

MAPPING ANTARCTICA

A Five Hundred Year
Record of Discovery



Robert Clancy
John Manning
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Springer

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Springer

Published in association with
Praxis Publishing
Chichester, UK



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ISBN 978-94-007-4320-5 ISBN 978-94-007-4321-2 (eBook)
DOI 10.1007/978-94-007-4321-2
Springer Dordrecht Heidelberg New York London

Library of Congress Control Number: 2013950739

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Preface

Antarctica was to be the greatest discovery of them all! It was never to be a tripping over of a piece of useless land: the Greek philosophers had predicted a polar land-mass of geophysical importance! The question was rather whether or not man could bridge the “torrid equatorial zone” that was thought to separate the sophisticated north from the primitive south. But slowly the zone was bridged by adventurous mariners and the commercial aspects of the Spice Islands led to a race to control trade with the Far East. In their efforts Western Europeans sailed every which way—to the west, to the southeast, to the southwest, and then via the northeast and the northwest searching for an easy route to the luxury goods. Catholics from the Iberian Peninsula stole a march on their Protestant competitors to the north once it became clear that the traditional Silk Route was unpredictable and cost ineffective. The Dutch and the English made no impact via northern routes across North America or Europe, so took Portugal and Spain front-on. Necessity to succeed on the ocean sharpened navigation technology, and with leadership from Edmund Halley in the post-Newtonian era, geophysics in its broadest context was born. James Cook circumnavigated Antarctica (without ever seeing the continent), on the back of this evolution of trade and science, to initiate the modern era when Antarctica would become a reality. Over time one thing became clear—that Antarctica was like no other land, never to be owned by another, nor easily exploited. A truly international phenomenon, with a unique capacity to provide a window on the health of the world, exemplified by detection of a dramatic depletion of stratospheric ozone at the Halley Station on the Antarctic Peninsula 20 years ago, reduction in ice water as an index of global warming, and the dramatic reduction in marine mammal stocks caused by uncontrolled fishing. Edmund Halley’s initiative of seeing the world as but part of a universe and his documentation of southern star charts previewed the use of the Antarctic polar plateau to network with the satellite fleet for solar astronomy. This integration of research in Antarctica and space will only strengthen in the future.

The contemporary views on Antarctica by those involved in its discovery and exploration are revealing and best illustrate changing ideas about the frozen continent:

- *1800* James Cook circumnavigated Antarctica between 1772 and 1775, crossing the Antarctic Circle on three occasions and confining any Antarctic landmass to within the Antarctic circle. Before Cook, Antarctica was no more than an idea. Cook believed that there was a “track of land near the poles which is the source of most of the ice which is spread over the vast Southern Ocean” a land of considerable extent, but that “no man will ever venture further than I have done and that lands that may be to the south will never be explored.”
- *1850* In the introduction to *Voyage to the South Seas*, the published journal in 1847 of James Ross’ expedition to Antarctica, there was no equivocation as to the importance of Antarctic exploration: “The subject of most importance beyond all question, to which the attention of Captain James Ross and his officers can be turned ... is that of terrestrial magnetism”—all else was subservient to this primary goal.
- *1900* Sir Clements Markham was the dominant figure in the politics of Antarctic exploration. In the early part of the 20th century, with his assumption of British “right” to control Antarctic exploration as a seamless extension of its “long and glorious story of Arctic discovery” (glorious for England, of course). His vision was clearly stated—discovery and physiography; he saw little beyond a continued investigation of geology, the ice cap, and the relationship of Antarctica to surrounding landmasses. The primary role for England was a given, and Robert Scott was his idea of the past, present, and future of Antarctica. Even magnetic, meteorological, and tidal studies are mentioned in his *The Lands of Silence* as afterthoughts.
- *1950* In 1958, during the time of the IGY, George Bertram, the recently retired Director of the Scott Polar Research Institute in Cambridge during the postwar years, saw the Antarctic Continent in the context of a contemporary world of uncertain politics and a new focus on internationalism. A world traumatized and paranoid following a horrific war that reached as far as Antarctica. He saw a glimmer of hope through “scientific friendly rivalry (in a period of) political, indeed strategic, cold warfare”, with modern technology poised to exploit a continent “ripe for development” once the critical mass of accessible resources was found. He only recognized two nations with “resources enough” to capitalize on any such discovery and they were the two most obvious absences from the “five mutually recognising sovereign powers that had partitioned the content between themselves.”
- *2000* Aant Elzinga chaired a conference in Goteborg in 1991 to mark the 30th year of the Antarctic Treaty. The unforeseeable of the anxious 1950s was the Antarctic Treaty. The underpinning concept of the new international vision for Antarctica was that of sustainability. This meant development without impinging on the needs of the next generation! By extension this involves environmental ethics, stretching the environmental guidelines incorporated within the original

