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Naming Antarctica

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ABSTRACT. In a recent interesting contribution to this journal, G.A. Mawer suggested that Antarctica was first so named in 1890 (Mawer 2008). New evidence however reveals that Antarctica first received its modern one-word name as early as 1840 at a congress of Italian scientists. The new name was soon adapted for other languages, and its use in English can be traced from 1849. A hypothesis is advanced as to why alternative French and German names were coined later in the century. The first map to use the new place name was published in 1843, and the first map to show a complete outline of the continent, estimated from expedition reports, was produced in 1844. But nothing could become the settled name of the south polar continent until its existence was confirmed at the turn of the twentieth century.

Introduction

Polaris, the North Star, is the brightest object in the constellation Ursa Minor, Little Bear in English or Arktos mikra in ancient Greek. Traditionally, navigators have found north by extending the line joining Dubhe and Merak, two stars in the constellation Ursa Major (Great Bear, Arktos)**,** to find Polaris in Ursa Minor. The word 'arktos' could also mean 'the north' as a region in ancient Greek. The proper noun 'Antarctica' comes from the Greek and Latin adjectives 'antarktikos/antarcticus', literally meaning 'opposite the Bear(s)'. The name was first applied to the south polar continent in the nineteenth century. So one criterion for the present investigation is simply that any name or names to be considered were formed in that way.

The second criterion is that the name should have been intended for the south polar continent. The US Board on Geographic Names has established a convenient if now slightly old-fashioned definition for the geographical referent: 'ANTARCTICA: continent, together with the islands rising from the continental block, centering roughly on the South Pole and lying almost wholly within the Antarctic Circle' (US Board 1956: 45). However we should also be aware that the existence of a far southern continent was surmised and discussed for at least 1200 years before James Cook set sail in 1772 to make 'the first real sustained attempt to delimit the bounds of the Antarctic land' (Tooley 1963: 6). The interaction between discovery and naming may seem obvious, but the discovery of Antarctica was so difficult and so gradual that the traditional compartmentalisation of European thought about the south polar region between an earlier *a priori*, scholastic period and a later *a posteriori*, scientific period (Rainaud 1893: 475) should perhaps be replaced by the notion of a long drawn out transition during which the two modes of thinking overlapped.

Some of the early voyages by Vespucci, Drake and others reported brief glimpses of *something* at the southern end of South America, which they called by such names as 'Terra da vista', 'Pressillgtlandt', 'the Elizabethides' etc. (Tooley 1963). With the exception of 'Gherritz Land', however, none of those events were possible encounters with Antarctica and, 'Gherritz Land' included, none of them resulted in a name that was intended for the continent. It was perhaps more significant, for the emergence of 'the thing to be named', that from the sixteenth century onwards explorers and scientists began to think that massive icebergs, of the sort that were being encountered in the Southern Ocean, must have originated from glaciers formed on land (Davis 1595: 26–30). In the eighteenth century Lomonosov, Phipps and Cook all accepted the idea, and a cogent cartographic example can be viewed on-line at the Boston Public Library (Senex 1725: Western Hemisphere). The combination of unconfirmed, ill-documented sightings and a prescient theory of glaciation mean that we should hesitate before dismissing references to 'the South, or Magellanic Land, of which we know nothing' (Varenius 1733, II: 537), or the passionate belief in a southern continent held by Alexander Dalrymple, the Royal Navy's first Hydrographer, as purely subjective and irrational. Still less should early nineteenth century seamen, such as Charles Poynter (Campbell 2000: 132) or John Davis (US Board 1956: 12), be accused of having gone beyond the evidence when they speculated on the spot that they had encountered a continent, as indeed they had. The story of the naming of Antarctica shows, rather, that such ideas and experiences contributed to a growing conviction that there was a continent there to be named, which came to its first fruition in the 1840s but which had to wait another fifty years for final vindication.

The third criterion is therefore that the proper noun, once introduced, should have been or probably have been the ancestor of our modern usage. The test of linguistic and cultural continuity is at once the most necessary and the hardest of the three to apply. The present author is far from having traced all the earliest examples of 'Antarctica' and its equivalents in other languages, and several gaps in the story remain for others to complete.

The adjectival phase

Starting in the thirteenth century a group of adjectives based on the Latin word 'antarctic-us, -a, -um' successively entered Spanish, Italian, French, English and other

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modern European languages. At first, according to the *Oxford English Dictionary (OED)*, they *all* dispensed with the 'c' in the second syllable. Not until the sixteenth century did English and French begin to privilege the historically authentic 'antarct-' form of the adjective, which then required about 200 years to become the settled norm. Meanwhile Spanish, Italian, Portuguese and Catalan retained the earlier 'antart-' form and continue to do so. The *OED* also points out that the nonstandard pronunciation 'antartic' persisted in spoken English until at least the end of the twentieth century.

Several aspects of the 'antart-/antarct-' group of adjectives are relevant to this investigation. First, like their Greek and Latin predecessors, they meant 'southern' as often as, if not more often than, 'south polar'. The *OED* even gives two fifteenth century examples of 'antartyke' applied to the south of England. A century later André Thevet defined his 'France Antarctique' as the body of land now known as South America (Thevet 1558: 51). And in a Latin example of this sense the signs or 'signa' in the southern half of the zodiac were designated 'Antarctica' (neuter, plural) in a sixteenth century prayer book (Anon. 1573: 227). It should also be mentioned that after Linnaeus published his system of binomial nomenclature for biological species in 1753, 'southern' examples of the Latin feminine adjective proliferated in species names such as *Balaena antarctica* or *Betula antarctica*. The usage continues to this day, but a significant shift from 'southern' to 'far southern' occurred in 1844, when Joseph Dalton Hooker published the botanical results of James Clark Ross's Antarctic expedition with the subtitle *Flora Antarctica*, reserved for territories more or less to the south of 50°S (Hooker 1844).

Second, like ancient Greek many modern European languages can form nouns by combining the definite article with an adjective. We do it today when referring to a geographical region or climatic zone as 'the Antarctic'. In several passages of a later work Thevet contracted his 'France Antarctique', meaning South America, to 'l'Antarctique' (Thevet 1575: 153, 163, 296 etc.). And the English translator of Thevet's earlier book even managed to anticipate his later usage by summarily translating the title from *Les Singularitez de la France Antarctique, autrement nommée Amerique* into *The new found worlde, or Antarctike* (Thevet 1568). But although 'l'Antarctique' and 'Antarctike' are adjectival proper nouns in those examples, they fail the test for early occurrences of the modern geographical name on two counts. They were not referring to a south polar continent, and for that very reason they did nothing to establish the place name that we use today.

