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THE SOUTH POLAR TRAIL



JOYCE AND OSCAR AFTER THEIR NINETEEN HUNDRED MILES' MARCH :
OVER TWO HUNDRED DAYS' SLEDGING.

THE
SOUTH POLAR TRAIL

By
ERNEST E. MILLS JOYCE
(Albert Medal)

The Log of the Imperial Trans-Antarctic Expedition

With an Introduction by
HUGH ROBERT MILL, D.Sc., LL.D.

DUCKWORTH
3 Henrietta Street, London
1929

To
MY WIFE'S BEST FRIEND
MOTHER
AND TO THE MEMORY OF
THE MEN WHO DIED ON THE
SOUTH POLAR TRAIL

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PREFACE

NO account of the depôt-laying journeys of the members of the Ross Sea party of Sir Ernest Shackleton's Antarctic expedition of 1914-17 has appeared except the brief summary in *South*. The writer feels that the journey was sufficiently important to justify him in giving the following transcript from the log which he kept at the time. It shows how the appointed task was carried out according to plan, in spite of difficulties greater than had ever before been overcome.

The Introduction, from the pen of Dr. H. R. Mill, author of *The Siege of the South Pole* and the biographer of Shackleton, shows how the work of the Ross Sea Party fits into the history of Antarctic exploration.

Distances are given throughout in sea miles of 2,020 yards and temperatures on the Fahrenheit scale. The strength of the wind is estimated in miles per hour.

My warmest thanks are due to Dr. Mill for helpful suggestions in the preparation of my book.

To Lady Shackleton I am indebted for some of the photographs she kindly placed at my disposal.

To Lieut.-Colonel Sir Philip Lee Brocklehurst, Bart., one of my companions of the 1907-09 Expedition, I bestow my appreciation for the loan of many of his valuable negatives of pictures which are included in the volume.

In a brief retrospect, the following considerations present themselves.

It was owing to the breaking away of the *Aurora*, in a blizzard, from her winter quarters, that we were hampered by lack of equipment and stores. The death of the dogs on the first sledging journey left us with only five. The depôts had to be laid at intervals of one degree (60 miles) to Mt. Hope. This meant man-hauling a load of 200 lbs. per man, as six extra men's food had to be sledged in order to provision Shackleton and his party. On that their lives depended, if they crossed the Continent. Relay journeys were rendered necessary; and although Mt. Hope was only 750 miles' journey there and back, the parties were sledging for 260 days and covered a distance of 1,921 miles. Scurvy, low temperatures, snowblindness and frostbite caused untold suffering, and loss of life. We lived primitively, with such inadequate clothing that we were compelled to wear the same things until relief arrived, when we enjoyed a bath, a change, and a pipe of tobacco after being without them for two years.

E.M.J.

INTRODUCTION

THE twentieth century has seen the beginning and the culmination of Antarctic exploration by sledge travelling over the frozen surface of the sea and of the continent. The work is still in progress and the records of exploration will continue to attract the adventurously minded. Experience has made it possible for cautious men to avoid many of the hardships and most of the horrors which bore so heavily on the pioneers. No one can be justified henceforth in setting foot on Antarctica without ample supplies of suitable food and equipment, above all efficient means of transport. With these the climate and the forms of the surface may be faced without fear. Circumstances may arise, however, when transport and equipment fail through no fault of the explorer and the narrative which I now introduce to the reader tells of such a case when the best laid plans went wrong and yet the endurance of brave and devoted men won renown from apparent failure.

I disclaim any intention of standing sponsor for the author, who has made his name by his deeds, or of expressing approval or disapproval of the plan or the execution of the Imperial Trans-Antarctic Expedition one side of which he describes. I wish merely to help the reader to follow the narrative by providing an outline

of the geography of the region with which it is concerned and a key to the persons, places and gear to which frequent reference is made. In addition a few notes on the career of the author may enhance the human interest of the story which he tells so tersely.

The book consists essentially of a transcript made by Mr. Joyce himself of the log he kept during two years' sojourn in the Antarctic regions in 1915-17. The reader need not look for literary graces or journalistic effusion in this story for it is told by a man of deeds and not of words. Parts of it may perhaps be dull reading, for life during many months was monotonous in the extreme. In other passages momentous events are treated with crude brevity, for the grimness of the worst conditions can only be faintly shadowed forth. No polar explorer has ever dared to tell in print the whole blunt truth about life on the very verge of existence. Those who have not heard their story from the lips of men who have struggled on for weeks half mad and utterly exhausted with cold and hunger and exertion must call on their imagination to read between the written lines. In this book that is not difficult.

THE ANTARCTIC REGIONS

To the south of the Atlantic, the Pacific and the Indian Oceans the great Southern Ocean forms a ring of unbroken water round the world. Early voyagers reported the existence in that region of great flat icebergs often forming islands scores of miles in extent,

drifting before the prevailing winds and unlike anything encountered in the Arctic seas.

Captain James Cook sailed round the world in 1772-75 as far south as ships could go, looking for a fabled temperate southern continent, and he proved that if a continent did exist there it must lie within the Antarctic circle in a region of perpetual ice. He did not think that anyone would ever wish to go farther towards the South Pole than he did when he came within 1,200 miles of it; but in this he was wrong. In 1824 James Weddell, in a little sealing brig, discovered a sea south and a little east of South America into which he sailed to the latitude of 74° S. and found open water 950 miles from the South Pole. Nearly a hundred years later the Weddell Sea was penetrated by Bruce and Filchner, through a close pack of floating ice until it ended in a lofty coast which was traced to 78° S. or 720 miles from the Pole.

There is only one other place where the Antarctic circle has been penetrated so deeply. This is on the other side of the world, south of New Zealand. Here Sir James Clark Ross, in the British naval ships, *Erebus* and *Terror*, discovered the Ross Sea in 1841. This sea is bordered on the west by a line of lofty mountains descending steeply to a coast which after running south for 500 miles seemed to turn to the east in a wide bay, named McMurdo Bay, in 77° S. The coast continued for 50 miles to the east under the two lofty volcanic peaks named Mt. Erebus and Mt. Terror. There, at Cape Crozier, the land suddenly

gave place to a great line of perpendicular ice-cliffs more than 100 feet high, which was followed eastward for 300 miles. The Barrier, as Ross called it, was so high that nothing could be seen beyond, and so steep that he thought it could not be climbed. No one saw these regions again until 1895, and in 1898 C. E. Borchgrevink, with a British expedition in the *Southern Cross*, found that the edge of the Ice Barrier varied in height, and at one point it was so low that he laid his ship alongside and landed. He found that it stretched as a smooth undulating plain of ice far to the south. In 1901 the British National Antarctic Expedition on the *Discovery*, under Captain Robert Scott, followed the Barrier throughout its whole length eastward from Cape Crozier to the rocks of King Edward Land. McMurdo Bay was found to be an open channel 30 miles wide, renamed McMurdo Sound. As this book is concerned mainly with that locality, its features must be referred to in detail.

Mt. Erebus stands on a triangular island, of which the north-eastern side runs westward for about 50 miles from Cape Crozier to Cape Bird, and the western side runs south along McMurdo Sound for 45 miles from Cape Bird to Cape Armitage. A promontory on this coast 27 miles south of Cape Bird was named Cape Royds; 10 miles farther south a great tongue of solid ice a mile wide projects from a glacier westward for five miles into the sea; nine miles farther south another little cape, called Hut Point, juts out, and one mile beyond it Cape Armitage ends

the island at the tip of a rocky peninsula. The whole coast of Ross Island is steep and formed of precipitous rocks and impassable glaciers, so that it is impossible to travel along it ; the only way of passing from one point to another is by sea or on the sea-ice when the surface is frozen. From Cape Armitage the third or south side of Ross Island runs for 50 miles eastward to Cape Crozier, but the whole of that side is embedded in the solid ice of the Barrier. Sometimes McMurdo Sound has open water round Cape Armitage, but Pram Point, one and a half miles north-east of that Cape, is always in contact with the Barrier. Pram Point is opposite Hut Point, the two being separated by one and a half miles of steep ice-clad hills which a strong man can easily cross. The *Discovery* found winter quarters off Hut Point, where a large wooden hut was erected to accommodate the 40 men of the expedition in case the ship should be lost, but the hut was used mainly as a store-house. It was well built and did good service for 16 years.

South of Cape Armitage the edge of the Barrier is not more than 20 feet high, and from the sea-ice its surface can usually be reached by easy snow-slopes. Several small rocky islands stick up through the Barrier ice, and just beyond them, 50 miles due south of Hut Point, a long spur of land stretches out from the Western Mountains and is named Minna Bluff, or The Bluff, on account of its characteristic outline. Scott's longest journey to the south over the Barrier extended for 200 miles beyond the Bluff to a point in $82^{\circ} 17' S$. The Barrier surface was found to average

about 150 feet above sea level ; it was smooth and gently undulating for the most part, but near the islands and the cliffs of the Western Mountains it was split by crevasses of great depth, frequently covered with snow and always dangerous to cross. Journeys were also made up the valleys of the Western Mountains, which were found to buttress a great Plateau more than 8,000 feet above sea-level.

In 1908 Ernest H. Shackleton, who had been an officer on the *Discovery*, returned to McMurdo Sound with an expedition of his own in the *Nimrod*, with the intention of reaching the South Pole. The Sound was frozen over and it was impossible to reach Hut Point, so a new hut was erected at Cape Royds, and the ship was sent back to winter in New Zealand. From Cape Royds it was necessary to travel 20 miles over the sea-ice to Hut Point before getting up on to the Barrier, and the old *Discovery* hut, still in good condition, was used as a convenient halting place. Shackleton found that he could avoid the crevassed country by keeping to the east for 20 miles to a point called Corner Camp, and then travelling southward for 300 miles he discovered in $83^{\circ} 30' S.$ that the trend of the Western Mountains was no longer southward, but south-eastward across his path ; but a great glacier, which he named the Beardmore, coming down through them from the Plateau, offered a steep road to the Pole. He passed between the main range and an outlying summit, Mt. Hope, to gain access to the Glacier which led him upward to the Plateau and, holding his way southward over a featureless plain nearly 10,000 feet

above the sea, he came within 97 miles of the Pole when failure of provisions compelled him to turn and retrace the 650 miles to Hut Point.

In 1910 Captain Roald Amundsen landed at the east end of the Barrier near King Edward Land, and built a hut for wintering on the Barrier Ice. With dog-sledges and travelling on ski, he crossed the Barrier due south and, gaining the Plateau by a glacier south-east of the Beardmore, reached the South Pole on December 14th, 1911.

Meanwhile, Captain Scott, with the largest and best-equipped polar expedition which ever left British shores, proceeded in the *Terra Nova* to McMurdo Sound, which was open six miles beyond Cape Royds, and here he built a hut for wintering at a point named Cape Evans, four miles north of Glacier Tongue and 13 miles from Hut Point. Scott followed Shackleton's route to Mt. Hope with ponies for transport; then with man-hauled sledges he ascended the Beardmore Glacier and crossed the Plateau to the Pole, which was reached on January 18th, 1912. The return journey proved fatal on the Barrier to the whole polar party.

The Australian Antarctic expedition under Douglas Mawson, in 1912-14, mapped the steep coast of the Antarctic continent south of Australia from the north-western extremity of the Ross Sea nearly half-way round to the Weddell Sea.

The result of all the expeditions is to show that the heart of the Antarctic consists of a great plateau many thousand feet high in the midst of which lies the South Pole. The distance to the Pole at what is apparently

the narrowest part of the continent is 720 miles either from the Ross Sea or the Weddell Sea, the distance to the Pole and back from either side being 1,500 miles, exactly the same as the journey across from one side to the other. The southern part of the Ross Sea is covered by the great Barrier, a plain of ice nearly 150 feet above sea-level and afloat at its northern margin from which portions break off at times in slices often miles in width and many miles in length and float away as the table-shaped ice-islands of the Southern Ocean. The Barrier is not at rest, but is creeping northward under the impulsion probably of the huge glaciers which descend to it from the Plateau ; the rate of movement is about 1,500 feet a year. All round Antarctica the sea freezes in winter, though the ice may be broken up and driven seaward by furious winds even in the coldest months.

The climate of the South Polar regions is more severe than that of the North. The snow covering rarely melts anywhere south of the Antarctic Circle and where in a few places steep rock surfaces show bare from snow there is no vegetation save a few patches of mosses or lichens. As in the farthest north so in the farthest south, the summer season consists of one long day during which the sun never sets. The southern midsummer is at the end of December and the mid-winter month is June, when the night is as long as the summer day.

While the temperature on the Plateau is normally lower than that on the Barrier by some 20° or 30° F. there are no observations to show how low it falls in

winter. On the Barrier, temperature in winter may fall to -70° F., that is more than 100 degrees of frost, and even in summer it very rarely rises as high as the freezing-point though the heat from the never-setting sun strikes the face pleasantly or even, at times, oppressively. There is no rain and the snowfall is comparatively slight, but the curse of the Antarctic climate is the blizzard, a furious wind descending from the Plateau and raging on the coast below the mountains. McMurdo Sound is more subject to such winds than any other part of the Ross Sea, while out on the Barrier far from the mountains the weather as a rule is calm though very cold. There are no microbes in the air and even excessive changes of temperature do not result in chills or serious illness, the one dread disease is scurvy due to malnutrition.

The native life consists of sea-creatures only, sea-birds, typically penguins, on the shores and seals on the ice-floes and the sea-ice fringing the land. On the interior of the Barrier and of the Plateau no living thing stirs and stores of food have remained for years and may remain for centuries untouched by beasts or birds and preserved by frost from decay.

ART OF POLAR TRAVEL

Forty years ago Dr. Fridtjof Nansen introduced the method of travelling over great expanses of snow-clad country which has been developed to a high degree in successive Antarctic expeditions. Shelter is afforded by a light tent of waterproof canvas, just large enough to accommodate the travelling unit which usually con-

sists of three men, each provided with a reindeer skin sleeping-bag. The tent is supported by an internal framework of bamboos and secured by piling snow on the rim of the floor portion. The clothing consists not of furs but of warm woollen garments with an outer suit of wind-proof material. Provisions in polar conditions are always frozen and so can be packed without tins in canvas bags, each bag containing rations for three men for a week. Cooking is done on an aluminium primus stove burning paraffin, which must be started with methylated spirit, and an outer vessel used for melting snow utilizes all the surplus heat. All these things are essential; any error which may destroy tent, stove or food bags on a polar journey, is subject to the one penalty of death by cold or hunger. All food for the whole journey must be carried with the party, or stored in depôts on the route to be followed. In order to save weight in transport it is usual to leave the food and fuel necessary for the return journey in a series of depôts each containing enough to carry the party on to the next. Everything must be carried by a sledge of the lightest and strongest construction, usually about 2 feet wide and 12 feet long. Dogs are the only efficient means of hauling a sledge; ponies are far less useful and when man-hauling is necessary for any long time the strain is too heavy and great suffering is caused. A sail hoisted on a bamboo pole is of use with a following wind. All efforts to employ mechanical transport have been unavailing, though developments in this direction are sure to lead to ultimate success. Snow goggles are

essential as the glare of the sunlight on the white surface produces serious eye-trouble, culminating in the torturing inflammation known as snow blindness.

THE LIFE WORK OF THE AUTHOR

Ernest Edward Mills Joyce was the son of a sailor in the Royal Navy, whose father had also spent his life in the same Service. He was born in the Coastguard station at Bognor in Sussex, educated at the Royal Hospital School at Greenwich and entered the Navy as a boy of fifteen. He went through a thorough training in sailing ships. His first trip was to Iceland, and in H.M.S. *Cordelia* he spent some time on the fisheries and surveying the coast of Newfoundland. During the South African war he served in H.M.S. *Sybil*, a second-class cruiser, and in her he was shipwrecked in Lamberts Bay, Natal. He then landed with the Naval Brigade. In October, 1901, he was transferred to H.M.S. *Gibraltar* in Simons Bay, when the *Discovery*, under Captain Scott, called there on her voyage with the National Antarctic Expedition. A vacancy occurred in her crew, and the Admiral on the station called for a volunteer from the fleet. Out of 400 men who applied, Joyce, then twenty-five years, was selected, his commanding officer giving him a strong recommendation. For the next three years Joyce was on the *Discovery*, where he spent two winters frozen in off Hut Point in McMurdo Sound and saw a great deal of service in sledging parties ashore. Experience had to be bought dearly at the expense of many frost-bites, but he learned his lesson thoroughly,

and his efficiency impressed Lieutenant E. H. Shackleton under whom he made several land journeys.

He was promoted to petty-officer on the return of the expedition and, specializing in gunnery, was for some time with the experimental staff at Whale Island, Portsmouth. He left the Navy in 1905 for other employment, but after a year he returned to the service. Early in 1907 Shackleton, who had planned an Antarctic expedition of his own, was looking out of his office window in Lower Regent Street, when he recognized Joyce on the top of a passing omnibus. He sent his secretary in pursuit and then and there offered his old sledging companion an important position on the new *Nimrod* expedition, his job being the care of provisions and dogs. Joyce was on leave, after which he was proceeding to Gibraltar in charge of Boom Defence ; from there he left the Navy again to join Shackleton. To his disappointment after wintering at Cape Royds, he was not taken on the journey to the South Pole ; but Shackleton had decided that only to him could he confide the task of laying out a depôt of provisions which he should pick up off the Bluff as he was returning. Joyce accomplished the work after the return of the ship, travelling with dog-sledges and four men, including Aeneas Mackintosh, first officer of the *Nimrod*. Two journeys were necessary, and the depôt was laid out on the Barrier, 14 miles east of Minna Bluff. When Shackleton, whose return from near the Pole was long overdue, came to the neighbourhood of the depôt he had finished all his food and was some miles out of his

course, but by an almost incredible coincidence the signal flag on the depôt was raised into sight by a mirage, just in time to save the returning party.

During the winter at Cape Royds Joyce distinguished himself as a printer, taking a leading share in the type-setting of *Aurora Australis*, the only book ever printed and bound in Antarctica, now naturally an extremely rare volume.

On the return of the expedition Joyce had charge of the difficult task of getting the *Nimrod* up the Thames to Temple Pier where he superintended an exhibition to the public of the gear and scientific collections in aid of sailors' charities.

Joyce's next polar work was the selection of 38 dogs in Copenhagen for Dr. Douglas Mawson's Australian Antarctic Expedition and the conveyance of them to England. He put them on board the *Aurora* at Tasmania in December, 1911.

For the next few years he was an officer of the Sydney Harbour Trust, Australia, and he was so employed in 1914 when he received an invitation from Sir Ernest Shackleton to join the Ross Sea Party of the Imperial Trans-Atlantic Expedition the proceedings of which he has set forth in this book.

The expedition was planned by Sir Ernest Shackleton for the purpose of crossing the unknown interior of the Antarctic continent. He started in the *Endurance* with the object of landing in the extreme south of the Weddell Sea and marching thence 720 miles to the South Pole with five men and provisions sufficient to carry him beyond to 80° S. or in any case to the

end of the Beardmore Glacier by which he had ascended to the great plateau in 1908. He arranged that the Ross Sea Party should proceed simultaneously in the *Aurora* under the command of Captain Aeneas Mackintosh to McMurdo Sound whence Joyce in charge of sledging operations would lay out a series of depôts of food and fuel at intervals of about 60 miles apart, the farthest one being placed on Mt. Hope where the Beardmore Glacier meets the Barrier.

The only part of this ambitious scheme which was carried out as planned was the depôt-laying from the Ross Sea to the Beardmore Glacier. The *Endurance* was caught in the ice in the Weddell Sea on January 19th, 1915, before the intended landing-place was reached, and drifted northwards to destruction. The *Aurora*, on the other side of the world, by a tragic coincidence, when frozen in for the winter in May, 1915, after landing her party, but before landing their winter stores, was also blown away northward, though she escaped after nearly a year of helpless drifting.

It is another story how Shackleton shepherded the company of the *Endurance* to safety and brought them home without losing a man.

We are concerned here with the doings of the Ross Sea party, cut off from the world, knowing nothing of the fate of either ship. Captain Mackintosh left the *Aurora* with his first officer in order to see to the laying of the depôts in person. He had courage of a high order, fiery enthusiasm and absolute devotion to his chief ; but he lacked the experience of Joyce in sledge-

travelling and his impetuous temperament was always for advance even when caution called for delay. Naturally there was friction which was only eased by the separation of the party into two independent groups for the sledge journeys. The work as detailed in the narrative which follows fell into three parts, the first being the autumn sledging during which depôts were laid out at the Bluff and in 80° S. in case Shackleton should by extreme good fortune make the trans-continental journey early in 1915. The second part consisted in spring journeys in 1915-16 to reinforce the great depôt at the Bluff with stores to be carried southward in the third and greatest journey, that of 1916, to lay depôts at 81° , 82° , and on Mt. Hope at the Beardmore Glacier where it was possible they might meet Shackleton coming from the other side. Before the goal was reached scurvy had disabled Captain Mackintosh and another member of his party, the Rev. A. P. Spencer-Smith, and from this time onward Joyce took over the sole command. His log tells of the long illness and death of Spencer-Smith, one of the finest spirits who ever joined in exploration, of his carrying the scurvy-stricken Mackintosh and Hayward back to safety and health and of their tragic death in a bold attempt to reach Cape Evans over the still insecure sea-ice. At last, in the early part of 1917, Shackleton appeared, not from the south but from the north, not as the leader of the expedition but as a passenger in his own ship the *Aurora*. The circumstances are explained in *The Life of Sir Ernest Shackleton* and need not be recalled here, where the story ends

appropriately with Shackleton's letter to Joyce in appreciation of duty done.

Strung out on the Barrier the chain of depôts still stretches for 300 miles to Mt. Hope, holding their imperishable food rations perhaps to save the lives of future explorers, perhaps only as a memorial unseen by man, to the faithfulness of the men who did not fail.

HUGH ROBERT MILL.

SIR ERNEST SHACKLETON'S LETTER OF
APPOINTMENT

IMPERIAL TRANS-ANTARCTIC EXPEDITION

4 New Burlington Street,
Regent Street,
London, W.
22-2-14.

ERNEST MILLS JOYCE,
Sydney Harbour Trust, Circular Quay,
Sydney, Australia.

MY DEAR JOYCE,

Following my cablegram, I will take you on the expedition subject to certain conditions.

I will now enumerate them and will explain to you the exact position of affairs at the present time.

I propose to have the expedition divided into 2 sections :

1. The Weddell Sea Section.
2. The Ross Sea Section.

The party for the Weddell Sea will include the Trans-Continental party.

The Ross Sea section will consist of a party of six men, who will lay a depot at the foot of the Beardmore Glacier for the Trans-Continental party and will possibly winter in either our old hut at Cape Royds or Captain Scott's hut at Cape Evans. This programme

can only be adopted if the full amount of money necessary for the expedition is forthcoming. In the event of that not being so there will be but one ship and that will be the Weddell Sea ship and one small party for the Trans-Continental journey. I do not anticipate the latter alternative, but if that occurs and I will know shortly then I can promise you a position on that party.

From the foregoing remarks you can see at the present time the uncertainty of the programme.

The following are the conditions which affect your good self, if the Ross Sea party eventuates.

1. You will be attached to the Ross Sea party in charge of all equipment, store, sledges, clothing, dogs, etc.

You will lay the dépôts on the same course as in the previous expeditions.

I wish you to make a good Zoological collection as in the previous expedition.

The Ross Sea section of the expedition will leave the Australian port about the 1st of November and land the shore party as early as possible.

This party will proceed under your directions to lay out a dépôt at the foot of Beardmore Glacier, returning to the Hut, and will either be a part of the complement of the ship, if sea exploration is done, or you will if too late for the ship remain at winter quarters until the following year, supplementing this work by again proceeding to the Beardmore Glacier and perhaps ascending the same on the look out for the Southern party. The work to be done in the winter quarters, will be similar to that of previous expeditions.

2. Your salary will be £350 per annum and a substantial bonus if the expedition is successful. You will also receive extra remuneration for the Zoological collection. Your salary will start as soon as you receive a cable from me.

3. You would join the ship in Melbourne or Sydney, as she will be out there, and if necessary I may send you from Sydney to the North-West coast of America to pick up your dogs.

4. The usual agreement would also be entered into between you and myself as to the matter of secrecy as regards the work of the Expedition.

Should the Ross Sea party not go I will make arrangements to include you in the Weddell Sea party, but I shall choose no one for the Trans-Continental party until the time arrives. This will mean your coming back to England.

Well, Joyce old chap, on receipt of this and thinking the matter over cable me. If there is one man I can trust to lay the depôts it is your good self—that was proved at a critical time in 1908 when I returned from the long trek South.

Your old shipmate,

E. H. SHACKLETON.

CABLEGRAM DATED MARCH, 1914

JOYCE, Sydney,

Your services will be required the middle of October. You will be in charge of dog, stores and sledging equipment Ross Sea side. Mackintosh in command of ship. Await letter.

SHACKLETON.

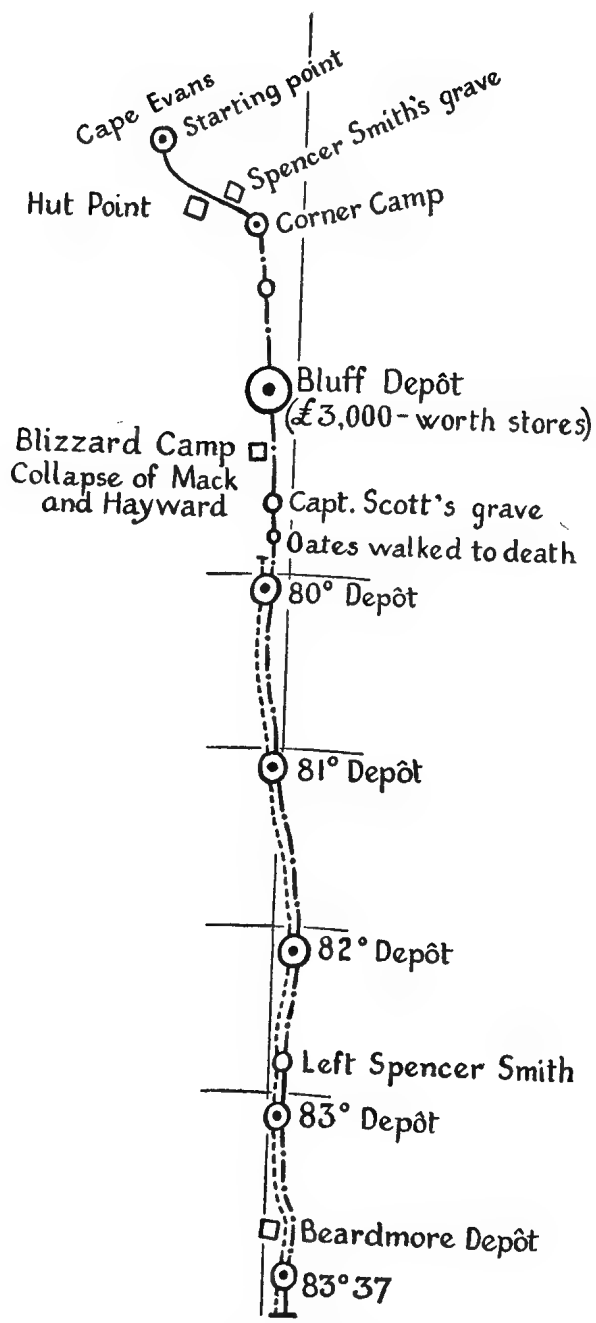


CHART OF THE JOURNEY.

CHAPTER I

FITTING OUT THE "AURORA"

The ship in Sydney—Help of the Australian Government—Stowing the stores—Officers and Staff—Good-bye to Australian friends.

WHEN Sir Ernest wrote the foregoing letter little did he think that the Ross Sea party would have to contend and overcome the great difficulties which the following pages depict.

Hitherto, very little has been published of the doings of the little band of explorers of the Ross Sea, 1914-17. The breaking away of the S.S. "Aurora," most likely drifting into the unknown, deprived us of supplies and clothing. Our plight became desperate; however we determined not to fail Shackleton, who on his anticipated journey across the Pole from the Weddell Sea, would rely on the depôts which we were to establish. The task was completed despite loss of life, while the great hardships encountered from blizzards, snow-blindness, short rations, scurvy, etc., with the temperature as low as 60° below zero, were almost beyond human endurance.

It is very sad to relate that Shackleton was doomed not to attain his object of crossing the Antarctic Continent, thereby linking up with us on our hazardous trail.

On the arrival of Capt. Mackintosh in Sydney, we

discussed generally the plans of the Expedition, which, to my surprise, had been altered since my last letter from Sir Ernest. Possibly the ship may winter in the Antarctic. The equipment, or part of it, was being shipped to Hobart from England in R.M.S. *Ionic*, some of the staff and dogs travelling in the same ship. The funds were short, the ship had to be docked and overhauled, and a considerable amount of stores had to be purchased in Sydney, in fact a great deal had to be accomplished with very little money.

The S.S. *Aurora* had already been purchased at a low figure from Sir Douglas Mawson ; she was lying in Hobart, Tasmania, where she had been since the return of the Mawson Expedition early in 1914. It was essential that Capt. Mackintosh should interview the different authorities regarding the bringing of the *Aurora* to Sydney for docking and overhauling.

Through the instrumentality of Professor T. W. Edgeworth David, F.R.S., now Professor Sir T. W. Edgeworth David, the State and Federal Government of Australia graciously gave every assistance, being very sympathetic towards the expedition.

Sir Edgeworth worked with great spirit to get the Ross Sea Expedition away. If he had been leader he could not have experienced a more anxious time. Funds were required, larger supplies needed, even sledges had to be made. It was owing to his efforts that the *Aurora* left Sydney.

Exploration is observed with a keen eye in the Southern Dominions. The people of Australia and New Zealand shower hospitality on members of the



PROFESSOR SIR EDGEWORTH DAVID.



RICHARDS.



SIR DOUGLAS MAWSON



THE AUTHOR IN KIT

different expeditions. Their financial help and personal assistance to men working in the cause of science is more than appreciated, especially is this appreciation worthy of note when funds are at a low ebb and money is required to further the great work.

When Sir Ernest Shackleton left New Zealand on the *Nimrod* in 1908, amongst the staff were two Australian scientists, Professor T. W. Edgeworth David, Professor of Geology, Sydney University, and Dr. Douglas Mawson, Lecturer in Mineralogy and Petrology, Adelaide University.

The Professor led the first party to the summit of Mount Erebus, 13,300 feet, and his great sledge journey of 1,200 miles, discovering the South Magnetic Pole, was a wonderful feat. Dr. Douglas Mawson, a former pupil of the Professor's, was his right hand man on both journeys.

In 1911 Dr. Mawson led an expedition south, which was typical of Australia and her spirit of idealism. For the successful work accomplished he received a knighthood.

"AURORA"

Under the command of Captain Mackintosh, who had a scratch crew, the *Aurora* reached Sydney from Hobart; she was immediately taken in hand by the dockyard authorities at Cockatoo Island, which is under the control of the Commonwealth Government.

She remained there throughout November and beginning of December during her overhaul.

The *Aurora* was built at Dundee in the early

seventies for the Newfoundland Sealing Fleet. She is similar in all respects to the *Terra Nova*, the well-known Polar ship of Captain Scott's last expedition, and specially constructed for the strenuous work of the ice regions. She is barquentine rigged, compound engines and single boiler : the engines situated aft, 98 horse power, speed six to eight knots. Length 165 feet, breadth 30 feet, depth 18 feet. Registered tonnage 386, built of greenheart and oak, the bow fashioned in cutaway lines, a mass of solid wood, armoured with steel plates. The heavy side frames were braced and stiffened by two tiers of horizontal oak beams, upon which were built the 'tween decks and main deck ; three bulkheads isolated the fore peak, the main hold, the engine-room and the after living quarters respectively.

A hull of such strength would resist a heavy strain, which was proved a few months later when she was beset in the pack ice for ten months.

Between the engine-room bulkhead and the chain and sail locker was a spacious hold, six large steel tanks built into the bottom of the hold served for the storage of fresh water, and at any time when empty could be filled with sea water for ballast.

On the deck, just forward of the main hatch, is a deckhouse comprising cook's galley, steward's pantry and two laboratories ; still further forward was a lamp-room. A lofty fo'c'sle head gave much accommodation for carpenter's and other stores.

Below it a capacious fo'c'sle served as quarters for a crew of 16 men.

Aft the chart room, captain's cabin and dark room, for photographic work ; this formed a block leading up to the bridge, situated immediately in front of the funnel. Further aft, behind the engine room and below the poop deck, was the wardroom, a central space 16 by 8 feet, filled by the dining-table and surrounded by cabins with bunks for twenty persons.

The majority of the staff reached Sydney from England on November 6th, 1914, travelling in R.M.S. *Ionic* from London to Hobart.

The party consisted of Messrs J. R. Stenhouse (Chief Officer), the Padre, A. P. Spencer-Smith, J.L. Cope, E. Wild, A. H. Ninnis, A. Stevens, — Mason, C. C. Manger, A. H. Larkman, V. Hayward.

Twenty-six dogs and 80 tons of stores were landed at Hobart, the dogs being taken to the Quarantine Station at Taroon Bay, some miles out of Hobart, in readiness for the *Aurora* on her arrival. Messrs. Wild and Ninnis were left in charge of them, the remainder of the personnel transhipped to Sydney.

Towards the end of December the staff was increased by five more members whose names are as follows : — Thompson (Second Officer), W. R. Richards, A. Keith Jack, L. A. Hooke (wireless), I. O. Gaze and C. A. Donnelly, engineers, the two former scientists and representatives of Australia, the complement being now up to its full strength—28 all told.

All hands are now employed in their own particular spheres, the scientific staff busy assembling their scientific gear, the officers and crew working on board the ship. After she had been through extensive

repairs and alterations, at great expense to the Australian Government, the *Aurora* went through her steam trials, compasses adjusted and found satisfactory, the second week in December.

The Sydney Harbour Trust extended to us every facility, and gave all possible assistance to the Expedition for which we were very grateful.

The loading of an exploring ship is not a usual procedure. The work of preparation for the final departure made rapid progress to completion.

Before long we were anchored off Neutral Bay, officers and men bidding their last farewells to the gallant and hospitable Australians.

Anchor was weighed at 2.30 p.m. on December 15th, the weather fine. Steamed down the Harbour following a memorable sojourn amongst a people of sunshine, mirth and hospitality.

With the hooting of the sirens from the fleet of ferry-steamers, radiating from the city's centre to the distant suburbs, and the ships at their buoys, cheer upon cheer was showered on us.

Our memories will go back to the pleasant time you have given us. "Good-bye, Sydney."

As the good old chanty goes :

"Our anchor we'll weigh, and our sails we'll set,
Good-bye, fare-ye-well!
Good-bye, fare-ye-well!

The friends we are leaving, we leave with regret.
Hurrah! my boys, we're southward bound!"

