

ANTARCTICA

OR TWO YEARS AMONGST
THE ICE OF THE SOUTH POLE



BY

OTTO NORDENSKJÖLD

WITH A FOREWORD BY SIR VIVIAN FUCHS
AND A BIOGRAPHICAL NOTE

BERSERKER

BOOKS



ANTARCTICA



Otto Norstenskjöld.

ANTARCTICA

OR

TWO YEARS AMONGST THE ICE OF
THE SOUTH POLE

BY

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AND

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P R E F A C E .

It was at the International Geographical Congress, held in London in 1895, that the thought of exploring the South Polar zone—the last great unknown region of the earth—by means of international collaboration between the countries interested, first assumed fast form. Only by attacking the region named from several different points, and by simultaneously carrying out observations, made in accordance with one and the same plan, could there be any hope of greatly extending, at one blow, our knowledge of these enormous tracts.

In what manner this plan was afterwards realised is now a matter of public knowledge. The exploration of the Antarctic regions was undertaken by England, Germany and Sweden, England being given the task of investigating the tracts south of the Pacific, and Germany that of carrying out similar work south of the Indian Ocean. The third expedition, which—to the greatest degree, on my initiative—was despatched from Sweden, had its field of labour in the lands and seas lying to the south of South America and the Atlantic.

It was no light matter to procure in Sweden from private sources the means necessary for such an enterprise, and in the matter of valuable equipments we could not think of competing with our richer sister-expeditions. The general plan was, however, the same for all three, viz., to leave Europe in the summer of 1901, and to spend the following Antarctic winter at some fixed station within the South Polar regions. I determined, however, not to retain my vessel—the *Antarctic*, well known from several previous expeditions both in northern and in southern tracts—at our

station, for, although I was, of course, well aware that my so doing would possess certain advantages, there was reason to believe that it would be difficult to find a suitable harbour on the east coast of the land, and, moreover, investigations of the highest importance could be carried out, in the seas lying between South America and the South Georgia Islands, by the scientific staff that was to remain on board during the winter.

To fill the post of commander of the *Antarctic*, I succeeded in obtaining that most competent of all seamen in northern and southern Polar waters, Captain C. A. Larsen, already known as the discoverer of King Oscar II Land and of the first fossils found in South Polar regions, during his voyages in 1892 and 1893, in the same tracts which were to be the scene of our labours. It was also of importance to find a man fully qualified to undertake the leadership of the expedition after I had landed with the wintering-party, and the person who entered the party in that capacity was Dr Johan Gunnar Andersson, at present lecturer at the University of Upsala. He was not able to join the Expedition, however, until the vessel had returned from the wintering-station to the Falkland Island.

The plan of the whole was, then, as follows: Our Expedition was to leave Sweden as early as possible in the autumn of 1901 for the South Shetlands, and thence go to the east coast of that extensive and then unknown stretch of land which lies to the south of these islands. Here we were to endeavour to penetrate as far southwards as we could, either along this coast or, possibly, farther eastwards, and then land the wintering-party, which was to consist of six persons under my personal leadership, at some suitable and snow-free place. The *Antarctic* was then to return to the Falkland Islands and Tierra del Fuego, in order to spend the winter in these tracts, and in the neighbourhood of South Georgia, in scientific work. On the return of spring, the vessel was to fetch off the wintering-party; the greatest possible use was to be made of the summer, and in May, 1903, we were to be once more in Sweden.

But this plan was to be most essentially modified, however.

The Antarctic summer of 1902-03 was the coldest and, as far as the ice-conditions are concerned, the worst that has hitherto been experienced. The German Expedition alone succeeded—at the very last moment and with the greatest difficulty—in extricating itself from the ice and sailing for home. The English Expedition did not succeed in getting out of the ice and was obliged to remain there for another year. This was also the case with us, although in a different way. When the *Antarctic* was on her way to bring off our wintering-party, it was soon discovered that it would be extremely difficult to penetrate even to such a northerly point as the place where we had our station. A twofold effort to reach us was then made; Dr. Andersson and two companions attempting to reach us by travelling over the ice that covered and surrounded the land, while the vessel tried to force a way farther to the east.

Both attempts to reach us failed. The *Antarctic* was nipped by the ice and sank, and the two relief parties had to spend the winter at two different points on the Erebus and Terror Gulf, unable to communicate with each other or with us.

The lot of each of the three parties during a second enforced wintering, the wonderful circumstances that attended our reunion; and our return to the world of the living, on board a vessel belonging to a foreign nation, form a chapter which is almost unique in the story of latter-day expeditions. It is related in this work by the leaders of the various parties, viz., myself, Dr. Andersson and Captain Larsen. As the latter has not had the opportunity of giving a complete account of his division of the Expedition, a great part of these final chapters has been written by C. J. Skottsberg, one of the scientists of Captain Larsen's party.

But if, in many respects, our Expedition has had more reverses to contend against than most others, these adverse fortunes have not affected the scientific and geographical results obtained. In these respects our programme has been carried out to the full, and there can be no doubt but that these results have been made much more complete by the continuance of our labours through a second winter.

However great my goodwill may be, it is not possible for me to give in this book, and in addition to the many references already made in its pages, any connected survey of the scientific results of the Expedition. The Swedish State has granted the money necessary for the editing of such a report, and the examination of our material is already in progress, but several years must elapse ere the work can be completed in which we shall give all the scientific results of the work of the SWEDISH ANTARCTIC EXPEDITION.

O NORDENSKJOLD.

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MAP OF THE NORTHERN PART OF THE MAINLAND AND
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PRELIMINARY CHART SHOWING THE TRACK OF THE
ANTARCTIC WITHIN THE SOUTH POLAR REGIONS
AND THE NEIGHBOURING SEAS, 1902-3 . . . *End of Vol.*

ERRATUM —For Sidney *Harborn* Bay (page 99), please read Sidney *Herbert* Bay.

