpedition," *Deutsche Rundschau für Geographie und Statistik* [German Review of Geography and Statistics] 26 (1904): 92.

nautical determinations... More important is the main outcome.” He had perceived the Antarctic quest as an opportunity to appraise the strengths of the united German nation:

The fact [is] that in the expedition are focussed [sic] the most diverse forces and efforts in order to test their value when combined for some new undertaking in vast unknown regions. In this respect the nautical and technical experiences undergone by our noble craft are no less valuable than the fresh triumphs of industry which have placed at our service instruments, provisions, articles of sport and dress, and the thousand other objects supplied by the outfitters, or even than the methods of science itself adopted in our operations.²⁷⁹

Adamant in his insistence of the success of the mission, Drygalski even addressed the public’s primary point of contention, emphasizing that, though not dwelled upon, the overcoming of many harrowing experiences in the mold of those recounted by the British crew had occurred during the expedition. To prove his point, the expedition leader recounted a few such episodes, demonstrating through them “how we solved our problems to reach our goals.” Anticipating continued condemnation, however, Drygalski felt compelled to explain the character of his narrative: “The lack of descriptions of perils and adventures has been frequently regretted, although we said nothing about them in order to concentrate on positive experiences, such as how to overcome events rather than fall victim to them.” Not only did Drygalski acknowledge that “Every polar expedition has, beside all the fine things, a list of privations, of conflict with the powerful compulsion of a superior Nature,” he also chided both German detractors and British chroniclers for evaluating the success of an Antarctic expedition solely against such commonplace experiences. “These are not to be dismissed in arrogant fashion,” suggested Drygalski, “but neither are they to be paraded in the front line.”²⁸⁰

Drygalski’s pleas were to no avail. Though instigated by the desire to grab national pride on an international stage, the First German Antarctic Expedition had failed to “discover a goal that would justify struggle,” as had the British.²⁸¹ Yet if Britain had taken the glory by reaching record latitudes and suffering stoically in the process, German polar promoters hoped they could salvage

²⁷⁹ Drygalski, “The German Antarctic Expedition,” 147-148.

²⁸⁰ Drygalski, *The Southern Ice-Continent*, 1 and 372.

²⁸¹ Pyne, *The Ice*, 93.

international respect with the scientific work done by the crew of the *Gauss*. In this way, German intellectuals strove to enact a shift, emphasizing the importance of practical scientific work, systematic observation, and discipline over the attainment of the sensational. As Drygalski maintained in the final pages of his narrative, “The German *Gauss* had played her important and decisive role, precisely according to her instructions. We faithfully pursued our plans...and we had also followed step by step” our scientific instructions.²⁸²

ENVIRONMENT AND EMPIRE: GERMAN SCIENTIFIC SUCCESS IN THE ANTARCTIC

Just as the organization and sending out of national parties to explore the South Pole cannot be fully understood without regard to Western imperialism, so too must the interest in improving scientific knowledge of the Antarctic be seen in the context of competing colonial ambitions. “Rivalry there will be,” wrote William Bruce, the Scottish naturalist and leader of the Scottish National Antarctic Expedition (1902-04), “but it will consist in the endeavor of each Expedition to obtain the best possible scientific results.”²⁸³ Indeed, the lack of cooperation is, perhaps, no more evident than in the record of the scientific publications following the return of the national voyages. Seldom were the expeditions’ findings compiled in coordination with one another. Nor do the manuscripts complement one another. “Unfortunately,” as one later reviewer put it, “the system of combining the results did not work so well as was expected; and from various causes the three expeditions went their several ways in discussing and publishing their reports.”²⁸⁴

German polar promoters, for their part, looked to evidence the nationalism evident in the sheer wealth of data brought back by the *Gauss*. Charged with, and largely successful in, comprehending – charting, collecting, and analyzing – a vast, rugged, and harsh environment, the practical work of German scientists in the Far South demonstrated German character and masculinity. Their perseverance, industry, and discipline amidst the hostilities of Antarctic nature proved the mettle of

²⁸² Drygalski, *The Southern Ice-Continent*, 368.

²⁸³ Bruce, “The German South Polar Expedition,” 466.

²⁸⁴ Hugh Robert Mill, “Review: The *Gauss* Antarctic Reports,” *The Geographical Journal* 79, no. 6, (Jun., 1932): 506.

the German people. Furthermore, it was Europe's obligation to unveil the truths about this unknown region and, as such, any practical contributions made by the German scientific establishment could distribute honor to the German nation. If 'the exploration of the Antarctic regions truly was the greatest piece of geographical exploration still to be undertaken,' as the Sixth International Geographical Congress had resolved, then surely scientific success in the region would bring international glory and recognition to Germany. In short, the scientific execution and results of the German expedition became a point of national prestige.

Standing before the newly christened *Gauss* in April 1901, Ferdinand Richthofen summarized the plan of the German Antarctic Expedition. The winter before, it had been decided to divide the scientific work of the Expedition into two parts; the first to be carried out on board during the ocean voyage, the other on land from a scientific station provided by freezing the *Gauss* in the Antarctic ice. It seemed a risky scheme, yet offered a powerful metaphor for boosters of the mission. "The ship shall advance into the ice and serve for more than a year as the fixed point from which to make attacks into the ice world," announced Richthofen, characterizing the scientific program through the theme of conquest. "In the midst of a fearfully desolate nature," continued Richthofen, advancing his depiction of the scientific task as a battle between human and the forces of the natural world, "it shall be the home and domicile of the Antarctic travelers."²⁸⁵ In his official account, Drygalski did his best to maintain this air of aggression: "Always there was the same image of total impotence, struggling against the elements that encompassed us so overwhelmingly."²⁸⁶

Against this backdrop of an extremely inhospitable Antarctica, polar protagonists went to work creating a nationalist scientific narrative. The reports and articles that followed stressed the extremes encountered and the dangers overcome in the name of science. "Bad weather was frequent," writes Drygalski, recalling the voyage between the Crozets and Kerguelen, "but it was

²⁸⁵ Richthofen quoted in Murphy, *German Exploration of the Polar World*, 74.