CHAPTER II

FROM SYDNEY TO MCMURDO SOUND

15th December, 1914—20th January, 1915

Arrival at Hobart—The dogs embark—Macquarie Island and its memories—Getting through the pack-ice—A cheerful crew—A few hours on land at Cape Crozier—Reach McMurdo Sound—Pass Cape Royds—Aground off Cape Evans—Visit Hut Point—Find old stores in good condition.

THE distance from Sydney to Hobart is 623 miles. Rough weather was soon encountered, the passage providing excellent training to the members unaccustomed to sea life.

Beyond the fact that Kavanagh, one of the crew, harpooned a porpoise, the run across was uneventful. We passed through the heads in the early hours of the morning of December 21st. From the western shore of the broad estuary of the Derwent, 12 miles from the lighthouse at the entrance, rises the city of Hobart, the capital of Tasmania, having as a background Mount Wellington, rising to a height of 4,166 feet above sea level, while the Mount Nelson range hems in the city on the western side.

The shore line is broken by a succession of bays, inlets and headlands. A beautifully clear atmosphere ; a panorama of green fields and sombre bush, of wooded slopes, orchards and shrubberies ; a busy commercial centre within a stone's throw of Nature's charms ;

ship, steamers and yachts studding placid waters, and above all Mount Wellington, towering skyward in solitary grandeur—these are the things which make Hobart unique.

We dropped anchor at Hobart at 6.30 a.m. on December 21st, 1914. Several New Zealand troopships steamed close to us. We exchanged pleasantries.

A number of us went on shore in a steam-launch. Hayward and I drove out to the Quarantine Station at Tarooma, a distance of about 10 miles, where Wild and Ninnis were expecting us ; they had sighted the ship from the station. I examined the dogs and found them in excellent condition. They appear to be a splendid sample to perform the duties of hard sledging.

On returning to the ship at 10.30 p.m. we found our English mail awaiting us. Many of my old acquaintances formed in my previous visit in 1911, were also there to greet me.

December 22nd, my birthday. The *Aurora* went alongside the wharf and at once started taking in stores.

During the loading an invitation came from Government House, which the majority of us were pleased to accept. Those who remained worked the cargo till nine o'clock, when Hayward, Roberts and myself went on shore to dinner, spending a jovial evening with my Tasmanian friends of long standing.

On December 23rd, the Governor, Sir William Macartney, and Lady Macartney paid the ship a visit. Lady Macartney, who is a sister of the late Captain Scott, presented the ship with Captain Scott's portrait.



N.S.W. Government Photo

THE SPIT, MIDDLE HARBOUR, SYDNEY.



SEA ELEPHANT MACQUARIE ISLAND.

The last time I had the pleasure of meeting the Governor was in 1904, when he took passage from Portsmouth to London in the *Discovery*, on our return from the Antarctic.

We worked steadily all that day and night, and at 4 p.m. next day finished our loading.

The generosity of the people of "down under" was again displayed with a handsome gift of 50 sheep and fruit in abundance.

Again I say, words cannot express gratitude for kindness shown to us.

At 5.30 p.m. the hawsers were cast off, the first turn of the screw not only paid all debts, as the sailors say, but was the beginning of roars of cheering from the thousands of citizens who lined the jetties. These farewells are more than impressive, they reach the heart's core.

Proceeding down the harbour we dropped anchor off the Quarantine Station, Taroona, shipping our dogs from there.

Being Christmas Eve, our celebrations were of a hearty nature.

Christmas Day. Was called by the officer on watch at 4 a.m., a boat waiting alongside to take me to the Quarantine Station; we pulled in and found Ninnis and Wild waiting with 18 dogs—Canadian huskies. Then came some sport, the dogs refusing to stay in the boat; the boat's crew were rather afraid of them at first. When one realizes the average weight of the dogs was over 80 pounds, and some of them with the playful nature of the wolf, showing the teeth when

grasped, it was sufficient to scare one not experienced with dogs of this breed. They required careful handling and much patience ; the last one to be put on board was "Oscar"—"the king of the pack"—his weight being about 112 pounds.

Eventually we arrived alongside the ship ; it was another repetition of man versus dog to hoist them on board.

The boat hoisted, the anchor weighed, everything secured for sea, and once more under way. Southward bound at last. The weather perfect. Being Christmas Day, the Rev. A. P. Spencer-Smith held service. In the evening had a very enjoyable dinner and music.

Our first call will be Macquarie Island, where we are landing stores for the party left there under a Mr. Tullock, a meteorologist of the Commonwealth Government.

On the 26th all hands turned to lashing all spare gear. The barometer falling and the wind and sea rising ; those not familiar with sea life were feeling the effects of dining unwisely the previous evening, Christmas Day. Several days elapsed before they found their appetites once again.

On December 30th at 3 a.m. we arrived off Macquarie Island. The wind was blowing half a gale, moderated later, dropped anchor, lowered the boats and proceeded to land stores for the meteorological station, which was placed here by the Mawson Expedition in 1911.

This station forms an important link between



'AURORA.'



WAKE OF SHIP THROUGH PACK ICE.

Australasia and Antarctica ; it is situated in 55° south latitude. It was discovered in 1810 by Captain Hasselborough in the sealer *Perseverance*, of Sydney, New South Wales, and was named Macquarie Island after the Governor of New South Wales.

My first visit here was in the *Discovery* in 1901, under Captain Scott. When we landed to investigate the Island and to collect specimens. We were compelled to push our boat through heavy serpentine kelp-weed to reach the shore.

On landing an unexpected adventure awaited us. We were confronted with a huge animal about 20 feet in length, weighing about three tons ; it was standing on its flippers, its mouth wide open, spluttering, bellowing and grunting ; Captain Scott shouted, "Bring the gun." This was our first introduction to the seal family; at that moment they appeared to us ferocious and dangerous, later we found them to be of a friendly nature, so much so, one was able to shake them by their flipper. Afterwards we had many a hearty laugh over this encounter. Capt. Scott exclaimed, "Evans and Joyce, you had better kill and skin this fellow for our collection, while we ramble around the island." I said to Evans, "What do you know about this job?" He replied, "Rabbits are about my limit." When Capt. Scott returned, we were still occupied on the work, although many hours had elapsed since their departure. We were smothered up to our neck in blood and grease. Dr. Wilson, our zoologist, who was of the party, said, "Not finished yet, boys?" set to, and gave us a helping hand. I think

the skin is now amongst the Antarctic collection of the Natural History Museum. Before many months had elapsed, and we were in the Antarctic regions, five minutes was all that was required to kill a seal and flinch it.

As all the world knows, Capt. Scott, Dr. E. A. Wilson, Petty Officer Evans, the three names mentioned above, died on their return journey, after reaching the South Pole in 1912.

Capt. Mackintosh and a party of us landed with stores. We were greeted by Mr. Tullock, the meteorologist—what a life of loneliness. The wireless is a blessing for these lonely outposts. Whilst the hands are employed with the landing of provisions, etc., I am engaged in killing seals for dog food, to last until we enter the pack ice, where we are bound to meet a number of seals basking in the sun. The liver, heart and kidneys are a delicacy for the table. At first it is difficult to persuade one unaccustomed that seal and penguin meat can be made appetizing ; but seal to the palate is similar to beef, and penguin breasts compare favourably with wild duck.

On exploring expeditions it is invariably much to the advantage of everyone concerned for health's sake to live on as much fresh food as possible. I obtained a good supply of penguins for the larder.

What an ideal island for a zoologist, every kind of Antarctic bird, seals, sea elephants, penguins (except the Emperor) in their hundreds of thousands.

On December 31st, New Year's Eve. Resumed work landing stores from daybreak, finished in the



OUR FIRST ICE FLD.



BACK SH.

afternoon. The last letters were written to wives and sweethearts, Mr. Tullock taking them on shore. Some months later they were posted in civilization. We wished the Macquarie Islanders good-bye. Weighed anchor and proceeded to the Great White South.

The last day of the old year, a fitting occasion to splice the main brace. The men are an excellent crowd, full of life and jollification. They richly deserve their extra tot of rum.

New Year's Day, 1915, greeted us with fine weather. Our afterguard have been through their sea-training. They compare very favourably with the others when the tossing of the ship in a heavy lurch calls for their sea legs. Three watches are the order of the day. The scientists are now very adept. One would think, when watching them shifting coal, or applying themselves to any necessary work on the ship, that they were accustomed to doing such things all their lives.

This is the spirit required to make an expedition successful. I have seen the scientists enter the ward-room soaked to the skin; one wag would turn round and sing: "Why did I leave my little back room in Bloomsbury?"

Then again, when the ship had given an extra lurch and shipped a big sea, one of the scientists would find himself in the lee scuppers; a sailor remarking, "Look 'ere, sir; who was that bloke who wrote 'Life on the ocean wave?' did the b—— ever go to sea?" Sometimes the man at the wheel is having a dream of

home, luffing the ship up in the wind suddenly, shipping some tons of the briny. "Who the H—— is at the wheel?" is the next exclamation, whilst those who are the recipients of the deluge swear vengeance.

We are making good progress, all sails being set. Although the seas are very heavy, the *Aurora* is like a duck on the water. Several icebergs were sighted on the morning of the 4th.

Shortly after dinner, Stenhouse, who was on watch, reported land off the port beam. This caused much excitement, as there was no land marked on the chart. Altering our course for the purpose of closer observation, the supposed land turned out to be an enormous iceberg (with three peaks) rising to about 280 feet in height, and several miles in length; the shadows falling creating the appearance of land.

One can understand the old-time sealers and whalers reporting land when these bergs cast shadows of such a deceptive nature.

Latitude $62^{\circ} 40' S.$, Longitude $169^{\circ} 58' E.$

The sunshiny day makes the dogs very frisky. I have them out of their kennels on every possible occasion to bask in the sun.

January 5th. Snowing hard, extremely cold. Whales disporting themselves everywhere. Passed through the advanced guard of pack ice in Latitude $64^{\circ} 27' S.$

Through driving sleet and boisterous seas the sails were furled. The ship washing down fore and aft. The dogs looked miserable, drenched through. I gave



CLIFF BERG.

them a hot meal of seal meat. The galley being awash made things difficult for the cook, but a tot of rum however oils the wheels, with the result my big dog pot is never in the way.

January 6th. After the buffeting of yesterday, the day is calm. The atmosphere warmer. I have the morning watch, four to eight. On fine days I take the dogs out of their kennels and after exercising them tie them up around the ship. They are always in a fighting mood, I foresee trouble ahead, when enemies come together; will have to keep them apart. All the sheep were killed to-day and hung in the rigging, the temperature being about refrigerating point.

The crew are fine fellows, the more difficult the work the more cheerful they are. The Chief Officer, Mr. Stenhouse, is glowing in his appreciation of them. A happy crew is what is required in the difficult times on a Polar Expedition; we seem to be very fortunate in that respect.

January 7th. Sighted Mt. Sabine, Admiralty Range Victoria Land, 70 to 80 miles off our starboard beam. This mountain was discovered by Sir James Clarke Ross in 1842. The Ross Sea, where we are now, is named after him.

There are many hundreds of whales blowing right ahead, sometimes they venture in close vicinity to the ship. What a sea for whaling, they seem to be trekking to the east. The atmosphere is congenial, the sea calm. All the day we have been running down the Admiralty Range, delicately tinted clouds sweep

the surrounding mountains. The snow with the sun shining upon it, glistens in all its glory, while the scene inspires one to face with courage the solitude and vastness of the Polar Regions.

January 8th. The sea dead calm. Coulman Island plainly visible about 100 miles off our starboard beam. Large schools of whales spouting here, there and everywhere.

All hands employed getting up stores in readiness to land at Cape Crozier, where it is proposed to winter a party under Dr. Cope, to study the habits of the Emperor penguins. These birds breed in the depth of winter.

A party under Dr. Wilson sledged there in 1902 from Hut Point, and also another party under Dr. Wilson visited there in 1911.

These parties investigated under extreme temperatures.

We are indeed fortunate not to have encountered the thick pack ice and the progress of the ship has not been delayed.

We held a meeting in regard to sledging arrangements previous to which Mackintosh and I had a chat regarding same.

Parties were detailed off and will proceed as follows : First sledge, Gaze, Jack and myself ; second sledge, Mackintosh, the Padre and Wild ; third sledge, Cope, Ninnis, Hooke, with the motor-sledge ; fourth sledge, Stevens, Richards and Hayward. These arrangements were open to a degree of alterations later.



POINTED BERG.

My party is intended to start away in the lead and break the trail, the others following in the track, according to dates previously arranged.

The object of the first journey is to lay depôts as far south as possible during the season. How far these plans eventuated will follow later.

From now on, all hands will be employed in sledging preparations, which includes the weighing and bagging of provisions.

January 9th. Snow fell throughout the morning. About noon the weather cleared, giving us a fine view of Franklin and Beaufort Islands off our starboard beam, a little later Mount Erebus, 13,300 feet, Mt. Terror and Mt. Terra Nova loomed in the distance. We were very fortunate in witnessing an eruption from the former. A large volume of steam was thrown up to a great height, with the sun shining upon it made a wonderful picture.

At 6 p.m. we stood off Cape Crozier, where the Great Ice Barrier meets the land. A whaler was lowered, loaded with stores and portions of the small hut to be erected. Our desire was to seek a suitable landing-place. To scale the steep ice cliffs we had to cut steps up the ice-slope to assist us. Stenhouse and I walked along the cliff and investigated for a likely spot to erect the hut, and also to find any trace of the Emperor penguin rookery. In the meantime the boat was ordered to return to the ship and report to the skipper the conditions and that Stenhouse and I were scouting. Stenhouse was delighted with his first landing on "Antarctica." It is truly fascinating to

the uninitiated, and gratifying to an old penguin like myself to share in his enthusiasm. Whilst the *Aurora* was cruising about, the Great Ice Barrier loomed ahead, and owing to a mist arising and the atmosphere thick, the look-out man failed to observe the Barrier. The telegraph was put full speed astern, but before this evolution was carried out, a collision occurred, smashing the jib boom, and filling the fo'c'stle head with tons of ice. Many willing hands soon rectified that which might have proved a tragedy.

In the meantime Stenhouse and I returned to the ship and reported there was no suitable place to erect a hut. This was abandoned until later.

Surrounded by numerous icebergs, we made for McMurdo Sound. ("Spliced the Main Brace.")

January 10th. At 2 a.m. we came up against the bay ice ; our ice anchors were made fast. One likens this calm to a ship being in dry dock. We thoroughly appreciate the day of rest that Sunday bestows upon us. After breakfast the majority of the party were soon over the side, anxious to learn the noble game of ski-ing; from a distant point of view they appear similar to penguins disporting themselves on the ice-floe.

My luck enriched the larder to the extent of about twenty skua gulls.

We are now in McMurdo Sound, about 20 miles from Cape Evans, where it is proposed to make our main base. All land is showing up around us, the weather being fine and clear. To the east is Cape Royds, where we wintered in 1908 in the Shackleton



SHACKLETON'S HUT, CAPE ROYDS. 1907.



CAPE ROYDS. INACCESSIBLE ISLAND DISTANT.



STORES. CAPE ROYDS.

Expedition. To the south, Castle Rock, the great old landmark which cheers one when returning from southern journeys, Harbour Heights and Observation Hill, between which we were frozen in for two years in the *Discovery*, 1902-4. The western mountains are plainly visible, and the sun shining on the glaciers creates a magnificent sight.

The next day ice anchors still out, no change in the ice conditions. Hands busily engaged in making or trying to make canvas boots, for the purpose of protecting the fur boots (finneskoes), our supply being somewhat limited ; also no ski boots being on board the ship. I hope to interview the individuals one of these days who were responsible for the supply of equipment for the Ross Sea. I was led to believe all sledging equipment, including fur boots, Burberrys, Jaeger clothing, etc., was shipped from London to Hobart. When the time came to serve out equipment for sledging, to my astonishment there was only sufficient for 10 men instead of 28. This being my department and I responsible for it, I am somewhat perturbed.

At 8 p.m. we are in open water, made fast again about 10 p.m., advancing about one mile nearer Cape Evans.

Seal meat varied with penguin and skua gull have become the fancy of many, if not all the personnel. This diet is conducive to good health and proves its worth, all hands displaying a cheery spirit.

January 12th. Still fast in the pack ice, snowing and extremely cold.

January 13th. Steamed 15 miles towards Cape Evans, all the pack going out up to this point.

January 14th. Went alongside a huge berg (all icebergs being fresh water), to fill our water tanks : the ice is placed in a steam tank, through which runs a coil of steam pipes, which melts the ice ; this evolution takes three or four hours. Spencer Smith secured a number of cinema photographs. Like a " will-o'-the-wisp " memories of Shackleton's 1907-9 Expedition are uppermost in my thoughts at the moment. There in the distance at Cape Royds, one has a glimpse of the old hut.

Cape Royds was named after the No. 1 or First Lieutenant of the *Discovery*, Charles Rawson Royds ; he is now an Admiral and a Commissioner of the Metropolitan Police. Little did he think, when he was sledging over the barrier, he would end up at Scotland Yard.

January 15th. Cape Evans is about four miles away ; to-morrow should see us there.

January 16th. We are now in close proximity to Cape Evans, where Captain Scott's 1911-13 Expedition wintered. Captain Mackintosh and I took advantage of the opportunity and ski-ed to the hut a distance of three miles. Just as we expected, the hut is in an excellent state of preservation. On the hills surrounding it are hundreds of wooden cases, most of which contain provisions. On our return to the ship, it came on to blow from the south ; we just arrived on board in time, much to the relief of Stenhouse. A blizzard sprang up ; all hands below except the anchor watch.



THE PADRE. REV. ARNOLD PATRICK SPENCER-SMITH, B.A.,
QUEEN'S COLLEGE, CAMBRIDGE.



DISCOVERY HUT AT HUT POINT : BUILT IN 1902. (CAPTAIN SCOTT.)

January 17th. Through the ice breaking out we found ourselves close to land. In consequence, ran aground off Cape Evans, fortunately the tide was low, a kedge anchor was run out and the ship floated again at high water. Ten tons of coal and 100 cases of oil were landed. Under way for Hut Point which is $13\frac{1}{2}$ miles to the south.

January 18th. A splendid calm day occupying most of it in getting up stores from the hold. After dinner left on a trip over the sea-ice to Hut Point, Capt. Scott's winter quarters in the *Discovery*, 1902-4. The party consisted of Stenhouse, Gaze, Wild, Stevens, Hayward and self. The ice right up to Hut Point was cracked and ready to go out. Stenhouse, Gaze and self went through and had a dipping. On arrival at our destination at 5.30 a.m. we were practically frozen.

The interior of the hut is more than 50 per cent. snow, one corner partitioned off with cases and everything reeks with blubber. An improvised blubber store, a weird contraption amongst this impedimenta. It was used by Capt. Scott's party on his last expedition, to melt ice for the ponies for drinking purposes.

A certain amount of patience is required to make the stove in anything like working order, after which the party received their first meal of pemmican. Fortune favoured us ; to our amazement we found some old clothes left by Capt. Scott's expedition. These we substituted for our frozen garments. Some time or other, a banquet must have been the order of the day, or night, according to the happy find of a box of cigars, some cigarettes, and one full and one half-bottle of

Crème de Menthe. A little later, after digging around the snow, I came across several cases of Spratt's dog biscuits, and found them in excellent condition ; we landed them in 1902 from the *Discovery*.

January 20th. A blizzard. Remained at the Hut, it being very dangerous at all times to travel in a blizzard.

January 21st. Returned to the ship, Capt. Mackintosh somewhat perturbed at our late arrival.

January 22nd. All parties preparing for sledging ; weighing and bagging provisions, etc.



“PRESSURE” ICE

CHAPTER III

AUTUMN SLEDGING ON THE BARRIER

21st January—26th March, 1915

Sledging rations—Start to lay depôt of stores in 80° S.—Sledging with exhausted dogs—From Hut Point to the Bluff depôt—Return of Spencer-Smith's party—One party pushes on to 80° S.—Laying the depôt for Shackleton—Ten miles of signal cairns—Return from 80° S.—Blizzards—Weakening and death of the dogs—The Bluff depôt rebuilt in correct position—Frostbite—The skipper's toothache cure—Provisions run out—Return to Hut Point—The depôt-laying journey in retrospect.

AN idea of a week's provisions for three men. All provisions have to be weighed, put into linen bags, then all bags are placed into a large canvas bag. This constitutes one week's provisions for three men.

Each member of the tent enjoys the privilege for one week, of cooking and looking after the inner man of his tent-mates ; he is responsible that the provisions are eked out for that time. If he should be over-generous, which one is inclined to be at first, he realizes he is perhaps short of two meals, with no chance of replenishing ; this mistake only occurs once on a sledge journey.

Sledging is a hungry and starving game, and after five hours' hard pulling, the leader says "Luncho!" Up goes the tents, one enters, no food, hungry men, then the poor cook who has been too

generous at times with the food bag has his fortune told.

FOOD REQUIRED FOR 3 MEN
FOR 1 WEEK.

	lbs.	ozs.
Pemmican - - -	10	8
Oatmeal - - -	2	0
Sugar - - -	7	0
Glaxo - - -	0	14
Chocolate - - -	1	10
Tea - - -	1	0
Biscuits - - -	21	0
Oil - - -	10	0
	<hr/>	
	54	lbs.
	<hr/>	

EQUIPMENT.

	lbs.
Spare Clothing - -	15
Tents, Poles & Cloths	30
Sleeping-Bags - -	30
Shovels - - -	12
Ice Axes - - -	9
Flags Bamboos - -	4
Alpine Rope - - -	4
Medical Case - - -	5
Repair Bag - - -	3
Cooker Primus - -	6
Senna Graes - - -	4
Sledge - - -	60

lbs. 182

The dogs I have fitted out with harness. They seem to understand our plans are developing in readiness for landing. I fear they are not acclimatized. Owing to the small amount of space for exercising purposes, and their continual soakings from the deluge of water we so often shipped, one realizes these conditions are not conducive to keep them in trim for hard sledging. It will take some time before any of them will feel fit for hard pulling.

January 23rd, 1915. Everyone preparing for sledging. Skipper and I had another chat about the dogs. He said the depôt must be laid at 80° South; there is nothing else for it. All is ready for my



SCENE AT SHIP'S SIDE

party leaving to-morrow, had a bath, changed into clean clothing, which consists of Jaeger thick under-clothing, sweater and trousers, outer covering being Burberrys.¹

We are lucky to be so far south at this date, being only seven miles from Hut Point. When the relief ship *Morning* arrived about January 23rd, 1903, she was 20 miles to the north, and the ice did not break away to within seven miles of Hut Point until February 27th. The relief ships *Morning* and *Terra Nova* arrived January 4th, 1904. The Sound was then frozen over to over 20 miles to the north. It was not until February 15th that the ice broke away to Hut Point, thereby releasing the *Discovery*, which had been frozen in since early 1902.

The *Nimrod* was 16 miles from Hut Point on February 2nd, 1908, and on January 29th the sea was frozen over for over 20 miles north of Hut Point, so one cannot depend on how far the ice will break away in the Sound any season.

January 24th. After breakfast Skipper and I discussed several details. I decided to get under way after lunch. This, of course, was an occasion for excitement. With the exception of the skipper, who accompanied me on a short journey in 1908, no one has had any sledging experience. I related to them some of my adventures, advising them on different subjects, viz., crevasses, frostbite and snow-blindness, strongly emphasizing the necessity of never travelling without first putting on their snow goggles. I do not

¹ Two years elapsed before this opportunity occurred again.

know of any pain so intense if this precaution is neglected. Ninnis, who is in charge of the motor-sledge, is very sanguine. I told him not to get out of my trail, my course being marked by cairns and flags. One is liable to find the crevasses otherwise, and as this is my seventh trek to the south, I feel justified in passing on this knowledge to the different sledging parties.

GENERAL ROUTINE FOR SLEDGING

Rise 5 a.m. Breakfast : one pint of pemmican, biscuits, tea. Except cook, breakfast in sleeping-bags, after which shift footgear. This is the most painful evolution of the day. The finneskoe (invariably frozen) cause adjectives to be used before they are secured to the feet. The socks taken off to be placed inside the blouse for drying purposes. From 6 to 6.45, down camp. Packing and securing sledges, harnessing dogs, etc. : this takes a considerable time, nearly every morning the dogs and sledges buried under the drift snow. Under way about 7 a.m. Every half an hour three-minute spells, if longer would freeze. Lunch 12.45 to 2 p.m. Tea, biscuits and chocolate. Under way 2 till 6.30 p.m. Camp. Dinner same as breakfast. Whilst the hoosh is being cooked, the footgear is shifted, when one has the benefit of the warmth of the Primus. The wet socks are placed inside the blouse to dry. The dogs are fed directly the tent is up, then they coil around for the night ; it is useless building them any shelter as they will not avail themselves of it. After the above routine, everyone



SEALS ENJOYING THE SUN.



WEDDELL SEALS.

turns into their sleeping-bags, requiring no rocking. When we are compelled to lie up in a blizzard, we remain in sleeping-bags on half rations.

After lunch packed sledges on the ice, the weight being over 1,200 pounds. Harnessed the dogs after a struggle. Their names are Nigger (leader), Gunboat, Duke, Dasher, Tug, Pat, Briton, Scotty and Hector, the average weight about 80 pounds. My sledging mates are two Australians, Jack and Gaze. With parting greetings and cheers from all hands we proceeded south over the sea-ice.

At first the dogs were inclined to be frisky. Soon however they broke into a trot. About 5 p.m. we arrived at Hut Point, tethered the dogs, then climbed the slopes of Observation Hill, and had a survey south. The ice around Cape Armitage seems very thin and showing black : will have to keep well out. Returned to the Hut at six o'clock, fed the dogs and then the inner man. Turned in, in readiness for an early start in the morning.

During the night heard the dogs barking and on going out to find the cause, found some of them adrift. They had bitten through their harness, were in a fighting mood, and before we could separate them one was killed. Unfortunately they possess very sharp teeth, and when they have some old-time feud to settle, these are used with all the power at their disposal. To avoid a repetition—a moral—see the dogs are secured in a proper manner.

I remember an incident which occurred when I was in the *Discovery* in 1902. Capt. Scott thought it to be

a good plan to give the dogs a run. They were landed. A little later, the quartermaster on watch reported they were fighting. Before we could land in the boat several were killed. We did not realize the nature of the husky. The dogs formed a ring, the victim in the centre; as soon as one fell, another had been singled out to take its place. Evidently this is the manner in which they fight for leadership. This breed of dog requires studying, and with the wolf strain they are almost human in their likes and dislikes.

January 26th. Left Hut Point in the early morning. Camped south-west of Cape Armitage. Held up with thick weather.

January 27th. The going very sticky. Found ourselves in difficulties as the sea-ice grew uneasy under us. Altered course to the westward. About three miles off Cape Armitage I went through the ice. Although the ice looks firm, it is only snow covered and badly undercut. Steered west until firm ice was struck, then camped. Changed into dry clothing, borrowing some garments from my tent-mates.

After lunch sent Jack to Hut Point to warn the Skipper *re* the conditions, and to advise him to steer well out to a cairn I was going to erect for a turning-point. When Jack returned at 6 p.m. we had dinner. He reported the Skipper had lost his bearings, After leaving the ship a snowstorm raged. The Skipper travelled on, thinking he could make Hut Point. After several hours he camped. When the weather cleared, he found he was heading for the Western



A DOG TEAM.

AUTUMN SLEDGING ON THE BARRIER 59

Mountains, and had travelled a distance of 18 miles to cover eight.

January 27th to 30th. The trail has been heavy; decided to relay our load; the snow is so soft that we sink in up to our knees, and the dogs are having a rough time. Relaying makes the work easier, but doubles the journey. We managed to trek all the stores up the Ice Barrier that night. The Barrier is where the sea-ice joins up to the land-ice, and is from 15 to 40 feet high, the top of which is reached by climbing the snow slopes.

The Skipper met us some time later ; he is travelling by night. His struggle is hard, only covering two to three miles in 12 hours. When one realizes that the edge of the Barrier is only seven miles from Hut Point, the hours of trekking ten, and only this distance covered in three days, well, it is far from easy work.

February 2nd. We found the surface much better, with a full load I caught up Mack's Camp, my dogs made a bee line for Mack's dogs, and Gaze and Jack had their work cut out to keep them at a distance. Camped that night about four miles ahead of Mack. We accepted a challenge to race to the Bluff ; this creates an interest. The wager—a magnum of champagne—some time ! Gaze and Jack have settled down to sledging conditions, and they are two splendid sledging mates and an excellent sample of Australians.

February 3rd to 9th. Every mile traversed was monotonous, going blindly ahead, advancing slowly, covering the mileage taking 16 days to reach the point bearings for the Bluff Depôt, my cross bearings

obscured, but placed the depôt for the present where we were, 70 miles from Hut Point. We built the depôt 12 feet high, lashing the flags to the bamboo poles, the height being 24 feet in all a good mark. The dogs behaved splendidly, but I think it was rather too much for them. Gaze and Jack are feeling fit.

February 10th. A blizzard was raging, so laid up.

February 11th. Mack camped beside us about 11.30 a.m. We beat them by two days; that means a magnum of champagne some day. Owing to the hard struggle, some of his dogs caved in, one dying. He proposes to trek to 80° South. I tried to persuade him not to take the dogs further south, as they were feeling the effects of the hard sledging. However, he decided otherwise. I quite see his point of view, that Shackleton may get across this year, and expect to find the depôt laid at 80° S. The Padre, Jack and Gaze, with five dogs, are to return to Hut Point. Mac, Wild and self are to trek south with the remaining nine dogs. The sledges were repacked. The Padre's party taking one week's provisions.

Wishing them good-bye, turned south, putting in some good work before we camped.

February 12th. Trekking all day on a very rough surface, we are in the crevassed area, this being caused by the pressure from the Bluff. Put in a good day's mileage. Temperatures are getting lower. Dogs are pulling well.

February 13th. A howling blizzard and very low temperatures. Went out to feed the dogs, found them buried right under, breathing through a small hole



SEAL HUNTING AND DOG TEAM.



SEAL HUNTING.

made by their warm breath. We had to keep in our sleeping-bags throughout the day.

February 14th. A beautiful calm day of sunshine. The Bluff is showing up well to the north-west. Mount Erebus throwing out huge columns of steam. The dogs are doing fairly well in spite of the broken up surface and pressure ridges ; these are caused through the movement of the Barrier which advances to the north, pressing on the long arm of the Bluff, which is reaching out to the eastward. We are putting up cairns at every spell, which will serve as guides on our return north, and will also be a great help to the Trans-Continental party.

February 15th to 19th. We have been plodding on the trail putting in our ten hours a day, the average mileage being about five miles a day. The afternoon of the 19th we were sinking in the soft snow up to our waists; when we camped we were wet through with perspiration, which causes a cold sleepless night in the sleeping-bags. The dogs had a gruelling day ; gave them an extra feed.

February 20th. Surface similar to yesterday. Came on to the bearings of 80° south at five o'clock. Distance travelled from ship is about 140 miles, taking 27 days, averaging a little over five miles a day. To lay the depôts to Beardmore Glacier we will have to double that mileage.

February 21st. Following breakfast, Wild and I journeyed off with the dog team to the east, the object being to raise a huge cairn of snow five miles out. Each half-mile we put up a cairn, every mile a flag on a

cairn, the outer cairn five miles east of the main depôt and 15 feet high, with instructions in a tin tied on the flag staff of how, and where, to find the store depôt. Shackleton's party cannot fail to find this. In clear weather the food depôt can be seen from 12 to 15 miles. After five hours we returned, had lunch and built the main 80° depôt. A base of 10 feet with 15 feet staff of bamboo, three flags—25 feet in height. During the night the temperature dropped, and a howling blizzard sprang up.

February 25th. The blizzard still raging. Went outside to feed the dogs. The force of wind was so great that it was almost possible to lean against it, the force was in the vicinity of 80 to 100 miles per hour. It is a miracle how the tent stands the strain. The dogs are out of sight, completely buried; from the sledge mast which appeared above the snow drift I took my direction to search for them. I called Wild out of the tent to assist, as I could see it was going to be a long unpleasant job to dig them out; it took us over two hours to release them; we gave them a good supply of biscuits; they appeared very weak. When we camp, our first consideration is the feeding of the dogs, after which they coil around for the night. If a blizzard springs up, the drift covers them, and after a time they are completely buried, with no chance whatever of freeing themselves. This seems to be antagonistic to the laws of nature. If human aid were not at their assistance, where would they be? With the temperatures from 10 to 30 below zero, the snow becomes compact as the result; what chance have they? The

AUTUMN SLEDGING ON THE BARRIER 63

Antarctic conditions must be quite different from those in their Arctic home.

Wild and I were pleased to get inside the tent. My hands were badly frost-bitten, my nose a sight. Had dinner and turned in cold.

February 23rd. After a strenuous night, expecting the tent to be blown to pieces, the temperature below -30° ; we were shivering all the night. The wind abated about seven o'clock, went outside the tent, the dogs were in the same predicament as yesterday. To my sorrow discovered two of them had succumbed. Dug the others out, released them out of their harness, and let them run around; dug the sledge out, harnessed the dogs again and went in to breakfast. During breakfast the dogs started their wolf cry. I went outside the tent, they were sitting on their haunches with their bleak noses pointed upwards, and giving a long wolf howl. Poor fellows, these blizzards are a trial to man and beast.

After breakfast Mack and I went to the west to lay cairns, similar to those we laid out to the east. After covering two miles the weather came down on us again. Impossible to see more than two hundred yards; however we set to and built a cairn, raising it up from 15 to 20 feet with a flag and pole. Returned to camp.

During dinner I could not refrain from remarking that in this degree of latitude 80° South no exploring party has ever experienced clear weather. Perhaps the southerly wind striking the Bluff causes the heavy drift.

February 24th. Weather still unsettled, after break-

fast placed on top of the depôt three tins of biscuits, three tins of oil and three weeks' provisions for three men. We decided to take on 10 days' provisions in case of emergency. Started to return to Hut Point, when about half a mile on our trail the weather thickened, to the extent that I could not see the sledge from the lead. Pitched our tent once more, as it is impossible to proceed. The dogs are getting weaker, the temperatures lower. These constant halts do much damage. After lunch the elements cleared sufficiently to proceed. Travelled four miles when the blizzard was upon us again.

February 25th and 26th. Trekking out of the question. The blizzard—a fury. We are now on half rations. My heart aches for the dogs. Dug them out, they appear very weak, fed them ; this evolution takes over an hour, one generally takes into the tent a blouse full of snow. In the blizzards the snow creeps in every hole and corner, which makes things uncomfortable. The temperature is high, which is peculiar, the last blow the temperatures were below— 30° , the wind from the same direction as now, south-east. The temperature now is about zero. Our sleeping-bags are soaked ; clothes in a similar condition.

February 27th. Our 80° south depôt still in sight. From there we decided to take one week's provisions, leaving 7 days' provisions, 14 days' biscuits and oil for Shackleton, if he should cross the continent. Poor Mack, he is feeling the strain. We went across to the depôt, Wild remaining to lay out the sleeping bags ; they may dry somewhat as the sun is shining. Old King

AUTUMN SLEDGING ON THE BARRIER 65

Sol being out makes a heap of difference to the dogs ; they seem to be more cheerful and incidentally, we are the same. On our return Wild had a good hoosh awaiting. It seems hard after depôt-ing stores to rob them again. The dogs cause me grave concern, although they were cheerful this morning, the bark which they greet me with at feeding-time has gone. I examined them thoroughly, and can only put it down to weakness.