NOTE —The seal mentioned on p 32, Chapter II., Part I., proved, on examination, to be a sea-beal or fur-seal, *Arctocephalus*.



Photo by]

Oblin.

Bodman

Nordenskjöld.

Skotfisberg

Larsen

K. A. Andersson.

Ekelof

[A. JOHANSON

Members of the Swedish South Polar Expedition on their departure from Gothenburg.

ANTARCTICA.



CHAPTER I.

FROM SWEDEN TO ANTARCTICA.

Departure from Gothenburg—A flying visit to London—Falmouth—Buenos Ayres—
We are joined by Lieut. Sobral and Mr. Stokes—Last of the members of the
Expedition—Port Stanley—Staaten Island—We enter Antarctic seas



THERE lay a touch of autumn over the city of Gothenburg early on the 16th October, 1901; a light morning mist enveloped the town, and its streets and houses and the trees of the avenues where the last yellow-tinted remains of summer verdure still lingered, while the sun, gradually breaking through the haze and illuminating the picture with its pallid rays, shone down also upon the members of the Swedish South Polar Expedition making their way to

their vessel, which lay at the quay gaily dressed in bunting as though in preparation for a feast.

Crowds of people are already assembled at the water's edge, and many others are hurrying to the spot, when we go on board attended by our closest friends and relations, to find everything in order for the voyage. I have long been

hoping for this hour, the fruit of many years' efforts, but at the moment I feel none of the pleasure which should accompany departure, for just now all feelings and thoughts are given to parting; to a long, long parting, a farewell which has a touch of solemnity in it, for who shall say which of those who now bids a friend farewell shall ever press the other's hand again.

It is almost precisely 10 o'clock when the ropes are cast loose which have hitherto held us fast to our native land; a last grip of the hand of those we hold dearest, a few, short, clear orders from the captain's bridge, and the *Antarctic* glides slowly ahead on the dark water. Just as we cast off, a call for a cheer for the Expedition is heard from the land, followed by a thousand-voiced "Hurrah!" and this we on board answer with a parting cheer for Sweden. The place by the side of which the vessel has been moored begins to be clear of people, and will soon resume its ordinary appearance, but a few still stand there, whose gaze long follows us, and to whom our looks are directed as long in answer. Even these at last disappear from view and we turn to new pictures. The vessels in the roadstead give us greeting; here and there along the shore flags are hoisted and greet us as we pass, whilst we slip farther and farther out to sea, towards the ocean which, for a long time, is to be our only dwelling-place.

We do not at once direct our course to the south, but first make a short call at Sandefjord in order to complete our equipment there. There we also separate temporarily from one of the members of the Expedition who has been my next man during the whole period of planning and preparation—J. Gunnar Andersson. He had been foremost in all the work at Gothenburg, but was now obliged to leave us for a time in order to complete his academical studies; this absence should last for a few months only, after which he was to go out to the Falkland Islands, there to assume the command of the party left on board after I had gone on shore with the wintering expedition.

The next port the ship was to call at—and the last one in Europe—was Falmouth, but on the way there I left the vessel at Dover in order to be able to run up to London, where I was received in the friendliest manner possible by leading geographical circles, and where Sir Clements Markham, at a lunch given by the Royal Geographical Society, ex-

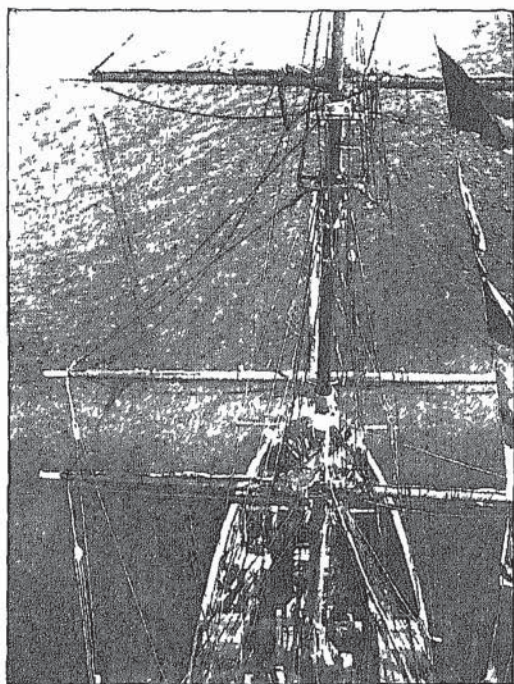


Photo by]

From an elevated point of view.

[G. BODMAN.

pressed his own and the Society's warmest wishes for the success of the Expedition.

I was especially touched by the fact that Mr Bruce, the leader of the proposed Scottish South Polar Expedition, had come to London to meet me, and also to convey the good wishes of the Scottish Geographical Society. The two Expeditions had so many points of common interest that it was of

special importance to come to an agreement on these heads, and I was also very anxious that, in the case of our party meeting with any accident, we should be able to calculate upon having Mr. Bruce's co-operation in our rescue, when he came out a year later to the tracts where we had our field of operations. Who could then have thought how near this agreement was to becoming realized, and that the two Expeditions should carry out work and investigations at stations which lay within a couple of degrees of latitude of each other, thus making these investigations of especial interest for the determination of the meteorological conditions of those regions?

