STEPPING STONES TO THE SOUTH POLE

By the same author

A NEW ENGLAND PILGRIMAGE

A SCOTTISH PILGRIMAGE

CAPTAIN SCOTT AT THE ICE-CRACK

Photo: H. G. Ponting

Stepping Stones to The South Pole

By

J. R. NICHOL

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DEDICATED TO

H. R. MILL, D.Sc., LL.D.,

IN APPRECIATION OF HIS HELP AND ENCOURAGEMENT

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My great debt to Dr H. R. Mill is accorded in the preface.

J. R. N.

PREFACE

MANY years ago I enjoyed the privilege of reading and re-reading Dr H. R. Mill's famous book, *The Siege of the South Pole*, published in 1905.

This volume is truly the classic story of the Antarctic, though, of course, we need the records of the twentieth century adventurings to bring the story up to date. Dr Mill himself is the doyen of that band of writers who, in the last thirty to forty years, have written books about the Antarctic. From his point of vantage as Chief Librarian of the Royal Geographical Society, this gentleman has had intimate contact with most of the later voyagers who have dared to venture into the South Land's inhospitable clime, and has proved a friend, adviser and encourager to them all. Though Dr Mill himself has not voyaged into Antarctic waters, he had much to do with preparations in the homeland, and has journeyed to nearly all the jumping-off places in the south; Wellington, Lyttelton, Port Chalmers, Half Moon Bay, Hobart, Capetown, Punta Arenas, Port Stanley, Buenos Aires and Monte Video.

Dr Mill, being so fully informed concerning the series of expeditions in the earlier years of this century, entertained the idea of revising his book, and bringing it up to date by including the stories of the later expeditions. But other urgent duties and failing sight prevented the publication of what would have proved a super-classic in the literature of Antarctica. Instead, he devoted a year to writing *The Life of Sir Ernest Shackleton*, which involved

"a minute study of the voyages of the *Discovery*, the *Nimrod*, the *Endurance*, the *Aurora*, and the *Quest* and the personality of the most attractive and many-sided man I have known". Later, this eminent authority gave two years of literary toil to the preparation of *The Record of the Royal Geographical Society, 1830-1930*. These very important publications represent Dr Mill's immense contribution to polar literature. In this work, Mrs Mill gave her husband invaluable help.

The Siege of the South Pole aroused in me an alert interest in Antarctic happenings, and I have also obtained and avidly read most of the splendid publications that detail the experiences and achievements of men like Scott and Shackleton, Mawson, Amundsen and Byrd, and their comrades, in the regions of eternal ice within the Antarctic zone.

Dr Mill's book goes back to the genesis of Antarctic thinking and imagination. In the earlier section, it deals with the theories and legends of the ancient world in respect to the southern part of the earth. Some of the views held, and demonstrated on maps, as to the existence and character of a vague South Land are very fantastic and amusing. On the assumption that the earth was flat, a great land mass in the southern regions was postulated to counterbalance the known land masses in the north. On the ancient maps this hypothetical land was described as "Terra Australis", and curiously enough was in some maps set down almost in the same location as our now well-known Australia. But the chief merit of Dr Mill's book for present-day readers is that it tells the story of the pioneers of Antarctic research. Books dealing with the later expeditions, that is, the expeditions of the twentieth century—such as Scott's *Voyage of the "Discovery"* and *Last Expedition*, Shackleton's *The Heart of the Antarctic* and *South* and Mawson's *Home of the Blizzard*—

are well known, and have had a wide circulation throughout the whole English-speaking world. But the grand and inspiring records of the pioneer adventurers into the frozen wastes of the Antarctic—men like Cook, Dumont D'Urville, Bellingshausen, James Clark Ross, and James Weddell—are probably little known to the reading public, particularly to the younger generation of that public.

Being determined to write up—even if in brief compass and in popular vein—the story of Antarctica, I sought and obtained the most kind and gracious permission of Dr Mill to use his book as the basis of this narrative. Other correspondence ensued, and for that distinguished gentleman's help and encouragement, I am profoundly grateful. I am also greatly indebted to Sir Douglas Mawson, O.B.E., B.E., D.Sc., F.R.S., Professor of Geology at Adelaide University for sanction given to write up the Australasian National Expedition of 1911-14, which should interest Australian and New Zealand readers. In addition, this very busy gentleman rendered further kind and disinterested service in perusing my manuscript, and making several helpful excisions, alterations and suggestions.

Another distinguished Antarctic traveller, who was closely associated with Captain Robert Scott in his last expedition has also smoothed the way to the publishing of this book. That gentleman is Lord Mountevans—better known in earlier years as Admiral Sir Edward R. G. R. Evans, K.C.B., D.S.O., on the Australian station, and possibly even better known to citizens of the Empire as "Evans of the Broke". Lord Mountevans has given me his cordial permission to publish the summary printed herein of his own noble book, *South With Scott.*

I am deeply appreciative of the goodwill of the several authorities who have granted me permission to use the summaries of other expeditions included in this book,

together with the illustrations shown through its pages. Elsewhere there is set forth in detail these sundry acknowledgments.

The title, *Stepping Stones to the South Pole*, suggests a series of adventurous journeyings in quest of something thought to be worthy of attainment, despite all the difficulties and dangers of the way, and the reader will, I think, be struck with the gradualness of the achievement. But was the quest worth while? And are the stories of that quest—the unravelling of the ancient mystery of the Antarctic—worth retelling for Australian readers? The following statement, taken from Dr Mill's opening chapter, suggests an affirmative answer:

> Voyages towards the South Pole commenced so long ago, and have exercised an influence on the trend of exploration so continuously, that a complete history of the search for the Antarctic would almost be a history of geographical discovery. The particular motive to Antarctic exploration has varied from age to age, as the special problem it was expected to solve has changed with growth of knowledge, and the development of thought. When first started, the problem was no more than a philosophical speculation, a mere academic thesis interesting a few learned men. It grew to be a burning question in the struggle of rival Powers for commercial and political supremacy.
>
> It was a force in Empire building, with the Commonwealth of Australia as a product of its partial solution.

That makes it clear that our subject is a vital aspect of British and Australian history, and the added fact that brave and brilliant British and Australian men have faced the Antarctic terror and taken a hand in the solution of its mystery should make its appeal to the younger men of our nation. It is for them this grand story is now retold.

A strong desire to interest our young people in this story, to help them to grasp its meaning, and emulate the

courage, comradeship and unselfish endeavour of heroic men, is my dominant motive. I feel further encouraged in my purpose by words written by Herbert Ponting in the foreword to his own splendid pictorial book, *The Great White South.*

Recording a conversation between himself and his leader, Captain R. F. Scott, he tells us that Scott expressed his desire that the youth of the nation should be conversant with such adventures as polar explorations, since this would help to stimulate "a fine and manly spirit in the rising generation". Ponting, the photographic artist of Scott's second expedition, went on to admit that his leader's words inspired the writing of his book, and added: "If therefore it could help to foster in our boys that love of adventure which has animated all our great Empire builders", he himself would feel sufficiently rewarded for all the work entailed.

Perforce the story must be told from the already extensive literature on this subject, and the bibliography indicates the treasure store of material from which this volume has been evolved. For permission to draw on these contributions of others to the heroic saga of Antarctica, I am profoundly grateful.

J. R. NICHOL

Melbourne.

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CHRONOLOGY

1487. Bartholomew Diaz sailed from Lisbon into the South Atlantic Ocean, and thus destroyed the long existing myth of an "impassable torrid zone".

1497. Vasco da Gama discovered the sea route to India.

1492. Christopher Columbus sighted new lands adjacent to the great western continent now known as America.

1501. A Portuguese expedition found the South American Continent.

1519. Ferdinand Magellan sailed through the South American Continent into the Pacific Ocean by the strait now bearing his name. One of his ships, the *Victoria*, turned a furrow of blue water round the globe, and thus proved the earth's sphericity. During the sixteenth century many Portuguese and Spanish ships sailed the high seas, and located much new land, especially in eastern waters, even to the great island of New Guinea.

1578-81. The English Captain Francis Drake passed through Magellan Straits into the new ocean—the Pacific. In his ship, the *Golden Hind*, he reached latitude 57° S., the farthest south yet attained, though still nine degrees north of the Antarctic Circle. Drake emulated Magellan in the circumnavigation of the world, and also proved that no South Land territory was connected with the South American Continent.

1605-8. The Portuguese Pedro Fernandez de Quiros, in an expedition from Callao, Peru, located islands (later identified as the New Hebrides), and enthusiastically claimed that he had at last found the great South Land.

1768. The first of Captain James Cook's voyages was begun. The three voyages occupied the years to July 1775. Captain Cook was the first navigator to actually cross the An-

tarctic Circle and sail his ships through Antarctica's ice-infested seas. Cook failed to locate the Antarctic land.

1819-21. The Russian Admiral Fabian von Bellingshausen, with two naval vessels, the *Vostok* and the *Mirni* spent 751 days at sea in attempts to locate the Antarctic land. This voyage was a masterly continuation of that of Cook, supplementing it in every particular, competing with it in none.

1823. Captain James Weddell, with two small ships, the *Jane* and the *Beaufoy*, found open water in latitude 73° S. and gained the farthest south point yet reached—214 nautical miles nearer to the Pole than Cook had attained.

1838-40. Admiral Dumont D'Urville, of the French navy, with two ships, the *Astrolabe* and the *Zelée*, actually sighted the ice-covered mainland far to the west of Cape Adare, and named his discovery Adélie Land after his wife.

1838-42. Lieutenant Charles Wilkes and five ships of the American Exploring Expedition spent four years in the Pacific and southern waters.

1839-42. These years saw the momentous Antarctic voyage of Captain James Clark Ross. For the first time the forbidding pack-ice was conquered, and the northern ice-covered coastline of a section of the Antarctic land mass was clearly disclosed.

1872-4. The *Challenger* scientific exploration. This was the first time a steam vessel crossed the Antarctic Circle.

1892. A fleet of Scottish steam whalers proceeded to the fisheries of Antarctic waters.

1894-5. Voyage of the ship *Antarctic* on a whaling cruise. Reached latitude 74° S.

1897-9. Captain Adrian de Gerlache's *Belgica* expedition. First ship party to spend a forced winter on their ship in Antarctica. Roald Amundsen was on board.

1898-1900. The *Southern Cross*, Borchgrevink's ship, carried the first Antarctic party to plan to spend the winter in a hut within the Antarctic Circle. This ship reached a new farthest south record, latitude 78° 21′.

1901-3. Voyage of the *Discovery* under the command of Captain Robert F. Scott. The expedition was named the British National Expedition. Scott failed to reach the land mass beyond the barrier-ice.

A German Antarctic effort, originated by Professor Erich von Drygalski, explored Kaiser Wilhelm II Land in the western sector. The ship was the *Gauss.*

The first Swedish expedition, under Dr Otto Nordenskjöld. The ship, the *Antarctic,* was lost. Party wintered on the ice and were ultimately rescued by men from the Argentine naval ship *Uruguay.*

1907-9. Sir Ernest Shackleton's first expedition. The ship was the *Nimrod.* The leader, with Marshall, Wild and Adams, nearly reached the Pole.

1910-12. Captain Scott's second expedition. Achieved the Pole but the leader and four companions perished on the return journey.

Roald Amundsen, with four Norwegian comrades from Nansen's famous ship the *Fram,* based on the Bay of Whales, won the race to the Pole.

1911-14. Sir Douglas Mawson's Australasian Antarctic Research Expedition. King George V Land in the western sector was discovered and named. Most valuable scientific data in all departments achieved.

1914-17. Sir Ernest Shackleton's Weddell Sea venture in the ship *Endurance,* which was crushed by the ice. Momentous boat journey of 800 miles to South Georgia. Ultimately all personnel returned safely to England and took part in the first world war.

1928-30. The conquest of Antarctica by air. Rear-Admiral R. Byrd was the first aviator to fly over the South Pole.

The first Antarctic flights—Sir George Hubert Wilkins.

1929-30. Sir Douglas Mawson's aerial expedition.

CHAPTER I

THE MYSTERIOUS SOUTH LAND: BEFORE THE DAWN

Dr H. R. Mill headed the first chapter of his book *The Siege of the South Pole*, "The Origin of the Idea", and wrote:

> At the dawn of geographical history an antarctic problem was impossible because the Earth was viewed as a flat disc girdled by the Ocean River and bounded by darkness. Curiously enough the name [Antarctica] became possible before the idea. When the early Greek students of the stars, looking out hour after hour and night after night on the wheeling vault overhead, classified the brightest points into groups or constellations they named the most conspicuous of these which never set *Arctos*—the Bear—and the point round which it, in common with the rest of the heavenly host, appeared to turn was called the Arctic pole. The natural antithesis of an antarctic pole of the heavens, that is, a fixed point *opposite the arctic*, must have occurred to many minds . . . .

And so the word Anti-arctic—Antarctic, came into being.

It is fascinating to read the theories and speculations held by the Greeks and other ancients about our habitable globe, and the vast oceans with their terrifying storms. Although the Greek, Aristotle, "the intellectual giant who founded so much of modern science", demonstrated the truth that our earth was spherical in form, this fact was not fully accepted until many centuries later. Aristotle lived in the fourth century B.C., and history tells us that the famous Italian, Galileo, who lived from 1564 to 1642 A.D., was punished and silenced by the medieval Church

for asserting the fact of a spherical earth that moved in the heavens. Dr Mill deals with some of these ancient theories—especially a long prevailing notion of a great South Land, judged necessary to balance the land mass of the Northern Hemisphere; and several very ancient maps are reproduced which indicate the quaint and imaginative ideas ancient geographers held as to the disposition of land and water in the then known world.

The world map, according to Herodotus, the Greek traveller and historian (*circa* 400 B.C.), names the great water lying to the south of the little known African land mass, Mare Australis.

Another map, to us today a very queer and fanciful drawing, is that of Ptolemy, which emphasized the zone theory, namely, that the known temperate zone or belt which embraced the Mediterranean countries was bounded on the north by an intensely cold area, and on the south by land of torrid heat, quite impossible for human habitation.

Here it is apposite to quote a whimsical paragraph or two from Professor G. Arnold Wood's book, *The Voyage of the Endeavour,* an instructive and attractively written little book that should be a text-book in all Australian schools. On pages 1 and 2 the reader will find the following:

It was not till the 15th Century that European seamen sailed south of the Equator. They had quite enough to do in Europe. Their ships, good enough for inland *Seas* like the Mediterranean, were not good enough to sail forth into unknown *Oceans* which stretched no man knew whither. And, moreover, even if their ships *had* been good enough, seamen would not have dared to leave the coast. For they had no compass to tell them which was North, South, East and West; and they had none of the instruments which now enable seamen, by observing sun, moon and stars, to know where in the world they are, and what they must do in order to get home again.

And, further, what reason could you give a sensible man for sailing South? The further South you sailed, he would tell you, the hotter you grew. You sailed into a "roasted sea"; and, if you went on, you would in the end, no doubt, *yourself* be roasted. And if you had luck, and got through only half-roasted into cooler weather, what would you find there? Greek geographers long ago had said, it is true, that the world was a *globe*, and that probably there were big, rich and populous lands in the South as well as in the North. But, how *absurd* was this opinion! A man standing on the *down* side of a *globe* will fall off!

That famous man, Ptolemy of Alexandria (126-161 A.D.), Greek mathematician, astronomer and geographer, was the founder of plane and spherical trigonometry and of the Ptolemaic system of astronomy. This assumed that the earth was spherical, but stationary, at the centre of the heavens, with the other planets and suns revolving round it. It is astonishing to men of today to be told that this theory enjoyed little disputed acceptance for fourteen hundred years.

Whether the Southern Hemisphere was held to consist mainly of land or of water, the terrors of the torrid zone supply a sufficient explanation of the failure of the early explorers to penetrate it. At the same time there is evidence that before the growth of the torrid myth some voyages to the south had been undertaken with success.

It may be that Ophir was in the Southern Hemisphere; it is practically certain that Africa was circumnavigated by the Phoenicians, and that other early travellers had sailed far southward along the east coast of that continent.

But these achievements were forgotten, and the legacy of Greek wisdom to Christendom was the fact that the earth is a globe, and the belief that the Southern Hemisphere of that globe contained habitable land which could never be reached.

CHAPTER II

THE DAWN

MODERN geographical knowledge owes a tremendous debt to a Portuguese nobleman, known as Prince Henry the Navigator, who, it is good to recall, was the son—like the Roman Emperor Constantine—of an English mother. With the advent of Prince Henry we pass from speculation to exploration, and thanks to his vigorous initiative, the clouds of ignorance that had obscured three-quarters of the earth's surface for milleniums began to roll away.

For forty odd years—from 1418—Prince Henry sent out his ships under stout skippers specially trained for their daring work; and these, sailing south carefully, stage by stage, down the West African coast, at last dissipated the myth of the intolerable torrid zone, and on the landward side discovered fertile and temperate territory south of the Sahara Desert. Eventually, in 1487, Diaz sailed from Lisbon with three ships, and after many stormy and anxious days passed into eastern waters, having rounded the extreme south of the African continent. And, but for the inevitable mutiny that played a part in almost every voyage of the period, Diaz would have anticipated Vasco da Gama in discovering the sea route to India. Credit is also due to the Portuguese for their magnificent perseverance in pushing their way to the farthest south. They proved that long voyages were possible, that the dangers of navigation on the high seas were far less than had been supposed, and they brought

home proofs of the spherical form of the earth that even the man in the street of those days could not fail to understand.

The new age of adventure on the high seas, of discovery of new lands, of inter-ocean trade, and of naval strife on a wider scale, was now inaugurated.

The Portuguese at the beginning of the sixteenth century maintained their lead as captains of navigation and discoverers of important new lands. Two expeditions in 1501-3 were sent out westward and eastward. One resulted in the discovery of the South American mainland, the ships touching the coastline of Brazil. The second reached its goal in India. On board the ship that first sighted the Brazilian coast was a Florentine sailor, Amerigo Vespucci, and "although he was neither the leader of the Expedition, nor a Portuguese, he did write an account of the voyage, and somehow his name became attached to the new land, in the form of 'America' ".

Earlier than this, in 1492, Christopher Columbus, a Genoese navigator, using Portuguese ships and sailors, led an expedition whose objective was to reach the Asiatic mainland by sailing westward across the Atlantic. Columbus was actually the first European to sight the new continent, touching the outer islands now called the West Indies.

During this period, the late years of the fifteenth and early years of the sixteenth century, Spanish ships and sailors were abroad on the high seas, competing with the Portuguese for trade and power.

There was keen rivalry—political, commercial and religious—between the Portuguese and Spanish explorers, and they appealed to the Pope of Rome to settle their disputes. This the Pope did by assigning the Eastern Hemisphere to Portugal and the Western Hemisphere to

Spain, the meridian separating the two passing through the Atlantic. This settlement was rudely disturbed by Francis Drake, when the English put in their claims for sea room a few years later.

The relationship between Portuguese and Spanish is seen in a better light in regard to the brave navigator Ferdinand Magellan. Though himself a Portuguese, it was from Spain that he led a Spanish expedition, which found its way into the Pacific through the intricate passage that cuts through the southern part of South America, now called the Straits of Magellan. Though the great captain himself died in the later voyaging, one of his ships, the *Victoria*, in Dr Mill's striking phrase, "turned a furrow of blue water round the globe, and taught Europe by that simple demonstration that the Earth was a sphere".

After these tremendous discoveries the map-makers got busy again. Leonardo da Vinci, an Italian, and one of the world's famous men, made a globe depicting America and Africa separated by broad stretches of ocean from a continent almost included in the Antarctic Circle, which would have been a marvellously lucky guess at the truth had there been any indication of a possible Australia.

Another map by Orontius Finne, published in 1531, "shows a vast continent covering the whole Antarctic area, coming close to America and keeping more distant from Africa. This continent on the map bears the inscription, 'Terra Australis' ".

The sixteenth century was near its close, and as yet no clear and definite advance had been made in solving the mystery of the South Land. The early years of the seventeenth century, however, recorded a new voyage of discovery in the Pacific Ocean, of which we are given some interesting, even amusing, details.

De Quiros, a Portuguese, was keen to solve the South Land problem. He first went to Rome and sought the Pope's assistance, telling the Pontiff a touching story of the untold millions of South Land natives ready to be led into the fold of the Church; the Pope recommended him to King Philip of Spain, to whom de Quiros promised new lands greater in extent than those he already possessed. In December 1605 this adventurer set out from Callao, Peru, with three ships, accompanied by six Franciscan missionaries. After months of anxious voyaging, he ultimately struck a group of small islands, now identified as the New Hebrides, which de Quiros claimed, whether in earnest or not, to be a part of the much sought South Land. He named one island Austrialia del Espiritu Santo, and, we are told, he took possession with much pomp and ceremony.

De Quiros landed with his soldiers and priests, set up his standards and the Cross, and hailed his discovery with the words, "To God be the glory and praise! O Land, so long sought for, believed in by so many, so earnestly longed for by me." A round of ceremonies followed the declaration of this alleged momentous find.

On his return to Europe de Quiros is reported to have claimed that his discovery was a land of gold and silver, cattle and grain, the richest fruit and the healthiest climate, peopled by gentle natives, a land richer than Mexico and larger than Europe.

Evidently this Portuguese was a rival of the famous Baron Munchausen, or the Austrian de Rougemont, as a teller of stories tall and thin. It is fitting to mention here that it was Captain James Cook who dissolved the roseate dreams in which de Quiros had indulged. During Cook's second voyage, after weeks of blissful refreshment at Tahiti Island, the famous navigator proceeded in his ship, the *Resolution*, to Austrialia del Espiritu Santo,

which had been so gloriously annexed to Spain, and resolved de Quiros's dazzling continent into a small, unhealthy archipelago inhabited by hopeless savages. He named the group the New Hebrides.

In subsequent years many other adventurous voyagers pushed their little ships into southern seas, but none actually located the mysterious South Land so long dreamed of and sought.

HISTORICAL INTERLUDE

It has been said that when Columbus sighted the land now known as the West Indies, he really believed that he had reached Asia. For it was the Asian lands with their alleged stores of spices and "gold in incredible quantity" that many of the seafaring adventurers set out to find. So it happened that Portuguese and Spanish sea captains sailed their ships through the hazardous waters of the "Spice Islands" approximately two hundred years before Captain Cook set out in 1768 on his first voyage of discovery.

Professor G. Arnold Wood, of Sydney University, in his book, *The Voyage of the Endeavour*, records the voyage in 1567 of two Spanish ships from Peru, in search of lands rich in gold. A Spanish nobleman named Mendana led this expedition. Had the voyagers maintained their westerly course, these ships would have been the first to locate the eastern coast of Australia.

In 1595 Mendana set out again, and on this voyage the Portuguese Pedro Fernandez de Quiros was his chief pilot. This was the same de Quiros who sailed from Callao, Peru, in 1605 with three ships and, as already recorded, found only the islands now known as the New Hebrides. He too, if he had continued long enough on a direct westerly course, must have discovered Australia. Indeed, the captain of one of these ships, Luis Vaez de

Torres, when separated by a hurricane from his leader's ship, sailed south-west on a course which, had he sailed far enough, would have taken him to Brisbane 218 years before Brisbane was founded. We are told that, seeing no land, he had to give up his search for the continent, and turned on a north-westerly course that would have taken his two ships to the eastern end of New Guinea (then well known), thence along the northern coast to the Philippine Islands. But contrary winds prevented this northerly retreat, so the daring adventurer sailed westward along the south coast of New Guinea through uncharted and dangerous waters, and in due course got safely through. This feat of seamanship proved that New Guinea was but a very large island, and that—as many supposed—that island was not part of a greater unknown continent.

Torres probably saw the tip of an unknown Australia, for he reported having seen "some very large islands", but sailed away without making the great discovery, for which we Australians today should be thankful.

Professor Wood, in his picturesque narrative of these earlier voyages, also relates the exploits of Dutch skippers in waters about the still undiscovered continent. In Chapter III he relates how the Dutch came to settle in Java, and how their inquisitive seamen "discovered two and a half of the four sides of Australia, a bit of Tasmania, and a bit of New Zealand". The story is told of a Dutch ship, the *Duyfken*, which, coming from the west, sailed along the southern coast of New Guinea, crossed the Strait—wondering whether it was a strait—and then sailed a good way down what we now call Cape York Peninsula.

So it was established that Dutchmen were the first Europeans who certainly saw Australia, known to the

Dutch as New Holland. Indeed, Tasman nearly sailed round it.

In this early period of the seventeenth century fleets of ships of the several competing nations—Spanish, Portuguese and Dutch—plowed the island-studded waters of the North Pacific Ocean. Gradually the Dutch won the supremacy "and made a Sea Empire which spread from Madagascar to Japan, from New Guinea to the Red Sea". We are also informed that Dutch mariners occupied St Helena and the Cape as ocean taverns on the long sea route between East and West.

But what about the British during these years?

Professor Wood mentions that Englishmen came to the Spice Islands before the Dutch. Francis Drake passed through these waters in his memorable voyage round the world (1577-1580).

William Dampier was apparently the first Englishman actually to sight the mainland of Australia, but in his two voyages of 1688 and 1700 Dampier saw only the least favourable part of New Holland's vast coastline—that of the west.

Historians tell us that Dampier's published accounts of his sea travels greatly interested men of science in England, although his descriptions of the new land and its people were anything but complimentary. "The Land," he wrote, "was a dry and dusty soil, destitute of water except you make wells." The people were "the miserablest people in the world; and, setting aside their human shape, they differ but little from brutes". And much more to that effect.

The next Englishman to touch the coastline of the great island which is now Australia was England's most famous navigator, Captain James Cook. The date was 7 October 1769, and the land first seen was named Point Hicks, after the young lieutenant whose sharp eyes

ORONTIUS FINNE'S CONCEPTION

discovered it. It was, of course, on the more favourable eastern seaboard, and the ship, the *Endeavour*, had sailed west after the circumnavigation of the great new islands to the east—New Zealand.

TIME MARCHES ON

The seventeenth century has now passed into the limbo of forgotten years. The dawn of the eighteenth century has also come and gone. But an English boy, born in 1728, has now grown into a strong, determined, and experienced man. The time is the year 1768, and Lieutenant James Cook is the choice of the Admiralty as Commander of an expedition to pursue certain scientific investigations in South Pacific seas, and if time and circumstances will permit, to make an attempt—a British attempt—to solve the centuries-old problem, the existence or not of an Antarctic land mass. The greatest British navigator of his day takes up the challenge.

In Chapter III we shall learn of the success or otherwise of his efforts.

CHAPTER III

REALISM

BEFORE embarking on an account of Captain James Cook's famous voyages, it is important to note that the invention and perfecting of certain nautical instruments gave the navigators of his day advantages over their predecessors.

These instruments included the quadrant or sextant, and the chronometer. As to James Cook's high ranking amongst the supreme names in seamanship, Dr Mill named him as the first of the British maritime explorers, "the one man who could be compared with Columbus and Magellan". Before being given charge of the scientific expedition to the South Pacific, Cook had spent most of his years at sea. He was a self-made man, who forced himself to the front by pure merit and tenacity in an age when merit was by no means the usual road to promotion.

Over a period of years, by outstanding service in the British Navy in Newfoundland and Canadian waters, Cook had come under the favourable notice of his superior officers, and by the year 1759 he was promoted to the rank of master of the warship *Northumberland,* commanded by Lord Colville, Commodore of a squadron on the American Station. It is said that he studied with avidity, but that his attention was no longer given to elementary treatises on arithmetic or geography. Instead, he spent the long winter evenings poring over Euclid and studying astronomical works.

Lord Colville was so deeply impressed by Cook's

ability and loyal service that he wrote a letter to the Secretary of the Admiralty, in which he referred to his master's genius and capacity. Captain Hugh Palliser, then Commodore and Governor of Newfoundland and Labrador, under whom Cook had served, held a similar opinion of this remarkable man.

In the year 1768 the Royal Society of London, with the approval of their King, George III, planned to send a scientific expedition into the Pacific to observe the transit of Venus across the sun's disk, and ultimately, on account of his seamanship, his scientific attainments, and his experience and judgment in the management of men, James Cook was chosen by the English high authorities to be the leader of this national adventure. The ship chosen for this voyage into the practically uncharted waters of the Pacific was the now famous *Endeavour*—a solidly built craft of 370 tons.

The expedition sailed from England on 26 August 1768. The ship carried a complement of eighty-five men, including a group of scientific experts, of whom Charles Green, an eminent astronomer, Joseph Banks, and Dr Daniel Solander were the outstanding personages. The objective of the voyage was an island in the Marquesas group, or one of the islands which the Dutchman Tasman years before had named Amsterdam, Rotterdam and Middelberg. The expedition ultimately conducted its observations from that beautiful island in the South Pacific now known as Tahiti. One result of this first of Cook's voyages was the writing of a new chapter in the geography of the world's largest and least-known ocean.

Briefly put, the voyage of the *Endeavour* resulted in the discovery of several new islands in the Pacific; the circumnavigation and charting of New Zealand's coast line; the discovery of the eastern seaboard of Australia, and the landing on our island continent at Botany Bay

(so named by Cook on the recommendation of the bot anist Joseph Banks).

Throughout the long voyage, which lasted almost three years, the leader, by skilful seamanship, by new and effective measures for maintaining the health of his men, and by wise exercise of disciplinary control, avoided most of the dangers of pioneer sea travel, and brought his ship safely back to her anchorage in English waters.

Referring to the achievements of this tremendous voyage round the world—for *Endeavour* entered the Pacific via South America and returned from the Indian Ocean round the Cape of Good Hope—the Frenchman, Maurice Thiéry, in his book, *The Life and Voyages of Captain Cook,* penned this enthusiastic verdict:

> Cook had endowed his country with fertile islands and vast countries. He had enriched the science of navigation with charts of admirable accuracy and clarity, and, with the help of the scientists who had accompanied him, he had added invaluable chapters to astronomy and natural history. Everywhere and always he had shown himself a great leader, as exacting of himself as of others, straight and loyal, just and humane.

In 1772 Captain Cook set out on his second long voyage, verifying the positions of some already known islands, and discovering others. He sailed his ships right down into Antarctic waters, and eventually returned home again via South Africa.

The great navigator's third and final voyage began in 1776. This took him and his crews into the cold northern seas in a brave effort to find the North-west Passage from the Pacific side. Later he sailed his two ships down into the warmer waters of the South Pacific.

The scenes of former discoveries were in turn revisited, charts rechecked, and old acquaintances renewed. Late in November 1778 the English ships

located the Sandwich or Hawaiian Islands; and Cook wrote of Hawaii—one of the group—as the largest of those he had seen in the Pacific, with the exception of New Zealand.

Here, on 14 February 1779 this great man met his death in a serious clash with the savage islanders.

LIEUTENANT KING'S MEMORIAL ENTRY IN THE SHIP'S LOG

After the tragic death of Captain Cook, one of his officers, Lieutenant King, wrote in the ship's log of the worth of the man who had been his leader and his friend.

The French writer already referred to, Maurice Thiéry, described this entry in the log as the most beautiful, the most sincere and true of the tributes paid to Cook's memory. The entry was as follows:

Cook seemed to have been born for distant expeditions; his earliest habits of life, the experience acquired in his long voyages, the constant application of his mind, all concurred in giving him a degree of knowledge, which perhaps is the lot of only a small number of officers. He was of robust constitution, hardened to toil and capable of supporting the greatest fatigues. His mind was of the same vigorous stamp as his body. His judgment in everything that concerned his mission was prompt and sure. His plans had boldness and energy. Their conception and execution revealed a very original genius. An admirable coolness in the face of danger always accompanied his calm and intrepid courage . . . . But the continued and indefatigable perseverance with which he carried out his plans and ideas was the most salient feature in his character.

During his long and wearisome voyages his ardour and activity never abated for a moment. He was never diverted by the amusements which offered themselves to him.

The services which he has rendered to geography and navigation are immense. In his first voyage to the South Seas, Captain Cook discovered the Society Islands; he proved that New Zealand consisted of two islands; he traversed the Strait that separated them and took the bearings of the whole coast;

he followed the Eastern Coast of New Holland (Australia) unknown before his time, and he added to the maps of this part of the Globe a stretch of land more than 2000 miles.

His second voyage round the world solved the great problem of the Southern Continent. He showed that there can be no such continent, unless it lies near the Pole, and in regions inaccessible to ships.

He discovered New Caledonia, the most extensive island in the Pacific after New Zealand. He also discovered South Georgia and a new Coast which he called Sandwich Land. Having twice visited the Tropical seas, he fixed the position of lands seen earlier by navigators, and found several which were unknown. But the third voyage is preeminently distinguished by the extent and importance of his discoveries. Apart from many little islands which he found in the South Pacific Ocean, he discovered north of the Equator the group called the Sandwich Islands, whose position and resources promise more advantages to European navigation than any other lands of the South Seas.

As a sailor, his services are not less brilliant, and they are certainly important and useful. The means of preserving the health of crews, a means which he discovered and followed with so much success, forms a new epoch in the history of navigation, and future centuries will place Captain Cook among the friends and benefactors of the human race.

And now I entrust his memory
to the gratitude and admiration of Posterity.

THE EPOCH-MAKING SECOND VOYAGE

Captain Cook was instructed in the second of his expeditions to solve the problem of the southern continent finally, and before he set out in 1772 he accomplished an immense task in making provision for every possible emergency. His two ships were the *Resolution,* of 462 tons, with a crew of 112 men under his own command, and the *Adventure,* of 336 tons, with a crew of eighty-one men commanded by Lieutenant Furneaux.

The expedition left the Thames on 22 June 1772 and Capetown was reached on 30 October—four months of sea travel compared with a week to ten days in our time.

Leaving Capetown on 22 November, Captain Cook first met the sea ice on 10 December in 50° 40′ S. and 20° E. It was described as "a majestic berg, perpendicular in the sides, flat topped—a veritable island of ice". Next day the number of bergs had increased, while the sea ran high in a wild storm and thick fog lay over everything. Nevertheless, these brave little ships kept on their way. No land was yet in sight.

And now a fine passage from Dr Mill's book must be quoted:

> January 17th, 1773, was an epoch in the world's history, for just before noon on that day the Antarctic circle was first crossed by human beings. The southern frigid zone, foreseen by Aristotle, reasoned on by the Greek philosophers, who declared it existent but inaccessible, denied and stigmatised as heretical by the medieval Church, never hitherto deliberately sought for, had at last been entered by the *Resolution* and *Adventure* in an open sea with only one iceberg in sight. Cook had now outdistanced all his predecessors; but the attempt to push southward was made impossible by the increasing thickness of the crowd of bergs and at 6 p.m. on the same day a vast expanse of solid ice appeared, rising only about eighteen feet above the sea but stretching with a perfectly uniform surface, as far as the eye could reach from the top of the mast. It was the signal for retreat.

Baffled in his attempts to get farther south, Captain Cook kept an easterly course, and indeed, in further efforts to force a passage south, practically traversed in his little ships the whole expanse of southern waters, east to west—but found no South Land. All this voyaging, these repeated attempts to force a southward passage within the Antarctic Circle, spelled danger to the ships and the lives of the brave men who manned them.

Cook himself wrote: "I will not say that it was impossible anywhere to get further to the south; but attempting it would have been a dangerous and rash

enterprise, and which, I believe, no man in my situation would have thought of." Cook and his men believed the ice extended right to the Pole. No birds were seen. There was no evidence whatever that any land existed in these desolate regions.

We are further assured that the vast masses of ice in the Antarctic region profoundly impressed Cook, and convinced him that there was indeed a frigid continent within the Antarctic Circle, though he himself had not caught sight of it. As to the lands he had seen (that is, certain ice-clad islands like the Shetlands and South Georgia), and the nature of those beyond, he concluded:

> Countries condemned to everlasting rigidity by Nature, never to yield to the warmth of the sun, for whose wild and desolate aspect I find no words; such are the countries we have discovered; what then may those resemble which lie still further to the south? Should anyone possess the resolution and the fortitude to elucidate this point by pushing further south than I have done, I shall not envy him the fame of his discovery, but I make bold to declare that the world will derive no benefit from it.