February 28th brought forth a beautiful clear day and a lovely following wind from the south-east. Sail was set, which helps considerably. As the sledge requires very little pulling, took the dogs out of harness and let them follow the sledge. After lunch I found three of the dogs were so weak that I felt a painless death would be human. In the afternoon put in a good mileage, the surface being excellent for travelling.

We have only four dogs left. I gave them double rations. They have lost their appetites ; when I went out later only a small portion of their food had been touched.

March 1st, 1915. Under way 6.30, the surface far from satisfactory. The light is so atrocious that I find it very difficult to steer ; we have struck a rotten soft patch, sinking in up to our knees. I have a bad attack of snow-blindness. The dogs seem tired, their cheery night bark has left them.

March 2nd. No sleep last night. Snow-blindness. So do not feel my usual self. The surface similar to yesterday ; had to turn the steering over to Mack, my eyes refusing duty. The sail being set makes the

position easier for man and dog, the sledge overhauling one as we walk. The dogs have been free of their harness up to lunch-time, just keeping up with the sledge. After lunch they seemed too weak to trek any further ; we decided there was only one course to pursue : that was my painful duty. This is a sad blow, there is now only one survivor, " Pinkey."

March 3rd. The surface is worse than abominable. We were just crawling along, so decided to depôt all spare gear ; turned the sledges up and scraped the runners ; found we were doing better in the afternoon. My eyes have recovered from the bad attack of snow-blindness.

March 4th. Having a hard gruelling, in 10 hours the mileage being under six miles. Temperature 25° to 30° below.

March 5th. A cold shivery night, the temperature being down to -25 to -30 . The travelling the same as yesterday. My fingers badly frostbitten and feet blistered.

March 6th. The wind sprang up from the south ; set sail. The sledge overhauling us. What with our frostbitten feet and our failing strength, it is painful to keep pace with the sledge. Wild and Pinkey (the dog) having a busman's holiday—but a cold one—riding on top of the sledge. The temperature is about 20° below zero. Our last dog, Pinkey, collapsed in the afternoon. I thought there was a possible chance to take him back. We are sad about it. On Polar journeys the dogs are almost human, one never feels lonely when they are around.

AUTUMN SLEDGING ON THE BARRIER 67

March 7th. A terrific blizzard came upon us during the night, had to lay up. We are doctoring up frostbites, our feet are getting raw. Mack's face and hands badly blistered ; Wild's right foot like raw steak, bandaged with plenty of vaseline. As the sailor remarks, it is all in a day's march.

March 8th to 12th. One does not feel inclined to write diaries when the hand is so badly blistered. It has been one abominable long struggle. To make the position more unpleasant, after our long marches, sometimes 10 hours on stretch, no sleep at nights. Advanced four miles, the strain near breaking-point.

March 10th. The weather being clear, I was able to get my Bluff Depôt bearings accurate. Advancing from south, it is very simple to pick up the depôt bearings on a clear day. One takes the centre peak of White Island in line with a peak on Mount Erebus. The cross bearing being a line drawn through a peak of the Bluff and the summit of Mount Discovery. Advancing on this and my bearings accurate, I found the depôt I laid on our outward course was four miles to the east of the intended position, through being unable to sight White Island bearings and land in thick weather. We pitched camp, leaving it standing, taking the empty sledge to the old depôt, and loading it with the provisions and flags, arrived back to the tent after four to five hours. A hard struggle, the last hour or so travelling in the dark. It has been a long day, being on the trek for over 14 hours ; had to cook our hoosh in the dark, which we relished in spite of the low temperature—did not take any rocking to make us sleep.

March 11th. Awakened with a blizzard howling, laid up.

March 12th. A fine clear day. We built the depôt to a height of 12 feet, lashed three bamboos, put three flags on them and stayed them to a height of 27 feet, an excellent mark for many a mile. It is but a tiny speck on the frozen sea, but, with the landmarks, easy to pick up. We placed on top of the depôt three weeks' provisions for three men, four weeks' oil and six weeks' biscuits. After lunch proceeded north, taking one week's provisions. The distance 50 miles to Safety Camp.

March 13th. Blizzarding; one wonders if it is ever going to cease. Wild's feet very badly frost-bitten. Mack and I compelled to nurse them round, which took over an hour. I remember on a spring journey in 1902 when the temperature was 68° below zero, 100 degrees of frost, one of my feet was frozen for an hour or so. Lieutenant Barne and my companions spent an uncomfortable time in restoring it back to life.

Our circulation must be at a low ebb, as we are getting frostbitten in our sleeping-bags. My foot badly frozen later.

March 14th. The temperature during the night was down to -40. It was a night of desolation, shivering in our sleeping-bags the majority of the night. The sun is now shining. "Hurrah," under way at day-break. Wild in agony with frostbites. I made him a pad for his foot; difficult trekking on hard ice.

March 15th. Another heart-breaking night, the

temperature down below 50°—82 degrees of frost. Heard Mack groaning during the night. I emerged from my sleeping-bag to find him in agony with toothache. In the medical case there was naught to ease him. My thoughts could only think of methylated spirit, a bottle of which we kept for starting the Primus. This I passed to him, together with cotton wool. During the short space of time necessary to pour the spirit on the wool—his fingers were badly frost-bitten—he placed the cotton wool on his tooth, a second elapsed, and then a yell, the sound of which must have penetrated to Cape Crozier, giving the Emperor penguins a shock, the toothache was cured, the inside of the mouth raw, but Mack's Billingsgate language was supreme. Wild and I indulged in our first laugh since the dogs died, although when we laugh it hurts, as our faces are one mass of blisters. The temperature of the spirit was the same temperature as the air—82 degrees of frost. It had the same effect as boiling liquid. We did not think of that at the moment. Owing to low temperatures and food shortage, our circulation is far from normal, in consequence frost-bites attack us sooner than when one is fit.

March 16th to 21st. Our progress ominously slow ; to Wild each step a ball of fire. Our food-bag dangerously light, we are on half rations. Sleep of a fitful broken nature, and on the verge of extreme exhaustion. After a hard day's marching our dinner consisted of half a cup of pemmican and one biscuit. Our human machine is truly wonderful in supporting us in our task. We three, Mack, Wild and self, have

had an overhaul. Mack's fingers badly frostbitten, hands, nose and cheeks blistered. Wild his face out of proportion, his nose one black blister, his feet blistered and painful to walk. Mack informs me my face is in a state, considerably worse than Wild's. My hands and feet blistered. We are three old crocks.

March 22nd and 23rd. Staggering along slowly with the sledge ; in fact just crawling three miles in ten hours. Our food—biscuit-crumbs and cocoa. The temperature about 50° below.

March 24th. What a night, we were just shivering praying for daylight, the temperature must have been down below -60° We went outside, filled the cooker, found the weather clear, made our last feed of cocoa and biscuit crumbs. Under way at daybreak. Impossible for Wild to be dragged on the sledge as we can just crawl along. Wild's feet causing him much pain. I caught a glimpse of the depôt flag two hours after we started. Struggling on and on, the scales almost weighing in the balance, reaching the Safety Camp, on the verge of the borderland.

But the Code of a Man says : " Fight all you can,"
And self-dissolution is barred.
In hunger and woe, it's easy to blow—
It's the hell-served-for-breakfast that's hard.

Service.

Pitching the tent, we put Wild inside to get the Primus going. While doing this the right side of his face and neck became badly frostbitten. When Mack entered the tent he called to me. I have never seen anything like it; with the aid of our warm blistered hands

we soon had his circulation flowing. Unfortunately, Wild was again in sore straits. He put his blistered hands too near the flame of the Primus. The agony brought tears down his blistered face. The first mug of pemmican soon had the machine pumping the blood through our veins, the second cup we began to feel the thrill of warmth. It was essential to be cautious in regard to the amount of food we consumed, after starvation diet ; still a starving man has little conscience when the cross roads meet. I discovered a note left here by the Padre explaining all parties were returning to Hut Point. They journeyed some miles on the Barrier. The motor-sledge an utter failure.

Note : " On leaving the Bluff Depôt on March 12th, we stocked up with one week's provisions, which we thought would be ample to trek the 50 miles to Safety Camp. Owing to blizzards, etc., the trek occupied 12 days. We arrived there in an exhausted condition."

As a comparison :—

In February 1909, after laying a depôt for Shackleton returning from his southern journey, George Marston, Bernard Day and myself, with eight dogs, travelled over 50 statute miles in one day. After our meal—a banquet to us—we were once more under way, with a sufficiency of the glories of the Great Ice Barrier for a time. We feel very anxious to reach Hut Point in case another blizzard traps us. Painfully we proceeded to the Barrier edge. The sea-ice had broken away right up to the Barrier. The only available course

is to make for the slopes of Pram Point. Camped seven o'clock. The Primus lamp we kept burning. What a difference with food in plenty, we are contented. We cannot laugh, our faces would crack.

March 25th. A woe-begotten night, the temperature below -50° . Feet and hands throbbing all night through the blisters. Made breakfast and proceeded towards the Hut. We are on the trail of a sledge track. Expect it was the one made by the Padre and his party. It led to a comfortable down trail on the sea-ice. On inspection the ice was thin, therefore treacherous. We decided to climb the slopes. Proceeded to an easy slope I remembered well on the Scott expedition, Pram Point. Before ascending same, we thought it advisable to lunch in case of accidents. After satisfying the inner man, packed and abandoned sledge; filled a small bag with biscuits and sugar in case we were caught in thick weather, carrying ice axes and our impedimenta. Assisted Wild up the gradual slope. His feet are very painful. I bandaged them before we left. After a severe struggle we reached the summit of the hills, and looked down on a plateau between Cape Armitage and Hut Point. I remarked to my companions, "Chances," sat down, let myself go, in a few seconds found soundings, Mack and Wild were soon alongside me; we were within a few yards of a drop of 30 feet. Our breath exhausted. In half an hour we were at Hut Point, hailed, received no answer. Expected to find the Hut deserted. To our surprise Cope appeared; he was alone. We climbed through the window. Our eyes soon accustomed to the smoke-

grimed interior. A blubber fire burning, our frozen helmets thawed, beards frozen on our chests, gradually thawing over the blubber stove, assisted by our swollen frostbitten hands ; the ice as it fell from our faces rattled and sizzled on the stove.

There were no tables or chairs, just a few old provision cases, but it was a palace after the great gruelling we had been through. One realizes this is a game of life.

Later Hayward and Jack appeared, having been to Pram Point for their sledge which they had left there previously. Cope prepared a meal : we are now a merry little party of six ; to look at us one would wonder from what tribe we sprang. After dinner Cope ran the rule over us (gave us a medical examination). Wild is in the worst plight, both feet raw like steak, his big toe will have to be amputated, his face blistered, one ear frozen seriously ; later he parted with the top of it. Mack : feet, hands, cheeks and nose badly blistered. My feet and hands are not serious ; nose I am afraid of. From cheek bones across, one big black blister. Anyway we are under cover, have a doctor, and must be thankful for all mercies. Cope set to, lanced a few blisters and made us more comfortable.

During the period from the time of leaving the *Aurora*, January 24th to March 25th, was one of hardships. The Skipper and party joined up with my party at the Bluff ; having taken 17 days to cover a distance of 80 miles ; he had lost three dogs on the journey. The parties were then reorganized. The Padre, Gaze, Jack, returning north with five dogs, and

Mackintosh, Wild and myself, with nine dogs, trekking south to lay the depôt at 80° . From February 10th to the 20th the party struggled on, and eventually reached and laid a depôt at 80° south, according to plan made out by Shackleton. From February 20th to March 25th is a tale of terrible hardships through frostbites, blizzards, food shortage and low temperatures. The collapse of the dogs through working them too quickly after being cooped up in the *Aurora*, and in conjunction with the constant lay-up in blizzards and low temperatures, the strain was too much for them. One could not expect otherwise.

The other parties under Cope, owing to the breakdown of the motor-sledge, did not advance very far. The motor-sledge was a useless toy: and was abandoned at Hut Point after covering about four miles.

The southern party was out on the Barrier for 60 days, 14 days out of that blizzarding. The temperatures very low, at times below— $60-92$ degrees of frost. The distance travelled was about 280 miles.

CHAPTER IV

WINTERING IN MCMURDO SOUND

April—August, 1915

Prisoners in the old *Discovery* hut—Killing seals—The sun sets for the winter—Waiting until the sea-ice bears—Midnight march to Cape Evans—Re-united in the *Terra Nova* hut—Learn that *Aurora* had been blown away before landing stores—Improvising equipment for main sledging journeys—Tobacco-hunger—Hut Point Mixture—Visit to old *Nimrod* hut at Cape Royds for old stores—The sun rises for the summer.

(1) HUT POINT

THE position in the Discovery Hut is, there are only three sleeping-bags. Watch and watch will have to be kept until the other sleeping-bags are brought from Pram Point. When in our possession later, we weighed them, and found them to be 25 to 30 pounds. The average weight of a sleeping-bag is 10 pounds, the extra weight being the accumulation of ice that is caused by the heat of the body. Through the absence of the sun, we had no opportunity to spread them on the sledge for the ice to evaporate. It is remarkable how difficulties are overcome. What with the dirt, blubber and grease, our frostbites give us a very unpleasant time, no sleep for days on account of the throbbing from the blisters. A part of Wild's big toe had to be amputated, the top of an ear came off. A couple of weeks elapsed before our faces straightened out again. Very painful to laugh, in spite of odds, and

the good management of Cope, who was working under extreme difficulties, we were soon about again. We are living the primitive life. No soap, no towel, no wash, no shave. The blubber stove throws out its reeking fumes when it is replenished.

The sun went north on April 22nd, darkness gradually descending over the Antarctic until daylight had vanished. Commodore Armitage, of the Jackson, Harmsworth and Scott's 1901-4 Expeditions, gives the following description of the sun leaving: "I doubt whether those who have not experienced it can at all imagine what the loss of the sun means. It is not the mere fact that there is less heat and light. Indeed, in regard to the former, it is not so cold during the long absence of the sun below the horizon as after his return in the spring. But it seems as though some vitalizing force had been withdrawn from our lives. We knew by the clock, by the departure and return of the moon each month, and by the movement of the stars as well as by the increasing shortness of daylight during each succeeding twenty-four hours, that the days were passing by. Still, one did not realize it to nearly the same extent as when the sun, each morning and evening rose above our horizon and dipped beneath it; and as midwinter approached it seemed, to me at least, as though all the days were rolled into one long night. Walks were taken more as a matter of duty for our health's sake than for pleasure, and as time passed by we felt less inclined for each other's society when taking our daily constitutionals."

It is difficult for one to realize what it is like to be housed in a hut that was built for 45 people, the interior two-thirds full of ice and snow (one corner of which was blocked off with provision cases), minus table, chairs and bunks, old provision cases on the floor with sleeping-bags laid on the top of them acted as bunks. Three men in sleeping-bags, while three others (two of whom were bandaged) hugged the blubber stove. No lighting except that from an improvised blubber lamp, which consisted of an old tin full of blubber, a piece of canvas floating about as a wick. The food, seal cooked in blubber oil, biscuits, and now and again dried vegetables as a variation. Our appetites are encouraging in spite of the menu. The non-appearance of the *Aurora* brings forth many heated arguments. There being open water as far north as the eye can see from the hills. The arguments always finish in this strain : what has occurred to the ship ? Something must be radically wrong otherwise she should have returned to pick up the sledging parties, realizing there was no coal, lighting, clothing, etc. These arguments cause friction and have decided to taboo the subject. We have settled down to the unnatural life until such time as Provi sees fit to freeze the sea over to the north. Our seal blubber became exhausted, in consequence no fuel, as a substitute we burnt parts of the old observation huts. Later seals were sighted some miles away to the south-west ; we killed and skinned five ; that will give us 10 days' fuel. On May 9th a blizzard sprang up, lasting four days, the velocity at times 70 to 100 miles per hour. As a rule, when the wind is

southerly the temperature rises, but in this case the temperature dropped 20 to 30 below zero. The hut temperature being well below zero, even alongside the stove the water freezes. The sleeping-bag's the only place for warmth.

Towards the end of May, Wild and I ventured north a couple of miles over the newly frozen sea, which had been frozen for three days. Found the ice bearable. On rounding the point on our return, Wild fell through a seal hole, which was snow covered. The temperature being about 20° below zero. The hut was about 150 yards away, by the time we arrived Wild was well and truly frozen.

June 1st, 1915. Mack and I went north. Found the ice bearable. Decided to try our fortunes, to-morrow will trek, weather permitting.

June 2nd. Under way for Cape Evans, 13½ miles away. When we started the moon was shining brightly. In an hour it was obscured. This was unfortunate. About eight miles from Hut Point is a Glacier Tongue, a huge formation of ice about one mile wide, jutting out for five miles to the west from Mt. Erebus. Through the darkness the moon hiding under a cloud, we found ourselves in the ice-pressure around the glacier, an awkward predicament, as we were liable to fall through the broken ice. Our sledges overturned several times. It was very uncanny in the dark, trying to find solid ice. A huge mass loomed ahead, which was Inaccessible Island. Wild remarked, "I think I hear the barking of dogs." When the atmospheric conditions are calm sound vibrates many miles across

the ice, as in this instance. Cape Evans was easily five miles away.

On reaching there the dogs were full of delight. They greeted us making as much noise as twenty instead of six. This ovation brought the inmates of the Hut out to find the reason of the commotion. We were welcomed by the Padre, Stevens, Richards and Gaze. On entering the hut, the acetylene light proved too brilliant for our eyes, necessitating putting on our snow-glasses. The hut to us seemed like a palace.

(2) CAPE EVANS

When the excitement had subsided, Stevens prepared an appetizing meal, we all agreed, the finest ever tasted.

To our amazement, we were then told the following story: "The '*Aurora*' called at Hut Point on March 11th, embarking the Padre, Richards, Gaze, Ninnis and Hooke. The ship returning to Cape Evans dropped her anchor and (with no further endeavour to communicate with Hut Point) made preparations to winter. The ship was moored stern to shore with five hawsers made fast to shore anchors on March 14th. Four of the staff—Stevens, Richards, Spencer-Smith and Gaze landed, while several tons of coal was set on the shore, close to the ice-edge. When the ice broke out the coal was lost. During a southerly gale on May 7th the ship carried away her moorings, drifting away, no word having been heard of her since." All sledging equipment, general stores and clothing is still in the ship, wherever she may be. One

of the worst calamities, there is no tobacco. One can forgive and forget many indiscretions over this soothing weed.

We turned in that night, bothered, bewitched and bewildered, thanking Provi we were here again after 129 days of adventure and privations.

Stevens had taken an inventory of all the stores here, and on my perusal of same with Mack and Stevens, think we can (with care) eke out sufficient food to lay the depôts. This being our first consideration. A number of cases of pemmican left by the Scott Expedition, 1911, was an excellent find. Over 2,000 pounds additional stores must be laid at 80° south before the Beardmore depôt can be attempted.

Clothing, there is none. The party just returned must still exist in their blubber saturated garments until we do some scouting.

This finished, we raised a quantity of canvas, several old sleeping-bags, bundle of old socks, parts of pony rugs, parts of cookers, old Primus lamps, three old tents and poles, some old leather, three sailmakers' palms and needles, twine, etc., but no books, under-clothing or Burberrys.

This assortment a very poor line for Petticoat Lane. The late Sir Ernest Shackleton writes in *The Heart of the Antarctic*, Vol. I :

“The equipping of a polar expedition is a task demanding experience as well as the greatest attention to points of detail. When the expedition has left civilization, there is no opportunity to repair any omission or to secure any article that may have been

forgotten. It is true that the explorer is expected to be a handy man, able to contrive dexterously with what materials he may have at hand, but makeshift appliances mean increased difficulty and added danger. The aim of one who undertakes to organize such an expedition must be to provide for every contingency."

Returning to the above assortment of gear, it will have to be made into sledging garments for nine men for at least six months' sledging, at temperatures as low as -60 to -70 . These are the conditions one must overcome to lay the depôts at Beardmore Glacier.

The sledging equipment being my special department, with the aid of Wild, we started on the canvas. Within a week each man received a new pair of trousers, no first fitting, the cut similar to that of sailors' bags. Our Burberry trousers were at once shed, later washed through petrol, then repaired and stowed away for sledging. The spare sleeping-bags and all surplus fur to be cut with care to make 30 to 40 pairs of fur boots.

Everyone realizes our predicament, but in spite of the overwhelming odds, we are merry and bright.

The Hut Point party have no opportunity to indulge in the act of ablutions, neither have we a change of clothing, which would add greatly to our comfort. Six months seems a life-time, when necessity provides no substitute for these.

Mack going strong, assisting us all. The scientists are interested in their various duties taking the night watches in turn, for the purpose of meteorological observations ; Stevens (Chief of Scientific Staff,

geologist), Richards and Jack (physicists and meteorologists), Cope (doctor and biologist), with Spencer-Smith (padre and photographer) Gaze and Hayward—the general factotums—killing seals, supplying the camp with seal meat, blubber and ice, exercising the six dogs and, when deciding to venture on a sealing excursion, harnessing them to the sledge, which means a certain amount of exercise, both for the men and dogs.

GENERAL ROUTINE OF HUT

Breakfast, 9-10 ; duties till 1 ; lunch 1-2, finishing the day's toil at 5. (No union rules.) Afterwards we indulge in ski-ing, and exercise accordingly. Our appetites need no cocktails to assist in creating a desire for our dinner. The chef's duties are carried out in rotation. Without a doubt, the first prize should go to Stevens, his surprise dishes are a boon. There are two fine stoves, one for cooking, the other for heating. By utilizing blubber with coal, we obtain more heat, also we found the combination to be economical. The Padre made some playing cards, an opportunity for most of us to enjoy a rubber at bridge.

Many discussions have taken place *re* the sledging season. I have come to one conclusion, there can be no feasible solution until the Bluff depôt is laid. At least 3,000 pounds weight of stores must be sledged there before a definite plan can be arranged. We will know something about depôt laying when this is accomplished. Wild and I are doing our utmost, making fur boots, much overtime, the majority of our



WILD AND JOYCE, MAKING FUR BOOTS AT CAPE EVANS.



JOYCE ON RETURN TO CIVILIZATION.

community joined the bootmakers' union, each member making a pair of canvas boots to protect the fur boots : the wages—one pipe of Wild's famous Hut Point Mixture. What an oasis in the wilderness if only a case of tobacco had been landed. A pipe makes all the world akin. Various substitutes for tobacco were tried with varying degrees of satisfaction to the consumer. We failed however to top the high-water mark. Tea was attempted, and so was coffee. I tried some dried mixed vegetables, but was speedily requested to cease. Then the inventive genius of Wild asserted itself. With exquisite care he blended tea, coffee, sawdust and a few species of herbs, and called his creation Hut Point Mixture. This survived the gamut of criticism and became the standard tobacco. When sledging started this famous mixture had to be shelved, all our lung power being required for our strenuous task.

Daylight is approaching. When one's eyes become accustomed to the light, and we scan the faces of our companions, we wonder what new tribe we have discovered. Without a doubt, an Esquimaux cannot be compared to us.

There is still open water to the north of Cape Royds, nine miles away. This calls to mind where is the ship? If she is in the pack-ice they will be having a rough experience.

I remember occupying a seat next to Dr. Cook at a luncheon some years back ; he gave me some idea of a ship being caught in the pack-ice in the Antarctic. He was surgeon of the "*Belgica*" in 1898 (Raold

Amundsen was the mate). The "*Belgica*" was a small ship of 250 tons ; she was beset and drifted in the pack-ice for over a year. Some members of the crew died from inadequate food, as they were not prepared for wintering. Dr. Cook was much in the public eye later over the North Pole episode.

If the "*Aurora*" is in a similar plight to that of the "*Belgica*," it will be useless to depend on her for sledging equipment. We must do the utmost possible with the remnants at our command. Every day it is getting lighter, and we exercise a few hours on ski, making ourselves fit in readiness for sledging.

Richards and Jack are engaged in weighing the sledging stores. This requires initiative, for each ounce tells ; the method of preparation is explained earlier in this log. Over 3,000 pounds weight of stores will be required.

About the middle of August, Mack and Stevens went north to Cape Royds Hut, seven miles distant. While there a rough inventory was taken of the stores left by the Shackleton Expedition in 1908. A quantity of dried vegetables was found, and if we are not relieved, this will see us through another winter. To our regret, not anything serviceable for sledging made its appearance, but, to our joy, one tin of Navy Cut tobacco, one box of Lifebuoy soap (the only one on the continent) and finally one box of Henry Clay cigars, one of which was delicious when smoked after dinner that evening. Needless to add, the stumps we retained to mix with the famous Hut Point Mixture.

Wild and I finished our furriers' contract at last;



RICHARDS AND JACK IN LABORATORY AT CAPE EVANS



MAC K

it was an irksome job; the fur boots we handed to each and all completely satisfying them.

We patched the three tents, making them as reliable as possible. They have seen better days and will necessitate great care. The cookers we overhauled; they will last. The Primus lamps, three, with no spare parts, cause me grave concern; they have seen service for many a day with the Scott Expedition. A Primus is the principal item of the equipment on a sledging journey, it is the only means of melting the ice for cooking; if it fails, it is difficult for one to conceive what the result would be. The sledges and harness overhauled and in good trim.

August 22nd. The sun returned in all its glory. On the 25th Richards and Jack completed the stores, at the end of the month our house was in order, and all hands ready for the ordeal.

CHAPTER V

SPRING SLEDGING ON THE BARRIER

1st September—12th December, 1915

Sledging stores to Safety Camp without dogs—FIRST DEPOT JOURNEY TO THE BLUFF—Separate from Skipper's party—Relaying sledges—Find Shackleton's 1908 depôt—At the Bluff—Find Cherry-Garrard's last letter to Scott—Feeding up at Hut Point—Sledging stores from Cape Evans—SECOND DEPOT JOURNEY TO THE BLUFF—Using dogs again—A strayed Emperor—Great bergschrund—Blizzards at the Bluff—Short cut across the crevasses—Frostbite and snow-blindness—Hut Point at last—THIRD DEPOT JOURNEY TO THE BLUFF—High temperature and bad going—Filling up the depôt—Trouble with the Primus stove—Back at Hut Point recuperating for the great effort.

AFTER discussion, the programme is to sledge the great bulk of stores (about 4,000 pounds) to Safety Camp on the Barrier—the distance about 23 miles to the south.

Starting September 1st, the different parties sledged practically all that month, one of the toughest months in the Antarctic for trekking. The temperatures encountered varying from 10° to 60° below zero. The majority of us travelled in canvas trousers, which froze like boards on us.

However, we had the consolation of knowing this condition saved our Burberrys for the Barrier. Gaze suffered from a frostbitten heel and was obliged to lay up. Frostbites were also prevalent amongst us.

September 29th. Rubbed Jaeger clothing through petrol, which evaporated when the goods were hung in



GAZE.



JACK.



COPE.



RICHY.

the sun for an hour. Burberrys came in for their share also. Indulged in a sponge down, the first since January.

September 30th. We are ready for an early start to-morrow. Gaze remaining behind, because of the condition of his heel. He will care for the dogs, which we will not take south until the third trip to the Bluff, then I hope to work them to the Beardmore. Under ordinary circumstances, with so poor an equipment, one would not consider for a second such a journey, the Bluff depôt would be the limit of our mileage. If any of the old Arctic or Antarctic explorers read this log, I feel certain they will agree with me in my remark. Our spirits buoyed for the journey ahead of us, we sat down to our last dinner at Cape Evans before trekking. We are merry and bright with a complete satisfaction of having accomplished our task of preparations under extraordinary circumstances.

FIRST SPRING JOURNEY TO BLUFF

October 1st, Friday. Up with the dawn of day, with every hope, trusting we move off in excellent time. Turned out 6.30. The weather conditions are very thick to the south, with every indication of a blizzard. Breakfast ; the party consisting of Capt. Mackintosh, Spencer-Smith, Hayward, Wild, Jack, Stevens, Cope, Richards and self ; under way at 10.30. As previously mentioned, Gaze remained behind for meteorological observations, also to care for the dogs. Our load consisted of three sledges carrying about 1,700 pounds in all. Surface fair, travelling about one mile per hour.

Arrived at half-way camp, $6\frac{3}{4}$ miles, at 3.30. Lunch followed, after which found the going very heavy. Decided to leave one sledge of 300 lbs. and proceed to Hut Point, 7 miles away. At 7 o'clock the drift and a southerly was upon us, the force of which must have been 30 to 50 miles an hour. Decided to abandon another sledge, as we were still 3 miles from our destination; to make matters more uncomfortable, the temperature fell to -20 . Most of us had frostbites one way or the other. All land being obscured, I found steering difficult, facing the wind and heavy drift. It is natural to turn away; by doing so if one is not careful one is back in one's tracks, and instead of going south, one is trekking north. We arrived at Hut Point at 10.30. Everyone weary after the hard day's battling. Soon had a blubber fire going and made a good thick hoosh (Bovril pemmican). Watches were told off. By the heavy breathing, snores, etc., everyone seems contented. My fingers badly blistered with frostbites. The Skipper having only one eye, the strain on the other is dreadful, more so in a blizzard. Turned in midnight. Temp. -29.8° Distance $13\frac{3}{4}$ miles.

October 2nd, Saturday. Turned out 7 o'clock. Weather overcast. Nimbus 9. Wind S.E. Blizzard 50 to 60. After examining weather with Mack, decided too bad for trekking, much to the delight of most of the party, myself included, yesterday's gruelling being too much of an *hors d'œuvre* to start a journey on. I appointed myself chef and soon had breakfast ready. It is surprising how pan after pan of

seal meat vanished ; at least 12 to 15 lbs. Hands had rather a lazy day. Dinner 7.30. Had a debate—Hayward on Canada, Wild on the Navy. Turned in 11.30.

October 3rd, Sunday. Turned out 6 o'clock. Weather clear. No wind. Cooked breakfast, after which decided to bring on the Hut Point sledges which were abandoned on Friday. Left Stevens behind to kill any stray seals, which one generally finds within a radius of 3 miles from the Hut. The remainder of party under way 9.45. Arriving back at the Hut 5 o'clock, with two sledges and 1,100 lbs. of food and a good appetite. Distance 14 miles. Temp. —19. Turned in 11 o'clock.

October 4th, Monday. Turned out 6 o'clock. Weather thick to the south, every indication of a blow. Mack and two hands decided to bring on the remainder of stores from half-way camp. I took the remainder of the party, with two sledges and 900 lbs. and proceeded south to the Barrier. Safety camp, $6\frac{3}{4}$ miles. On rounding Cape Armitage I found all land obscured. Proceeded 3 miles. I then decided to return, the weather getting worse ; impossible to get bearings. Arrived back at Hut Point at 1 o'clock. Skipper and party not yet returned. Decided to feed. After which sledged in all seals and blubber, which had been previously killed, finishing about 6 o'clock. Made dinner. Skipper arrived back 6.30. Turned in 10.30. Temp. —18.

October 5th, Tuesday. Turned out 6 o'clock. Weather atrocious. Blizzarding too bad for travelling, had a lazy day, eating and arguing. Temp. —26.5°.

October 6th, Wednesday. Turned out 6 o'clock. Weather overcast. After breakfast proceeded to Safety Camp with 600 lbs. provisions. Came on to blizzard, force 60 to 70. Richards and Hayward, who were left at Hut Point, killed 12 seals. Temp. —26. Distance 14 miles.

October 7th, Thursday. Turned out 6 o'clock. Weather overcast. After breakfast another strenuous pull to Safety Camp, 900 lbs. Came on to blizzard, Temp. —20. Distance 14 miles.

October 8th, Friday. Still blizzarding, Had to keep to Hut. Temp. —22.

October 9th, Saturday. Turned out 5.15. Weather promising. After breakfast decided to trek. At 9.30 started with a good load on three sledges. Arrived and lunched at Safety Camp 1 o'clock. Mackintosh superintended stores. Sledges to be packed to 200 lbs. per man, making 600 lbs. for each sledge, for the journey to the Bluff (3 sledges). This is too much weight on this soft surface, it will mean relaying. Under way 4.30. Found going very heavy. Camped at 6 o'clock. Distance travelled $\frac{1}{2}$ mile. Temp. —34. Turned in 8 o'clock. Very tired and dissatisfied.

October 10th, Sunday. Up at 6 o'clock. Weather overcast : not promising. Under way at 8 o'clock, 9 men dragging the 3 sledges. An hour's struggle, 100 yards. This farce was carried on until lunch-time, 1 o'clock. I had a yarn with the skipper, we decided to try 3 men to 1 sledge. Distance covered before lunch in 5 hours, 1 mile 1,140 yards. Trekked

again at 2 ; 3 men to a sledge, going worse than awful. My sledge bringing up the rear at 6 o'clock. We were exhausted. Wild and Hayward had to help us in. I do not think in all my experience in the Antarctic I have come across harder pulling. Distance 4 miles 164 yards. Turned in soaked through. Temp. — 18.

October 11th, Monday. Turned out 6 o'clock. A fine clear day. Had an uncomfortable night through being wet through with perspiration yesterday. The temperature dropped in the night to — 36°. Under way at 8 o'clock, on our physical farce. Found the loads harder to pull than yesterday, called out to the Skipper to wait until we came up. Had a talk with him, decided to overhaul sledges and take weights. I told him it was impossible to proceed on the lines we were going, all hands would be on the sick list before half the sledging season was over. I took the weight on the 3 sledges, and found there was over 2,000 lbs., making 222 lbs. per man, which is impossible to pull on this surface. On working out weights at Cape Evans, it was proposed 174 lbs. per man at the start, this weight would be reasonable. I told the Skipper I thought he was mad to think that we could get along with this load, under our extreme conditions. Firstly : there was not the physical status amongst the party. Secondly : through the condition under which we had been existing during the winter, our clothing and equipment was up against us. I advised him to lower the loads to 150 lbs. per man and make 5 trips out instead of 4, and try and save the men that way. The men had to be studied. If you study

them, then you will get the best out of them, if not you will have them laid up and no depôt laid. Being too pigheaded to take advice he carried on in his own way. He will learn to regret later. We hauled up in a snowstorm at 3.30. After a hard towsing day covered $3\frac{3}{4}$ miles. Will have to talk seriously with the Skipper before we start on the trek again. Turned in wet through. Temp. — 30.

October 12th, Tuesday. Turned out 6 o'clock. Blizzarding. Spent half an hour in the Skipper's tent. I told him whatever happens the depôt was going to be laid ; it was a physical impossibility to carry on like we were going. After an argument, he said he had decided to push on with Wild and the Padre less 60 lbs. weight off his sledge. I to carry on with the remainder of the men, Richards, Cope, Gaze, Jack and Hayward. To use my own discretion in trekking the loads to the Bluff.