Third, in modern languages before the eighteenth century 'antarctic' etc. may have been the less common, sophisticated alternatives for more familiar words such as 'southern' or 'australe'. The preference for the latter is especially noticeable on maps, if Tooley (1963) is anything to go by, but it is also evident in prose, even when the subject was a south polar continent. Some texts suggest a division of labour, with 'antarctic' etc. preferred in astronomical contexts but 'southern', 'australe' etc. preferred in geographical contexts; see for example Saint Gelays (1578) which observes the distinction throughout.

It bears reiteration that educated Europeans would have been familiar with and to some extent guided by Latin usage because they were thoroughly conversant with the parent language. The formation of the proper noun 'Antarctica' was surely influenced by the fact that, while the most frequent Latin phrases in astronomy were masculine, namely 'Polus antarcticus' and 'Circulus antarcticus', the most frequent Latin phrases in geography were feminine, such as 'Terra antarctica ', 'Gallia antarctica' etc.; see, for example, Vespucci (1505). From the late seventeenth century, furthermore, 'antarctic' was not reserved for astronomical sentences in English because 'Terra Antarctica' frequently occurred in geographical texts. Appearing throughout the eighteenth century the multiple editions of Gordon's *Geography anatomiz'd* provide a prominent illustration of this usage (Gordon 1708: 400). By the mid-nineteenth century 'Terra Antarctica' was in effect a Latin phrase *in the English language*, much like 'terra firma' today; see for example Locke (1862: 119).

A final component in the adjectival 'inheritance' of the noun 'Antarctica' is that some ancient Greek place names such as Attica, Cyrenaica, or Thessalonica were formed from adjectival '-ikos' roots which resembled the adjective 'antarktikos'. 'America' is also an adjectival form, meaning 'pertaining to Amerigo [Vespucci]', and although the etymology of 'Africa' is different the ensemble of adjectival or quasi-adjectival precedents would have facilitated the adoption of 'Antarctica' when it was offered to the world of learning.

Wilkes

Between 1820 and 1832 several parts of the mainland of Antarctica, such as Trinity Land (Bransfield) or Graham Land (Biscoe), were named on the basis of exploration rather than conjecture. The names intended to have the broadest scope were perhaps Bellingshausen's 'Alexander I Coast', so-called because it stretched away southwards out of sight, and Johnson's 'New South Greenland', which was taken up by Morrell and applied, according to one generous commentator (Mills 2003: 433–435), to the Antarctic Peninsula as a whole. Neither of the last two, however, had continental pretensions, as the reference to Greenland, in particular, makes clear. (Edwin Balch's quotation from Benjamin Morrell's *Four voyages*, 'This continent … was named New South Greenland' (Balch 1902: 108), was a tendentious misquotation. What Morrell actually wrote was that Johnson had given the name to a 'body of land' (Morrell 1832: 69).)

The first person to propose a name for the south polar continent as a whole, on the basis not of conjecture (however well-founded) but of what he believed to be his own actual discoveries combined with those of previous

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explorers, was therefore Lieutenant Charles Wilkes, the commander of the United States Exploring Expedition of 1838–1842. As he reported from Sydney in March 1840, having repeatedly encountered what appeared to be an extensive body of mountainous land between latitudes 64° and 67° S, longitudes 154° and 97° E, he decided at the end of January 1840 to name his discovery 'the Antarctic continent' (Anon. 1840d; see also Wilkes 1845: 335). A brief account of the American discovery was published in the *Sydney Herald* on 13 March 1840 (Anon. 1840a), and similar accounts based on that press report and on letters from the expedition began to appear in the United States from 11 July 1840; see for example Anon. (1840b). However Wilkes's choice of name, 'the Antarctic continent', was not communicated to the northern hemisphere until the full text of his official report from Sydney was published later in July (Anon. 1840d). (That article cited the *Congressional Globe* as its source, but neither manual nor electronic searches of the *Globe* have succeeded in locating a plausible item. Rather, the earliest accounts of the naming in the *Globe* appear to have been those given by the President and by the Secretary of the Navy in December 1840 (Van Buren 1840; Paulding 1841).)

The pattern was similar in Britain. Short press reports, based on the first story in the *Sydney Herald* and not containing Wilkes's choice of name, began to appear in the third week of July (Anon. 1840c: 575). By mid-August, after a slightly longer interval than in the United States, Wilkes's official report, giving his choice of name, was also published (Anon. 1840e). However this detail of the American expedition commanded so little attention that, when the general secretaries of the British Association for the Advancement of Science presented their annual address to its members at Glasgow on 17 September 1840, they commented on the American discovery as follows:

> Had the project of an Antarctic expedition been acceded to when it was first proposed, viz. at the meeting of the British Association, in Dublin, in 1835, there can be no reasonable doubt, that a discovery of coast, *which by its extent may almost be designated as that of a Southern Continent*, situated in the very region to which its efforts were to have been chiefly directed, must have fallen to its lot … (Murchison and Sabine 1841: xxxvii, emphasis added.)

Two conclusions follow from this overview of the dissemination of Wilkes's name for the south polar continent. First, Wilkes called nothing 'Antarctica'. And second, if the leaders of a British scientific organisation which boasted Agassiz, Arago and Humboldt among its members were unaware of Wilkes's name for the south polar continent, when they prepared a survey of recent science for presentation in mid-September 1840, then we may reasonably suppose that someone in Florence, writing a report on recent exploration to lay before the Italian sister organisation of the BAAS one day after the latter received the address of its general secretaries, would not have learned about Wilkes's choice of name in time to mention it either.

By way of a footnote to this section it should be added that Robert McCormick, a surgeon with the Ross expedition which came after that of Wilkes, also used the designation 'Antarctic Continent' and at one point referred to 'the newly-discovered continent of Victoria' (Ross 1847 II: 412). McCormick's assistant, Hooker, did likewise (1844: viii, 507), although Ross himself discouraged such language (below).

Gråberg

The first person to give Antarctica its now familiar name did so in Italian at Turin on 18 September 1840. Jacob Gråberg (roughly pronounced 'Grorberg') Christiansson (1776–1847) was born at Gannarve in the parish of Hemse on the Swedish island of Gotland. (Biographical details were drawn from Sterving (1977), which has been published on several websites, and from Liverati (1842).) His father, Christian Gråberg Göransson, was an official at the audit office in Stockholm and later became Gotland's provincial judge. As a child Jacob was largely self-taught in ancient and modern languages and several other subjects, from history and mathematics to logic and navigation. He went to sea at the age of 14 and passed for mate while only 16. Finding himself in the Mediterranean after a transatlantic voyage he took service with Admiral Lord Hood's squadron of the Royal Navy. He was promoted lieutenant in 1794 but left the Navy a year later after a duel with a fellow officer. He settled at Genoa, perhaps because it was then a French protectorate, where he was befriended by the Swedish ambassador J.C. Lagersvärd. Gråberg earned a living partly as Lagersvärd's secretary and partly in service to patrons among the local nobility, and eventually joined the Swedish diplomatic service in 1811.