The great navigator's severe summing up as to the futility of any further incursion into Antarctic waters has, we know, been falsified by subsequent exploration. If we could imagine that, from his vantage point in the Elysian Fields, Captain Cook was able to look down on the very brave and distinguished men who followed his icy trail into the unknown south—what would his reactions be? Surely he would view it all with surprised yet glad and approving eyes. For, as we know full well, taking account of only a few greater names, Ross, D'Urville, Bellingshausen, Weddell (with his tiny ships), Borchgrevink, Drygalski, Scott, Shackleton, Mawson, Amundsen, and Byrd pushed south far beyond Cook's farthest point and found a wonderful new world. From the

pictures and writings of these later voyagers into this new world, we realize that mankind has gained a glorious heritage of a South Land of wondrous beauty, destined to prove of substantial benefit to the people of subsequent generations.

Probably Captain Cook was consistently unlucky in striking such adverse ice conditions in many efforts to attain a higher latitude in Antarctic seas. In striking contrast to his depressing experience it may now prove interesting to record the conditions in Antarctica when another British captain, James Weddell, pushed two little ships into these inhospitable seas. In the year 1822 Weddell set out from England on a sealing cruise with two small ships—the *Jane*, of 160 tons, and the *Beaufoy*, of sixty-five tons. The combined crews numbered thirty-five men. Besides his commercial objective, Weddell had a flair for scientific investigation. Since Cook's day certain bleak, ice-covered islands like South Georgia and the South Shetlands and Orkneys had been rediscovered and named, and these were visited by Weddell in his search for seals.

However, in February 1823 he turned his thoughts to discovery, and decided to sail his little vessels as far south as possible, hoping to locate some new and entirely unknown land. Weddell took the utmost care of his men, who were apparently not afraid to make the dangerous voyage. The captain offered a reward of £10 to the man who should first sight land. Providence must have favoured this enterprise, for ultimately this daring navigator, despite some rough experiences, reached the high latitude of 74° 15′ before changing course again to the north. It is on record that on 18 February 1823 in latitude 73° S., the weather was beautiful and no ice whatever could be seen.

Yet Weddell's position then was 214 nautical miles

nearer to the Pole than Cook's farthest south. We are told that the sailors rested on deck in the sunshine; that the carpenter mended a boat; the sail-maker the sails. It was altogether a picture of summer-time at sea.

It may interest the reader to be given further information concerning this British captain, whose name, in consequence of his outstanding achievement, is literally interwoven with the romance of Antarctica. The Weddell seal and the Weddell Sea are illustrations. He has been compared with Captain Cook in his honest, straightforward style of writing, his seamanship, his flair for scientific investigation, and in his birth, training, and naval experience.

Weddell tells us that he was well aware that the making of scientific observations in the unfrequented Antarctic regions was a very desirable object, and voiced his regret that his tiny ships were not adequately equipped with the instruments generally provided for vessels fitted out for discovery.

For it must always be remembered that Weddell's ships and crews were down south to make profit from seals—not to risk their lives in frail ships bent on a dangerous voyage of discovery. In the very cold region of the high latitude attained, despite their temporary extraordinary experience of open water and summer-time conditions, Weddell mentions that the food allowances for his men—considering the cold—were rather scanty, but that the extended length of the voyage, due, of course, to the dash for the farthest south, required the strictest economy.

One other incident in the voyage of the *Jane* and the *Beaufoy* is also very creditable to this splendid Britisher. Early on the voyage from England, passing down the Atlantic his little ships met a Portuguese ship carrying 250 slaves, presumably to America. Weddell went on

board, and avers that he bitterly regretted that he had no legal right to make a prize of her and liberate her wretched cargo. His ships, though small, were obviously armed, for he said he had force enough to take the slave-ship, and his officers strongly urged him to do so, but Weddell reluctantly decided that he could not lay himself open to a charge of piracy on the high seas. So the slave-ship was allowed to depart with its unfortunate captives.

CHAPTER IV

CUI BONO

JAMES WEDDELL'S courageous venture into Antarctica is a striking illustration of the mixed motives of many sea captains who planned voyages into those dangerous waters. It showed a spirit of adventure combined with the hope of gain.

When it became known in the places where seafarers forgather that whales and seals, sea-elephants and other valuable inhabitants of the sea were theirs for the taking in the icy waters of the south, there developed a rush to secure a share of the spoil. As is well known, great wealth had been won in earlier years in similar industries in Arctic waters, and, indeed, many of the stout little ships that first engaged in the northern trade were switched to the Antarctic when the chances of even greater results "down south" became known.

Men of the British race, enterprising Americans, stout-hearted Norwegians, Germans, French and Japanese all shared in exploiting the rich harvests of Antarctic seas.

In his book Dr Mill tells a fine story of this trading enterprise, and the zest for geographical discovery that especially marked the activities of an English firm—the Enderby Brothers.

One hundred and forty years ago, that is, early in the nineteenth century—gas for street lamps first came into use in England. Electricity, of course, was introduced much later. Thus we can imagine what a demand there

must have been for whale oil as an illuminant in the period prior to the nineteenth century.

However, the theme of my story is not so much concerned with the material gains from Antarctic expeditions. Rather is the emphasis placed on the romance of the new discoveries, the spirit of adventure, the display of human courage and fortitude, the cool and adequate handling of dangerous situations, and the great companionships promoted by sharing these common difficulties and dangers.

In ordinary commercial or social intercourse men insist on their individual preferences and selfish advantages. In Antarctic exploration the wearisome journeying, the common danger, the splendid objective of the combined effort, forge a group of men into a band of brothers.

As we proceed with our story it will be disclosed that there are substantial material advantages in Antarctica, quite apart from the existing industries; that new scientific knowledge in many fields of inquiry is certain; and that future developments in meteorology and the establishment of sanatoria for fighting disease in the germless atmosphere of the South Land appear to be assured.

I have little flair for, or experience in, scientific matters, but I admit being tremendously impressed by a few hours' study in the Adelaide Public Library of the publications which show the results, in many branches of Physical Science, of the Antarctic Expedition of 1911-14, led by the Australian scientist Sir Douglas Mawson, D.Sc., F.R.S. The series of bound publications run into eight or nine large volumes. Part I for example deals with Zoology and Botany, and the names of Professor Réné Kochler of Lyon and Professor T. Harvey Johnston of Adelaide are identified with these findings. Similarly, the data concerning Meteorology, Magnetism, Biology, Geology,

Oceanography, and other branches of Science, were examined and closely studied by other eminent scientific experts, and results recorded.

Dr Mawson's own immediate responsibility, apart from editorial supervision, embraced Series A, Volume I. Part 1 of this volume dealt with the Geographical narrative; Part 2 was concerned with Cartography and Photography. This volume alone ran into 350 pages of text, contained thirty text figures, seven maps and plates, two folding maps, and 124 half-tone photographic prints —each with its full history.

These few details surely prove the voluminous scientific gains from Antarctic research, and, as regards the sciences of Meteorology and Terrestrial Magnetism, observations must be continued.

But there is still another supreme dividend that cannot be measured in material terms. It has been publicly stated that Sir Ernest Shackleton, when questioned as to what was the good of all the Antarctic explorations, gave some of the above beneficial results, but beyond all these stressed "the spirit of adventure", saying, "As long as that spirit is kept alive amongst the British, just so long will the British Empire endure." That this spirit animated our kinsmen in Britain and elsewhere during the second world war has borne its testimony to the whole world.

CHAPTER V

OTHER VOYAGES

BEFORE dealing with some of the stirring expeditions that are recorded in the Victorian era of the nineteenth century, we shall recall an interesting account of a Russian exploration into the southern seas. Possibly fired by the exploits of Captain Cook in the Pacific, and, indeed, by that great man's failure to pierce the mystery of the South Land, the Russian Government in 1819 fitted out two small naval vessels, the *Vostok* and the *Mirni*, under the command of Admiral Bellingshausen, with crews numbering about 190 officers and men. This expedition was carefully planned and well equipped, the leader being especially careful to stock his ships with adequate and proper food and suitable clothing for a rigorous climate. With Captain Cook's charts to guide and help him, the Russian crossed the Antarctic Circle on three or more occasions, testing the ice in localities other than the points shown on Cook's course, but with the same disappointing result. The fierce Antarctic gales and the menace of the ice-fields prevented his expedition getting any farther south than latitude 69° 25′, a point, however, beyond Cook's farthest south.

Coming now into the Victorian era of the nineteenth century, and restricting our attention, with two exceptions, to British ventures, it will be seen that the story grows both in interest and importance.

The first exception is that of a French expedition led by Admiral Jules Dumont D'Urville, a fellow countryman

of La Perouse, Bougainville and d'Entrecasteaux, who in earlier Pacific voyaging had left their names on Pacific maps. Other Frenchmen, like de Gonneville, Bouvet, Marion and Kerguelen, had figured in geographical discoveries in southern waters, but D'Urville touches the Antarctic in a more intimate way. His life story is most interesting, and it seems that from early youth he indulged a passion for scientific and geographical attainment.

D'Urville's plans for an expedition were duly approved by the then King of France, Louis Philippe, who suggested a trip into Antarctic seas to beat Weddell's record of 70° 15′ S. towards the South Pole. Again two ships were found for the task, the frigates *Astrolabe* and *Zelée*. They sailed from Toulon 7 September 1837, and made their way into the Atlantic, passing through the Straits of Magellan into the broad waters of the Pacific. Now southward bound, the French ships first struck the ice-pack in 63° 39′.

D'Urville failed to penetrate the ice, nor did he approach anywhere near Weddell's turning point. We read that the Frenchman was annoyed at the check, and was inclined to think that where he had failed the Englishman could not have succeeded. Just national pride and jealousy, no doubt. However, after two years spent about the Pacific, D'Urville made another attempt at a southward drive.

The date was 1 January 1840. This time, no doubt, he passed the great ice-pack which sternly guards the actual approach to the land mass in Antarctica, and gave the name Adélie Land to the ice-covered precipitous cliffs of the coast he had discovered; but the outstanding achievement of being the first to sail along the coastline of the Antarctic continent was to be the prize of a British captain, James Clark Ross.

Before detailing the momentous voyage of Captain

ADMIRAL BELLINGSHAUSEN

From a portrait in the Library of the Imperial Naval Department in St Petersburg

ADMIRAL DUMONT D'URVILLE

From D'Urville's "Atlas"

SIR JAMES CLARK ROSS

From a watercolour in the possession of the Royal Geographical Society

LIEUT. CHARLES WILKES

From the Narrative of the Expedition

SOME OF THE PIONEERS

Ross, something should be told of American participation in these international efforts to probe the mystery of Antarctica.

Early in the nineteenth century American skippers were industriously engaged in sealing and whaling activities, and, it is reported, making great numbers of dollars selling cargoes of Antarctic skins to the heathen Chinese. Indeed, from all accounts, Americans scored heavily in regular visitations down south, hunting the unfortunate mammals that swarmed about the stern ice-islands, discovered by Captain Cook. The Russian, Bellingshausen, had met an American, Captain Palmer, off the South Shetland Islands, and was informed of "the really prodigiously rich booty which was made here of sealskins". Thereupon the stately old Russian predicted the early extermination of the seals.

Later, in 1836, the American Congress approved of an American exploring expedition being dispatched to the Antarctic. Lieutenant Charles Wilkes, a naval officer, was placed in charge of the expedition, which comprised four ships and two pilot boats. Wilkes was given a large programme of sea travel, including not only the Antarctic, but vast stretches of the Pacific, and even as far north as Japan.

Trips into the Antarctic were designed for short periods in summer-time, but it is interesting to hear that the instruction for the southward venture was to follow the track blazed by Weddell. However, it would seem that no worth-while results followed from this well-equipped expedition. Nevertheless, as Dr Mill commented:

> Considering the state of the ships which made this attack on the South Polar seas, the length of time they were able to pursue their object was remarkable, and in the highest degree creditable to the commanding officers. Experience has shown, however, that so large a squadron so heavily manned is not

the best instrument of exploration in Polar seas. A couple of small stout ships of the Arctic whaler type would undoubtedly have done far more with much less risk than the two French and four American vessels which cruised for months in these inhospitable waters.

It is gratifying to learn that the gold medal of the Royal Geographical Society, the highest distinction in the geographical world, conferred upon Wilkes a few months later, was sufficient evidence of the esteem in which his geographical results were held in Europe.

CHAPTER VI

HAIL THE SOUTH LAND!

OLD FATHER TIME has now moved on to 8 April 1839. Another expedition—this time British—was about to leave for Antarctica, fitted out by the Admiralty in accordance with a plan submitted by the British Association and approved by the Royal Society. Captain James Clark Ross was chosen to be the leader.

Now for the first time a man well versed in sea travel in Arctic waters comes south to put that experience into successful service in the equally harsh and dangerous Antarctic. Ross was the grandson of a Presbyterian minister of the Parish of Inch, Scotland. This cleric had four sons, the eldest of whom was a general in the British Army. The fourth son was Admiral Sir John Ross, famous as an Arctic explorer. The minister's second son, George Ross, was the father of Colonel Alexander Ross, and James Clark Ross was Alexander's youngest brother.

With such inspiring family connexions we might reasonably expect—*a priori*—that James Clark Ross would do a real job in any capacity. Born in London on 15 April 1800, James entered the navy at the age of twelve, being placed under the care of his Admiral uncle, in whose ships he sailed until 1818.

James subsequently took part in two North Polar expeditions, in the second of which, under his uncle John Ross as leader, our hero spent four years in the Arctic regions.

In the course of these journeys James Clark Ross did

an immense amount of sledging work, and on 1 June 1831 he reached the North Magnetic Pole, and had the pleasure and honour of hoisting the British flag on that coveted spot.

Dr Mill adds this little bit of personal information: "Ross, who was reputed to be the handsomest man in the Navy, was an excellent officer, with a rigid sense of duty."

One other fact worth recording is that Captain Ross was intimate with the famous Sir John Franklin, who at that period was Governor of Tasmania, and who in a letter bore testimony to Ross's kindliness and generosity, and to his high sense of honour.

The two ships of the British expedition were named the *Erebus* and the *Terror*, of 370 and 340 tons respectively. Both were very strongly built, and already tested in their capacity to buffet the severe ice conditions of the north. These two facts—a thoroughly tested and proved leader, and strongly built and tested wooden craft—had a lot to do with the ultimate magnificent success.

The men of the ships were, of course, the best type of hardy and brave British sailors—ready to go anywhere and attempt any task with such a leader and such ships. On board the ships were naval officers trained for magnetic work, and other scientific men, amongst them Joseph Dalton Hooker, assistant surgeon, who was also a keen botanist.

When the two ships left the dockyard, they were as strong as human ingenuity could make them. The decks were made of two thicknesses of stout planking, separated by layers of water-proofed cloth; internally the bow and stern were filled up nearly solid with timbers, and externally all projections were removed and a thick outer skin of planking added. The hulls were double coppered,

and copper was used instead of iron in the fastenings wherever possible.

It was fortunate that the ships were so strong, because later, in the far south, they had to stand a buffeting amidst icebergs in a raging gale that would have foundered vessels less strong, and shipmen less brave and experienced.

The instructions given to Ross were of a most minute character, drawn up by the Admiralty and by the Royal Society. So much was already known from previous explorations; he was to collate all these discoveries, examine and test and bring back the best possible comprehensive report. To locate the South Magnetic Pole was also one of the major objectives of the expedition. On the slow voyage to the Antarctic Ross was engaged in various scientific tasks, and it was not until Christmas 1840 that the expedition seriously struck the ice in latitude 63° 20′ S.

Here let me quote the exact words of Dr Mill:

> At 9 a.m. on the last day of the year [1840] a long line of ice appeared on the horizon which soon proved to be the edge of the pack. The weather fell calm, and the two ships lay in front of the low line of ice unable to approach or to retire from it. Other Antarctic explorers in a like position would have whistled for a wind to carry them out of the reach of the ice, but not those on board the *Erebus* and *Terror*. Never before had the Antarctic circle been approached by ships for which the ice-pack had no terrors. Cook had to retire before the pack-edge in his strong north-country colliers, the sealers in their little craft, the circumnavigators of Russia, France and America, dared not venture within it for their ships would have been crushed like egg-shells in the grinding ice. To all his predecessors therefore the edge of the pack was as effectual a barrier as the glacier fronts that girdle the Antarctic land, but to Ross it was only an encumbered path.

That fine passage sums up the situation exactly.

Captain Ross, his strong ships, and his brave and hardy men were ready for their task. The revelation of the Antarctic, the great disclosure which roused the intense interest of the ancients, which occupied the thought and aspirations of splendid minds through the Middle Ages, which evoked the magnificent daring of Cook, and like spirits of many nationalities—was now at hand.

On New Year's Day 1841 a breeze sprang up and the ships moved towards the pack, crossing the Antarctic Circle the same afternoon. The fight was on. A fresh breeze with fog and snow-showers; hard thumping of ice against the ships. Collisions with the ice occurred occasionally, so violent as to have been fatal to any ships less strongly fortified.

Taking advantage of every opening lead, and every opportunity of progress, the ships ran out of the pack into the open sea to the south at 5 a.m. on 9 January. Soon an easterly gale sprang up, and when it moderated next day not a particle of ice was to be seen—it was all open water. Another fine passage from Dr Mill's book says:

It was an epoch in the history of discovery; the magic wall from before which every previous explorer had to turn back in despair, had fallen into fragments at the first determined effort to break through it. The opportunity opening before the triumphant ships was one of those that occur but once or twice in the course of the ages—the first seafarer to pass the Pillar of Hercules, Diaz when he doubled the Cape of Storms, Columbus when he sighted the West Indies, Balboa when he first saw the Pacific "Silent upon a peak in Darien," Magellan, when he forced his way through his strait into the trackless ocean had experienced similar moments. It was impossible to predict how much might lie beyond that unbroken expanse of clear sea. The expedition seemed to be a success at its very start. The course was set for the south, straight for the magnetic pole which the increasing dip of the

needle, now 85°, showed could not be very far away. Just as hopes of reaching the magnetic pole were at their height came the report of land ahead, a discovery that was actually a disappointment, coming as it did in the form of an obstacle to the immediate attainment of the principal object of the expedition.

The Antarctic Continent in all its inspiring reality was now in sight. Ross and his men were the first human beings to set eyes upon it. From a hundred miles distant its lofty peaks rose higher and higher as the ships steered straight for the highest point. Many years later Shackleton had the same thrilling joy, when, having crossed the great barrier ice-field from the sea front, the solid land and the Beardmore Glacier came into view.

A notable promontory of the new coastline was named Cape Adare. Its high dark cliffs of volcanic rock were in strong contrast to the snow-covered heights behind and the ice-pack in front. The latitude of Cape Adare was 71° S., and from this point the ships followed the land directly southward into higher latitudes. The name "Victoria Land" was given to this first Antarctic land, and boat crews got ashore with difficulty to set up the English flag and to claim the country in the name of the English Queen.

Innumerable flocks of penguins—"little old gentlemen", as D'Urville called them—were observed, but no trace of any vegetation. The navigation was dangerous, but the chain of great mountains running southward from Cape Adare formed a spectacle of the utmost grandeur and magnificence, rising with sharply pointed summits to heights of from 12,000 to 14,000 feet, one sweep of spotless snow from sea to sky. Still the ships beat their way southward, no break in the land front, no suggestion of any harbour, could be seen. Latitude 75° S. was

attained on 20 January. Weddell's farthest had been overpassed.

On 27 January latitude 76° 8′ was gained.

Another tremendous sensation was enjoyed by the leader and men when, at midnight, the loftiest peak ahead was discovered to be emitting dense volumes of smoke. As the ships drew nearer on the morning of 28 January, the smoke was seen to be shot through with flames, or lit up by the dull glare of molten lava lying within its crater. This great volcanic peak rising from its icy base to 12,400 feet was named "Erebus" after the first ship, while another summit rising to 10,900 feet was named "Terror" after the second ship.

Later research proved that these mountains rose from an island separated from the main Antarctic Continent. This island was later named after Ross.

The expedition had now reached a point south as well as east of the Magnetic Pole. The heavy land-ice made it impossible to approach by steering to westward. So Ross decided to follow the edge of the ice-barrier to the eastward, hoping, however, that the trend would again turn to the south. The ships accordingly approached within three or four miles of the perpendicular ice-cliffs, which rose smooth and solid to a height of from 200 to 300 feet, forming a straight line against the sky. The swell broke in a heavy surf upon the ice, and the sea was seen to have hollowed caves in the lower part of the ice-wall. Mount Erebus, towering above the ships, suddenly broke into violent eruption, throwing out a column of smoke 200 to 300 feet in diameter, to a height of 1500 to 2000 feet.

At places it appeared that the great ice barrier was resting on the bottom, but at other places it was undoubtedly afloat, and the huge flat-topped bergs which drifted northward were obviously portions of the mass that broke off. The size of the bergs may be realized from

the remark of a sailor that the whole of London might float away on one of them. Experienced as Ross was in all forms of Arctic ice, the gigantic dimensions of the great southern barrier were as amazing to him as to anyone on board. The marvel of the ice-barrier impressed the men more than anything else; they had never seen anything like it before.

On 2 February the ships got close up to the barrier and reached the highest latitude for the trip, 78° 4′ S.; they had followed the icy wall for a distance of 250 miles. At that point the barrier was 160 feet high, the cliffs of ice rising sheer from the sea, and, considering the depth, it must have been afloat, so that the total thickness of this sheet of continental ice could not have been less than a thousand feet.

On 14 February the ships turned back to the westward, towards the Magnetic Pole, to locate the exact site of which was the leader's dearest wish. Indeed, he had brought with him on the southward venture the identical flag which he had the honour and privilege to fly over the North Magnetic Pole. But it was not to be.

The honour of locating the South Magnetic Pole was to fall to three distinguished members of Sir Ernest Shackleton's first expedition in 1907-9. These gentlemen included two noted Australians, Sir Douglas Mawson and Sir Edgeworth David.

In the seaway opposite Mount Erebus the volcano was seen once again in violent eruption.

A name now emerges which is frequently met in the later expeditions—Scott's, Shackleton's and others—in the early years of the twentieth century. The deep bight through which the ships were now pushing their way, and which opened out to the south-west, was named McMurdo Bay by Ross.

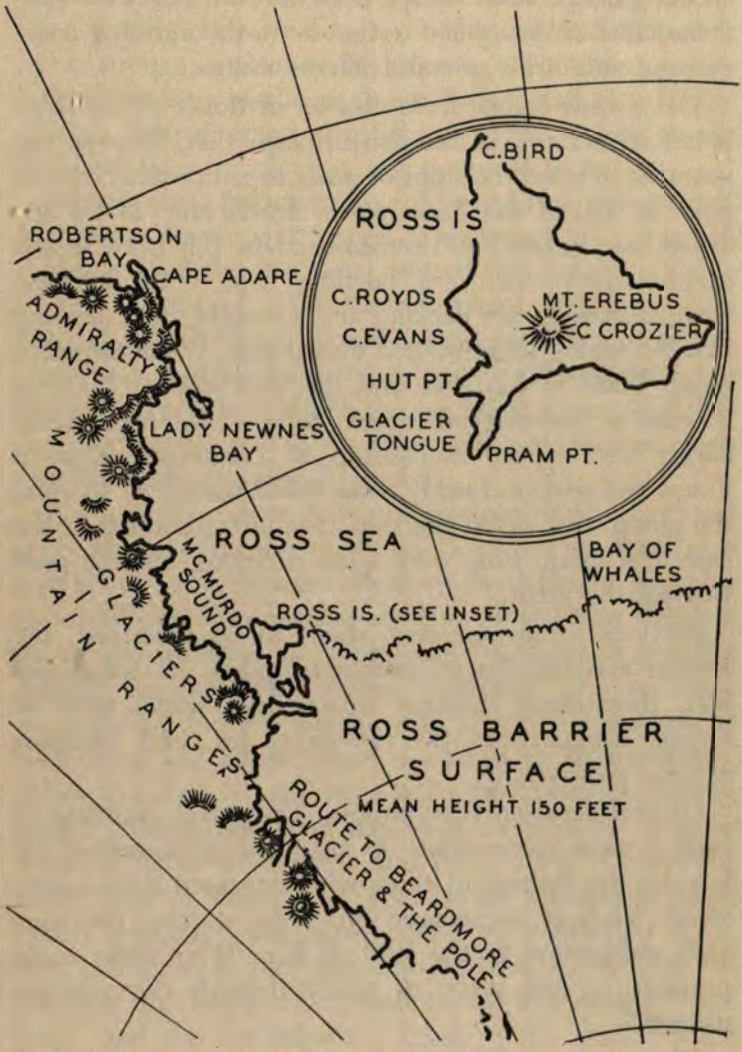
The accompanying map will better explain the features of the coast and of this famous bight.

The pack-ice was growing deeper along the ice-covered shores, and Ross, with great reluctance, had to give up his hope of reaching the Magnetic Pole, and turning again to the north, passed Cape Adare on 21 February, and, finding no sort of harbour or place where a landing could be made, decided to set the course for Hobart, which he reached on 6 April 1841. The Governor of Tasmania, Sir John Franklin, was the first to greet Ross and his men and to warmly congratulate them upon their magnificent achievement.

Some three months were spent in resting and festivities, and of course, in repairing, refitting and revictualling the ships. They then visited Sydney, where they had another round of entertainment. Later on the expedition sailed for New Zealand and lay at anchor for three months in the Bay of Islands.

The approach of the second summer made it possible for Captain Ross and his ships to return to Antarctica. As always, scientific work was done *en route*, and throughout the whole of the voyaging valuable data in all departments was gathered. The Antarctic Circle was approached on Christmas Day, but owing to ice and treacherous weather the Antarctic regions proper were not reached until the end of the year. This time a strenuous attempt was made to follow Weddell's track into the Weddell Sea, but, like Bellingshausen, Ross found solid ice instead of water.

On the occasion of this second attack weather and ice conditions were infinitely worse, and many pages of Dr Mill's narrative tell of hairbreadth escapes by the ships from being crushed by the terrible bergs. About midnight one night the men had a dreadful experience, the ships being caught in a howling gale in the midst of



Map showing contour of coast and details of bases on Ross Island.

crashing bergs. Their escape from disaster was really providential. Ross bears fine testimony to the amazing courage and skill of his splendid officers and men.

The narrow escape from disaster of Ross's strong ships is but an example of the fearful perils that, through the years, have beset the ships of other expeditions. A case in point is that of the *Terra Nova*, Scott's ship in his last expedition. Readers will remember how this stout vessel, caught overloaded in a howling gale, with immense waves smashing her decking and sweeping deck loading into the raging seas, escaped destruction. When the main pump failed to function, and the ship seemed likely to become a waterlogged wreck, it was the magnificent daring and expert seamanship of Lieutenant Edward Evans and seaman Lashly, who risked their lives to clear the pump, that saved the ship. The circumstances in the case of Captain Ross were quite different, but the peril was equally great.

Previous to the incident about to be described, the *Erebus* and the *Terror*, caught in rough, ice-laden seas with threatening icebergs surrounding them, were in serious danger from the masses of ice, and narrowly avoided collision.

Of that occasion Ross wrote: "The awful grandeur of such a scene can neither be imagined or described, far less can the feelings of those who witnessed it be understood. Each of us secured our hold, waiting the issue with resignation to the Will of Him Who alone could preserve us and bring us safely through this extreme danger."

Having escaped that peril, captains and crews had to face another one, somewhat similar, within a month. It was late in February, 1842, and, the season being nearly

over for further work, the two ships, crowding all canvas, were tearing through thin ice, being driven northwards by a strong south-easterly breeze. Their plan was to follow the edge of the pack northward, and to take the shortest course across the South Pacific Ocean to the Falkland Islands, where it was intended to winter.

Fine weather favoured the northward run, and early in March the course was turned to eastward. At 7 p.m. on 6 March 1842 the two ships crossed the Antarctic Circle to the northward after having passed sixty-four days battling the ice within it, one day longer than in the previous year, and far longer than any other expedition before that time. On 9 March the sea being clear of ice, the eastward course was taken again to allow them to reach the Falklands as soon as possible.

For a further three days the sea remained clear, and good progress was made, but on 12 March the wind rose and heavy snow-showers obscured the look-out. Ice also appeared, and we read that about midnight Ross had just made up his mind to lay-to until daylight, when the greatest danger of the whole expedition was suddenly encountered and for one terrible hour the total loss of both ships and all on board appeared to be inevitable. Many members of the expedition had been in deadly danger before, but none had ever experienced a more appalling hour of suspense and fear. When it was over some even of those who had borne themselves most calmly confessed that they could not remember what they had done, or how the ships had been saved. In the gloom of the night they found themselves amongst icebergs, and the *Erebus* was hauled to the wind on the port tack—to clear a large berg looming right ahead, when the *Terror* was seen to be bearing down upon her comrade ship—so close that it was seen she could not

clear both the *Erebus* and the solid berg. A terrible collision seemed inevitable. From Ross's carefully written account it is evident he considered that the situation was almost hopeless. He wrote:

> The terrific impact threw the men to the deck, masts and sails were carried away, and the ships, now hanging together, entangled by their rigging, and dashing against each other with fearful violence, were falling down upon the weather face of the lofty berg under our lee, against which the waves were breaking and foaming to near the summit of its perpendicular cliffs. . . . Sometimes the *Terror* rose high above us, almost exposing her keel to view, and again descended as we in our turn rose to the top of the wave, threatening to bury her beneath us, while the crashing of the breaking upper works and boats increased the horror of the scene.
>
> Providentially they gradually forged past each other, and separated before we drifted down amongst the foaming breakers, and we had the gratification of seeing *Terror* clear the end of the berg and of feeling that she was safe.

The danger, however, was not all over. The *Erebus* was crippled in the dreadful collision and had somehow to be repaired so that she could maintain her seaway, and, with a gale blowing, with high seas and threatening bergs, survive the ordeal.

We read that the stricken ships separated in the darkness, burning blue lights to assure each other of their safety, and eventually the signal came that all was well, with the answer from the other ship, "Thank God, we are the same."

After this terrible ordeal Ross turned his battered ships homeward, glad enough, we may be sure, to see the last of the bergs.

A lot more could be written about this epoch-making voyage, but the account must now close with the statement that eventually, when the ships were paid off at

Woolwich on 23 September 1843, it was more than four years and five months since they had been commissioned at Chatham.

It is almost superfluous to add that leader and men received a wonderful reception from all ranks of the British people.

CHAPTER VII

MARKING TIME

DR MILL heads the next chapter of his book "The Generation of Averted Interest". In the early pages there is a story of the heroic Sir John Franklin, whose sad fate in the northern ice-fields is joined up with the final disappearance of Sir James Ross's veteran ships, the *Erebus* and the *Terror*.

In 1845 Sir John, in command of an Arctic expedition and on board the *Erebus*, with Crozier second in command to both Ross and Franklin as captain of the *Terror*, sailed into Arctic seas and utterly disappeared. Expeditions were sent out unavailingly to solve this mystery. Years later certain relics were found in the Arctic, but what disaster befell the leaders, their brave men and the two famous ships is not likely to be known.

The search expeditions sent to Arctic waters to investigate this tragedy, and the tremendous civil war raging for years in the United States, were potent causes in averting the interest of seafaring men from the Southern Hemisphere.

The scientific expedition of 1872 in the *Challenger* equipped by the British Admiralty, was not on a mission to further explore the mystery of Antarctic seas, but the ship (2300 tons) did actually cross the Antarctic Circle, and this created another record, for this fine ship was the first steam vessel to touch and cross the magic circle of the south. Captain George Nares, R.N., commanded the ship, and a group of eminent men of science, under

Professor Wyville Thomson of Edinburgh was part of the working staff. Another member of the staff, John Murray, was later acknowledged as the world's leading oceanographer. The expedition reported the presence of numerous whales in southern waters.

The whaling industry in Antarctic waters was by this time (1870-80), attracting considerable attention in many quarters, and steam whalers began to plough the southern seas.

The record contains a reference to the people of Victoria taking an interest in Antarctic work. A movement was on foot in England to renew exploration in Antarctica and to make a great attempt "to wipe off the stain of ignorance from the South Polar regions". A strong committee of the British Association was selected to forward this great purpose and to plan for an expedition. The Victorian branch of the Royal Geographical Society of Australasia and the Royal Society of Victoria cooperated in furthering the effort.

There was some delay and hesitation in the home country and the Government of Victoria took the first definite step by offering to provide £5000 for an expedition combining trade and science, if the Imperial Government would provide a like amount. But there was no immediate result of these activities. However, about this time, it was known that the Northern Sea whales had become scarce, and whaling captains of the northern ships were turning their attention to whale-hunting in the Antarctic. The first fleet sailed from Dundee, Scotland, on 6 September 1892. The ships were the *Balaena*, 400 tons; the *Diana*, 340 tons; the *Active*, 340 tons; the *Polar Star*, 210 tons. These were typical Arctic ships, of great ice-resisting strength, and competent to deal with Antarctic ice. The captains' names were Fairweather, R. Davidson, Robertson and James Davidson.

The purpose of this Scottish expedition was to establish a whale-fishing enterprise in Antarctica. But these ships were bent solely on commercial activities; there was no thought of pushing into higher latitudes to search out new land. However, arising out of the whaling industry, an interesting story is told in which a Norwegian ship-master named Svend Foyn is linked up with Antarctic research. This gentleman is described as a man of remarkable perseverance, courage and originality, whose genius had grappled with the problem of killing the hitherto invulnerable blue whale or finner. In achieving that he made a great fortune for himself and a new industry for Norway. When a fellow countryman, Mr H. J. Bull, who had been captivated by the fascination of the Antarctic, had failed to induce Australian capitalists to invest money in an attempt to renew Antarctic whaling, Mr Bull returned to Europe and applied at once to Commander Foyn. His request met with success. This aged veteran—he was eighty-four—entered keenly into Mr Bull's plan and placed a stout ship at his disposal. Renamed the *Antarctic*, the ship, with Mr Bull on board and with Captain Christensen in command, reached Melbourne at the end of January 1894.

A further interesting fact was the joining up with the expedition of Carstens Egeberg Borchgrevink who, though of Norwegian birth, was then residing in Australia. This young man was keen to go south and desired to go as a passenger. But when the captain declared he would have no passengers, Borchgrevink offered to go in any capacity and signed on as ordinary seaman. His name is especially identified with this voyage because of the fine description of its achievements that he wrote. This Norwegian had the honour later on of giving a lecture at the sixth International Geographical Congress, held in London.

Leaving Melbourne in September 1894, the *Antarctic* spent a few months sealing round Macquarie Island and along the Antarctic pack which was met in latitude 58° S. The Antarctic Circle was crossed in December, the midnight sun being visible on Christmas Eve.

The ship became hemmed in by ice, and it was 14 January 1895 before she worked her way out again into the open sea, in latitude 66° 55′ S. Two days later Cape Adare, at the northern end of Victoria Land, was sighted —for the first time since Captain Ross in the *Erebus* had seen and passed this portion of the Antarctic Continent in January 1841, over fifty years before.

A day or two later a boat from the ship brought a landing party to Possession Island (named by Ross), and here Borchgrevink made a botanical discovery of considerable interest. It was lichen growing on the rocks—the first evidence of plant life obtained within the Antarctic Circle. A further interesting record obtained by this expedition is that in the vicinity of Cape Adare the first landing upon the Antarctic Continent was made on a low beach at the base of an icy cliff. Penguins came along in numerous parties to meet the unusual visitors.

The ship, with Captain Christensen, Messrs Bull and Borchgrevink and crew, arrived back in Hobson's Bay, Melbourne on 14 March 1895. Two results of this cruise should be mentioned: (a) though not a commercial success, the voyage demonstrated the facility of visiting Victoria Land and furnished some proof that the open sea found by Ross south of the pack ice was not a temporary incident, but the normal feature of an ordinary year; and (b) the last effort of whalers and sealers had done much to spread interest in Antarctic navigation, and it had done more in training men who were destined to take leading parts in the great scientific expeditions which were to follow.