Weather cleared, 10.30 decided to make a start. Skipper and party under way at noon. My party at 12.30. We had 2 sledges with 1,392 lbs. weight. I started relaying, that is, take one sledge on for a mile, and then return for the other ; although this makes 3 times the distance, the strain is not so great, the work is easier and no fear of a breakdown. Surface soft, sinking in the snow up to the knees. Weather came on thick, carried on until 5 o'clock, then camped. Skipper is about 4 points off our port bow. Temp. — 36. Distance $1\frac{1}{2}$ miles.

October 13th, Wednesday. Up 6 o'clock. Called all hands together, told them I decided to depôt two

weeks' provisions, and reduce our rations. All spare gear to be left behind, which amounted to a heavy weight, practically taking about 360 to 400 lbs. of the sledges, pulling about 170 lbs. per man. Under way at 10 o'clock, lunched at noon, going during forenoon fair, pulling steadily, not the heart-breaking strain as hitherto, under way 1 o'clock. Altered course to the S.W., building cairns every half-hour, keeping them in line with third peak on the slope of Mt. Erebus. 3.30, came on to blow from S.S.E., with heavy drift, fairly hard going against wind and drift, which seems to grip the sledges. All land obscured, steering by compass and cairns behind. All hands eager to push on, otherwise should have camped, the drift very thick. Camped 4.45. Temp. —12. Distance ?

October 14th, Thursday. Up at 6 o'clock. Southerly wind with drift, decided to wait for a clearance. Under way 10.30. After 20 minutes came on a howling blizzard in our teeth ; as much as we can do to shift a sledge ; carried on until 1 o'clock, lunched. The wind eased during lunch, under way 2 o'clock. Sighted Skipper's party to the east. Altered course 2 points to the S.W. at 3.30. Although I am steering further in towards White Island and amongst the crevasses, we will cut off a few miles of agony. Our finneskoes are wearing through and sleeping-bags full of ice, which one's body melts before going to sleep ; there is very little comfort even in our bags. Camped 6 o'clock. Temp. —16. Distance ? All my party are keen and cheerful.

October 15th, Friday. Up at 6 o'clock. Brilliant sunshine, cloudless sky. This is the kind of morning when one turns out and feels cheerful. We can spread out the sleeping-bags in the sun, which plays on them, causing the ice to melt and then they dry. Lunched at noon. During same the wind sprang up from the S.E., no drift. Under way 1.10. Opened up Mt. Discovery 2.15, south of White Island, dipped Cape Armitage. Altered course two points to the S.W., on account of sighting a strange thing on the horizon. It looks like a big cairn ; according to the time it is taking us to come to it, it must be heavy ice pressure. 3.45, wind sprang up from the S.E. ; heavy drift. Sledges are pulling like 400 lbs. per man. Weather thick ; decided to camp at 4.50. Temp. —16.

October 16th, Saturday. Up 5.45. Splendid morning, all bags and clothes drying. Took off Burberrys ; sun very warm, although temp. —16. Under way 8 o'clock, carried on course for cairn, very heavy going in places. Found we were ascending a steep incline ; decided to rope up ; everyone being secured by Alpine rope, as we are now in the crevassed country. Lunched and under way 1.20. Came on to supposed cairn 3.15. This proved to be heavy ice pressure. It appears as if the Barrier was passing over a pointed rock and was pressed up, heavily crevassed by fissures, one could not see bottom. Altered course to the south. Excellent going, as we are travelling down hill, passing heavy pressure, with a drop of 80 to 100 feet. Would not care to travel through this quarter in thick weather. Passed over a

snow bridge with a drop each side. I was somewhat doubtful about crossing, but being roped 20 feet ahead of the others, I would be the first to fall through, so would be a warning to those following. Camped at 6.10 in a maze of crevasses. Temp. —21.

October 17th, Sunday. Up 5.30. Everyone complained of enduring a cold miserable shivery night. Temp. falling to —32. The previous day we had put in a good day's march, and perspired freely making our clothes wet through ; this was the cause of our discomfort. Under way at 8. Heavy clouds to the south. Put in a splendid trek before lunch. Under way at 1. Surface like glass, causing many falls on the hard ice (plenty of adjectives). A blizzard sprang up 3 o'clock, increased in velocity, decided to camp 4 o'clock. Taking half an hour to pitch camp, 6 men on one tent. In ordinary weather 3 men can camp in 5 minutes. Temp. —5.

October 18th, Monday. Up at 5.30. Splendid morning. Temp. during night —1. All hands had a good night's rest, and are cheerful. Under way 8. A slight S.E. wind. Passed over several crevasses, some as wide as Regent Street, running E.S.E. and W.S.W. We were naming them different streets as we crossed over them. These crevasses are not dangerous except on the edge. Being roped together gives one more confidence; several of our party had an unpleasant drop of 12 feet, the length of the rope. There is no bottom to these crevasses. On one occasion in 1908 we sounded and found no bottom at 100 fathoms (600 feet). 10.30 came on to hard sastrugi,

like marble, sledge flying along, with little exertion. Lunched noon, under way 1 o'clock. After lunch the clouds obscured sun, causing bad light. In fact, one cannot see the hummocks until one falls over them. Owing to our finneskoes being well-worn, one is falling all over the place, looking something like classical dancers (of the "Camel type"). This is our record day, sledge going very easily. Distance covered about 10 miles. Camped at 6 o'clock. All hands pleased with themselves. Temp. —9.

October 19th, Tuesday. Up at 5.30. Had a bad night, shivering. Temp. during night, —26. Under way at 8. Light strenuous for the eyes. Passed over the last crevasse 10.30. There were over 80 of them ranging from 2 feet to 30 feet in width. These crevasses are caused by the impinging of the Barrier ice on the land to the west. The Barrier movement is about 1,500 feet a year, in an E.N.E. direction. (I discovered this in 1908, whilst laying Shackleton's depôt.) Lunch usual time. Wind increased to blizzard force during lunch; all land obscured; decided to camp; impossible to get under way. My second pair of finneskoes worn out and beyond repair; have only 2 pairs left, to last 5 months, and another 1,500 mile trek. Temp. —20.

October 20th, Wednesday. Up 5.30. Weather dull and cold. Temp. —26. Had a bad night, bags wet, shivering all night. Something like ague. Shall not be sorry to see the last of this month. Under way 8. Most of us getting bad frostbites in packing sledges. Our clothes being wet through, when we get out of our

bags in the morning they are frozen hard and remain so until one is on the move. After starting, to my astonishment, the wind veered to the north, the first northerly since we started. We decided to put up the floorcloth for sail, which helped us considerably. The changes of the surface are astonishing, sometimes like marble, then soft, then piecrust, which is the worst, it is hard, but one goes through up to the ankles, and this does not improve one's feet and finneskoes. We must have covered 7 miles before lunch, through the good graces of the northerly. I put in a little extra time whilst the wind lasted, at this rate we will be at the Bluff depôt to-morrow night. After lunch put in some good work ; at 4 o'clock Jack sighted a bamboo right on our course. Found it to be the depôt I laid down in 1908 for Shackleton. Camped there and decided to dig down to see if by any chance there was any stores left there. Had dinner 6 o'clock, after which carried on digging to ascertain the depth of snow. Came on to some black bunting ; the sun playing on the black bunting had caused ice to form, which made it difficult to dig. Came to base about 8 o'clock. "No luck." Too thick to take angles. Will leave pole up until we come this way again. Turned in 9.10. Temp. — 21.

October 21st, Thursday. Another uncomfortable night. Sleeping-bags icy and temp. down to — 31. Under way at 8 o'clock. At 9.30 Richards sighted a flag to the S.E. ; altered course 2 points. Awful piecrust surface, which makes one tired and feet so sore. Lunch and under way 1.30. Flag does not seem to get any closer. It is miraged up. I do not know exactly

what depôt this is, it does not look to be the same one which we laid last March. At 5.30 3 flags loomed up, I then knew it was the Bluff depôt. Arrived there 6.30 p.m. It must have been 9 or 10 miles distant when Richards sighted it. I found a note there from the Skipper who arrived on the 19th, leaving 178 lbs. of provisions. Turned in 9 o'clock. Richards had a bad attack of snow-blindness ; my nose one black blister. Temp. —25.

October 22nd, Friday. Up at 6. Had a good night's rest in spite of the cold and frostbites. Being more contented on account of reaching the Depôt. Temp. —26. After breakfast packed sledges and left 373 lbs. at Depôt. Under way 10.30. Travelled 4 miles northward before lunch. Under way. Lost sight of depôt about 2 o'clock. A satisfactory performance. Distance travelled 10 to 12 miles. Camped 5.45. Jack and Richy suffering snow-blindness. Temp. —7.

October 23rd, Saturday. Up 5.45. Glad to rise, miserable shivers. Warm when we turned in, —30 during night. Under way 8 o'clock, with a cold south wind, —25. Set sail. "Just before starting, Jack and Hayward opened their sleeping-bags, and laid them out. Whilst having breakfast, the wind suddenly sprang up with heavy drift and filled them up. I pity them to-night." No land in sight, am steering by the sastrugi, which runs E.S.E. and W.S.W. Having to run to keep up to sledge. Came on to ivory surface about 10.30. Took sail in.

The wind increased and was so strong that it blew

the sledge along without pulling, a sort of "Sledging de Luxe." Most of us came awful croppers on the hard "sastrugi." Sastrugi means surface made irregular by the wind, the wind scooping hollows out in the snow; this varies in depth sometimes 3 or 4 feet; the raised masses of snow between the hollows are difficult to trek over, especially when they run parallel to the course. In dull weather, when all landmarks are obscured, one can steer by the "sastrugi." We have much trouble to keep our balance, our finneskoes being worn and slippery. We always knew when we found soundings. Sufficient unto the day is the evil thereof. We are ploughing along at 2 to 3 miles an hour. It took all hands over 20 minutes to spread one tent at lunch-time, the force of wind being 50 to 60 m.p.h. After lunch wind still the same, with no drift. Sledge travelling at a great rate. We were falling about like ninepins on the hard "sastrugi." Camped 6. Distance 16 to 17 miles. Temp. — 20. All hands turned in sore after the falls on the hard ice.

October 24th, Sunday. Turned out 6. Glorious day. No wind. Excellent night's rest. After yesterday's splendid long march, am still sore. Under way 8 o'clock. Sleeping-bags out to dry; the surface disappointing. Lunch and under way 1 o'clock. Passed over 50 crevasses. Cope seems unable to dodge them. Heavy pressure ahead. Distance 14 miles. Temp. — 10. Expect to arrive Corner Camp tomorrow.

October 25th, Monday. Up 5.45. Fair night.

Glorious morning. Under way usual time, bags spread out on sledges, good travelling surface. Lunch, under way 1. Gradually bringing up land the other side of White Island. Camp 6 o'clock. Distance 16 miles. Temp. —16.8.

October 26th, Tuesday. Up 5.30. Slept the sleep of the just. Temp. — 26. Under way as usual. Sighted our Corner Camp (10 miles south of Safety Camp) 10.25, reaching same 12.25. Lunch. Here we had left a large quantity of stores on the way out. Now we are in possession of full and plenty. Under way 1.40. Sighted a sledge on end to the N.W. Made for same, reached there 4.10. I decided to investigate. Found the sledge buried 8 feet, came across an ice pick, with a note attached to it. On opening it, found it to be from Cherry Garrard, dated March 19th, 1912.

Dear Sir,

We leave here this morning with the dogs for Hut Point. We have laid no depôt on the way in. I have not been able to leave a note before.

Yours sincerely,

CHERRY GARRARD.

This letter is pathetic. Three days previous to this being written Captain Oates had staggered out of his tent to his death. Captain Scott wrote: "We knew it was an act of a brave man and an English gentleman."

On the above date, March 19th, Capt. Scott, Dr. Wilson and Lieut. Bowers were crawling along, feet badly frostbitten, trying to reach the depôt, "One Ton



WILD, DAY AND JOYCE.



VIEW FROM OBSERVATION HILL.

SPRING SLEDGING ON THE BARRIER 101

Depôt," which was $15\frac{1}{2}$ miles distant. They were found 11 miles from here in latitude 77.50 South, about 100 miles from where we picked up this note.

Finished digging out Cherry Garrard's depôt about 8 o'clock. Having struck gold in the Antarctic at last, 8 cases of Spratt's cod liver oil dog biscuits. Made depôt of same, after which had dinner. Turned in 9.30. Temp. —26.

October 27th, Wednesday. Up 5.45. Weather fair, with a haze to the north. Under way 8 o'clock. Surface rough piecrust. Lunch and under way 1 o'clock. Sighted Safety Camp about 5 miles distant in line with Observation Hill. Reaching same 4.30. Left at Safety Camp all spare gear, tents, etc., left 5 o'clock for Hut Point amidst a howling northerly blizzard. Very difficult light for steering. Arriving at the Barrier Edge 1 mile from Safety Camp. By good fortune escaped from going over the Barrier edge, a drop of 40 feet. I called out to the others to hang back. At the same time Stevens disappeared down a crevasse to the length of his harness; he was wedged, a tough proposition to extricate him. It gave him a nasty shaking; it may have proved serious. Altered course to N.E.; found a snow slope down to the sea-ice. Then a 6-mile pull facing a howling N.W. blizzard. We arrived at Hut Point at 7.30. After a severe buffeting. Found Capt. Mackintosh returned. We soon enjoyed a seal steak. Then slid into our bags into the land of Nod. Temp —4. So ended our first depôt laying journey.

October 28th, Thursday. The blubber fire going

all night and 10 men in a space of 15 feet, no windows, no doors, the atmosphere, well, enough said! The temp. + 30, the warmest we have experienced for many a day. A howling blizzard is blowing, the hut shaking. I had a talk with the Skipper, and told him I have decided to take the 5 dogs on the next trek. I am certain they will prove their worth. Our appetites are of a first-class order; we are making up for lost time—seal liver, kidney and steak the menu. Turned in 9 p.m., contented with all the world.

October 29th, Friday. I took on chef's duties again. Turned out 6 o'clock and performed on the breakfast. All hands in splendid health according to the way the meat disappears. Skipper and party decided to travel after lunch. Starting at 2. Sledge took charge on the way down the slope from the hut, capsized and smashed the tent spread. Under way again and disappeared around Cape Armitage at 4.30. I sent Richards, Hayward, Gaze and Jack to Pram Point (4 miles away) to store the 12 seals which we killed at the beginning of the month. They found the surface terrible, sinking in up to their knees. I have been overhauling all our sledging gear during the day, and fixing a new sledge for the trip. Turned in 9 p.m.

October 30th, Saturday. Up 6 a.m. Light wind. Sent off Hayward, Stevens and Doc to Cape Evans with dog team for more stores. Still working on sledging items. Turned in 11 p.m. Temp. +11.

October 31st, Sunday. Up 6 a.m. Weather fine. Expecting party back from Cape Evans to-day. I have decided to start south on November 3rd, 9 a.m.

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Party did not return from Cape Evans. Working on sledging preparations. Turned in 10 p.m. Temp. —9.

November 1st, Monday. Up 6 a.m. Weather clear, calm and splendid. Sun's rays almost tropical during the afternoon. Party sighted from Cape Evans. Arrived 6.30, reported surface slushy. Turned in 9 p.m. Temp. —6.

November 2nd, Tuesday. Party left 9.30 a.m. to pick up depôt 6 miles distant to the north. Ten cases being left there by Gaze. I have spent a busy day on the dog food and harness. All is now in order. At 4.30 p.m. came on to blow from south : sighted party. Arrived 7.30 p.m. Starving. Appetites excellent. Temp. +7.

November 3rd, Wednesday. Drawn a blank. Blizzarding. Hands employed in patching their clothes. I am making a few spare sets of dog harness. Hoping to start to-morrow. Temp. —9. Turned in 9.30.

November 4th, Thursday. Blizzarding. Cleared somewhat about 11.45 a.m. ; came on again. Will not trek to-day. Temp. +13.

SECOND SPRING JOURNEY TO THE BLUFF

November 5th, Friday. Up 6 a.m. Weather fair. After a shocking night. Under way at noon. With the 5 dogs and 6 men we should accomplish much this trip. Arrived at Safety Camp 5.30 p.m. On the way out the surface soft, the dogs struggling through it. They pulled splendidly, and quite justified my taking them. All stores buried, hands engaged in digging out

same. We broke a shovel in the operation. This is rather serious ; it will mean both parties using one ; awkward for camping, taking double the time to pitch camp. I am taking 7 weeks' provisions. I do not know how we will fare, surface not of the best. Finished packing sledges 9 o'clock. My heel is chafed and painful. Turned in 10 p.m. Temp. —2.

November 6th, Saturday. Up 5.45 a.m. Weather fine. Had a good night in a dry bag. Under way 8 a.m. on ski ; could not start the sledge. Decided to depôt ski ; started on foot. I found we could shift load, which is somewhat gratifying. The dogs will feel strange for a time, pulling in harness, with the men pulling alongside them, as I taught them to pull by themselves. The surface is soft. During the forenoon had a number of stops, twice leaving one sledge behind on account of the rope carrying away. Lunched noon. Distance 2 miles 1,380 yards. Under way 1. Going somewhat better during the afternoon. Passed our homeward lunch camp. Sighted a strange trail coming from S.S.W., going towards Cape Crozier. It was an Emperor penguin's track, the one and only time I have seen a track so far south on the barrier ; it was at least 40 miles from Cape Crozier, and, as an Emperor is a slow travelling bird, it seems strange that it should be such a long distance from food and the rookery. Now and again the ice crust would make a rumbling noise and would frighten the dogs, causing them to spring forward with great gusto. Camped 6 p.m. Distance 5 miles 700 yards. Temp. —18. Dogs satisfactory.

November 7th, Sunday. Turned out 5.45 a.m.

SPRING SLEDGING ON THE BARRIER 105

Hoar frost covering everything, a thick haze everywhere. No land in sight, snowing slightly; decided to wait awhile before striking camp. At 9.30 thick; at 12.30 a clearance to the north, Cape Armitage in sight. Decided to have lunch and trek at 1.30. Sighted petrol depôt where we had found Cherry Garrard's note to Scott. Reached there 6.30. Distance 4 miles 300 yards. Temp. +7.

November 8th, Monday. Up 5.30. Weather clear. Sent Richards and Hayward to pick up depôt which we laid on the way out. Returned at 9.30. Under way at 10.30 a.m. Surface very soft, sinking in up to ankles. Lunched noon, under way, 1. Dogs warming up to their work. Distance 5 miles 1,800 yards. Temp. —7.

November 9th, Tuesday. Up 5.45 a.m. Temp. during night + 29. Under way at 8. Surface detestable, making runners clog. At 9.45 a slight northerly sprang up. Set sail, a great help. Lunch noon, under way 1 o'clock. At 1.45 sighted heavy pressure, which we encountered on our previous trip. Distance 8 miles 1,800 yards. Dogs going fine. Gave them extra feed: am increasing their diet. Temp. —7.

November 10th, Wednesday. An excellent night. Temp. —8. Up at 6 a.m., under way usual time. After struggling for 2½ hours up hill, reached the ice pressure at 11 o'clock. Lunch usual. Under way, 1. Came on splendid surface 2.30. At 3.15 came on to a huge bergschrund with a drop of 70 to 80 feet. If we had been travelling in hazy weather, I would not

have been writing these notes. In appearance it seems that one of the big crevasses had fallen in, leaving a huge gap.

After examining this, found pure blue ice at the bottom, not the same as the surface we had been travelling over—compressed snow. Camped 6 p.m. Distance 9 miles 420 yards. Temp. —3. Dogs A1.

November 11th, Thursday. Temp. —19.8° Up 6.15. A beautiful day. Under way as usual, surface excellent. At 10.40 came across another bergschrund, examined same, found pressure heavy, surrounded by crevasses, and a drop of 100 feet. Lunch noon. Under way 1. Good going in the afternoon. Distance 9 miles 1,500 yards. Temp. —2.

November 12th, Friday. Up 5.45. Temp. —20. Under way as usual. A slight northerly. Set sail on sledge, excellent surface. About 11.15 the wind veered to the S.W. Lunch noon. Under way 1 o'clock with a strong S.W. wind and drift. During the afternoon the wind increased with heavy drift, forced to camp at 4.30. Wind 50 to 60 m.p.h. It took 6 men half an hour to spread one tent. Temp. up to +14. Dist. 9 miles 200 yards. Excellent going.

November 13th, Saturday. A fair night. Wind been howling all night, the drift striking the tent like hailstones. Up 5.45. Went outside; found dogs buried right under. Their breathing holes locating their position. Dug them out. They did not like being disturbed, being so comfy. If they are left too long in a blizzard, the heat from their bodies

turns the snow into ice, then an ice pick is required to free them. Had breakfast 9.30. I decided to lay up until the blizzard subsided. Wind eased 6.30. Had dinner, fed dogs. Hoping to make depôt to-morrow. Temp. +6.

November 14th, Sunday. Up 5.15. Weather clear. Taking 2 hours to dig out dogs, sledges and tents. Snow 4 feet around tent and dogs down under. Position of sledge can only be judged by the mast. Under way 8.20. Surface extremely bad. Approaching piecrust ice which reaches over the ankle. This causes a big strain on the harness. Sometimes the sledge stops dead. Fortunately at 10.15 a northerly sprang up. We set sail. This relieves the strain from off one's back. Lunch usual, under way 1 o'clock. Sighted Bluff depôt 2.45. After a good afternoon's work arrived there 6.50. Distance 12 miles. Temp. +6. Turned in 9 o'clock, tired, feet blistered. The dogs pulled well, and I am more than pleased that I had sense enough to know the value of them; they are as good as 4 men, or at least 4 men in the condition we are in.

November 15th, Monday. Up at 7 o'clock. Gave the party an extra hour's sleep after the good work of yesterday. After breakfast sledges were packed and took stock of provisions. Skipper and party had been there two days previously, leaving 188 lbs. of stores. I found we could depôt 624 lbs., after last trip with 6 men I depôt'd only 373 lbs. My journey then was a very stiff one. What a difference the dogs make. I am very sanguine now of carrying out our objective.

Left depôt for North at 10 o'clock. I am allowing myself only 5 days to return, we have to make the pace. Lunch at noon. Under way at 1 o'clock. Camped at 6 o'clock. Distance 12 miles 300 yards. Temp. — 3.

November 16th, Tuesday. Up at 5.30. Strong southerly wind with heavy drift during the night, worse this morning, impossible to travel ; as a result put party on two meals a day. This blizzard seems it has come to keep us company for a time. Dinner at 6. Went out, dug dogs out, and fed them. When I returned to the tent, my clothes were full of snow. Temp. + 11.

November 17th, Wednesday. Blizzard continued during the night. It is really remarkable how the tent withstands the strain of the terrible gusts of wind between 40 to 70 m.p.h. Up at 8 a.m. Altered meal times to 10 a.m. and 8 p.m. It is simply distressing this waste of precious time laying up. After breakfast turned in again. Richards, Cope and I talking over the situation. Skipper wishes me to leave the dogs at Hut Point, at the end of the third journey. I have decided to take them on altogether and sacrifice them if needs be ; I think they will prove themselves to be the mainstay. The excellent manner they have worked on this journey goes to show what an asset they are. I arranged the plans accordingly. After the next trip, Skipper and party to work from 80° to 81°. My party filling up the 80° depôt, then laying the 82° depôt sending three of the weakest men back. I am leaving a note to this effect for the

Skipper. Dinner at 8 p.m., fed dogs and turned in. Temp. +16.

November 18th, Thursday. Up at 5 o'clock. Dug out sledges, dogs, from beneath the drifting snow. Under way as usual. Weather clear. Surface abominable. Lunch noon. Under way 1 o'clock. Our trekking pace is astonishing. Camped at 7 o'clock. Distance 17 miles 540 yards. Tired.

November 19th, Friday. Up 5.45. Clear. Under way as usual. Going not too good, sinking well in. At 10.30 came across another bergschrund, took photos of same. It is an extraordinary sight. Blue ice about 70 feet from the level of the barrier, crevassed with overhanging snow curtains. The distance before lunch, $7\frac{3}{4}$ miles, good going on a bad surface. Lunch noon. Under way 1. At 2.30 called a halt, shifted into finneskoe, on account of my feet being badly blistered and painful. If I were in civilization I would not venture two yards, as the blisters on my heels are as large as potatoes. Camped 6 o'clock, 17 miles ; we still have 24 miles to reach Hut Point. Will try and cover that distance to-morrow. Turned in 8 o'clock, weary, snow-blind and blistered feet. Temp. +4.

November 20, Saturday. Up at 5. Under way at 7.30. I decided to trek across the crevassed country to the point of White Island. It will cut off about 8 miles. Being roped together, will not be too dangerous. At 10.30 came across heavy pressure with crevasses. Surface splendid. Lunch usual. Under way 1 o'clock. Came on to 4 crevasses suddenly.

Jack fell through. We dragged him out, took direction of them, could not alter course as we would be steering along them. Gave the order to rush them. One then plays chances. You're down! you're up! you're out! Your heart goes pit-a-pat. Strange to say these four were the only ones we encountered. At 2 came on thick, all land-marks obscured. Decided to keep going, and had to stop at 4.30 to put cocaine in my eyes. Snow-blindness—agony. Took party to Cape Armitage; turned the lead over to Richards, staggered to sledge blind. Arrived at Hut Point 6.30, after covering 18 miles. Was assisted to the Hut. Enjoyed a dinner of seal meat. Turned in midnight. Cope attended me, dropping in my eyes cocaine and sulphate of zinc at 12, 2 and 4 a.m. Snow-blindness is mostly caused through bad light, also one is liable to same when the sun is obscured. Snow goggles should always be worn; on expeditions, at least 3 pairs per man should be carried. My goggles were made out of a piece of leather with a slit cut across the centre. My only pair which I was religiously keeping were broken when I was lifting a provision case. As I was leading the party the whole of the time, there was no rest for my eyes, the persons pulling behind have the rest for their eyes from the back of the person in front. The one leading is always facing the white ocean. Snow-blindness is likened to pepper in the eyes. I do not think I have experienced worse pain, it keeps one awake at night, the agony being intense. The symptoms are running at the nose, vision becomes blurred, and eventually one goes blind. The

blood-vessels of the eyes dilate, eyes water freely, and by degrees close. The only method of relief is cocaine, then apply sulphate of zinc ; this reduces the distended blood vessels. Sometimes a week or so elapses before one recovers.

November 21st, Sunday. All hands recuperating. Seal meat in plenty. Having a particularly bad time with my eyes. Cocaine having very little effect. Have them bandaged and put snow packs on them, which eases the pain.

November 22nd, Monday. Hands employed in preparing for next journey. Still laid up with blindness.

November 23rd, Tuesday. Same as yesterday.

November 24th, Wednesday. My eyes are much better ; shall try and trek south to-morrow. Overhauled sledges, dog harness, provisions, etc. Richy preparing dog meat, he is going to look after them. I shall be leading. Hoping to-morrow will bring fine weather.

THIRD SPRING JOURNEY TO THE BLUFF

November 25th, Thursday. Up at 6 o'clock. Fine morning. Lunch noon. Under way 2.20. Northerly wind and heavy drift. Rounded Cape Armitage in a heavy drift. Arrived at Safety Camp 5.20. Dinner, after which packed sledges for an early start to-morrow. Found a most amusing letter from the Skipper. Turned in 11 o'clock.

November 26th, Friday. Up at 5.30. Under way as usual. Overcast and warm. Came on to blow, with heavy drift at 10.30. As the drift lodged on

anything on the sledge it turned into water, even our Burberrys were wet through. Obligated to camp at 11 o'clock. The wind and drift did not cease until midnight. Distance $3\frac{3}{4}$ miles. Temp. +28. Too warm for this climate.

November 27th, Saturday. Up at 6 o'clock. Under way at 8. The temp. is still up, so much so that all hands stripped off everything except underclothing, going along in Jaeger pants and singlets. Lunch noon. Under way 1 o'clock, good going. It seems like a New Zealand summer's day. Distance 10 miles. Temp. +28.

November 28th, Sunday. Up 5.45. Under way as usual. Weather splendid. Sighted Skipper's party. I thought he would be out at the Bluff by this time. At 9.30 came on to drift. Through the drift sighted strange cairns, made over to them, but found they were moving. Surmised they were Emperor penguins from Cape Crozier. They turned out to be the Skipper and Padre. They had left their camp and walked 4 miles to pick us up. I camped ; Skipper came into my tent. Padre, who does not look too well, returned. I then gave the Skipper a good working plan. I told him what stores we had on the sledge, gave him the list of the last load we trekked to the depôt. He quite agreed to my programme.

We made lunch, and wished him good-bye. If possible he will meet me at the Bluff on December 23rd. Under way at 1, Skipper's party 4 miles ahead. The going very good. Met a large crevasse at 4 o'clock, Cope playing Jack-in-the-box ; hauled him out none the

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worse. Passed Skipper's party 4.30, arrived at Cope's No. 2 Dépôt (32 miles south of Barrier Edge) 5 o'clock. Camped. Dinner. Skipper's party came up about 6 o'clock. Turned in 9.30. Distance 11 miles.

November 29th, Monday. Up at 5.30. During breakfast had Wild in to pay me a visit. We had a talk over old times. Before he left, he said, they were having a very hard time. We wished him "bon voyage" until December 23rd. We made breakfast. Skipper and party under way 8.15. I decided to wait, as a low drift (carpet sweeper) was sweeping along, just the correct height to strike the dogs' eyes. The wind came up stronger, and did not ease down until 2 o'clock. Packed sledges from dépôt, under way 3.15. Passed through wide crevasses and fell through several; was held up by the Alpine rope. On looking down, nothing but a big black chasm. Skipper and party camped off our port bow; we soon passed them. Crossed heavy ice-pressure, had another game of in and out amongst the crevasses. Camped 6.30. Distance $4\frac{1}{2}$ miles.

November 30th, Tuesday. Under way as usual. Passed over heavy crevasses, Cope trying for bottom several times. Being a biologist, I think he must be investigating, he seems the only one playing chances. Passed several old cairns which we laid down last year. Lunch as usual. Under way 1. Good going in the afternoon. Camped at 6 o'clock. Distance $14\frac{1}{4}$ miles. A brilliant performance. Having 1,400 lbs. on the sledges, one can realize the worth of the dogs. Temp. +20.

December 1st, Wednesday. Under way as usual. S.W. wind and heavy drift, all land obscured, difficult to steer. In spite of drift, dogs are pulling well and seem to enjoy their work. Wind and drift when we trekked after lunch. Camp 6 o'clock. Distance $10\frac{1}{2}$ miles. A splendid journey against heavy wind and drift. Temp. +16.

December 2nd, Thursday. Up 5.45. Beautiful day with a fair wind. Under way as usual with sail set. We had miles of piecrust ice to travel through, making the dogs' feet sore. We are making good headway. Lunch. Under way 1, fair going in the afternoon. At 5 o'clock asked party if they agreed to make a forced march to the depôt; the answer was in the affirmative. Halted 5 o'clock. Tea. Under way, arrived at the Bluff Depôt 9 o'clock. Gave dogs double allowance. After dinner, turned in tired. A strenuous day.

December 3rd, Friday. Called hands 8 o'clock. Three hours' extra lay in after their good work of yesterday. Unpacked sledges after breakfast. Left 729 lbs. of food for the depôt, which is 13 weeks for 3 men. Under way 10.45. Surface as usual. Lunch. Under way 1. Piecrust surface. Camped 6 o'clock. Distance $11\frac{3}{4}$ miles. Temp. +20. Primus out of order, the inside of the cap burned away. This inconvenience means double the time for cooking, there being no spare Primus lamp.

December 4th, Saturday. Up 5.45. Under way as usual, northerly wind. Passed through the crevassed country, now and again someone would dip, a sort of

“ Now you see 'em, now you don't.” It is funny to see the scared look on their faces when they are pulled out. To the east a big crevasse had opened ; if we had been travelling in thick weather, depôt-laying would have been finished, it was large enough for the large party and sledges to fall in. Lunch noon. Surface good in the afternoon. Distance $17\frac{3}{4}$ miles.

December 5th, Sunday. Up 5.45. Under way 8 o'clock. Very warm, all hands travelling in Jaeger underclothing. Passed heavy pressure. 11.45, lunch. Surface abominable afterwards : soft snow, sinking up to knees, travelling difficult. Dogs trudging along splendidly. Camped 6 o'clock. Distance 13 miles.

December 6th, Monday. Up 5.45. Under way usual time. Surface as yesterday. Arrived Corner Camp 3 o'clock. Distance 13 miles.

December 7th, Tuesday. Up 6 o'clock. Under way as usual. Sighted Safety Camp 9.30. Arrived lunch time. Under way 2 o'clock. Arrived Hut Point 4.10. Decided to give party a good spell. Advised them to eat as much seal meat as possible. This should increase our physical force for the strenuous days ahead. The last party out will not return here, until the end of March. Our clothing and finneskoes are in a very dilapidated condition, our socks are patched with canvas. The dogs have proved their worth. Richy is looking after them splendidly.

CHAPTER VI

THE GREAT SOUTHERN JOURNEY

13th December, 1915—26th January, 1916

Hut Point to the Bluff once more—A birthday in the blizzard's grip—From the Bluff to the Beardmore—Breakdown of Primus—Thinking out a problem—Return of Cope's party from 80° S.—Building snow cairns as guide posts—Value of the dogs—The Skipper's party rejoins—Receive command of united party—Snow-blindness—Depôt laid at 81° S.—Sight Mt. Longstaff—Depôt laid at 82° S.—Which is Mt. Hope?—Spencer-Smith succumbs to scurvy and remains in tent while party proceeds—Find Scott's old depôt on Mt. Hope—Build depôt for Shackleton 83° 30' S.—370 miles from Hut Point.

HUT POINT TO THE BLUFF

December 8th to 12th, 1915. Seals were killed and brought in to the Discovery Hut, the blubber stowed. These will be for the last returning parties from Mt. Hope. In case the *Aurora* fails us. I have fried a couple of hundred pounds of seal meat and blubber to prevent that dreadful disease scurvy. Seals' meat I am also preparing for the dogs, as I know a meat diet mixed with Spratt's cod liver oil biscuits will keep them in trim. I do not think the depôt at Mt. Hope can be laid without them. It is necessary for Bitchie to remain behind. If I am fortunate to return, I hope to be able to train her forthcoming family into an excellent sledging team.

December 13th, Monday. Up at 6 o'clock. Packed sledges. Expected Stevens from Cape Evans, he

should have been here to take charge of Bitchie. Had to leave her tied up with biscuits and plenty of seal meat. Under way at noon. I want to make the Bluff by the 19th if possible. Was about $\frac{1}{4}$ mile from the Hut when Bitchie came running up, ran around us wagging her tail. She had bitten through her rope. I had to take her back and chain her up. Reached Safety Camp on the Barrier 2.30. Lunched. Afterwards loaded sledges. Thank God this is our last load from here. Altogether we have dragged something like 5,000 lbs. of provisions to this depôt; we are leaving a small supply for emergency. Under way 3.40. Camped 6.45. Mileage $10\frac{1}{2}$.