Meanwhile Gråberg was gaining an international reputation as a man of learning. His early works included a short-lived geographical journal, textbooks of cosmography and geography, and a study of ancient Scandinavian poetry. As his diplomatic career took him to North Africa there followed a survey of the kingdom of Morocco and studies of Ibn Khaldun, the Berber language and the plague. Other works included dictionaries, a diary of the siege of Genoa in 1801, and a theory of statistics. By 1834 he was a member of 68 learned societies and was valued in Britain as a supplier of early portolan charts to the Royal Geographical Society and the British Museum.

Gråberg was not of noble birth but began to gentrify his name as 'Jacopo Gråberg da Hemsö', in Italian, from about 1810. In 1828 he left the diplomatic service and settled in Florence, and when Pope Gregory XVI made him a Knight of the Golden Spur in 1834 he became a Roman Count. By the time he wrote the report in which he named Antarctica he had been appointed chamberlain and chief librarian to the Duke of Tuscany. A portrait

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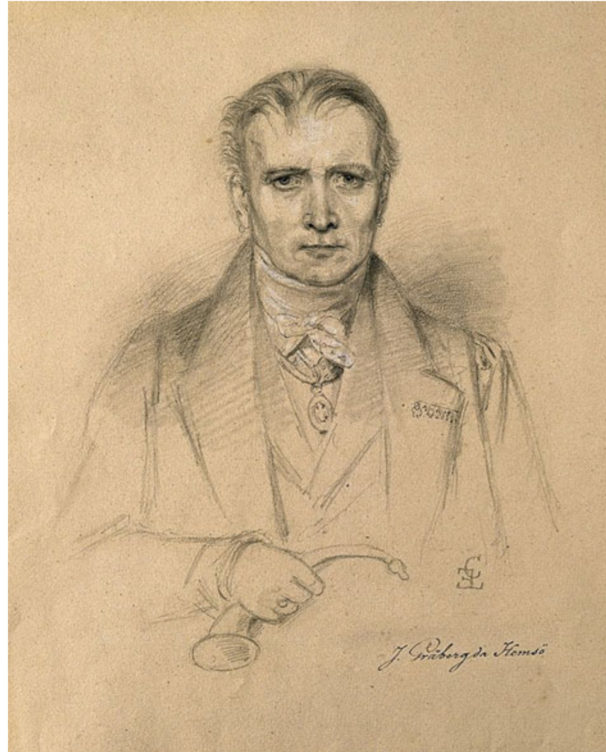

Fig. 1. The man who named Antarctica. 'J. Gråberg da Hemsö' by Carlo Ernesto Liverati, pencil, 1841. Wellcome Library, no. 3735i.

sketch by Liverati was taken at the third Congress of Italian Scientists (CIS) in Florence in September 1841, the year the 1840 report (below) was published, because with the meeting on his doorstep Gråberg had for once attended it despite his deafness. It shows a vigorous, serious and self-confident intellectual (Fig. 1; Liverati 1842). Gråberg died in 1847.

The 1840s – 'Antartica', 'Antarctie', 'Antarctica'

In 1839 Gråberg sent a paper on recent developments in geography to the first CIS, held in Pisa, where it was read in his absence. In 1840 he wrote a sequel. Gråberg's report on 'The latest advances in geography' was written in Italian and was read in two parts, on 18 and 29 September 1840, at the second CIS in Turin, again in the absence of the author. He began by explaining that his focus would be on recent exploration and discoveries, and that he would divide the subject between the six main parts of the world: Europe, Asia, Africa, North and South America, and Oceania, to which it would probably soon be appropriate to add a seventh under the name of 'Antartica'. He then followed his own advice by closing the report with a short seventh section headed 'Antartica', half of which described Balleny's expedition of 1838–1839 while the other half dealt with the expeditions commanded by Dumont d'Urville, Wilkes and Ross, of which two were still continuing. Out of those various matters he chose to emphasise Wilkes's reported discovery of 1700 miles (statute R.B.) of coastline (Gråberg 1841: 58, 149–50). Gråberg introduced the new place name as follows:

> ANTARTICA
> È questo il nome che fino d'ora io mi faccio sicuro di adottare pel nuovo continente che sta per emergere dal seno di quell' oceano glaciale che le antiche nostre carte coprivano di terre, ma che nel secolo passato ricomparve affatto bianco. [This is the name which I feel confident in adopting from now on for the new continent which is just emerging from that frozen ocean which our old maps used to cover with land, but which reappeared as a blank space during the last century.] (Gråberg 1841: 149).

As explained above, the 6-line summary of the Wilkes expedition was taken, indeed directly translated, from versions based on the first story in the *Sydney Herald* which had given no information about Wilkes's prior choice of name.

Although Gråberg evidently began using his neologism, and then shared it with the organisers, some time before the actual congress, its usage should probably be dated from 18 September 1840 when the first part of his report, containing the suggestion for a new place name, was read to a learned audience. The rest of it, containing the section confidently headed 'Antartica', was read on 29 September. The report was then published in the *Rivista Europea* in April and May 1841 (Gråberg 1841) and again a few months later as a separate pamphlet. It is impossible to say, however, whether the April number of

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the *Rivista* saw the first appearance of the new place name in print, because it was also mentioned that year in the proceedings of the congress, which cannot be precisely dated (Anon. 1841: 85).

Until he died in 1847 Gråberg continued to deploy the new place name in regular reports on geographical exploration to the CIS which were published either in periodicals like the *Rivista Europea* or separately, or both. In his 1843 report to the congress at Lucca he even noted Wilkes's choice of name as 'Continente antàrtico', but added dismissively that it had been given to a chain of mountains the existence of which had since been disproved by Ross (Gråberg 1844: 259).

Although Gråberg used his new word assiduously no one else (with one exception, below) appears to have done so in Italian in the 1840s, and 'Antartica' might have died the death if it had not been taken up in other languages. The first person to adapt it into French as 'l'Antarctie', within two years and with an explicit acknowledgement to Gråberg, was the Belgian geologist J.J. d'Omalius d'Halloy (1783–1875) (d'Halloy 1843: 98). d'Halloy continued to use it for the next 25 years, and in 1846 the name was accepted by the French author of a major series of geographical textbooks (Ansart 1846: 209) and then retained in similar works by himself and his son until at least 1869.