²⁸⁶ Drygalski, *The Southern Ice-Continent*, 141.

found possible to take thirteen soundings.”²⁸⁷ Many make mention of the climbing of mountains, the trekking across uneven, untrodden terrain, and the wandering over desolate snowfields. Excessive cold, rain and fog, blizzards and ice, glaciers, and repeated bouts with snow blindness, the crew met all of these hindrances and had still managed to conduct the first detailed scientific investigation of the Antarctic coast south of the Indian Ocean. The scientific methods, informs Drygalski, “were conducted in a new sphere of action, where no one could tell how matters would turn out under absolutely unknown conditions.”²⁸⁸

And German scientists were largely successful in this terrible environment. Not only had they achieved several firsts, including the first Antarctic balloon ascent, they collected such a large amount of data that it took the work of nearly three decades and twenty volumes to make sense of it all.²⁸⁹ Even Neumayer, though himself not completely satisfied with the results of the expedition, mustered up praise for the German scientists’ ability to conduct such thorough work in such hostile conditions: “Surrounded by ice and snow, an observatory was erected for geographical and magnetical observations. Sledge journeys of a limited range were carried out. Magnetic, meteorological, and geodetic observations were diligently gathered in... Biological, geological, and botanical work was zealously pursued.”²⁹⁰

These efforts to present the hardships met and overcome in the unveiling of terra incognita did win international acclaim for German science and brought a degree of glory to the nation. “In spite of many obstacles,” complimented Albert Markham, British explorer and cousin of Clements Markham, during a meeting of the Royal Geographical Society in 1904 at which Drygalski presented a paper regarding the German Antarctic Expedition. “Obstacles due to severe climatic conditions, to dense fogs, to furious gales of wind which are always, in polar regions, accompanied by blinding

²⁸⁷ “The Voyage of the ‘Gauss’ from Cape Town to Kerguelen,” 40.

²⁸⁸ Drygalski, “The German Antarctic Expedition,” (Aug., 1904), 148.

²⁸⁹ Though Drygalski beat Scott to the punch here, Scott’s balloon reconnaissance proved, in the end, more fruitful. For the scientific results see Erich von Drygalski, ed., *Deutsche Südpolar-Expedition, 1901-1903*, 20 vols., 2 atlases, (Berlin: Georg Reimer, 1905-31).

²⁹⁰ Georg Neumayer, “Recent Antarctic Expeditions: Their Results,” *The Geographical Journal* 27, no. 3 (Mar., 1906): 263. His disappointment shows in the article’s conclusion. “It is far from me to assume the part of critic,” Neumayer admits, instead “it is enough to demonstrate how the problem of the Antarctic Regions south of Kerguelen has been left unsolved” (p.263).

snowdrifts, – in spite of all those obstacles, [Drygalski] has brought his ship, the *Gauss*, back again with valuable and important geographical and scientific information.” Thomas Holdich, British geographer and then Vice-President of the Royal Geographical Society added his congratulations, noting the “scientific character of the German nation,” was well represented thanks to the “extraordinary difficulties that [Drygalski] had to contend with, those long Antarctic nights, the darkness, not of hours but of continuous days, the ship isolated amidst the ice with nothing but the weird ice-shapes all around it, and a silence such as might almost be felt covering the whole of the vast ice area around.”²⁹¹

International commendation, however, came more easily than the approbation of the German public. Thus, convincing the German people of the national glory won through bringing home large amounts of scientific data would have to take a more direct and popular approach. At the forefront of this effort was Richthofen, whose Berlin Institute for Oceanography resolved in 1902 “to maintain an oceanographical museum in which naval, commercial, historical, and scientific exhibits are to find a place.”²⁹² By 1906 the Berlin Museum of Oceanography (Das Museum für Meereskunde zu Berlin) had opened, its purpose, according to director Albrecht Penck, “to inspire and to diffuse far and wide in the German Nation by means of its exhibits a conception and understanding of the sea and its phenomena, the means employed in its exploration, the wealth of its life, and its economic value, as

²⁹¹ See Albert Markham’s and Thomas Holdich’s comments in “The German Antarctic Expedition,” *The Geographical Journal* 24, no. 2, (Aug., 1904): 148-152. Praise for the achievements of German science came not only from European corners but American ones as well. Edwin Swift Balch, Pennsylvania-born graduate of Harvard University and prolific writer on geographic exploration, especially that pertaining to the poles. See *Antarctica* (Philadelphia: Press of Allen, Lane, and Scott, 1902). Swift’s *The North Pole and Bradley Land* (Philadelphia: Champion and Company, 1913), echoed the comments of Markham and Holdich in his review of Drygalski’s expedition narrative. “Winter soon came on and the usual routine of a polar wintering was gone through, except, perhaps, that an unusual amount of scientific observations was made,” writes Balch. “Magnetic, astronomical, and meteorological stations were set up on the ice, and observations were taken regularly.” “Review: Zum Kontinent des Eisigen Sudens,” *Bulletin of the American Geographical Society*, vol. 37, no. 9 (1905): 546.

²⁹² Ferdinand Richthofen, ed., *Deutsche Südpolar-Expedition auf dem Schiff ‘Gauss’ unter Leitung von Erich von Drygalski. Bericht über die wissenschaftlichen Arbeiten auf der Fahrt von Kiel bis Kapstadt und die Errichtung der Kerguelen-Station, mit Beiträgen von Bidlinmaier, v. Drygalski, Enzensperger, Philippi, Ruser, Stehr, Vanhöffen, Werth* [The German South Polar Expedition on the ship ‘Gauss’ led by Erich von Drygalski. Report on the Scientific Work on the Trip from Kiel to Cape Town and the Construction of the Kerguelen Station, with contributions from Bidlingmaier, v. Drygalski, Enzensperger, Philippi, Ruser, Stehr, Vanhöffen, Werth] (Berlin: Siegfried, Mittler und Sohn, 1902), quoted in Hugh Robert Mill, “Review: The Voyage of the ‘Gauss,’” *The Geographical Journal* 20, no. 2 (Aug., 1902): 223.