December 14th, Tuesday. Up at 5.50. Under way at 8 o'clock. The temperature high, we find it very warm for travelling. Lunch noon. Under way 1.15. Solid, good travelling. Distance 12 miles.

December 15th, Wednesday. Up 5.45. Under way at 8 o'clock. A phenomenon in these regions—a northerly wind. Set sail, going good. Lunch noon. Under way 1 o'clock. Had a trying experience in crevasses, which are running east and west. I am steering due east so am running along them. They are blind ones; you're on and through them without being able to locate them. Arrived at Cope's No. 2 Depôt 3 o'clock. Left stores there in case of emergency, loaded remainder on sledge. Under way 3.20. Camped 5.30. Distance $10\frac{1}{2}$ miles.

December 16th, Thursday. Blizzarding. Up at 5.30. Dug out dogs. Impossible to travel.

December 17th, Friday. Up at 6 o'clock. Beautiful

day. Dogs and sledges buried. Under way 8.10. Surface sticky through the warm temperature. Lunch noon, under way 1 o'clock. Sighted Cope's No. 3 Depôt, which he laid in February last year. Loaded up a few things, such as dog biscuits, left other food as an emergency depôt. Camped at 6 o'clock. Distance 12 miles 250 yards. Dogs doing splendidly, worth their weight in gold.

December 18th, Saturday. Up 5.45. Blizzarding all night, still the same this morning. After digging out dogs, laid up until weather breaks.

December 19th, Sunday. Same as yesterday. Blizzarding.

December 20th, Monday. Wind dropped about 4.30. Up at 5. Under way at 8 o'clock. Same old routine—sledges buried, etc. Can just see the outline of the Bluff. At 9.20 came on to snow again. Carried on until 11.10 when I was obliged to camp, heavy snow and atrocious light that makes one walk in a circle. Distance $4\frac{1}{2}$ miles.

December 21st, Tuesday. Up at 5.20. Can just see the Bluff; so decided to trek. Over an hour digging out dogs and sledges. Under way at 8 o'clock. At 10.45 came on to blow from the S.W. with drift, before tents could be pitched a howling blizzard was upon us. Took 6 men to pitch one tent, three-quarters of an hour to pitch camp. Distance $3\frac{3}{4}$ miles.

December 22nd, Wednesday. Still blizzarding. Dug out dogs and laid up. My birthday. "No celebrations"—the eighth on Antarctic expeditions. Will

have to spend this one in the sleeping-bag. Would give much for a pipe of tobacco.

December 23rd, Thursday. Blizzarding, "no ceasing."

December 24th, Friday. Up at 5 o'clock. Two hours digging out dogs, sledges, etc. Under way at 8.30. Surface abominable. Lunch noon. Under way 1 o'clock. Sinking in up to the knees during the afternoon. Very heavy drift snow. Dogs pulling splendidly. Camped 5.45. All hands very tired. Distance $9\frac{1}{2}$ miles.

Christmas Day. "On the Barrier." All days are the same in these regions. Up at 5.30. Wished all hands the very best. Dug out camp. Under way at 8 o'clock. Going similar to that of yesterday—sinking in up to the knees in places. Lunched at noon. Under way at 1. A peculiar feature, everyone has been talking of good things, especially tobacco. I notice that no one has mentioned a bath or clean clothes, things of the past. There is no conversation on the trek, everyone's time is occupied in pulling. Camped 5.45. Distance $8\frac{3}{4}$ miles. About 5 miles off the depôt. Blizzard sprang up 9.30.

December 26th, Sunday, and December 27th, Monday. Blizzarding. Force of wind 30 to 60 m.p.h.

December 28th, Tuesday. Up at 5 o'clock. Still very thick. Turned in again. Turned out 7 o'clock, went outside, saw a break in the clouds to the south, had breakfast. Under way at 9 o'clock. 10.15, came on very thick with drift and snow. Decided to carry on. After a hard gruelling arrived at depôt

1.45. After lunch all hands preparing provisions. Found letter left there by Skipper, thanking me most profusely for the good work we are putting in. Packed sledges, took tally of all stores. During the whole of this evolution, blizzarding. I do not know what is wrong with the elements lately. Finished stores 6.40. Had dinner and turned in. If this weather does not cease, will have to devise some plan to travel in a blizzard. It is the steering that is so difficult, one is liable to turn completely around in one's tracks. We must push on; if not, our struggle will be in vain.

FROM THE BLUFF TO MT. HOPE

December 29th, Wednesday. Up at 5.50. Under way at 8 o'clock. Still snowing and thick. Can see the Skipper's trail, will follow in it. What a treat to steer in someone else's trail, it rests the eyes. Snowing and very bad light. Camped 5.30, tired. Dogs do not seem to take much notice of the hard work and are frisky.

Distance 7 miles 150 yards. Came out of tent 7.30. Found the weather clearing to the south, spotted Skipper's camp about 3 miles south. He left the depôt on the 27th so must be having a rough time or delayed by the thick weather.

December 30th, Thursday. Up at 6 o'clock. Under way 8 o'clock. Had to dig out dogs and sledges. Surface very bad, sinking in up to the knees at times. A terrible light for steering. Camped at 6 o'clock. Skipper about $1\frac{1}{2}$ miles ahead. Distance 7 miles 1,700

yards. The surface being soft and sticky, this is good going.

December 31st, Friday. Up at 5.40. Under way at 8 o'clock, after same old digging out. Weather fair when we started, came on thick about 10 o'clock. Ran across the Skipper's trail again, and followed in it to save the eyes. Came on the Skipper's camp 10.45. Distance 3 miles 300 yards. Went over to the Skipper's tent and had a cup of tea; we talked over the prospects. I told him we would get through. He looked weather-beaten. Wild looks fit and the Padre his cheery old self. We are now 90 days out from Cape Evans, and all feel well. Let us hope that Providence will look on us and give us fine weather for this arduous proposition. It is the toughest job ever undertaken in the Polar regions. Our hearts are willing, there is no turning back, we must accomplish that which we have undertaken to do. We shook hands with Mack and party and wished them all the best for the New Year. They are to meet me again at 82° South. Under way again. Camped at 6 o'clock. Distance 5 miles 500 yards.

New Year's Day, 1916, Saturday. Up 5.45. Wished all hands the usual compliments. Under way at 8 o'clock. Skipper and party off our starboard bow; they are keeping up fairly well. Dogs going fine except Towser, who has suddenly developed shortness of breath. Took him out of harness. He seemed to have something in his throat, put my fingers right down, this appeared to ease him. Lunch time.

We are giving the dogs "spells" every quarter of an hour, and incidentally the men. The surface very tiring in the afternoon. Towser well again. I must have shifted some obstruction in his throat. Distance 9 miles 1,200 yards. A really splendid performance on this surface.

January 2nd, Sunday. Up at 6 o'clock. Weather thick and overcast. At 6 o'clock could not see sledges from tent, decided to wait a little. Examined weather again at 8 o'clock, decided to play chances. Under way 9.30. Skipper and party off our starboard quarter, still in the tent. Surface terrible, the dogs are going strong. This overcast weather is very bad for my eyes, the dogs even get snow-blind. Lunch usual. Under way 1 o'clock. The weather still similar in the afternoon. Camped 6 o'clock. Distance 8 miles 400 yards. "Con" and "Towser" have both developed shortness of wind, and are not in the best of trim. I examined them, stopped their food and dosed them. I sincerely hope they will not give in; we can do nothing but trust in Provi.

January 3rd, Monday. Up 5.30. Went out and examined "Con" and "Towser." Their eyes are bright, and they have recovered from their lassitude. Richy made them a hot feed. "Oscar" and "Gunner" became jealous, and had to be squared with a piece of seal meat. As the dogs are only fed after the day's work, this was rather out of the routine. Under way as usual. We are now going through the same few miles where the dogs collapsed in February last; passed several of our old cairns; on one, 2 sets of

dog harness. Distance 9 miles 1,800 yards. Dogs have been going splendidly all day ; " Con " and " Towser " recovered. Richy is giving them all a hot feed to-night, which they enjoy. The other tent called out for me. I went over. Whilst cooking their dinner the Primus gave out. On examination found the ring where the cap fits on completely burnt out. This stops the Primus from giving out the flame which is necessary for heating. Gaze cut some tin from the top of a tea tin and fixed around ; this answered the purpose, but it takes double the time to melt the ice and boil the cooker. This accident has caused me to think ! I proposed to take all hands to 81° South. The most essential part of a sledging equipment is the Primus. Lives depend on that. The question is, whether to send back one party at 80° with the defective Primus, or to play chances and take them on to 81° . I do not want to risk men's lives, without thoroughly thinking out the position. We must trek our sledge loads, what we have here, to 81° in any case. We are about 2 days' march from 80° . Will see how things progress by then. There does not seem to be any happy medium in this beautiful country, one thing or another crops up, but I think with the aid of good old " Provi " we will pull through. Turned in 9 o'clock with food for thought.

January 4th, Tuesday. Up at 5.30. Not too good a night's rest, thinking too much. Under way 8 o'clock. Weather overcast, snowing. About 11.30 sun came out—good " Ould Sol." It is wonderful what a difference the sun makes, especially in the spirits of

the men and dogs. The sun was so warm we had to peel off all our outer garments. It was essential ; we wanted an airing—the first time they have been off for months. I turned up my pants ; my legs were badly blistered with the sun. All sleeping-bags and gear laid out to dry. Washed the feet in the snow (splendid). Under way at 1 o'clock. Going admirably in the afternoon. Camped 6 o'clock. Distance 10 miles 200 yards. A good day's performance. After dinner I examined the Primus again in the other tent, and decided that it would not be fair for me to take the party past 80° S. with the defective Primus lamp. The lamps had seen service with Capt. Scott's parties, I was afraid of them when we started. It is impossible for a party to travel without a lamp, it is the only means of melting snow and preparing food. If I take the party past 80° it may jeopardize the whole of our depôt laying, and imperil the success of laying the depôt to the Beardmore. I will think the problem out to-morrow.

January 5th, Wednesday. Another restless night. Up at 5.40. Under way 7.45. Weather thick. Have to steer by cairns, which we are putting up every half-mile. Lunch and under way as usual. Distance during day 9 miles 900 yards. The dogs are much brighter. Richy is giving them a hot meal every other day ; they will have to be nursed like children. I can now realize everything depends upon them. "Oscar" and "Gunner" are like two draught horses and in splendid trim. "Con" and "Towser" doing well ; they are much lighter in build than the former two. After

dinner had a chat with Cope ; decided to send him back with Gaze and Jack. Sorry to part with Cope, he has been a good tent-mate and a pal, and always willing. The strongest have to go forward to carry out our objective. I went over to the other tent, informing Hayward he will have to go south, and Gaze and Jack will return with Cope in charge. They have all worked willingly and shown great cheerfulness under the extraordinary circumstances in which we are placed. Richy and I talked well in the night on the future programme. "It is difficult."

January 6th, Thursday. Up at 5.30. Under way 7.45. Weather, snowing and thick. Arrived 80° S. Depôt 10.45. Unpacked sledges, loaded my sledge with 1,240 lbs.—12 weeks' food for men and dogs. Gave Cope instructions to push on in all weathers and travel in our outward track, the weather being thick, no possible chance of picking up landmarks. I could not supply him with a compass, having only one. Gave him a note for the Skipper, with instructions about this depôt, the provisions I am carrying forward and to try and pick me up at 82° S. Under way at noon, after wishing the boys good-bye. I thought we should have a bad time in starting the sledge ; to my surprise it ran very smoothly, the dogs simply overran us. I called a halt, went back for another case of biscuits—45 lbs. The wind veered to the north, we set sail, our sledge slipping along. We have now 1,285 lbs. on the sledge ; we put in a splendid afternoon. Camped 6.15. Distance 5 miles 800 yards. Brilliant performance. If we can keep this up, I have no doubt

about the success of the journey. I have sufficient food on our sledge to lay all depôts. Richy gave the dogs an extra feed. Turned in quite satisfied. Hayward, our new tent-mate, rather enjoyed my hoosh. I asked him if this were equal to his Canadian experiences. He said, "no comparison! Give me Canada!" Having no sleep for the last few days, I think I will go off to-night, my mind more at ease.

January 7th, Friday. Foggy. Snow crystals falling heavily. It is a wonderful sight to see the well-formed stars of the crystals. We have proposed to build cairns all the way to 83.30. Not only will it be a guide for ourselves on our return, but will be an excellent mark for Shackleton; he will have no fear of picking up the Depôts. So every "spello" quarter of an hour, up goes a small cairn: these spells also rest the dogs. At 9.45 fair wind, set sail. Going fair. Distance before lunch 4 miles 1,400 yards. Under way one o'clock. With fair wind, came across very heavy surface; sledge sinking in up to the bow. Camped 6.30. Distance during day 9 miles 1,600 yards. Richy gave the dogs a hot hoosh; that is pemmican, seal meat and biscuits boiled up. They simply love it. It is really remarkable the vim they put into their work, they seem to realize what's required of them. On sledge journeys 180 lbs. a man is a big working load, one does not travel more than 8 miles a day with same. In the ordinary course of events 540 lbs. would be the hauling load for three men. Our dogs are then answerable for 745 lbs. I have always calculated that 80 lbs. to 100 lbs. is a fair average load

for a dog. "Oscar" and "Gunner" are such big fellows, weighing 115 and 112 lbs., respectively; "Con" and "Towser," between 70 and 80 lbs. It makes one wonder! If we keep up the average we are doing, we will soon be at the Beardmore.

January 8th, Saturday. Last night about 11 o'clock dogs started barking, turned out to see the cause, for they never bark unless there is one adrift. Found, to my surprise, Skipper and party coming up. I met them, and found they had been travelling since 9 o'clock, to overtake us. I gave them a hand to put up their tent; they look very weary. Had a chat with the Skipper. "He told me he did not wish to interfere with my arrangement, and I was to carry on as if he were not there."

January 8th, Saturday. Up at 5.30. Under way 7.30. Good going for a start. We found ourselves in difficulties at times in heavy snow-drift. Lunch as usual. Skipper and party a long way astern; they came up as we were finishing lunch. As we were getting under way Skipper called me to his tent and told me he would like to join up with my party. I told him frankly "he would delay us," but I would take some of his load. We took 50 lbs. weight off his sledge, leaving him about 500 lbs. Under way 1 o'clock. We have now about 1,335 lbs. on our sledge. The surface fair, until we strike the snow-drift. When I come to them, I say, "up with her, boys" and we get over somehow. About 4.30, Skipper and party a long way behind; held a consultation with Richy and Hayward; decided to wait and see what was the cause

of delay. 5.10, they came upon us. It seems to me this party are rather exhausted. I toggled his sledge on behind ours, and rearranged the harness. After this, going fair, in fact seems much easier. Camped 6.30. Distance 9 miles 1,000 yards. Good going. I went over to the Skipper's tent after dinner ; we had a talk over the position. He asked me to carry on the same as I have been doing throughout—in charge of both parties.

January 9th, Sunday. Up at 5 o'clock. Under way at 7.30. Weather fine, with heavy snow crystals. Difficulties were encountered in the heavy snow-drifts, but in spite of everything, got in 5 miles 700 yards by lunch, noon. Under way 1 o'clock. At 2.30 Skipper complained of a sprained knee. It is painful to watch him on the trek ; the surface will not improve very much. At times we go in up to the knees. One cannot afford to have an invalid at this juncture. Parties working harmoniously. I still think the Skipper should have returned. Distance during day 10 miles 700 yards. The dogs splendid. I am suffering very intense pain with snow-blindness, hence this scribble. I have been steering in the lead since October, and have hardly been free from snow-blindness since November : have used most of the cocaine. The dogs suffer from snow-blindness at times ; they dig a hole in the snow and bury their heads ; at every spello I take a handful of snow and hold it over my eyes. I found it gave me instant relief. We are doing extraordinary well, thanks to the dogs.

January 10th, Monday. Up 5.30. Under way

7.45. Weather very thick and snowing hard, but we have made up our minds to travel in any weather—except a howling blizzard. In ordinary sledging one would not travel under these conditions. It is almost impossible to steer by compass. Our method of steering is to build cairns every ten minutes, as we have a little supply of black bunting for depôt flags. We cut bunting into pieces about a foot square, putting them on cairns facing south. It is amazing how far one can see these. (I should advise any expedition to take away bundles of black flags on sticks which would save the time of building cairns.) We always keep two cairns in sight. In spite of the stops we made good headway before lunch, covering 4 miles 1,280 yards. Under way 1 o'clock. Snowing hard. Smithy, who is pulling behind me, is feeling the strain and getting very short-winded. At every spello, he is compelled to sit down on the snow. Mack's knee is playing up with him. Sometimes we sink in up to our knees; this makes matters very hard for the men and dogs. Against odds they are doing excellently. Distance for day, 9 miles 1,500 yards. Splendid work. Snow-blindness bad.

January 11th, Tuesday. Up 5.30. Under way 7.30. Weather and surface, similar to yesterday (chronic). Skipper and the Padre not too well. Distance during forenoon 4 miles 1,800 yards. Under way 1. Came into very heavy snow-drifts, the most awful surface we have experienced, sometimes sinking in up to the waist. A great blessing our little dog team is sticking it out, or we could not travel 4 miles a day. I halted later to-night. We will be able to

reach 81° to-morrow night, and build the depôt. Time is precious, we cannot afford even an hour. It is imperative to push on without delay. As far as the weather is concerned, we have no reason to complain. Our halts have been frequent of late. Distance during day 10 miles 200 yards, an excellent mileage. Richy gave the dogs their usual feed, with a hot meal to follow. It is a joy to see the way they relish their food. They deserve all consideration. Snow-blindness, painful.

January 12th, Wednesday. Up 5.30. Under way as usual. Although it is snowing, it is worth while to make the effort. Towards 10.30 my eyes troubled me, my sight had vanished. I was compelled to ask the Skipper to steer. Lunch. Distance 4 miles 1,100 yards. Once more we pulled over the soft snow and through the thick atmosphere. With my eyes bandaged and pulling behind the Padre, it seems a holiday to me, in spite of several falls. To maintain my position, I kept my hold on the trace. About 5, released the bandages ; eyes much relieved. Camp 6.30. Built a large cairn with 4 flags. Latitude 81° S. We placed on top of this depôt 3 weeks' provisions, 4 weeks' oil and biscuits, sufficient food to carry 12 men to 80° South. Distance 9 miles 570 yards. Turned in 8 p.m., tired, but satisfied.

January 13th, Thursday. Up at 5.30. Weather blizzarding. This weather looks as if it has come to stay. Much to the surprise of the Skipper I decided to trek. By erecting cairns every 200 yards I will be able to steer by them. This work requires patience.

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As we have run out of black bunting, cut up an old pair of trousers belonging to Richy. It is astonishing how we progress in spite of stops. The surface is a good travelling one if it would only clear. It is days since the sun gave us a welcome. Distance before lunch 5 miles 75 yards. After lunch, going good, dogs are a marvel. Skipper and Padre having a rough time, but they are doing their best. Camped 6.30. Distance during day 10 miles 720 yards. Splendid !

January 14th, Friday. Up usual time. Snowing hard. Blowing from the north "very strange." Going along at a ripping pace. About 10.30 my eyes refused duty. Skipper took my place steering. Sun broke through 11 o'clock. All land visible by noon. Our first glimpse since we left 79° S. What a treat to see King Sol after such gloomy weather. There is no mistaking the difference it makes in one's spirits. Lunch as usual. Under way at 1. About 3.30 land loomed ahead. It must be Mt. Longstaff. To the east of the mountain is the goal we are making for—Mt. Hope. Going good. Distance during day 10 miles 450 yards. We are all cheered at the sight of land.

January 15th, Saturday. Up 5.45. Under way 7.40. Clear—a strong S.E. wind. Surface improved through a cold snap in the night ; the temperature went down below zero, the first zero temperature since November. Head wind right in our teeth. In spite of this we put in 5 miles 1,700 yards before lunch, after which the wind freshened and sky became overcast. I

could just see an outline of the land to steer by ; this saves the eyes. Skipper and Padre not too good. Distance for day 11 miles 1,072 yards. Excellent surface and good travelling. Dogs keep up their lively spirits and are very fresh. Richy gave them an extra feed to-night. Snow-blindness improving.

January 16th, Sunday. Up 5.45. Under way as usual. Fine day. South-west wind and much colder ; had to put on extra clothing. Mountains showing up well to the south. Surface A.1. Distance before lunch 5 miles 1,600 yards. Under way 1 o'clock. Wind dropped, much warmer, travelling in singlets and pants. Land clear ; easy to steer. What a difference to trudging along in the gloom with the snow falling. Distance 11 miles 1,100 yards. Splendid.

January 17th, Monday. Up 5.40. A day out of the bag. "Provi" is looking on the right side of us. A northerly wind, sail set, surface good and the travelling "it." The distance before lunch 6 miles 300 yards—our record. After lunch wind much stronger, sails set. This takes the great strain off our harness. Skipper and Padre are not well ; they feel the effort. Distance during day 12 miles 600 yards.— A day of days. Expect to arrive at 82° South tomorrow, with good luck and the aid of "Provi." 83.30 in a week. Richy gave the dogs a double extra to-night. Snow-blindness practically nil.

January 18th, Tuesday. Up 5.30. Under way 7 o'clock. "Provi" has given us another fair wind. Before getting under way, took angles and found to our



GLACIER TONGUE.



SLOPES OF THE WESTERN MOUNTAINS.

delight we were only 7 miles from 82° S. Under way 8 o'clock. Arrived at position of 82° S. Lunch. Put up a huge cairn with flags. Left 3 weeks' provisions, 4 weeks' oil and biscuits for 12 men. Under way 3 o'clock. Ended the day by doing 5 miles in $2\frac{1}{2}$ hours. At this rate we will have the Mt. Hope depôt laid in a week from now. Distance for day 11 miles 1,800 yards. Turned in satisfied.

January 19th, Wednesday. Under way as usual. What a day! Opened up land to the S.E. during forenoon. The difficulty is to pick out Mt. Hope, as our chart is an old one and not marked. Mt. Hope is 2,700 feet high to the west of the Beardmore Glacier. I do not expect to sight it for 2 or 3 days yet. One can see that height about 54 miles off. Lunch. 6 miles 700 yards. Under way 1 o'clock. The Padre complained of his knees giving out; he has been in agony since 81° depôt. It is a great pity that the Skipper and his party did not return at 80° . There is no turning back now. Whatever happens, I expect we will have to leave the Skipper and Padre in camp, while we push forward. Surface changeable in the afternoon. Distance 13 miles 700 yards for the day. We must try and do 15 miles. The dogs are Trojans. Hot feed to-night.

January 20th, Thursday. Up at 5 o'clock. Under way 7.30. Weather clear, going fair to indifferent. Opened up new land about 9.40. We are speculating which is Mt. Hope. I am very pessimistic about the Skipper and Padre. Luncheon. Distance 6 miles 700 yards. Surface much better in the afternoon.

Poor Padre going along like an old man, his legs are not too good. Camped 6.30. Distance for the day 13 miles 470 yards, a good performance. It is through the dogs we are covering these long distances. I only hope we can carry on at this rate in case anyone gives in.

January 21st, Friday. Up 5.30. Under way with a heavy S.E. wind. Temp. low and all land obscured. I was steering by the clouds until 11 o'clock, when it cleared to the south, very black to the north. In spite of wind and mixed surface, we covered 6 miles 500 yards before lunch. Under way 1 o'clock. During lunch the sun came out, all land showing. Skipper and Padre do not seem well. I expect it will mean dragging them on the sledge before we have finished. I am steering for a mountain right ahead, which answers to the description of Mt. Hope ; it is about 35 to 40 miles off. Distance for day 12 miles 1,600 yards. I camped earlier—5.30—on account of the Padre. Snow-blindness nil.

January 22nd, Saturday. For the first time since October I overslept myself. I have awakened at 5 to 5.30 every morning. I think this regularity is the result of my Naval training. Up 7.10. Under way 9 o'clock ; at 11.30 the Padre gave in, so we camped. We had a consultation. I wanted the Skipper to stay behind with the Padre, as I think the rest will do them both good : anyway I left it to them. After lunch Skipper decided to trek with us ; the Padre said he was able to look after himself. We decided to leave him with tent and stores for a fortnight and push on for all



BUILDING THE BULL DEPOT.



JOYCE TRYING TO FIND A PASSAGE.

we were worth. I think we can be back under a week. I tried to persuade the Skipper for his own good to remain behind. Under way 2 o'clock. Good going, surface fair. Distance 11 miles 1,800 yards. Camped at 6.

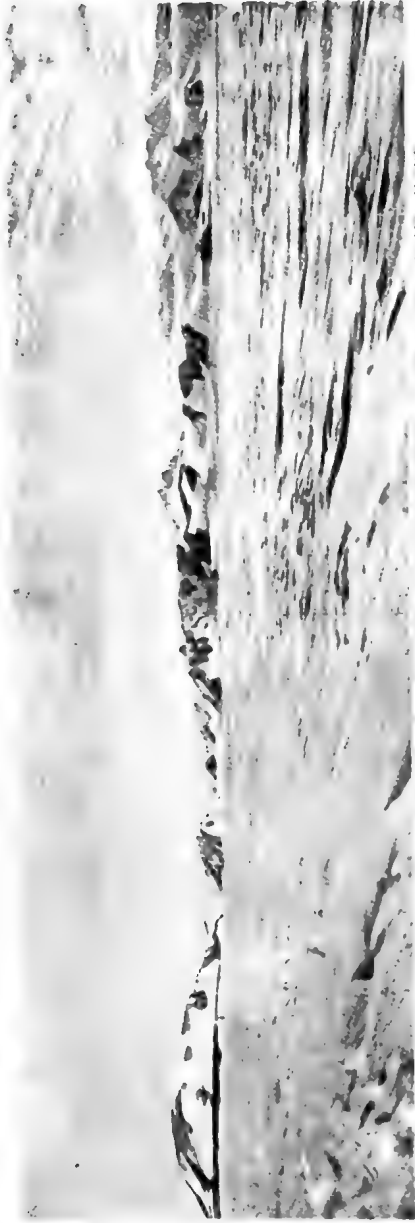
January 23rd, Sunday. Up 5.30. Under way 7.30. With 5 men in a 3-man tent, it makes a tight squeeze, did not have a very good night's rest. The temperature is down fairly low; weather thick. Nothing in sight and very foggy. Had to build cairns to steer by. At 11.30 came on to blizzard; decided to camp. Came on very heavily during lunch: brought the sleeping-bags in, and laid up. Although the rest will do us the world of good, especially the dogs, we cannot afford the time; we will have to make up for it later. Distance travelled 4 miles—about 20 miles from our destination. Hoping "Provi" will give us a travelling day to-morrow.

January 24th, Monday. Blizzard continued all night. Up at 5 o'clock. Richy dug the dogs out. I put the party on half rations, as the blizzard may continue for some time. Examined Mack's knee: it is blue; cannot understand how a sprain should remain so long; of course, it requires rest. Massaged it which made it much easier. What a pity he did not take advantage and lay up with the Padre!

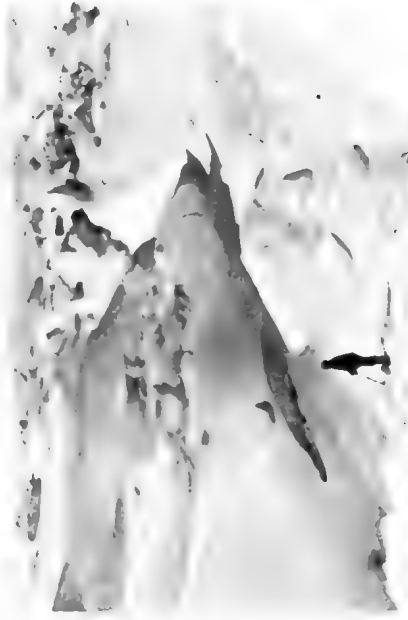
January 25th, Tuesday. Up at 5. Splendid day for travelling. All hands feel the benefit of the rest. Prepared for a hard day's travelling by peeling off our Burberry clothing again. Under way 7 o'clock. The surface "it." The dogs have a new lease of

pulling powers. Before lunch travelled 8 miles 1,860 yards. Under way 1 o'clock. Altered course two points to the west, at 2.10 a.m., to a gap between which we hope is Mt. Hope and mainland. At 5.50 came into a very heavy crevassed country. We roped up, my lead being about 25 feet ahead of the party. 6.15, camped on the edge of the biggest ice pressure that I have encountered on all my journeys. Distance for day $17\frac{3}{4}$ miles, our record. The Skipper said he felt a little better for the massaging, so after dinner we gave him a good rubbing down with methylated spirits. The first thing now is to try and find a passage through this ice pressure. To the south-east is the Beardmore Glacier, which is about 24 miles wide. This huge amount of ice pushing northward causes this heavy pressure. The dogs received their double allowance to-night for their splendid work to-day.

January 26th, Wednesday. Up at 5 o'clock. Then a talk during breakfast. Arriving at the conclusion to keep the tent pitched. The weather being clear and no clouds, we decided to investigate and search for a passage through. Skipper, Richy and self roped together, I taking the lead. We came across very wide crevasses, and by appearances, no bottom. Navigating around these, had several drops, and many shudders in consequence, Skipper and Richy hauling me out. To the west, we came on to a high pressure mound. All around us was such a scene similar to that in a pantomime, but beyond realization in life. We seemed to be in the centre of a vortex of ice, churned into caves, all of blue appearance, dark and



MOUNT HOPE, ON LEFT OF PHOTOGRAPH. LEARNMORE GLACIER IS TO LEFT OF MT. HOPE.



TRYING TO FIND PASSAGE TO MT. HOPE.

light. Then again we appeared to be standing on a mountain, the pressure 3 to 400 feet. I was fortunate in being able to take several photographs of this grotesque scene. I spotted a place to the east, which looked all the world like a bridge. We made for this, falling through at intervals. We crossed it, emerging into smaller crevasses, then eventually on to good solid ice. We then thrust ahead to a gap between, trusting it would be Mt. Hope. Of this we were somewhat uncertain, because of an old chart we were using. Still I felt encouraged, and was more than confident when I found the huge glacier to the east was the Beardmore. When almost at the ice-foot ascending the gap, Richy's sharp eyes spotted something to the west, which we made for. It turned out to be one of Captain Scott's depôts—two sledges lashed on end, with about four feet showing. We then knew we were on the right trek. We climbed the small glacier between Mt. Hope and the mainland, and then got on to a slope, and we then saw the Great Beardmore Glacier stretching away to the south. A glorious spectacle, a mighty silence, a fitting recompense amidst our trials. We trekked back to camp, finding a trail for the sledge. Eventually arrived, where a good feed was awaiting us. We had travelled 12 miles and arrived at 3 o'clock, after 9 hours' trek. Skipper very exhausted. Under way again 4 o'clock. We proceeded to Capt. Scott's depôt, arrived at 7 o'clock. Before dinner I decided to take the depôt up Mt. Hope, Wild and Hayward accompanying me. Arrived at the summit. I picked out a place, which would be

impossible to miss coming from the south. Left depôt lashed to a broken sledge, with bamboos lashed to a height of 15 feet, with 3 flags. We left two weeks' food, 3 weeks' oil and biscuits. I snapped a few photographs. We made for camp, reaching there at 10.30. I was satisfied that the object of the expedition was carried out. After all our toil and hardships it would indeed have been bad luck if we could not have accomplished our objective. Shackleton's party will have to depend upon this depôt for their lives. During dinner the Skipper acknowledged our work. "Something attempted, something done." Our next proposition is to trek back to Hut Point, with the greatest speed. Distance during day 22 miles. We have had a long day. Turned in with one great load off my mind. The next enterprise is the long trail back. The dogs are our only hope. Our lives depend on them. (It has taken 148 days to lay this depôt.)

CHAPTER VII

BACK FROM MT. HOPE TO THE BLUFF

27th January—26th February, 1916

Homeward bound—Pick up Spencer-Smith and carry him on sledge—All show scurvy symptoms—Reach depôt at 82° S.—Rapid progress with sail on sledge—Miserable conditions—Reach depôt at 81° S.—Skipper exhausted—Reach depôt at 80° S.—Sighting old landmarks—Held up for six days in blizzard near Scott's grave—Food exhausted—Grim humour in last extremity—Skipper and Spencer-Smith left in tent with Wild in charge—Struggle to the Bluff—Food at last—Hayward succumbs.

January 27th, Thursday. The wind started at midnight, increasing to a howling blizzard. Turned out 5.30 The weather too thick to proceed through the vortex of crevasses. I had a very bad attack of snow-blindness during the night, so very little sleep. Breakfast at noon, saved a meal. I went outside ; there is a slight clearance, decided to play chances and get under way. We managed to pull through the crevasses, after which I turned the steering over to the Skipper. My eyes a source of constant pain—the worst, there is no remedy, as we have run out of cocaine. At every spello I put snow on them, which eases them. Camped 7.30. Distance $6\frac{3}{4}$ miles. We are now homeward bound, with 370 miles to trek. With "Provi" with us, we should be in Hut Point by the end of February. We sang to-night :

" Here in the body pent,
Absent from Him I roam,
Yet nightly pitch my moving tent
A day's march nearer home."

January 28th, Friday. Up at 5.30. Under way at 7. I feel a useless wreck at present. Cannot see, my eyes are a complete blank. Although I am pulling, it is necessary to hold on to the trace for guidance. We have 2 days' provisions left, before we pick up the Padre. Dogs going with a will. Camped 6.45. Distance $16\frac{1}{2}$ miles. Skipper's legs are swollen to a degree, and our gums are turning black. Every indication of scurvy.

January 29th, Saturday. My eyes caused me a restless night. Up at 5.30. Under way 7.30. We are making an attempt to reach the Padre before lunch, but a northerly wind hit us full in the teeth, so we could not carry out our desire. Lunched at noon. Under way 1. Sighted Padre's camp just after, arriving there 3.15. Found the Padre in his sleeping-bag, and unable to walk; examined him. His limbs black, extending from ankle to hip. Gums slightly swollen. Every indication of scurvy. Struck camp, placed the Padre on the sledge, taking care to make him as easy as possible. We moved off at 4 o'clock. Poor Skipper down in the dumps, we soon bucked him up. Somehow I felt after we left 80° something like this would occur. If it had not been for their Primus giving out I should have sent them back. Well! we must along and make the best of the circumstances, with longer hours and distances. One of the trials of Polar regions which we must expect. Our only hope is our four-footed friends; they make the going with a vengeance. Camped at 7 o'clock. My mind a little less disturbed. Snow-blindness almost vanished.

January 30th, Sunday. Up at 5. Blowing incessantly all night to our utter disgust, the wind and drift too strong for travelling. Rationed party on two meals a day, first at noon, second, 9 p.m.