CHAPTER VIII

WINTER IN THE ANTARCTIC

We are now to hear a story altogether different from those in preceding chapters. Hitherto all voyagers in southern waters have carefully and wisely steered north with their ships before the ice set fast with the oncoming of the Antarctic winter. They found the summer cold and changeable, liable at any moment to showers of snow and chilling fogs, but it was the best quarter of the Antarctic year. As Dr Mill wrote:

> Every explorer has spoken of the marvellous beauty of a fine Antarctic day, the unbroken genial sunshine, twice round the clock, the black rocks throwing off their white covering, and growing hot under the persistent radiation, the soft snow on the levels dissolving into water which gathered into streams, and almost rivers, every block of ice on land or sea musically adrip, and sea and land alike loud with the hoarse voice of birds—no sweet songsters among them, but every throat clamorous with life.

But as yet there was no record of a man, or a ship and its crew, spending the cold and dark days in the Antarctic. This is the story of a ship and that ship's crew that had perforce to face this unknown, and as it proved, terrible experience.

The ship was the *Belgica*, its captain a Belgian, Adrien de Gerlache, its crew mainly of Belgian and Scandinavian birth, its scientific complement hailing from several European countries.

TOP: CAPE ROYDS, LOOKING SOUTH

BOTTOM: MOUNT EREBUS

Photos: H. G. Ponting

Among the Norwegians was the ship's mate, Roald Amundsen, later to rank as one of the world's greatest names in Arctic and Antarctic travel, and the leader of the expedition that won the race for the South Pole. Another celebrity, Dr Frederick Cook, an American surgeon, joined the ship at Rio de Janeiro.

On 16 August 1897 the *Belgica* sailed from Antwerp with her cosmopolitan company and proceeded at a slow pace southward through the Atlantic. It was 13 January 1898 when she left South America, and in the cause of science took a line of soundings of the ocean depths from Cape Horn to the South Shetlands. The season was rather late for starting an advance on the frozen south. During bad weather a Norwegian sailor fell overboard and, despite desperate rescue efforts, was lost.

Gerlache steered his ship into a wide channel tending south-westward. Three weeks were spent in this strait, no less than twenty landings were made, and good collections of geological and natural history specimens were secured. The channel separated what appeared to be the mainland from a group of large islands bearing the name of Palmer Land. The able scientific men on board made the most of their opportunities. Near the sea, where the rocks were bare and trickling with water, lichens and mosses were found in some abundance, and even a few insects

On 12 February 1898 the *Belgica* left the strait and passed southward along the coast of Graham Land at a date when all previous expeditions in these waters had been making haste for home. Icebergs became more numerous, and the sea along the coast was beset with rocks, which made navigation slow and difficult. On 15 February the ship crossed the Antarctic Circle–still steaming south-west. On 28 February latitude 70° 20′ S.

was reached. A gale blew and tore great gaps in the ice-pack, affording tempting openings to the south.

Despite the lateness of the season, and against the advice of some of his people, Gerlache thrust the *Belgica* into one of the openings, and, pushing his way still southward, but with increasing difficulty, he reached 71° 30′ S. on 3 March

An attempt was made to return—but it was now too late. The ship was gripped in the pack, and for thirteen months she was a prisoner in the ice facing the dark and dangerous winter. The captain, the crew and the men of science had now to make the best of a bad job.

It should be noted that the ship was not equipped for wintering in Antarctic ice, but everything possible was done to minimize the inevitable hardships.

The scientists on board very determinedly carried on and won good results even under such harsh conditions. Through the months of extreme cold and darkness the ship shifted to and fro with the ice, but fortunately no land or rocky coast was in the vicinity of her drift. The period of darkness lasted ten weeks, and the courage and nerves of the men were sorely tried. Fierce storms arose and the ice cracked and formed pressure-ridges, but there was no shore near enough to offer resistance sufficient to bank the ridges to a dangerous height, although, no doubt, land lay to the south, and the storms passed, leaving the hull intact. Dr Cook, from all accounts, did a wonderful job in caring for the health and morale of the party throughout those bitter months of trial.

In March 1899 the *Belgica* broke loose from the pack, and early in November, returned to Europe, having lingered for some months in South American ports.

Recording the arrival of the expedition in South America, this little bit from Dr Mill's book must be given in his own words:

Never before were the bleak shores of Magellan Strait so welcome to the seafarer, and the harsh autumn wind from the forests of Tierra del Fuego was laden with all the perfumes of spring to the worn-out explorers who for more than a year had lived in a world of ice with no natural odour more fragrant than a penguin rookery.

CHAPTER IX

THE *SOUTHERN CROSS* STORY

CARSTENS EGEBERG BORCHGREVINK, who had sailed as an A.B. in the *Antarctic*, was later—like so many others—smitten by a great desire to revisit the frozen south. In 1898 he found a generous benefactor in Sir George Newnes, a wealthy Englishman, who financed the last expedition of the now expiring nineteenth century. The stout ship selected was renamed the *Southern Cross*. Borchgrevink was fortunate in the ship's company he assembled, especially in his experienced captain, Bernhard Jensen. Louis Bernacchi, a scientist from Melbourne, was engaged as meteorologist. Later, Bernacchi was also a member of Captain Scott's *Discovery* expedition. The *Southern Cross* left the Thames on 22 August 1898, and in due course sailed from Hobart for the Antarctic on 19 December 1898.

At her first attempt the ship failed to beat the pack, but, proceeding eastward, she made a second try and this time pushed her way into the open sea. Land was sighted on 16 February 1899, and we are told that on 17 February the first anchor ever dropped within the Antarctic Circle struck ground in Robertson Bay, situated not far from the now well-known landmark, Cape Adare. This expedition carried a number of dogs, with two Lapps to attend them, but as it happened there was little chance of using them for transport.

Now at the same time, in nearly the same latitude, but

on opposite sides of the vast unknown Antarctica, all on board the *Belgica* were working furiously to break from their prison in the floe before a second winter overtook them; and all hands on board the *Southern Cross* were straining every nerve to unload stores and the material for a house in which to pass the first long night on land within the Southern Circle. This proved, as always, a difficult and dangerous job. But the task was accomplished, and the ship was safely got out of the dangerous bay before the ice could make it also a close prisoner through the winter. The *Southern Cross* wintered in New Zealand, and on 28 January 1900 returned to the south and safely brought back the winter party to a warmer northern world. They had proved their grit. But before the return to a milder climate this good ship, capably handled, steamed southward along the coast of Victoria Land and reported the coastline seamed with great glaciers descending from the immense plateau behind, and at times thrusting their icy tongues far into the sea.

Another botanical find by this expedition was reindeer-moss. The men on the *Southern Cross* lying off Cape Crozier were able to see the volcanoes Erebus and Terror, which had been hidden from human sight since the ships of those names carried Ross and Crozier back to the open ocean sixty years earlier.

From Cape Crozier the ship turned eastward along the great ice-barrier. It steamed along the face of the towering wall of ice much closer than Ross could risk doing. The weather grew bitterly cold. On 11 February the ship had reached 78° 21′ S., farther south than any other ship —Ross had reached 78° 4′—and there was in consequence much jubilation on board. But the weather was no party to the joy, and again the little ship had a tempestuous time tossing about amongst the icebergs off the barrier. The *Southern Cross* dared all dangers and, proceeding

eastward in finer weather, indeed in sunshine, found the barrier greatly changed. The wall of ice dipped until it was only a quay of ice inviting the traveller to step ashore. The *Southern Cross* was moored along this icy quay and lay there for a whole day. Dr Mill says:

> February 19th was one of the finest days of the Antarctic year. The ice stretched beyond the reach of the eye in a smooth, uniform, snow-covered sweep over which *ski*-travelling was a joy to men so long cramped up on shipboard. . . . Mr Borchgrevink and Lieutenant Colbeck made a short sledge trip southward over the ice, attaining 78° 50′ S., and thus establishing a record for southward travel.

This good ship and the men on board in due course returned safely to civilization.

Though the expedition's scientific results were not as great as expected, it was interesting as a dashing piece of pioneer work, and useful in training men for later service. The voyage of the *Southern Cross* was noteworthy for the fact that its men spent the first winter on land in Antarctica, and that it was the last effort of the nineteenth century, that century which had solved all problems of geographical discovery except that of the Poles.

But before leaving the *Southern Cross*, there are several other incidents connected with her story that may prove of interest.

It was from this ship that the first anchor ever dropped within the Antarctic Circle struck ground in Robertson Bay, not far from the headland of Cape Adare. The *Southern Cross* was the first to carry dogs as an aid to men in Antarctic research. A third unusual happening was an outbreak of fire in the hut during the winter. The building caught fire from the careless placing of a lighted candle, and the flames were extinguished with difficulty. Doubtless there was tremendous relief on the part of the men at their narrow escape from disaster.

CHAPTER X

THE VOYAGE OF THE *DISCOVERY*

THE twentieth century ushered in a splendid series of Antarctic expeditions. The British world responded to the challenge to attempt to solve without further delay the South Land's remaining mysteries. The geographical guesses of the ancient world gave place to definite knowledge about many things that Herodotus and Ptolemy were very keen to understand.

As the preceding stories of this book have disclosed, intrepid men of many nationalities shared the honours of the achievements already gained. The location of the two Poles—the South Geographic and the South Magnetic—had yet to be determined. For the former prize, as we shall see later, a tense contest was pending between Robert Scott and the Norwegian, Roald Amundsen.

Though Captain James Clark Ross was greatly disappointed that it was not for him to locate the South Magnetic Pole (and so achieve a double victory), this honour fell to other men of the British race, as we have already recorded.

In the twentieth chapter of *The Siege of the South Pole*, Dr Mill refers to early expeditions of the twentieth century and enlarges on the unprecedented activities by the Royal Geographical Society and its great president, Sir Clements Markham—together with famous names like Sir John Murray, Sir Joseph Hooker, Dr Nansen and Dr Von Neumayer—to arouse interest in Britain to plan and equip a great British National Expedition to Antarctica.

Large sums of money were soon forthcoming from private citizens, and the Treasury authorities promised £45,000—making the financial side of the undertaking very secure.

For this splendid national effort, a brand-new ship was built at Dundee, Scotland; the material in the main was solid oak. The ship was named the *Discovery*, and command of the expedition, as well as of the ship, was given to Commander Robert Falcon Scott, of the Royal Navy—a man not only born to command, but in full sympathy with every branch of scientific work. Lieutenant Albert Armitage, R.N.R., who had experience in Arctic work, was second in command. Lieutenants Barne, Royds and Shackleton—all navy men—were amongst the other officers.

Another officer of the expedition—a name to become famous in a later adventure—was the doctor and artist, the beloved Edward Wilson. The crew numbered twenty-seven—picked men from the Royal Navy. Engineer-Lieutenant Skelton was the official photographer, who, like Herbert Ponting and Frank Hurley, official photographers of later expeditions, was to give the world pictures of Antarctica, its magnificent, if awesome landscape, its bird and animal life, its glaciers, mountains, and snow-covered plateaux which will delight lovers of beautiful and majestic things in all the after years. Among the scientific staff was Louis Bernacchi, who, it will be remembered, was on the *Southern Cross* and shared the severe winter experiences in the hut near Cape Adare.

The whole company of men on board the *Discovery* numbered fifty. Surely never before had a better company of British men set out on a dangerous but worthwhile quest. Their individual efficiency and willingness, their co-operation as a team, their fine comradeship, set

TOP: SHACKLETON, SCOTT AND WILSON START ON THEIR FIRST LONG SOUTHERN JOURNEY

BOTTOM: SMOKE CLOUD FROM MOUNT EREBUS

Photos: H. G. Ponting

a standard of conduct and service that inspired a similar high morale in other later expeditions.

The ship left England on 6 August 1901, and made two calls *en route* to Antarctica—one at Capetown, the other at Dunedin, New Zealand. The people of New Zealand were very interested and enthusiastic, and when the *Discovery* finally sailed from Port Chalmers on 24 December she was laden with welcome gifts of fresh meat and vegetables.

The main objects of this expedition were officially stated to be to determine, as far as possible, the nature and extent of that portion of the South Polar lands which the ship would be able to reach, and to conduct a magnetic survey. The question of wintering was left to the discretion of the commander, but a relief ship was engaged to communicate with the expedition in the following summer.

The *Discovery* met the pack on 1 January 1902—almost on the Antarctic Circle, and was fortunate in working her way through in exactly a week, finding open water at 70° 25′ S., 173° 44′ E. Some of the crew landed at Cape Adare on 9 January, and next day the ship set a southern course along the coast of the now well-known Victoria Land, with its glacier-infested coast and mountainous hinterland. Practically following the track already blazed by the *Erebus* and the *Terror* and the *Southern Cross*, the *Discovery* proceeded eastward after another landing had been made at the base of Mount Terror, near Cape Crozier. Coasting the great ice-barrier ever eastward, and sounding the ocean depths at intervals, Captain Scott found the water shoaling from 300 to 100 fathoms—indicating the presence of land. This was soon discovered and named King Edward Land—confirming Ross's suggestion of land about the same longitude some sixty years before. But now the ice definitely prevented further

voyaging eastward, and Scott, like Ross, again turned his ship back on the south-westerly course.

McMurdo Bay was again reached on 10 February, and soon the ship was anchored in a small and sheltered harbour where it seemed safe to winter. This location became known as Hut Point. It was near the south-west extremity of Ross Island, and favourably situated for reaching the barrier expanse.

With all haste material for the winter huts was put ashore, short excursions planned to learn all about the location, and hut-building and landing of stores were rapidly proceeded with. The only fatal accident during the whole stay in the Antarctic regions occurred on one of the excursions, when a party was overtaken by a blizzard in crossing a dangerous snow-field terminating in a vertical ice-cliff. One of the crew, a man named Vince, fell into the sea and was lost.

At the base everything possible was done to make the living-quarters warm and snug for the long Antarctic winter, but the cold became very severe, temperatures of forty degrees below zero being recorded. However, the winter passed cheerily; everyone was busy with the observations, with preparations for the sledge journeys in the spring, or with the compilation of a brilliant and artistic production, the *South Polar Times*.

Before this date no one had ever wintered so far south, and although the night was long and some cause for anxiety appeared in unmistakable symptoms of scurvy, no one gave way to melancholy, and the disease yielded to treatment.

Spring came in September, and sledge journeys to lay down food depots to the southward over the barrier-ice were undertaken. Then, on 2 November, Scott, Shackleton and Dr Wilson set out southward with laden sledges and dog-teams to solve the barrier mystery. Depots were laid

down at intervals, and provisions cached to be picked up on the return journey. The going was difficult and progress was slow. Westward the land rose above the surface of the barrier, over which the first Antarctic land-travellers were struggling. Latitude 82° 17′ S. was reached on 30 December, and two huge mountains to the westward were seen and named Mount Markham (15,100 feet), and Mount Longstaff (9700 feet). Dr Mill observed that it would be impossible to overrate the importance of this splendid journey. But, alas, it was not for this first team of gallant men to unravel the barrier's mystery.

After travelling fifty-nine days from their camp, and being now 380 miles from their ship, travelling on sea-ice all the way, the breakdown of one of their party sounded out the signal for retreat. Shackleton had given way under the strain, and Scott and Wilson—the dogs being finished—had all the burden of the sledges. Shackleton's indomitable will enabled the stricken man to struggle along with his comrades, but he had no strength to help them. At last the ship was reached on 3 February 1903. The party had been away for ninety-three days.

The comradeship of these three gallant Englishmen, who were the first human beings to explore the icy wastes of the great barrier, was very wonderful.

Apsley Cherry-Garrard, who knew these men so well, wrote: "Scott and Wilson saved Shackleton's life, although they themselves also had scurvy. This journey led to an understanding between these two men; it became a friendship which endured to death."

And every reader of *Edward Wilson of the Antarctic* will recall how earnestly Shackleton pleaded for the help and company of the beloved doctor in the first Shackleton Expedition.

During the absence of the barrier party the scientists who remained near the ship carried out their several

duties. Some of them were absent for many days on important exploring trips, and one party travelled as far as 130 miles from the winter quarters.

Meanwhile, in England, the Royal Geographical Society had secured a relief ship named the *Morning*, which sailed for the South Land under the command of Lieutenant Colbeck, a naval officer who had been one of the staff on the *Southern Cross*, and who was well aware of the dangerous conditions of navigation in those ice-infested seas. Colbeck, arrived in McMurdo Bay, sighted the *Discovery's* masts from afar on 25 January 1903. The ice had not broken out of McMurdo Strait as in the previous year, and stores from the *Morning* had to be sledged across nearly ten miles of frozen sea, for the *Discovery* was still held prisoner in firm ice.

The *Morning* dare not wait lest she also might be imprisoned, so she left for the north on 3 March—a rather late date for navigation in such latitudes. Lieutenant Shackleton—much against his will—was invalided home, and Lieutenant Mulock, R.N., took his place on the *Discovery*. But this unfortunate failure did not break the spirit of the intrepid Englishman. As we shall see in later stories, he came back south again and again, and by sheer grit and consummate leadership won a place among the immortals.

Meanwhile the *Discovery* remained fast locked in the ice, and a second winter had to be endured by the ship's company. We learn that brilliant acetylene lamps were installed in the living-room of the hut, and this meant greater comfort for the marooned officers and men. To ensure health and freedom from scurvy great stores of seal meat and of skua gulls were laid in for food before the winter, enabling the company to live largely on fresh provisions.

Again, with the return of spring and early summer,

sledging parties pushed outwards over the barrier, and westward across glaciers and high land to the vast plateau beyond—9000 feet above sea level. The scientific staff were busy day by day attending to their various duties. The leader and two comrades won a distance of some 300 miles from the ship westward towards the centre of the Antarctic continent.

Apparently there was no further extensive effort to reach the southern limit of the great barrier. This achievement was left to Sir Ernest Shackleton on his second venture into this southern solitude.

The summer had come again, and by mid-December there was still no sign of the ice-imprisoned *Discovery* breaking into the open water to the north. Efforts to blast a way out for the ship were futile. However, the men were in great heart and cheered lustily when the relief ship, the *Morning*, steamed to the ice-front on 5 January 1904, several miles away from the *Discovery*. The *Morning* was accompanied by another and larger ship, the *Terra Nova*. The orders from the Admiralty were to abandon the imprisoned ship, and for Scott's party to transfer to the relief vessels. Hard instructions, but instant action was taken to obey. By the end of January all instruments, registers, collections and valuable books had been removed to the other vessels—when, to everyone's surprise and delight, the ice around the *Discovery* began to move and break up. The crews of all three ships now got to work, breaking holes in the ice, and using powerful explosives to form cracks, and so enable the ocean swell to do the rest. After further delay and some anxiety the *Discovery* was free, and on 18 February 1904 the three ships steamed northward.

Early in March the relief ships continued homewards, but Captain Scott held on a westward course, well to the south of the Antarctic Circle in clear weather and open

sea, with icebergs in sight but with no appearance of land. Eventually the *Discovery* returned to England via Cape Horn, arriving in September 1904.

The leader and his comrades received a tremendous welcome, having spent two years and two months within the Antarctic Circle. Captain Robert Scott's second and fatal adventure in the south dates from 1910, and will be told at greater length in Chapter XVI. It surely is one of the most thrilling stories, if, alas, one of the saddest, in the records of Antarctic travel.

CHAPTER XI

SOME MINOR VOYAGES

We have already seen that brave and able men of many nationalities felt the call to venture into the dangerous seas of the South Land, impelled by love of adventure, for the advancement of science and the hopes of material gain. One might truthfully add that the activities in the early years of the present century were, to some extent at least, motivated by a spirit of generous national rivalry. Scott's Expedition left England on 6 August 1901, and in the same month and year a well-equipped scientific expedition left Germany for southern seas. Professor Erich von Drygalski was in charge, and his fine ship was the *Gauss*, controlled by a German of the Hamburg-American service, Captain Hans Ruser. There were on board five members of the scientific staff, five ship's officers and a crew of twenty-two picked men.

The venture had the blessing and practical help of the German Government, and the plan was to set up a supplementary station in Kerguelen Land, while the main party pushed farther south. Eventually the *Gauss* was beset and wintered in the ice. Thence sledging parties set forth in several directions, and one of their remarkable finds was a steep black rocky hill situated within fifty miles of the ship. This striking protrusion from the icy level was named the Gaussberg. The Germans named this part of the Antarctic land mass Kaiser Wilhelm II Land. Unusually clever and successful methods were adopted

for freeing the imprisoned ship in the ensuing spring, and eventually the *Gauss* anchored again in the Elbe on 24 November 1903. The scientific gains from this expedition were noteworthy.

Another romantic venture to the south was led by a distinguished Swede, an experienced traveller and scientist, Dr Otto Nordenskjöld.

In this connexion we recall that in the first real Antarctic voyage, that of Captain Cook in 1772, both German and Swedish men of science were in the party.

Now we are to learn something of an expedition planned, financed and led by men of the Swedish nation. The leader was fortunate in securing the Norwegian ship *Antarctic*, which had already proved her sterling worth in the southern ice, for it may be remembered that she was the first ship, after the *Erebus* and the *Terror* of the Ross Expedition, to revisit that part of the continent named Victoria Land, with its mountainous background. Nordenskjöld was fortunate in having C. A. Larsen as the ship's captain. He had captained the *Jason* in an earlier voyage to Antarctica.

The Swedish party started for the south from their homeland towards the end of 1901. They made for the Weddell Sea area, and tried to voyage south along the coast of what was named King Oscar II Land. The firm ice, however, prevented further southerly progress. Nordenskjöld sent the ship north to continue scientific work in safer latitudes, while he and several of his men landed at a spot called Snow Hill Island in latitude 64° 8′ S., to establish a winter hut to carry out further observations. The *Antarctic* proceeded north, but never returned. Later it was learned that this ship, with the Swedish flag flying at the masthead, went to her doom in the cruel ice-strewn waters which she had explored at such length.

Nordenskjöld and his party experienced a very severe winter, and it was fortunate that their hut—a timber structure brought from Sweden—proved sound and strong. Summer came, but not the ship, and a second winter, that of 1903, had to be passed in their winter quarters. When spring returned in October Dr Nordenskjöld, with a sledge party, was out on an exploring trip, when suddenly two beings from whom the dogs fled howling were encountered. When recognized, these men proved to be Dr J. Gunnar Andersson and Lieutenant Duse. They were black from head to foot, with long hair hanging down over their shoulders, and black, bushy beards. These brave men had left the doomed ship the previous summer, and had endeavoured to make the winter camp on foot. They had built an ice hut to winter in, and eked out their scanty food supply with seal meat, and with blubber as their only fuel. We can imagine how glad they were to reach the comparative comfort and safety of the well-supplied hut.

On 8 November strangers were seen approaching. They proved to be Captain Irizar and an officer of the Argentine Naval ship, *Uruguay*, who had come to offer the party a passage home, since no news of the *Antarctic* had been received. That very same night, by one of those coincidences so improbable that fiction would hardly dare to invent, Captain Larsen, from his lost ship, with five of his men, also appeared at the camp. The rest of the crew had wintered on Paulet Island, and soon all came together on the relief vessel, and eventually were returned safe to Sweden—a wonderful example of international friendship.

There is still a third minor voyage to be recorded.

Dr Mill introduces it in this humorous way: "From the day of Cook's Highlander who roused the bergs to echo the skirl of the bagpipes, the bond between Scotland and

the Antarctic had been unbroken." He proceeds to tell us that the news of the discovery of the South Shetlands (by Cook) was first published in Scotland; that Weddell and Ross were of Scottish parentage; that Thomson, Murray, Buchanan and several others of the *Challenger* company were Scotsmen; that the Dundee fleet led the way in reopening these seas in 1892. "Scotland for ever!"

And now a definitely Scottish expedition financed by a wealthy Scotsman—Andrew Coats of Paisley—with a ship, the *Scotia*, captained by a Robertson, and the whole under the control of a Bruce, was ready to leave the Clyde in November 1902. Men of science were on board, for the purpose of the voyage was scientific as well as exploratory. On 18 February 1903 the *Scotia* crossed the Circle and passed on into waters entirely free from ice. However, on 22 February, in latitude 70° 25′ S., on the southern course midway between the tracks of Weddell and Ross, the ship encountered the ice.

The depth of the sea, ascertained by a modern, deep-sea sounding-machine, was found to be 2500 fathoms. The sea was now freezing, and the *Scotia* returned northwards, and after a search along the rough coast of the South Orkneys, found a good harbour wherein to pass the winter. A solid stone house with walls four feet thick was constructed, and scientific work was carried on all through the winter. On 27 November the ship was again able to put to sea, and visited the Falkland Islands on the way to Buenos Aires. She left again for the south with a party of Argentine meteorologists on board, who were to continue scientific work at the headquarters on Scotia Bay for another year.

On 6 March land was seen, being named Coats Land after the generous patron of the expedition. The farthest south reached was 75° 1′ S. in longitude 23° W. Eventually the *Scotia* and her company arrived back at the Clyde

on 31 July 1904. The distinguishing merit of this voyage was the accurate sounding of the sea depths over a wide range of southern waters.

A final minor voyage should now be briefly mentioned, in which a splendid gesture of the brotherhood of the sea was shown by a Frenchman, Dr Jean Charcot. In the French ship, *Francais,* Dr Charcot sailed into Antarctic waters to relieve Nordenskjöld—forced to spend a second winter in the ice, when his ship, the *Antarctic,* met her doom. However, as we have previously seen, the Swede's rescue was effected by a ship from the Argentine. Nevertheless, Dr Charcot's fine effort deserves grateful recognition. This noble Frenchman then set out south on an exploration voyage, and carried the French flag into waters that long years before were ploughed by the proud keels of Dumont D'Urville's little ships, the *Astrolabe* and the *Zelée.* This French party did useful scientific work throughout two summers and one winter in Antarctica, and, though once at least in serious danger, ultimately reached their homeland port about June 1905.

CHAPTER XII

REVIEW

THE very last chapter in Dr Mill's book, from which so much of my material is taken, is entitled "The Raising of the Siege". It gives an interesting, though brief, review of various facts and incidents dealt with in the preceding twenty chapters. At this stage in my narrative a short review of these past incidents and happenings may help readers to remember. Dr Mill wrote:

> The siege of the South Pole has been a spasmodic operation, proceeding by magnificent efforts separated by long intervals of inertness and inattention. Half a century elapsed before Bellingshausen resumed the attack commenced by Cook; twenty years separated Bellingshausen from the period of D'Urville, Wilkes and Ross, and no less than fifty-four years passed before the task abandoned by the *Erebus* and *Terror* was taken up by the *Belgica* and the expeditions of the new century. As we have seen, the long intervals between the short periods of the great expeditions were partially filled by incidental voyages, each interesting, but affording little real help towards the solution of the problem of exploration. . . . There was no body in any country particularly entrusted with the solution of the problem of the South Pole.

He then proceeded to indicate the several parts played by the British Admiralty, the Royal Society, the British Association, and the Royal Geographical Society in promoting research voyages into the little-known southern seas. He names also some of the generous patrons of Antarctic activities—men like Enderby, Newnes, Long-

staff and Coats—but even these could by no means be compared with the Portuguese Prince Henry in devotion to the cause of exploration. Entering the twentieth century:

> The condition of things had vastly changed since the time of Cook or even of Ross, both from the intellectual standpoint and in material resources. The Antarctic circle is now only a week's easy steaming from British colonies or Argentine ports presenting all facilities for refitting, and forming convenient sites for permanent bases; the value of continuous observations of climatic conditions is fully understood, and the existence of extraordinary differences in the navigability of polar seas from year to year has been definitely ascertained.

The procession of the proud and sturdy ships that successively faced the rigours of southern waters also passes through Dr Mill's mental vision:

> The *Antarctic* perished honourably in the field of her last achievements. The *Gauss* was sold to the Canadian Government to be used as an Arctic exploring vessel under the versatile French-Canadian Captain Bernier, so that her destiny is being carried out according to the original design though at the other end of the world. The *Terra Nova* also remains an exploring ship in the services of a private United States Arctic expedition; the *Morning* has reverted to her old whaling life; the fate of the *Scotia* is unknown to us; . . .

But Dr Mill particularly stresses his reget that "the magnificent *Discovery*, built to her innermost fastenings as a scientific ship, fitted in every detail of her structure for the one purpose for which she was designed, has sunk to mercantile uses which could be as well served by any common sealer." *

* Later the *Discovery* was bought back for the Antarctic service by Sir Douglas Mawson.

Then he says: "It is very desirable that the experience gained by men of science and officers in the recent Antarctic expeditions should be turned to account by following up without delay the successes they have obtained." What follows in this book will disclose how grandly, and with what magnificent success, men like Shackleton, Scott, Mawson, Amundsen and Byrd fulfilled Dr Mill's expectations.

CHAPTER XIII

THE RACE FOR THE POLES

We have already travelled a long way towards unravelling the problems of the Great White South. The myths and guesses of the geographers and travellers of the ancient world have all been resolved. The great and mysterious South Land which loomed large on medieval maps is now an actuality; the exact position in its latitude and longitude is known to the world.

Nevertheless, at the stage now reached in this retelling of a splendid story, there are still vital discoveries to be made, and objectives to be won before gallant men of several nations will lay down their ships.

The two Poles—the Geographic South and the South Magnetic—have still to be reached.

The expeditions to be recorded later, namely, Shackleton's of 1907-9, Scott's second of 1910-12, Amundsen's of 1910-12, had as their major objective the winning of the Poles.

As we shall see in due course, a great team of Shackleton's comrades first located the South Magnetic Pole; and at a later date the Norwegian, Amundsen, beat Scott and his four companions by only four short weeks in the race for the Geographic South Pole.

Truly it was a grand contest by magnificent men, a theme worthy of a modern Homer to give it poetic justice.

Sir Ernest Shackleton's immense effort, which came so

very close to a glorious success, must first claim our attention.

The story is told in Shackleton's great book, *The Heart of the Antarctic*. The ship *Nimrod*, a sealing vessel forty years old, rather small but very strongly built, and having steam power as well as sails, was purchased by Sir Ernest for the expedition. Considerable refitting and repair work had to be carried out until, at last, Sir Ernest, who really required a newer and larger vessel, said, "I grew to be really proud of my sturdy little ship." The leader went to great trouble and very considerable expense in his preparations. He journeyed to Norway to secure the best equipment in the shape of sledges, sleeping-bags, fur boots and mitts, skis, and the dozen and one other essentials for life and travel in the very cold southern climate.

He ordered ten sledges measuring twelve feet, eighteen measuring eleven feet and two measuring seven feet. These were of the Nansen pattern, built of specially selected timber and of the best possible workmanship. The larger ones were for haulage by ponies, and fifteen strong and hardy animals were secured from Northern China for the expedition. These were of various colours, strong and healthy and ready for any amount of work over the snow-fields.

Another experiment in transport under the harsh conditions of the south was the shipping of a motor-car on the *Nimrod*. The shore party included the leader and fifteen companions, among them being men of science, those in charge of dogs, sledges and ponies, and of course a first-class cook. Two men of the shore party, Wild and Joyce, had been in Antarctica previously as members of Scott's *Discovery* Expedition.

Among the scientific staff were Professor T. W. Edgeworth David, of Sydney, Dr Douglas Mawson, of Adelaide,

and two medical men, Drs Marshall and Mackay. It was certainly a well-balanced and workmanlike group of men which Sir Ernest took south in the *Nimrod.*

On 30 July 1907 the *Nimrod* sailed from the Thames on the first stage of her long journey to New Zealand, but, before leaving the English coast, the little ship was inspected at Cowes by their Majesties King Edward and Queen Alexandra, who came on board, an honour greatly appreciated by Sir Ernest and his men. Her Majesty presented the ship with a Union Jack to be carried on the southern journey. The expedition arrived at Lyttelton, New Zealand on 23 November. Final preparations were now made for the great southern venture, the people of New Zealand showing a wonderful interest in the ship and in its human and animal crew. Much attention had to be given to planning the accommodation on the ship and the space available was worked out to the very last fraction. Sir Edgeworth David, with all his scientific equipment, was allotted a little den five feet ten inches by three feet.

On arrival in New Zealand the Manchurian ponies were given a few weeks' breaking in and training on Quail Island. It is interesting to record their names: Socks, Queen, Grisi, Chinaman, Billy, Zulu, Doctor, Sandy, Nimrod and Mac; ten ponies were brought on the expedition and nine dogs made up the canine contingent.

It was 1 January 1908, Regatta Day at Lyttelton, and great crowds of New Zealanders were present to see the *Nimrod* cast off the lines and make her way to the open sea. Three ships of the then Australian squadron, the *Powerful,* the *Pegasus* and the *Pioneer,* joined in farewelling and wishing god-speed to the heavily laden little ship, bound for the ice-infested waters of Antarctica.

To save the *Nimrod's* coal and to help her in the early stages of the sea journey it was arranged for a more

powerful ship, the *Koonya,* to tow the *Nimrod* to the Antarctic front, a daring nautical effort never previously attempted. It was most fortunate that this was done, for on the second day out the ships struck terrible weather, and Sir Ernest tells us that for the next fortnight no one took his clothes off, and all lived in a constant state of wetness, wakefulness and watchfulness, until the ship arrived in the vicinity of the winter quarters. The ship sustained damage from the severe buffeting of enormous waves. The *Koonya* towed the *Nimrod* through storm and tempest for a distance of 1510 miles. The *Koonya* achieved a record in that she was the first steel vessel to cross the Antarctic Circle. The *Nimrod* gamely fought her way through the ice, and the leader was greatly relieved when the ship reached the Ross Sea, then free of ice.

It should now be explained—the facts are set forth clearly in Dr Mill's *Life of Sir Ernest Shackleton*—that the leader of the expedition, in deference to the expressed wish of Captain Scott, planned to make his base of operations far to the east of Ross Island and McMurdo Sound. The *Nimrod* accordingly shaped her course to the south-east and touched the great ice-barrier some hundreds of miles eastward of Scott's old position at Hut Point on McMurdo Sound.

The place Shackleton had in mind was previously known as Barrier Inlet, where, years before, Borchgrevink had landed from his ship, the *Southern Cross,* and where also Scott had brought his ship, the *Discovery,* alongside the low ice-wall to land a trial balloon. Shackleton could see that a tremendous change had taken place. Now the ice-cliffs were high and menacing, and miles of the old barrier front had been broken away to a depth of many hundreds of yards. In place of the inlet in which the *Discovery* had lain so snugly, there was now a great

wide bay, a very playground for whales, which were spouting on all sides.

It was Shackleton who gave the name "the Bay of Whales" to this portion of the barrier coast. The leader quickly decided he could not safely establish his base there although it will be remembered that some four years later Roald Amundsen sailed the *Fram* into this bay, and from his base on the ship struck out on a south-westerly course for the Pole. Shackleton next tried to force his way farther eastward, but the dangerous ice conditions eventually compelled him to turn westward again, and to seek a base in McMurdo Bay. Dr Mill has put it on record that Shackleton was very disappointed at the forced change in his plans, and the leader himself wrote: "It must be part of my life that I go striving for the things that are out of reach." When back in the vicinity of Ross Island, he brought the *Nimrod* to the sea base of Mount Erebus, but further progress south was blocked by the ice. The season was now getting late, the date being 29 January, and Captain England was anxious to get his ship away from the threatening ice, into safer waters to the north. Shackleton had decided to establish his base somewhere on the west coast of Ross Island, finally fixing on the place overlooked by Mount Erebus known as Cape Royds. No time was lost now in landing stores, material for the hut, and shelters for the animals. All hands worked with a will to get everything done so that the *Nimrod* might get out and back to New Zealand before ice should block her exit. A terrific blizzard raged for several days, and seriously hindered operations. Eventually, on 22 February, final letters were sent aboard, and the ship moved rapidly away from the winter quarters with a fair wind helping her on the northward course. The hut completed, and made snug and strong to withstand the storms and intense cold of the dark winter

season, all the members of the expedition settled down to their tasks. The men had their times for outdoor games before darkness fell and practically prevented movement outside the quarters. The ponies and dogs had to be carefully looked after, and as the days went by the plans for the spring journey were considered in all details, and preparations were most carefully made.