The exact point at which and person by whom Gråberg's 'Antartica' was first anglicised as 'Antarctica' remain elusive. The earliest use discovered is from 1849, when the *American Journal of Science and Arts* carried an index entry for 'Mountains of Antarctica' without a word of explanation, and despite the fact that the article in question, an account of the discovery of Victoria Land by James Clark Ross, had not used the new name (Anon. 1849: 462, 325). The timing suggests a connection with Gråberg, but the first appearance of the name in English remains to be discovered.

Diffusion

A year later in Britain the Reverend Thomas Milner (1808–1882) included the new name in his *Universal Geography*:

> ANTARCTICA
>
> 433. Islands, and extensive tracts of land, supposed to be portions of a great southern continent, occur towards the Antarctic Circle, and within its limits, a region of no importance to be mentioned, only to complete the view of the known terrestrial superficies.

Milner spelled out the scope of the name with the following list: the New South Shetlands, Deception Island, New Orkneys, Trinity Land, Graham's Land, Louis Philippe Land, Adelaide Island, Enderby's Land, Terre Adelie, Wilke's Land and Victoria Land (Milner 1850: 522, original spellings). The islands are sufficiently continental for his usage to fall within the definition of Antarctica accepted for this enquiry (US Board 1956: 45).

Although Milner published two atlases in the 1850s (below) neither contained the new place name. The next example comes from a school textbook published in 1860. The author broadened the scope of 'Antarctica' considerably, to include the Prince Edward Islands and even Tristan da Cunha, which Milner had treated separately as 'Solitary Islands' (Staunton 1860: 341). In 1861 two more books used the place name 'Antarctica'. One focussed carefully on polar discoveries that might form part of a seventh continent and explained the name as that '... given to those extensive tracts of land, recently discovered within the Antarctic Circle ...' (Mackay 1861: 25, 695). The other was by the Tasmanian educationalist Alexander Ireland and from internal evidence it was based either on Staunton or on Staunton's unknown source. Ireland had published a longer study of Oceania earlier in the year without including Antarctica (1861a), but then added a new section in the abridged version 'for the use of junior classes' a few months later (1861b). His explanation stated that: 'Of late years, several islands and extensive tracts of land, supposed to form portions of a great Southern Continent, have been found ... ', but he followed it with Staunton's loose, regional list, including Tristan and the Prince Edwards, with the addition of Macquarie Island (Ireland 1861b: 70). It should be noted that Ireland's book was probably the first ever to include 'Antarctica' in the title (Fig. 2).

Milner's *Universal geography* was revised and updated in 1876 by one of Britain's foremost atlas makers and holder of the royal warrant, Alexander Keith Johnston. The term 'Antarctica' and much of Milner's original wording were retained (Milner and Johnston 1876: 749). Staunton's book had no sequel. Ireland's abridged *Oceania*, with 'Antarctica' in the title, was used in schools throughout Australia for at least two decades. He produced three further editions in 1863, 1865 and 1870 with additional information that went far beyond Staunton. Mackay's *Manual* had several editions up to 1881, and he also used the term 'Antarctica' in his *Elements* (1864: 297) and again in his *Intermediate geography* (1885: 4).

In 1862 Lancelot Spence, a 24-year-old civil servant, completed the first draft of a textbook on geography. When he died just three years later his friend and executor Thomas Gray, an assistant secretary at the Board of Trade, revised the text throughout and saw it through the press. It is impossible to say, therefore, which of the two men was responsible for the brief section headed 'Antarctica' at the end of the book. After introducing the notion of a south polar continent as 'not yet confirmed or dispelled', in line with other treatments of the day, the text went significantly further by adding that '... the partial discoveries of enterprising navigators incline us to believe that a large tract of land, although not of the extent at first presumed, surrounds the South Pole' (Spence and Gray 1867: 115).

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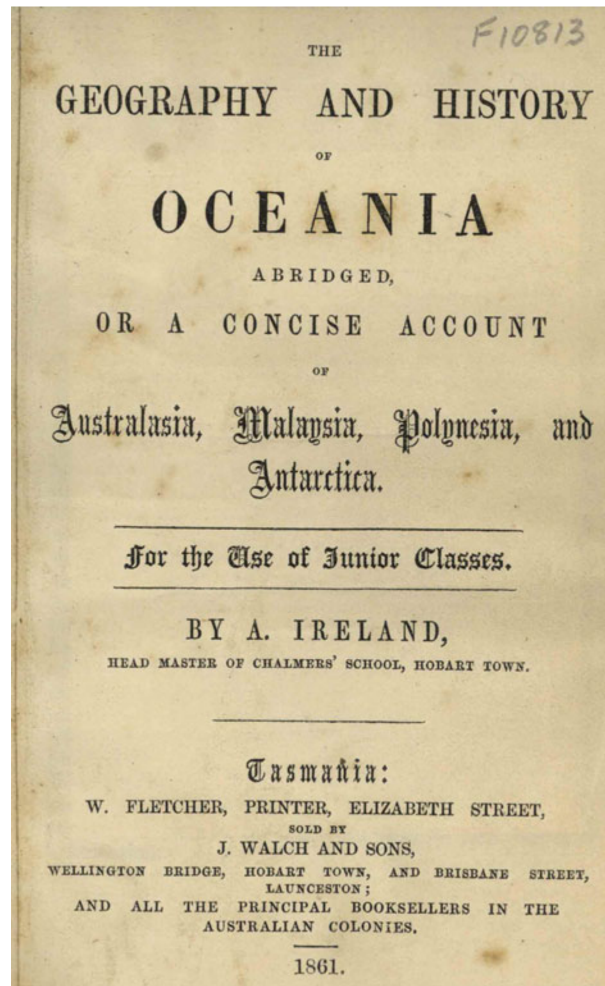

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THE

GEOGRAPHY AND HISTORY

OF

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ABRIDGED,

OR A CONCISE ACCOUNT

OF

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1861.

Fig. 2. The first book title to mention Antarctica. From Ireland (1861b).

Spence's book joined, indeed it seems almost to have spawned, a swathe of civil service manuals from the same publisher. Thanks to Gray it went through ten further editions to 1903, thus ensuring for the remainder of the century that the putative south polar continent was known as 'Antarctica' at the hub of the British Empire.