January 31st, Monday. Up at the usual hour, still blizzarding. Richy released the dogs from down under. Skipper came over to my tent and asked if we would travel by night. I replied "No," and explained "we must carry out the routine we have set; if once we side-track it is not easy to step into line again." He is worrying over the condition of the Padre. The dogs must be studied, and I feel it my duty to nurse them in every sense of the word. He saw the trend of my suggestion. I told him he should have realized the state of the Padre's health, travelling with him for so long a period. During a lull, prepared breakfast at 10. On the trek again at noon. After placing the Padre on the rear sledge, covered him with a snow cloth, to keep the drift out of his bag. The atmosphere mild, the drift enveloping all objects, the melting snow making all we possess wet through and miserable. Camped at 5. Distance 8 miles. Turned in saturated. Spirits bright.

February 1st, Tuesday. Up at 6.30. Overslept second time. Everything buried in drift. Under way 9 o'clock. The new month started with a fair wind. Set sail. Surface soft snow. Travelled before lunch 6 miles 900 yards, notwithstanding the Padre's weight on sledge. After lunch we trudged on and on until 6.30, being anxious to make up a little of our lost time. Camped. After dinner, told Skipper

No. 2 sledge would have to be put in depôt ; he did not seem to agree. Still I feel it to be a wise course, and shall travel to-morrow without it, when I hope to put in at least 13 to 14 miles a day. A heap to be thankful for, the dogs in great form. Examined the Skipper and Padre, the former has the corresponding symptoms to those of the Padre. It is beyond my powers to understand how he moves along, his ankles are swollen out of all proportion. What an asset pluck is in these vast wastes ! Hayward's gums are black and protruding, his knees are inclined to be of the same colour. I fear scurvy has caught us in its net ; only one cure—fresh food. No chance whatever to dry the Padre's sleeping-bag. He is a Briton ; no complaints.

February 2nd, Wednesday. Up at 5.30. Unpacked No. 2 sledge and transhipped all gear to No. 1. If we can travel faster that is what I want, no matter if the sledge is awkward to pack. Under way 9.15. We try to the best of our ability to give the Padre all the ease we can arrange. On this occasion he is tucked in on top of the sleeping-bags, his lips are bloodless and his breathing is far from normal. I feel dubious of his heart. Although surface not too good, trekked 7 miles 900 yards. Lunched. Under way at 1. Surface same as forenoon. Dogs give one the impression they would go on for ever. Skipper falling behind, as much as he can do to keep up. Camp 7 o'clock. Distance 16 miles 800 yards. Encouraging to a degree.

February 3rd, Thursday. Up at 5. Because of our

invalid, the sledge takes a little longer to pack. Under way 8.20. Fair wind. Set sail. What a wonderful difference this breeze makes to our pace. Skipper not pulling. It will make matters awkward if we are compelled to place Mack on the sledge. Picked up 82° Depôt at 2.45, going ahead splendidly. Distance during day 17 miles 200 yards. Camped 7 o'clock. This speed of travelling is stimulating.

February 4th, Friday. Up 5.30. Weather calm. The Padre fainted this morning ; it will necessitate us placing our shoulder to the wheel to get him in ; no living being can do more. We are up against a very bad surface, makes the position harder. In spite of these conditions, trekked 15 miles 1,700 yards. Camped 6.15. The dogs are worth their weight in gold. Richy gave them their extras to-night.

Skipper far from well. The Padre cheerful ; making good headway, cheers him.

February 5th, Saturday. Up 5.30. Under way as per usual. Surface still heavy. Sastrugi about 30 yards apart ; this means the bumping of the sledge, causing much distress to our patient. Passed half-way camp before lunch. Distance 8 miles 400 yards. Under way 1. Going similar to forenoon. Camped 6.15. Distance 17 miles 1,400 yards. Bravo, dogs ! they are the top of the mark, and marvels. At this rate we shall soon wipe out the remaining distance. Padre about the same. My sympathy goes out to Skipper and Padre, they are both having a very rough time ; one cannot help them more.

February 6th, Sunday. Up 5.45. Under way as

usual. The Padre somewhat happier. Fair wind Set sail. Land is obscured, am steering by the clouds. On looking at my watch at 11 o'clock found it had stopped. Set it going again. To my surprise I had neglected to alter the hands, consequently put in 10 miles 1,600 yards on a rotten surface before lunch. Under way 1 o'clock. Surface still unpleasant. However we managed to get in a fair mileage. 81° depôt 4½ miles distant. Distance travelled 18 miles 1,200 yards—our record. The Padre has no comfort, a wet sleeping-bag. Weather too bad to dry it. Our bags in a similar state. Naught to soothe us when we require rest after our trekking. Dogs are Trojans.

February 7th, Monday. Up at 5.30. On the trek as usual. Wild informs me Padre was groaning with pain all night. Had a talk with him. He is feeling much better this morning. Picked up 81° Depôt at 10.15. The light is atrocious for steering, our outward cairns are very helpful. Came on to snow at 3.15. Trekked on until 5.15, then camped. Distance 13 miles 1,000 yards. The Padre suffering, and Skipper weak.

February 8th, Tuesday. Blizzarding all through the night. Turned out 5.30. No chance to proceed. A lull at 7. Outside the weather clearing. Under way 9.50. After digging out dogs and sledges. The snow still falling, with the bad light, steering is hard work. We are on top of the cairns before we are aware of their proximity. Lunch at 1, during lunch the sky became clear and blue. Under way 2 p.m. I have been over this course fourteen times, and this is the first instance

I have known these surroundings to show up bright. The surface shocking—one of the hardest pulls since we trekked. Distance $11\frac{1}{4}$ miles. Dogs behaving splendidly. Our patient cheerful.

February 9th, Wednesday. Up as usual. The Padre taken a turn for the worse. It is incredible how a human frame can endure these trials. We are absolutely powerless to aid him further. All we can do is to slog on with the greatest possible speed. Under way 8.30. A following wind. Surface altered for the better. Lunch noon. Under way 10 o'clock. Poor Mack having a rough time, the other boys in good trim. Camped 6.30 Distance 15 miles 900 yards. Dogs very keen. Richy gave them extras to-night.

February 10th, Thursday. Up 5.30. The Padre had a better night. We massaged Mack before starting. Under way with a fair wind, but it unfortunately dropped, just as we reached a beastly surface. Sometimes hard and then sinking in up to the knees. Poor Skipper, what agony he was enduring. Asked him to ride on the sledge; he said he would not jeopardize the Padre's chance; he is true blue, and we admire him for it. Lunch and under way as usual. Similar surface in the afternoon. In spite of obstacles, put in 13 miles 1,700 yards for the day. If all goes well will reach 80° Depôt tomorrow. Padre not so well. Dogs in excellent condition, although the surface has been very difficult for them to-day. Wild is a brick the way he looks after the Padre.

February 11th, Friday. Up 5.45. Under way at
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8 o'clock, with a fair wind and a flowing sail. Padre had a comfy night. We rubbed the Skipper down before we started ; this massaging seems to relieve him. Sighted 80° Depôt 1.45. Picked up same 4.45. I decided to take on extra provisions on account of the treacherous country between 80° and the Bluff. We took on an extra four days' stores to be on the safe side. I am leaving four weeks for Shackleton, which should see him through. Under way again 5.10. Camped at 7 o'clock. Distance 16 miles 400 yards.

February 12th, Saturday. Under way the usual time. A slight wind, but awful surface. Sighted Bluff in the forenoon, miraged up.

Sighted Mt. Discovery in the afternoon. Quite a treat to see these landmarks; it gives one a little more vim ; sledging now is getting very hard work. Richy and Wild are well and cheerful. Hayward is losing some of his spirit. Sighted four lines of cairns which we laid down last year. Gave Mack a massage to-night. Hayward's knees are troubling him ; massaged him. Distance 12 miles.

February 13th, Sunday. Under way as usual. Very bad surface. All land obscured. Very thick—difficult to steer. Lunch, usual, and under way with no change in the weather. Distance 12 miles.

February 14th, Monday. Under way as usual. Surface fair in the forenoon. Passed cairn and sledge runners ; at this point last year we lost 8 dogs in about as many miles. In the afternoon came across our very worst surface since we have been out. We could only just toddle along. The strain is worse than awful. It

is like pulling 300 lbs. a man. I do not exactly know the distance travelled for the day as our meter has refused duty. Distance travelled about 8 miles. After massaging our patients, turned in—very tired. Dogs are still splendid.

February 15th, Tuesday. Up the usual time and under way. The light is very bad and surface similar to yesterday. A hard doing up to lunch, and in the afternoon had to spello often ; the dogs are feeling the strain. Camped a little earlier. Poor Padre not too well. Distance 8 miles.

February 16th, Wednesday. Blowing and snowing hard all night. Did not have much rest, the hard gruelling of yesterday made one wet through with perspiration. We are not progressing as we should. Under way in a snowstorm at 8 o'clock. A southerly wind with sail set. The surface terrible. If it had not been for the fair wind and sail, we could not have advanced more than 100 yards an hour. Sometimes we sink in up to our waists and poor Skipper, with his swollen limbs, is suffering. Afternoon performance similar to forenoon, hard pull. Distance during day about 8 miles. Massaged Mack and Hayward.

February 17th, Thursday. Under way as usual. Conditions similar to that of yesterday. Sinking in up to the knees. Asked the Skipper to tie himself to the sledge, but he would not give in. We should reach the Bluff Depôt to-morrow, after which the going is better. This terrible 60 miles between 80° and the Bluff is worse than Hell. Distance 8 miles. Gave Mack a massage. The Padre keeps cheerful, Wild

looks after him well. The dogs are feeling the effects of the continual sinking in the soft snow. They are still frisky. Very tired to-night.

February 18th, Friday. Turned out 5.30. Blizzarding all night. Found conditions too thick for travelling. Decided to wait and see if it would clear. Came on very hard about 8 o'clock, decided to lay up. Went out and dug the dogs out. Gave them a run. One day's rest will do us the world of good, but we cannot afford it, it is about 100 miles odd to Hut Point. The temperatures are getting lower. Our clothes and finneskoes are in a dilapidated condition, and Mack seems to be getting weaker. If we have 2 men to drag in, I do not know what will happen. We have now 3 days' provisions left. The blizzard carried on all day. Richy dug the dogs out in the evening and fed them.

February 19th, Saturday. Thought the tent was going to be blown from over us. Blizzarding all night. Up at 5.30. Richy dug out the dogs, who were completely buried. Put all hands on half rations, as this seems to have set in. Capt. Scott's grave is in the vicinity of here, being 11 miles from One Ton Camp.

February 20th, Sunday. Still blizzarding. Our position serious. Stores running out, the sick men not improving in their sleeping bags, the dogs weakening on account of being laid up: must halve their allowance. We are up against the biggest calamity: no kerosine for the Primus.

February 21st, Monday. Blizzard still howling. We are having a hell of a time, temperature being high and

lying in the same spot for 5 days causes a large hollow under the bags, which we have melted away with the heat from our bodies. It has been blizzarding continuously without cessation for 5 days. Richy improvised a spirit lamp out of the enamel mug used for serving out pemmican. We have a little methylated spirit left which we use for starting the Primus, although it takes about half an hour to melt a cup of water, it is something warm. Our daily ration now is one biscuit each, $\frac{3}{4}$ pint of tea, and $\frac{1}{4}$ pint of pemmican, and the dogs 2 biscuits each. This helps to sustain what little strength we have left. We are frozen by night and starved by day.

February 22nd, Tuesday. Same old thing, no ceasing of this blizzard ; 6th day, and not a lull since it started. We are on our last legs for food. Keeping one feed of Bovril pemmican to get under way with as we are still about ten to eleven miles from the depôt. After a talk with Richards and Hayward, decided to trek to-morrow in any case, or we will have to submit to the same fate which befell Capt. Scott and his comrades. The other tent seems very quiet; now and again I hear Wild's voice in the lull. Although only a few yards apart it is impossible to see the other tent, the weather being so dense. Our daily ration 8 lumps of sugar, and a half of biscuit. Richy went out to feed the dogs. His face and eyes became snowed up within two minutes. I went out to assist him, the wind was howling and the drift suffocating. The time taken to dig them out was over an hour ; he gave them the last of their food ; so we must trek at

any cost to-morrow. About midnight the gale must have reached its zenith, 60 to 80 miles an hour.

February 23rd, Wednesday. We decided, although it is still blizzarding to get under way. At the same time it seems our best plan to eat the last of our Bovril emergency, which we have kept so religiously these last 6 days for the big final effort. I called the Skipper's tent, and told him "we must attempt to make the depôt, and we should trek as soon as we had our last meal." I went over to his tent as he did not hear what I said owing to the wind. He said he was feeling somewhat off. I replied, "We must move, we are on our last legs, and slowly weakening. It is imperative that we must leave this camp, or we will go under. Have a hot meal and we will come over and assist you to strike camp."

"Our food lies ahead, and death stalks us from behind."

After our meal we started to dig out the sledge which was many feet under the snow. What a labour. Two digs of the shovel, then our breath exhausted. What a state of weakness we are in. The dogs were then freed and the tent struck. The sledge was taken over to the Skipper's tent. The heavy snowdrift 10 feet high in places. We managed to get the Skipper's tent down, packed the sledge. Poor Padre, he fainted as we lifted him to place him on the sledge. It causes one to think and say, "What is the good of it all?" The time taken to strike camp was over four hours.

Eventually we were under way with sail set at 2.30.

The wind so violent with heavy drift, it was almost impossible for me to steer by compass. I would lay the course and call out "On," Richards would take the direction of the snow as it passed my back, this being our only way to steer.

Poor Mack, who was very exhausted, was holding on to the sledge. After three, he fell down, we halted. He said, "Joycey, wrap me in a snow-cloth and leave me in the snow." I stood over him, my thoughts travelling rapidly. I felt I must cheer him at any cost. Some added strength came to my assistance, and I remembered the wager we made on our race to the Bluff in February last year. I exclaimed, "You Scotchman; what about my magnum of champagne?" This remark changed his thought waves. Even the Padre had to smile. We lifted Mack on the sledge; then I held a consultation with Richards, Wild and Hayward.

We decided to pitch a tent leaving the Skipper and Padre with Wild to care for them, with what little food there was left, which consisted of 16 biscuits, $4\frac{1}{2}$ ounce cubes of Bovril and a little chocolate. We proceeded to try and make the depôt $10\frac{1}{2}$ miles away. I left instructions with Wild to eke out the food until the 27th, when I hoped to be back if I found the depôt: if not?—We wished them good-bye and gave them a cheery parting. As we left them the blizzard came on us again with unabating fury. Even with an empty sledge, 4 dogs, and sail set, we found we could not do more than half a mile an hour. The surface was so bad, sometimes we sank in up to the

waist. After the tent was pitched, I found my left foot badly frostbitten and blistered. We sat down to our banquet—one cup of tea and half a biscuit. The dogs did not give us their cheerful bark, which they always do when we camp for the night. Poor fellows, no food for them. We turned in about 9 o'clock, our sleeping-bags saturated. We are living in hopes of a fine day to-morrow. The situation looks far from promising. However, I have two excellent tent-mates. They are cheerful under the circumstances. This is the time to bring the very best out of everyone. I call to mind these lines of Robert Service :

“ And though you come out of each gruelling bout
All broken and beaten and scarred,
Just have one more try—it's dead easy to die,
It's the keeping-on-living that's hard.”

February 24th, Thursday. Up at 4.30. Breakfast, one cup of tea and half a biscuit. Under way 7 a.m. Weather snowing and blowing like yesterday, only worse. Had great difficulty in laying the course, on account of the heavy wind, about 60 miles an hour. Every quarter of an hour we were compelled to halt, our breathing short. Now and again the sledge struck a soft patch ; she would stop ; then came the physical force required for starting again. The weight of the sledge about 200 lbs. all told, with four dogs and three men to haul it, trekking only two to three miles a day. As a comparison, the same team pulled 1,380 lbs. at 10 miles a day a month previously. Camped in an exhausted condition at noon. Our lunch half a cup of weak tea and a quarter of a biscuit ; this meal taking

1½ hours to prepare. Following this Richards and Hayward went outside to get ready for trekking, the force of the wind, 70 to 80 miles an hour, driving them back to the tent. We decided impossible to proceed ; brought in our sleeping-bags.

The worst of camping is the poor dogs and our weakness, which means we have to get out of our sleeping-bags, and have another half-cup of tea without working for it. With scrapings from the dog tank, it is a very scanty meal. I don't think I ever tasted anything worse, but it had to go down. This is the third day the dogs have been without food. If we cannot soon pick up depôt and save the dogs, it will be almost impossible to drag our two invalids back the 100 miles we have to go. The wind carried on with increasing fury until 7 o'clock, and then at last came a lull. Turned out, found it snowing very heavily, and impossible to proceed. The wind came on again worse than ever at 8.30. I am afraid the tent will be the next thing to go, then it will be all up with us. My tent-mates are cheerful and look on the bright side of everything. It is really wonderful what dreams we have, especially about food. Trusting in Providence for a fine day to-morrow.

February 25th, Friday. Up at 4 o'clock. Richy prepared our banquet—half a cup of tea. Under way at 7 o'clock. The effort to pack the sledge is almost beyond our control. "Day after day the same, only a little worse." Still snowing very hard, halting every ten minutes, as we are in such a weak state. The dogs seem to realize we are searching for something. They

look at us pathetically. We often speak of my late chief—Capt. Scott and his party. Their snow monument is within only a few miles of us. If we had prolonged our stay in our tent another day, I feel assured we should have remained powerless to get under way once more. We would have shared a similar fate to Capt. Scott and his companions. If the worst comes, we have made up our minds to carry on and die in harness on the trek. If a mortal soul were to meet us, without a doubt, they would receive a shock, three men staggering on with four weak dogs, fair wind, and sledge practically empty, clothing in tatters and finneskoes worn through and tied with provision bags. We camped for our grand lunch at noon, having covered the small mileage of $2\frac{1}{2}$ miles in 5 hours.

The tent is ripped down the front. It will require manœuvring to mend. Temperature down below 20. After lunch (I call it lunch)—half a cup of thin tea, our last ; food, *non est*. We struggled on once again. I am steering by compass only. God knows if we have passed the depôt. It may be miles away from us. Since we left the invalids the blizzard refused to leave us. Had to call a halt, the wind too strong—60 to 70 m.p.h. Decided to erect the tent and patch it with empty food-bags, Richy pulling the needle through from the inside, and I from the outside. This answered the purpose, preventing the snow from invading us and the tent from splitting further. I expected the tent and myself blown to smithereens, whilst we were mending it. Turned in in our wet sleeping-bags ; decided to proceed as soon as the wind drops. The

position is very serious, our plight desperate. I am doubtful if Hayward can stand the strain another day. He is down in the dumps and strange. He suggested killing one of the dogs for food. I cheered him up by saying it is bound to clear to-morrow. I told him although we were starving, it would jeopardize all the party to lose a dog. I was depending on them to trek the sick men in, and if we lost a dog it would mean good-bye.

Hayward had been trained in the wilds of Canada. I quoted to him, much to the delight of Richy, a few lines written by the Canadian Kipling, Robert W. Service :

“ ‘ You’re sick of the game ? ’ ” Well, now, that’s a shame.
 You’re young and you’re brave and you’re bright.
 ‘ You’ve had a raw deal ! ’ I know—but don’t squeal.
 Buck up, do your damndest, and fight.
 It’s the plugging away that will win you the day,
 So don’t be a piker, old pard !
 Just draw on your grit ; it’s so easy to quit :
 It’s the keeping-your-chin-up that’s hard.”

After this poor Hayward took another couple of holes in his belt to stay the gnawings of hunger and was more his old self.

February 26th, Saturday. Just after 1 a.m. the wind dropped after blizzarding for nine days ; the stillness feels uncanny. Went outside, low and behold ! a break in the clouds to the south-east. This did not mean clear weather. Under way 2 a.m. Just before 3 a.m. Richy sighted the depôt. The visibility made it appear immediately on top of us ; in reality it was three-quarters of a mile away. “ Provi ” must have

been guiding us. To pick up a depôt flag on a clear day is like picking up a buoy on the ocean, but how much more difficult to find one in a blizzard! On an ordinary clear day this depôt could be sighted 10 miles away. (I laid the depôts on Shackleton's last expedition. On February 23rd, 1909, when Shackleton and his party were returning from their record journey—88.23 South—and were on their last meal, my depôt was sighted at 12 miles distant.)

After Richards sighted the depôt, Hayward collapsed. We put him on the sledge. He was becoming weaker; tried to be cheerful. One could see he would not continue to hold up for a much longer period. The dogs sighted the depôt and gave a joyful howl—the first we had from them for six days. They became electrified and started to run. Richy and I could barely crawl. My weakness made it compulsory to bring the dogs to a standstill again. It took us over two hours to reach the depôt, arriving there about 5 o'clock in an exhausted condition.

Then came the struggle to erect the tent, which took over an hour; in ordinary circumstances a tent can be spread under five minutes. One can judge from this our condition. If the depôt had not been sighted to-day, we could never have pitched the tent again. Richy was the strongest of the party. I do not think that there has ever been a weaker party arrive at a depôt, either Arctic or Antarctic. After the tent was up, we put Hayward inside, then took down the provisions off the depôt and gave the dogs a feed of pemmican. One would think, after five days without food, they

would simply wolf it down ; they ate it as if they had just enjoyed a feed. If ever a person owed their life to anyone, we owe ours to the dogs, and I sincerely hope they will keep fit, as so much depends upon them. "The next hundred miles will be tragic with three sick men on the sledges." After seeing the dogs comfy, Richy and I started to dig out the oil, which is kept clear of the food-bags, as kerosine permeates everything. This evolution was hard work in our present state. A week's provisions in the tent, our Primus started : strange to say, we are not hungry, food does not tempt us. I think it is the reaction. It is now eight days since we enjoyed a full ration. I decided to cook Glaxo for a start. It took some time to drink, then it refused duty, and came back again. Next I tried Glaxo and Oatine ; this was successful. We expected to hear news from the ship here as this was arranged with Stevens before we left Cape Evans, but there was no news, I think there must have been a calamity. Let us hope for the best. Our physical weakness put us down in the dumps, but the cheery sound of the Primus took all that feeling away. It is like coming out of a thick London fog into a cosy drawing-room. After our first feed we decided in about four hours' time to have another of Bovril, and so on, until our weakness had vanished. The Glaxo had already worked wonders, and we will be trekking as soon as our legs are in a fit state to travel. Hayward's legs are black, I am afraid that scurvy has claimed another victim ; there is no possible cure until we arrive in the seal country. Richy massaged

him, rubbing in methylated spirit, which seemed to ease him. After a four hours' rest, made Bovril pemmican, which we were able to keep down. Richy gave the dogs a hot meal, and by the way they are barking, it has cheered them. Then Richy and Hayward (who is feeling much better) built up the depôt, and I mended the tent out of the old provision bags. The weather is still the same, the force of the wind at times between 60 to 90 miles an hour. It is remarkable how the old tent stands. As soon as there is a lull we will get under way.—This is a day to remember.

CHAPTER VIII

THE FIGHT WITH SCURVY FROM THE BLUFF TO HUT POINT

27th February—18th March, 1916

Forcing the dogs south again to rescue Skipper's party—Two helpless men dragged on sledge—Shortening days—Increasing weakness of party—Northwards from the Bluff—Mt. Erebus sighted—A third man added to sledge-load—Progress impossible—Skipper volunteers to remain alone in tent on Barrier—Sledge dragged on carrying Spencer-Smith and Hayward—Death of Spencer-Smith after 40 days on sledge—The Barrier edge at last—Seals for food—Hut point once more—Contrast with home-coming of *Discovery* party—Two days' rest—Back to the Barrier to rescue Skipper—Long marches—Open water at Hut Point but no ship.

February 27th, Sunday. The tenth day of the blizzard at the Bluff Dépôt. Weather continued with fury the whole night, expecting every minute to have the tent blown from over us. Up at 5 o'clock. Found it impossible to get out of the tent, the door being blocked by snow. Had a hard job to force our way. Could not see dogs or sledges as they were completely buried. Could only tell where the dogs lay by the impression on the surface caused through their breathing holes. After digging them out, made breakfast. We are eating much better. One can feel one's self gradually becoming stronger. After breakfast had a talk over the position. We are 11 miles from our comrades. If this weather would only ease, we could do the trek in one forced march, although our strength is not up to the mark, in the case of Hayward whose legs are badly swollen. But it is essential that

we trek south, as the Skipper and his party have been without food for five days. This is the longest blizzard I have experienced in this country. We have not had one travelling day for eleven days, the amount of snow which has fallen is incredible. Turned in our bags again. It is the only comfort we have, and they are wet through. Up again 10.30. Had another good meal, the dogs the same. If they could speak they would say, "why all this food, and what is the meaning of it?" After the meal we decided to trek. The force of wind about 60 m.p.h. We must reach our companions. We loaded the sledge with three weeks' provisions, about 160 lbs. and 50 lbs. dog food. The complete weight being about 500 lbs.; also an empty sledge on which to place Mackintosh. We were under way about noon, but to our great surprise found we could not shift the sledges. After advancing 10 yards in about 20 minutes, decided to turn up the sledge and scrape the runners. It went better afterwards. We are still weak. Poor Hayward seems in a bad way, his legs are giving him trouble and are painful. For the first time since we started sledging with the dogs, they do not appear to relish their job; they would not start the sledge. Richy said, "Turn them to the north, Joycey." I did, and so did they. I was on my back with my legs in the air. They are cute; they had seen sufficient of the Glories of the Southern Trail, and knew that the Northern Trail was homeward bound. I gradually faced them around to the south, the wind in their faces a trial to them. The heavy snow that had fallen made the surface impossible. We were

sinking in up to the knees, our pace only half a mile per hour. Lunched at 4.30. Carried on again until 11.20, when we camped. The sun is now dipping, it was dark when we made dinner. Richy spent an hour massaging Hayward, using methylated spirit, which seemed to improve him. If he collapsed now we would be in sorry straits. Turned in about 1.30. The wind dropped at last, but it is still snowing and overcast.

February 28th, Monday. Up again at 6 o'clock. Could see a little of the sky-line. Under way at 9 o'clock. The reason of delay, had to mend, with provision bags, our fur boots, which are in a very dilapidated condition. My feet were badly frostbitten and blistered yesterday. About 11 o'clock came on thick again. I should think we are only three or four hours from our companions, but fate once more intervened, with a howling blizzard from 50 to 70 m.p.h. So were obliged to camp at noon. The party cannot be far from us now, and one cannot go on, or we may pass their camp within a few yards and not see them, as one knows, who has been in Polar regions, how difficult it is to steer with a compass in a blizzard. The blizzard continued with fury all the afternoon and night. I had no sleep thinking if this carried on we would not find our companions alive.

February 29th, Tuesday. The wind simply howled all night. It is really a miracle how the tent stands the strain. Turned out 4.30. Very thick. Cleared a little to the south about 8 o'clock. Richy with his sharp eyes, sighted something black to the north. We had a look around, and Richy sighted the tent to the

south-east ; our sledge was pointing right at it. We were soon under way ; it was not until 12.45 when we reached the camp. Wild came out of the tent to meet us. We gave him a hearty cheer. I fully expected to find them down. Poor old Mack crawled out of the tent, very weak, could just stagger, and thanked us profusely for our journey. I told Wild to cook them some food—Glaxo, Oatine and a small quantity of Bovril pemmican, and not to eat too much in case of reaction.

This was their ninth day practically without food. Wild had kept his strength up by exercising with the shovel, every day building cairns in case we should miss them. The Padre, poor fellow, had to stay in his wet sleeping-bag, and is very weak. The only thing now is to push on and travel in all weathers. We were soon under way after lunch. It took us over an hour to dig out Mack's tent. Then we lifted poor Padre ; found that he was in a large hole, the ice having melted through the heat from the body. Poor fellow ! He has been in the same position six days. We made him comfortable on the sledge. He said, "Joycey, don't forget your promise about the Embankment when we get back,"—i.e., whilst sledging we knew the pangs of hunger ; we talked of the poor people on the Embankment in winter time.*

We made the Skipper comfy on the extra sledge, which we trekked from the depôt. Hayward trudged alongside. The dogs are going splendidly. Camped

* We were invited, on our return to England in 1909, to many festivities in London, which finished in the early hours, after which, we made our way to the Embankment and lined up the stranded at the coffee stalls.

at 8 o'clock. To camp now is awkward. We have to erect the Skipper's tent ; carry the Padre inside, make him comfy. Mack does not require the same amount of attention. Wild looks after them. We then pitch our own tent, feed the dogs. Richy is looking after them. We are giving them a hot meal every other night. The distance for the afternoon three miles. The position is—3 men down with scurvy "very seriously," 3 men very weak, also with scurvy "but not so serious," and 4 dogs. Hut Point is about 90 miles away ; the sick men will have to be dragged on the sledge. The dogs going north will travel much better ; the wind which is invariably southerly will be behind us. The dogs will not be hampered with the wind and drift in their faces, and with the help of the sail, there is a chance. Our sleeping-bags are wet through and worn out. The sun has not been out for over 20 days, so we have not had a chance of drying them. Our clothes are in tatters, and finneskoes in a dilapidated condition tied up with spare food bags. Poor Padre has been helpless for 38 days ; he has a wonderful spirit, and is very cheerful. Turned in at 11 o'clock, in a better frame of mind, having all the party intact. Hope to reach the Depôt to-morrow. My feet badly frostbitten.

March 1st, Wednesday. Up at 5 o'clock. Under way at 8, with a good southerly, and sail set. Worse luck, very heavy drift and temperature well below zero. "One cannot expect all good things at once." Skipper and Padre lashed on the sledges with Hayward tied to the front sledge. We are making

splendid progress. Sighted something black some miles off our starboard beam. It is Captain Scott's grave. We put in a good mileage before lunch. After which we had to dig the dogs and sledges out, the wind and drift much stronger. Skipper fell off the sledge. We were not aware of it until Wild saw the empty sledge ; had to return a considerable distance ; dogs refused to face south, but coaxed them along. Arrived at the depôt in a howling blizzard at 6.45. Found our tent-poles minus, must have fallen off when the Skipper came a cropper. Richy went back for them ; they were some distance behind. Richy had an unpleasant time in finding them. "Moral"—see everything properly lashed. We soon had our tent up and dinner cooked. Turned in wet through, and cheerful, about 10 o'clock. Thanking "Provi" that the last part of our journey will start to-morrow.

March 2nd, Thursday. Had a bad night, very little sleep, cold shivers. Up as usual 5 o'clock. Strong south-west wind with heavy drift. Took four weeks' provisions from the depôt, leaving six weeks' for Shackleton and party. I think this will last us through, there being another depôt about 50 miles north of the eastern trail. I will have to take the outer trail on account of the crevassed country, as I cannot afford to take chances with three invalids. Left instructions tied on the depôt for Shackleton. Under way 9.45. Lunched at noon in a very heavy blizzard. Over an hour getting the tents up, wind about 60 miles an hour ; the drift so thick, when we came out of the tents after lunch, the only thing showing was the sledge-

mast. It is a cold evolution digging out dogs and sledges. Under way 3.30, with the sail reefed down. The going perfect, the sledges overtaking one. Carried on trekking until 8.15. Distance covered about 12 miles. It stimulates one to carry on like this ; only hope the wind will keep up. Had to cook our meals in the dark ; still we do not mind. Turned in about 11 o'clock pleased with ourselves, although wet through with snow and perspiration. The snow creeps into all the holes in our clothes ; if there is a hell, this is the place ; and the sleeping-bags are worse than hell.

March 3rd, Friday. Up the usual time. It has been blowing a howling blizzard all night. Found to our utter disgust impossible to travel. Another few hours of agony in these rotten bags, later ; blizzard much heavier, amused myself mending finneskoes, Burberrys, mits, patched socks with spare food bags, had the Primus going whilst this operation was in force. Hoping for a fair day to-morrow.

March 4th, Saturday. Up 5.20. Still blizzarding, but have decided to get under way. We will have to try and travel through all weathers, as Hayward is getting worse, and one does not know who will be the next. Hayward's symptoms are, gums swollen and turning black, joints of legs swollen and black, feet can hardly bear any pressure on them, elbows stiff and sore, pupils of eyes enlarged. So no mistake it is scurvy, and the only possible cure is fresh food. I sincerely hope the ship is in ; if not, we shall have to climb the hills by Castle Rock, which is rather difficult ; it would delay us another couple of days. Padre is still cheerful ; he

has scarcely moved for weeks, poor fellow. Everything has to be done for him. Skipper is not so cheerful and seems to be worrying ; day before yesterday when we were trekking, he fell off the sledge two or three times, and in the heavy wind and drift it was impossible to hear anyone shout. I told him if he did not shout as soon as he fell off, he would be left behind; he said: " It would be a good job." Under way 9.35 ; it took some two hours to dig out dogs and sledges, as they were completely buried ; it is the same way every morning now. Set sail, going along fair. Hayward off sledge now and again to get circulation. Lunched usual time ; it takes some time to camp now, and in this drift it is awful. In the afternoon wind eased somewhat, and drift went down. Found it very hard pulling with the third man on the sledge. Hayward has been on all the afternoon. Wind veered two points to the south, so we had a fair wind an hour before we camped. " Erebus " and " Terror " showing up ; a welcome sight, only hope wind will continue. The drift is the worst thing we have to contend with, as it creeps into our clothes, which are soaking wet through now. Camped 8 o'clock. Cooked food in the dark. Turned in our wet sleeping-bags about 10 o'clock. Distance 8 to 9 miles.

March 5th, Sunday. Another restless night. I think my brain is working too much. Turned out 6.15. Overslept myself, the third time since we started. It seemed strange in the night, the wind going down and no flapping of tent. It was similar to being on a steamship and the engines stopping. The wind has

been our constant companion for weeks. Sun shining brightly. What a treat to see old King Sol! Just before trekking the wind sprang up again; we were able to set sail on both sledges. Going hard. Very heavy snowdrift in places, making tedious work. The dogs are marvellous, they put their souls into their work, and seem to realize we are struggling for life. Lunched 12.45. Sledges and dogs buried under again. Drifting as hard as ever, all land obscured. Under way at 3. A heavy afternoon. Camped at 7.30 in the dark. Distance 10 miles. Richy gave the dogs a hot feed; they are worth their weight in gold. Our patients are not too cheerful, poor fellows; they have been wet through for weeks. Being trussed on a sledge is a terrible experience. If this wind keeps up, with the aid of "Provi," we will make Hut Point in 4 days.

March 6th, Monday. Up 5.30. Under way 9.20. Same old slog, digging out dogs and sledges. Fair wind, set sail, picked up 32-mile outer depôt, 11 o'clock. Lunched 12.30. Under way at 2 o'clock. The wind eased in the afternoon, which caused very heavy work. It is a great strain, three weak men (and four tired dogs) staggering along with three men on the sledge. Sledging under ordinary circumstances is solid hard graft. In this case it is almost heart-breaking at times. Camped at 8 o'clock in the dark. Richy gave the dogs a hot meal. Richy and Wild are two good pals, in spite of the hard gruelling they are experiencing.

At camping time we invariably make our patients smile by remarking "next stop, Piccadilly, Leicester Square," etc. Turned in 10 o'clock, tired and wet through.