The leader was of opinion that the camp location at Cape Royds was more favourable and convenient than Scott's Hut Point. Low hills and small frozen lakes dotted the hinterland of the camp, and in summer-time sea birds could be seen bathing in the shallow waters. Numerous names were allotted to the many features of the landscape—or should one say snowscape? Dr Mill can help us to visualize more clearly the various geographical features of the Ross Island bases.

Ross Island may be pictured as a triangle each side of which measures 40 miles. One side runs north and south, Cape Bird being its northern extremity and Cape Armitage its southern. This forms the eastern side of M'Murdo Sound, which is about 40 miles wide and is bounded on the west by the mountainous coast of Victoria Land. Nearly half-way between Cape Bird and Cape Armitage a little flat peninsula tipped by Cape Royds projects into the sound under the steep slopes which rise to the summit of Mt. Erebus. Here Shackleton had established his winter quarters almost exactly in latitude 77° 30′ S. and in longitude 166° E. About 10 miles south of Cape Royds a group of islands, named the Dellbridge Islands, lies off the coast, the islands in order southwards being Inaccessible, Tent, Small Razorback, and Large Razorback. These all lie in a bay formed on the south by the projection from the land of a great tongue of ice 5 miles long, tapering from about a mile wide at the base to a fine point: this extraordinary structure, which must be afloat for the greater part of its length, is known as Glacier Tongue. It is 14 miles from Cape Royds, and for 9 miles farther south. Ross Island runs in a long narrow peninsula

TOP: THE NORTHERN PARTY AT THE SOUTH MAGNETIC POLE
FROM LEFT: DR MACKAY, PROFESSOR DAVID, DOUGLAS MAWSON

BOTTOM: THE SOUTHERN PARTY ON BOARD THE *NIMROD*
FROM LEFT: WILD, SHACKLETON, MARSHALL, ADAMS

terminated by Cape Armitage. Half a mile north of Cape Armitage on the west side is Hut Point, with the hut of the National Antarctic Expedition at the *Discovery's* winter quarters; and on the east side of the peninsula, about a mile north of Cape Armitage, is Pram Point. The whole west coast of Ross Island, from Cape Bird to Cape Armitage, is so precipitous, or so covered with glaciers, ending in ice cliffs, that it is impossible for a sledge-party to travel along it, and very dangerous for an unloaded explorer to make the journey on foot.

Shackleton's finely written book abounds in fascinating descriptions of all that transpired from day to day, and the numerous illustrations embellish and illuminate his story. During winter, when the sound is frozen over, the sea-ice forms a good thoroughfare along the coast to the south; at other times, there is no passage except by sea. The surface of the ice-barrier is usually found nearly in 78° S., and is attached to the island about Pram Point. The whole southern side of Ross Island from Pram Point to Cape Crozier is wedged firmly into the barrier, and the north-eastern side from Cape Crozier to Cape Bird is open to the waves of the Ross Sea for the greater part of the year. The extinct volcano, Mount Terror, rises to a height of 10,750 feet in the eastern corner of Ross Island, and the summit of the active volcano, Mount Erebus, rises just behind Cape Royds to a height of practically 13,000 feet, sloping steeply on all sides.

Before winter set in a party was organized to explore and attempt the ascent of the volcano, Mount Erebus. Professor David, Dr Mawson and Dr Mackay duly achieved this objective, aided by a supporting party, which was absent from camp about ten days. The party reached an altitude of 13,370 feet. The book contains a detailed description of the incidents of this interesting and dangerous undertaking, written by Professor David,

and doubtless our readers will be interested in a summary of his story.

THE CONQUEST OF MOUNT EREBUS

It will be recalled that late in January 1841 Captain James Clark Ross and his men were the very first human beings to witness and report the fact that away down in the Antarctic regions—far within the Circle—two great volcanic mountains rose from amidst the icy desolation, 12,000 to 14,000 feet into the murky sky. The peaks were given the name of the captain's ship, the *Erebus*, and the escort vessel, the *Terror*. And at the astonishing hour of midnight dense volumes of smoke were seen to be issuing from the higher peak, Mount Erebus. Then, on the following morning, the men saw that the smoke was shot through with flames, or was it the glow of molten lava spilling over from the crater's mouth? It must have been a tremendous spectacle—a burning, active volcano in these frozen icy wastes.

To climb the ramparts of this burning mountain, to examine its fiery crater, and to secure some photographic records of its features was a clear and peremptory call to the scientific experts of the Shackleton Expedition. The chief chose Sir Edgeworth David, Dr Douglas Mawson, and Dr Mackay to make the attack on Erebus. A supporting party consisting of Lieutenant Adams, Dr Marshall and Brocklehurst was to assist the main party as far as possible. In the end the supporting party were so keenly interested in this hazardous exploit that they went the whole journey with their other three comrades, and shared equally in the honours of a great achievement.

In the preparations for the sledging journey, a mass of detail had to be considered, and plans made to meet every possible contingency. It was thought that the scientific data to be gathered—in the sections of

meteorology, geology, observations of temperatures and wind currents, would make the venture well worth while.

And so it proved; the attempt was entirely successful. The written account of this first major effort of Shackleton's Expedition was prepared by Professor David, who shared with Lieutenant Adams the responsibilities of the enterprise. The great burning mountain rising to its lofty heights has been described as standing forth as a sentinel at the gate of the great ice-barrier, its enormous snow-clad bulk towering above the white slopes that run up from the coast.

The mountain party, most of them hitherto inexperienced in the attendant difficulties, underwent the usual hardships of mountain-climbing, plus the low temperatures of the heights, the strong winds, and, worst of all, the fearsome blizzards, which at times blot out all sense of direction in Antarctic travel. Men were even at times blown to a prone position on the snow by the boisterous gusts.

Some magnificent photographs illustrate the attempt on Erebus in Shackleton's book. When the party, despite all difficulties, at 10 a.m. on 10 March reached the edge of the active crater, the very summit of Erebus, they were, of course, the first human beings to conquer perhaps the most remarkable summit in the world. The instruments showed that Erebus lifted his ice- and snow-clad bulk, tipped with fire and smoke from his crest, 13,370 feet into the frosty sky. Here is an extract of great interest from Shackleton's *Heart of the Antarctic*:

> We stood on the verge of a vast abyss, and at first could see neither to the bottom nor across it on account of the huge mass of steam filling the crater and soaring aloft in a column 500 to 1000 ft high. After a continuous loud hissing sound, lasting for some minutes, there would come from below a big dull boom, and immediately great globular masses of steam

would rush upwards to swell the volume of the snow-white cloud which ever sways over the crater. . . . Meanwhile, the air around us was extremely redolent of burning sulphur. Presently a pleasant northerly breeze fanned away the steam cloud, and at once the whole crater stood revealed to us in all its vast extent and depth. Mawson's angular measurement made the depth 900 ft, and the greatest width about half a mile. There were at least three well defined openings at the bottom of the cauldron, and it was from these that the steam explosions proceeded.

The summit of the active cone was proved to be 13,370 feet above the sea.

A severe blizzard was encountered near the summit and one of the party, Brocklehurst, had his feet frost-bitten.

The party found the descent from the volcano, though still not without danger and discomfort, easier than the harsh ascent, and they all came through safely, and deserved and received the congratulations of their leader and comrades. And, needless to say, a good hot meal and something stimulating to drink was not the least of their reward for the hardships and risks of their achievement.

It would be tempting to dwell on particulars of camp life during the winter—to detail the admirable planning in domestic affairs, in the various sections of scientific research, the reactions of the men to the difficulties and restrictions imposed by the cold and blizzards that swept their Antarctic home, and the grand spirit of helpfulness and goodwill, the fun and the laughter that prevailed amongst this band of men. But we must continue our story of the race for the Poles.

With the passing of winter, preparations for the spring and summer campaigns were pushed rapidly forward. Shackleton used Scott's hut extensively in the preparations for the southern journey; the shortest route was over the sea-ice from his camp at Cape Royds. The first

food and fuel depot was established one hundred miles out on the barrier-ice.

In the journeys to establish these depots the cold was often intense. Depot A was set down in latitude 79° 36′ S., longitude 168° E. on 6 October. During the leader's absence on this first trip over the barrier, the northern party, consisting of Professor David, Dr Mawson and Dr Mackay, had started on the long north-westward journey that resulted in the attainment of the South Magnetic Pole.

Shackleton chose Adams, Marshall and Wild as his companions in the supreme effort to reach the Geographic Pole. The men were to take provisions for ninety-one days, the loads to be drawn by four ponies, the survivors of the ten which had been landed at Cape Royds. Complete arrangements were made for the handling of affairs in case the polar party did not return. The four men finally left their comfortable base on 29 October 1908. A supporting party of five men accompanied them for ten days. The race was on!

As they trudged day after day over the barrier-ice, each leading his pony attached to a sledge, the men wondered what new kind of world would open out before them. Shackleton kept a daily record of their experiences, and it makes fine reading. The ponies gave a lot of trouble on the barrier, but day by day the mileage mounted up, despite all the difficulties and disappointments. They covered about fourteen miles a day. On 14 November the travellers sighted the black flag and the upturned sledge that marked the depot where supplies were cached.

The ponies broke down under the strain, and three of them had to be killed before the continental land was opened up at the end of the barrier. Only Socks remained.

This meant that the men themselves had to pull the sledges over the difficult ice and snow surfaces. The leader wrote that 26 November was a day to remember, for they had passed the farthest south previously reached by man and were in latitude 82° 18½′ S., longitude 168° E.

He mentions that 82° 16½′ was the farthest point reached on his former journey with Scott.

On 22 November the leader wrote: "The outstanding features of to-day's march is that we have seen new land to the south—land never seen by human eyes before. The land consists of great snow-clad heights rising beyond Mount Longstaff and also far inland to the north of Mount Markham."

A week later, on 29 November, the leader noted in his diary: "During the day still more great mountains appeared to the south-east, and to the west we opened up several huge peaks, 10,000 to 15,000 ft in height. The whole country seems to be made up of range after range of mountains, one behind the other. . . . Altogether it is a weird and wonderful country."

On 4 December Shackleton's diary had this entry:

Crossing several ridges of ice-pressure and many more crevasses, we eventually at 12.30 p.m. reached an area of smooth blue ice in which were embedded several granite boulders and here we obtained a drink of delicious water formed by the sun playing on the rock face and heating the ice at the base. After travelling for half a mile, we reached the base of the mountain which we hoped to climb in order to gain a view of the surrounding country. . . . With great difficulty we clambered up this rock face, and then ascended a gentle snow slope to another rocky bit, but not so difficult to climb. From the top of this ridge there burst upon our view an open road to the south, for there stretched before us a great glacier running almost south and north between two mountain ranges.

The party had crossed the great barrier, and the promised land lay before them. The relationship of the barrier to the south continental land mass had been solved.

It is said that Dr Edward Wilson, who, just a few years later also stood in this gateway which opened up the glacier and the ranges of beautiful mountains, remarked, in reference to Shackleton, "Well, the man who stood here, and saw that for the first time and plugged into it, did a pretty good thing!"

In mileage this enormous mass of snow-covered ice extended some 300 miles from the base on McMurdo Sound to the land mass, and to the snow-slopes to the glacier that the party had now reached on their epoch-making journey. The huge glacier was ultimately found to extend 130 miles from the polar plateau to its front on the southern terminus of the barrier. The men found the ascent of the glacier most trying and treacherous. On 7 December disaster almost overwhelmed them. The diary extract from *The Heart of the Antarctic* is as follows:

December 7. Started at 8 a.m., Adams, Marshall and self pulling one sledge, Wild leading Socks behind. We travelled up and down slopes with very deep snow, into which Socks sank up to his belly, and we plunged in and out continuously, making it very trying work. Passed several crevasses on our right hand and could see more to the left. The light became bad at 1 p.m., when we camped for lunch, and it was hard to see the crevasses as most were more or less snow covered. After lunch the light was better, and as we marched along we were congratulating ourselves, upon it, when suddenly we heard a shout of "help" from Wild. We stopped at once and rushed to his assistance, and saw the pony sledge with the forward end down a crevasse and Wild reaching out from the side of the gulf grasping the sledge. No sign of the pony. We soon got up to Wild, and he scrambled out of the

dangerous position, but poor Socks had gone. Wild had a miraculous escape. He was following up our tracks, and we had passed over a crevasse which was entirely covered with snow, but the weight of the pony broke through the snow crust and in a second all was over. Wild says he just felt a sort of rushing wind, the leading rope was snatched from his hand and he put out his arms and just caught the further edge of the chasm. Fortunately for Wild and us, Socks' weight snapped the swingle-tree of the sledge, so it was saved, though the upper bearer was broken. We lay down on our stomachs and looked over into the gulf, but no sound or sign came to us; a black bottomless pit it seemed to be.

The leader added that, while profoundly grateful for Wild's escape, had the sledge gone also with a vital part of their equipment, the Pole journey would have ended forthwith, and, indeed, the party might never have reached the base.

Yet these brave and determined men still pressed on and upward. They forced their way to the glacier top, over terribly crevassed snow- and pressure-ridges, and passed on to the immense plateau 9000 to 11,000 feet above sea level. Over this they struggled, hoping and praying for better conditions so that they might make the Pole. But the sands of time were running out. It was now 7 January, and a blinding, shrieking blizzard raged all day with the temperature ranging from 60° to 70° of frost. The party had reached a height of 11,600 feet.

The men were hungry, cold and spent, and although now in latitude 88° 23′ S., and within one hundred miles of the polar latitude, they had to sound the retreat. The Union Jack was planted at 88° 23′—the farthest south. A record in a brass tube was then buried in the snow. From the diaries of both Shackleton and Wild, recording their daily experiences on the bitter tramp back from the Pole, it is clear that the sufferings of the four men were almost beyond endurance.

In his *Life of Sir Ernest Shackleton* Dr Mill gives some harrowing details of the return journey. Death stalked the men at every stage. The lateness of the season forced them —despite failing strength and blizzards—to make the pace. On one day, 19 January, the tally was twenty-nine miles. On another occasion the men had to negotiate ice-falls and crevasses for nearly twenty hours with nothing but a cup of cocoa to sustain them. They constantly broke through snow bridges and were saved only by their sledge harness. Shackleton's diary entry for 26 and 27 January says: "In fact, only an all-merciful Providence has guided our steps to to-night's safety at our depot. I cannot describe adequately the mental and physical strain of the last forty-eight hours."

An instance of amazing self-denial on the leader's part was recorded in Wild's private notes, but the incident escaped the notice of the other two men. Once, on the march, when all were desperately hungry, and their next food depot was still a long distance away, each had only one biscuit to last the day. Wild wrote that he detected Shackleton stealthily putting his biscuit into his (Wild's) pocket. Wild at once remonstrated with him, but Shackleton insisted on him retaining it, saying, "Your need is greater than mine."

The four men struggled safely through the blizzards and picked up their depots one by one on the home journey, reaching their ship on 1 March 1909. They had accomplished a marvellous feat, and had won the admiration of the world. This near achievement of the Pole, under such desperate circumstances, was indeed hailed by understanding men in all civilized lands as something epoch-making in the human story.

Dr Mill calls the fourth chapter of his *Life of Sir Ernest Shackleton* "Popularity". To quote his opening words:

Whatever dreams of recognition and praise might have cheered Shackleton during the year of struggle to get his expedition together, and his year of toil and endurance in the farthest South, they fell far short of the reality. No traveller, possibly no man, ever woke up to find himself so suddenly and so universally famous. No man stood the shock better, either; the essential modesty and generosity of his nature enabled him to keep his head, and much as he enjoyed the sunshine of popularity, it changed in no way his love for his own people and his devotion to old friends.

Dr Mill proceeds to tell us that the first public function Shackleton attended with most of his comrades was a Thanksgiving Service in the Cathedral at Christchurch, New Zealand. "And here by special request the leader heard once more the hymns which had long had for him a mystical meaning as associated with his own career—'Fight the Good Fight with all Thy Might', and 'Lead Kindly Light'—songs of work and faith."

Then followed a congratulatory cable from King Edward, and later Shackleton's knighthood; thereafter a tremendous round of official functions and lecture engagements in his homeland and in practically all the capital cities of Europe, America and Canada. And what must have touched this splendid man to the very depths of his being, were the warm congratulations of his fellow Antarctic adventurers—and three other world-famous travellers. In this connexion are included the names of Robert Scott, Roald Amundsen, Captain Adrien de Gerlache, Robert Peary, Dr Otto Nordenskjöld, Dr Sven Hedin, and Dr Fridtjof Nansen.

In a later chapter we shall read of the subsequent experiences of Sir Ernest Shackleton in Antarctica, namely, his voyages in the *Endurance* and the *Quest*. He proved to be a very able and trusted leader, and a brave and heroic man. On the terrible journey back to the ship,

the leader, who had failed in health and stamina in Scott's barrier journey, proved to be the strongest member of his own gallant party, and by his personal example helped to maintain his comrades' morale.

Shackleton's *Heart of the Antarctic* also records the successful journey of many days, covering both there and back a distance of 1200 miles, which Professor David, and Drs Mawson and Mackay accomplished in locating the South Magnetic Pole. This, too, was a prodigious achievement, involving a good deal of the risk and privations, and the solid sledge work, that the four men of the polar party had to face. Though Shackleton's first expedition narrowly missed the major prize, it gained a second important objective.

Both teams comprised brave, determined and highly competent men, of whom our British race should be proud to the end of time.

Before turning the page to the next exploration, I would like to quote some fine words that Apsley Cherry-Garrard wrote in the introduction to Seaver's book on Edward Wilson:

> Courage or ambition, or love of notoriety may take you to the Antarctic, or any other uncomfortable place in the world, but it won't take you far inside without being found out. It's courage, and unselfishness; and helping one another; and sound condition; and willingness to put in every ounce you have; and clean living; and good temper and tact and good judgment; and faith.
>
> And the greatest of these is Faith, especially a faith that what you are doing is of use.
>
> It's the idea which carries men on!

CHAPTER XIV

THE CONQUEST OF THE SOUTH MAGNETIC POLE

In planning these stories of Antarctic adventuring, I decided to deal only with the main objectives of each exploration, although in several expeditions subsidiary exploratory feats were well worthy of notice. Indeed, certain of these lesser efforts contributed vitally towards the success of the main enterprise. Twice already I have felt impelled to deviate from my earlier decision. The reader will probably agree that the account of Captain Robert Scott's tragic last expedition would be incomplete without the complementary narrative of the hazardous, though ultimately successful, retreat from the polar plateau of Lieutenant Evans and his two comrades, who comprised Scott's last supporting party.

In the story of Shackleton's adventure, we have already dealt briefly with the successful ascent of Mount Erebus, the burning mountain in this land of ice and snow.

Professor David, and Drs Mawson and Mackay, who comprised the main party in that successful attempt, were chosen at a later date by Shackleton to undertake a much greater and more dangerous task. This was to carry out an important scientific investigation of the sea coast of Victoria Land, and then to proceed inland beyond the precipitous coastal ranges and glaciers to locate the South Magnetic Pole.

It will be recalled that Captain James Clark Ross, leader of the British Antarctic Expedition of 1840-2, which

opened up, for the first time, the Antarctic terrain, was greatly disappointed at failing to achieve one of the main objectives of his mission—the conquest of the South Magnetic Pole. That task was an impossible one a hundred years ago, even for James Clark Ross.

A team of Shackleton's men, as already mentioned—Professor Edgeworth David, Dr Douglas Mawson and Dr A. F. Mackay—were allotted to attempt this polar conquest.

Professor David was chosen to lead this northern team. He was keenly interested in Shackleton's expedition, and had been helpful in forwarding its interests. His original intention was to journey only as far as the Antarctic base, and to return to Australia with the ship, after the men and the stores were safely put ashore. But he did not return with the ship. The leader persuaded his friend to see the great adventure through to the end.

Professor David was the oldest man of the company, and had fought on the battlefields of France during the first world war. A distinguished and lovable personality, it was fortunate for Shackleton that he won the Professor's complete support for his cause. Let us look briefly at the instructions given to the northern sledge-party, noting, by the way, that the three men had neither dogs nor ponies to help them on their way.

You will leave winter quarters on or about October 1, 1908. The main objects of your journey are to be as follows:

1. To take magnetic observations at every possible point, with a view to determining the dip and the position of the Magnetic Pole.

If time permits, and your equipment and supplies are sufficient, you will try and reach the Magnetic Pole.

2. To make a general geological survey of the coast of Victoria Land. In connection with this work, you will not sacrifice the time that might be used to carry out the work

noted in paragraph 1. It is unnecessary for me to describe or instruct you as to details re this work, as you know so much better than I do what is requisite.

3. I particularly wish you to be able to work at the Geology of the Western mountains, and for Mawson to spend at least one fortnight at Dry Valley, to prospect for minerals of economic value on your return from the North. I do not wish to limit you to an exact date for return to Dry Valley, if you think that by lengthening your stay up North you can reach the Magnetic Pole.

Among other matters referred to in these instructions was an important statement, namely, that the expedition's ship, *Nimrod*—which had gone north before the winter set in—was expected back at McMurdo Sound about 15 January 1909, and the leader warned the party to watch out for their relief ship.

A further instruction to the northern party was: "If you reach the Magnetic Pole, you will hoist the Union Jack on the spot, and take possession of it on behalf of the Expedition for the British Nation." Again, "When you are in the Western Mountains, please do the same at one place, taking possession of Victoria Land as part of the British Empire."

With these instructions in mind, the three men busied themselves in making the final arrangements for their momentous journey. With the help of a motor-sledge, a considerable portion of the party's stores and equipment was conveyed to two depots, close in to the western mainland. On 5 October, after early breakfast, the northern party was prepared to start.

With a motor vehicle drawing the party's two laden sledges, and several other of their comrades with them, some on the motor, others on the sledges, and with three cheers for the rest, "Day turned on the power, and away we went."

Alas, after travelling a mere two miles over the sea-ice, the snow had become so thick that the coastline was almost hidden from view.

"Under the circumstances," continued Professor David in his narrative of the journey, "I did not think it prudent to take the motor-sledge further, so Mawson, Mackay and I bade adieu to our good friends. Strapping on our harness, we toggled on to the sledge rope, and with a one, two, three and away, started on our long journey over the sea ice of McMurdo Bay."

The party reached their first depot, ten miles out, at 7 p.m., put up their tent and prepared a meal; and so to the sleeping-bag for a much-needed rest and sleep. Next day's diary entry said: "We slept that night on the floe ice with about three hundred fathoms of water under our pillow." They found the going difficult. The men had to relay their two sledges, which bore the curious names of "Christmas Tree" and "Plum Duff". The weather was thick with falling snow, and that night they camped amongst screw pack within less than a mile of the fifteen-mile depot. The mileage for that second day's relay was therefore only four miles. And that was about the daily average relaying the sledges on the sea-ice, nearly always not far off the coast. Thus it went on, some days being beautifully fine, others very different.

A frequent reference in the leader's narrative was to the heavy going. On the evening of the third day out he wrote, "We had a glorious view of the Western Mountains, crimsoned in the light of the setting sun. We camped that night close to a seal hole, which belonged to a fine specimen of the Weddell seal. During the night we were disturbed by the snorting and whistling of the seals as they came up for their blows."

From Professor David's narrative we also cull this humorous bit:

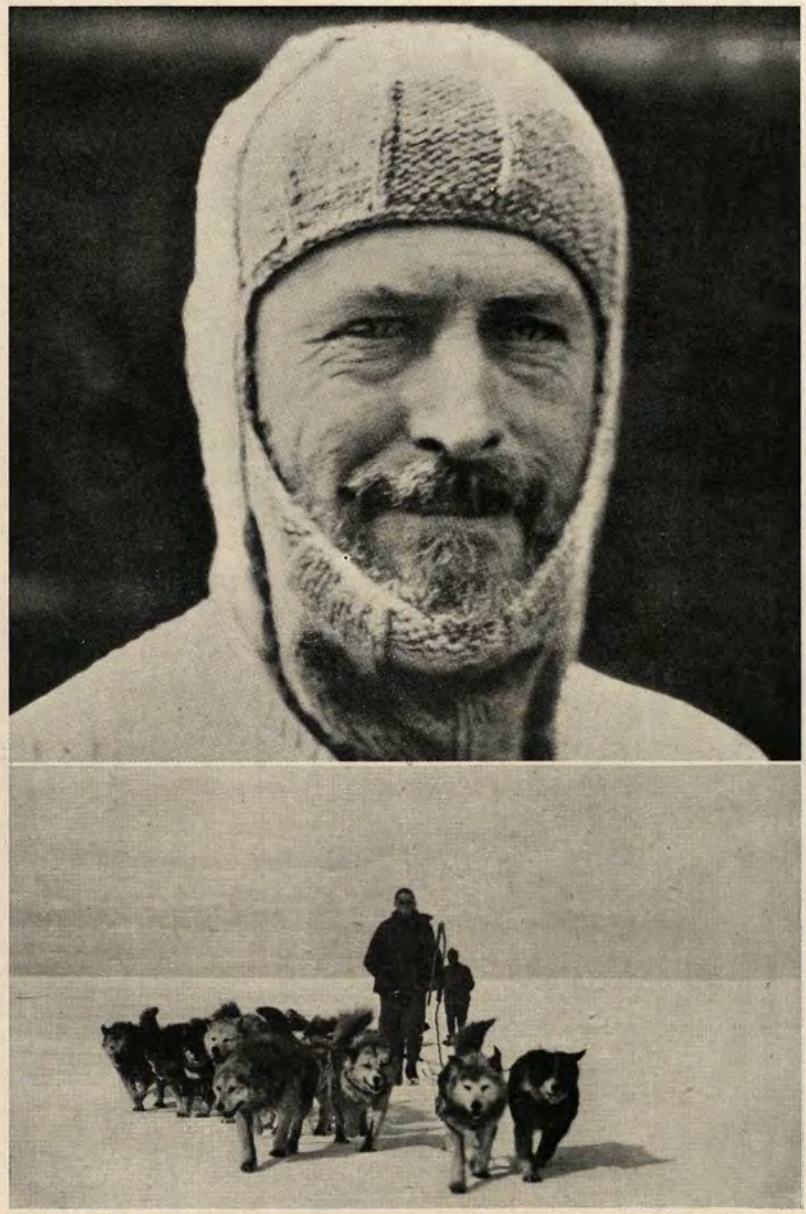
On October 10 we were awakened by the chatter of some Emperor penguins, who had marched down on our tent during the night to investigate us. The sounds may be described as something between the cackle of a goose, and the chortle of a kookaburra. On peeping out of the Burberry spout of our tent, I saw four standing by the sledges. They seemed much interested at the sight of me, and the conversation between them became lively.

They evidently took us for penguins of an inferior type, and the tent for our nest. They watched and kept a careful note of all our doings, and gave us a good send off when we started about 8.30 a.m.

Some days, with a fresh wind behind them, and with makeshift sails on the two sledges, the men were saved the toil of relaying, and so increased the daily mileage.

But over all the journey, covering a total mileage of 1260—that is, from Cape Royds on Ross Island, across the fast ice of McMurdo Bay, on to the western mainland, across formidable glacier barriers, up the mountain valleys to the high plateau, and to the Magnetic Pole—then back to the coast in the vicinity of the Drygalski ice-barrier, the sledges were relayed over a distance of 740 miles —an amazing achievement. The leader wrote concerning the sledge loads: "For the remaining 520 miles, from the Drygalski depot to the Magnetic Pole and back, we dragged a weight at first, of 670 lb. but this finally became reduced to about 450 lb., owing to consumption of food and oil, by the time that we returned to our depot on the glacier." In all, the party was absent on the sledge journey for one hundred and twenty-two days, of which they had to rest five days in their tent, unable to move on account of the fearful blizzards. Surely this daring venture was hardly a subsidiary journey; indeed, it was an immense achievement.

The men travelled for a period of thirty-eight days over the firm sea-ice, under the shadow, so to speak, of



TOP: SIR DOUGLAS MAWSON

BOTTOM: DOG-SLEDGING ON KING GEORGE V LAND

Photos supplied by Sir Douglas Mawson

the mountainous ranges and glaciers of Victoria Land, before they ascended to the mountainous terrain to strike north-west for the Pole.

Frequently throughout the coastal period Dr Mawson, carrying out the leader's instructions, had continued to scientifically map the contour of the coast, and to take the angles of the ranges and valleys, as the party moved northwards. Also Professor David and he, experts in geological science, noted down many references to the rock formations, and gathered specimens for future analysis and classification.

Other interesting matters which engaged the travellers' attention were the invention of utensils to facilitate cooking arrangements, and to help to conserve their supply of precious fuel oil. Amongst them was an ingenious blubber-lamp and cooker, where they cooked seal meat. Seals were easily captured and provided nourishing food. Penguin breasts and the livers of the seals are mentioned as especially appetizing items.

The diary entries of Professor David make most interesting reading. The entry for 11 November announced the good news that an ascent from the sea-ice to the Nordenskjöld ice-barrier was comparatively easy, and that David and Mackay, having gone further to investigate the barrier surface, were satisfied it was quite practicable for sledging, and would, they considered, afford an easier surface than the sea-ice.

Up to this point their transport was exclusively over the frozen McMurdo Bay. Furthermore, the men were becoming apprehensive about meeting a thinner surface —even open water.

They had noted on 10 November that cracks in the ice were becoming numerous, and indeed at a later date they had to leave the sea level hurriedly for the mainland to avoid dangerous ice conditions.

Therefore on the morning of 12 November the men packed up, ascended to the ice-covered mainland and began the task of proceeding still northwards across the Nordenskjöld ice-barrier. The narrative also informs us that 12 November was an important date in the history of Dr Mawson's triangulation of the coast, for he was able in the morning to sight simultaneously Mount Erebus—on Ross Island—and Mount Melbourne and Mount Lister, both on the mainland. That day was very bright and clear, and the round of angles obtained with the theodolite was satisfactory in every way.

Adverting to the thinning of the ice in McMurdo Bay on the northern route, it is surely of interest to mention the experience that befell three other members of this expedition, who, later in that season (that is, on 24 and 25 January), had a very narrow escape from disaster.

The men concerned were Armytage, Priestley and Brocklehurst, members of the western party. They were out on the sea-ice from the Cape Royds Camp on Ross Island, and had crossed the Bay to Butter Point on the western mainland, which is situated about forty miles—that is, about the width of McMurdo Bay—from Ross Island. They had established a depot on Butter Point for the relief of the northern party, in the event of their having to return to the Ross Island base by the Butter Point route.

The western party men were camped on the sea-ice at the foot of Butter Point. The ice seemed quite safe. They went to their rest, intending next morning to return to their Ross Island base over the intervening ice-covered bay. The night passed without any alarm. But at 7 a.m. on 24 January Priestley emerged from the tent, and came running back a few minutes later to arouse his comrades, informing them that the ice they were on had broken away from the main mass, and was drifting north to the

open sea. The other two men turned out promptly, and found that Priestley's alarming statement was only too true.

There were now two miles of open water between their floe and the mainland. There was no possible escape that way. The men seemed to be in a desperate plight.

By three o'clock in the afternoon there was no improvement in their position. The narrative refers to killer-whales appearing and spouting in the nearby open water, and at times bumping the ice on which the men stood.

Dragging their sledge and equipment, they marched round their insecure floe, and eventually decided to risk camping for the night at the former camp site. It was now 10 p.m. They took to the sleeping-bags to try to get warm. Then about 11.30 p.m., one of them turned out to see if there was any change in the position. He quickly returned and reported that their floe was now moving southwards. At midnight they were within two hundred yards of the fast ice. Making all preparations to seize any chance of escape, the men anxiously watched their floe in its approach to the parent ice mass. Providentially they were in exactly the right spot to seize their opportunity when the two masses bumped together, and although not more than six feet of the edge of their floe touched the more solid mass, they rushed with their sledge over the temporary bridge thus formed. The diary note was: "We had only just got over, when the floe moved away again, and this time it went north to the open sea."

Resuming our story of the northern party's adventures, we left them crossing the Nordenskjöld ice-barrier from the south. Travelling by night, for conditions were better in the lesser sunshine, the men found the crossing itself much easier than the rather precipitous descent down the

northern ice-cliff on the barrier to the sea-ice below. However, every difficulty was overcome, and before midday on 13 November this first great mainland ice-barrier was in their rear. We are told that the three men were all much elated at having got across this formidable obstacle so easily and quickly.

Dr Mawson took a photograph of the ice-cliff forming the northern boundary of this barrier. It was about forty feet in height. It was believed that the greater part of this huge ice mass was afloat.

On the following day most careful calculations were made to determine the true position, and the result showed that the position reached was nearly twenty miles farther north than they had previously thought.

The party had killed a seal that day, and the men were provided with steak, liver and blood as an acceptable reinforcement of the food stocks.

The day was calm and fine, and the leader wrote:

We had a magnificent view of the rocky coast line, which is here most impressive.

The sea ice stretched away to the west of us for several miles up to a low cliff, and slope of glacier ice, with occasional black masses of rock showing at the edge. Several miles further inland the glacier ice terminated abruptly against a magnificent range of mountains, tabular for the most part, but deeply intersected. In the wide gaps between the coast range were vast glaciers fairly heavily crevassed descending by steep slopes, from an inland plateau to the sea.

The party pushed on and on, Northward bound, overcoming all obstacles, small or great. November 18 was bright and sunny, but the sledging was terribly heavy. "We were so weary with the great effort to keep the sledges moving, that at the end of each halt we fell sound asleep for five minutes or so at a time across the sledges."

On 22 November Professor David wrote: "On round-

ing the point of a low ice barrier, thirty to forty feet high, we obtained a good view of Cape Irizan, and also of the Drygalski ice barrier."

The travelling was now again on the sea ice. The diary entry for November 26 was:

We had some good sledging over pancake ice nearly free from snow, and travelled fast. While Mackay secured some seal meat, Mawson and I ascended a rocky promontary, climbing at first over rock, then over glacier ice to a height of about six hundred feet above the sea.

From the top of this headland to the North, we had a magnificent view across the level surface of sea ice far below us. To the North-West was Geikie Inlet, and beyond that, stretching as far as the eye could follow was the great Drygalski Glacier.

Using powerful glasses, the travellers were concerned to notice that the surface of the Drygalski Glacier was formed of jagged surfaces of ice very heavily crevassed and projecting in the form of immense séracs separated from one another by deep undulations or chasms.

The men could also see, looking to the east over the sea-ice, large bodies of open water tending shorewards. The narrative continues: "Clearly not a moment was to be lost if we were to reach the glacier before the sea ice broke up." It appears there were several more days of anxious and risky sledging before the men could get off the sea-ice, now also a serious threat, and reach the fearsome terra firma of this new and more enormous ice-barrier. Here also they noticed the colder wind that blew upon their tired bodies from the inland plateau.

On 29 November the men were pulling their sledge loads over a series of ridges, apparently at a point where the disturbed sea-ice junctioned with the enormous Drygalski Glacier tongue, so that "we hardly knew whether we were on the edge of the sea ice, or on the thin edge

of the Glacier". At this stage there was this further comment by Professor David: "We had a fine view from the top of one of these ridges over the surface of the Drygalski Glacier, to the edge of the inland plateau. Far inland, perhaps forty or fifty miles away we could see the great névé fields which fed the Glacier, descending in conspicuous ice falls, and beyond these loomed distant mountains." Over some such difficult terrain must lie their track to the still distant Magnetic Pole.

As the men advanced on the morning of 30 November the ice-ridges fronting them became higher and higher, and pulling the two sledges over these proved most exhausting work. The cold wind from the plateau, blowing now at from fifteen to twenty miles per hour, brought against them a good deal of snow-drift. Then suddenly the weather conditions changed. About 10 a.m. the plateau wind dropped, and with it the drift, and the weather became warm and sunny.