well as the social and national significance of navigation, marine commerce and sea power.²⁹³

Occupying one entire chamber of the institute was a life-size exhibit presenting the “extreme south of the earth.” “There stand and lay, on icy fields, the penguins and seals brought home by the German Antarctic expedition,” advertised the museum’s first brochure.²⁹⁴ The museum went far in stimulating enthusiasm for ocean studies, attracting 100,000 visitors annually.²⁹⁵ Just across town, the Berlin Museum of Natural History (Museum für Naturkunde) installed a Kaiser Wilhelm II Land diorama, replete with South Polar fauna arranged in front of a depiction of the *Gauss*.²⁹⁶

On display beside exhibits featuring the vegetation and animal life from other realms within the German Empire, South Polar land dioramas made visible to the German public the import of the Antarctic environment to Germany’s wider imperial project and quest for global status. Moreover, by displaying biological forms beside a re-creation of Germans at work in the Far South, the display highlighted, quite clearly, the contribution of German science to the unveiling of the Antarctic. In short, museum exhibits aimed to convince Germans that the Antarctic natural world was part of their national identity. Through collecting, German scientists had brought home the Antarctic environment, and through museum displays, they packaged and presented to the public the results of their expedition.²⁹⁷

An even more important scientific contribution than the menagerie of South Polar life lugged back by the *Gauss* was the mapping done by the German scientists while frozen in along the Antarctic coast. Geographical discovery, especially the delineation of the coastline, was the most heavily promoted

²⁹³ Albrecht Penck quoted in Charles Atwood Kofoid, *The Biological Stations of Europe*, United States Bureau of Education, Bulletin no. 4 (Washington D.C.: Government Printing Office, 1910), 230.

²⁹⁴ Albrecht Penck, *Das Museum für Meereskunde zu Berlin* [The Berlin Museum of Oceanography], 1st issue (Berlin: Ernst, Siegfried, Mittler und Sohn, 1907), 29.

²⁹⁵ See Kofoid, *The Biological Stations of Europe*, 233.

²⁹⁶ Lynn Nyhart, “Creating a ‘Public’ Nature and a ‘Professional’ Nature: The New Museum Idea in German Natural History,” Paper presented at the American Historical Association, Seattle, Washington, 8-11 January 1998 and the Universities of Manchester and Cambridge, 24-26 February 1998. See also Lynn K. Nyhart, *Modern Nature: The Rise of Biological Perspectives in Germany* (Chicago: University of Chicago Press, 2009) for more on the concept of museums making Germans aware of the importance of various environments to national culture.

²⁹⁷ For more on the importance of scientists and specimen-collecting to empire see William Beinhart and Lotte Hughes, *Environment and Empire* (Oxford, UK: Oxford University Press, 2007).

Antarctic program at the turn-of-the-century. Necessary not only in order to facilitate safe navigation and future exploration of the unknown region, geography was also the premier imperial science: cataloging landmass was the first step in making a territorial claim. It follows that geographical exploration was often the first priority of an Antarctic expedition. When describing the goals of the German Antarctic Expedition to the public, Drygalski offered "I shall here only mention a few of the problems with which the German Expedition will be occupied. Amongst these, geographical studies will take first place since they supply the necessary foundation for all other investigations."²⁹⁸ This ranking of geographical work above all other scientific interests illustrates the national pride at stake in Antarctic exploration. "I decided for the first," declares Drygalski, discussing the reason for his choosing to sail toward the land in the Indian Ocean south of Kerguelen rather than toward the Weddell Sea, admitting "it was on geographical grounds which to me seemed conclusive. For south of Kerguelen, between 60° and 100° E. of Greenwich, there lay before us an Antarctic region where hitherto no serious advance had been attempted, and where were consequently concealed many debatable problems."²⁹⁹ The mapping of the unknown, however, was more than a prestigious contribution to the knowledge of the Antarctic, it held colonial consequences, most importantly what nation held ownership of a territory and its resources.

To that end, one of the most important geographical tasks placed before the German Expedition was the verification or disproof of the existence of a continuous Antarctic continent. During his Antarctic voyage in 1838-42, Charles Wilkes, American naval officer and explorer, claimed to have sighted an island or the tip of a peninsula running from roughly 63°30' to 65° south latitude. By Wilkes' estimation (estimation is used here because so much of nineteenth-century geographical discovery rested upon the art of observation, such as distinguishing – often through the lens of a telescope or by sounding to determine the depth of the water – a snow-covered coastline from the adjacent frozen sea; a project made more difficult by the uniformity of the Antarctic landscape, the

²⁹⁸ Drygalski, "The German Antarctic Expedition," (1 February 1900), 319.

²⁹⁹ Drygalski, "The German Antarctic Expedition," (Aug., 1904), 134.

frequent appearance of polar mirages, and the clarity of the air which made underestimation of distance almost inevitable) the landmass rose more than 80 feet above sea level and stretched toward both horizons. He named it Termination Land. Just six days after the discovery, on 23 February 1840, Wilkes ended his Antarctic cruise, steering his vessel eastward toward Sydney, confident he had charted a “continuous line of coast, and deserving of the name bestowed upon it, of *Antarctic Continent*.”³⁰⁰ Wilkes contention of an Antarctic continent was widely rebuked, especially by the Royal Geographical Society. James Clark Ross, commander of a British expedition which reached the Antarctic just one year after Wilkes had himself left the Southern Ocean, suggested no Antarctic continent existed and that Wilkes’ landfalls had been “of inconsiderable extent, of somewhat uncertain determination.”³⁰¹ In 1872-76 the British *Challenger* expedition returned to the supposed position of Termination Land and found no sign of the coastline as charted by Wilkes, casting further doubt on the reliability of Wilkes’ observations.³⁰²

Thus, the German Expedition resolved to investigate the 600 miles of “unknown space between Knox Land and Kemp’s Land” to determine whether a coastline connects them or if, as Georg Neumayer suspected, a stream ran through the gap to higher latitudes.³⁰³ On 15 February 1902 the *Gauss* reached “the position in which Termination Land had been thought by Wilkes to exist;” no land could be seen and soundings showed the vessel lay in more than 3000 meters of water. From this Drygalski concluded “the existence of Termination Land originated in the deceptive appearance of the icebergs.”³⁰⁴ Continuing westward, the *Gauss* sighted high ice cliffs on 18 February. Drygalski named the land Hohes Eisbedecktes Land [High Ice-Covered Land].