March 7th, Tuesday. Up at 5 o'clock. Had a good night's rest, which bucked me up immensely. Under way 9 o'clock. It may seem a long time to get under way from 5 to 9—4 hours. Every night we camp it is dark ; cooking is carried out by the light of the Primus lamp. There is no chance at night of mending fur boots which have to be sewn and patched with spare food-bags before trekking ; and digging out sledges and dogs, looking after the invalids and making them comfy on the sledges, takes some time longer than one would imagine.

The sun is shining brightly. The finest day we have experienced for months, all land in sight, which is very pleasant, and what a rest it is to my eyes, having been in the lead since we started in October, nothing but the white ocean to face and nothing to relieve the eyes. There is a slight breeze, enough to fill the sail ; going extremely heavy ; wind dropped 10.30, so could only just shift the sledges. Took Skipper and Hayward out of their bags, and sent them along with sticks. This I did for the purpose of encouraging them. They only advanced a few paces, had to place them on sledge again. Camped at 11.30. Decided to depôt all gear except what was absolutely necessary. Had lunch. Under way at 2 o'clock. Camped in the dark at 8 o'clock—after the biggest gruelling we have encountered yet. The distance travelled for the day, $3\frac{1}{2}$ miles. Poor dogs, they look at one so wistfully, they seem to ask if we are trying to kill them with the heavy load. After dinner I called Wild over to our tent. We had a talk over the position. I came to the conclusion it

was impossible to proceed with the three invalids. So I proposed to leave one behind, and try and make Hut Point, with two. The distance from here to Hut Point is over 40 miles. As we could not possibly leave the Padre, I put it to the Skipper and Hayward, and explained I would leave three weeks' provisions and come out again as soon as possible. The Skipper volunteered; poor fellows, I am sorry for them. I am also afraid that one of us will give in; if so the whole party will go under. Scurvy has got us, our legs are black and swollen; if we bend them at night, there would be a chance they would not straighten out. So to counteract that, we lashed pieces of bamboo to the back of our knees, to keep them straight. There is no possible hope of receiving help from Cape Evans if the sea-ice is broken up. However there is one chance—the party from Cape Evans may be at Hut Point. “Provi” may be good to us to-morrow, and send along a southerly; if so, we will not be compelled to leave anyone behind. Temperature—25 to 30. Turned in 10.30.

March 8th, Wednesday. Up at 5 o'clock, after a rotten, sleepless night. After making the Skipper comfy, I had a chat with him, told him to expect us back in 9 or 10 days, and if possible, to try and get a little exercise.

It seems hard to leave anyone on the barrier; this was only carried out after very careful thought. We wished him good-bye.

Under way at 9 o'clock, dragging Hayward and the Padre on the sledge. About 11 o'clock a slight breeze sprang up from the S.E. Set sail. In half an hour we

sighted Cope's No. 2 Depôt, where we lunched at 1. If this wind would only continue, we could make Hut Point in 4 days. Under way 2.30. Sledge persists in sinking into the heavy drift snow, causing it to become a burden to shift. About 4 p.m. the wind veered to the north, increasing our difficulties. Camped in the dark. Turned in 10.30. In the hopes of cheering the Padre, related a few stories, some of which I carry in my mind, in memory of my good old sailing-ship days while in the Navy. Our tent is very cramped ; we are five in a three-man tent. However, this adds to warmth. Some compensation at any rate.

March 9th, Thursday. Had a distracting night. Temperature down below —30. Poor Padre was groaning with pain. In the medical chest there appears little to relieve him. He was anxious to know the time. When Wild said 4 a.m., he remarked, "Have you lost your bearings?" He then told Richy his heart was behaving in a strange manner, and what was the best thing to do. Richy advised, "I think it would be wiser to try and lie still." Poor Padre, he must have passed away shortly afterwards.

Turned out 5.45. Glancing across the tent noticed to my surprise that the Padre's head lay out of his bag. I thought this is not in accordance with the nature of our sleeping-bag conditions and at a temp. —35. He appeared to be asleep, the ice had formed on his beard. Richy said, "I think he has gone, Joycey." I examined him. To my sorrow and distress, he had already passed along the road to the Great Unknown. He had been sick indeed for 57 days, over 40 of which he was carried

on the sledge. The jolting of the sledge, on a weak heart would be agonizing to him and required much fortitude to brave it. He never complained, always cheerful. Sometimes when lifted on the sledge he would faint. We were powerless to aid him further. All we could do was to make him as comfortable as possible. The absence of sun made matters worse ; no chance to dry his sleeping-bag. Wild was a tent-mate in a thousand, and cared for him all the while ; truly a mother at such a time. I covered him up. We then took Hayward from the tent and placed him on the sledge : he was in a state of collapse. The passing of the Padre was the first death he had experienced, and in his exhausted state, he felt the position keenly. Richy and Wild prepared a spot in the snow, we bared our heads, and with a prayer, buried him at 9 o'clock. The position is Erebus 184. Observation Hill 149. Discovery 93. Over him we erected a cairn, with a bamboo cross, to which we securely lashed all particulars. During this sad ceremony, we left Hayward in his bag, on our return to him we found he had fainted. At first I thought he had given in ; he came round later. Under way with a northerly wind, the temperature down to —32. The wind blowing in our faces, seemed to strike through us, our clothing in tatters. In spite of this uncomfortable business, full of hardship and toil, my two companions, Richy and Wild, are cheerful; they are White men. The dogs seem listless, and look like giving in ! They do not take an interest in their work, poor fellows ! They have given of their very best. Through their efforts we

are pulling through, or trust we shall. Our trek has been one long agony of mental anguish. There is nothing ahead (if the ship has not returned) except a cold, cheerless hut, no comforts, no coal, lighting or provisions. No "Happy Medium." Still, the old hut will be like a palace to us if we can only make it. In the four hours' march we covered about 2 miles before lunch. During lunch "Provi" once more was our good friend, sending us a southerly wind with heavy drift. After lunch under way at 2 with sail set ; going along at a good pace. Hayward is on the verge of collapsing. If I cannot make Hut Point to-morrow, I am afraid he will share the same fate as the Padre. Carried on through the dark, steering by stars. Camped 8.30. Turned in 10.30, weary and worn, still a sparkle. Distance during afternoon about 8 miles. Splendid going. Told Hayward some funny stories, made him laugh and promised to get him in to-morrow ; cheered him up.

March 10th, Friday. Had a rotten night's rest. It is wonderful the plans one forms lying in the sleeping-bag. Up at 5 o'clock. Under way at seven, with a beam wind ; going pretty fair during forenoon. Safety camp in sight. Lunched at noon. Under way at 1 o'clock. Came into a bad surface ; up to our knees in soft snow. In spite of odds reached Safety Camp at 5 o'clock. Made a hot meal, after which proceeded to the Barrier edge ; the bay is full of seals. What a welcome sight ! The dogs became very excited and seemed to be electrified ; there is no mistake, they realize that the seals are their food and that their

journey is nearly at an end. It is a big job to keep them in, because we are so weak. Through the glasses it seems that the bay is frozen over, which is a God-send to us. If there was open water, we should have to climb over the hills, which would take another two days. Cape Armitage is about $4\frac{1}{2}$ miles away ; going splendid. Dogs pulling like Trojans. Arrived Cape Armitage 8 o'clock in the dark ; found open water. This made us downcast to a degree ; had to make for the slopes about $1\frac{1}{2}$ miles away. We arrived there so exhausted that it was not until 11.30 that our tent was pitched, and Hayward inside. It is remarkable how weak we are. Made dinner, turned in 2 o'clock. This is the worst day we have spent, with the disappointment of finding open water at the Point. The thought of getting Hayward over the slopes is not conducive to sleep. We have been trekking for nearly 17 hours.

March 11th, Saturday. Up at 7 o'clock. Did not rouse my tent-mates. They are worn out after yesterday's gruelling. Took the binoculars, climbed the slopes to look north of the Cape. To my astonishment, found the open water only extended about a mile out from the Cape. Arrived back about 9 o'clock and gave the boys the good news ; this relieved my mind greatly. I am certain we should never have succeeded in taking Hayward over the hills in our weak state. Whilst I was preparing breakfast, Richy and Wild climbed the slopes to look at the back of the bay, and reported the ice was still there. Under way 10.30. Rounded the Cape, found the ice slushy, therefore treacherous. Continued on. No turning back now. Reached hard

ice shortly after, eventually arriving at Hut Point about 3 o'clock. No words can express our feelings on going up the ice foot to the old hut. This hut was built in the beginning of 1902 on my first expedition, under the late Capt. Scott, and has been the starting-point of several expeditions to the south. As we approached the hut, my thoughts recalled old memories, one of which I here mention.—Lieut. Armitage offered an inducement to the first person who sighted Capt. Scott's sledge party when returning from his journey south in 1903. Looking through a power telescope, as I stood with two companions on the summit of Observation Hill, I noticed a black speck, almost indiscernible. My companions looked, but failed to recognize so small an object. My curiosity aroused, I looked through the glass again ; then great excitement prevailed, we returned in haste for I was certain I spotted the party. All hands were then eager to see for themselves ; to their utter disgust no party to be seen, the mirage had disappeared, and I had won. It was not until 4 o'clock the next afternoon the party rounded the Cape. Lieut. Armitage went out to meet them. They were dragging two lightly laden sledges, Capt. Scott and Dr. Wilson in harness pulling, and Lieut. Shackleton coming along on ski. There were no dogs and the three of them looked weather-beaten and weak. We were all waiting to hear the news. Lieut. Armitage returned back ; the ship was dressed rainbow fashion and looked very smart. We manned the rigging. Lieut. Armitage then called out that Capt. Scott and party had been as far as $82^{\circ} 17'$ south.

Then as they came close to the ship we gave them three hearty cheers, which must have compensated them for many a hardship endured. Capt. Scott himself described his first happy homecoming : " But how can I describe this homecoming ; how we again clasped the hands of our friends ; how our eyes wandered about amongst familiar faces and objects ; how we dived into our comfortable quarters to find every want forestalled, and every trouble lifted from our shoulders by our companions ; how for the first time for three months we shaved our ragged chins and sponged ourselves with steaming hot water ; how in the unwonted luxury of clean raiment we sat at a feast which realized the glory of our day dreams ; how in the intervals of chatter and gossip we scanned again the glad tidings of the homeland ; and how at last, in the comfort of our bunks, the closely-written sheets fluttered from our hands and we sank into the dreamless sleep of exhaustion ?

" It was a welcome home indeed, yet at the time to our worn and dulled senses it appeared unreal ; it seemed too good to be true, that all our anxiety had so completely ended and rest for brain and limb was ours at last. For 93 days we had plodded with ever-varying fortune over a vast snowfield, and slept beneath fluttering canvas."

What a different homecoming for us ! We struggled over the ice foot. Before we could enter the hut it was necessary to dig away tons of snow, to force an entrance through the window, the door being several feet under the ice. Our remaining strength

was taxed to lift Hayward through the window, although he is a bag of bones. Anyhow, the hut is a covering. For 193 days we have toiled under extreme temperatures and suffered untold agonies, to carry out an objective which we have now accomplished. No Britisher could do more. For 15 months we have been without a change of clothing or a bath. It will perhaps be another 12 months before this luxury comes to us.

Hayward was made comfortable ; he can thank his lucky stars that he is here. Soon the blubber fire was going and Mc.Doddies dried vegetables in the pot. We are afraid to start on meat, as our machine will hardly be equal to the strain at first. Richy and Wild out in the Bay. They have killed a couple of seals. As head of the culinary arrangements, I prepared a meal of seal meat and vegetables, not that we wished for a dainty feed at the moment, we desired to avoid the result of reaction. Turned in 11 o'clock, happy and contented. I crave for a smoke. Oh ! for a pipe of tobacco ! Twelve months since our last draw.

As there is still no word or news here of the ship, and the sound clear of ice, we surmise she has gone down with all hands. We wonder how Shackleton is faring ? When struggling in from the south, many a time when the atmosphere was clear, I stood on the sledge, and through the binoculars scanned south, in the probable hope to see Shackleton appearing on the horizon.

March 12th, Sunday. Heard groans and moans proceeding from the sleepers all through the night ; a hearty meal the night previously had left its mark. Hayward not himself, all his limbs swollen and black,

gums protruding from his mouth, eyes dilated ; his brain not clear ; he is in a state of semi-coma. Will have to wake him out of that. Made breakfast 8 o'clock, light porridge and seal liver, coffee—what a banquet ! After breakfast Richy and Wild killing seals. Being sunny, we carried Hayward outside. Our sleeping-bags out in the sun at last ; they are our only comfort, but gone beyond repair. Whilst doing this, a drift came on. Before I was aware our sleeping-bags were full of snow. As they were the fur side out, they received the benefit.

Hayward was covered in drift. I had to leave him until Richy and Wild came in from the Bay. We had seal soup for lunch. We are feeling the benefit of the fresh food, although our gums are black and protruding, they are not painful. We can bend our knees without fear of them staying so at night. Our joints are as black as coal. The dogs have lost their languidness, their eyes their dull look, and are bright ; their welcome bark greets one when one makes an appearance. I found poor old Oscar groaning ; he was always a big eater, and had overfed himself—making up for lost time. It took us all day, clearing up the hut, killing seals, bringing in meat and blubber. This must be done. If the ice goes out we will be stranded for food and fuel. Every seal that comes up we are going to kill. One seal's blubber is sufficient fuel for five days. Judging from last year, we will be stranded here for another four months : that will mean 25 to 30 seals. Our strength is returning fast. Will face the elements for Mack to-morrow or next day. Turned in contented, 10.30.

March 13th, Monday. Turned out 7 o'clock. Hayward about the same. We propose to take the trail again for Mack to-morrow. I think our strength will take us through. Richy, Wild and dogs—seal killing. I am preparing for our journey ; overhauled sledge, mended fur boots, and cooking seal meat ; a large stock. The journey will be about 88 miles there and back. Am allowing 10 days. The dog meat I will take raw. I mended the tent. It is quite a picture; very little tent, all patches. Hayward is feeling a little better ; he is down in the dumps, because we are leaving him. I have cooked an adequate supply of meat to last him three weeks and have left sufficient ice. We turned in feeling better ; ready for the fray to-morrow, to rescue our lonely sledge-mate, out in that Great White Silence.

March 14th, Tuesday. Had a sleepless night. Wondering how the dogs will face south again. Up at 5 o'clock. A day of days. Under way after mid-day food.

One would think when looking at us, that we were the worst crowd of ruffians unhung. Our clothes patched with food bags, finneskoes, half fur and food bags, our faces no resemblance to White men—a crowd one would shudder to run up against in the dark. We wished Hayward good-bye, advising him to try and put in some exercise, even if it is only crawling around. On rounding Cape Armitage, a southerly struck us full in the bows, the temperature —18, far from pleasant. We reached Safety Camp at 6 o'clock ; had dinner. Everything ship-shape for an early morning start. Turned in 8.30. Our knees are aching and

badly swollen and black, so thought it advisable to lash the bamboo at the back to keep them from bending.

March 15th, Wednesday. Up at 5 o'clock. Had an unpleasant night. Temperature down to -35 . A beautiful morning, calm and peaceful. Under way at 7 o'clock. Going along at a rattling good pace. In spite of our swollen limbs, we all feel the benefit of the dried vegetables and seal meat. The dogs are jewels, especially "Gunner" and "Oscar." They look at one so wistfully. If they could only talk, I am certain they would say, "Are you taking us into that rotten country again?" We camped in the dark at 7.30. After an excellent 12 hours' trek, the distance travelled over 20 miles—our record. The temperature down below 20 all day. Turned in 9 o'clock. Bandaged our knees to keep them from bending; am still afraid of them.

March 16th, Thursday. Turned out in the dark about 4.30. We had a cold uncomfortable night, being wet with perspiration from our long trek yesterday. It is remarkable how one perspires in these cold temperatures. We are nothing but a bag of bones, very little flesh on our limbs. Under way 6.15. Going along splendidly, about 3 miles an hour. Passed the Padre's grave 10.45. Had lunch at the depôt. Climbed on top of the cairn with the binoculars, and sighted the Skipper's tent, he was outside, much to the joy of the party. What a relief to us! We arrived there 4.45. He was very surprised to see us, as I gave him the earliest possible date, the 17th. Broke the news of the Padre's death: he took it splendidly. He said: "He would always remember this day as

one of the biggest things in his life, and he would always commemorate it." We struck his camp and turned north, placed the Skipper on the sledge and made him comfy. The dogs seemed greatly surprised, they went off with great speed. It is wonderful what vim they put into their work when they go back on their old tracks. Camped at 6.30. Gave the Skipper a banquet, vegetables with seal meat, powdered up. The feed of his life. During dinner we had a chat. He said : Whilst lying in his bag in a semi-conscious state, he had peculiar dreams, and always found himself talking to supposed people in the tent. He seems somewhat peculiar now. What an experience ! Left on the Barrier, wondering if the party had been able to make Hut Point, etc. Poor chap, he is in a bad way. I hope to have him in safe in three days. I think the seal meat will cure the scurvy, because we feel the benefit of it already.

I am satisfied, my mind is easier for the first time since we left him on the barrier. Turned in contented. Distance for day 18 miles. Temp. —32.

March 17th, Friday. Up at 5 o'clock, had a restless night. Temperature down to —35. Shivering in our bags. Under way at 8 o'clock. Skipper feeling much better. Going splendid, dogs are marvels. Lunched north of Smith's grave. Camped in the dark about 7.30. Distance about 20 miles. Turned in 9.30—wet through.

March 18th, Saturday. Turned out 5 o'clock. Temperature in the night down to —39. Sleepless night. Under way at 7 o'clock. During the spello, took the Skipper out of his bag, and walked him along a few yards to try and bring around the circulation

(the temperature well below -40). This seemed to do him a heap of good. We put in a good three miles an hour before lunch. Under way 1.30. Arrived at Safety Camp at 4.10. To our great delight found the sea-ice firm ; this will save us a journey over the hills. Arrived at Hut Point at 7 o'clock. Carried Mack into the hut, found Hayward dejected, but soon cheered him. Richy made the dogs comfy, I set to and made dinner. All hands in splendid spirits. Now we have arrived in safety, it rests with the patients to get well again. I think with plenty of exercise and fresh food, they should recover. Scurvy is one of the old sailing-ship diseases. I think now it is a disease of the past. Very few people know much about it. I am more than thankful that this long journey is finished. We have been struggling hard since September, and suffered hardships that I did not think the human machine could stand. The irony of Fate is that poor Spencer-Smith should have gone under a couple of days before arriving back, after being hauled on the sledge for 40 days.

After dinner I examined the Skipper, and found his right hip bone down to knee a heavy blue, very hard and swollen ; from the knee to the ankle heavy blue stripes, ankle swollen out of proportion, gums swollen and slightly black, whites of eye distended, appetite extraordinary good, feels in himself much different from when we rescued him. Cannot walk, knees bent about the angle of 45 degrees. Hayward's gums swollen black and protruding from mouth. Knees similar to Skipper's, black

at joints but not swollen, eyes distended, body bent, like a very old man. Richards—right leg black and swollen, left leg slightly ; gums swollen. Wild's right leg behind knee black and swollen, gums protruding, but not painful. Both my knees are swollen, stiff and black, gums swollen, eyes very weak from the continual snow glare.

Before turning in, the Skipper shook us all by the hand with much emotion, and thanked us.

During the sledging season of seven months Richards has been my constant companion and tent-mate. A Whiter man never existed. The comradeship of Richards and Wild, especially after the collapse of the party through scurvy, was worthy of the highest traditions of Polar service. Regardless of themselves, they carried out to their uttermost all that was required of them.

Without the assistance of Stevens, Cope, Gaze and Jack, it would have been almost impossible to lay the depôts. Through the shortage of equipment, it was out of the question for them to carry out more. They were sledging continually for four months and were cheerful throughout.

This ends the depôt journey. We have been out for over 200 days ; covering a distance of 1,641 miles.

“ Do you recall that sweep of savage splendour,
That land that measures each man at his worth,
And feel again in memory half fierce, half tender,
The brotherhood of men who know the South? ”



EREBUS. SAMOYED.



HAYWARD, JOYCE, WILD AND RICHARDS,
AFTER OVER SIX MONTHS' SLEDGING.
A RECORD.

CHAPTER IX

THE SECOND WINTER IN THE HUTS

19th March, 1916—3rd January, 1917

Convalescence in the *Discovery* hut—Excellence of Scott's seventeen-year-old provisions—Monotonous routine—Will the sea never freeze?—Impatience of the Skipper—Mackintosh and Hayward set out for Cape Evans without tent—Great blizzard—Open water at 40° F.—Salt gives out—March to Cape Evans over sea-ice in lunar eclipse—No news of Mackintosh, Hayward or the ship—Illness of Cope—Collapse of Richards—Accident to Wild—Training the puppies—Visit to Cape Royds Hut for Shackleton's old stores—Return of the sun—Solitary sojourn at Cape Royds studying penguins—Return to Cape Evans and collection of meat for the risk of a third wintering—Final trip on Barrier to erect cross at Spencer-Smith's grave.

AT HUT POINT, LATITUDE 77.49 S.

March 19th, 1916, Sunday. I appointed myself chef. Up at 7 o'clock. Cooked breakfast. Menu—seal liver, porridge. All hands, judging by appetites, very healthy. Spent all day in living quarters, shovelling out snow, filling up the cracks in the cosy corner; the old hut has been here since January, 1902. Little did I think when we erected it, that it would be so useful; it is now falling to pieces, but a palace to us. We carried the invalids outside the hut to enjoy some exercise. We fixed them up with crutches; they can just toddle. Lunched 2 o'clock. Arranging the hut again in the afternoon. Dinner 7 o'clock. After dinner examined patients. Found Skipper's ankles swollen more, his legs feel

a little stiffer. Hayward about the same. All appetites extraordinary. Have all my work cut out cooking seal. It gladdens one's heart to see them eat. I have a feeling they will recover. Turned in 10 o'clock.

March 20th, Monday. Up 8 o'clock. Cooked breakfast; appetites "it." After breakfast took stock of all stores in hut. We will be here until the middle of June, as I think it will be impossible to travel over the ice until then. Will have to allowance out. I do not mind as long as there are seals. There is a good supply of biscuits, which have been here for 16 years, Spratt's Cabin Biscuits; they are in a splendid condition, the tin inside is just the same as if they have only just been packed. The cod liver oil biscuits are the favourites for the dogs. I put their splendid health down to the lucky find of the cod liver oil biscuits which we fed them on throughout the journey. Patients had to remain in bags on account of the heavy drift and cold snap. Everyone in good spirits, Richards massaging the patients; this seems to ease the muscles; the gums are still black but not protruding, they are gradually receding. Hayward seems to be the worst. Turned in 10 o'clock. Oh, for a pipe of tobacco! My eyes are still very weak from snow-blindness.

March 21st, Tuesday. Up as usual. Made breakfast. Appetites have not eased one scrap. Our little party eats enough for 20 men. I am giving them as much seal as they can relish. In the evening Richy and Hayward gave us some amusing experiences of their

last year's sledging with the motor-sledge party. On account of the blizzarding, no exercise for the patients ; their condition about the same. Retired 9.30.

Wednesday, March 22nd to April 5th. I have been allowing my log to go off on account of practically nothing to write up except the same old daily routine. Patients recovering rapidly. It is miraculous how they have progressed. The enormous amount of seal meat they eat and the exercise "weather permitting," have brought them through. Richy has spent many hours in massaging them. This relieved their hard-bound muscles. Richards and Wild are still doing good work, sealing. They have brought in 10 since we have been back. The dogs love going sealing, although a peculiar trait about them is, that they will not touch the flesh whilst one is killing, but wait until the meat is frozen before eating it. Everything is going along fine.

April 5th to 19th. Everyone now seems to have recovered, all symptoms have nearly gone with the Skipper. There is still a slight blackness at the back of the legs. Had hair cut with small medical scissors, the first time for 19 months. It was matted together with seal grease. My whiskers, which were down to my chest, shared the same fate. I feel like a rubber ball. Appetites extraordinary. Richy and Wild can just cope with the seal supply. Amount to date, nineteen.

April 19th to 26th. It has been blizzarding for a whole week. All ice is broken out to the north again. I forgot to mention, on the 18th, I went to the north

close to the land, for about three miles and found the sea-ice about two to three inches in thickness. Another couple of days low temperatures, we then would have been able to travel. The open water now is within half a mile of Hut Point. So all chances to trek to Cape Evans have gone for a time. All hands are merry and bright. Seals killed up to date, 26.

April 26th to May 3rd. Blizzard came on again, never ceasing. All ice gone out to the Point. We are jogging along, improving every day. A peculiar thing I notice, all our finger nails are indented, probably the after-effects of scurvy. Heard the dogs making a commotion, and to our great surprise found 30 Emperor penguins marching up to the hut. This meant a change in our diet ; hearts and livers made an excellent dish. In spite of being cooped up in our blubber hut, the time passes quickly ; there is a small quantity of reading matter, which was left here by the Scott expedition. Some books are read over and over again, especially *Lorna Doone*. Reading is not a joy with the flickering wick and smoke from a blubber lamp. Richy and Wild read out to me now and again. On account of snow-blindness I have been unable to read since December. Seals killed up to date, 39.

May 3rd to 10th. Blizzard continued to the 5th, then ceased with a cold snap. Temp. down to -35° . Bay again frozen over. On the 7th Skipper and Hayward went north on the sea-ice and found it bearable. I fail to understand why these people are so anxious to risk their lives again. It seems to me they are inclined

to underrate the cruelty of the thin ice, the sticky nature of the surface, and the probability of a blizzard overtaking them. During breakfast on the 8th, the Skipper asked me what I thought about him going to Cape Evans with Hayward, who volunteered to accompany him. I took him outside and pointed to the Bluff (60 miles away), which was our weather pilot. It then had a covering over it, and looked very dark to the south. I told him we would have a blizzard within two hours, and strongly advised him not to attempt it. Although Cape Evans is only $3\frac{1}{2}$ hours' journey without a sledge, it would be hell to be caught in a blizzard on the thin ice. After breakfast the Skipper came to me again and remarked "he was going." I tried to persuade him otherwise, but his mind was already made up. He promised me faithfully if it came on to blow before he arrived at the Glacier tongue, he would turn back. So they left. Half an hour later came on to blow from the south and increased to a howling blizzard. Whether they arrived at Cape Evans I cannot say, but an experience Mack had previously on the sea-ice should have proved a warning without any further wish to court it again, for the Antarctic Region is a hard mistress. Such is life, after dragging them back from death. Their ultimate decision proved a regrettable incident. The blizzard carried on in all its fury for a couple of days. I went to the summit of the hill and found open water to the north. Perhaps they have gone out on a floe. We do not intend to leave until the ice is safe. There is no reason to risk one's life without a cause.

May 10th to 17th. Blizzard-bound until the 12th, when we took a trek to the north, following in the Skipper's trail, which was visible. Discovered it led to the north-west and open water. The fate of these foolish people we do not know. Shall not proceed to the north until the 13th of June (full moon), that is, if the sea-ice is bearable. Seals and biscuits are our diet. Wild and Richy reading their books the third time. What would we give for a pipe of tobacco! The luxury of a wash and a bath is a joy of the past. My eyes are still weak from blindness.

May 17th to 24th. Just the same old thing. Temperature down to -40 . Blizzards, etc. We are just existing.

May 24th to 31st. Blizzard bound for the whole week; no possibility of leaving the hut, which means no sealing or exercise. Still we are cheerful.

May 31st to June 7th. One wonders if it ever stops blowing in these regions; for a fortnight the wind has hardly ceased; the irony of it is, that it is impossible to go out sealing. We are running short of fuel.

June 7th to 14th. Wind eased on the 9th, but came on again in the night. Calm on the 10th. About midday heard barking, went outside, found "Gunner" and "Towser" had "Oscar" down; to separate them was a contract. I brought "Oscar" into the hut and found him badly mauled; it was necessary for me to put twelve stitches in his back. "Gunner" and "Towser" were securely tied up. "Oscar" disappeared, we searched miles for him, but could not locate him. Eventually, he turned up three days



THE DOG - ARIZONA - 1914-15

later. I brought him in the hut and tied him up. His wounds are healing ; will keep "Gunner" and "Towser" chained up. Wild and I went to the north to see if the sea-ice is fit to travel over. It seems in good condition, ten inches thick in places. Weather permitting, will start in a day or two. Took stock of food supply : enough Spratt's biscuits for one month if no seals come up. Sufficient fuel for ten days if we use sparingly.

June 14th to 21st. Blizzard sprang up again and continued for the whole week ; through this we will have to stay here until next moon, the 15th July. Our salt supply ran out, which makes the seal meat very unpalatable. Wild was reading a book called *The Term of his Natural Life*. There was a passage in it about an escaped convict making salt out of sea water. We tried to make some by taking the snow from the top of the sea-ice. After boiling down in the cooker, extracted a pound and half of salt. Our salt supply now unlimited.

"Oscar" has quite recovered and is getting his own back on "Towser" (who is tied up), by visiting his kennel and thieving his bones. We lost "Con" for a few hours. We had been out all day looking for seals, to the south and west. "Con" did not come back with us. About four in the morning we heard barking. I went outside and saw a strange dog. I brought him in the hut and found it was "Con." "Con" is a beautiful white dog ; this fellow was a red one, not a sign of white showing. This was good news, for we knew he had been sealing. We took him out

with the other dogs and he led us to a seal which was about six miles to the south-west. It was dead. This will give us another five days' fuel and food. To-morrow is the shortest day, and then we look forward to the sun returning.

June 21st to 28th. It seems strange the continual wind will never cease. It keeps the seals down. We have not seen one since Con's hunting episode. We have been without fuel for 2 days, impossible to go out, one cannot see 5 yards and the wind is from 30 to 70 miles an hour. If we cannot get out to-morrow, the temperature being so low, as we have no warmth we shall have to chop up part of the hut for fuel.

June 28th to July 5th. At last the wind has ceased, going down on the 30th. We spent 36 hours in our sleeping bags, chewing biscuits. On the 30th we killed a seal at Cape Armitage. From then a plentiful supply came up and now we are in the land of plenty once more. The new moon came in bright and clear, promising fine weather for a considerable time. It seems strange not to have the howling wind, and a still hut. In a blizzard the hut shakes and rocks.

July 5th to 14th. The weather has been exceptionally cold all the week down to 40° below zero.

July 15th. This turned out a beautiful calm day with full moon, temp. down to -40 . Packed sledge; under way 10 o'clock. When we were opposite Inaccessible Island, it came over very dark, and on looking up to the moon found it was in eclipse. It is strange that an incident like this should occur on the

very day we arranged to trek. Between the islands, the ice was all churned up, which made the position very awkward. Finally we managed to get through, and arrived at Cape Evans. It seemed there were hundreds of dogs howling, as we left only one behind, "Bitchie," who was to have a family. We quite forgot we had been away for ten months, and her puppies full grown. Oscar could not stand this challenge, and being so powerful broke his harness, making a bee line for them he scattered them as if the devil was after them ; the other dogs also wanted to join in the melée, we had our work cut out to hold them in. Eventually we arrived at the Hut. Stevens, Gaze and Jack came out to find out what all the commotion was about. They saw us in the distance. On coming up the first words we said were, "Have Mack and Hayward turned up?" The answer was in the negative. "Once more the Great White South has taken its toll."

AT CAPE EVANS HUT

Our first thoughts after the sad news were for the dogs; if they were not secured there would be some severe fighting. After which, we entered the Hut. It is 289 days since we left, and much snow has fallen on the Antarctic since, but not sufficient for us to have a bath—there does not seem any hope for that luxury yet. The hut on our first entering, although black and grimy, was like a palace to us. Stevens soon had a meal prepared. After which we had a talk over the conditions. I found Cope had not been well, poor

chap. It is hard to be laid up, especially in the way we are situated, there being no comforts for a sick man. Stevens and Jack had kept the Meteorological Observations going the whole time, which is good work. Next day took inventory of stores, found that some of the items with care would last 18 months. I do not think that it is possible to carry through any more sledging, all the equipment is too dilapidated. The scientists will carry out the meteorological observations, biological work, etc. I will collect and skin the zoological specimens. To do this I will have to spend three months at Cape Royds.

The health of all the party is a matter we must keep uppermost in our minds. It is essential that all hands should indulge in much exercise to keep fit. The sun will be here ere long, the thought of which brings cheer. Richy and I fed our four faithful pals, the dogs—Oscar, Gunner, Towser and Con—and took them for a scamper out in the Bay. We turned in that night, and to “Provi” who guided us over the vast Unknown, through our trials and tribulations, we bow our heads in gratitude. This ends the great Dépôt Journey. One can only say, “Thank God.”

July 21st. Heard a commotion outside and found Con (one of the dogs who had been with us all through) badly mauled. It is strange that the four dogs who were with us on our southern journey, will quarrel on sight, yet they refrain from fighting with the puppies, who are now full grown. I carried Con inside the Hut, examined him, and found he had been badly bitten in the groin and was bleeding profusely. In spite of



A "ROOKERY." EMPEROR PENGUINS.



EMPEROR PENGUIN, TOBOGGANING.

all my care the poor fellow died a few hours later. Another pal gone. We buried him on the hill.

All was going well until one day Richy collapsed. He threw up his arms, gave a cry, and fell down in a faint. Cope was soon to his aid : the long journey had strained his heart. No words could express my sorrow when I heard the news. He had been my constant companion for ten months, and a better pal amidst toil and trouble never existed. Cope gave me every hope, with that I had to be comforted. All the same, I felt a broken man.

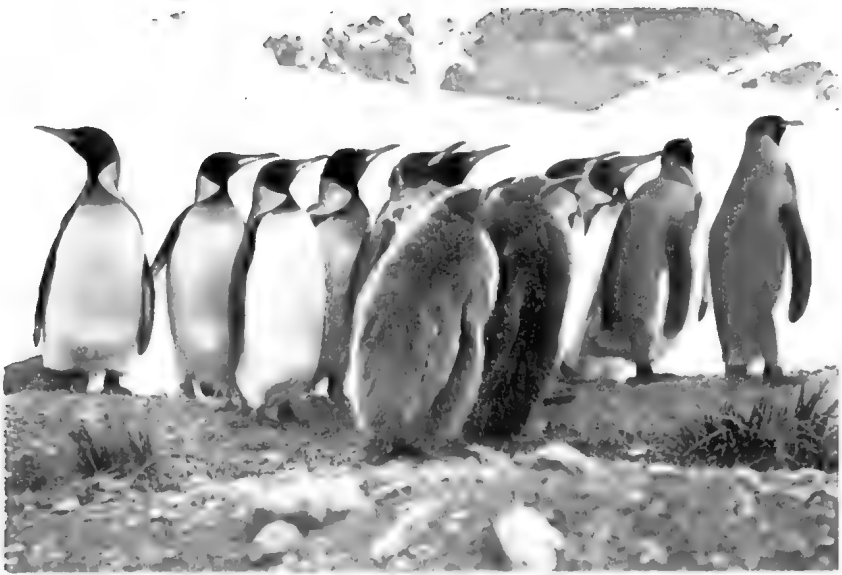
Another accident. While ski-ing down a slope, Wild came to grief ; it means a fortnight in his bunk. Weather greatly improved. The sun effects amongst the opalescent clouds are wonderful to behold, no artist could portray them. A week to-day the sun returns. I am training the puppies, but have made a mistake; that is, I should have tied them up before putting them into harness ; they were frolicsome. In a week they travelled in harmony with Oscar, Gunner and Towser—an excellent team. We have made up our minds to store large quantities of blubber in case the relief ship does not put in appearance.