In company with Bruce I afterwards travelled to Falmouth, where I arrived on the morning of the 26th October, a few hours after the *Antarctic* had anchored in the outer roadstead. The chief object of our calling here was to ship a supply of coal for the voyage. The cargo had at the same time to be re-stored, which gave us one or two more laborious days, and it could have been no agreeable sight which met the eyes of those who visited the ship just then, with the deck black and dirty, in consequence of the coal-dust; boxes, reserve rudders and all the bulky apparatus lying about topsyturvy; boards, planks, materials for the observatories, boats, and all possible kinds of goods piled upon each other up to the gallows-bitts; sailors, coal-heavers, the scientific members themselves of the Expedition, in sooty work-clothes, and, last of all, fourteen wild Greenland dogs, which howled and barked continually—all of these in combination gave most of our visitors the impression that we should need weeks to get in order for our departure; but our start having already been delayed, it became of consequence not to lose unnecessarily the least part of that time which could be employed amid southern ice, and, thanks to our captain's energy, we succeeded in getting away the next evening.

Among those who visited us at the very last moment was Mr. Coats, the chief of the liberal promoters of the Bruce Expedition, who had come into Falmouth with his yacht,

and as we steamed out on Sunday evening after dark, he called for a cheer for our party, to which we answered with vigorous "hurrahs"—and so the *Antarctic* glided out in earnest upon the ocean.

At first we had still pretty much to do before we got all our cargo in order, but by degrees we fell into the monotony of ship-routine. A journey through tropical seas is all too much like similar voyages for me to dwell on it; a visit to

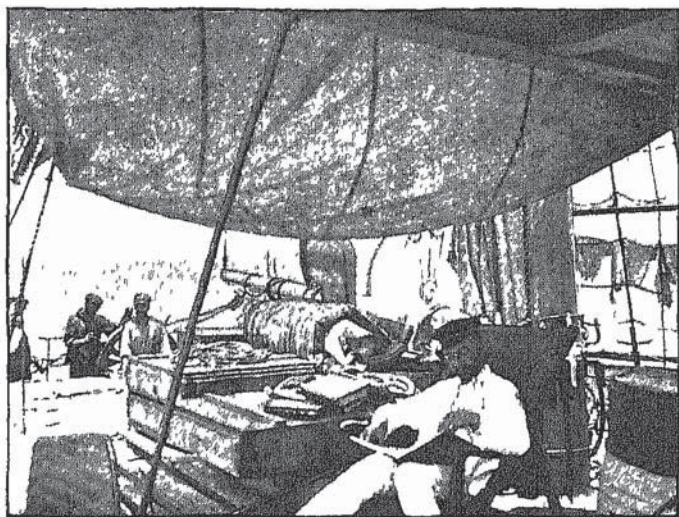


Photo by]

Ohlin,

[G. BODMAN.

We begin to feel the warmth.

St. Vincent afforded us a few hours' relief amid the sameness, which, however, did not feel at all oppressive, but, on the other hand, gave us a welcome opportunity of resting after the preceding days of toil.

At length, on the afternoon of the 14th December, we again sighted land—the low sandy coast of Uruguay—and twenty-four hours later we met the yellow waters of the Rio de la Plata. The weather during the day had been very changeable; sometimes with fresh head-winds, and then with heavy

squalls from every quarter. In the evening we saw a magnificent picture, the sky being suddenly filled with piled-up cumulus clouds which flamed in all shades of yellow, brown, and blush-grey; the air was traversed incessantly by lightning which illuminated the vessel and its surroundings as though with the clearest daylight, and which flashed almost uninterruptedly along the horizon.

We were up early the next morning in order to view the entrance to Buenos Ayres. The traffic on the river grew greater and greater, with boats plying in all directions; before us lay a forest of masts, behind which rose houses and towers, and at eight o'clock we came to the outer roadstead, where we were met by our tug, which took us up a channel that has been made at a very great expense, and which communicates with the inner harbour, and in little more than an hour we reached the capital of the southern hemisphere, and shortly afterwards anchored in the outer basin.

I had fixed upon Buenos Ayres as the place where we were to complete our supply of coals and provisions for the last time before leaving the civilized world behind us. There was much to do—for the captain and myself at least—and as our stay at the place must be as short as possible, there was little opportunity of enjoying our surroundings. And Buenos Ayres has very much to offer. Splendid modern streets and mansions, stately quarters filled with villas, magnificent parks with exuberant southern vegetation, public works of art—all these form the frame to a picture of wonderful animation. There is a bewildering throng of people and vehicles, the latter including the electric trams which traverse the city in all directions, costly private equipages, the considerably less elegant cabs, and the numerous carts. At every step we take we mark that we have before us a city wherein great wealth is accumulated, and one can say with truth that more luxury is exhibited here than in a European city of corresponding size. But, in any case, it is with the most agreeable sensations that one mingles with the crowd in one of the main thoroughfares, and regards the whole of the elegant public



Photo by]

On the deck of the *Antarctic* under a tropical sun.

[G. BODMAN.

which rolls slowly past in its equipages. And the ladies of Buenos Ayres are not only elegant, but, as regards personal charms, can challenge comparison with the fairest of any land. What, then, under these circumstances, should be our feelings, who were conscious every second that this was the last glimpse we should have for a long time of beauty and luxury and pleasures, and that we were now about to renounce everything

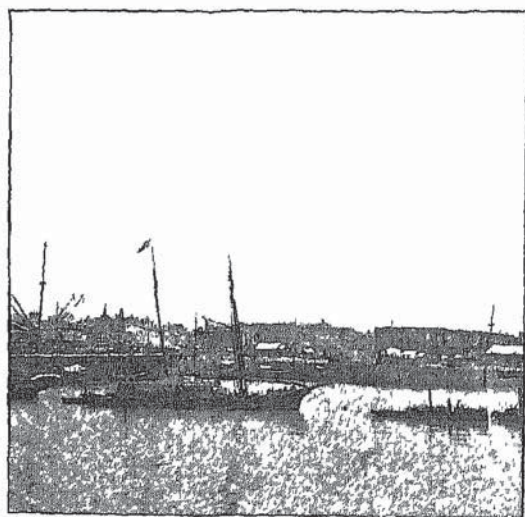


Photo by]

[G. BODMAN.