The American scientific establishment cringed at Drygalski’s cartographic revision. In May 1904 Edwin Swift Balch, American author of several works on Antarctic exploration, wrote an article for

³⁰⁰ Charles Wilkes quoted in William Herbert Hobbs, “The Discovery of Wilkes Land, Antarctica,” *Proceedings of the American Philosophical Society* 82, no. 5 (29 June 1940): 566. Emphasis in original.

³⁰¹ James Clark Ross quoted in *Ibid.*, 568.

³⁰² Mill, *Siege of the South Pole*, 359.

³⁰³ Drygalski, “The German Antarctic Expedition,” (Aug., 1904), 135.

³⁰⁴ “The German Antarctic Expedition,” (Aug., 1903), 195.

The National Geographic Magazine in which he argues that “Hohes Eisbedecktes Land can be nothing but the western coast of Termination Land.” Far from disproving its existence, suggested Balch, Drygalski had shown that Termination Land did exist and had proven “what a remarkably acute and accurate geographical observer Admiral Wilkes was.” Balch further accused Drygalski of charting a new coastline only “to throw out Admiral Wilkes’ discoveries entirely in order to take all the credit to himself.”³⁰⁵

German science retaliated later that year. In Drygalski’s first complete account of his expedition, he maintains the impossibility of Wilkes having cited land at that location, suggesting that “refraction can explain many things.”³⁰⁶ And in August 1904 he stood before the Royal Geographic Society insisting that “two fruitless attempts...brought us nothing but evidence of the non-existence of Termination Land.”³⁰⁷ By March 1906, Georg Neumayer had added his support, contending “The existence of Termination Land was rendered more than doubtful by the investigations of the *Challenger*, and was, by the German expedition, proved to be on the side of Wilkes [Land] illusionary.”³⁰⁸ In 1911 the eleventh edition of the *Encyclopedia Britannica*, the first published since the return of the German Antarctic Expedition, supported the German claim: “The ‘Gauss’ crossed the parallel of 60°S. in 92°E. in early February 1902 and got within 60 m. of the charted position of Wilkes’ Termination Land, where a depth of 1730 fathoms was found with no sign of land.”³⁰⁹

In January 1912, on the heels of reports made by the Australian Antarctic Expedition, under Douglas Mawson, after having camped on Termination Land, the American scientific establishment renewed its dispute over the German geographical discovery. “Australian energy and courage, by the recent occupation of Termination Land for scientific research,” read an article entitled “Enlightenment Essential to National Honor” in the January *The National Geographic Magazine*,

³⁰⁵ Edwin Swift Balch, “Termination Land,” *The National Geographic Magazine* 15, no. 5 (May, 1904): 220-21.

³⁰⁶ Drygalski, *Zum Kontinent Des Eisigen Südens*, 233, footnote 1.

³⁰⁷ Drygalski, “The German Antarctic Expedition,” (Aug., 1904), 136.

³⁰⁸ Neumayer, “Recent Antarctic Expeditions: Their Results,” 262.

³⁰⁹ Hugh Chisholm, ed., “Polar Regions,” *Encyclopedia Britannica*, 11th ed., vol. 21 “Payn to Polka” (Cambridge, UK: Cambridge University Press, 1911), 967.

have thus put an end to the anti-American campaign of many years' duration. During this period American honor has suffered from national neglect as well as from assertions and disingenuous representations from foreign sources, thus beclouding the situation to American discredit. Moreover, claims have been made which attribute to European activities that priority of Antarctic discoveries which rightfully pertains to American explorers.³¹⁰

The energy was short-lived. Following Mawson's return in 1914, his second in command, Captain John King Davis, published his observations, concluding Termination Land to be an ice-shelf extending some 180 miles from shore. The high land spotted by Wilkes was not land at all but a "great ice tongue...rigidly locked to the land south of it."³¹¹ Briefly renamed Termination Ice-Tongue, the official name of the broad sheet became Shackleton Ice Shelf. Both the American and German nomenclature had been usurped.

The battle over the existence of Termination Land illustrates that international competition drove geographical discovery. The circumstances surrounding the American placement of Termination Land on the map, the German relocating and renaming of the site to Hohes Eisbedecktes Land, and the eventual Australian erasure of both claims, prove that national pride was at stake in the development of knowledge of the Antarctic region. However, disputes over geographical priority suggest not only desire for just distribution of honor. They also imply concern over which nation would secure the right to claim dominion over the land. Before the German Expedition departed for the Antarctic, the German state had made clear, "The whole expedition is an undertaking on the part of the German Empire" insisting that as such "The results of the expedition, and the collections that may be obtained by it, are the property of the empire."³¹² The assertion meant scientists were imperial agents and any discovery, including geographical, could be used to further the interests and motives of the state.

On 21 February 1902 Drygalski spotted the edge of an ice wall rising 50 meters above shoreline. It was a hitherto unsighted stretch of the East Antarctic coast. Drygalski christened the new land

³¹⁰ "Enlightenment Essential to National Honor," *The National Geographic Magazine* 23, no. 1 (Jan., 1912): 299.

³¹¹ Hugh Robert Mill, "The Australian Antarctic Expedition," *The Geographical Journal* 45, no. 5 (May, 1915): 422.

³¹² Erich von Drygalski, "The German Antarctic Expedition," *The Geographical Journal* 18, no. 3 (Sept. 1901): 231.

Kaiser Wilhelm II Land. The gesture was in no way unique – geographic features were often named for well-known personalities. Yet the naming of the land after the German Kaiser did mark, if only symbolically, Germany's presence in the Antarctic. In addition, though not an official claim, the naming of the territory after a national leader inscribed upon the landscape (and the map) the nationality of those persons who first discovered it. Not to mention, discovery and naming were often considered the prerequisites to official territorial claims.