To sum up, the works cited in this and the previous sections provided the new word with a growing foothold in the international world of knowledge from 1840 onwards. It was not an extensive literature, however, and the name 'Antarctica' did not come into general use before the twentieth century. Thus it was still possible for Henry Forbes, writing in 1893 in New Zealand, to suppose that he had coined the term himself as a name for a lost former continent (Forbes 1894).

Lepidoptera

In the latter part of the nineteenth century alternative names to those derived or probably derived from Gråberg's 'Antartica' appeared in French and German, but not in English. A possible factor which might explain that pattern is lexical competition between geography and entomology. Gråberg had little interest in the natural sciences, and was probably unaware that words resembling the name he selected were already being used elsewhere. In 1816 the great entomologist Jacob Hübner had listed four species of moths comprising the genus 'Antarctien, Antarctiae' (Hübner 1816: 191). For each Latin species name the word 'Antarctia' was a noun, and the plural nouns just quoted were the name of the genus, which became 'Antarctie' in French and could be spelled 'Antarktien' in German. But after Gråberg those were also names for the south polar region. Since by the 1870s there were at least as many if not more lepidopterists in the world of learning than Antarctic explorers or geographers, some of the latter may have felt a need to modify the name. The difference in Britain may have been that the genus name *Antarctiae* was never adapted into the vernacular, besides which 'Antarctica' was also differentiated by its second 'c' from species names beginning with 'Antarctia'. The flaw in this hypothesis, however, is that even French and German would

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have provided some differentiation, because instances of the continent must have been preceded by singular, and instances of the genus by plural articles.

'l'Antarctide'

The French educationalist Félix Ansart was a national authority on the teaching of history and geography, so that when he adopted d'Halloy's name 'l'Antarctie' he secured a place for it in the mid-nineteenth century French school curriculum. Not surprisingly it was included in Larousse's *Grand dictionnaire universel*, one of the preeminent works of reference of the day (1866: 421).

The website of the Centre National de Ressources Textuelles et Lexicales offers an example of 'l'Antarctique' as a noun meaning 'south polar region' from 1870, but the passage in question does not appear to have been referring to a continent. The context was palaeontological, which complicates interpretation, and although the author, George Bentham, was extremely fluent he was not a native French speaker (1870: 647). These considerations suggest that the example should be set aside. However an alternative to 'l'Antarctie' as a name for the south polar continent, namely 'l'Antarctide', was in use by 1876 (Milne-Edwards and Grandidier 1876: 56). The origins of the new word are obscure, and the two names probably coexisted for some time. 'Antarctie' was still in use in Belgium at the end of the century (Alexis 1896: 439). That also seems to have been the case in France (Reclus 1894: 790). However the passage in which he used 'Antarctie' contained the bizarre claim, contradicted by Reclus himself in an earlier volume, that no one had yet discovered anything south of South Georgia. It must, therefore, have been written several years or even decades before it was published.

Whoever coined 'Antarctide' and for whatever reasons, the name has been extremely successful. Today the south polar continent is known as 'Antarctide', 'Antarctida', 'Antartide' or 'Antartida' in French, Italian, Romanian, Russian, Spanish and doubtless other languages. In most cases the usage dates from the twentieth century; Parona (1903: 146) is an early Italian example of 'Antartide'. Likewise, although Hispanic actors have been prominent in modern Antarctic history, the author could find no Spanish examples of 'Antártica' or 'Antártida' as a place name for the continent before 1900. The feasibility of such a noun had been demonstrated by one of Spain's greatest authors, Lope de Vega, as early as 1630, when he imagined the nymph Antartica as a personification of the mineral wealth of the American colonies (Vega Carpio 1630: 12). A nineteenth century history of Brazil contained a more prosaic Portuguese example, referring to Thevet's proposal 300 years earlier (above), which also meant 'South America' (Varnhagen 1854: 28). In the 1890s even Spanish authors who accepted the case for a south polar continent, such as Beltrán (1889: 352), restricted themselves to expressions like 'continente austral' or 'continente antártico'. One of the first uses of 'Antártida' in Spanish was probably Beltrán (1915: 177).

'Antarktis'

In 1842 the lexicographer Christoph Friedrich Grieb demonstrated the reluctance of German to import words based on Greek or Latin roots by translating 'antarctic' in its vaguer sense as 'südlich' and 'antarctic regions' as 'die Südländer' (Grieb 1842: 41). Nevertheless the adjective 'antarktisch' came into German by 1843, if not earlier, often in connection with foreign expeditions (Anon. 1843). The place name 'Antarktien' was in use by 1851, and since that example occurred in a novel without explanation (Bechstein 1851: 111) it must surely have been introduced earlier, and from the timing may have been adapted from Gråberg's 'Antartica' via d'Halloy's 'Antarctie', but that is conjecture. Examples of 'Antarktien' in geographical texts show scholars either denying or doubting the existence of the continent to which the name would apply (Reuschle 1858: 59; Daniel 1859: 123). The word can be traced into the next decade, once again accompanied with caveats (Wagener 1865: 157). But a final example, in a Bavarian school textbook, demoted 'Antarktien' to islands in the southern ice ocean (Saffenreuter and others 1867: 5). (It should also be noted that a Danish dictionary leaned the other way in 1858 by giving one sense of 'Antarktiske' as the mainland or continent ('Fastland') (Anon. 1858: 199).)

In 1869 Gustav Jäger coined the name 'Arktis' for a lost polar continent that had existed in the Miocene epoch, and of which Greenland and Scandinavia were, he claimed, surviving fragments. Jäger explained that he had formed the name by analogy with 'Atlantis' and in conscious opposition to that rival hypothesis about the Miocene (Jäger 1869). He used it again in *Petermanns geographische Mittheilungen* the following year (Jäger and Bessels 1870: 89–91), but it did not gain rapid currency, probably because it was tied to a specific palaeogeological theory. As such it could not be translated and did not suggest a southern counterpart.

The word 'Antarktis' was introduced in the 1880s by Friedrich Ratzel, an assistant professor at the Munich Technical High School, to designate the Antarctic region as a whole, regardless of which parts of it might or might not be land. His lecture to the Fifth Congress of German Geographers at Hamburg in April 1885 can best be consulted today in the excerpt reproduced by Neumayer (Ratzel 1885; Neumayer 1901: 397–400). One commentator also suggests, unfortunately without direct quotation, that Ratzel was using the terms 'Arktis' and 'Antarktis' for 'the Arctic' and 'the Antarctic' by 1883 (Böge 1999: 554). Perhaps, but two years earlier he was still using expressions such as 'Südpolarländer' (Ratzel 1881: 276). Then in 1892 Carl Viktor Fricker shifted the meaning of 'Antarktis' from the climatic zone to the aggregate of land in the vicinity of the South Pole,

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some of which, whether a substantial mainland or merely islands, probably lay beneath the ice cap. Fricker showed which option he preferred by explaining that: '. . . the northern hemisphere has a separate polar ocean and a polar facet to its continents; the southern hemisphere has a separate polar continent (or polar archipelago) and a polar facet to its oceans' (Fricker 1892: 24, translated by the author).