The men found the travelling on the glacier surface almost impossible, but there was no thought of giving up —a way through must and would be found. The leader wrote in his diary:

> The glacier now spread before us as a great billowy sea of pale green ice, with here and there high embankments of marble-like névé,* resembling railway embankments. As we advanced still further north, the undulations became more and more pronounced, and the embankments higher and steeper. These embankments were now bounded by cliffs forty to fifty feet in height. The cliffs faced northwards.
>
> The deep chasms which they produced formed a very serious obstacle to our advance, and we had to make some long detours in order to head them off. It was hardly to be wondered at that we were unable to advance our sledges more than one mile and a half that day.

* The compacted mass of snow-ice that feeds a glacier.

The next day was 1 December, and the hauling of the laden sledges became more and more laborious. For half a day the men struggled on. Having covered only half a mile, they decided to camp. Despite all difficulties, scientific work went on, all through the long journey and at this camp. While Dr Mawson took magnetic observations and theodolite angles, David and Mackay, roped together on account of the frequent crevasses, reconnoitred ahead for several miles to see if there was any practicable advance out of "these mazes of chasms, undulations, and séracs".

The roped men actually fell into a score of shallow crevasses before they returned to camp. They had fixed a black flag on top of a conspicuous ice-mound to guide them back to camp. The upshot of that afternoon's serious discussion was the decision to retreat. This enormous Drygalski barrier was some twenty miles in width, and to proceed any further on the northerly course was but to invite even worse conditions of travel, as well as the loss of precious time.

On 3 December their course was eastward on the south side of the barrier, and on 6 December the men struck across high ridges of blue ice into a small valley which they had prospected on 4 December.

Ultimately, on 11 December, by a long circuitous route the men found themselves on the northern edge of the Drygalski barrier. Near where they camped that evening a conspicuous ice-mound was located, overlooking the sea front, which would be easily observable from below. Here the men decided to establish a depot and to leave one of the sledges, and all else they could spare, intending, with the remaining sledge and all necessary travelling gear, scientific instruments and food supplies, to steer north-west for the coveted Pole, which was estimated to be some 220 miles from this Drygalski camp location.

Three following days were spent in final preparations; cooking and storing penguin and seal meats, repairing and strengthening the "'Plum Duff" sledge; affixing flags and signals to their depot, writing final letters and reports, etc. Blizzards delayed their start until 7 a.m. on 16 December. The outward route presented the difficulties to which these splendid men were, in some sense by now, inured, but the correct route to the inland plateau, even by 20 December, was not clearly discerned. Indeed, a further measure of retreat had become imperative.

Their anxiety was heightened by the fact that they had to be back at their depot not later than 1 or 2 February, if there was to be a reasonable chance of being picked up by the *Nimrod*, cruising off the coast on the look-out for them. Time was running out, and the distant goal still meant at least 450 miles out and back.

It now seems sufficient to record that this Magnetic Pole adventure was successfully accomplished, and though the British were beaten, but by no means disgraced, in the race to the Geographical Pole, their comrades were the first to attempt and to overcome the almost insuperable difficulties attending the conquest of the South Magnetic Pole.

It was on Saturday, 16 January 1909, that Dr Douglas Mawson's most precise and careful calculations proved that they were almost exactly on the coveted spot. The position was fixed for 72° 25′ S., 155° 16′ E. Dr Mawson, attaching a string to the camera trigger, arranged the group photograph; Professor David and Dr Mackay fixed up the flagstaff. "We then bared our heads and hoisted the Union Jack at 3.30 p.m. with the words uttered by myself in conformity with Lieutenant Shackleton's instructions, 'I hereby take possession of this area now containing the Magnetic Pole for the British Empire'."

The camera trigger was pulled by means of the string,

and the men gave three cheers for His Majesty the King. The altitude of the plateau at the Pole was over 7000 feet. The wind swept coldly over the plateau, and the temperature when the flag was hoisted was exactly 0° Fahrenheit.

Professor David's narrative at the end of the outward journey contained these words:

> It was an intense satisfaction and relief to all of us to feel that at last, after so many days of toil, hardship, and danger, we had been able to carry out our Leader's instructions, and to fulfil the wish of Sir James Clark Ross that the South Magnetic Pole should be actually reached, as he had already in 1831 reached the North Magnetic Pole. At the same time we were too utterly weary to be capable of any great amount of exultation. I am sure that the feeling that was uppermost in all of us was one of devout and heartfelt thanks to the kind Providence which had so far guided our footsteps in safety to that goal. With a fervent "Thank God", we all did a right about turn, and as quick a march as tired limbs would allow, back in the direction of our little green tent in the wilderness of snow.

That last day, the party had travelled from 6 a.m. to 10 p.m., and had covered a distance of twenty-four miles. Twelve miles away they had made a depot of all the paraphernalia they could shed, and thus travelled more lightly, and more speedily.

After leaving the difficult terrain of the mountains and glaciers, the mileage had considerably increased and on 3 January, by dint of great efforts, they had scored ten miles, and they sustained this average for successive days thereafter. The eleventh of January realized eleven miles, and thirteen and fourteen miles were the totals for subsequent days. The leader's diary tells us that, after reaching their "little green tent in the wilderness of snow" they treated themselves that night to a special

"hoosh", which was immensely enjoyed, and thereafter turned into their sleeping-bags, "faint and weary, but happy that the great load of apprehension of possible failure, that had been hanging over us for so many weeks was at last removed from our minds."

They all slept soundly after twenty-four miles of travel.

The journey from camp on 16 January back to the Drygalski depot overlooking the sea front involved at least 249 miles. This took the northern party from 17 January to 3 February to accomplish. Their aim was to do the journey by 1 February. They actually did not achieve the sixteen to seventeen miles daily necessary for that success. They had favourable weather and a following wind for several days to encourage them. Unfortunately, on the second day out Dr Mawson's left leg became very lame and caused him considerable pain for some days. Much later in this desperate adventure Mawson's stamina and good judgment prompted the generous Professor to invite his younger comrade to take over the leadership of the party. This the younger man would not do, but readily agreed to relieve his leader for a time.

The three men were indeed comrades. They each had their share of dangers and privations on the home run, Dr Mawson, especially, being unlucky in experiences of crevasses. While Professor David and Dr Mackay had a number of dangerous experiences, Mawson twice on the journey fell deeply into these fearsome chasms. The first occasion was on the outward journey, soon after the start from the Drygalski depot. Travelling after midnight, he fell through the snow-crust and dropped about eight feet, but was sustained by the sledge-rope, which, fortunately, remained attached to his sledge-harness. Even when dangling over the abyss, while his comrades arranged ropes for his rescue, this intrepid man remained

cool and collected, even to the point of gathering some ice-crystals from the side of the crevasse, and throwing these up at the other men. The second narrow escape came right at the journey's end. The men had camped near the depot on the heights overlooking the bay, and were keeping a sharp look-out for the relieving ship. Meanwhile they discussed alternate plans for eventual return to Cape Royds, if perchance they missed the ship. They took turns from their mound to keep a sharp look-out over the bay with powerful field-glasses.

It must have been late in the afternoon of 4 February when, the three men being together in their tent, a loud bang startled them, followed by a big boom, louder than the first sound. "Mawson gave tongue first, roaring out, 'A gun from the ship', and dived for the tent door." Equally excited, the other two men rushed to the opening, and for a few seconds it looked like a scrimmage between them. It was the *Nimrod*, sure enough. Dr Mawson was well in the lead, Mackay second, and the good Professor was almost left at the post. Hearty cheers from the crew of the nearby ship greeted the three men running down the slope to meet her.

"How those cheers stirred every fibre of one's being," wrote the leader. "My first feelings were of intense relief and joy; then of fervent gratitude to the kind Providence which had so mercifully sent our friends to our deliverance." Professor David's narrative continues:

> A sudden shout from Mackay called me back to earth. "Mawson's fallen into a deep crevasse. Look out, it's just in front of you" . . . . I then saw that Mackay was kneeling on the snow near the edge of a small sapphire-blue hole in the névé. "Are you all right, Mawson?" he sang out, and from the depth came up the welcome word, "Yes." Mackay then told me that Mawson was about twenty feet down in the crevasse.

Providentially, their comrade, in his fall into the fearsome abyss, struck a stout ledge in the icy wall, and felt he would be able for a little while to maintain his footing. His comrades at once let down a length of sledge-harness, but soon found that their combined strength was inadequate to allow him to take the risk of leaving the ledge. Fortunately the ship was now at the shore edge, and a call for help was made. The ship was only two hundred yards away, and officers and men came quickly to the rescue, led by Davis, the first officer. With a piece of sawn timber the crevasse was quickly and securely bridged. Davis had himself lowered down to effect Dr Mawson's rescue. This was speedily done, and then the many willing hands pulled their officer in his turn to terra firma. There was great rejoicing at Mawson's most fortunate escape. Surely the good hand of Providence was in it all. Such a conjunction of fortunate circumstance can hardly be imagined. When Mawson was assured that help was at hand, he replied that he was quite comfortable at present, but that sea water was just about two feet beneath the ledge that broke his fall.

Men on the ship said they had never before seen such happy beings as the rescued members of the polar party, but the happiest of all the men now safe on board the rescuing ship must have been Professor David himself, and the very essence of his joy was the fact that a dear and trusted comrade had been saved from a tragic death.

CHAPTER XV

THE HOME OF THE BLIZZARD

To Australians the very prominent part played by an Australian citizen—Sir Douglas Mawson—in Antarctic exploration should bring a thrill of pride. As we have seen, he was a distinguished member of Shackleton's team, and was one of the party which located the South Magnetic Pole. He himself has put on record the circumstances leading up to the launching of the Australian Antarctic Expedition in 1911-14. He wrote in his book, *Home of the Blizzard*:

> In the summer of 1908-1909, when sledging from the Ross Sea, North-west towards the Magnetic Pole—across the plateau of South Victoria Land, I felt the urge to go on and discover the limits of the Antarctic land in that direction. The broader features were known, but little of the vast area to the West. In one place only (D'Urville's Adelie Land) was there on record convincing evidence of terra firma.

While on a visit to the homeland in 1910, Sir Douglas discussed the prospects of a further expedition with Captain Robert Scott, and was later encouraged by his former chief, Sir Ernest Shackleton, to go ahead. The idea was to investigate thoroughly the land and the coast lying far to the west of Cape Adare and extending many hundreds of miles to the Gaussberg, which had been discovered in the Drygalski Expedition many years before. Dumont D'Urville and Wilkes and others had in earlier years pushed into the ice-infested coastal waters,

but nothing very definite was clearly known about the land mass in this area, though D'Urville named the eastern part, nearest to Cape Adare, Adélie Land. Indeed, until the exploration carried out by the Australian expedition, it was not known whether this immense area was part of the continental land or not, or that it was joined up with the Victoria Land first mapped by Sir James Ross in the year 1841.

Sir Douglas put his plan before the Australian Association for the Advancement of Science at a meeting held in Sydney in January 1911, and was assured of the Association's approval and strong co-operation. Generous Australians and Australian Governments contributed funds, and later considerable financial help and great encouragement was forthcoming from England. Doubtless, the motherland was glad to see Australia attempt a task that would test its manhood in a noble, altruistic way.

Former distinguished explorers like Dr W. Bruce, Dr Jean Charcot and Captain Adrien de Gerlache gave the Australian enterprise their blessing. In all the local planning, in finance, advice and co-operation, Sir Douglas especially acknowledged the great help received from his university comrades and friends, Professor David, of Sydney and Dr Masson, of Melbourne. The leader was fortunate, too, in having Captain John King Davis as his shipmaster and second in charge of the expedition.

As in all earlier ventures, the ship was a most important consideration, and the *Aurora*, purchased in England, proved her solid worth. For his comrades and helpers in the land operations and science departments, Dr Mawson chose picked young men of the universities of Australia and New Zealand; also several from English universities; and he certainly secured a great team.

Another experienced and tried comrade who joined up

was Frank Wild, who had been a member of both the Scott and Shackleton Expeditions, and later was to be Sir Ernest's most loyal and trusted lieutenant, both in the ill-fated Weddell Sea adventure and on the *Quest*, when, on his fourth expedition, this noble Antarctic hero sailed south to his death.

In addition to plans for a thorough exploration of the territory already mentioned, which was named King George V Land, Mawson's Expedition planned to build a wireless station on Macquarie Island, and to leave a party there to examine scientifically this lonely rocky islet situated 850 miles south-east of Hobart.

This first wireless installation so far south of Tasmania proved a tremendous advantage, for during the expedition's stay in Antarctica they were able to keep in touch with Australia.

Promptly at 4 p.m. on 2 December 1911 the *Aurora*, with all hands on board, left Hobart for the south. On 11 December the ship made Macquarie Island, and on the morning of the 24th proceeded again on her southward course. It was expected that the ice conditions off the coast of this part of the Australian quadrant would be difficult—and they proved to be so. Nevertheless, the ship was making for Dr Mawson's "Land of Promise", and was now steering through untravelled waters, and there was great expectation amongst the young men as to what adventures might lie before them.

At that stage they had no means of knowing what an awful land for blizzards and furious winds that "Land of Promise" would prove to be. Through the fogs that beset them, through the pack studded with innumerable icebergs (one was a mile in length and one hundred feet in height), they pushed their dangerous way to the precipitous ice-bound coast. On the morning of 4 January

the prospect of making the land was more encouraging. To quote Dr Mawson:

> The change in our fortunes occurred at five o'clock next morning, when the Chief Officer, Toucher, came down from the bridge to report that the atmosphere was clearing and that there appeared to be land-ice near by. Sure enough, on the port side, within a quarter of a mile, rose a massive barrier of ice extending far into the mist and separated from the ship by a little loose pack-ice. The problem to be solved was, whether it was the seaward face of an ice-covered continent, the ice-capping of a low island, or only a flat-topped iceberg of immense proportions.

Alas, this enormous ice formation was not the ice-covered land they were seeking. Later it was found to be an iceberg, forty miles in length and from thirty to seventy feet in height. Another great ice projection that the ship steamed past was later discovered to be the tongue of a mighty glacier coming down from the land to the sea, and it was named the Mertz Glacier. At last the *Aurora* was in the vicinity of land. The leader wrote:

> At 11 p.m. the *Aurora* entered a bay, [afterwards named Buchanan Bay] ten miles wide, bounded on the east by the shelf-ice wall, and on the west by a steep snow-covered promontory rising approximately two thousand feet in height, as yet seen dimly in hazy outline through the mist. No rock was visible, but the contour of the ridge was clearly that of ice-capped land . . . . It was almost certainly the Antarctic continent . . . .

However, the landing was not to be made at this place. Steaming carefully farther west for several hours, on the watch for rocks outcropping from the ice, as well as for the ever present bergs, the ship at last made another bay, soon to be named Commonwealth Bay, which the leader thought would be a good place for a camp.

GROTTO IN A BERG. THE *TERRA NOVA* IN THE DISTANCE

Photo: H. G. Ponting

THE *TERRA NOVA* IN THE PACK-ICE

Photo: H. G. Ponting

Sir Douglas Mawson wrote about this bay:

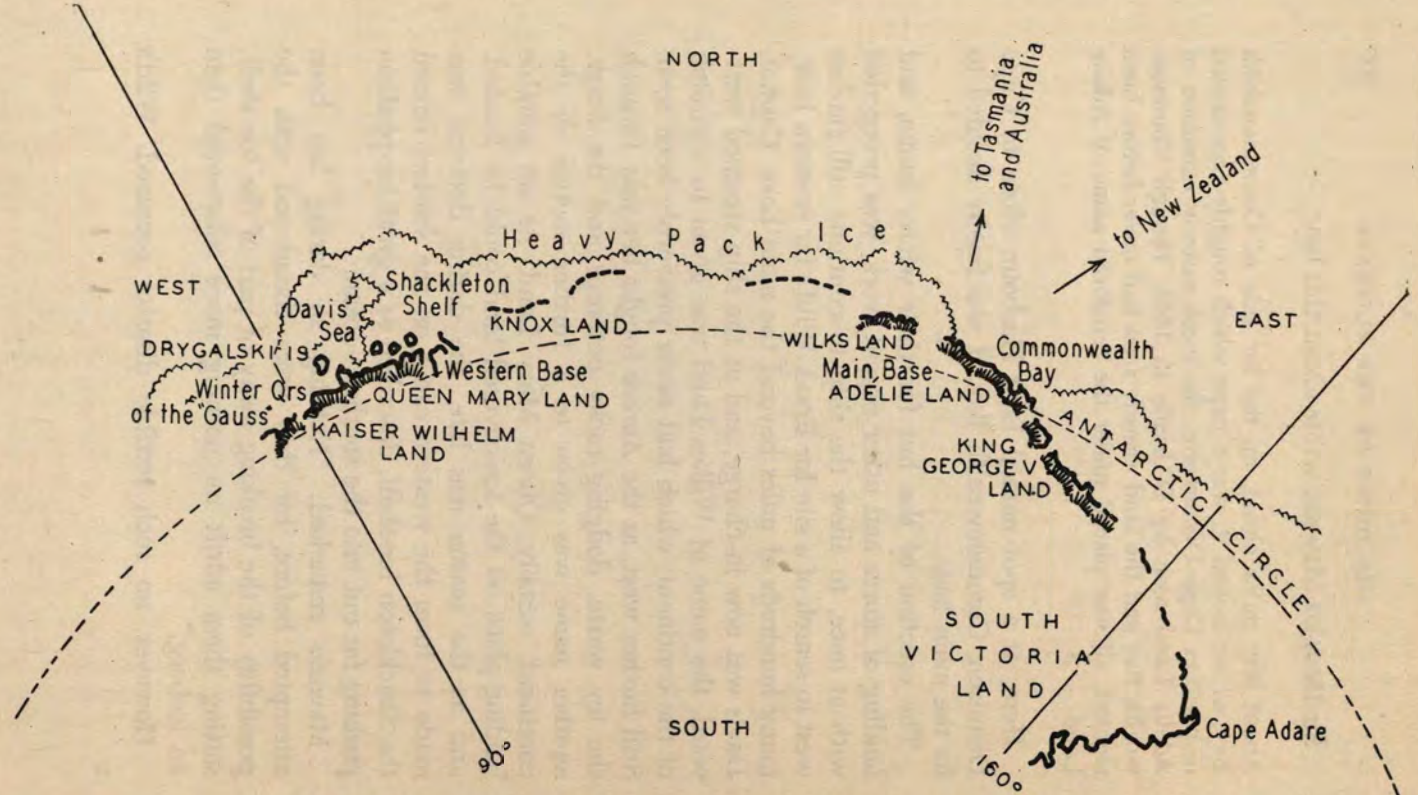
About fifty miles ahead, on the far side of Commonwealth Bay, as we named it, was a cape which roughly represented in position Cape Découverte, the most easterly extension of Adelie Land seen by D'Urville in 1840. Though Commonwealth Bay and the land already seen had never before been sighted, all was placed under the territorial name of Adelie Land.

Here, at a spot named Boat Harbour, close to Cape Dennison, Commonwealth Bay, it was finally decided to fix the main base.

The erection of the hut for their winter home, and landing of stores and other urgent work, was proceeded with at once, to allow the ship to continue still farther west in search of a site for Frank Wild's far western base, many hundreds of miles beyond the main base. Captain Davis was now in charge, and as the ship steamed westward, the name of Wilkes Land was given to a stretch of the continent, which had never previously been seen. Still farther west, as the *Aurora* fought her way through the icy waste, dodging rocky outcrops and the bergs, another name was given to a further section of the continent, namely, Queen Mary Land. As no suitable landing-place on the ice-covered land could be located, and as the season was late, the daring decision was made to form the western camp on the sea-ice, named the Shackleton Ice-shelf, described as a great ice-pontoon pushing far out into the southern ocean.

Mawson remarked: "Nothing so daring has been attempted before, for they were threatened with the possibility of the breaking away of part of the ice shelf, setting them adrift on nothing more substantial than an iceberg."

However, no such terrible disaster occurred. Wild's



Region explored by the Australian Antarctic Expedition of 1911-14.

party landed its stores and hut material, and throughout the ensuing months carried out the instructions of the leader in the exploration and scientific tasks entrusted to them.

In commenting on the several party journeys of the Mawson Expedition, we will confine our account to the main journey eastward into King George V Land, conducted by Dr Mawson in person, with Lieutenant Ninnis and Dr Mertz as his comrades.

From the base above Boat Harbour on Commonwealth Bay, as far as the men could see, the inland ice was an unbroken plateau with no natural landmarks. So, to guide sledge parties returning from the several exploring journeys, certain artificial landmarks were set up on the plateau south of the base.

Journeys to set up these guide-posts were the first undertaken. As previously mentioned, the prevailing winds and frequent blizzards, ranging from forty and fifty to one hundred miles an hour, proved an awful handicap and hindrance to the successful carrying out of the leader's objectives.

In a splendid chapter in his book, *The Conquest of the South Pole,* J. Gordon Hayes makes a telling reference to these terrific winds. He remarked that he did not doubt that Dr Mawson had discovered the windiest country in the world. "With the atmosphere roaring," he wrote, "the hut at times vibrated like a violin."

With the passing of the winter, as with other expeditions, the base awoke to urgent preparations for the spring and summer journeys. In all, six parties were organized to go out in various directions, with definite goals of achievement.

Dr Mawson himself, with Lieutenant Ninnis and Dr Mertz, undertook the biggest effort—that of the far eastern journey. Their objective was, with the assistance of

two dog-teams, to push out rapidly overland to the southward of another small party, mapping their route, and also the more distant sections of the coast of the territory to the eastward of Adélie Land, which new area to be explored was designated King George V Land. Ninnis and Mertz were the two men of the whole company who had most to do with handling the dogs.

November opened, Dr Mawson tells us, with more moderate weather, and 6 November was fixed for the starting out of several of the parties, although the far eastern journey was deferred to 9 November. So on the evening of 5 November a special farewell dinner in the base hut was arranged, at which all the men enjoyed themselves heartily. None actually got away on the 6th on account of a furious blizzard that raged all day. Again, before the men left we are told that the penguin rookeries on the cliffs near by were full of new-laid eggs, and since Dr Mertz was a past master in the art of cooking omelettes, there was a great demand in the camp for his specialty. However, the last omelette was made on the 10th, and it was a beautiful calm afternoon as the leader and his two comrades with their dogs and sledges started out up the long icy slopes.

Their adventure, which was to bring to each man such tragic consequences, had been launched. That sad story will come later. Here I would like to quote from Dr Mawson's narrative some interesting information about the work and character of their faithful dogs:

> Any doubts as to the capability of the dogs to pull the loads were dispelled; in fact, on this and on many subsequent occasions, two of us were able to sit, each one on a sledge, while the third broke trail ahead. . . . If the weather is reasonably good and food is ample, sledging dogs enjoy their work. Their desire to pull is doubtless inborn, implanted in a long line of ancestors who have faithfully served the

Esquimaux. We found that the dogs were glad to get their harnesses on and to be led away to the sledge. Really, it was often a case of the dog leading the man, for, as soon as its harness was in place, the impatient animal strained to drag whatever might be attached to the other end of the rope. Before attaching a team of dogs to a sledge it was necessary to anchor the latter firmly, otherwise in their ardour they would make off with it before everything was ready.

There can be no question as to the value of dogs as a means of traction in the Polar regions. . . .

Later we shall see that it was because of the splendid help of his dogs, and the Norwegian's skill and experience in handling them, that Roald Amundsen beat Scott's party in their great race for the Pole.

Day after day, braving the fierce weather and the heavy ice and snow surface, falling into and being pulled out of the treacherous crevasses, the three men pushed on to the east. Their track in the earlier stages lay across two immense glaciers, subsequently to bear the names of the leader's ill-fated companions. Every aspect of the new territory of King George V Land, the angles of mountains and the bearings and features of the coastal areas, were carefully reckoned and recorded, so that—as the maps show—all the topographical details are preserved, adding to the sum of human knowledge. Though the weather was often atrocious, the party had their occasional "good" days. For instance, the leader has recorded that 18 November "was a lovely day; almost like a dream after so many months of harassing blizzards". As the party moved eastward over glaciers, carefully negotiating crevassed areas (often in snow-drifts and misty weather) the continuous strain took its toll of human strength and energy, and was the cause of the death of some of their faithful dogs.

Dr Mawson's book gives extensive details of these vary-

ing experiences. December came in, its first day still and hot, with brilliant sunshine. ". . . the snow became so sticky that it was as much as we and the dogs could do to move the sledges up the slopes." From 4 December and for several days thereafter the men had a bad time with raging blizzards, heavy, driving snow and poor visibility. For three days on end they had to keep to their sleeping-bags, while the poor dogs were simply buried in the snow. The men caught troublesome infections, Ninnis being the worst sufferer.

On the morning of 14 December the course was still eastward. A light south-east wind blew and the sun shone. Ninnis had slept well, and was feeling much relieved. Mertz was well in the lead, the conditions being both suitable and agreeable for employment of skis, and was in high spirits as was evident from the snatches of song that wafted back from time to time. Shortly after noon, while travelling thus light-heartedly, a terrible catastrophe happened.

It all happened so suddenly. The leader's narrative makes it clear that Mertz was ahead on his skis making the trail, and that by holding up his ski-stick at a certain place, he indicated that something unusual was afoot. When Dr Mawson, in the leading sledge, reached that place a few minutes later he could see nothing unusual. He said that a close look-out was kept for crevasses. Indeed, they did not expect any, for they were on a smooth, even surface inland from the broken coastal slopes.

Nevertheless, they suspected the existence of a crevasse, and called out to warn Ninnis, who was walking in the rear alongside his sledge, drawn by the second dog-team. Dr Mawson writes:

When I next looked back, it was in response to the anxious gaze of Mertz who had turned round and halted in his

tracks. Behind me, nothing met the eye except my own sledge tracks running back in the distance. Where were Ninnis and his sledge?

I hastened back along the trail thinking that a rise in the ground obscured the view. There was no such good fortune, however, for I came to a gaping hole in the surface about eleven feet wide. The lid of the crevasse that had caused me so little thought had broken in; two sledge tracks led up to it on the far side but only one continued on the other side.

Frantically waving to Mertz to bring up my sledge, upon which there was some alpine rope, I leaned over and shouted into the dark depths below. No sound came back but the moaning of a dog, caught on a shelf just visible one hundred and fifty feet below. . . . Another dog lay motionless by its side. Close by was what appeared in the gloom to be the remains of the tent and a canvas tank containing food for three men for a fortnight.

We broke back the edge of the névé lid and took turns leaning over secured by a rope, calling into the darkness in the hope that our companion might be still alive. For three hours we called unceasingly but no answering sound came back. The dog had ceased to moan and lay without a movement. A chill draught was blowing out of the abyss. We felt that there was little hope.

It was difficult to realize that Ninnis, who was a young giant, so jovial and so real but a few minutes before, should thus have vanished without even a sound. It seemed so incredible that they half expected, on turning round, to find him standing there.

Truly the position of the two men was now most serious. The remaining food supply was inadequate; they were 315 miles from the hut, and the present location was 2400 feet above sea level. The return journey must begin at once. Should they make for the sea front where seal and penguin meat might be got? But that track was appallingly dangerous.

By the side of the fearful crevasse the two men con-

sidered what best should be done. At regular intervals they still called into the gloomy depths—but no sound came back. At 9 p.m. on the day of the disaster they stood by the side of the open crevasse and Dr Mawson read the burial service. "Then Mertz shook me by the hand with a short 'Thank you!' and we turned away to harness up the dogs."

The subsequent chapter in the leader's book is entitled "Toil and Tribulation". It is a tragic story, and in the doctor's own words: "It was to be a fight with Death, and the great Providence would decide the issue." He explains that, contrary to the usual procedure, on the way out the travellers left no food depots to be picked up on the return journey, because it was their bad fortune to meet such impossible country that they had decided to make a circuit on the return to winter quarters sufficiently far inland to avoid the coastal crevassed zones.

The situation was very grave. Only six miserable dogs were now left. The best animals had been drafted into the rear team, for that sledge carried most of the food, the tent, and other indispensable articles—such as the spade, ice-pick, mugs and spoons—although the load weights of the sledges were about equal. The whole of the dog food had gone, and the only food available for the two men would suffice for only ten or eleven days. The only shelter left to them was a makeshift tent. The daily journey on the homeward trail must be speeded up, notwithstanding the risks. Soon the famished dogs had to be killed one by one, and the men sought to get what nourishment they could from the impoverished dog meat. They also had to endure attacks of snow-blindness. But day after day they made good mileage tallies in the now almost reckless battle with fate.

Christmas Day was not a cheerful occasion. The two men wished each other happier anniversaries in the

future, drinking the toast in dog soup. The hours of rest were often passed under wretched conditions. Then on 30 December Dr Mawson began to realize that his companion's health was seriously affected by the terrible strain, and the wretched and totally inadequate food. Bad weather oppressed the men in the opening days of the New Year, but by 6 January there was much improvement, and Mertz felt equal to attempting another stage. However, his strength was failing, and ultimately he was persuaded to rest on the sledge which his leader—with a following wind—was able to pull for a few miles further. The end came on 7 January. Mertz was unable to travel even on the sledge, so both men lay in their sleeping-bags, for the high-minded leader would not desert his comrade while life remained.

About midnight Dr Mertz, of the University of Berne, Switzerland, who had done such splendid work with the expedition, in the words of his bereaved and sorrow-stricken leader, "had been accepted into 'the peace that passeth all understanding' ".

Dr Mawson calls the fourteenth chapter of *Home of the Blizzard* "Alone". Truly he was now alone, his two comrades having laid down their lives in the great adventure. Could their leader win through? The hut was still one hundred miles away, and such miles in such a country! This determined and courageous man, unnerved and stricken as he had been, would not give way to despair. The first urgent job was to cut down his equipment—sledge, the makeshift tent, instruments, utensils, etc., to the bare minimum. Even the exposed photographic films were abandoned. A man's life was at stake. But before retiring to the sleeping-bag for a greatly needed rest that evening, the lone man read through the burial service and put the finishing touches to the grave of his late comrade and friend.

The terrible experiences that befell Dr Mawson in his desperate efforts to cover the mileage in the ensuing days make a harrowing story. It seemed that the odds were greatly against him. Then, on 17 January something happened that seemed to mean the end of the trail. Taking all the necessary risks to shorten the road "home", he fell into a deep crevasse and tells us that he felt the end was near. There was no human aid at hand. Fortunately the sledge held—resting on the edges of the chasm, but Mawson hung dangling at the end of a fourteen-foot rope. What followed must be told in his own words:

In my weak state the prospect of climbing out seemed very poor indeed, but in a few seconds the struggle was begun. A great effort brought a knot in the rope within my grasp, and, after a moment's rest, I was able to draw myself up and reach another, and at length hauled my body on to the overhanging snow-lid. Then, when all appeared to be well, and before I could get to quite solid ground, a further section of the lid gave way, precipitating me once more to the full length of the rope. There, exhausted, weak and chilled, hanging freely in space, I felt that I had done my utmost and failed, that I had no more strength to try again, and that all was over except the passing. There on the brink of the great Beyond I well remember how I looked forward to the peace of the great release—how almost excited I was at the prospect of the unknown to be unveiled. From those flights of mind I came back to earth, and remembering how Providence had miraculously brought me so far, felt that nothing was impossible and determined to act up to Service's lines!

> "Just have one more try—it's dead easy to die,
> It's the keeping on living that's hard."

My strength was fast ebbing; in a few minutes it would be too late. It was the occasion for a supreme attempt.

Fired by the passion that burns the blood in the act of strife, new power seemed to come as I applied myself to one last tremendous effort. The struggle occupied some time, but

I slowly worked forward to the surface. This time emerging feet first, still clinging to the rope, I pushed myself out extended at full length on the lid and then shuffled safely to the solid ground at the side.

Then came the reaction from the great nerve strain, and lying thus alongside the sledge my mind faded into a blank. When consciousness returned, it was a full hour or two later, for I was partly covered with newly fallen snow, and numb with the cold. I took at least three hours to erect the tent, get things snugly inside, and clear the snow from my clothes. Between each movement, almost, I had to rest. Then, reclining in luxury in the sleeping bag, I ate a little food and thought matters over.

Two days later, on 19 January, despite bad light and falling snow, this courageous man braced himself for the onward journey. He resolved, as he says, "to go right ahead and leave the rest to Providence". Nine terrible days passed, and the lone traveller was almost spent and seemed to realize he could not get through. But Providence could still be counted on.

The evening of 28 January turned out beautifully fine, and the traveller's spirits rose. He tells us that now, for the first time, he felt he had a good chance of making the hut. However, he had only two pounds of food left, and wondered how long that would last—when another miracle happened. In the distance something dark loomed through the haze of the drift. It was a cairn with a black flag on top, built by a party out searching for the three men. "And on the top of the snow mound, outlined in black bunting, was a bag of food." A note in a tin also informed the famished man that Aladdin's Cave (a depot) was distant 23 miles, that the ship, *Aurora*, had arrived at the base and was waiting, that Amundsen had reached the Pole, and that Scott was remaining another year in Antarctica.

Dr Mawson continued:

It certainly was remarkably good fortune that I had come upon the depot of food; a few hundred yards on either side, it would have been lost to sight in the drift. On reading the note carefully I found that I had just missed by six hours what would have been crowning good luck, for it appeared that the search party had left the mound at 8 a.m. that very day, January 29th. It was about 2 p.m. when I reached it. Thus, during the night of the 28th, our camps had been only some five miles apart.

Nevertheless, with good food in his bag, and the knowledge that human aid was not far off, and also conscious that Providence was watching over him, he pressed forward. He could now do at the most a very few miles each day and found the going very difficult in his weakened state. Furthermore, having lost or worn out his cramponed ice-boots, he had to improvize wretched substitutes, spending whole days in his make-shift tent on their construction. On one stretch of glacier with only finnesko footwear, the traveller carried on, pulling his small sledge on hands and knees.

Truly he needed Providential aid to get through. However, at 7 p.m. on 1 February, Aladdin's Cave was actually reached, and he was able to get out of the wind and cold and into the comparative comfort and safety of this ice-house retreat. No wonder the doctor's note-book contains this entry, "Great joy and thanksgiving!" He also wrote, "I camped in the comfortable cave and hoped for better weather next day." But the blizzard that raged when he reached this haven, as he tells us, "droned on night and day for over a week with never a break". Without cramponed footwear he knew he could not reach the hut, now only five miles distant down a steep ice-slope, so he spent days in trying to construct their substitutes. From the food resources of the cave he was

able to cook nourishing food and especially benefited from drinks of "hot milk".

On 8 February Dr Mawson, now somewhat refreshed and strengthened, and finding conditions more favourable, reached the hut, and was joyfully reunited with his comrades, who had remained behind for another winter to search for his eastern party. For the *Aurora* had come and gone. She had steamed two thousand miles to the westward to pick up Wild's party before the coming winter marooned them also for a second season in their camp on the ice-shelf. This rescue was successfully achieved.

The rest of the story can be quickly told. The leader and five companions had to spend a second winter in their comfortable hut, but they were in touch by wireless with civilization through Macquarie Island. One of the messages sent out was to Mawson's good friend, Professor Edgeworth David, in Sydney. It was to the effect that he had lost his two companions, but that, "Miraculously guided by Providence", he himself had come through the crevassed area and had safely reached the hut.

We are told that several months passed before he recovered from the terrible hardships and was really able to take up again the continuing scientific work of the small winter team. What were his thoughts in this period? He himself tells us:

> My heart was deeply touched by the devotion of these men who thus faced a second year of the rigors and extreme discomfort of the Adelie Land blizzard. For myself, that wonderful occasion was robbed of complete joy by the absence of my two gallant companions, and as we descended to the Hut there were moist eyes amongst the little party as they learnt of the fate of Mertz and Ninnis.