View of harbour at Buenos Ayres.

which was not counted amongst the mere necessities of life—and that in the strictest sense of the word.

My first concern was to make acquaintance with a new member of the expedition who was to join us here. This was Mr F. W. Stokes, the artist, a son of the great North American Republic, and formerly a member of Peary's wintering expedition, 1893-1894, and who was now, at his own expense, to take part in the voyage. It had long been a wish of mine that an artist should accompany us, and, therefore, when a man of Mr. Stokes' great talents, and a specialist, too, in the

art of depicting the scenery of Polar regions, wrote to me and offered to come with us, I gladly accepted his offer, especially as there then seemed to be a possibility that his experience of Arctic winter-life would be of use to us, for it was at first his intention to remain with the wintering party—an intention which, as we shall afterwards see, was not realised.



Lieutenant J. M. Sobral.

It was not without a special reason that I had chosen Buenos Ayres as our base of operations and point of final departure. The previous summer I had received a letter from the Director of the Argentine Observatory on Staaten Island, which was to co-operate with the three South Polar Expeditions, asking me if it was possible for a naval officer to accompany our party as the representative of the Argentine Government. I gladly

answered in the affirmative, just because it brought about the realization of one of my old dreams—that of being able to interest the nations of South America in, and to induce them to contribute in due proportion to, the exploration of South Polar regions. At first I understood the application to mean that the Argentine officer should accompany that part of the Expedition which was to remain with the vessel, and now when I learned on my visit to the Minister for the Navy in Buenos Ayres that it was the special wish of the Government there that the officer in question should form one of the wintering-party, I grew a little doubtful in the matter, as I was fully sensible of the difficulties that could arise from introducing into our circle one who was a perfect stranger, and one who had no previous knowledge of what a wintering amid Polar ice involved. Still, I was most unwilling to answer in the negative, and delayed my reply until I had seen the young officer, Señor José M. Sobral, then sub-lieutenant in the Argentine Navy, who had been proposed to me by the Minister. Señor Sobral came on board the *Antarctic* early next morning, and he appeared so unaffected and affable, so interested in the question and so intrepid, that I cast all doubts to the winds and determined to run what risks there might be in accepting him, and the matter was definitely decided the very same day.

In return for this compliance with its wishes, the Argentine Government promised to aid the Expedition by every means in its power. For the moment we were in want of nothing, but the whole world now knows in what a splendid way the country afterwards fulfilled its promise.

On the 20th December we had finally finished the greater part of our work in Buenos Ayres. We had received several invitations for the last night of our stay, and for everyone of us who could possibly avail himself of this final opportunity of taking leave from all that a great city has to offer. When I came on board with the captain early the next morning, the ship was just finishing coaling, and we at once began to settle all our accounts, in order that not an hour should be wasted. Scarcely had the last coal-heaver left the vessel than the

engines were started, and by 6 a.m. the *Antarctic* was once more on its way to the Polar ice, followed by the cheers of a crowd of people who were assembled on the quay in spite of the early hour. We move through the narrow entrance to the harbour, move along the more than mile long, dredged-out harbour channel, and down the yellow waters of the mighty river on towards the ocean.

The names of those who were now on board and who thus partook, in some degree at least, in the work of the Expedition, were as follows :

N. Otto G. Nordenskjöld, born 1869, lecturer in geology at the University of Uppsala, leader of the Expedition.

Carl Anton Laisen, captain of the *Antarctic*, born in Norway, 1860. He had for many years commanded whalers in the Arctic Ocean, and, just before being engaged for this voyage, had charge of a whaling-station in Finnmarken, Norway ; has gained his greatest reputation through his two voyages, combining whale and seal fishery with exploration, in South Polar waters, in the years 1891 and 1892.

Axel Ohlin, born 1867, since 1896 lecturer in zoology at the University of Lund. Mr. Ohlin, a well-gifted student and a comrade such as one rarely meets, had previously taken part in exploring expeditions to Greenland, Tierra del Fuego and Spitzbergen. He was unfortunately obliged to leave the present Expedition in 1902 on account of illness, and died in Sweden, 1903.

S. A. Duse, born 1874, lieutenant (now captain) in the Norrland Artillery, was the cartographer of the party.

K. A. Andersson, B.A., born 1875, had charge, together with Mr. Ohlin, of the zoological work of the Expedition.

Gösta Bodman, born 1875, had direction of the hydrographical and meteorological work on board of the *Antarctic*, and accompanied the Expedition for the special purpose of taking charge of the magnetic and meteorological observations carried out at the wintering station.

Eric Eklöf, born 1875, the medical officer of the Expedition and our bacteriologist.

Carl Skottsberg, B.A., born 1880, botanist.

F. W. Stokes, North American, landscape painter, took part in Peary's Greenland Expedition, 1893-94.

José M. Sobral, born in the Argentine of Spanish parents; sub-lieutenant (now lieutenant) in the Argentine navy; assisted with the meteorological, magnetic, astronomical and hydrographical work.

F. L. Andreassen, born 1858, first mate of the *Antarctic*.

H. J. Hashum, born 1856, second mate.

Anders Karlsen, born 1864, first engineer.

George Karlsen, son of the above, born 1883, second engineer.