But the reviewer who translated 'Antarktis' as 'Antarctica' in the *Geographical Journal* was right to do so, precisely because neither term had yet become the settled name of a continent (Anon. 1893). Nor had 'Antarktis' done so by the end of the decade, when Fricker published his seminal study of the region (Fricker 1898). Given Fricker's emphasis on land as the core meaning of 'Antarktis', however, the translation of his title as *The Antarctic regions* in 1900 was somewhat timid. Today the word is used more often in Ratzel's sense, for 'the Antarctic', rather than Fricker's.

Maps

From the sixteenth century printed maps often showed land at the South Pole, usually of continental proportions (Tooley 1963). The Latin legends 'Polus antarcticus' and 'Circulus antarcticus', which are essentially astronomical concepts, were fairly common in cartography, but few early maps used the adjective 'antarctic' in any language to name south polar *land*, preferring a variety of expressions such as 'Terra Australis Incognita' (Hondius 1636) or 'Terre Magellanicque, Australe, Inconnue' (Sanson 1657) for that purpose. The French adjective 'antarctique' began to be used occasionally in the eighteenth century but the Latin feminine adjective 'antarctica' (or 'antartica') was extremely rare. The only such map identified by Tooley over a period of 350 years was published by John Seller in 1670 with the legend 'Terra Antarctica' (1963: 14). (Tooley's description of a map published by John Thomson in 1814 with the legend 'Icy sea Antarctica' was erroneous (Tooley 1963: 24). The legend actually reads 'Antarctic Icy Sea', a phrasing used in several languages including English at the time.)

Tooley missed the first map to use the modern one-word place name for the south polar continent, which was, not surprisingly, Italian. The 'Carta generale dell' Antartica' was drawn and lithographed at Naples in November 1842 by Benedetto Marzolla (1801–1858), an officer of engineers at the Reale Officio Topografico (Royal Topographical Office) in the Kingdom of the Two Sicilies. According to Valerio (Visconti 1995: 150, 168) it was published in the first edition of Marzolla's *Atlas*, which contained only eleven sheets, in April 1843 (Marzolla 1843, not seen). It was republished in steadily enlarged editions of the atlas, the last of which appeared posthumously in the 1860s. It must also have been issued separately, since the State Library of New South Wales, for example, has a copy in its own leather case stamped with the title 'Antartica'. The 1856 edition of the atlas can be studied on-line at the David Rumsey website, and has many interesting features. The sheets were unnumbered and separately dated; each incorporated its own explanatory text with no further editorial matter; the contents page was written out by hand; and no title page was provided (Marzolla 1856).

In a large block of text below the map Marzolla described its subject matter as 'the various stretches of the continent, islands and signs of land so far known within the Antarctic Circle [polo antartico]' (for this usage of 'polo' see Tommaseo and Bellini (1871: 1089–1090)). The routes of Cook, Bellingshausen, Weddell, Biscoe, Balleny, Dumont d'Urville, Kemp and Ross were shown on the map and mentioned in the text. Wilkes was omitted because as Marzolla explained his map was a reproduction of the 1842 edition of a 'Chart of the South Polar Sea' produced by the British Hydrographic Office, which itself had not included Wilkes. (Athough the American explorer began producing maps of his voyage in 1840 they were first published in an *Atlas* volume in 1845, according to the David Rumsey website. Prior distribution of individual maps can probably be ruled out in this case because the Wilkes expedition more than any other from this period embargoed its research materials until they were ready for publication.) Marzolla also stated in the text that he had taken the new name for the south polar continent from Gråberg's report to the third CIS, held at Florence in 1841. In short the first map to use and acknowledge Gråberg's new name left out the very event, the Wilkes expedition, which had inspired Gråberg to coin it.

Although Marzolla was only the second person to use the new place name in print, by the lithographic date, a few months before d'Halloy became the third, as noted above, the sequel in cartography was very different from that in geography. Whereas the new name reappeared from time to time over the next 45 years in geographical texts, it seems to have disappeared from maps completely during the same period. Thomas Milner published two atlases in the 1850s in collaboration with the German cartographer Augustus Petermann, who worked in Britain for several years. The most that Petermann conceded were legends such as 'Antarctic Ocean extent of land unknown' (Milner and Petermann 1850: Sheets 4, 5), or 'Antarctic Continent supposed after recent expeditions but still unproven' (Milner and Petermann 1854: Sheet 9). For the next three decades leading British atlas makers such as Alexander George Findlay and Alexander Keith Johnston followed Petermann's lead by regularly marking the area *south* of discoveries such as Kemp Land or Victoria Land as 'Antarctic Ocean'; see for example Johnston and Johnston (1878: Sheet 1).

The question of cartographic continuity after Marzolla, however, is not a simple one. Certainly there was no direct continuity in Britain. The Royal Geographical Society has only nine of the 49 sheets in Marzolla's *Atlante geografico*, not including the Carta dell' Antartica, and there are no copies listed at other British libraries.

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It is not impossible but it is improbable, therefore, that the Edinburgh firm of John Bartholomew and Co. possessed either the *Atlante* or the Carta. Thus when John Bartholomew Jr. and his son John George Bartholomew, in collaboration with John Murray, prepared atlas sheets of the south polar region for publication by the firms of John Walker and Thomas Nelson in 1887 and 1890 (Mawer 2008; Woodburn 2008), they could easily have obtained the name from the latest edition of Mackay's *Manual* (1881: 631), but they probably thought they were using it on a map for the first time. And so in one very important sense they were, because Marzolla had only used it in the title of his map, and not as a legend on the map itself as did the Bartholomews; see for example Bartholomew (1890: Sheet 28).

In the second half of the nineteenth century there was however another sort of cartographic continuity with reference to the south polar continent, which returns us briefly from the name to the thing named. Mawer and Woodburn have described the stages by which Murray conceived and John George Bartholomew illustrated a conjectural outline of the continent which from 1887 onwards they began to call 'Antarctica' (Mawer 2008: 181; Woodburn 2008: 4; Murray 1894: 10, 13–14). But Murray's outline, though doubtless carefully considered, was by no means the first one based on actual discoveries. By 1887 only the application of that name to a conjectured outline was new. For the sake of completeness, and given that the 1887 map was issued in the name of John Bartholomew Jr., it should be mentioned that the first maps published by his son John George and showing the continent with the legend 'Antarctica' were produced in 1889, before the 1890 maps identified by Woodburn, for a pair of paperweights showing the eastern and western hemispheres (Anon. 2008; Woodburn 2008). One example of the eastern and two of the western hemisphere paperweights have come to light since 2006, but the actual number issued is not known. More importantly, there is no record that John Murray had anything to do with them.