At the outset of the German Antarctic Expedition, it was noted "The departure of the German South Polar Expedition marks an era in the rapid development of the German Empire. It is the greatest geographical undertaking that Germany has ever set her hand to, and to all appearances she will rise to her task as a giant among nations."³¹³ And it appeared, in this respect, the voyage had been a success. Drygalski summed up the scientific program as follows: "It may, however, be already affirmed that the *Gauss* Expedition achieved everything in the region assigned to it that was possible to achieve in the time available. It has discovered a new land, and thereby cleared up an old contested question regarding the nature and extent of the Antarctic continent." German geographical discovery in the Antarctic had salvaged, as had the collection of scientific data and specimens, some semblance of national recognition and honor on the world stage. So too was public approval gradually attained and notice taken as to the import of the Antarctic to Germany. Germans had found in Antarctic science some imperial redemption, and as data continued to be published – in countless scientific tomes – and South Polar specimens displayed – through museum exhibits – it was hoped "the newly discovered Kaiser Wilhelms II. Land, with the new knowledge yielded by it, [could] become a foundation for fresh triumphs even in the homeland."³¹⁴

CONCLUSION: FILCHNER, FAILURE, AND THE FIRST WORLD WAR

The German Antarctic science program inaugurated under the direction of Georg Neumayer in the late nineteenth century stressed the need for geographical discovery, natural history inventory, and

³¹³ Bruce, "The German South Polar Expedition," 466.

³¹⁴ Drygalski, "The German Antarctic Expedition," (Aug., 1904), 148.

empirical data collection as the prerequisite for winning Germany international glory in the Far South. This program remained the primary motivation behind Germany's interest in the Antarctic because influential individuals such as Albrecht Penck and institutions such as the German Marine Observatory supported it. Even the death of a generation of German polar protagonists (Richthofen in 1905, Koldewey in 1908, and Neumayer in 1909) teamed with Kaiser Wilhelm II's disgust over the failure of Drygalski to reach high latitudes, could not derail German interest in the Antarctic. Indeed, by 1909, national attention was again turned toward an appeal for getting up a German expedition to Antarctica. The appeal was raised by Bavarian army lieutenant Wilhelm Filchner. He proposed an expedition "not concerned with reaching the Pole, but...primarily aimed at solving the problem of the relationship between West and East Antarctica."³¹⁵ Geographic and scientific investigation would again link the Antarctic to Germany's wider imperial ambition.

Born in Bayreuth on 13 September 1877, Filchner joined the Prussian Military Academy at age fifteen. By age twenty-three he had gained national notoriety for completing a one-man trek across the Pamir Range of central Asia into British India. Just five years later, in 1905, international fame came upon the successful return of a German Tibetan expedition under his leadership. Not only did Filchner have an uncanny knack for negotiating dangerous situations – both of his Asian journeys had been rife with rugged adventure, harrowing tribal encounters, and perseverance against the elements – he had a solid scientific background, having studied cartography and geomagnetism with the Prussian Ordnance Survey.³¹⁶ By the time the thirty-two-year-old Filchner proposed an Antarctic voyage to the Berlin Geographical Society in 1909, he had already successfully completed two Asian sojourns and had been awarded an honorary doctorate from the Albertus University in Königsberg. Owing to both his expeditionary success and scientific ability, Filchner's Antarctic scheme won quick

³¹⁵ Wilhelm Filchner, *To the Sixth Continent: The Second German South Polar Expedition*, trans. William Barr (Norfolk: The Erskine Press, 1994), 4. This book originally published in German in 1922 under the title *Zum sechsten Erdteil: Die zweite deutsche Sudpolar-Expedition*.

³¹⁶ See Filchner's colorful memoirs of these expeditions in *Ein Ritt über den Pamir* [A Ride over the Pamirs] (Berlin: Ernst, Siegfried, Mittler und Sohn, 1903) and *Das Rätsel des Matschu: Meine Tibet-Expedition* [The Riddle of the Machu: My Tibet Expedition] (Berlin: Ernst, Siegfried, Mittler und Sohn, 1907).

support from a number of influential outlets, including the Ministry of the Interior, the German scientific community, and Germany's most powerful soldier and war hero, Count Helmuth von Moltke, chief of the General Staff of the army.

Filchner's ability to gain ready approval from an array of state sources suggests the Antarctic research program was in 1909 still fully incorporated into official nationalism. It was endorsed officially, (Ministry of the Interior), disseminated through official channels, (notably schools, museums and public lectures such as those delivered at Penck's Museum of Oceanography), and was reinforced through official means (Antarctic exploration became a project of the German military and expeditions to the South would be an extension of German imperial might). In short, Antarctic research offered the German nation the best way to showcase its imperial might on the world stage. "Germany has doubtless been surpassed by other nations in recent decades when it comes to great geographical discoveries," stressed the Ministry of the Interior. "It is very much in the national interest to wish that the kind of prestige bound up with such successes might also once again redound to Germany's benefit."³¹⁷ With that, Filchner obtained the support of the German Empire for the Second German Antarctic Expedition.