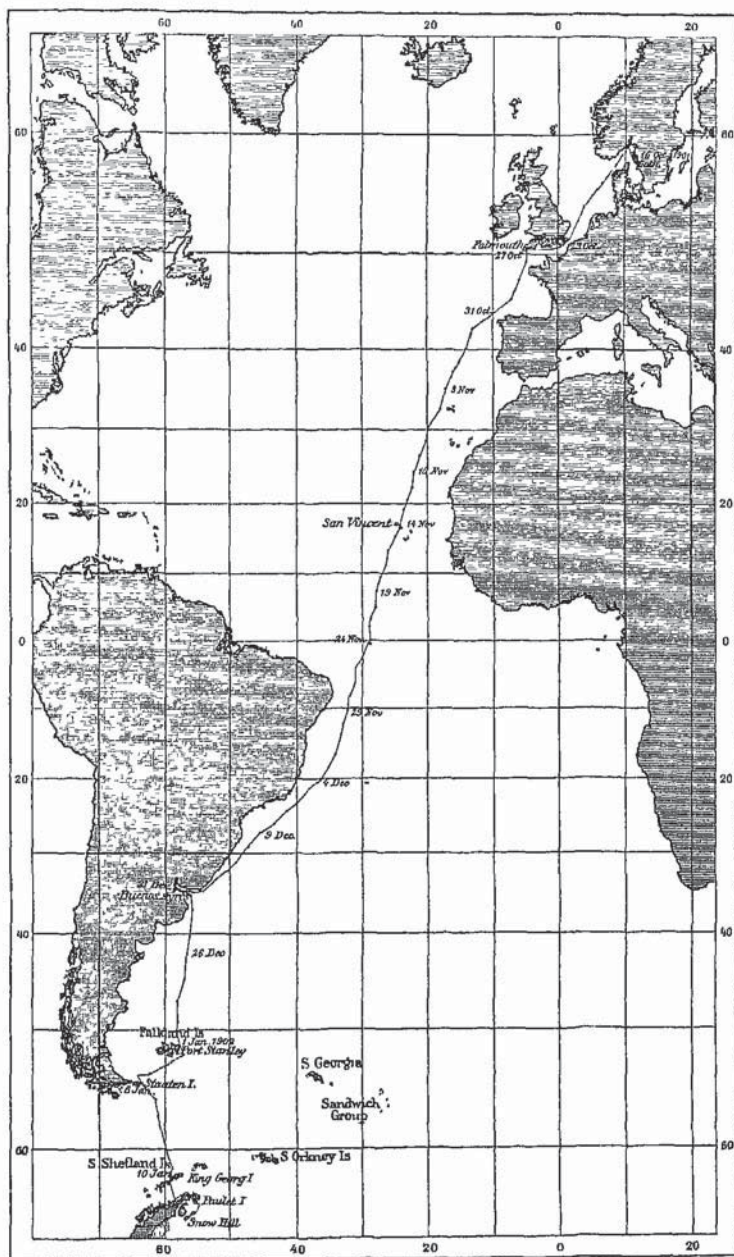
Axel R. Reinholdz, born 1873, third mate.

G. F. Schönbäck, born 1879, steward.

The crew consisted of the following men: *Anton Olsen Ula*, boatswain; *Ole Johnsen Bjørnerud*, smith; *Ole Jonassen*, specially engaged in order to form one of the wintering party; had previously accompanied the *Stella Polari*, on the Duke of Abruzzi's Polar Expedition, and had then taken part in several sledge journeys; *Toralf Grunden*, *Ole Olansen*, *Gustaf Åkerlundh*, *Ole Christian Wennersgaard*, a promising young seaman, died during the wintering on Paulet Island, June 7th, 1903, *Axel Andersson*, cook; *Carl Johanson* and *Wilhelm Holmberg*, firemen.

In addition to these, there were two seamen who sailed with the vessel from Sweden, and a ship's-carpenter engaged in Buenos Ayres, who left the ship on her return after the first summer cruise. Thus our full strength on leaving Buenos Ayres was 29 in all.

From this time forward we gradually began to direct our attention to the scientific work, which was the chief object of our journey. The weather on the way south was fine on the whole, with a steady wind from the north, which permitted us to make good progress, partly with the help of sail alone. The days passed as a rule quietly, Christmas alone making a little change in the monotony; the festive feeling which then prevailed carrying our thoughts back over the sea to all that we had left behind us in the North.



Map showing the course of the *Antarctic* from Sweden to the South Polar regions.

But when we left Buenos Ayres we had not therewith bade good-bye to the whole of the inhabited world. It was my determination to call at Staaten Island, off Tierra del Fuego, in order to compare the magnetic instruments we carried with those in the Argentine observatory there. In other respects, too, it was of the greatest interest and importance for us to put ourselves into communication with this station which, according to the plan for international co-operation in this work—of which plan our expedition formed an integral part—was to form the *point d'appui* for our meteorological and magnetic labours. In the meanwhile, we had gradually begun to reflect on the advisability of calling at the Falkland Islands too, which lay quite near to our course. According to the plan just mentioned, these islands were to form the base of operations for the ship-expeditions, and Dr. John Gunnar Andersson was to join the Expedition there, but I had a special reason for wishing to put in now. We had had very bad luck with the Greenland dogs we had brought with us; they had sickened very early and died, very many of them, during the voyage through the tropics, so that now we had only four left. Although there was not much probability that the sheep-dogs used in the Falklands would compensate for this loss, I was especially anxious to make a trial of their adaptability for such purposes as those for which we needed them, and as the weather was good and our expenditure of coal less than had been expected, I at last determined to make this little deviation from our route and proceed to the islands.