In December 1913, exactly on the thirteenth day of the month, the *Aurora* steamed into Cumberland Bay and rescued Dr Mawson and the five men who had shared the second winter with him. Other members of the expedition also returned with the ship to join in the welcome and in the rescue of their beloved chief. Captain Davis, second in command of the expedition, was still the master of the ship, and a few weeks later brought the *Aurora*, with Mawson and his men safe on board, to the quiet haven of his own St Vincent's Gulf to receive "the Welcome Home, the voice of the innumerable strangers, the handgrips of many friends". And we would add, the everlasting gratitude and admiration of the Australian people.

In memory of the leader's ill-fated companions, a large cross was subsequently erected near the expedition's base, and the following inscription was carved in a handsome tablet:

ERECTED
To Commemorate
the Supreme Sacrifice
Made by
Lieut. B. E. S. NINNIS, R.F.
and
Dr. X. MERTZ,
in the
Cause of Science
A.A.E. 1913

CHAPTER XVI

CAPTAIN SCOTT'S SECOND EXPEDITION

THE glamour of the Antarctic caught Scott, like Shackleton, in its toils. As in Shackleton's case, the final preparations for the great adventure were made in New Zealand.

The ship chosen was the *Terra Nova*, a stoutly built vessel, having steam power as well as sails. The expedition was called the British Antarctic Expedition, and, following the long voyage of the ship and most of her personnel from England, the *Terra Nova*, with all her complement on board, finally sailed from Port Chalmers, New Zealand, on Saturday afternoon, 26 November, 1910. The ship was loaded almost to the Plimsoll line, and fared rather badly in a week-long battle with terrific seas when only a few days out from port. The situation, indeed, seemed rather more dangerous than that which Shackleton and his men experienced on the *Nimrod* on her Antarctic journey some years earlier.

In his diary, Captain Scott, on 2 December, called it "a day of great disaster". The gale was at its height and stores on the deck began to break loose. Bags of coal were heaved overboard. There was great trouble keeping the ponies on their feet, and great seas swept the deck. At 4 a.m. the engine-room became the centre of interest. The water gained in spite of every effort. Lashly, to his neck in water, stuck gamely to the work of clearing suctions. The pumps were choking. Eventually, after much effort a great hole was cut in the bulkhead, and at

10 p.m. Lieutenant Evans wriggled over the coal, found his way to and down the pump shaft, and removing the obstructing coal and oil balls, cleared the pumps. This was a vital service in saving the ship.

After he had struck the pack Captain Scott and his navigators had a long-continued fight with the ice before they got the ship again into open water. Indeed, it took them from 9 December to 30 December to force a way through.

The leader's diary covering this period reveals his intense interest in the expedition's scientific objectives, reminding one of what was written about Scott when chosen as leader of the *Discovery* South Polar venture, namely, "that he was a man not only born to command, but in full sympathy with every branch of scientific work". And, again like his friend Shackleton, Scott had a great team to help him, both in the scientific aspects of the expedition, and in the more spectacular attempt to reach the Pole. Apart altogether from the ship's officers and crew, Captain Scott eventually landed on the Antarctic continent with thirty-three men, comprising seven officers, twelve scientific staff and fourteen men—nearly all Royal Navy personnel. His great friend Dr Edward Wilson was chief of the scientific section, which included at least two Australians, Griffith Taylor and Frank Debenham. Lieutenant Edward Evans (later Admiral Sir Edward Evans) of the Royal Navy was second in charge. Herbert Ponting deserves mention as the expedition's photographer. His truly magnificent photographs have won him great renown, and his own book, *The Great White South*, must surely be the finest picture-book of Antarctica that has been published. The names of other members of this company will come to light as we proceed with our story.

Having safely reached the quieter and more open

TOP: CAPTAIN SCOTT'S WINTER QUARTERS ON ROSS ISLAND. MOUNT EREBUS IN THE BACKGROUND

BOTTOM: "CHRISTMAS" DINNER IN THE ANTARCTIC (22 JUNE 1911)

Photos: H. G. Ponting

waters of McMurdo Bay, the leader and his advisers were much concerned as to where the land base should be established. On Monday, 2 January 1911, Mount Erebus, the volcano amidst the ice, was sighted 115 miles distant, and soon thereafter Cape Crozier on Ross Island and the Antarctic barrier came into full view. The leader's first thought was to make the base at the Cape, but the cliffs and the strong sea-swell made a landing of the supplies impossible. Eventually they fixed on a point, now named Cape Evans, as the site for the winter hut, and within a week landed all material and stores on a wharf of solid ice a mile and a half from the chosen site.

This expedition had for transport purposes two motor-sledges, seventeen hardy Manchurian ponies and a number of dogs. These were soon released from confinement on the ship, and were most useful in the transport of the stores. The men, officers, scientists, and the rank and file "toiled terribly", to use Sir Walter Raleigh's phrase, in erecting their winter home and storing in safety the expedition's supplies and equipment. Provision also had to be made for the transport animals, on whose fitness and strength the success of the polar journey was thought in large measure to depend.

During the landing and transport of the stores, weather conditions allowed the ship to remain anchored at the ice-front—the wharf provided by Nature for their great convenience. As the days passed, difficulties and dangers presented themselves in various ways—physical ailments, such as temporary snow-blindness, the loss of the third motor-sledge, fights and struggles with refractory dogs and ponies—but all these drawbacks were met and overcome.

A great spirit of co-operation and comradeship prevailed in the camp. Captain Scott's diary throughout

January makes most interesting reading. He seems to have noticed everything that was going on. "Ponting," he says, "is the most delighted of men; he declares this is the most beautiful spot he has ever seen and spends all day and most of the night in what he calls 'gathering it in'—with camera and cinema." He also writes of Harry Pennell, captain of the *Terra Nova*, of Thomas Clissold, the cook, of "Birdie" Bowers, of his "dear" friend, Dr Wilson, and of others; he delights in praising them and their work. No wonder all the company liked him, and that good fellowship and devotion to the cause was the dominating spirit all through their hazardous campaign.

As with other Antarctic expeditions, the winter period was a busy time, with all manner of preparations for the summer journeys of exploration. The polar journey was, of course, the one that was most often in their minds and the theme of their conversations. Captain Scott, before winter set in, laid out a series of depots southward across the barrier. This work was done somewhat leisurely to give the men and animals practice and experience in travelling, and fitting them all for the severer toil and quicker travel of the real journeys later in the year. Commenting on the experience gained in this preliminary work in respect to his transport animals, Scott wrote, "I withhold my opinion of the dogs, in much doubt as to whether they are going to be a real success—but the ponies are going to be real good." In the light of later happenings, and in consideration of the definite fact that it was largely due to his dog-teams that Amundsen first reached the Pole, we fear that the British leader's bias in favour of his ponies was a costly error in judgment—due entirely to lack of adequate experience of dog transport.

Again, when the routine work of the winter gave the leader time for reflection on what was going on round

about him, we find further evidence of Scott's kind disposition and his just appreciations of his men. He writes of his friend Wilson's sound judgment, of Simpson's capacity for work, of Wright—good-hearted, strong and keen. Evans is praised for his clear-minded zeal, and for taking pains in his work. The Australian, Taylor, has an omnivorous and versatile intellect—his mind is exceedingly active, his grasp wide. Debenham is a well-trained, sturdy worker, with a quiet meaning that carries conviction. And to Bowers's practical genius is owed much of the smooth working of the station.

And now with the coming of another spring—forerunner of the short Antarctic summer, the winter quarters hum with the various preparatory activities.

THE WINTER JOURNEY TO CAPE CROZIER

During the winter period a somewhat dangerous, though short exploration was carried out. It was a journey across the land-ice and pressure-ridges to a penguin rookery at Cape Crozier. The purpose of this midwinter journey in the uncertain light, and over an unknown and difficult terrain, was to study the penguins' midwinter incubation, and the party of three men, Wilson, Bowers and Cherry-Garrard, were out on this risky mission for five weeks. They had only a light tent for shelter, and at times had to endure blizzards and extreme temperatures down to seventy-seven degrees of frost, and on one occasion in the darkness of the night this frail covering was blown right away by the furious wind. Fortunately for the men it was recovered some distance away next day. Had it not been recovered, Dr Wilson and his comrades would probably have perished. Scott heads the chapter of his book concerning this winter venture, "A Most Gallant Story", and that it certainly was.

On their return to the comfort of the hut, the worn condition of the three men was very noticeable. However, a few days' rest and sleep and good warm food restored them to health and fitness.

One of the participants in this dangerous midwinter adventure, Apsley Cherry-Garrard, wrote the grim story of this journey. His book is well named *The Worst Journey in the World.* Also, in his breezy introduction to George Seaver's book, *Edward Wilson of the Antarctic,* Cherry-Garrard wrote as follows about his two comrades: "Courage is catching. This want to find out will take men anywhere; it took us to Cape Crozier, and Wilson to the South Pole—to his death."

Of Edward Wilson he wrote: "We then saw his serenity, his courage and his sympathy. For of course that Sympathy, which in a way is Love, was at the bottom of the devotion he got from us all."

And of his other companion Cherry-Garrard wrote: "Birdie Bowers was the most indomitable person I have ever met. I have seen him in the most terrible situations, but I have never seen him dismayed." As to Cherry-Garrard himself, Dr Wilson gave this reciprocal testimony: "He has been a real trump, and has made himself beloved by everyone—a regular brick to work and a splendid tent mate."

Scott's comment was as follows:

> Wilson is disappointed at seeing so little of the penguins, but to me and to everyone who has remained here (in the comfortable hut), the result of this effort is the appeal it makes to our imagination as one of the most gallant stories in Polar history. That men should wander forth in the depth of a Polar winter to face the most dismal cold and the fiercest gales in darkness is something new; that they should have persisted in this effort, in spite of every adversity, for five full weeks is heroic.

BOWERS, WILSON AND CHERRY-GARRARD BEFORE LEAVING FOR CAPE CROZIER

Photo: H. G. Ponting

It makes a tale for our generation which I hope may not be lost in the telling.

It is interesting to note that Captain Scott, whenever possible, observed the Sabbath days and conducted Divine Service.

In the preparations for the polar journey much use was made of the old *Discovery* headquarters at Hut Point. With the coming of October all hands were busy blazing the trail to the south. Motor-sledges, ponies, dogs and men all took part in laying down the depots far to the south over the barrier-ice. These were given various names: Safety Camp, Corner Camp, One Ton Depot, etc. By early November the polar party, with the several supporting parties, were well on their way. It was cheerful now, despite the ever-changing weather, the occasional blizzards and difficult surfaces of the icy waste, compared with the harsher conditions, the unutterable loneliness and the desperate food shortages of the return journey in the weeks that lay ahead. On Sunday, 5 November, Camp 3, Corner Camp, was reached; on 6 November Camp 4. The leader's diary tells the story of the mileage gained day by day, and the performances of sledges and animal transport, and the sayings and doings of his comrades. A series of disturbing blizzards caused halts and slowed down progress. Every new day saw them approximately ten miles farther on. The diary on 9 November had this cheery entry: "Things look hopeful. The weather is beautiful—temp. plus 12—with a bright sun." But alas, only the following day, how different the entry: "A very horrid march, a strong head wind, then a snow storm, etc."

Camp 12, reached on 15 November, was identical with One Ton Camp, 130 geographical miles from Cape

Evans. Advance parties were still ahead laying depots farther out, and building snow cairns for the guidance of the polar party. At Camp 14 the reports indicate that some of the ponies were feeling the strain. However, at Camp 17, given a decidedly better surface, the ponies were doing better.

On 21 November, latitude 80° 35′, the party overtook the Motor Section, which had been waiting for six days. After three more days of travel the motor party had orders to make back to the base. The first supporting team had done its job.

Camp 21 was made on 25 November, and the leader's diary entry is as follows:

> Last night we bade farewell to Day and Hooper [Motor-sledge party] and set out with the new organisation. . . . All started together, the man-haulers, Evans, Lashly, and Atkinson, going ahead with their gear on the 10-ft sledge, Chinaman and James Pigg [ponies] next, and the rest some ten minutes behind. We reached the lunch camp together. . . .

As the ponies gave out under the strain, they were mercifully killed one by one, and the pony meat kept the dogs strong and useful. No doubt Scott, his men and animals found the barrier conditions very bad on many November and early December days, and these adverse conditions seriously retarded progress and may have been a factor in determining the later catastrophe. But always the cry was Southward ho! and at last on 1 December, Camp 27 was decided on and named the Southern Barrier Depot.

The continental land was now in sight to the west, and the individual mountains—Mount Markham, Mount Longstaff—were easily identified. Then on 5 December, Camp 30. The men were awakened by a howling blizzard. Scott referred to this camp as "The slough of despond".

They were held up for four whole days. It proved a frightful disappointment. The whole camp, tents, sledges, the few remaining ponies, the dogs, were encompassed with snow and ice. And when the temperature rose to plus 4, the melted snow made the living conditions almost intolerable.

Progress through the soft snow and slush to Camp 31 was most difficult, and at this camp the last of the ponies were shot. The camp became known as Shambles Camp. Both men and dogs benefited by the eating of the pony meat. It was now Saturday, 9 December, and the gateway from the barrier to the great Beardmore Glacier (named by Shackleton) was in full view. Scott wrote: "The scenery is most impressive; three huge pillars of granite form the right buttress of the Gateway, and a sharp spur of Mount Hope the left."

The barrier was now behind them; the glacier—one hundred and thirty miles to the polar plateau—had now to be conquered. Readers will perhaps recall the task that was set Shackleton and his three companions in getting beyond this enormous stream of ice.

When the polar party made the Lower Glacier Depot, the time had come for Meares and his dogs to leave on their long return to Cape Evans. Henceforth the sledges had to be hauled by teams of men. At first the dispositions were:

No. 1 Sledge: Scott, Wilson, Oates and Petty-Officer Evans.

No. 2 Sledge: E. Evans, Atkinson, Wright, Lashly.

No. 3 Sledge: Bowers, Cherry-Garrard, Crean, Keohane.

Then after 21 December from Upper Glacier Depot, Atkinson, Wright, Cherry-Garrard and Keohane left on the homeward trail. Two teams only remained:

No. 1 Sledge: Scott, Wilson, Oates and Petty-Officer Evans.

No. 2 Sledge: E. Evans, Bowers, Crean and Lashly.

And finally, on 4 January 1912, Lieutenant Edward Evans, Crean and Lashly, the last support to the polar party, bade their five comrades farewell and turned their faces to the north.

The polar party, Scott, Wilson, Bowers, Oates and Petty-Officer Evans, had still to cover another 150 miles before reaching the Pole. Scott's diary makes it clear that the five men found the going on the high plateau leading to the Pole terribly trying in the intense prevailing cold. A note of apprehension creeps into the record. When only twenty-seven miles from the Pole the leader wrote in his diary: "It ought to be a certain thing now, and the only appalling possibility the sight of the Norwegian flag forestalling ours."

They had passed Shackleton's farthest point south of latitude 88° 7′, some one hundred miles from the great objective. This was on 6 January, but it was not until 16 January that the weary men, cold and disappointed, reached their goal. Disappointed, because as Scott wrote:

> The worst has happened, or nearly the worst. . . . Bowers' sharp eyes detected what he thought was a cairn; he was uneasy about it. . . . Half an hour later he detected a black speck ahead. Soon we knew that this could not be a natural snow feature. We marched on, found that it was a black flag tied to a sledge bearer; nearby the remains of a camp; sledge tracks and ski tracks going and coming, and the clear trace of dogs' paws—many dogs. This told us the whole story. The Norwegians have forestalled us and are first at the Pole. It is a terrible disappointment, and I am very sorry for my loyal companions.

The leader added, "It will be a wearisome return."

Roald Amundsen, whom we have already met in these stories as a member of the *Belgica* expedition, and whose ship was the first to spend a compulsory winter in the

ice, had now, with four Norwegian companions, won the coveted prize. Scott's party knew the Norwegians were competitors; indeed, Amundsen himself had sent word by telegram to Scott that he and his men, on board Nansen's famous ship, *Fram*, were bound for South Polar seas. His earlier intention was to locate the North Pole, but on hearing that the American, Peary, had achieved that objective, the Norwegian at once changed his plans, and decided to make a try for the South.

When Scott first learned that Amundsen was coming south, he made a decision that, anxious as he was to win the Pole, he would not depart from his defined plans, which of course included important scientific objectives. Sir Clements Markham, writing of Scott in September 1913, stressed that point. He wrote: "The principal aim of that great man was the advancement of knowledge," whereas the avowed objective of the Norwegian was—the Pole.

And now to return to the five splendid Englishmen, who, just a month later than the Norwegians, had also reached the Pole.

The so-called summer season was getting on. The return was begun on 17 January 1912, and the men had some 800 miles to tramp before they would reach the base at Cape Evans on McMurdo Sound. Could they do it? The leader's diary makes it clear that, while the men were very brave and determined, they realized their desperate position. How these men, under conditions of extreme cold and failing strength, fought their way back over the wind-swept plateau, down and through the rough ice and crevassed areas of the glacier, and by sheer grit reached again the barrier, with their faces set for their ship and safety, is a story of amazing courage and fortitude.

But alas, misfortune dogged their heavy footsteps. The

season was late. Blizzards, accidents, the mysterious seepage of their fuel oil and other hindrances barred their return to the base. Petty-Officer Evans, physically the strongest of the party, succumbed on the glacier stretch; the soldier, Captain Oates, sorely weakened, and afflicted with frozen feet, walked out into the storm—to give his three remaining friends a last chance. But all in vain. Scott, Wilson and Bowers eventually reached a point only eleven miles from a depot in which abundant supplies were available—but it was now too late. A blizzard beset them for days and their food was done. The men could do no more.

The blizzards that so cruelly beset the men both on the way out, and on their return from the Pole, may truthfully be said to have been the determining factor in their final defeat. Blizzard conditions proved an adverse influence even before the polar journey began.

The following quotation is from Seaver's book, *Edward Wilson of the Antarctic*:

> It had been Scott's intention to lay One Ton Depot in the 80th parallel, but at "Corner Camp" the party was held up by a three days' blizzard, and the ponies were fast losing condition. Consequently he could only reach 79° 30′. This untimely blizzard, therefore, was a contributing cause of the final disaster, for if One Ton Depot (with its abundant supplies) had been thirty miles nearer the exhausted men returning from the Pole, the party might have been saved.

A search party with dog teams had pushed out over the barrier to help. At this same depot (One Ton Depot) they waited for several days before they, too, had to face the dangers of returning to the base—130 miles distant. Another winter had to pass, but in the following November a well-equipped search party, led by Dr Atkinson, journeyed out the 140 miles on the southern

trail and found their honoured dead. The tent was partially snowed up, and looked from the distance like a cairn. Before it were the ski-sticks, and in front of them a bamboo still remained stuck in the snow. Within were the three men in their sleeping-bags. Atkinson's team travelled another twenty miles or so farther south, seeking the body of the gallant soldier Oates, but the falls of snow throughout the winter had given him, too, a gracious burial.

In the tent Scott's diaries, and a number of letters written in the last hours to several friends, were found and carefully preserved. These, and a message to the British public, told the story of the end. It would seem that Scott himself was the last to die.

It does not seem fitting to intrude any farther upon the sacred privacy of the honoured dead within the snow-encumbered tent that became their place of burial. But the story would not be complete without at least a reference to the leader's last message to his countrymen. This message contained these brave and wonderful words:

> . . . I do not regret this journey, which has shown that Englishmen can endure hardships, help one another, and meet death with as great a fortitude as ever in the past. We took risks, we knew we took them; things have come out against us, and therefore we have no cause for complaint, but bow to the will of Providence, determined still to do our best to the last. . . . Had we lived, I should have had a tale to tell of the hardihood, endurance, and courage of my companions which would have stirred the heart of every Englishman.
>
> These rough notes and our dead bodies must tell the tale. . .

I would like to close this very sad, yet wonderful and inspiring story, with a quotation from an appreciation of

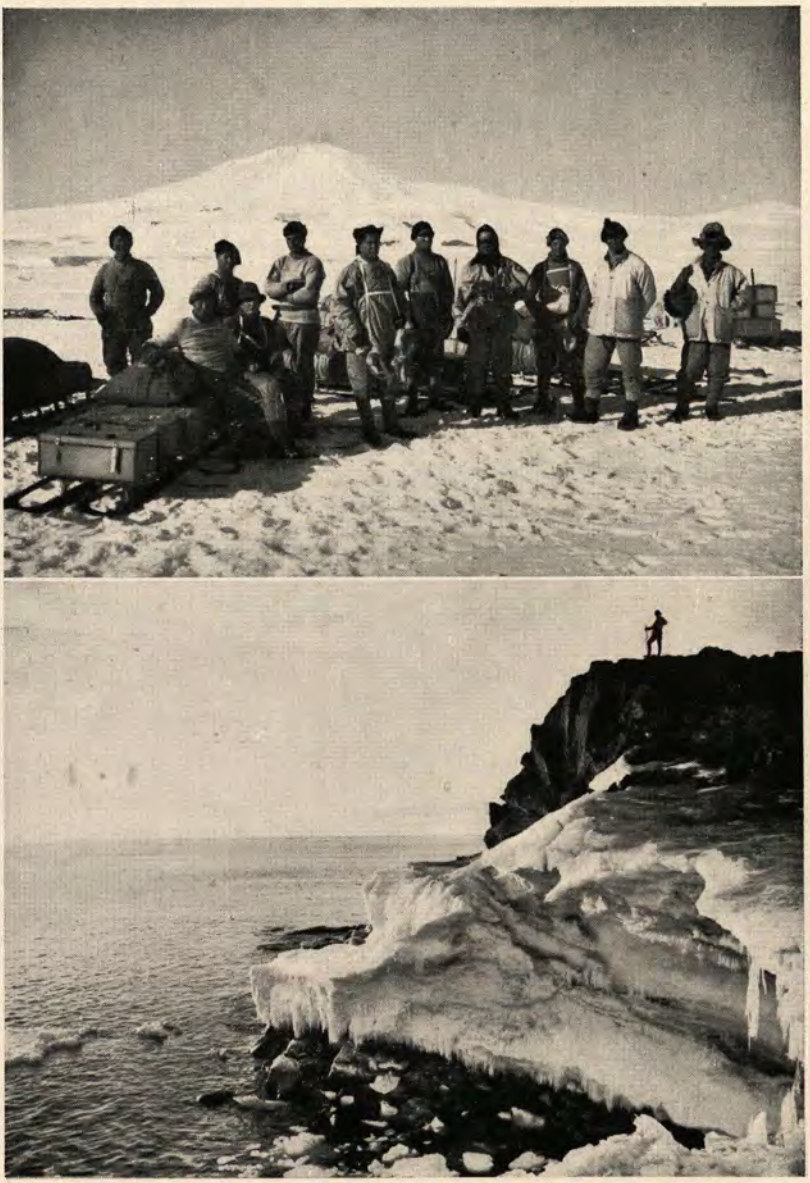
the leader by Sir Clements Markham, President of the Royal Geographical Society:

> From all aspects Scott was among the most remarkable men of our time, and the vast number of readers of his Journal will be deeply impressed with the beauty of his character. The chief traits which shone forth through his life were conspicuous in the hour of death.
>
> There are few events in history to be compared for grandeur and pathos with the last closing scenes in that Silent Wilderness of snow. The great Leader, with the bodies of his dearest friends beside him, wrote and wrote until the pencil dropped from his dying grasp. There was no thought of himself, only the earnest desire to give comfort and consolation to others in their sorrow.

The cairn marks the last resting-place of Scott, Wilson and Bowers, and another, but smaller cairn was raised farther south in memory of the gallant soldier, Captain Oates, bearing the following inscription: "Hereabouts died a very gallant gentleman, Captain L. E. G. Oates of the Inniskilling Dragoons. In March 1912, returning from the Pole, he walked willingly to his death in a blizzard, to try and save his comrades beset with hardships. This note is left by the Relief Expedition of 1912."

Later, in January 1913, when the *Terra Nova* returned from the north to bring the survivors of the expedition home, men sledged out to Hut Point to erect a cross in memory of Scott and his companions.

This cross, nine feet in height, which was made by Captain Davis of Australian jarrah wood, now stands on the summit of Observation Hill, overlooking the great ice-barrier, and in full view of the *Discovery* winter quarters. The inscription, chosen from Tennyson's "Ulysses" by Cherry-Garrard, reads:



TOP: CAPTAIN SCOTT AND SOUTHERN PARTY. MOUNT EREBUS IN THE BACKGROUND

BOTTOM: CAPE ROYDS, LOOKING NORTH

Photos: H. G. Ponting

In Memoriam
Capt. R. F. Scott, R.N.
Dr. E. A. Wilson, Capt. L. E. G. Oates, Ins. Drgs.,
Lt. H. R. Bowers, R.I.M.,
Petty Officer E. Evans, R.N.,
Who Died on their Return from the Pole—March, 1912.
To Strive, To Seek,
To Find,
And Not To
Yield.

CHAPTER XVII

SOUTH WITH SCOTT

The Narrative of Admiral Sir Edward R. G. R. Evans, K.C.B., D.S.O.

(A Complementary Story)

In the previous pages we have seen that Lieutenant "Teddy" Evans, as he was then known, was second in charge of the Scott Expedition, and with his two sailor comrades, Lashly and Crean, accompanied the polar party right up and on to the polar plateau, within 150 miles of the Pole itself. We learn that Evans was very disappointed that he could not finish the rest of the journey with his chief. However, he had excitement and suffering enough on the long trail back, and, in fact, owed life itself to the truly loyal and heroic men who made up his party. I do not intend to tell this story at length. Admiral Evans's own book, *South With Scott*, is available, and makes excellent reading. It is affectionately dedicated to the devoted and staunch companions already named. Yet there are incidents of this return journey that should have a place in any retelling of the Antarctic story. The first incident is the superb, even reckless, courage of the three men in the return march from the plateau.

On 13 January they arrived right above the Shackleton Falls, from which they could look down upon the more regular surface of the glacier, hundreds of feet below. Would they make a detour costing three days to get

around this forbidding obstacle—or chance taking their lives in their hands to rush the falls on their sledge?

Making all possible preparations, the men decided to take the risk. They got through with cuts and abrasions, but fortunately no bones were broken, nor was their loaded sledge seriously damaged. The leader estimated that over one steep section the sledge travelled possibly at a rate of sixty miles an hour.

The second incident occurred halfway down the great glacier. In bad light, and travelling over a terribly crevassed area, having to negotiate a series of difficult snow-bridges, with no spot to camp, the men got off the track, and really did not know just how to proceed. The leader left his companions and scouted ahead, but found himself plunging in and out of a series of cup-like ice depressions, and really felt they were lost. Then he tells us that he fell on his knees and prayed to God that a way out should be shown him. He wrote:

> Then I sprang to my feet, and hurried on boldly. Clambering up the opposite slope of ice, I found a smooth, round crest, over which I ran into a similar valley beyond. . . . Suddenly I saw before me the smooth, shining bed of the glacier itself, and away to the north-west was the curious reddish rock under which the Mid Glacier Depot had been placed. My feelings hardly bear setting down. I was overcome with emotion, but my prayer was answered and we were saved.

Reference has previously been made to Evans's courageous and essentially vital service in clearing the pumps of the *Terra Nova* when the vessel was in serious danger of being swamped by the angry sea.

It may be that his tremendous exertions in that effort and in many other ways to support his chief, and to ensure the success of Scott's great adventure, plus the strain and anxiety of the return, had somewhat sapped

his health and strength. However it came about, Lieutenant Evans broke down on the return journey, but, thanks to the great care his comrades took of him, he eventually arrived safely at the base. The trouble was a severe attack of scurvy—followed by other complications. This very brave man struggled on, keeping up day after day with his companions, but eventually, despite his protestations, Crean and Lashly bound their leader on the sledge, safe and warm in his sleeping-bag—with their own bags underneath him to make him more comfortable—and dragged him a hundred miles over the barrier-ice.

In his book Evans wrote:

> How weary their marches must have been—ten miles of foot slogging each day. I could see them from the sledge by raising my head—how slowly their legs seemed to move—wearily but nobly they fought on until one day a blizzard came and completely spoilt the surface. The two men had been marching nearly 1,500 miles, their strength was spent, and great though their hearts were, they had now to give up. In vain they tried to move the sledge with my wasted weight upon it—it was hopeless.

Then, having erected their tent, and having made their leader comfortable within its shelter, the two men held a council of war outside. Evans wrote that he thought his end had come. What these two splendid men discussed was which of them should stay with their helpless comrade, while the other made a desperate effort to reach the base. The party was then thirty-five miles from Hut Point. If men were not there, the traveller would need to push on farther to Cape Evans. Crean undertook this desperate mission. If he failed all three were lost. But, thank God, he did not fail. He started out with only a few biscuits in his pocket and some chocolate, for the men were almost out of food. A little oatmeal remained,

THE FIVE AT THE POLE

Photo: Lieut. Bowers

and Lashly used this to make thin porridge for his leader, who wrote:

After I had eaten it he made me comfortable by laying me on Crean's sleeping-bag, which made my own seem softer, for I was very, very sore after being dragged a hundred miles on a jolting, jumping sledge. Then I slept and awoke to find Lashly's kind face looking down at me. There were very few wounded men in the Great War nursed as I was by him.

Two days passed and every now and then Lashly would go out and search the horizon for some possible sign of relief. The stricken man thought that the end had nearly come.

But help came just in time. Crean, almost done, got through after continuous marching. The first the men knew of impending relief was when they heard the baying of dogs. Lashly sprang to his feet, looked out and saw the dog-team gallop right up to the tent door. The leader, a beautiful grey dog named Krisravitsa, came right inside and licked the face and hands of Evans. Dr Atkinson and the Russian dog boy, Dimitri, had come out with a fast and fresh dog-team in time to save the men.

Lieutenant Evans's narrative continues:

After resting his dogs and feeding me with carefully prepared food stuffs, he got me on one sledge and Lashly on the other, the dogs were given their head, and in little more than three hours we covered the thirty-five miles into Hut Point, where I was glad to see Crean's face once more and to hear first hand about his march. It had taken him eighteen hours' plodding through those awful snows from our camp to Hut Point, where fortunately he met Atkinson and Dimitri, and told them of my condition.

After the Expedition was over the King gave Lashly and Crean the Albert Medal for their bravery in helping me win through

No wonder the leader wrote of Lashly as "a noble, steel-true man". And who could doubt but that he thought the same of Crean, whom we shall meet again playing a heroic part in Shackleton's third and disastrous venture into Antarctic ice-infested seas.

CHAPTER XVIII

THE ACHIEVEMENTS OF ROALD AMUNDSEN

In a previous chapter passing reference was made to this brave and distinguished Norwegian, who, with his four fellow countrymen, won the race to the Pole.

Amundsen was well known as an experienced explorer in the frozen wastes of the north before he changed his plan and came south in the *Fram* to compete with the British for the coveted prize. Peary, the American, as previously recorded, was first to reach the desolate North Pole, for which honour the great Norwegian was also a competitor.

Prior to making his plans to attack the North Pole, Amundsen had already won the proud distinction of discovering the North-west Passage, which many other courageous and venturesome voyagers, over a period of several hundred years, had failed to accomplish. By his own frank and honest account, Amundsen admitted he was favoured in the Antarctic in an extraordinary way by the weather. He reached the Pole only a month ahead of Scott, and while Amundsen's narrative reveals that he and his four comrades suffered physical hardships, their food supply was secure, and the climatic conditions favourable.

If he and his men had had to battle with the dreadful series of blizzards and frustrations that Scott and his party had to face, the result might have been very different. Amundsen's return from the Pole was done at

the average rate of 22½ miles a day, a tragic contrast to Scott's desperate struggle, amidst almost intolerable climatic conditions, towards the home he never reached.

It is interesting to hear that Amundsen admitted being overcome with great emotion when his party reached 88° 23′ (Shackleton's farthest south). He wrote: "No other moment of the whole trip affected me like this. The tears forced their way to my eyes; by no effort of will could I keep them back."

Again he wrote:

> We did not pass that spot without according our highest tribute of admiration to the man, who, together with his gallant companions, had planted his country's flag so infinitely nearer to the Pole than any of his predecessors
>
> Sir Ernest Shackleton's name will always be written in the annals of Antarctic exploration in letters of fire.
>
> Pluck and grit can work wonders, and I know of no better example of this, than what that man has accomplished.

Surely a noble instance of one very brave and competent man's verdict on another man of different race and tongue.

THE NORWEGIAN'S DASH TO THE POLE

From his ship base (Nansen's famous *Fram*) on the Bay of Whales, Amundsen and his fellow countrymen, Hansen, Wisting, Bjaaland and Hassel, with several dog-teams and sledges, well equipped with food supplies for man and beast, struck off across the barrier-ice in a south-westerly direction. As mentioned before, and as also claimed by Amundsen, the distance from his base on the Bay of Whales to the Pole was considerably less than from the starting points on McMurdo Sound adopted by Scott and Shackleton.

Furthermore, the barrier surface itself from the *Fram* base afforded Amundsen's party and their splendid dog-

CAPTAIN ROALD AMUNDSEN

Photo: Wide World Photos

teams an easier terrain for the start. Nevertheless, as they pressed their way across the barrier's immense expanse to the land mass beyond, with its great mountain ranges, its glaciers and crevasses, the Norwegians had to deal with many of the difficulties and frustrations that beset their British rivals using the Beardmore trail. But their dog-teams, and the experience of the Norwegians in driving and controlling the dogs, undoubtedly gave them the advantage.

It would seem that Amundsen started out with three dog-teams, eighteen animals all told, and actually reached the Pole location with seventeen. One fine dog named Major had previously wandered from camp and never returned. He was extremely tired, and must have gone away to die.

Another animal, Hedge, was utterly done at the latitude of the Pole and had to be destroyed. "But what is death to one is food to another, and within a couple of hours there was nothing left of him but the teeth and the tuft of the tail."

The return from the Pole was commenced with two sledges, each drawn by teams of eight dogs.

The leader's account of careful calculations—journeys of miles in various separate directions by several of his men to make quite sure of the polar position—shows how painstaking the Norwegians were.

A month later, when Scott's party arrived, their calculations agreed with the Norwegian's findings, thus for ever settling the claim which the Norwegians had flashed around the world:

The South Pole is Reached.

Naturally they were elated with their success. Yet a certain note of surprise may be discerned in Amundsen's own account:

At 3 p.m. on December 14th, 1911, a simultaneous "Halt" rang out from the drivers. They had carefully examined their sledge meters, and these all showed the full distance—our Pole by reckoning. The goal was reached; the journey ended. I cannot say, though I know it would sound more effective, that the object of my life was obtained. That would be romancing rather barefacedly. I had better be honest and admit straight out that I have never known any man to be placed in such a diametrically opposite position to the goal of his desires, as I was at that moment. The regions around the North Pole—well, yes, the North Pole itself—had attracted me from childhood, and here was I at the South Pole.

Can anything more topsy-turvy be imagined?

Roald Amundsen and his four comrades returned in safety from their successful southern venture to receive the glad welcome of their own nation, and indeed the plaudits of an admiring world. And the man was worthy of the honours tended him, who, just a few years later, in northern ice-fields, sacrificed his own life to save another, the Italian Nobile, who was not even a friend. If Robert Scott, so quick to see good points in others, had met and known Roald Amundsen, how he would have admired the noble Norwegian, and claimed him, too, as a friend.