The expedition departed Bremerhaven for Buenos Aires on 7 May 1911, aboard the *Deutschland*. Outfitted with scientific equipment donated by several government agencies (German Geodetic Commission, the Magnetic Institute in Potsdam, the Meteorological Institute in Berlin, etc...) and supplied with provisions by various private firms, Filchner planned for the expedition to proceed from the Argentine port city to the Weddell Sea via South Georgia. The vessel would sail as far southward as ice would permit whereupon a base would be erected to serve as a scientific station as well as a jumping off point for sled teams that would explore and map the Antarctic mainland between the Weddell and Ross Seas. The plan seemed certain to win Germany some international recognition: in an era of pushes for the South Pole, the German nation's commitment to

³¹⁷ Memorandum quoted in Murphy, *German Exploration of the Polar World*, 88.

geographical and scientific research remained sincere and success in the Antarctic could only boost that reputation. Moreover, international interest in the Antarctic was as prevalent as ever – the Second French Antarctic Expedition (*Pourquoi Pas?*) departed in 1908, the both the Amundsen expedition (*Fram*) and the Scott expedition (*Terra Nova*) left for the South Pole in 1910, a Japanese expedition (*Kainan Maru*) sailed in 1911, and the Australasian Antarctic Expedition (*Aurora*) started for the Far South in 1911 – and, as Filchner wrote in his official report, “It seemed to me a worthy goal to provide the opportunity for my Fatherland to participate in this noble competition among nations to explore our globe and especially the polar zones.”³¹⁸

The expedition got off to a successful start. The voyage to Buenos Aires produced a wealth of oceanographic data; though a rough passage, the vessel arrived on schedule in South Georgia; on 28 January 1912, after drifting amongst the ice for more than a month, Filchner sighted a previously unknown coastline, christening the stretch Prinz Regent-Luitpold Land in honor of the Bavarian aristocrat’s patronage of the expedition; and, on the following morning, Filchner discovered the ice shelf positioned at the head of the Weddell Sea, naming it after Kaiser Wilhelm II.³¹⁹ However, it was these geographical discoveries that would ruin the mission. While Filchner believed that landing the craft and carrying out geographical and scientific investigations on the newly discovered masses would best achieve the expedition’s goals, Richard Vahsel, the ship’s captain and German naval representative, considered navigational reconnaissance to be the expedition’s primary task and insisted on scouting all navigable water in the area. The friction between the two men grew as Vahsel refused to attempt a landing.

Vahsel finally did concede to Filchner’s desire on 9 February, choosing for the landing an iceberg imbedded in the ice shelf. The crew quickly unpacked gear and supplies and constructed a station house on the iceberg. Just over one week later, on 18 February, the spring flood tide ripped the ice chunk from the shelf and the crew awoke to find their base drifting with the retreating tide. Vahsel

³¹⁸ Filchner, *To the Sixth Continent*, vii.

³¹⁹ The Kaiser later denied this tribute and insisted the feature be named after its discoverer, Filchner.

had lied about the stability and grounding of the berg, deliberately undermining both Filchner's authority and the aims of the expedition. The *Deutschland* was forced to flee north, but with the Antarctic winter fast approaching failed to reach open water and was frozen in on 15 March 1912. While beset in the ice open hostility between the crew members prevented the execution of scientific tasks. And after the *Deutschland* broke free on 26 November 1912, and returned to South Georgia, the rift between the scientific contingent and naval officers came to a head resulting in Filchner leaving the vessel and returning to Germany aboard a separate ship.³²⁰ The expedition had made only limited geographical discoveries and, though achieving limited acclaim, was largely considered a failure. Having brought only shame and disappointment to the nation, the Second German Antarctic Expedition effectively ended Wilhelmine Germany's imperial interest in Antarctica.

With the outbreak of the First World War, Germany's attention shifted away from overseas exploits. The *Deutschland* was commissioned as a mine-sweeper by the Austro-Hungarian Navy; several of the members of both the First and Second Antarctic Expeditions served and died in European trenches; and the Great War vanquished both Germany's colonial holdings as well as the nation's imperial fervor. Yet while Article 118 of the Treaty of Versailles, signed on 28 June 1919, renounced all of Germany's claims to sovereignty in the Antarctic, the two decades of German imperial interest in the Far South had influenced a rising generation of scientists and explorers.³²¹ These new heroes of German polar exploration, including Alfred and Kurt Wegener and Alfred Ritscher, determined to preserve the German commitment to the Poles. Inasmuch, following 1919, German polar protagonists began presenting the Poles as a site where German industry, technology, and science could rise again. The polar environment became in the 1920s and 1930s an arena in which to prove to the world the resiliency of the German nation.

³²⁰ For a detailed timeline of the voyage see Filchner, *To the Sixth Continent*.

³²¹ Article 118 states: "In territory outside her European frontiers as fixed by the present Treaty, Germany renounces all rights, titles and privileges whatever in or over territory which belonged to her or to her allies, and all rights, titles and privileges whatever their origin which she held as against the Allied and Associated Powers.

Germany hereby undertakes to recognize and to conform to the measures which may be taken now or in the future by the Principal Allied and Associated Powers, in agreement where necessary with third Powers, in order to carry the above stipulation into effect."

EPILOGUE: THE ENVIRONMENTAL LEGACY OF THE GERMAN POLAR ENCOUNTER

In the fall of 2006 the German-born and Hamburg-based photographer Michael Poliza embarked on what would become a three-year quest to capture the beauty of the polar world on film. Poliza's crusade took him on four trips to the Arctic and four more to the Antarctic, the resulting images culminating in the photo montage *AntArctic: A Tribute to Life in the Polar Regions* released in August 2009.³²² More than simply a "coffee table epic...filled with 180 stunning colour photographs taken during his journey to the polar regions," *AntArctic* illustrates, both literally and figuratively, that polar nature is still very much a part of German self-understanding and that the (protection of the) polar environment remains important to Germany's ability to see herself in the world. Further, Poliza's interpretation of the Poles resembles closely those of his German forbearers: his photographs present the earth's Poles as, above all, places of fantastic wonder. Poliza's book, then, points to the environmental legacy of German polar exploration, and suggests, in the end, that the German nation remains vested in ice.

"They offer an opportunity to go to places where there are no people," admits Poliza, speaking of his interest in the earth's Poles, "I am attracted to the purity of nature, which is fragile and fascinating. I was struck by the simplicity of the colours."³²³ Poliza's depiction of the polar world as an awe-inspiring place recalls the tendency of many German polar explorers forced to grapple with the imposing grandeur of the place. "This wonderful repose of nature, without either motion or life, overcomes one with a feeling of boundless desolation and solitude," wrote Karl Koldewey of his

³²² Michael Poliza, *AntArctic: A Tribute to Life in the Polar Regions* (Kempfen, Germany: teNeues, 2009). August 2009 was the German release date. Book released worldwide in September 2009.