treaty document which addressed only nuclear waste and nuclear testing. In 1991 these new concepts were incorporated in a further international agreement providing for comprehensive protection of the Antarctic environment. This “Madrid Protocol” was ratified by 27 countries which included essentially all countries expressing an interest in Antarctica. Antarctica had truly become a “global village” relevant to global ecological security and recognized as the “climate machine” of the world and as a strategic monitor of influences on the environment and the health of the planet. Tangible and measurable determinants such as the origin of the marine food chain and the stability of the ice sheet, became household topics of conversation.

The story of Antarctica as a unique global village can only be appreciated by an analysis over time of its discovery and exploration, and the behavior of its guests. The constant record of these events has been the maps drawn over many hundreds of years, initially to predict its presence, then to validate its detection, and most recently to judge its place in the wider world. The competing tensions of science and commerce continue to play on an increasingly complex political stage with its precarious balance influenced by the collective international mood.

The maps in this book have been selected to illustrate man’s interaction with Antarctica from concept to reality. On one hand, these maps are a record of discovery and exploration of a unique, isolated, remote, hostile, and unpopulated environment at the “end of the Earth”. On the other hand, however, they depict the growth of a dynamic interactive “global village” of international importance evolving out of 500 years of expansion of the nations of Western Europe in search of economic advantage, extension of their powerbase, and scientific understanding of the way of things! It is through these contemporary maps that certain philosophies relevant to Antarctica can best be understood: the discovery of Antarctica was an end point of the process that commenced on how best to exploit the Eastern luxury goods market. While Antarctica is the one truly “international” continental address, activities in and around Antarctica have always been linked to those in the Arctic. The concept of a “polar unit” best encapsulates this idea. The driving pressure for Antarctica was born of the tension between commerce and science but concluded the discovery process of the world. Maps of 21st-century Antarctica still illustrate the big questions of the day, as they have for several hundred years, and identify the cutting edge digital technology that can now be brought to bear. As the study of terrestrial magnetism drove early discovery of Antarctica, the Earth’s magnetic field now provides a special platform for the scientific study of space. Nowhere can the view of history as an examination of the past in order to have a better understanding of the future be better understood than through the study of the maps that record the discovery of Antarctica!

Robert Clancy, John Manning, and Henk Brolsma
May 2012

Abbreviations and acronyms

ANARE	Australian National Antarctic Research Expedition
ATCM	Antarctic Treaty Consultative Meeting
BANZARE	British, Australian and New Zealand Antarctic Research Expedition
BGLE	British Graham Land Expedition
BIOMASS	Major multinational scientific program dedicated to the study of the Antarctic marine ecosystem
CCAMLR	Commission for the Conservation of Antarctic Marine Living Resources
CEP	Committee for Environmental Protection
CHINARE	CHInese National Antarctic Research Expedition
CMS	Convention on the Conservation of Migratory Species of Wild Animals
COMNAP	Council Of Managers of National Antarctic Programs
ECARE	Teniente Ruperto Elichiribehety Uruguayan Antarctic Scientific Station
EDM	174
FIDS	Falkland Islands Dependencies Survey
IAATO	International Association of Antarctic Tour Operators
IGC	International Geographical Congress
IGY	International Geophysical Year
IMW	<i>International Map of the World</i>
JARE	Japanese Antarctic Research Expedition
LIMA	Landsat Image Mosaic Antarctic
RGS	Royal Geographical Society
SCAR	Scientific Committee on Antarctic Research
SDUK	Society for Diffusion of Useful Knowledge
SPOT	Satellite Pour l'Observation de la Terre

xx **Abbreviations and acronyms**

VOC	<i>Vereenigde Oostindische Compagnie</i> (Dutch East India Company)
WGS84	World Geodetic System 84

[illegible]

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