CHAPTER XIX

THE ILL-FATED VOYAGE OF THE *ENDURANCE*

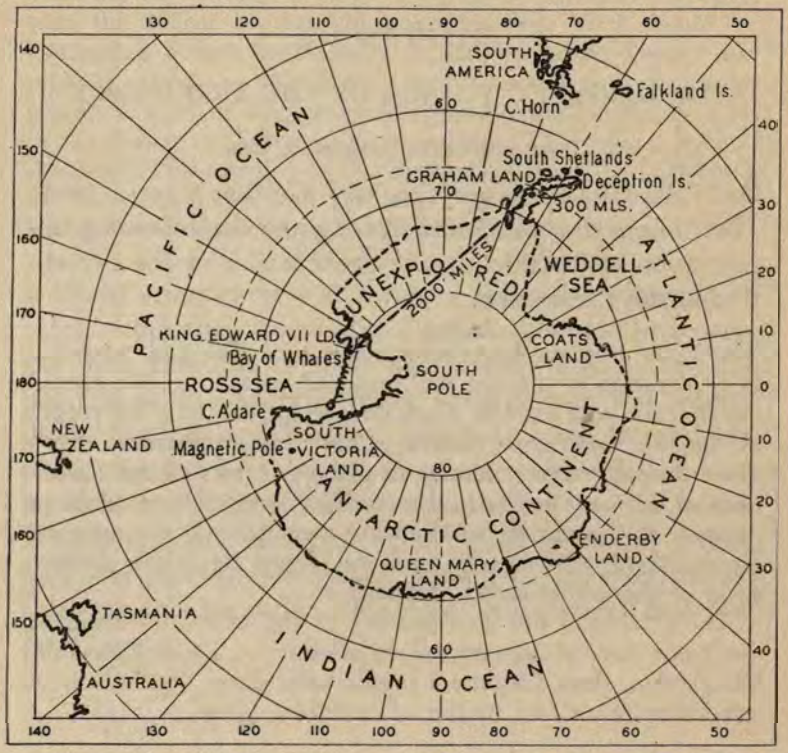
THE AMAZING WEDDELL SEA

Dr H. R. Mill, in his preface to J. Gordon Hayes's book, *The Conquest of the South Pole*, wrote the following appreciation of Shackleton, the great leader of the expedition in the *Endurance*:

> The Polar Regions have seen many triumphs and tragedies of exploration in the last few hundred years. . . . We cannot say that the past has left much chance for breaking the record of human endurance, courage and resourcefulness. . . . Nevertheless, we are inclined to place the story of the *Endurance* at the very head of all records of Polar achievement, on account of the variety of the risks encountered, the accumulated difficulties overcome, and the almost incredible deliverance of the whole ship's company.
>
> The Britons of the 20th century in this adventure stand in the front rank of adventurers of all time . . . Shackleton did things that other Explorers might have done, but which no other Explorers, as a matter of fact, have done.

Also in his *Life of Sir Ernest Shackleton*, Dr Mill indicates a gracious element in the make-up and disposition of this remarkable man; that is his intense love of poetry. His biographer avers that it was their mutual love of poetical literature that drew both men together. Another friend of the Shackleton circle, Mrs Hope Guthrie, tells us that Shackleton's "love of poetry was passionate, and he stored his mind with—not passages—but whole poems and pages of Shakespeare, Browning, the Bible, Kipling, Service and

others. Poetry was his other world, and he explored it as eagerly as he did the great Antarctic spaces". This lady also wrote: "Everyone who knew him, knew his love of



Browning, and that he seemed to be an incarnation of that poet's virile faith and optimism."

The reader is now invited to accompany me in this last adventure to quite a new sector of the Antarctic Circle, and to join Sir Ernest Shackleton in a third mighty effort to compel the South Land to unveil more of its face to the sight of an inquiring world.

This expedition covered the period 1914-17, during the years of the first world war. Shackleton, in the preface to his book, *South*, calls his narrative "the tale of the White Warfare of the South". His preparation for this expedition began in 1913, and no less than 5000 men applied for a chance to share its experiences and danger. Eventually fifty-six men were selected, amongst whom were those splendid men, Wild and Crean, whom we have already met in earlier narratives. Frank Hurley was the official photographer. Two ships were to be employed. One, the *Endurance*, a new vessel specially constructed for polar work, carried oil fuel, as well as coal and the other, the *Aurora*, the stout vessel which carried Dr Douglas Mawson and his company into South Polar seas.

Sir Ernest wrote that in all respects the *Aurora* was a similar ship to the *Terra Nova*, which took Captain Scott to Antarctica on his last fateful voyage. The planning for this expedition was very ambitious. The first and major objective was to cross the Antarctic continent from sea to sea, via the Pole. The estimated mileage involved was 1800 miles.

Again that part of the ocean called the Weddell Sea comes into the picture. If the reader will study the accompanying map he will observe that the part of the Atlantic Ocean named the Weddell Sea is in what we might term the South American quadrant of Antarctica, and almost opposite is the Pacific Ocean Bay indent in the Australian quadrant, named Ross Sea; McMurdo Sound or Bay is the southern part of Ross Sea. It will be seen that Sir Ernest Shackleton would cross the Antarctic Continent at the narrowest part, if he could navigate his ship through the open water of the so-called Weddell Sea; for, when he struck the solid ice or ice-covered land and took to sledges, he would be about the same distance

from the Pole as he was from the Hut on McMurdo Sound, namely, 800 to 900 miles. Anyhow, that was Sir Ernest's rough calculation, an overall journey of 1800 miles. As previously mentioned, that was the main objective.

Another was for two sledging parties to operate from the Weddell Sea base to collect geological specimens and generally to study and map the areas traversed. Another party holding the base would study the fauna of the land and sea, and the meteorological conditions. Still another party would set out from the now well-known Ross Sea base, on the other side of the Pole, and push southward over the known track across the barrier-ice and up the Beardmore Glacier—to wait for and join up with the men coming across the polar plateau from the Weddell Sea base. Obviously it was an inspiring and daring undertaking. Sir Ernest pointed out that it would be the first use of the Weddell Sea as a base for exploration; and added that it was appropriate that the work should be carried out under the British flag, since the whole of the area southward to the Pole (that is, from the Ross Sea bases to the Pole) was British territory.

But alas, as the poet wrote:

> The best-laid schemes o' mice and men
> Gang aft a-gley.

The expedition did not have the pioneer Weddell's good luck in navigating this area.

Leaving England on 8 August 1914, the *Endurance* called first at Buenos Aires, and on 26 October left that port for South Georgia, the most southerly outpost of the British Empire. Here for a month the men were engaged in final preparations. The leader tells us that his plan was to leave South Georgia early in December 1914, and as he scanned his plans for the voyage to the prospective

winter quarters, he wondered what sort of reception the Weddell Sea would have for his ship. Whaling captains at South Georgia gave him advice as to the direction of his voyaging; they warned him of the difficulty of getting through the icy seas in the neighbourhood of the South Sandwich group of islands, and also advised that he would have to push through heavy pack in order to reach the Weddell Sea.

The narrative reveals that the ship left her anchorage off South Georgia on the morning of 5 December on a south-easterly course. On the following day heavy ice with numerous bergs was in evidence; all sails were taken in and the *Endurance* proceeded slowly under steam. That night impenetrable pack-ice barred any further progress in that direction. Indeed, during the night, Sir Ernest wrote, the situation became dangerous; a heavy south-westerly rocked the ship. As a bad augury for the success of the enterprise, despite all their care, their strong ship struck large lumps of ice being heaved about in the swell.

Conditions improved a couple of days later, but Shackleton and his experienced officers, Worsley and Wild, maintained a close watch day and night while the ship worked its way through the pack. The navigation was difficult. Some of the ice-floes presented a square mile of unbroken surface. However, the ship pushed its careful way through the channels of thin ice between the heavy floes. The leader wrote that he had hoped the pack would be loose in December and January, even if no open water was to be found. "What we were encountering was fairly dense pack of a very obstinate character." Again we are told:

> Monday, December 21st, was beautifully fine, and we made an early start through the pack. Petrels of several species, penguins and seals were plentiful, and we saw four small

blue whales. At noon we entered a long lead to the Southward and passed nine splendid bergs.

One huge specimen was shaped like the Rock of Gibraltar, but with steeper cliffs, and another had a natural dock which would have contained the *Aquitania*. Hurley brought out his cinematograph camera to make a record of these bergs.

At midnight of the same date the ship was definitely held up by a huge floe estimated to be fifteen miles long and ten miles wide.

One would expect Shackleton's brief comment, "I had never seen such an area of unbroken ice in the Ross Sea."

On Christmas Day they had got a little further on, but were again held up by more bad weather. Nevertheless, "we had a really splendid dinner, and in the evening everybody joined in a sing song!" By New Year's Day, despite all hindrances, the ship had made 480 miles in a south-easterly direction, and early on the following morning reached latitude 69° 40′ S., longitude 15° 42′ W.—the run for this day was 124 miles. On the 8th and 9th the ship had a clear run through blue water, which was a joyful experience after the long struggle through the ice lanes, but at 1 a.m. on the 10th the *Endurance* once again encountered ice. The position was given as latitude 72° S., longitude 16° W., and the leader reckoned they were near the land discovered by Dr W. S. Bruce of the *Scotia* Expedition, and named Coats Land.

Dr Bruce encountered an ice barrier in lat. 72° 18′ S., long. 10° W., and from his description of rising slopes of snow and ice, with shoaling water off the barrier-wall, the presence of land was clearly indicated. It was up those slopes, and at a point as far south as possible, that I planned to begin the march across the Antarctic continent.

At 5 p.m. that same day, the 10th, the look-out reported an appearance of land to the south-south-east, and shortly before midnight the ship broke into a lead

SIR ERNEST SHACKLETON IN SLEDGING DRESS

Photo: Frank Hurley

of open water along a barrier edge seventy feet high with cliffs of about forty feet.

At 4 p.m. on the 13th the ship still steamed along this barrier to the south-west, when it turned a corner, the trend now being to the south-east. Shortly before midnight on the 15th:

> We came abreast of the northern edge of a great glacier, projecting beyond the barrier into the sea. This was about 400 ft high, and at its edge was a large mass of thick bay-ice. The bay formed by the northern edge of this glacier would have made an excellent landing-place, for it was protected from the South-easterly wind and was open only to a northerly wind. I named the place Glacier Bay, and had reason later to remember it with regret.

On the 17th, new land rising 3000 feet above the head of a glacier was discovered and named Caird Coast. This connects Coats Land, named by Bruce in 1904, with Luitpold Land, discovered by Filchner in 1912. They were now close to the junction with Luitpold Land, where Shackleton thought to locate his base.

On the 19th the ship's position was latitude 76° 34′ S., longitude 31° 30′ W. At this position the *Endurance* was firmly beset. "As far as the eye could reach from the masthead the ice was packed heavily and firmly all round the ship in every direction."

Despite every effort thereafter to extricate the ship, she remained absolutely imprisoned in the unyielding ice.

I have deliberately detailed the conditions of navigation through the ice of the Weddell Sea to make clear the amazing difference in Shackleton's experience from that of Weddell, with his two little ships, the *Jane* and the *Beaufoy*, with their small tonnage.

It will be remembered that these small vessels reached latitude 74° 15′, and scored that latitude through ice-free seas, with sunshine on the water. And this was in February 1823, just about a month later in that season. And so Sir Ernest now knew only too well now the Weddell Sea would treat him and his fine new ship. Certainly it stood the battering and squeezing of the cruel ice-floes for several months before the end finally came. Time and time again the leader and his gallant men endeavoured to break their way out, but all in vain. The summer months passed, the winter came, and Sir Ernest bemoaned their helplessness as the winter night closed in upon them. In the earlier period of imprisonment the men played games in their icy environment, and the expedition's numerous dogs were exercised and trained for sledge-hauling, and sometimes the several dog-teams competed for the South Polar Derby. During all these months the men lived comfortably enough on their comparatively warm ship, but the days were drawing near when they would have to leave the doomed ship, and take to the great floes with their three boats, their dogs, and their supplies and stores.

The book *South* contains a series of photographs by Frank Hurley, depicting the *Endurance* in the several stages of the attack. One picture shows the ice-pressure approaching the ship. It was taken at midwinter, and reveals great ice masses rising above the deck level and pressing hard against the hull.

In the early days of July beautiful sunrise glows on the eastern horizon heralded the approach of the returning sun. Blizzards and snow-storms raged at intervals, the temperature dropping to thirty-three degrees below zero.

Of course every preparation had been made by the very competent chief and his men to leave the ship if that dire necessity should arise. However, August and Sep-

tember passed without the worst happening. Shackleton wrote: "September 30th was a bad day, for at 3 p.m. cracks, which had opened during the night alongside the ship, began to work in a lateral direction. The ship sustained terrific pressure. The decks shuddered and jumped, beams arched, and stanchions buckled and shook. . . . But the ship resisted valiantly. . . ."

Worsley also wrote:

> The behaviour of our ship in the ice has been magnificent. Since we have been beset her staunchness and endurance have been almost past belief again and again. . . . It will be sad if such a brave little craft should be finally crushed in the remorseless, slowly strangling grip of the Weddell pack, after ten months of the bravest and most gallant fight ever put up by a ship.

But the end came on 27 October, when the ship was crushed beyond any hope of recovery. On the previous night, at 9 p.m., the order came to abandon ship and to establish a camp on a great ice-floe some distance away.

Shackleton's biographer wrote that the wreck of the *Endurance* was the wreck of all Shackleton's dreams of a second polar triumph, but his optimism helped him to stand the shock.

The leader himself wrote in the last days of their great anxiety:

> The pressure ridges, massive and menacing, testified to the overwhelming nature of the forces at work. Huge blocks of ice, weighing many tons, were lifted into the air and tossed aside as other masses rose beneath them.
>
> I scarcely dared to hope any longer that the *Endurance* would live, and during that anxious day I reviewed all my plans for the sledging journey which we should have to make if we had to take to the ice. As far as forethought could

help we were ready for any contingency. Stores, dogs, sledges, and equipment were ready to be moved from the ship at a moment's notice.

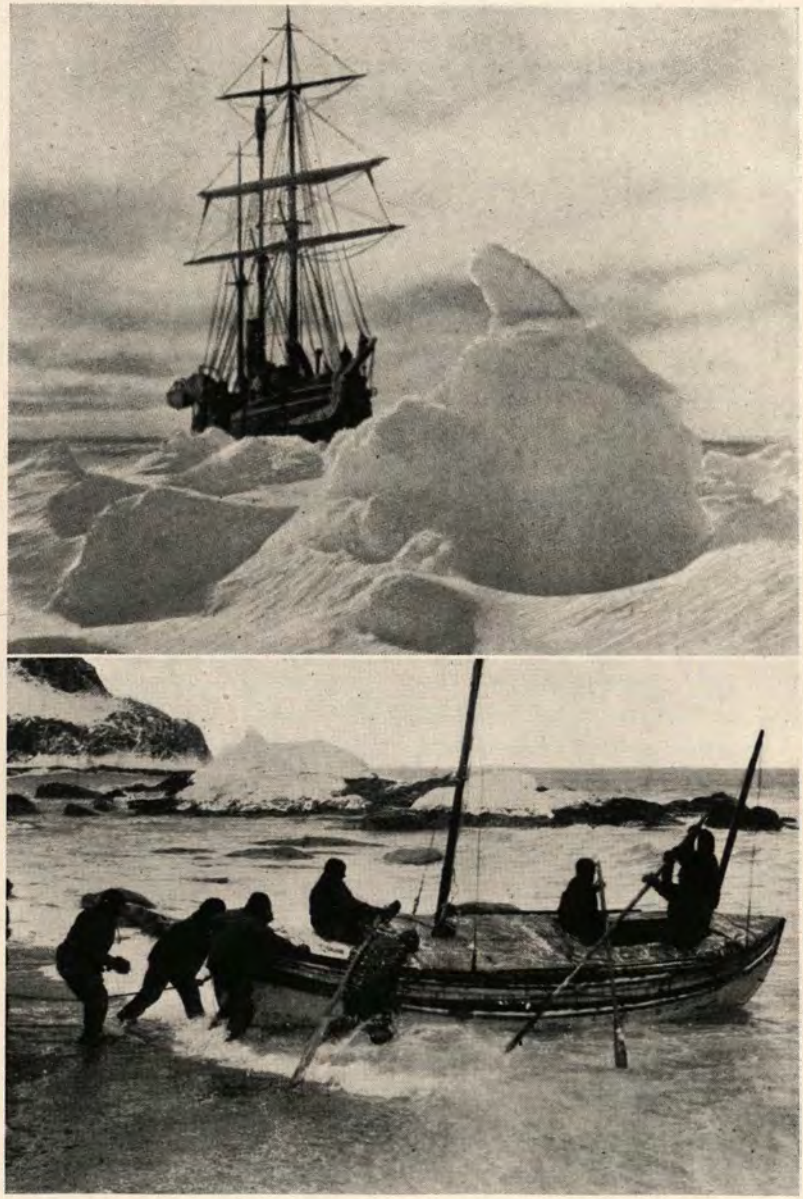
And afterwards, when the ship had been abandoned, and the whole party, with dogs, stores, and equipment, was camped on an ice-floe, "on six feet of ice over 8000 feet of ocean depth", what were this intrepid man's thoughts? He himself tells us:

For myself, I could not sleep. The destruction and abandonment of the ship was no sudden shock. The disaster had been looming ahead for many months, and I had studied my plans a hundred times. But the thoughts that came to me, as I walked up and down in the darkness, were not particularly cheerful. The task now was to secure the safety of the party, and to that I must bend my energies and mental power, and apply every bit of knowledge that experience of the Antarctic had given me.

The task was likely to be long and strenuous, and an ordered mind, and a clear programme were essential if we were to come through without loss of life. A man must shape himself to a new mark directly the old one goes to ground.

Dr Mill takes up the story just at this stage, paraphrasing it from Shackleton's own narrative. His biographer wrote:

And as he [Shackleton] mused he saw a sudden crack run across the floe through the camp between the tents. He blew a whistle and brought the men tumbling out; the tents and gear were shifted from the smaller of the two pieces into which the floe had split and re-erected on the larger. The men went back to rest if not to sleep, and Shackleton to his pacings to and fro alone, listening to the shrieking clamour of rising ice ridges, and the heart-rending sounds of collapse and destruction in the *Endurance* from the stern of which gleamed an unextinguished light. Another spasm of the dying ship broke the connection, and the light went out; but the soul of Shackleton was enlarged and set free, doubt and anxiety dropped from him, and he gave himself with all his



TOP: THE DYING SUN: THE *ENDURANCE* FIRMLY FROZEN IN
BOTTOM: LAUNCHING THE *JAMES CAIRD*

might to the simple, straightforward fight for the safety of his people, putting behind him the shattering of his own ambitions.

After the first alarm of the ice crack, the camp was shifted to a more solid portion of the floe, which was found about a mile to the north-west of the wreck. This became known as "Ocean Camp". Later on another site on the ice was selected, and this bore the name of "Patience Camp". The men had plenty of food, and at the Christmas period they had a great feast of "luxuries", the food value of which was negligible. This, however, was the last full meal that any of them was to have for five months to come. In camp a routine was established to keep everyone busy, and Shackleton "set the example of that cheery optimism, in the value of which he was so convinced a believer".

It should be mentioned that during the period of imprisonment the *Endurance* had drifted 1186 miles; also that the distance from the point where she first became beset to the place where she was mortally hurt was 573 miles. He calculated that their present position was 346 miles from Paulet Island, the nearest land where they might find food and shelter.

So the leader and his company of twenty-eight men camped on the ocean ice-floes in several different locations over a period of several months, at all times on the alert to shift camp if the ice under their feet threatened to crack and drift. It was on 8 April that the three boats, heavily laden with the men and stores and essential equipment, were able to exchange their risk from cracking ice-floes to the no less dangerous heaving waves of the Antarctic Sea.

The boats bore the names *James Caird*, *Dudley Docker*, and *Stancomb Wills*. The *James Caird* was the largest

boat, and carried the major portion of their stores. The leader took charge of the *James Caird,* Worsley captained the *Dudley Docker,* and Hudson and Crean shared control in the *Stancomb Wills.*

After many dangerous experiences, the three boats, with all their men still safe on board, reached the vicinity of Elephant Island, the most easterly island of the South Shetland group, a rocky, ice-covered mass rising abruptly from the ocean, situated about a hundred miles away from their camp on the floes. As the boats drew near, the island loomed up cold and forbidding. No previous landing had ever been made on this desolate islet. There was no hope of rescue, and the only advantage was that solid land, not ice, was beneath their feet.

The men had been for two days and nights without drink or hot food. Eventually they risked a rush landing through an opening in the reef, and were able to pull their boats to safety on a shelving, rocky beach. But it was soon discovered that this beach was unsafe, so a second landing had to be attempted. Shackleton wrote:

> When I landed for the second time a curious spectacle met my eyes. Some of the men were reeling about the beach as if they were intoxicated. They were laughing uproariously, picking up stones and letting handfuls of pebbles trickle through their fingers, like misers gloating over hoarded gold. I remember Wild came ashore as I was looking at the men, and stood beside me as easy and unconcerned as if he had stepped out of his car for a stroll in the park.

But we may well believe that even the imperturbable Wild and his chief, as well as the more emotional men, were feeling grateful to God, and happy even in their still dangerous predicament—that they were safe so far and had their feet solidly planted on terra firma.

It is reported that Shackleton, after eight sleepless

nights, lay down on the beach, and slept for many hours untroubled by damp or cold. But this uncomfortable spot could only be a resting place for the shipwrecked mariners. They had no means of communication with the world of men, nor any hope of ever being found at this desolate spot in Antarctic, ice-infested seas. Their nearest possible place for help was the whaling station on the larger island of South Georgia, but it was 800 miles away.

Port Stanley in the Falkland Islands was actually nearer—but their frail twenty-foot boat could never face the adverse prevailing wind, whereas the direct westerly wind would help the voyage to South Georgia.

This was the leader's decision. After about a fortnight for rest and preparation at their second camp on Elephant Island, the *James Caird* was got ready for the perilous voyage, and on the morning of 24 April 1916, Shackleton himself, with Worsley, McNeish, Crean, Vincent, and the ship's carpenter, McCarthy, bade their remaining comrades good-bye, pushed the *James Caird* from the rocky bench into the ice-cold sea, and began their sixteen days' strenuous voyage to South Georgia.

That long and dangerous venture in a frail boat must surely be one of the greatest feats in the long story of maritime achievements. Once, in the darkness of the winter's midnight, when the skipper himself was at the tiller, the boat was subjected to an awful onslaught by a tremendous overwhelming wave. Shackleton said it was the worst in all his years of sea experience.

It was a mighty upheaval of the ocean, a thing quite apart from the big white-capped seas which had been our tireless enemies for many days. I shouted, "For God's sake, hold on! It's got us!" Then came a moment of suspense which seemed to last for hours. We felt our boat lifted and flung forward like a cork in breaking surf. We were in a seething chaos of

tortured water; but somehow the boat lived through it, half-full of water, sagging to the dead weight and shuddering under the blow. We bailed with the energy of men fighting for life, flinging the water over the sides with every receptacle which came into our hands; and after ten minutes of uncertainty we felt the boat renew her life beneath us. She floated again, and ceased to lurch drunkenly as though dazed by the attack of the sea. Earnestly we hoped that never again should we encounter such a wave.

That was the worst experience of the journey, but these brave men had a terribly anxious time. Shackleton himself was tormented with sciatica; Vincent had almost collapsed; McCarthy suffered particularly but showed grit and spirit. But they got through by the mercy of Providence, though suffering severely from thirst for two days before the landing was made, still under perilous conditions, on South Georgia, but alas, on the opposite side of the island to the location of the whaling station.

The landing was on the shore of King Haakon Bay, which penetrated South Georgia by an eight-mile sound in an easterly direction. As mentioned, the boat struck the island on the opposite side to the whaling station, and it was hopeless to consider relaunching their now crazy craft in an effort to reach the other side of the island. The only course left was to make the supreme effort to cross the snow-slopes, glaciers and stern mountains of the island, to reach the hardy sea folk who lived at the station on the other side. To the preparation for this formidable task Shackleton and Worsley gave immediate and anxious attention.

They kept in mind the fact that if the crossing failed, the doom of their twenty-two comrades marooned on Elephant Island was sealed. Also, that their three splendid, but now crippled companions of the boat voyage, McCarthy, McNeish and Vincent, would also probably

THE RETURNING SUN. THE *ENDURANCE* IN THE ICE

Photo: Frank Hurley

perish. So Shackleton, Worsley and Crean, tired and spent as they were, braced themselves for this supreme and final effort to reach the only source of help. It should be mentioned that, after the landing on South Georgia, the weary men found an excellent dry cave in which to shelter, and ample and delicious food in the young albatrosses, seals and other animals that abounded near their camp. So now the three men were physically refreshed by the few days' rest and the good strong food.

The distance across was estimated at about seventeen miles—but what miles! However, the morning came when the men turned out at 2 a.m. and prepared a warm hoosh for breakfast, and, with a full moon and cloudless sky to encourage them, they set forth as soon as the meal was eaten.

Their only equipment was a small primus charged with fuel oil, and the cooker; the carpenter's adze for an ice-axe, and a fifty-foot length of Alpine rope. The men were able to have two hot hoosh meals on their journey, before dispensing with their cooking equipment. Without the adze and the rope they could never have made the crossing.

They had no definite knowledge of the interior, and knew that the whalers on the other side regarded the country as inaccessible. But these courageous men, spurred on by the necessity of accomplishing their terrific task, got safely through. It meant thirty-six hours of continuous, exhausting travel over a fearful terrain in places where one false step meant death. They started at three o'clock in the morning of 19 May, found a way up the snow-clad mountain slope, and after wandering to and fro in search of passes, or up and down in darkness or in mist, they made their way across the Allardyce Range, which no one had previously attempted to climb,

and on the forenoon of 20 May 1916 the trio, shaggy, dirty, and ragged reached Stromness Whaling Station.

As they approached the habitations of the whalers, two little boys, who had seen these three wild-looking men approaching, ran away from them in terror. Even the whalers who first saw them were suspicious as to their bona fides as responsible human beings.

But all this quickly passed. Shackleton asked if the manager (Mr Sorlle) was at the station. They soon met. Of this encounter Shackleton writes in *South*:

> Mr Sorlle came to the door and said, "Well?" "Don't you know me?" I said
>
> "I know your voice," he replied doubtfully. "You're the mate of the *Daisy*."
>
> "My name is Shackleton," I said. Immediately he put out his hand and said, "Come in. Come in."

And what a reception they got. Mr Sorlle's hospitality had no bounds.

> He would scarcely let us wait to remove our freezing boots before he took us into his house, and gave us seats in a warm and comfortable room. We were not fit to sit in any one's house until we had washed and put on clean clothes, but the kindness of the station manager was proof even against the unpleasantness of being in a room with us. He gave us coffee and cakes in the Norwegian fashion, and then showed us upstairs to the bathroom, where we shed our rags and scrubbed ourselves luxuriously.

Who could adequately estimate the joy of that moment in the hearts of these magnificent men?

Quickly a relief vessel was prepared and Worsley went with this ship and effected the rescue of the three men left stranded on the other side of the island. The three men were delighted beyond measure to be relieved, but

they did not recognize Worsley, who had left them a dirty, hairy ruffian, and had returned spruce and shaven.

Within a day the ship was back at Stromness Bay Station, where Vincent, McNeish and McCarthy received the same welcome.

The great leader concluded the chapter about the crossing of South Georgia with these words:

When I look back at those days I do not doubt that Providence guided us, not only across those snowfields, but also across the stormy white sea which separated Elephant Island from our landing place on South Georgia. I know that during that long march of thirty-six hours over the unnamed mountains and glaciers of South Georgia it often seemed to me that we were four, not three. And Worsley and Crean had the same idea. One feels "the dearth of human words, the roughness of mortal speech," in trying to describe intangible things, but a record of our journeys would be incomplete without reference to a subject very near to our hearts."

Dr Mill comments on Shackleton's great achievement:

If his return to the *Nimrod* on the Plateau, the Glacier, and the Barrier, seven years before, had been a race with Death on his pale horse, Shackleton's return from the *Endurance* over the floe, the ocean, and the mountains, had been one long wrestling bout with the same grim adversary, dismounted, and in earnest. Never for an hour in all these months had Shackleton or his men been free from the menace which only unsleeping vigilance could save from being a strangle-hold. In this struggle Shackleton had risen to the height of moral greatness, though the ambition he had started with was wrecked, and his party scattered. Battle by battle Shackleton had won so far; but his fight was not over.

The rest of this amazing story, and the final chapter in the life of Sir Ernest Shackleton, can be told in briefer compass. After one or two futile efforts by the available ships to reach the men marooned on Elephant Island, the

leader was fortunately able to obtain a small steamer, the *Yelcho*, from the Chilian Government, which in due course reached Elephant Island, and had the good luck to dodge the challenging ice sufficiently long to enable the twenty-two men, with the necessary gear, to be got safely on board.

"The *Yelcho*," Shackleton wrote, "had arrived at the right moment. Two days earlier she could not have reached the island, and a few hours later the pack might again have been inpenetrable."

The little steamer, at full speed, steamed north out of the track of the dangerous ice and eventually reached Punta Arenas, "where we were given a welcome we shall never forget. The Chilian people were no less enthusiastic than the British residents. The whole populace appeared to be in the streets. It was a great reception, and after the long, anxious months of strain we were in a mood to enjoy it."

The Chilian Government was most helpful, and when Shackleton saw the President and thanked him and his people for help given to a British expedition, the Chilian replied by recalling the part taken by British sailors in the making of the Chilian Navy. Shackleton thereafter completed arrangements for all his men to return to England, for all were keen to take their part in the Great War, which was still raging in Europe. The date was September 1916.

Shackleton himself with Worsley in due course reached San Francisco and caught the first ship to New Zealand to take charge of the effort then being organized to rescue the men still stranded in the Ross Sea area.

I do not propose to go into the details of that second phase of Shackleton's project. But it will be remembered that Dr Mawson's former ship, the *Aurora*, was also engaged in this great adventure. She was to land the

second half of the personnel under Captain Aeneas Mackintosh at a chosen point in McMurdo Sound, set up headquarters, and lay down a series of depots—as far as the Beardmore Glacier—to ensure the safe return of the leader himself and his companions completing their long 1800-mile tramp over the Antarctic Continent from the proposed Weddell Sea Base.

Alas, we know that all that laborious and dangerous work was in vain, though, under Captain Mackintosh's personal guidance, it was successfully accomplished. It appears that the *Aurora*, wintering at the ice front, and very strongly stayed and moored, was in early winter blown out to sea with the ice, and from May 1915 until April of the following year was more or less imprisoned, and drifted many hundreds of miles, before being towed by tug to Port Chalmers, New Zealand.

Shackleton arrived in New Zealand early in December 1916, and found that arrangements for relief of the Ross Sea party were then complete. The ship, now repaired and revictualled, with Captain John K. Davis in charge, and with Sir Ernest on board, reached McMurdo Sound on 10 January 1917.

Three members of the Ross Sea party lost their lives during the occupation, one being the leader himself, Captain Aeneas Mackintosh, and diligent search for their bodies was made before the *Aurora* left again for New Zealand, where the ship arrived with the remainder of the Ross Sea men on 9 February 1917. In the last chapter of *South*, the author mentions with justifiable pride that practically every member of the expedition who returned (that is, fifty-three men) took part in the later period of the first world war. Three of these were killed and five wounded.

As for the great leader himself, his war service also over, he planned, a few years later, still another expedition

into Antarctica with his proved comrade, Frank Wild, second in charge. The ship was the *Quest*. On the way south—indeed, in the vicinity of South Georgia's icy mountains—the brave warrior of the Antarctic died on his ship, and was buried on the island so closely associated with his gallant career.

Both Frank Wild and Commander Worsley wrote books concerning the voyage of the *Quest* and the circumstances attending the death of their beloved leader. Commander Worsley's book, *Endurance*, enlarges on Shackleton's own account in *South*, of the privations and painful experiences of the men living on the ice-floes, after their stout ship had been crushed and sunk. Again, writing of the crossing of South Georgia, in view of the fearful difficulties and dangers the three men had to face and overcome, Worsley, like his two companions, was positive they had help from above. He wrote: "There was no doubt that Providence was with us," and continued, "whenever I reviewed the incidents of that March, I had the sub-conscious feeling that there were four of us—not three."

Worsley averred that that impression was shared by both Shackleton and Crean, and that it had given him much food for thought. Elsewhere the Commander penned this statement: "I learnt afterwards, in our crossing of South Georgia, that it was the only interval of fine weather that occurred during that winter."

In those last days on the *Quest*, when Shackleton's weak heart had forced him to rest in his cabin, memories of the past twenty-odd years of arduous toil in Antarctica came back to him. Worsley records bits of this conversation. Once, referring to his own failure in health on that first attempted crossing of the barrier with Scott and Wilson, and his compulsory return to the ship and retirement to England, Sir Ernest said to Worsley: "When

I went aboard the *Morning*, I gritted my teeth, and said to myself, 'Nothing on earth shall prevent me coming back here at the head of my own expedition.' Then he rose to his feet and exclaimed: 'Skipper, I kept my word, didn't I?' "

The last chapter of Commander Worsley's book is entitled "The Death of a Hero". Here is an interesting excerpt:

> Once Shackleton referred to Sir T. W. Edgeworth David, who, although over fifty years of age, had ventured into Antarctica, as an honoured member of Shackleton's expedition, and who with Sir Douglas Mawson . . . located the South Magnetic Pole. Shackleton spoke of Professor David as a most lovable man, with whom his comrades . . . worked heart and soul.

Sir Ernest Shackleton gave twenty-two years of his valuable life to polar work, and never lost a man who was under his protection. Can we wonder that he drew to himself the love and devotion of such splendid companions, or that Worsley could write of him in terms like the following: "Does he not stand for a symbol of that greatness which is immortal? By qualities such as those that were characteristic of Shackleton, the mightiest empire in the World has been built up."

CHAPTER XX

THE CONQUEST OF ANTARCTICA BY AIR

PREVIOUS chapters in this story of the Antarctic have been concerned only with exploratory journeys in ships, or on the Antarctic terrain, where travel was always difficult, and often dangerous, especially in the disturbed and crevassed areas of the barrier expanse, and on the slippery ice-slopes and uplands of the great Beardmore Glacier. We will now hear something of Antarctic adventure by air.

We have seen that Captain Scott's first attempt to cross the barrier failed, largely through the breakdown in health of one of his team. Later, we saw that the indomitable Shackleton, who failed in that first attempt, led his companions, Marshall, Wild and Adams, across the three hundred miles of the barrier, and thence through the uplands of the glacier, until they reached the elevated plateau that leads to the Pole itself. It was a terriffic achievement. Early in their ascent of the Beardmore, with dangerous ice-slopes and snow-covered crevasses to be negotiated, the party narrowly escaped disaster. Had the pony, Socks, not broken his leather traces as he fell into the dark and bottomless crevasse, the surviving men would certainly have perished. There was no turning back. These gallant men persevered in their hard and dangerous task, and at last reached the point on the high polar plateau within a hundred miles of the still unconquered Pole.

A TYPICAL VIEW IN SOUTH GEORGIA

Photo: Frank Hurley

In later chapters we read of the epoch-making journeys, with all their hazards and excitements, of Scott's and Amundsen's teams in their momentous race for the Pole. The victory was narrowly lost by the British; the strong dog-teams of the Norwegians tipped the scales in their favour.

Now, some fifteen years later, an American expedition led by Rear-Admiral Richard Evelyn Byrd, and magnificently equipped for exploration, both across the snow- and ice-covered terrain, and in the air, reached the seaward face of the immense ice-cliffs which guard the portals of the polar world. The day of his ships' arrival was Christmas Day 1928. Byrd, referring to the barrier face wrote that its sheer ice-cliffs towered in places higher than the masts of his ships. But we know that in other places, for instance, where later the Americans anchored their ships on the eastern side of the Bay of Whales, the ships' decks were about abreast of the surface of the great barrier.

There is a splendid and full account of this important American expedition in the August 1930 number of the *National Geographic Magazine*. Unfortunately, however, copyright restrictions will not allow me to use that material. However, it is universally known that one important objective of this expedition was a search for minerals in the Queen Maud mountains—many hundreds of miles in the interior.

A second, and possibly a primary, objective of the gallant Rear-Admiral, who already held the aerial honours of the North Pole, was to be the first aviator to fly over the South Pole. In that ambition he was successful.