³²³ Poliza quoted in Sean Louth and Diane Smyth, "To the Ends of the Earth," *British Journal of Photography*, 26 August 2009, <http://www.bjp-online.com/public/showPage.html?page=867988>, accessed on 12 January 2009.

Arctic experience between 1869 and 1870.³²⁴ Both Erich von Drygalski and Wilhelm Filchner echoed this fascination with the polar environment in their recollections of the Antarctic environment. “It is hard to explain the reason for the unforgettable impression we gained as we gazed across the uniformity of nature around us,” noted Drygalski of his 1901-03 Antarctic visit. “It was perhaps that very uniformity and majestic tranquility which infused everything.”³²⁵ For his part, Filchner added of his 1911-13 Antarctic sojourn that “The landscape of South Georgia is remarkably reminiscent of that of Svalbard... In both places there is a desolation coupled with enchanting, wild scenery which give the polar lands that unique charm which nobody who has seen them can ever forget.”³²⁶ The published records of the German encounter with polar nature dwell endlessly on the spiritual impact of the icy landscape. In many of these descriptions, the polar environment becomes a sentimentalized place, a place at once extremely isolated and extraordinarily desolate as well as intensely alluring. “The vivid impressions that Greenland had left on me, the joy of working freely and in close contact with nature,” wrote Drygalski of his Arctic voyages explaining the impulse behind his desire to later embark on an Antarctic expedition, “urged me on to new ideas, all of which, naturally, were related to those regions of eternal ice.”³²⁷

The sublime beauty and haunting magnetism of the Polar Regions did not go unnoticed by the German public. And thanks to rapidly evolving technology, namely the steamship and vastly improved navigation charts and nautical equipment, by the 1880s, the polar world was opened to German tourists. In 1892, Wilhelm Bade, a German sailor who had survived the 1869-70 wreck of the *Hansa*, cofounded the Nordic Sea Fisheries Company (Nordische Hochseefischerei Gesellschaft), chartering cruise vessels to Spitsbergen. Ironically, given the eight-month ordeal of the *Hansa* crew, Bade presented the Arctic as a friendly place, a place of dramatic splendor and unmatched beauty. Though the enterprise lasted only one season, his work had proven the potential of Arctic tourism

³²⁴ Koldewey, *The German Arctic Expedition of 1869-70, and Narrative of the Wreck of the 'Hansa' in the Ice*, vol. 1, 272.

³²⁵ Drygalski, *The Southern Ice-Continent*, 235.

³²⁶ Filchner, *To The Sixth Continent*, 53.

³²⁷ Drygalski, *The Southern Ice-Continent*, 4.

and by the late 1890s the North German Lloyd line had begun regular jaunts to the Arctic archipelago. Still, the economic appeal of the polar environment went beyond simple trafficking of tourists to the romanticized landscape. Many of these polar tours doubled as whaling voyages or hunting trips: tourist steamers would often accompany a whaling vessel, thereby affording German vacationers an opportunity to board the ship and experience firsthand a whale hunt; and when Ludwig F. Herz accompanied Bade on a northern voyage, he recounted the gleeful shooting of water fowl from the decks of the boat.³²⁸ Further, the German Polar Navigation Company (Deutsche-Polar-Schiffahrts-Gesellschaft) was founded by Albert Rosenthal in August 1872 for the purpose of “the hunt[ing] of animals from which blubber can be extracted.”³²⁹

The optimism of these economic ventures had firm grounding in German attention to the riches of the polar lands. Though nearly three centuries of European hunting had decimated the Eastern Arctic whale and walrus populations – by 1828 commercial whaling had nearly depleted the North Atlantic’s estimated stock of 52,000 bowhead whales and by 1870 the Atlantic walrus had been completely eliminated from the marine ecosystem surrounding Spitsbergen – German Arctic narratives relate only a scene of abundance.³³⁰ Julius Payer, a member of the Second German Arctic Expedition in 1869, noted that extended Arctic travel was “greatly facilitated by the quantity of game, by which, to a certain extent, the stock of provisions may be renewed.”³³¹ Drygalski similarly reported on the bounty offered up by the Antarctic environment, often describing the wonton slaughter of polar fauna: “To the right of the stream there were two females [sea-elephants] on their own, which we decided to take: Bjorvig drove them gently down to the beach where he killed them

³²⁸ See Ludwig F. Herz, *Tropisches und Arktisches* (Berlin: Verlag von A. Asher and Co., 1896), p. 169-176.

³²⁹ Reinhard Krause and Ursula Rack. *Logbook of the German Steam Bark Grönland, Written during a Sealing and Whaling Campaign in Antarctica in 1873/74, Under the Command of Captain Ed. Dallmann* (Bremerhaven: Alfred Wegener Institute for Polar and Marine Research, 2006), 39.

³³⁰ Robert C. Allen and Ian Keay, “Bowhead Whales in the Eastern Arctic, 1611-1911: Population Reconstruction with Historical Whaling Records,” *Environment and History* 12 (2006): 89-113 and Louwrens Hacquebord, “Three Centuries of Whaling and Walrus Hunting in Svalbard and its Impact on the Arctic Ecosystem,” *Environment and History* 7 (2001): 169-185. See also J.N. Tønnessen and A.O. Johnsen, *The History of Modern Whaling*, trans. R.I. Christopherson (Berkeley: University of California Press, 1982) and John F. Richards, “Whales and Walruses in the Northern Oceans,” in *The Unending Frontier*, 574-616.