At length the light outside Port Stanley was sighted on December 30th, and every one came up on deck early in the morning in order to look at the entrance to the place. It was magnificent weather, with a fresh breeze which seemed to us quite a cold one after our long voyage through warm regions. Penguins swarmed in the water, and here and there we saw sea-lions come swimming, and often following us for long distances. It was, in a word, a perfectly new world which surrounded us. The entrance itself is very beautiful

and lies through two very narrow passages between long-stretching peninsulas. The land is clothed with vegetation of low growth, without tree or bush, and of that peculiar yellow-green colour so unlike what is seen in our Swedish meadows, but which I so well remember from the treeless

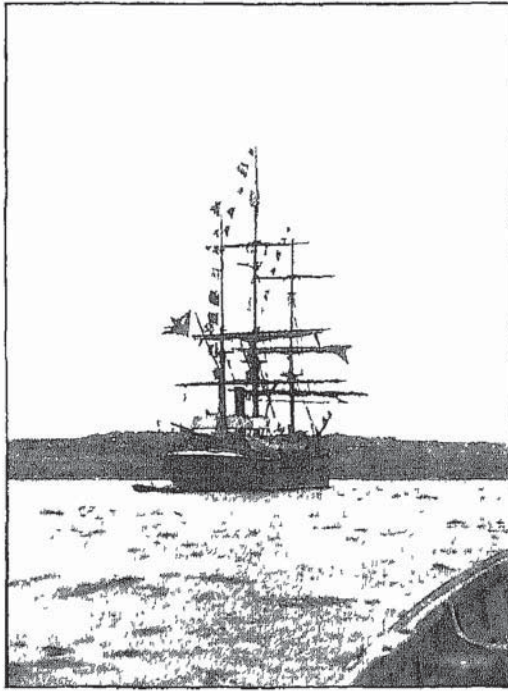


Photo 6,1]

[D. ECKLOF

The *Antarctic* in Port Stanley harbour.

districts of the northern part of Tierra del Fuego. At six a.m. we cast anchor in Port Stanley, and after getting through with the necessary formalities we all went on shore to inspect our new surroundings more closely. First of all, Captain Larsen and myself called on Mr. Grey-Wilson, the Governor of this isolated group of islands, who received us in a most courteous manner, after which I paid a visit to the man-of-

war lying in the harbour, which had sent one of its officers on board the *Antarctic* early in the morning, to offer us all the assistance of which we might stand in need. The rest of the day was spent in excursions and in the work of collecting dogs from which to make our choice. Some of us were invited to the Governor's to dinner, which was followed by a pleasant evening, enlivened by music and conversation. It gave me a most peculiar feeling to know that this was the last occasion for a long, indefinite future that we spent an evening in the way common in the civilized world. We left about midnight, to find that the weather had changed, and we stood on the pier in drenching rain and a howling wind, waiting for someone to hear our signals and send off a boat from the *Antarctic*. When we at last came on board, we found a merry party there. All who had not been on shore had assembled in the gun-room in order to welcome in the new year—the new year of which we all hoped so much. Here, too, there was speech-making and singing and music, even if of a less pretentious kind than that we had just heard. I joined the circle for a short while, but soon returned to my cabin to write a few letters home and, under the influence of all the impressions which crowded upon me, to have such waking dreams as one seldom enjoys.

New-Year's Day, 1902, came with clear and beautiful weather, and we all went on shore early in order to be ready to start again during the course of the day. We heard at a distance sounds of howling and barking, which guided us to the place where a score of dogs had been assembled for inspection. Their owners had seized the opportunity and demanded pretty high prices; at least, they could be considered high if one takes into consideration the fact that only such dogs were offered for sale as had shown themselves quite useless as sheep-dogs, and, as I had no great confidence in the suitability of any dogs of this race for my purpose, I took only four with me, and these were immediately sent on board the *Antarctic*.

We had invited the Governor and his lady, the Swedish



Photo by

Bird-life on New Year Island (incubating and flying cormorants)

[G. BODMAN.]

Consul, and others belonging to society in Port Arthur, to come on board in the course of the forenoon and inspect the vessel, and it was now soon crowded with an interested throng of ladies and gentlemen. All of them tried in every imaginable way to show us every kindness in their power, wished us good fortune and success on the voyage, and it almost seemed as though they hesitated to leave us to our fate.

But everything has an end, and, in spite of all attempts at persuasion, we would not delay our departure one hour longer. Our guests went on shore and we weighed anchor at 3.30 p.m., and recommenced our journey; but it soon appeared that we could well have stayed a little longer in the harbour, for a tremendous wind was blowing outside, a regular "Cape Horner," and it was first after four days' hard work, which made sad inroads on our small supply of coal, that we came on the night of January 6th to New Year Island, the little island just off Staaten Island where the Argentine observatory was in course of construction. The first thing that we discovered was that the variation-instrument of the station had not yet been erected, and that, therefore, no adjustment and comparison of instruments could be carried out, and we had to content ourselves with coming to an arrangement respecting the co-operation in the scientific work already mentioned, and also one respecting some voluntary, simultaneous observations which were to be taken in addition to those of the international programme. We also visited the magnificent meteorological observatory with its valuable apparatus; but as we could do nothing else we did not care to stay any longer, and after leaving our last letters and telegrams, we were on our way to the shore again by eight o'clock.

Several of our scientists, however, had seized the opportunity of making studies and collections in the new and rich fields of nature which here surrounded us. The place possesses a rich animal-life; a memorial of the time when it was but rarely that a human being set his foot on the island. Out

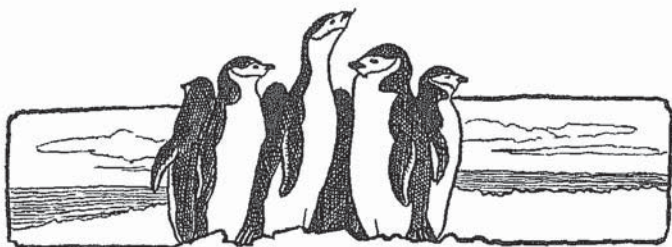
on the north-west point can be seen the breeding-place of innumerable cormorants who live there in company with a number of penguins. The air grows black with the crowds of the first-named birds on one approaching the spot and frightening them in any way. Among the rocks by the shore there still live large herds of sea-lions, stately animals with their long manes and roaring cry. Some young ones had newly seen the light, which added to the interest of the visit, and one could view them without their exhibiting any special signs of fear.