In 1863 Petermann rebuked contemporary cartographers for depicting an 'Antarctic Continent', in capital letters forsooth, on insufficient evidence (Petermann 1863: 407–408). Between 1840 and 1887 there were two main issues for cartographic representations of the south polar region. The first was whether to follow Wilkes in accepting the existence of an Antarctic continent, and the second was whether to attempt a complete 360° delineation of its limits, however conjectural, or show only the parts which had been discovered. The distribution of cartographers between the three resulting groups is interesting. As we have seen Petermann himself and leading British cartographers belonged to the 'no proof of a continent and therefore no outline' group. American cartographers, plus Marzolla, occupied the intermediate category 'Yes to the continent but no full outline'. Between 1856 and 1886 Colton's *World Atlas*, for example, went through six editions in which the representation of Antarctic land, including the 'continent' legend, hardly varied (a sign of the times), but in which no attempt was made to delineate the continent as a whole (Colton 1856: Sheet 13). A small group of cartographers, however, both accepted the continent and showed it with a complete outline. They were all German, and their maps were drawn between 1844 and 1860, when Petermann was not yet the dominant figure that he soon became. The earliest, and most naïve, depiction was a cartouche of 'Das Antarctische Continent' within a map of South America engraved by Carl Christian Franz Radefeld in 1844 (Fig. 3a; Meyer 1860: Sheet 13/170). Another map of the Antarctic in the same book, described on the David Rumsey website as 'the finest German atlas of the mid 19th century', showed a similarly complete but more detailed outline (Meyer, 1860: Sheet 26/8). A cruder outline, also from Hildburghausen, was shown on two sheets of Meyer's *Zeitungs Atlas* that were published in 1849 (see for example Meyer 1849–1852: Sheet 1), and doubtless other examples could be found.

But the most significant maps showing a full outline from this period were those prepared or influenced by Heinrich Berghaus. Berghaus had taught Petermann and preceded him as 'geographer-in-chief' at the Gotha publishing house of Justus Perthes. He cooperated with leading cartographers and publishers, and his outline of Antarctica (not so named) appeared in several atlases from this period, with or without a 'continental' legend and often divided between two hemispheres. An early divided example appeared in Sohr and others (1847: Sheets 3, 4), which went through several impressions and then another edition in 1855.

Berghaus's *Physikalischer atlas*, which appeared in various editions from the late 1830s, was hugely authoritative and regarded as 'the first comprehensive physical atlas of the world' according to the David Rumsey website. Several maps in the atlas showed a section of coastline south of Cape Horn with the legend 'Südl.[iches] Continent'; they were among the earliest to apply the 'continent' legend somewhere other than Wilkes Land. His conjectured full outline of Antarctica appeared on a single sheet in part 3 without a legend, as part of a map focussed on the global distribution of land and sea (Berghaus 1850a: Sheet 1). A striking feature was the high latitude assigned to the conjectured coastlines between 40°W and 20°E and between 180°W and 90°W (Paris meridian). Another version was included on two sheets of Berghaus's *School atlas*, published in the same year. It is easier to see because of its solid shading, and one of the outlines carries the legend 'Muthmaassl. Süd Pol. Land' [Supposed South Polar land] (Fig. 3b; Berghaus 1850b: Sheet 17).

To a historian, the single most remarkable thing about Berghaus's 1850 outline is its resemblance to outlines put forward decades later by John Murray and by the German geographer Albrecht Penck (Bartholomew 1894; Penck 1904). A posthumous edition of Berghaus's physical atlas

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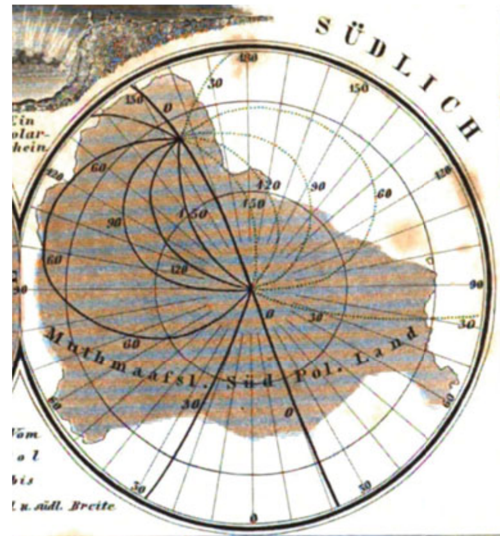
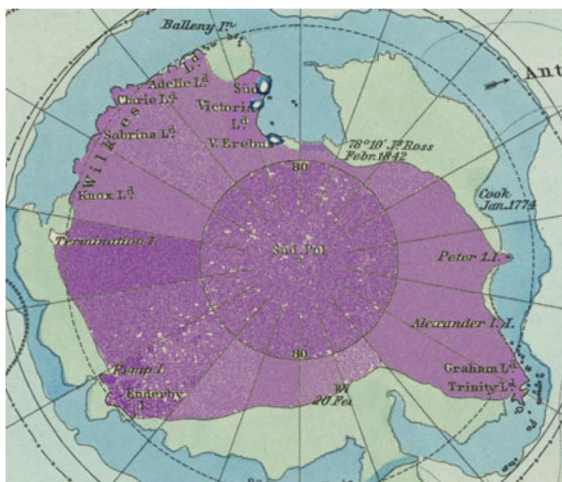
3a: Radefeld, 1844 (Meyer, 1860)



3b: Berghaus, 1850b



3c: Berghaus, 1892 (shading enhanced)

3d: Murray/Bartholomew, 1894 (inverted)

Fig. 3. Outlines of Antarctica 1844–1894.