³³¹ Payer quoted in Koldewey, *The German Arctic Expedition of 1869-70*, 438.

and cut them up...The boat was awash with blood by the time we boarded it for our return."³³²

Filchner described in even more graphic detail the skill of German hunters and the subsequent uses for their booty:

Today an adult leopard seal, weighing 6 hundred-weight, was killed on the ice by a well aimed blow to the skull, and was hauled aboard. From now on this was our preferred method of killing seals; it takes little effort and is quicker than shooting. Six or eight good shots may still not prove fatal and may still allow the wounded animal to dive into a nearby lead. The dead animal is gutted on the spot; the hide is separated from the carcass with a few expert cuts and the carcass is then dismembered. The liver and the filet are set aside for the galley. The blubber goes to the engine room to be used as fuel; while the skinned carcass is cut into pieces with an axe and it stowed aboard for dog food.³³³

While Germans took little part in the reorientation of local Arctic economies toward large-scale mining and agriculture and contributed only minutely to the biological invasion that accompanied Western imperialism, – Drygalski notes that while on Kerguelen members of the First German Antarctic Expedition introduced rabbits, rams, and dogs to the native ecosystem – their exploration of the earth's Poles caused a number of ecological disturbances, not least of which was the destruction of a vast amount of polar wildlife.³³⁴

Yet for all the veneration towards the slaughter of polar fauna, some turn-of-the-twentieth-century German chroniclers did remark on the fragility of the polar environment. Between 1880 and 1914 Germany had plunged into the second industrial revolution, becoming in the process Europe's premier industrial power. Steamships and street cars, dams and canals, synthetic dyes and phosphate fertilizers, these new wonders of science and technology proved Germany's mastery of the natural world. Denouncing this conquest of nature, however, were preservationists who had begun to notice the effects of smoking factories, streambed channelization, and mine shafts on

³³² Drygalski, *The Southern Ice-Continent*, 125.

³³³ Filchner, *To the Sixth Continent*, 74.

³³⁴ *Ibid.*, 114-119. For more on the environmental impact of Arctic industry see Bravo and Sörlin, eds., *Narrating the Arctic*. For more on the European introduction of alien species see J.A. Drake, et al., eds., *Biological Invasions: A Global Perspective* (Chichester: Wiley, 1989) and Alfred Crosby, *Ecological Imperialism: The Biological Expansion of Europe, 900-1900*, new ed. (Cambridge, UK: Cambridge University Press, 2004).

historic German landscapes.³³⁵ This emerging environmental sensibility and desire to protect nature as an idealized landscape began also to shape the ways in which Germans viewed the nature of the polar world. Ludwig Herz, for example, decried the near-systematic killing of Arctic fauna while cruising the Far North in 1896: “The hunters were once more disembarked and maintained a murderous fire on the birds swarming about,” remarks Herz. “The brooding were even knocked down from their clefts and holes, careless of whether the slaughtered bird could even be reached; rarely has the ‘noble passion’ of hunting seemed so hateful to me and appeared so identical with nauseating blood lust as here.”³³⁶ Even Drygalski noted man’s impact on the natural world: “The stars were shining and the full moon broke out from between the clouds,” writes Drygalski upon departing the Sub-Antarctic Crozet Islands. “It was a magically beautiful scene; only the plaintive calls of the penguins bore witness to the destructive effect of man’s visit to this lonely island.”³³⁷

If Germans were to protect the pristine polar environment, however, they required first some comprehension of that environment. Thus, the same aspects of modernity that were perceived to be fouling the German landscape were employed to make sense of the unknown polar world. Steamships, propelled by German coal, carried expeditions to and through the polar ice pack; German chemical companies donated explosives for breaking through the ice; and German scientific societies provided the necessary laboratory equipment for collecting, measuring, and recording polar nature. In this way, an alliance formed between German polar discovery and German industry and science. And just as travel narratives communicated the polar world to the German public, so too did both the technologies of travel and scientific practices helped to construct a German understanding of the polar world.

In turn, these means of knowing and describing the polar frontiers helped to impose order over the environment. Slowly a valuable body of meteorological, geomagnetic, and hydrographic data

³³⁵ For more on German industry and its impact on the environment see Blackbourn, *The Conquest of Nature* and Cioc, *The Rhine*. For more on the German landscape preservation movement see Applegate, *A Nation of Provincials* and Rollins, *A Greener Vision of Home*.

³³⁶ Herz, *Tropisches und Arktisches*, 175, quoted in Murphy, *German Exploration of the Polar World*, 163.

³³⁷ Drygalski, *The Southern Ice-Continent*, 103.

was amassed, geological and biological specimens collected, and previously unknown territory and landforms mapped. By the close of the First World War, Germans had helped to classify new Arctic flora and fauna and chart Arctic mountain ranges as well as measure the depth of the Southern Ocean and identify the geological origins of Antarctic land formations. More, following the war, Hugo Eckener's zeppelin flight over the Arctic provided a number of cartographic corrections, including the discovery of several previously uncharted islands. While Alfred Wegener's fatal Arctic expedition provided the first comprehensive picture of the thickness of the inland ice as well as important details on the composition of the Arctic atmosphere.

Indeed, by the time Adolf Hitler's Germany pursued commercial expansion into the Polar Regions, science had become the most valuable German polar tradition. Likewise, even the Third Reich's seemingly narrow-minded economic and political orientation had a decidedly scientific character; prior to any imperial claims in Antarctica, a systematic inventory of the place was required. Further, when Germany resumed its independent polar program at the end of the 1970s, the first objective was to erect a permanent polar research station in Antarctica. Thus, from the beginning of German polar exploration in the 1860s to the present, science has shaped the character of national expeditions. Science has been more than data-gathering; it has been a justification for the journey.

And Michael Poliza's *AntArctic* stresses as much. Poliza's polar photography is informed by the crisis of climate change and is directed by the scientific data gleaned from study in the Polar Regions. As such, his photographs are intended to alert the German nation to an environmental crisis. Much like the travel narratives and museum exhibits of earlier eras, these images are meant to relay to the German public incomprehensible scientific data in a more comprehensible way, thereby alerting the nation to the import of the polar environment to Germany. Finally, then, at the dawn of the twenty-first century, the German polar world has become a place to be preserved and protected. "My photographs are intended to show what incredible beauty we stand to lose if we do not stop," Poliza

explains. "I want to trigger emotions. For only when something moves us are we willing to take responsibility."³³⁸

³³⁸ Poliza quoted in Peter Pursche, "Von Pol zu Pol" [From Pole to Pole], *Stern* 6 August 2009, 56.

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