We give a last good-bye to the last inhabited spot, to the last people, besides ourselves, that we shall see for long months and years, and then turn our faces southward again. We sail along the coast whose bold, sharp peaks, here and there covered with snow, form one extremity of the longest of the mountain-chains of the world, which, beginning in this spot, runs through all the zones of the earth to end on the shores of the Northern Polar Sea. We double the last cape and then steer with a fresh breeze behind us, direct south, out into Drake's Strait, as the broad fair-way which separates America from the Antarctic lands is somewhat incongruously called after its discoverer.

It is a remarkable stretch of water, this boundary between two continents and between two oceans, and we should have very much liked to stay there awhile to make some scientific investigations, were it not that just on the track we now followed, the Belgica Expedition had made a series of soundings and carried out other hydrographical work, and under the circumstances we considered that time pressed too much for us to repeat these investigations.

We can say that we were favoured with remarkably fine weather when we take into consideration the notorious reputation these tracts have, and even as late as the 8th January, in lat. 58° S. we had a most magnificent summer-day. But the next four-and-twenty hours brought quite different weather. The temperature of the water had not changed very much, being still about +3° C. (37°.4° F.), but the air was

cold and heavy, with a thick fog in the morning, and in the evening a few flakes of snow reminded us that our long road now lay behind us and that over the warm oceans which girdle the earth we had come to regions where ice and snow are omnipotent, even amidst the warmest days of summer



CHAPTER II.

OUR FIRST DAYS IN ANTARCTICA.

The South Shetland Islands—Our first meeting with penguins—The Orleans Channel—In unknown seas—We return eastwards.

ON the 10th January we had clear weather once more, and we all stood on deck looking eagerly for the first glimpses of the South Shetland Islands. At 1.10 p.m. the long-expected cry of "Land ahead!" was at length heard from the bridge. And, sure enough, a black break and a few dark shadows could be marked in the sharp light on the horizon to the southwards, this light itself afterwards proving to be the ice-blink from the snow-covered land. It was our first sight of King George's Island, our first point of destination in the Antarctic regions.

Ere we approached so near the land that any of its details could be distinguished, our attention was taken up by something else which we also saw for the first time—the Antarctic ice. Yonder, on the green water there comes floating towards us a glittering white, four-cornered, flat mass of ice, an iceberg; not one of the largest kind, it is true, but in our inexperienced eyes it appears overwhelmingly great. This sight, which, on any other occasion, might have led us to doing all manner of things, was not able, however, to enchain our eyesight very long at such a time as this. All our thoughts, all our attention, was directed towards the colossal shining mass which slowly rose out of the ocean.

before us, and soon filled the whole horizon. It was the most wonderful picture my eyes have ever beheld. I have visited Greenland, 8° north of the Polar Circle, but the difference between what one sees there and the panorama which here unfolds itself to the view, is greater than that which exists between that same Greenland landscape and one in Central Sweden. Still, in Greenland, too, we find these extensive stretches of coast which in summer are free from ice and, on a closer view, present a verdant and often luxurious vegetation. On a summer day one can lie there on the soft grass, amidst many-coloured flowers, and surrounded by the grazing herds of musk-oxen, and, if only one is protected from the attacks of the myriads of mosquitoes, the snow-capped tops in the back-ground need not hinder one's being carried away in dreams to more southern climes.

But how terrifically different is the landscape which here meets the view! The whole of the large island forms a wild mountainous country with sharp peaks. Anywhere at all in the Arctic regions the most striking contrasts and the most changing scenery would be visible, but here, everything is buried beneath snow and ice, ice which creeps from along the hill-crests and the lower valleys up to the highest points without leaving a single spot free from snow, and which grows and grows to an immense, continuous covering, so that the land stands out to the view as one glittering vault of ice. It is but in a few places—the most precipitous—that the dark rocks look through. And a most peculiar contrast to this unbroken mass of ice is formed by a few, small, snow-free rocky islets; broken, pointed, bizarre of form. Towards the sea the land is bounded by a high, perpendicular, gleaming wall of ice, which, however, we notice first when we come nearer our destination.

The overpowering feelings cannot be described which were awakened in me when this long-wished-for land thus suddenly rose before my view. So rapid was the transition, from a vision of sea alone to this of ice-bound land, that my first impression necessarily was, that a loneliness and a wildness



Before the storm Off Jounville Island, on the evening of the 23rd February, 1902

[After a painting by P. W. Stokes]