From J. Gordon Hayes's book, *The Conquest of the South Pole*, I now give some further information about Byrd's venture. Hayes evidently held the American leader in high regard, and wrote of him: "The name of

Richard Evelyn Byrd shines brightly even in the galaxy of brilliant Americans to whom he belongs, for he surprised and delighted the world for several years by successively beating his own, and other, flying records. . . ." In 1925 he organized and carried out an enterprise with Floyd Bennett from Spitzbergen, to fly to the North Pole before Peary achieved that on foot. Byrd established the prestige of the United States, both in the Arctic and Antarctic.

For this expedition several ships were chartered. The leader had his quarters on the *City of New York* (formerly the *Samson* of Tromso, Norway), a wooden vessel of 515 tons. Other vessels used were the *Eleanor Bolling*, the *Larsen*, and a whaling-ship bearing a famous Arctic and Antarctic name, the *Sir James Clark Ross*. A risk was taken in bringing the *City of New York* and the *Eleanor Bolling* right up to the barrier's edge in the Bay of Whales. Byrd was well aware of that, but the risk was offset by the very great convenience of being able to unload direct from the ships on to the barrier. Concerning this, Hayes observed, "It had the disadvantage, that the Barrier, in its turn could, and did unload itself directly on the *Eleanor Bolling*, and nearly sank the ship."

Hayes has also put this comparison on record: "Sir Douglas Mawson included in the personnel of his expedition, the largest scientific staff; the Americans excelled in the completeness of their scientific equipment." This included aeroplanes, numerous dogs and sledges, aerial communications with every position and every party, whether on the terrain or in the air, aerial mapping, cameras, etc. Certainly no other expedition was so thoroughly equipped. It is also of interest to note that one of Byrd's exploring parties found a depot laid down by Amundsen, containing certain records.

Towards the end of his narratives, Hayes paid the American this further compliment: "Byrd is to be congratulated on his splendid achievements, not the least of which, with his large personnel, the fact of not losing a single life." Readers may recall that Sir Ernest Shackleton, too, had the same happy experience.

In concluding this necessarily short story of Rear-Admiral Byrd's successful expedition, I feel justified in quoting from Byrd's own narrative a paragraph illustrative of the American's noble spirit and his generous appreciation of a fellow craftsman of another race. These were his words:

> The immortal Scott lost his life to reach that spot—the South Pole which lay beneath us. His superhuman struggle showed that things of the mind and heart, the intangible spirit of a man, can have a far more enduring effect than the material results of his struggles. In honor of this hero, we carried the British flag beside the American.

SIR HUBERT WILKINS OVER GRAHAM LAND

For the following account of the extraordinary career of the Australian explorer, George Hubert Wilkins, the writer is largely indebted to J. Gordon Hayes, author of *The Conquest of the South Pole*. Two chapters of that book are concerned with the Antarctic experiences of Sir Hubert Wilkins, M.C., and Bar, Gold Medallist of the Royal Geographical Society of London, and of Sir Douglas Mawson, D. Sc., F.R.S.

Surely the first-named is the most versatile traveller and explorer that Australia has produced. Indeed a writer of fiction could hardly have portrayed a character of such outstanding daring and diverse achievements. The mere outline of his picturesque career needs only to be drawn to ensure for this Australian an honoured place in our nation's story.

Born in 1888, Wilkins commenced his flying career in 1910. After his early upbringing in Australia, we first hear of him in the Arctic in close association with the famous Swedish-Canadian, Stefansson, who, it will be remembered, lived for five years in the wastes of the frozen north.

No doubt the Australian absorbed a lot of valuable experience by his association with Stefansson. Wilkins could, as we say, turn his hand to anything.

In the Arctic he pulled his own sledge, drove dogs, sailed in ships and boats and in a submarine; he made the first trans-Arctic flight, and, as we shall see, led in the air attack in the Antarctic.

In 1916 he left the Arctic regions for the battle front in France, and served with the Australian Flying Corps, in command of the photographic section. He earned a captain's rank, was mentioned in dispatches, and was awarded the Military Cross and Bar.

When the war ended in 1918 Wilkins was still keen for further adventure. We next meet him in Antarctic waters as second in command in Copes's Antarctic venture. Wilkins subsequently was on the *Quest* when Shackleton died on his ship and was buried in the icy uplands of South Georgia.

A spell in the tropical parts of his native land was Wilkins's next adventure; but soon his first love, the frozen north, called to him again. In 1928, with Lieutenant Carl Eieleson as pilot, Wilkins flew from Point Barrow across the polar sea to Spitzbergen—a distance of more than 2000 miles.

For this and other extraordinary activities, one of which was an attempt to reach the North Pole by submarine under the ice-covered sea, Wilkins was awarded the gold medal of the Royal Geographical Society and

REAR-ADMIRAL R. E BYRD

Photo: Wide World Photos

other honours, including knighthood, the legend reading "For conspicuous Service between 1913 and 1928".

On the occasion when Sir Hubert received the gold medal, Dr Hugh Robert Mill, L.L.D., D.Sc., Vice-President of the Royal Geographical Society, in presenting the medal to the distinguished Australian used these memorable words: "I believe there are now only three knights who won their spurs in polar service. All are Gold Medallists, all Australians—Sir Edgeworth David, Sir Douglas Mawson, and Sir George Hubert Wilkins. . . . In our Patron's medallist we welcome one of these born explorers who seemed to have looked on life first—

> Through magic casements opening on the foam
> Of perilous seas in fairylands forlorn?

But surely, no more forlorn fairyland, no more perilous sea, ever loomed through the mists of poetry than that which Stefansson, his first leader, dared to call the friendly Arctic. We rejoice to know that he has no intention of resting on his laurels, and we wish him the best possible success on his projected Antarctic enterprise."

THE SEAPLANE ATTACK ON THE ANTARCTIC

We are informed that his flying experience in the Arctic convinced Sir Hubert that in Antarctic surveys, it would be necessary to use the astonishing mechanical bird that human genius had invented. In that part of the Antarctic that he most desired to closely examine, footwork would be useless in the investigation of the steep cliffs and glaciers of Graham Land.

The expedition to that part of the Antarctic mainland was styled the Wilkins-Hearst Expedition, and was largely sponsored by the American Geographical Society. Two seaplanes were aboard the ship, *William Scoresby*,

which carried the men and their varied equipment and food to their initial base on Deception Island, where the party arrived on 10 November 1928. One of the two machines—the *Los Angeles*—it is surely worth mentioning—was the machine that was used by Wilkins and pilot Eieleson in their record Arctic flight, and it was the Australian's good fortune that the same pilot was with him now in Antarctica.

The *Los Angeles* holds this further distinction of being the first aeroplane to fly in Antarctic skies. The leader's plan was to use Deception Island as a base for the flight over Graham Land to the Weddell Sea area, and there to select a landing-place for the machines on the ice. Thereafter both machines—the second named *San Francisco*—would be flown to another selected base five or six hundred miles to the south of Deception Island. After that, this man of large and adventurous planning aimed at a flight over the unknown coastline eastward, as far away as King Edward VII Land—or the Bay of Whales. The second plane was to lay the depots for this very daring project.

However, conditions on Deception Island proved too unfavourable, though the *Los Angeles* was aloft for a short flight on 16 November.

Again on 26 November both machines took the air and scouted for several hours, seeking more convenient and safer starting-places.

The men now realized the serious difficulties that had to be overcome and the risks that had to be faced. Some reconstruction of landing gear had to be effected, for neither enough snow space nor open water was available for a safe take-off. Conditions proved most unfavourable.

To lighten the loads, the food supplies for a journey were cut down—to an allowance for only fourteen days. Then on 20 December, Wilkins and his pilot set off in the

San Francisco. At a speed of 125 miles an hour they climbed above the plateau of Graham Land to a height of 6000 feet, but later, to clear the mighty boundary walls of rock that supported the tableland, the machine had to rise to 8000 feet. At 1 p.m. the plane flew over new terrain that was named Hearst Land, and she carried on to latitude 71° 21′, longitude 64° 15′ before she turned for home. A more direct course was set for the base at a speed of 150 miles. The leader, an expert photographer, made many exposures on the trip. Winds and mist were troublesome when nearing the base, but it was found possible to photograph the landing-place through an opening in the clouds, and after a ten-hour flight a safe landing was made.

Once again, on 10 January 1929, a further effort by plane to find a better base was determined on. It was to select some location that would be accessible to the ship.

This time the plan was to study and record conditions preparatory to the long flight of 1300 miles from Hearst Land to the Bay of Whales. Since the polar winter was now approaching, it was decided to store both planes on Deception Island for the winter, to be used again in the following summer. The leader's plan on his return was to establish, by aerial transport, an advanced base on the newly discovered Hearst Land.

THE SECOND SUMMER

Early in December 1929 the *William Scoresby* was back at Deception Island base, but conditions for flying were found to be even worse than in the previous season. They were now unable to improvize a safe runway for the planes. This emergency was met by shifting the whole expedition to another location, where it would be possible to use floats on the machines.

On 19 December a flight from the new base was undertaken. The machine rose to 10,000 feet to clear a mountain range. From this vantage point Graham Land was seen to be an island some 350 miles long, and seven to ten miles wide, with a perfectly horizontal summit rising to 8000 feet above the sea. Wilkins reported that the immense boundary cliffs would average 3000 feet in height. The course was eastward, and south of the valley where the high plateau ended the whole country seemed to consist of rugged mountain chains. One mighty mass extending westward was named the Lockhead Mountains. Subsequently Wilkins reported that Graham Land was cut in two parts by a channel (ice-filled) and that a second channel seemed to isolate the whole of Graham Land from the Antarctic Continent. This second channel was named Casey Channel in honour of Major R. G. Casey, the Australian statesman (recently Governor of Bengal).

The Australian navigator averred that the entire separation of Graham Land from the Antarctic Continent was very clear. The section of the continent that he named Hearst Land appeared to be typically Antarctic and resembled the Mawson countries that slope down from the interior to the ice cliffs on the ocean front.

Other flights were made in vain to locate a suitable base whence the leader could attempt his ambitious jump to the vicinity of Admiral Byrd's headquarters on the Bay of Whales, but the fates were now against him.

On 1 February 1930 Wilkins made his last flight in a due south direction. On this last effort the plane reached latitude 73° 8′ but only the pack and icebergs were seen. At the farthest point reached the ice was reported to be firmly attached to the mainland.

It is fitting now to conclude this short survey of Sir

Hubert Wilkins's effort by quoting J. Gordon Hayes's own words:

Thus ended a season that must have been disappointing to Wilkins who had hoped to fly over the unknown country to Admiral Byrd at the Bay of Whales, far to eastward. But he had accomplished a great deal of important, if less spectacular, work.

In reviewing his two seasons' results, we must notice that he showed the scientific value of the sea-plane in making preliminary surveys. . . . Sir Hubert was able to chart, approximately but with fair accuracy, probably 80,000 square miles of country in 10 hours. He found that Graham Land, assumed to be a peninsula, was a series of islands, and he proposed to name them the Antarctic Archipelago. . . . Sir Hubert looked down on the unique plateau of North Graham Land, raised like a huge stone altar above the sea. He discovered mountains and glaciers, fjords, channels and islands too numerous to mention; and lastly he discovered, probably, a new portion of the Antarctic Continent. Having been a professional aeronautical photographer, his camera pictures taken from the seaplane are most inspiring; and his confirmation of Charcot Land is very satisfactory. Altogether Sir Hubert carried out a fine piece of work and was a pioneer of a new age in polar exploration—the Aeronautical Age.

SIR DOUGLAS MAWSON'S AERIAL EXPEDITION

Again I fall back on J. Gordon Hayes's book *The Conquest of the South Pole* for a brief summary of the expedition of 1929-30 led by Sir Douglas Mawson, now for the third time venturing into Antarctica's frozen domain.

Hayes heads his chapter "The Attainment of Enderby Land", and takes account of the interesting fact that Sir Douglas Mawson, on his ship the *Discovery* and a Norwegian captain, Riiser-Larsen, on the Norwegian ship *Norvegia*, both on voyages of discovery, met most unexpectedly off the ice-bound coast in the vicinity of that same Enderby Land.

The first of these two ventures was that led by Sir Douglas Mawson, and was styled the British, Australian and New Zealand Antarctic Research Expedition. Under its very experienced leader, the expedition held out the prospect of continuing the work that was so well done in 1911-14 in the ship *Aurora*.

Several governments contributed towards financing this venture, and very large financial help was forthcoming from a wealthy and public-spirited Victorian manufacturer, Sir Macpherson Robertson. The objectives of the expedition were to survey and chart Antarctic terrain already known, to discover new land, and generally to further scientific work. Captain J. K. Davis, who captained the *Aurora* on the previous cruise, came south again as captain of the *Discovery*, and as second in command of the expedition. Major R. G. Casey represented the British and Australian Governments in preparing for this enterprise.

The *Discovery* sailed from the Thames on 1 August 1929, and called at Capetown for a final overhaul and to coal, and to take on board the distinguished leader, who, with some of his staff, had arrived at the Cape by mail-boat.

The ship left Capetown on 19 October 1929 and *en route* to the Antarctic mainland called at both the Crozet Islands and Kerguelen and carried out scientific work at both places.

On 3 December the *Discovery* sailed again for her southern destination. The ship was amongst icebergs a few days later, but held her course until 16 December, when the recorded position was latitude 65° 41½′ S. The position then was approximately 200 miles north-west of the Gaussberg, and the pack-ice to the south was impenetrable.

By 26 December the ship had made latitude 67° and

was possibly within thirty miles of the land. A seaplane was got ready for the first flight, but strong wind and ice made that impossible. However, on 29 December conditions for flying were favourable and the flight disclosed new land—"seen across a heavy consolidated pack that extended to the southern horizon".

FIRST FLIGHT OF THE EXPEDITION

Lieutenants Douglas and Campbell flew to a height of 5000 feet, and reported several peaked islands, forty miles to the south, and beyond the slopes of the ice-coast. These continental islands were named the Douglas Islands, and the mainland beyond was named MacRobertson Land in honour of the expedition's generous patron. Continuing in a westerly direction, sharp look-outs were kept for openings to the south, but ice conditions forced the ship north-west until 2 January 1930, when open water again allowed a splendid run to the south. At latitude 66° 35′ the depth was 552 fathoms. On 5 January Sir Douglas himself went up with his pilot in the seaplane and from a height of 4000 feet saw the new land—MacRobertson Land—lying thirty miles to the south of the ship. Ice-clad slopes of the continent extended east and west to the limits of vision, and above these several rocky ranges appeared. The new land was seen seventy or eighty miles to the west, extending in the direction of Kemp Land, but a heavy pack kept the *Discovery* twenty miles off the coast. The pack, Captain Davis wrote, was held in position by numerous bergs which are a feature of this part of the coast. Blizzards now drove the ship northwards for several days but on 11 January it was possible to again assume the southerly course. Later the ship was steaming among numerous ground bergs and the depth of the sea was only 146 fathoms at latitude 66° 3′ S. and longitude 57° 43′ E.

Now, in the year 1833 Captain Kemp, who was possibly one of Enderby's skippers, reported land in latitude 66° S., longitude 60° E. The *Discovery* sailed over this position, but no doubt some of the land now visible from the seaplane by Sir Douglas had really been sighted by Kemp, and his name remains on the map.

To the west of Kemp Land lay Enderby Land. Here on 13 January 1930 came Sir Douglas Mawson, nearly a hundred years after Biscoe had seen it from afar, and, approaching it from the east, the first British landing was made in latitude 65° 32′ S., longitude 53° 40′ E. The continuity of the mainland was proved during the following days.

A group of islands now observed might, it was thought, furnish reasonable shelter for the ship and a base for extensive land operations. No other harbour is known for a distance of 1100 miles to eastward. "The principal islet is a black rock mass rising to a height of 800 feet, contrasting strongly with the ice-covered mainland, from which it is separated by only several hundred yards. This we named Proclamation Island," wrote Sir Douglas Mawson. A flagstaff was raised on the summit and formal possession was taken of these Antarctic lands for the Crown. As the *Discovery* continued a westerly course, a range of mountains rising to 6000 feet was named Scott Mountains in honour of Captain R. F. Scott. The continental ice here rose towards the interior to about 400 feet.

Late on 14 January in latitude 66° 22′ S., longitude 47° E., Sir Douglas and his party were surprised to see another ship approaching. It proved to be the *Norvegia*, under the command of Riiser-Larsen, who signalled his desire to meet the *Discovery's* leader. In due course the Norwegian was welcomed on the British ship and a conference took place between Sir Douglas and his visitor, who explained

that he had made a flight to eastward of their present position. However, it was arranged between the two men that the Norwegians would keep to the westward of latitude 40° and the British to the eastward.

On parting, the *Norvegia* proceeded on a westward course, while the *Discovery*, after continuing in a westerly direction to about longitude 45°, turned eastward again to that part of the Antarctic Continent named Enderby Land, to examine it more closely. On 16 January a series of gales drove the ship 150 miles off course to west-south-west. Later she was worked back to eastward, and in latitude 66° 22′ S., longitude 48° 32′ E., a gigantic ice-tongue was seen, measuring 150 to 200 feet in height.

Proclamation Island was again reached on 24 January, and flights on two successive days, 25 and 26 January, took place. From a height of 5000 feet the plateau of Enderby Land was seen to attain about the same altitude to the south, and to contain more than a hundred rocky peaks, varying from 5000 to 7000 feet. Ice-cliffs rose from 60 to 150 feet out of the sea. The shipmaster, Biscoe, many years before, had reported these black mountain summits. Sir Douglas examined and classified the land rocks and certified these to be of a continental character —granites, schists, quartzites and slates, and examples obtained from the sea floor proved to be of the same type. So there could be no doubt that Enderby Land was part of the same continent previously discovered by this explorer to the east.

RIISER-LARSEN'S STORY

It is of interest to give a short résumé of Riiser-Larsen's account of his meeting with the British ship, and to mention that he had accompanied Roald Amundsen in Arctic flights in the years 1926 and 1927 and that his present

voyage was mainly to discover new whaling grounds in Antarctic waters. He wrote:

> On nearing the British ship on January 14 we dipped our flag to which she responded. Hailing *Discovery*, I said I would like very much to come on board and see Sir Douglas Mawson, which I was most cordially invited to do. Captain Davis and Sir Douglas received me on the gangway and invited me into the cabin. I came at once to the point, and explained what we had done up to the present and that we intended to take up work again, where we stopped it on December 22nd—that is, to follow the pack westward, from Enderby Land to the Weddell Sea taking oceanographical stations, and making occasional flights as opportunities offered.
>
> After being shown over the ship, I returned in about an hour's time.

J. Gordon Hayes specifically states that on 15 January Riiser-Larsen, aloft in a plane, discovered new land away to the south-west of Enderby Land, and named his find Queen Maud Land.

To return to the British ship, on its westerly course it was able to sail in uncharted waters to the south of any previous ship in that locality. A huge group of grounded icebergs was found to extend a hundred miles to the east of the Shackleton shelf. Next, a new island was discovered and named Bowman Island. Then new land beyond the Gaussberg was named Princess Elizabeth Land. Later, from 9 to 11 February, Macpherson Land was approached. The *Discovery*, still proceeding westward, opened up in the distance more masses of exposed rock 2000 feet in height; a landing was made, and a record was placed in a cairn. The coast of the new land was carefully charted until 19 February, when shortage of coal compelled the *Discovery's* return to northern waters.

THE SECOND CRUISE

On 22 November 1930 Sir Douglas Mawson, on the *Discovery*, left again for a second summer's cruise in southern ice-infested seas. The sailing master of the vessel was now Captain Mackenzie, Captain Davis having resumed his former duties in Australian waters.

This time the ship was provisioned to spend, if necessary, a winter in the inhospitable south. *En route*, Sir Douglas once more visited Macquarie Island, where, in the early part of his former venture, he and his men had made extensive scientific investigations and had established wireless communication with Australia.

Again proceeding south, Commonwealth Bay in Adélie Land was reached and a landing affected at the previous expedition's base at Cape Dennison. It was found that the old hut itself had bravely withstood the blizzards of the seventeen years that had intervened. Even the stores within the hut were still in good condition. All the land eastward to Oates Land, between longitude 140° and 160° E. was claimed for the British Crown under the name of King George V land. Summing up the results of this British exploration Hayes put these facts on record:

The cruise had been most successful.

On the two cruises approximately two thousand miles of new coasts had been charted.

Biscoe saw an ice coast from afar, Bruce had charted one for 150 miles, Drygalski reached another, but Mawson was the first explorer to establish a station at Cape Dennison on these coasts, and no other base has yet been set up either on them, or on any other comparable locality, except Mawson's own Western Base.

Mawson found, named, and photographed the enormous Scullin monolith in MacRobertson Land.

Dr Hayes wrote:

Mawson served his Antarctic articles early in the Heroic Era and carried to success his first expedition before the European War. . . . His experience covers the whole of one period, and embraces both its heroic and mechanical phases: for he made an epic journey to the Magnetic Pole and afterwards adopted the technical aids to exploration, especially flying and wireless telegraphy, the latter of which he introduced into Antarctica. He discovered the D'Urville Sea, King George V Land, Banzare Land, MacRobertson Land and Princess Elizabeth Land; he was the first explorer to land upon, chart and examine Adelie Land; he also re-discovered Kemp and Enderby Lands. All this and much more he did in person; while his Second-in-Command, Captain John King Davis, discovered Wilkes Land, the Davis Sea, the Shackleton Shelf, and Queen Mary Land, the coast of which Commander Wild, as Mawson's deputy, explored. Estimating thus the results of Sir Douglas Mawson's four to five years work, as they should be estimated, on the basis of the positive increase in geographical and other knowledge, he is seen to have been the most successful Antarctic explorer in the period.

CHAPTER XXI

CONCLUSION

SINCE the aerial expeditions recorded in the last two chapters, land movements—if any—in the Antarctic regions have had little or no publicity. For one thing, much of the South Land's age-long mystery has been cleared up. The two Poles have been won and charted, and the whole world today can learn much of the main features of Antarctic geography. But for the intervening wars, in which the very foundations of civilization were threatened, no doubt our knowledge of the Antarctic Continent would have been further advanced, and some of its remaining problems solved.

From news appearing in the Press during the preparation of this book, it is very obvious that observant eyes, in several and diverse nations, are turned with quickened interest, maybe also with a measure of anxious concern, to future developments in Antarctica.

Even as I write (June 1947), twenty-two picked men, a section of the personnel of Rear-Admiral Byrd's 1946-7 Expedition, are spending the winter months in quarters at Marguerite Bay in Antarctica.

Furthermore, it is alleged by a report appearing in the American paper *Newsweek* of 16 December 1946 that a British party was at that time located in the same area. What does it mean?

From the same source of information, we learn that Rear-Admiral Byrd, in command of a large American

expedition, left the port of Norfolk, Virginia, on 2 December 1946, bound for the Antarctic, where he planned to stay over four months. These ships, including an ice-breaker and a destroyer, were the first units of the American Navy's 4000 men, and thirteen-ship task force 68, which, after passing through Panama Canal, were to join up with five additional ships in Pacific waters. Aboard the ships of this considerable fleet were "the modern paraphernalia of exploration, army weapons, and alligators, helicopters, fast scout and patrol planes, large supplies of clothing, teams of dogs—with ample supplies of food for man and beast." The Commander's flagship was the *Mount Olympus*. Also, it was stated in the same issue of *Newsweek*, that on reaching the ice-bound south, an elaborate programme of explorations by planes was to be carried out. Little America, Byrd's old camp inland from the Bay of Whales, would be revisited. Another project was the laying out of an airfield on the Ross ice-shelf. Then, when this field was ready, it was planned to bring an aircraft-carrier to the ocean front of the ice-pack, from whose decks six Douglas transport planes were to be flown over the barrier to the completed airfield. Even a submarine was to be an item in the American outfit, its function "to nose around the underwater pool of glaciers, to pick up bits of glacial deposits which would indicate the nature of the ice-bound surface". *Newsweek* also stated that the geographers of this all-embracing enterprise would try to determine whether Antarctica was all one piece, or two huge islands.

Newsweek further averred that "a battery of Geiger Counters will measure Cosmic Rays (in Antarctica) as part of the continuing study of Atomic Energy."

A layman might well ask what all this means, especially since *Newsweek* proceeded to claim that several other nations, including Chile, Norway, Argentina, Russia and

Australia, were all planning expeditions to the Antarctic regions in 1947. We in Australia know that an Australian expedition is being arranged. There were rumours in the United States that the American venture was a race for uranium, and *Newsweek* publishes Rear-Admiral Byrd's reply to such rumours. It was, "We will investigate all minerals, and uranium happens to be one of many minerals." Apparently having the urge to pursue the matter further, *Newsweek* itself joined the inquisitive layman, and put its query as follows: "What drew this world-wide attention to the barren mass of ice-covered rocks?" and then proceeds to answer its own question:

1. Was the Antarctic an unexcelled laboratory for studying Cosmic Rays?
2. Or was it an ideal testing ground for Winter Military Equipment, as far away as possible from hypersensitive Russians?
3. The third possibility was a search for tangible treasures, in the shape of rich mineral deposits.

"Our Navy Explores Antarctica" is the heading of a long and profusely illustrated story in the October 1947 number of the *National Geographic Magazine*. This confirms, in the main, what has already been set forth in this chapter. Fantastic as it seemed when told in *Newsweek* of 16 December 1946, the official narrative prepared by Admiral Byrd, the expedition's distinguished leader, establishes the navy's enormous undertaking as a fact of current history. Students of the Antarctic have, in past years, been under an obligation to the American Geographical Society for beautifully illustrated accounts of Antarctic venturing, and this latest is the most significant.

The story runs through very many pages and contains about seventy illustrations and maps, but after carefully reading it, the reader, like the Editor of *Newsweek*, may

still remain in doubt as to this great expedition's real objectives.

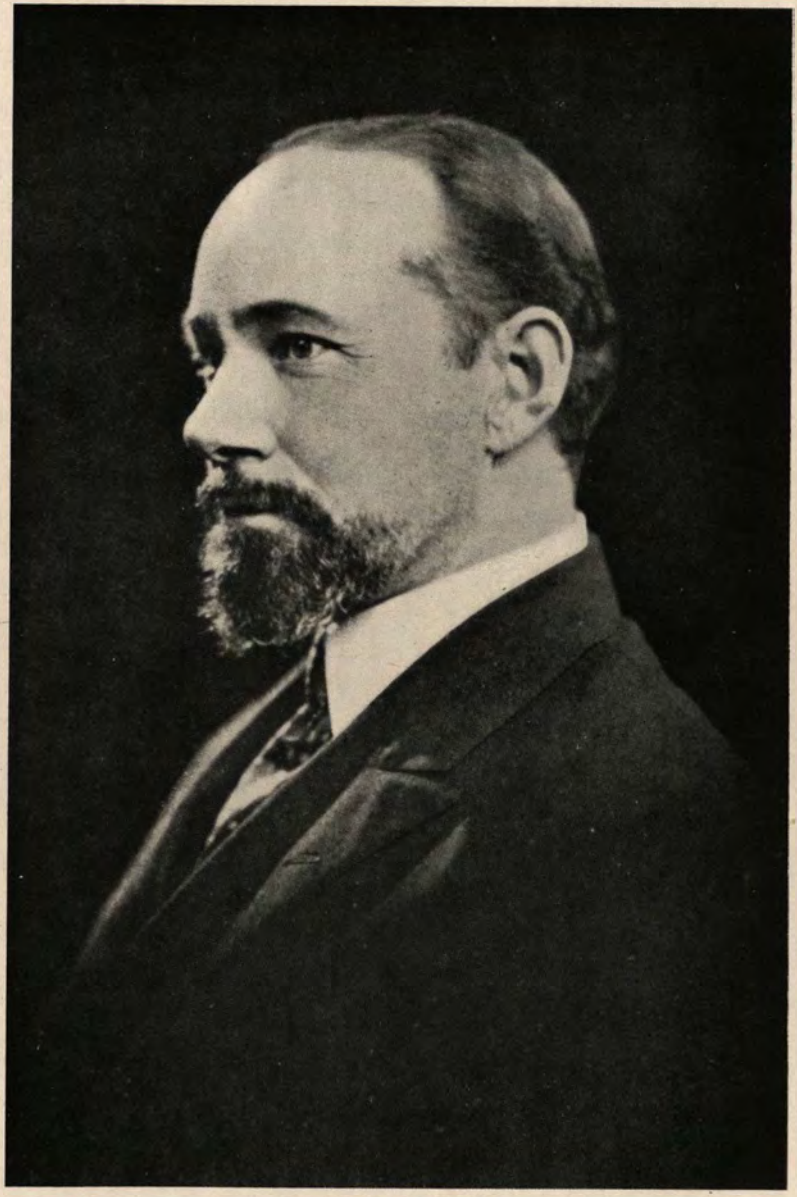
The gallant leader assures us that "exploration" is a tradition of the American Navy, and part of its training. It was the fifth venture into polar regions that he himself had led. The illustrations show some of the ships lying at anchor at the ice-wharves of the now well-known Bay of Whales. Other illustrations reveal extraordinary small lakes—open water of vivid blue and green colouring—scattered amongst barren, rocky hills, in an area estimated to cover 500 square miles, with no ice in evidence. This, inland from the ice-infested coast. One of these open water expanses was reported as large enough for a seaplane to alight upon.

The ships of this remarkable expedition fared better in facing the dreaded pack than any of their predecessors, because a powerful ice-breaking vessel led the attack, and opened up safe channels for the following craft. These included even a submarine, the first of its kind to venture within the Antarctic Circle.

As mentioned earlier, one of the convoy was an aircraft carrier. This large and vulnerable ship could not be risked in the pack, but from its seaward position, north of the forbidding ice, the six large Douglas planes were eventually launched from the aircraft's flight deck to carry out the planned extensive aerial survey of the continental terrain.

The mileage covered by each plane from the ship's deck to the prepared airfield on the barrier, in the vicinity of Little America, inland from the Bay of Whales, was approximately 600 miles.

Not only did Admiral Byrd succeed in a second flight to the South Pole, but on this occasion the plane penetrated many air miles "into the mystery land beyond the Pole".



SIR HUBERT WILKINS

Photo: Lafayette Ltd

One thoughtful gesture of this American must be recorded. When over the Pole position, he dropped a cardboard box containing "multicoloured little flags of the United Nations, in dedication of this goal of so much selfless heroism of the Norwegians and the British, to the ideal of brotherhood among peoples".

It would appear that the stay in the Antarctic of this by far the largest and best equipped expedition, extended only over the polar summer months.

As regards the "tangible treasures" of Antarctica, the several polar journeys already recorded have established the fact that coal- and gold-bearing stone have been found. It will be remembered that Dr Edward Wilson, in that last fatal journey back from the Pole early in 1912, carried to the end his mineral specimens, notwithstanding the additional weight on the sledge the distressed men had to pull. Even if the Antarctic regions held great mineral wealth, to locate it and mine it under the existing conditions would seem to be impossible. The distance from the marts of the world, the terrible severity of the climate, and the cost of extraction, would be fatal handicaps. Even gold at over £8 per ounce would not warrant a development policy. If the "tangible treasure" was in the nature of diamonds or uranium, it might be quite another matter.

The profitable harvest of the southern seas is in a different category. It would appear—as was remarked by J. Gordon Hayes in *The Conquest of the South Pole*—that the whaling industry has passed definitely from the Arctic to the Antarctic, and the world knows that rich harvests have been realized in the past. Therefore, under international control, whaling and sealing in extreme southern waters should prove a profitable industry for many years to come. That eventually sanatoria may be

established in the very cold but germless Antarctic terrain is said to be a possibility. However, as against material gains from the Antarctic, the rich dividends of "intangible values" transcend the material, and are indeed its real wealth and glory.* One thinks of the long list of great-hearted men of several nations, who, in the name of Science, and for its advancement, and for the honour and prestige of their peoples, have "toiled terribly", and have risked and lost life, in efforts to unravel the secrets of the once mysterious South Land. It has proved a stern training ground for the development of character. Courage, endurance, self-abnegation, mutual trust and dependence, loyalty, and glad and unselfish co-operation—such qualities have been the hall-mark of the men who have companied together in Antarctic exploration. Such qualities of human character, if practised and encouraged on the home front, would change immeasurably the very face of the world. In other words, the stern Antarctic regime has proved itself a university in the training of men in nobler ways of life, and in that harsh training has won their love and devotion. How, otherwise, can we account for the South Land's mysterious call to its favoured sons to return again and again? Shackleton, Scott, Mawson and Byrd among the captains; splendid A.B.'s like Wild, Crean and Lashly among the men, have all responded to

* Since writing the above, I am gratified to learn that the experienced Admiral Byrd is in agreement with me in stressing the "intangible values" of Antarctica. Towards the close of his long article in the *National Geographical Magazine* of October 1947 on the recent naval expedition into Antarctic waters, which he himself led, Admiral Byrd thus expresses his deepest conviction: "I dislike to think of money in connection with Antarctica. It has higher values. This continent and these seas can be looked upon as Nature's most sublime work of art. They are poetry, music, painting, architecture, and philosophy all combined. Antarctica is a sermon in ice. The vastness, clearness, whiteness, silence, the purity, the elevation above the petty quarrels and ambitions of men and nations, combine to form a majestic symbol of what man should want most, peace on earth."

that strange, but insistent call "to go back". Yes, to go back and face anew its terrors and privations. Frank Wild, for instance, like Shackleton his beloved "Boss", was a member of four expeditions with Scott and Shackleton, yet made a fifth hazardous journey with Sir Douglas Mawson into the western zone of Antarctica. He had charge of the far western party, and established his headquarters most daringly on an immense glacier tongue of ice that dropped from the ice-covered mainland to the ice-covered sea.

The fine lines of R. W. Service seem to furnish the only clue—that, and the strong will to uphold national honour, and "play the man :

Yes, they're wanting me, they're haunting me, the awful lonely places;
They're whining, and they're whimpering, as if each had a soul;
They're calling from the wilderness, the vast and God-like spaces,
The stark and sullen solitudes that sentinel the Pole.

And now I must write the word "Finis" to signify that my pleasant task is done. I do not claim that the result is an adequate presentation of such a big subject, but I have sought to make it as accurate as possible. In keeping to the main undertakings of the many expeditions, I have regretfully had to pass over very interesting and important, but still subsidiary, journeys of such expeditions. Nor have I covered all the available literature of Antarctica. Splendid volumes like Frank Hurley's *Argonauts of the South*, Griffith Taylor's *With Scott—The Silver Lining*, Priestley's *Antarctic Adventures*, Ponting's wonderful pictorial—*The Great White South*—are just a few of such books. But I have written, as indicated elsewhere, within a limited purpose. My thought was to make a

survey of the Antarctic saga, with its deathless deeds of men of unconquerable spirit, that might attract the attention of younger Australians, who, by reading these true and heroic stories, might be inspired and helped, even in humbler and more prosaic walks of life—to live nobly and well. After all, we have only one chance to live. Philip Bailey's inspired lines in "Festus" are worth quoting:

We live in deeds, not years; in thoughts, not breaths;
In feelings, not in figures on a dial.
We should count Time by heart-throbs. He most lives
Who thinks most—feels the noblest—acts the best.

Many of the Antarctic men were strengthened and sustained by a living Christian faith; the stories reveal that. In the phrase of the greatest Hebrew Prophet "They were kept in perfect Peace, because their minds were stayed on God," or in the inspired language of Dante, "*In la sua voluntade e nostra pace,*" translated by Mathew Arnold as "In his will is our Peace". Tennyson's great lines in the incomparable "Ode on the Death of the Duke of Wellington" are the final and uplifting word:

Not once or twice in our fair island-story
The path of duty was the way to glory:
He, that ever following her commands,
On with toil of heart and knees and hands,
Thro' the long gorge to the far light has won
His path upward, and prevail'd,
Shall find the toppling crags of Duty scaled,
Are close upon the shining table-lands
To which our God Himself is moon and sun.

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