was published in 1892, eight years after his death and shortly after the Bartholomews had rendered Murray's vague, curving outline in 1887 and his still somewhat amorphous outline in 1890 (Bartholomew 1890: Sheet 28; Mawer 2008; Woodburn 2008). A map of world ice distribution in the 1892 edition of Berghaus showed an outline around the South Pole which closely resembled the 1850 outline of 'Supposed South Polar land'. The editor of that section of the atlas, the German palaeontologist Karl von Zittel, revised the designation of the outline to 'Unbekannte Umgebung der Pole' [Unknown polar region], but still showed it as distinct from surrounding ice fields (Fig. 3c; Berghaus 1892: Sheet 5). (One of the co-authors of one of the seven maps on the Berghaus atlas sheet was Albrecht Penck.) A year or so later the outline shown in maps produced by John George Bartholomew to illustrate Murray's lecture in November 1893 was more confidently defined than their previous outlines and had a noticeable though not a slavish resemblance to the one in the 1892 Berghaus atlas (Fig. 3d; Bartholomew 1894). Another interesting feature of Murray and Bartholomew's 1893 maps is that, while the main map was oriented with the Atlantic Ocean at the top, as it had been in 1887 and 1890, five of the six supplementary maps were oriented with the Atlantic at the bottom, the convention followed by Berghaus and other German and Dutch cartographers, although there was no conceivable rationale for such vacillation. Whether the 1893 Murray/Bartholomew outline was influenced by Berghaus, or reflected commonality of data, or was merely a coincidence, is for the reader to determine. But Bartholomew's annotation, that the 1893 maps were

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simply 'after Dr. Buchan and Dr. Murray', is not enough to decide the matter.

Conclusions

The naming of Antarctica was an episode in a history of ideas about the south polar region that was not so much linear as dialectical. In the early modern period fragmentary reports of sightings and a shrewd theory of glaciation inclined geographers to suppose that land existed in the far south. When further evidence failed to materialise they became more sceptical and maps of the region went blank, as Gråberg pointed out in 1840. When the first modern discoveries were achieved, between 1819 and 1840, some were close together and others were, or were said to be, of considerable size. The old idea of a south polar continent came back into favour with many geographers and explorers. During the 1840s the modern name was coined and appeared on a map for the first time, and the first outline maps of Antarctica, based on discoveries, were also produced. However the controversy over Wilkes's reported discovery of hundreds of miles of coastline, which he had named 'the Antarctic Continent', led to a revival of scepticism in the second half of the nineteenth century, especially in Europe. The name 'Antarctica' appeared repeatedly in a small number of books, some by influential authors, but other names were also proposed and 'Antarctica' never caught on in cartography. Its very aptness, as the name of a continent alongside Africa and America, may have been a hindrance while the evidence for such an entity remained slight, as Ross and others pointed out (Ross 1847 I: 275). In 1876 Johnston put numbers on the problem. Known land in the Arctic comprised about 2,711,200, in the Antarctic about 3,500 English square miles (Milner and Johnston 1876: 125). The implication was obvious: if there was nothing worth calling a continent in the Arctic, how could one be attributed to the Antarctic, with just 0.13% of Arctic land by area? It is hardly surprising that no new maps showing a complete outline of the continent seem to have been created between 1861 and 1886. The only mystery about the revival of scepticism is whether the mindset which Hugh Robert Mill described as 'a generation of averted interest' was the product or the cause of the dearth of new Antarctic data (Mill 1905: 327–343).

A third cycle was triggered when the *Challenger* expedition of 1872–1876 found eroded mineral deposits in icebergs and on the ocean floor in longitudes where polar land had not yet been certainly discovered (Moseley 1879: 241–242). Working closely with the Bartholomews the *Challenger*'s former naturalist John Murray signalled his growing belief in the reality of the continent by referring to it as 'Antarctica' from the late 1880s. A few years later the first supplementary map provided by John George Bartholomew to illustrate Murray's 1893 lecture was the one showing a ring of benthic 'terrogenous deposits' around the mooted continent (Bartholomew 1894). Formally at least, however, doubt persisted. 'Murray's … antarctic continent' was treated as 'hypothetical' throughout the 1890s both by Murray himself and by others, including another erroneously mooted author of its name (Arctowski 1897, 1899: 77). Out of 347 titles published between 1893 and 1900, Mill's bibliography for George Murray's *Antarctic Manual* contained only four examples of the name, two of which were Forbes's 'vanished' continent, plus five examples of 'Antarktis' with various shades of meaning (Mill 1901).

In short, the name could only follow knowledge, never lead it. But each succeeding cycle saw scepticism give way to acceptance at shorter intervals, and each renewal of acceptance could draw support from a previous age. Thus early nineteenth century explorers could read Burney's account of 'Gherritz Land' (Burney 1806: 198, 204), and Murray and Penck could study maps created by Berghaus. At last, as some of the first results of the 'heroic age' began to come in, *The New York Times* could report, on Penck's authority, that 'there is little doubt that the great frozen continent of the southern hemisphere will be known as Antarctica' (Penck 1904; Adams 1904). Despite which, and perhaps as a last gesture in support of Wilkes, another by then American authority, the *Encyclopaedia Britannica*, declined to accept the name until its thirteenth edition in 1926.

Afterword

Several stages in the naming of Antarctica remain obscure. They include the first use of the place name in English, before the example discovered in 1849, the origins of 'Antarctide' in French, and the replacement of Gråberg's 'Antartica' with 'Antartide' in Italian. But this incomplete survey has at least established that the world's only demilitarised and partly internationalised continent was not named by imperialist geographers in the service of a monopoly superpower, but rather by a Swedish polymath and former diplomat who wrote in five languages and lived in half a dozen countries, and whose work was universally esteemed.

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Liverati's portrait sketch of Gråberg (Fig. 1) is in the Wellcome Library, London. It was downloaded from Wellcome Images and is published here under the Creative Commons Attribution, Non-commercial, No derivatives licence CC BY-NC-ND 4.0. The author would like to thank the National Library of Australia for supplying him with extracts from its copy of the first edition of Ireland's abridged *Oceania* (Fig. 2), which is not available online. The outline map of Antarctica shown in a cartouche by Radefeld in 1844 (Fig. 3a) is published with permission from the David Rumsey map collection (www.davidrumsey.com). The collection made possible the author's discovery of Marzolla's 1842 map, and where possible links have been provided to that and other maps in the collection, or in some cases elsewhere. The

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author is grateful to Kjell Olsson for posting Sterving's biography of Gråberg, first published by *Gotlands Allehanda* in 1977, on his website http://www.tjelvar.se/, and even more so to Mickael Lundgren for translating it for the benefit of this article. He would also like to thank Aant Elzinga for several extremely helpful comments and suggestions. Other material consulted was sourced, in most cases electronically, from the Bavarian State Library, the Biodiversity Heritage Library, the Bodleian Library, the Boston Public Library, Gallica, Google Books, Harvard University Library, the Internet Archive, the National Library of Australia, and M. Witkam's invaluable atlases website (http://www.atlassen.info).

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