On August 20th, decided to take a trip to Cape Royds for the purpose of finding any likely stores, etc. Cape Royds is 7 miles to the north over the sea-ice. At 9 o'clock started with Gaze and Jack and the dog team ; reached there 11. In the meantime the temperature went down 45 below zero. The Hut was snowed up. We soon had the door clear, the outer door was off its hinges. Everything in this hut is spot-

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lessly clean ; the reason, coal took the place of blubber. On going into the hut, a notice—"Joyce & Wild, Printers to Sir Joseph Causton," caught the eye. The hut is small and compact, the opposite to the one at Cape Evans. We then started to dig out cases. We wanted matches. I had some idea where they were stowed ; after digging down about 4 feet came upon them—a large case of Bryant & May's, in excellent condition. We were on our last ; this saves the situation. What a god-send. Following, we found cases of salmon, haddock and butter, all in splendid condition, although they had been there 8 years.

Alas, no tobacco. We loaded the sledge, and after taking stock found there would be ample food to last our party for many months. We returned back about 3. At 7 we sat down to a royal banquet, Stevens being the chef. The scientists found some hops and malt and brewed beer, or it tasted similar ; the after-effects were awful. Towser got into holts with Gunner. This was rather surprising as they were the best of friends and always journeyed out together and were inseparable. This is the first occasion they have quarrelled. It was necessary to put three stitches in Towser's eyelid. However, he does not seem to mind. One of the puppies was taken ill and died. We held a post-mortem and found a huge lump of Kenyte rock in his intestines. The puppies are going well in the sledge. Oscar, Gunner and Towser are pensioned off as a portion of their reward after faithful service. To-day, the 22nd of August, the sun returned. She gave us the "glad eye" and dipped. We are killing



KING PENGUINS AND YOUNG.



ADELE AND EMPEROR PENGUINS.

seal for fuel and meat, utilizing brains, tongue, heart and liver, they are an excellent variety. The first 20 seals gave us over 4 tons of blubber for fuel. We cut it into about eight inches square to feed the stove ; the warmth from it creates a good heat. Each skin lasts from 4 to 5 days for fuel. The worst contention is the fumes, and the grease is spread everywhere. Richards has to remain very quiet. Cope is nursing him ; he assures me of his recovery, but it is a slow process.

I intend to go to the Penguin Rookery at Cape Royds to study the habits of the penguins in September. Wild is off the sick list and everyone is in excellent spirits. The sun returning has worked its wonders.

PENGUIN ROOKERY, CAPE ROYDS

Late in September I started off with the dog team, with Wild and Gaze accompanying me, for the Penguin Rookery at Cape Royds. We made the hut our home.

Early in October an Adelie penguin arrived at the rookery; he examined the surroundings, strolled around, went over the hills, returned again, came to the hut, bowed to the dogs, who were wildly excited. He had sense enough to keep out of harm's way; the dogs were tied up. His visit of inspection concluded, off he went to the north. It is surprising how these birds find their way to the rookery. The open water is 15 to 20 miles away. A week elapsed when 27 penguins appeared together. They started to seek a most likely place to build a nest ; they picked the high ground. I wondered why this procedure,

because it was necessary to climb up a big slope to get there. A month after, when the sun was stronger, a thaw set in, and those on the lower ground were in pools of water. These wily old birds had been on the lower ground previously ; they knew a thing or two.

Within a few days an army of them arrived. They at once started building operations; the male bird opened up the session. After picking out their building section, they began by scraping the frozen ground to make hollows for their nests. This is tremendous hard work. They have to lie down and kick out backwards. After this was accomplished, and some semblance of a hollow was shown, they started to collect stones which they carry in their beaks. They then built a semblance of a wall around. Some birds are content with half a dozen small pebbles, but others again build quite a small cairn, using about half a bushel of stones of all sizes, some as large as hens' eggs. When this is finished they stand to attention on their nests, stretch their arms and make a peculiar noise from their throats, starting low and increasing to a trill, then slowly subsiding. This is the first starting of their love-making. Then a lady penguin comes up and examines the nest. The gentleman becomes very excited, bowing and emitting gurgling noises : he seems to be telling her the old, old story. She looks very coy and at last he persuades her to come into the abode of love : then they both bow, and start a crooning song—they are married. I have seen a penguin pick up a big stone in his beak, and lay it at the feet of another ; if she accepts the stone she will



EMPERORS TOBOGGANING.



STEVENS AND HIS CAMERA.

pick it up in her beak, place it in the nest—they are mated. After the home has been fixed up satisfactorily the female guards the nest, while the old chap does some scouting for stones ; he often travels far afield for these treasures, but passing a nest if the other bird is looking away, he will thief a stone and scamper off looking as guilty as a husband found out.

When he arrives home, the same cooing greets him. She tells him what a fine fellow he is. I have seen four of them stealing each other's stones. It is comical to see the look of amazement on their faces when they see the nest is not growing. Stone-gathering is part of their routine. Even when the eggs arrive the old chap has to keep guard whilst the lady sits on the eggs. If he were not there, other penguins would steal every stone from the nest. The unmated birds sit on the edge of the rookery and look so forlorn; they are artful, however. I have seen one leave the nest to go for food, and the other one jump the claim. The one in the nest looks somewhat astonished to see her lord back so quickly. After the little gurgle she at once takes on her new admirer. I waited for hours to see the legitimate husband return. He arrived, he looked, he examined, then the fun commenced. First of all he jumped at his rival, hung on with his beak, his flippers worked so quickly that one could hardly see them move. When he let go, the other started to run, and he chased him right through the rookery. The other penguins seemed to understand there was an intruder in the camp, and they had a crack at him as he went through. The chase was a long one. The hus-

band returned. The way he looked at his missus was too comical for words ; they both made their cooing noises from the throat and quietened down, and happiness reigned supreme.

The penguins when fighting hang on with their beak and fight with their flippers. I have had many a bruise and a nasty nip going through the rookery. One has to bandage the leg up to the knees to prevent any trouble of this kind.

Towards the end of October the birds started to lay their eggs, and then came the fun of collecting for our supply for the winter. We gathered in all about 2,400 eggs. They are splendid eating, in weight about 4 to the pound. They take six minutes to cook, and the flavour is similar to that of plovers' eggs. The inside of the shell is a beautiful light green.

I left only a small colony of them, about twelve in number, with their eggs, to study the breeding. One couple laid four eggs, the fourth egg being the size of a pigeon's egg. From some nests I gathered three.

The majority laid only two. They are funny when you rob the nest. One lifts the sitter by the tail and extracts the spoil; then the pair get together, and start jabbering away for about ten minutes. The husband picks up a big stone and places it where the egg was, her ladyship sits on it. In the small colony where the eggs were left untouched, the young came. They are of a French grey colour with dark heads. As soon as they are hatched, the mother takes equal share in tending them. This is carried on for weeks. The parents take watch and watch, when they go out to



STATELY PROGRESS. EMPEROR PENGUINS



ADELIE PENGUINS' BREEDING PLACE.

sea for food. By the way, the penguin is the only bird able to swallow its food under water, which is evidently the result of long practice. After leaving the water, the penguin hurries back to the nest and feeding of the young commences. The parent tries to induce its offspring to feed by tickling its bill and throat. The old bird opens its mouth, and the chick puts its head right in and picks the food out of her throat. The bird can be seen bringing it up into the throat by an effort. If the young is unwilling to feed, some food is thrown right up on the ground, a little is picked up again and placed on the chick's bill. This teaches it the way. There is then no further need for inducement. The parents are taxed to satisfy the clamouring for more. When the young bird is about three weeks old, he will chase any other bird for food and runs the risk of getting lost. There is always someone that will take compassion. It sometimes happens that a snow-storm comes in the breeding season. Those who built their nests on the high level seldom get covered, but those on the low level are completely covered with the heavy snow. The warmth of their bodies melts the snow, causing the young to lie in pools of water, thereby causing many deaths. During the blizzard they have to starve, as it is impossible for them to leave or find their nests.

During my stay at Cape Royds which lasted until December, I killed and skinned 50 Emperor penguins for zoological collection. The average weight 64 lbs. The largest being 47 inches in height, weighing 101 lbs. I packed all these speci-

mens in preparation for the relief ship. My work since September :

50 Emperors	15 Seals	3 Sea Leopards
10 Adelies	10 Skuas	2 Giant Petrels
10 Young ones	10 Young ones	4 Snow Petrels

After my sojourn of three months among the penguins, I started back in December for Cape Evans, having completed my zoological collection. I became weary of my own company. Gaze and Wild returned many weeks ahead of me. With the exception of Richards, all the Cape Evans party had been sealing, and had stocked a huge supply for food and fuel. Richy, I regret to say, is still on the sick list. I then prepared for another journey to the south, picking out Wild and Gaze to accompany me. My object was to erect a cross over the grave of my sledge-mate, Spencer-Smith. Our clothing was inadequate, and would not allow us the liberty of staying out too long. We started off with excellent weather, our dog-team consisting of 8 dogs. I wanted to pick up the geological specimens, which were left on our return from the Beardmore. They are in depôt 48 miles from Hut Point.

VISIT TO THE REV. A. P. SPENCER-SMITH'S GRAVE

Gaze and Jack had made a cross out of some hard wood which was found around the hut. On the cross the following inscription was carved :

“Sacred to the memory of Rev. Spencer-Smith,
Who died on March 9th, 1916. A brave man.”



ADULT FEMALE PENGUINS ARGUING.



COMING ON SHORE AFTER A FEED.

On the fourth day out this cross was erected on a cairn over the grave 12 feet high. The ceremony was solemn and impressive. Indeed, it gives one food for thought. We then made for the cairn where the specimens were left, leaving there on the third day for Cape Crozier. After 3 days' trekking came into contact with very soft snow, sinking in up to the waist, the bow of the sledge resembled a plough. The dogs were unable to pull on account of this. I altered my course to the eastward, found no alteration in the surface. As the trip to Cape Crozier was of little consequence, I headed north, eventually arriving back at Hut Point towards the end of December.

CHAPTER X

THE RETURN OF THE AURORA

Speculations as to fate of main expedition—"Joycey, the Ship!"—Meeting with Shackleton—Tobacco once more—The *Aurora* a dry ship—Baths and clean clothes—Shackleton's story—The drift of the *Aurora*—A last search for relics of Mackintosh and Hayward—Farewell, McMurdo's Sound—The welcome at Wellington.

WE reached Cape Evans on January 3rd, 1917. On our journey north from Hut Point we made a thorough search for our lost companions, but no trace. We are settled here, and intend preparing for another year's isolation. Our family discourse is the probable fate of Shackleton and party, the *Aurora*, and the likelihood of relief.

On January 10th, after breakfast, Richy went out of the hut. Shortly afterwards, he walked in quietly and whispered in my ear: "Joycey, the b—— ship." I replied, "Let us make certain." True enough, there she lay alongside the ice in the bay. We exclaimed, "Ship ho!" Our shouts brought the inmates of the hut out with a wild rush. We shook each other by the hand, all worries and troubles passed overboard. We then harnessed the dog team, packed the sledge to its limit, then off on the sea-ice.

Owing to the treachery of the sea-ice, which was breaking up, it was necessary to take every precaution; the ship was 8 miles distant. I ski-ed on ahead,



WILD ENJOYING A PIPE AFTER TWO YEARS' FAMINE.



RICHARDS, LATE PETTY OFFICER WILD, AND JOYCE, AFTER JOURNEY FOR WHICH THEY WERE AWARDED THE ALBERT MEDAL

making a safe course for the dogs to follow. When about 3 miles from the ship, I saw three objects ; they looked like Emperor penguins. On coming close, I saw they were three men. I recognized the walk of Shackleton, who was in the centre. I gave him the old *Nimrod* war-whoop, and he answered. On approaching him he said, "Joycey old man, more than pleased to see you ; how many of the party are alive ?" I told him three had gone. Then the three of them laid down flat on the ice. I wondered what was wrong. Shackleton explained it was a pre-arranged plan for the captain of the ship, to let him know how many had died. Shackleton was smoking. I said, "Have you a brother to that ?" I then had my first smoke for months. I then said, "Do not put the case away, Boss, the other five are coming up." Then I learned the war was still raging, and, worse than ever, what struck one most was the death of Kitchener at sea, and the submarine atrocities. My party was now upon us. I introduced the members to Shackleton, some of whom were strangers to him. We then made for the ship. Arriving alongside, the crew gave us three hearty cheers ; then climbed on board, received our mail, and once more amongst old friends.

I will not attempt to describe my feelings. Everyone was glad to see us, and keen to know how we had managed to exist. When they learned we were still in the same clothes as those in which we landed from the ship over two years ago, the look of astonishment on their faces was worthy of a snap. A sumptuous feed of good things was awaiting us, but strange to say,

no stimulants. I remarked : " Boss, what is the first order of the day when a sledging party returns ? " Silence reigned supreme. I said : " Steward, is the champagne on the ice. " Still silence. I remarked once again : " Boss, what is wrong ? " He said the ship was dry. Enough said ! The reason of these remarks from my point of view as an explorer : It was a grave neglect on the part of the person or parties responsible, to leave out of the store list stimulants required for a party that has been stranded for over two years.

After this dry meal, baths were prepared in the hold, clean clothes were supplied ; after two years we were once again civilized.

In the afternoon I took a party to the Hut at Cape Royds for the purpose of picking up my zoological specimens, on which I had been working for months. We arrived on board, and the ship steamed up to the ice edge and put out her ice-anchors.

SHACKLETON'S STORY

After dinner that night, we sat around and listened to Shackleton's story of Elephant Island. The boat journey was miraculous.

The *Endurance* was nipped in the ice, in the Weddell Sea, in December, 1914. From then to June 15th the ship lay snugly in the ice ; then the pressure of the ice began to increase. The danger was acute, and all preparations were made to abandon ship. The 70 dogs were exercised every day. A more serious nip than ever started bad leaks, and

the pumps were just able to keep the ship afloat. A coffer-dam was built, but a second nip destroyed it. In October the end came. The ship was lifted on a pressure ridge and she opened 4 inches in every 10 feet. The ice pierced her sides. On October 27th they had to abandon ship. She sank on November 27th. She was a new ship.

The position of the 28 men on the floe was precarious. They had three boats, the biggest of the three being a 22 feet craft weighing about 14 cwt. They were 320 miles away from the nearest food supply, and they had to carry stores to support them for a long journey, as travelling was a slow game, no more than a mile a day being covered. They camped on a floe and drifted with it, sometimes to the north, and sometimes to the south.

On New Year's Day, 1916, they camped on to a floe which they named Patience Camp. Here they stayed for three months, making good progress to the north.

In March the floes took an easterly turn and began to split in a heavy swell. They had to shoot their dogs, because their seal meat was giving out. On April 9th, they decided to take to the boats, the floe being split. They were then off the end of Graham's Land, having drifted 700 miles since they left the ship. The floe opened suddenly one night under one of the tents. One of the men fell through, and was rescued; they then decided to run for Elephant Island, which was uninhabited, but still the nearest land. After slow progress through the pack ice the sea opened to them,

with a southerly gale increasing in violence. They made a sea anchor out of spare oars, and threw it overboard and weathered the storm. They rowed westward, hoping to find Elephant Island. At night in a driving squall they caught a glimpse of Elephant Island, where they landed safely. They found that experts in England were wrong about Elephant Island in this respect; they had said there were beaches all around, but there were no beaches and seals were not plentiful, so the food problem was pressing. Shackleton decided to make South Georgia by boat. This perilous journey meant 750 miles in a 22 ft. boat. He chose five men to accompany him. They started off, ran through a line of ice, then into a series of snowstorms which lasted 16 days. They only saw the sun three times during that period. At last they saw the cliffs of South Georgia.

After a perilous landing on May 19th, they started to cross the island to the whaling station on the other side. After a march of 26 hours they sighted the cliffs of Stromness Bay, and heard the sound of the steam whistle. There they met a party of Norwegian whaling men, who thought the devils were after them. In appearance, they looked like wild men. After recuperating, Shackleton went out in a 90 ft. whale catcher to try and make Elephant Island. The ice was too much for him. He then went to the Falklands Islands and sent a wireless message for assistance. After several fruitless attempts to reach Elephant Island the ice was always too much for him. At last the Chilean

Government lent him a small steamer, "Yelcho." After an exciting time he rescued his companions and landed them safely at Punta Arenas. Then he heard about the dilemma of the Ross Sea party. After great adventures he managed to catch the *Aurora* before she sailed from Port Chalmers. To join the ship he had been compelled to sign on as a steward. To my great surprise he told me this. I then for the first time realized the position in which Sir Ernest was placed.

It was not until 4 a.m. that we thought of our bunks.

THE STORY OF THE "AURORA"

We also heard of the *Aurora* and her time in the ice. After the last sledging parties had left the *Aurora* on February 5th, 1915, Stenhouse decided to search around the Bay in the neighbourhood of Cape Evans for a likely place to winter the ship. Capt. Mackintosh being away from the ship made things very awkward, as it only left two executive officers on board; this meant watch and watch. The ship had a very bad time in the blizzards, and keeping the ship clear of the heavy pack and icebergs was a strain.

On March 11th, the *Aurora* proceeded to Hut Point and embarked the six men of the depôt-laying party who had just returned from sledging, after which Stenhouse decided to moor the ship at Cape Evans for the winter. Two anchors were dropped, and five steel hawsers were made fast to the shore.

On March 20th the boilers were emptied and fires

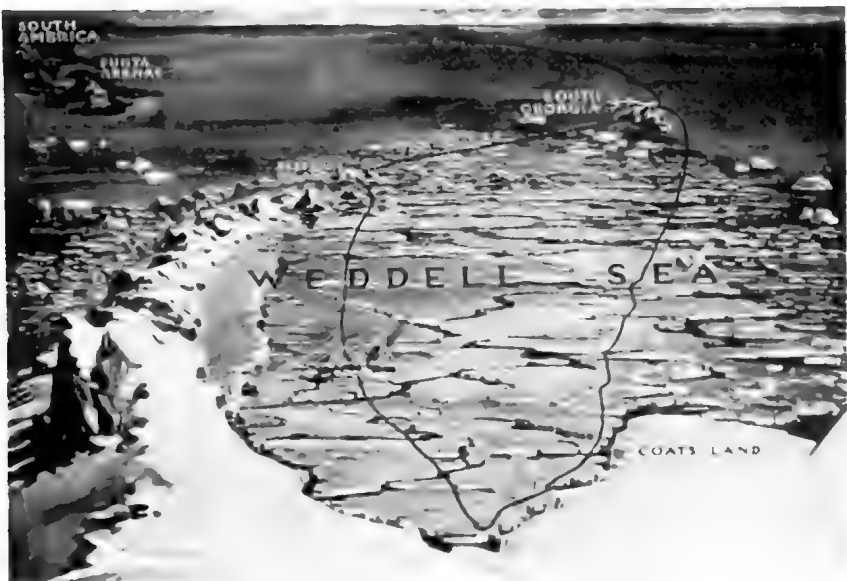
were drawn. Four of the staff were landed—Spencer-Smith, Stevens, Gaze and Richards—for meteorological work, and took up their quarters in Captain Scott's Hut at Cape Evans.

On May 6th, the wind freshened, and the ice started to go out to the N.W. The ship became uneasy and started to drift with the ice in which she was frozen solid, the steel hawsers carried away, and with two anchors down she drifted helplessly to the north. It was two days before steam was put on her owing to the sea connections, etc., being frozen, but the steam was of no avail as the *Aurora* was in the grip of the pack ice, and she had to drift where the ice took her. She was as helpless as a new-born babe. So the 18 souls on board had to make the best of a bad job.

On July 21st, the ship was in a precarious condition, as the pack was working; the floes began to move, exerting great pressure on the ship. She was nipped fore and aft, the rudder was twisted and smashed. Next day after the great anxiety and strain, Stenhouse called all hands together and made preparations for abandoning the ship, but fortunately at midnight the floes parted and the strain came off the ship. The ship was then about 80 miles off Coulman Island. If the ship had had to be abandoned in this position I am afraid there would have been no one left to tell the tale; but she was spared, and month after month she drifted to the north and towards open water. During this time the smashed rudder was unshipped. This in itself was no light task as it weighed $4\frac{1}{2}$ tons.



"AURORA" IN THE PACK TO THE RESCUE OF THE ROSS
SEA PARTY



MAP OF WEDDELL SEA SHACKLETON'S TRACK.

The break-up of the ice came on the second week in February, 1916. Strong north-east winds made a heavy swell from the north and caused the ice to break. From then on the officers and crew had a tough time. A jury rudder was made, and on March 13th was shipped. Then came the day of days. The pack ice was cleared in latitude $62^{\circ} 27'$, S., long. $157^{\circ} 32'$, E. After being battered and crushed in the ice for over ten months. For 19 days Stenhouse struggled with his disabled ship against odds, several men being ill, but by splendid seamanship and doggedness he managed to get the *Aurora* safe into Port Chalmers, New Zealand, in time to be refitted for our relief.

THE SEARCH FOR MACKINTOSH

I made the following report to Sir Ernest Shackleton on the search for Captain Mackintosh and Mr. Hayward after we returned to Cape Evans and heard they had not reached there.

"On July 15th, 1916, I heard at last that Capt. Mackintosh and Mr. Hayward, who had left Hut Point on May 8th, had not arrived there ; and, being aware of the conditions in which they left Hut Point, we came to the conclusion that these men were totally lost and dead—that they could not have lived for more than a few hours at the uttermost in the blizzard that they had encountered, they being entirely unprovided with equipment of any sort.

There was the barest chance that after the return of the sun, some trace of their bodies might be found, so during the spring—that is, August and September,

1916—and in the summer—December and January, 1916-17—the following searches were carried out : (1) Wild and I thoroughly searched Inaccessible Island at the end of August, 1916 ; (2) Various parties in September searched all along the shore to the vicinity of Turk's Head ; (3) In company with Messrs. Wild and Gaze I started from Hut Point, December 31st, 1916, at 8 p.m., and a course was steered inshore as close as possible to the cliffs in order to search for any possible means of ascent. At a distance of half a mile from Hut Point we passed a snow slope which I had already ascended in June, 1916 ; $3\frac{1}{2}$ miles further on was another snow slope, which ended in Blue Ice Glacier slope, which we found impossible to ascend, the snow slope being formed by heavy winter snow fall. These were the only two places accessible south of Glacier Tongue. Our search covered over eleven miles that day.

On January 1st, 1917, search was continued around the south end of Glacier Tongue, from the base towards the seaward end. There was much heavy ice pressure ; it was impossible to reach the summit owing to a great crevasse about 12 to 15 feet wide. Distance searched was over 4 miles.

On January 2nd, a blizzard held up the search.

On January 3rd, glacier was further examined. Several slopes formed by snow led to top of glacier, heavy crevasses between slope and tongue prevented crossing. We then proceeded round the tongue to Tent Island. We made a thorough search of this island, a complete tour being made. Our search that day

covered $8\frac{1}{2}$ miles. As a southerly was approaching, I made for Cape Evans, arriving 8 p.m."

After considering this report, Shackleton decided to make a final search, as there might have been a possible chance for the missing men to reach Butter Point, which is situated on the other side of McMurdo Sound, 35 miles west of Hut Point. On January 12th, the *Aurora* reached within 5 miles east of Butter Point; Shackleton, Wild and I trekked in; owing to the nature of the ice could not make a landing. The land ice had broken away at the point, cut by the cross-bearings of the depôt. There was no sign of the depôt or of any person having visited the vicinity. We returned to the ship and proceeded to Cape Evans.

The next day I harnessed the dog team, and with Shackleton, Jack and Wild, proceeded to Cape Evans Hut. The object was to search the area north of Glacier Tongue and Razorback Islands for traces of the missing men. We reached Cape Evans Hut at 1.30 p.m. Shackleton and I left at 3 p.m. for the Razorback. We conducted a search, round both islands, returning to the hut at 7 p.m. On the 14th, Shackleton and I started for the north side of Glacier Tongue. After starting, a S.E. wind sprang up. I advised a quick return. We arrived back at the Hut in a blizzard, which increased after lunch. We were obliged to keep to the Hut all that day and the 15th.

We turned out at 3 a.m. on the 16th, the weather being calm. After breakfast Shackleton and I made for the Glacier Tongue. We arrived and climbed up a snow slope, searched from the summit with glasses.

We could see there was not the slightest chance of finding any remains owing to the enormous snow drifts. The base of the steep cliffs had drifts 10 to 15 feet high. We arrived back at the Hut at 9.40. Wild and Jack had erected a cross to the memory of the three men who had lost their lives in the service of the Expedition—Capt. A. A. Mackintosh, R.N.R. ; Rev. A. P. Spencer-Smith, B.A. ; and V. G. Hayward. We secured the doors of the hut, loaded our sledge, bade good-bye to the Cape Evans Hut, and made our last sledge journey over the ice to the ship. We arrived alongside ; after the dogs and sledge were hoisted on board, the ship's head was turned north. We were homeward bound at last. This is the day we had looked forward to continually during the long days of exile. Farewell ! McMurdo Sound, the home of many explorers.

The Ross Sea Party fulfilled all the work that was laid down for it to do. Owing to the unfortunate breaking up of the *Endurance*, the main object, that was, the laying of the depôts, was after all of little use. The meteorological observations were kept up to date, and as far as possible all scientific work was carried out.

The Ross Sea Party are leaving here with sad memories of those we have left behind. Our hearts go out to those who are awaiting and watching for news of them.

FROM MCMURDO SOUND TO NEW ZEALAND

The voyage to New Zealand was without much incident. A succession of northerly gales had packed the ice closely off Cape Adare and occasioned a few

To Joyce
in remembrance
of Shrimmer days
together for many years.
E.H. 1911



THE BOSS. (SIR ERNEST SHACKLETON)

days' delay. The *Aurora* finally forced her way through the belt of the pack ice, into open water, on January 28th, recrossing the Antarctic Circle on January 31st, after being south of that latitude for 33 days. Proceeding northward and before a north-west gale, we reached Wellington, the capital of New Zealand, on February 9th, 1917, after spending over two years in the Great White South.

The Pilot boat had come out to meet us. Dusk had come down on the waters as we lay off Point Hallswell. From the moment we had a glimpse of those who ventured out to greet us, the enthusiasm and hospitality of the people of New Zealand never ceased towards us. A prominent party consisting of the late Hon. W. H. Herries (then acting Minister of Marine), the Mayor, Sir J. P. Luke, and other well-known citizens, were on the tug *Karaka*. As the two vessels drew alongside, three lusty cheers called for by the Mayor were given for our party on the *Aurora*; then three more cheers for Sir Ernest Shackleton. In a few minutes the party were over the side and on board the *Aurora*. Then followed general handshakes and congratulations. We were then introduced to the assembled citizens. We then made for the ferry wharf and berthed, where a huge crowd were gathered, and the air rang with cheers and shouts of welcome. Almost at once we were quick to recognize that New Zealand is a home from home, as all who have had the pleasure of visiting this delightful country and her charming people will agree.

We were soon ashore and then by car to the

Grand Hotel, as guests of the New Zealand Government.

Next day we were tendered a civic reception at the Town Hall. The Mayor (Sir J. Luke) presided over a large gathering of Ministers of the Crown, representative military men, and prominent local citizens. On behalf of the citizens of Wellington and the people of New Zealand generally, the Mayor extended a very happy welcome back to Sir Ernest Shackleton and the seven survivors of the Ross Sea Party. To the people of New Zealand, and to the Commercial Travellers' Association of Wellington, and all its comrades, our debt of gratitude can never be repaid.

A generous, unselfish people who bestowed on us unbounded liberality and great hospitality, in every sense of the word. Their keen interest in Antarctic exploration has never faltered since the early days of the Discovery Expedition.

With everlasting memories, I say "Thank you!"

"KIA ORA"



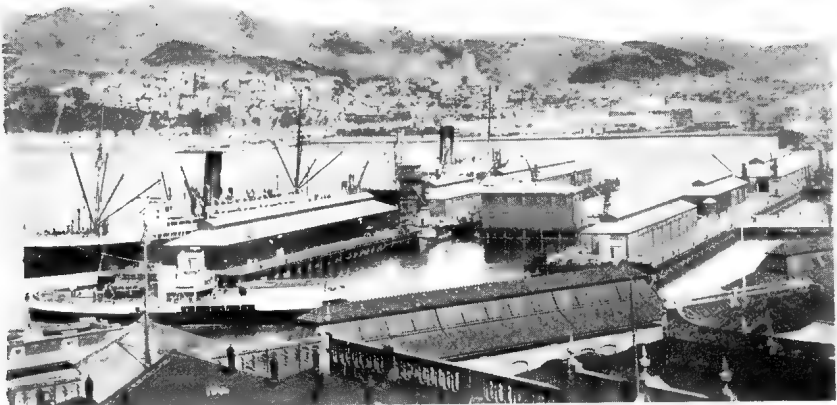
SHACKLETON,
TOWSER,

RICHARDS,
OSCAR,

JOYCE,
OSCAR,

WILD,
GUNNER.

ARRIVAL ON BOARD.



New Zealand Government Publicity Photo

WELLINGTON, NORTH ISLAND.

LETTER OF APPRECIATION BY SIR
ERNEST SHACKLETON

WELLINGTON,
NEW ZEALAND.

8th March, 1917.

MY DEAR JOYCE,

I am now leaving New Zealand as you know, and before I go, I wish to express to you in writing my feelings, as far as I can, towards yourself and your work. It may be that the War may separate us, and therefore I want you to know my appreciation of all you have done in case I do not return from the Great Adventure.

I consider that your strenuous work throughout the Expedition, the care you took of your parties under most adverse circumstances, your optimism when things looked black indeed, all go to prove that my judgment was correct in obtaining your services for the Expedition. But this judgment was formed years ago, for we have now been associated since 1901.

I specially want to thank you for the way in which you carried out biological work at a time when many others would have neglected it owing to the extraordinary circumstances in which the Expedition was placed.

Lastly, and most important of all, your conduct on that long, trying, southern journey—especially after Mackintosh broke down—ranks in my mind, and will, when the other men know of it, rank with the best deeds of Polar Exploration. You had charge of the party, and through your instrumentality as leader, and with the help of your loyal comrades, all except Spencer-Smith reached Hut Point in safety. I, as Commander of the Expedition, feel this to be of paramount importance, for though I was thousands of miles away, the responsibility still lay on my shoulders.

I could go on indefinitely, but I end by saying that if ever I can assist you, please call upon me, and if it is in my power it will be done.

Believe me,

Yours very sincerely,

E. H. SHACKLETON.

E. E. JOYCE, ESQ.,
WELLINGTON.

NOTES ON SLEDGING AND EQUIPMENT

Sledges.—The type of sledge used by modern explorers has been evolved from experience gathered on many expeditions and is a remarkable combination of lightness, suppleness and strength. Best all round service is given by a sledge 11 ft. long, 21 in. wide, and 7 in. high. Such a sledge weighs about 40 lbs., and its working load is about 650 lbs. Sledges have been loaded to over 1,000 lbs. without damage. All parts are of ash except the runners, which are of hickory, about 4 in. wide, split from the tree with the grain of the wood. Runners so made allow greater scope for bending, and also pull better over snow surfaces. It has been proved, too, that tapered runners, diminishing to $2\frac{1}{2}$ in. in width at their after end, are easiest to haul over a snow surface; the back portion also being allowed to deviate sideways a little in the track without increasing the friction. Detachable steel runners are used for work on ground which is bare of snow or on rough glacier ice. The various parts are secured by dovetailing and by raw hide lashings. Straps riveted to the bearers give a handy and trustworthy means of fastening stores and tents on the sledge.

Dogs.—Dogs, Siberian ponies, and various forms of motor traction have been used for sledge-hauling in Polar regions; but so far dogs alone have survived

the test; Canadian huskies best of all. They are magnificent animals, averaging 80 lbs. in weight, with a wonderful capacity for endurance in intense cold on very little food. Four such dogs with three men have hauled a load of 1,380 lbs. over soft snow at 10 miles a day for many weeks. Their staple food was $1\frac{1}{2}$ lbs. of Spratt's cod liver oil biscuits per day; this ration, with a hot hoosh every three days, keeping them in splendid health.

The companionship of dogs is a wonderful stimulant in the utter loneliness of the polar regions and they respond magnificently on forced marches, when a party utterly exhausted must win through or go under; indeed, many a dog has pulled in its harness to its very last breath.

Great care is necessary in transporting Canadian dogs through the tropics to the Antarctic, and some little time must be given to exercising them and getting them into good condition when once there. It is no use attempting to take dogs on sledge journeys until they are thoroughly acclimatized.

Provisions.—All food used on Polar expeditions has to be chosen with great care, with a view to obviating the danger of scurvy and other ailments. The explorer always seeks to combine variety and wholesomeness with greatest food-value in the correct proportion of proteids, fats and carbo-hydrates. Pemmican is the staple food used on sledging journeys. The preparation made by Bovril Ltd. consists of concentrated meat, 60 per cent. fat, and embodies the three principal food factors which are essential to

health and strength. Each man's allowance is $\frac{3}{4}$ lb. daily, a ration which is found to be ample. "Glaxo," dried milk, chocolate, sugar, oatmeal and biscuits are the only other foods used. Dried vegetables, made by McDoddies, and tinned and bottled fruits, are taken for anti-scorbutic purposes. All provisions must be packed in airtight tins as a protection against damp and decomposition, and every tin opened is examined by the doctor before use.

Clothing.—The selection of clothing, like everything else, is based on the experience of previous expeditions. Fur clothing is useless for Antarctic exploration work. The outer clothing must be light, hard-wearing, and absolutely wind-proof. In my experiences of eight years in the Antarctic, nothing has been found better than Burberry material, which has stood the test of the worst possible blizzards and of temperatures down to -70° Fahrenheit. The underclothing should be of the finest wool. It is the greatest mistake, and one that has been made on some expeditions, to stint the underclothing. During the long nights of winter, if men in the hut have to wash clothes, which take a considerable time to dry, hanging over the stove, it is conducive to ill-health. I would always advise expeditions to take sufficient underclothing to make such washing unnecessary. The finest footwear are lambs-wool socks, and these also must not be stinted. On all my expeditions, Jaegers, of Milton Street, London, have supplied all woollen clothing, and nothing has been found to beat it. The sleeping-bags used at the base are of Jaeger ; and all-wool mittens are used.

Fur is used to make finneskoe (fur boots), and also for the mittens which go on over the woollen ones. Sleeping-bags, too, are of fur. These are all made of reindeer skins.

The equipping of a polar expedition is a task demanding experience and great attention to detail; nothing must be forgotten, and every contingency must be provided against. Every man appointed should be a specialist at some one thing and a handy man at many things, able to contrive most things in an emergency.

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