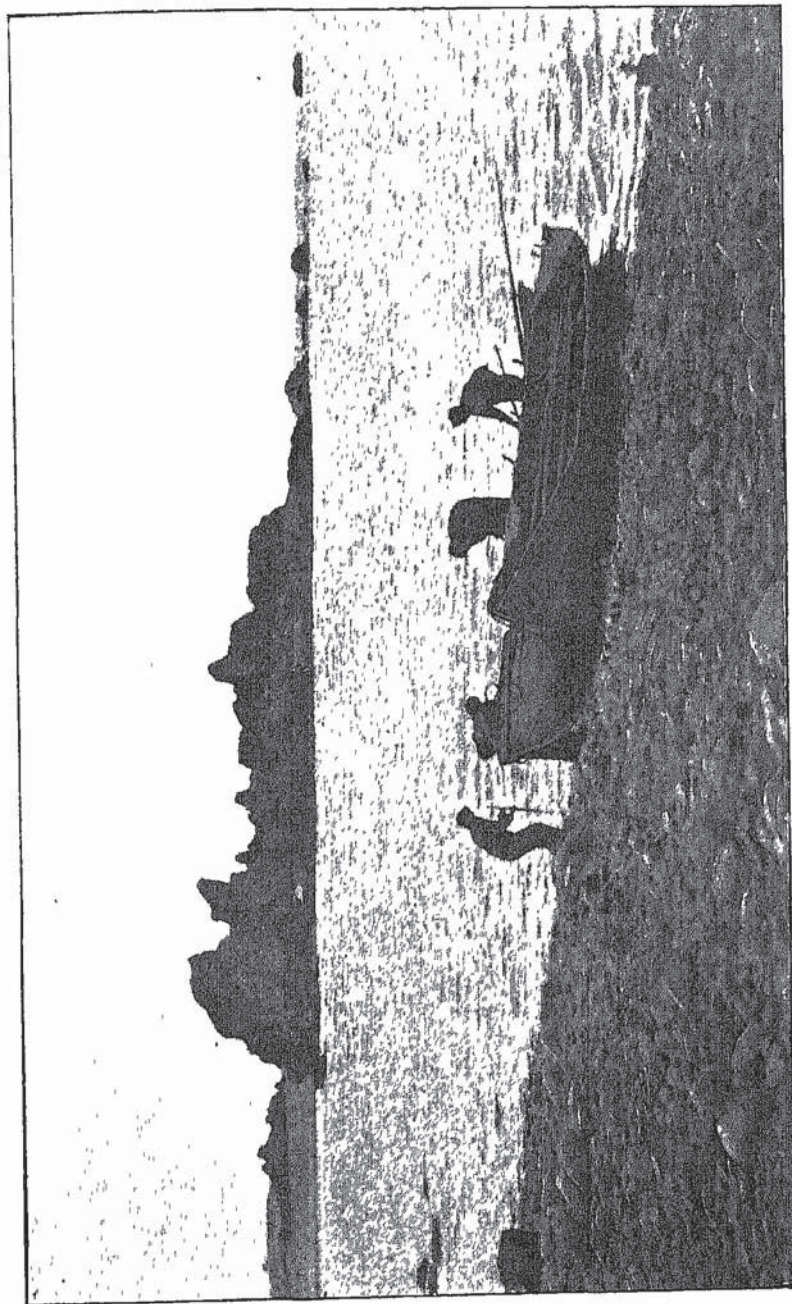
reigned here such as could, perhaps, be found nowhere else on earth; I experienced the same feeling of helplessness as when one stands alone and deserted amidst mighty forces of Nature. Although the writer himself has never seen anything similar to what he now beheld, it is probable that far within the North Polar regions, to the north of Frans Josefs Land and elsewhere, there may be tracts resembling this; but if it be considered that we now stood before what was merely the most northern outpost of the whole of the Antarctic land-region, that we were nearer the Equator than are such large towns as Trondhjem and Sundsvall, and that we had already reached the height of the Austral summer, it will be easy to understand the entry in my journal that "I had never expected to find so much ice and snow."

I have just compared the tracts where we now were with Greenland, but another comparison is nearer at hand. It was but four days previously, on the other side of Drake's Strait, that our by no means swift sailing vessel left behind it Tierra del Fuego with its impenetrable, evergreen forests, in which trees of an almost tropical type are to be found, and which are the dwelling-places of green parrots and small, gleaming humming-birds—a land whose climate is such that the natives can live there in a state of almost perfect nudity. I imagine that scarcely anywhere upon earth does there exist a more rapid transition of climate, in the case of two neighbouring shores, than is to be found in the places in question—the "land of fire" and the waste which now lay before us, a desert of ice which seemed to banish every possibility of plant or animal life.

After sighting the land a little more clearly, we swung round to the west, and steamed slowly past King George's Island. Coming nearer to its coast we perceived that an occasional and narrow belt of shore stuck out from under the lofty wall of ice. Here and there we observe a few seals and a solitary colony of penguins, but otherwise the view is everywhere the same, and the dark, rocky islets are the only objects which give variety to the picture. Our thoughts turn irre-

sistibly to the time when northern lands, and Scandinavia, too, were enveloped in a similar covering of ice. And few questions are more interesting than those which give us an insight into that remarkable epoch of the history of the development of the earth. Here, down in the futhermost south, can be seen a landscape which probably gives a clearer idea of the matter than can be had in the Arctic regions. As King George's Island in our days, so has Norway, for example, been enshrouded in ice whose onward-moving mass polished and rounded the whole of the low-lying country; whilst the highest tops, although snow-clad, were still visible as to their contours. But farthest out in the encircling sea lay a number of islands and rocks, which even then lifted themselves in bold, sharp forms, like to high towers with pinnacles and projections. All these rocks, such as Lovunden and Tränen in Nordland, and many others, so admired by tourists and which are regarded with special attention by men of science, on account of the difference which exists between them and the inner islands—these rocks have their counterparts in the snow-free, rocky islets off the Antarctic coast and they mark what was, for a long period at least, the limits of the ice.

We stood gathered on deck far into the night, our first Antarctic night, light and still. At two the next morning I was on the bridge again, just as we turned into the strait between Nelson Island and Robert Island. There is, just here, a jutting headland on the former of the two, with a wide, snow-free shore where, with the aid of a glass, we could distinguish seals and penguins. I determined to land on that point. We dropped anchor outside a little bay, marked Harmony Cove on the chart, and, in company with Duse, Andersson, Bodman, Ekelöf and Skottsberg, I got into a Nordland boat and rowed into the little bay which seemed as though it would make a well-sheltered harbour for small vessels. We landed on an open, gravelly shore at the foot of a high mass of rock, and thus set foot for the first time on Antarctic land.



[E EKLLOF

Our first landing in Antarctica

Photo by]

Although this land had presented itself to us the day before in the guise of a wilderness of ice, we now learned that it could also be swarming with life. The whole shore was covered with large seals whose peculiar appearance awakened a desire within us to make their nearer acquaintance. They were grey-green in colour, with lighter spots and all belonged to the Weddell-seals (*Leptonychotes Weddelli*), those most commonly met with in this district. But there are, too, other forms of animal life which so entirely arrest our attention that we have no eyes for anything else—the penguins, these wonderful creatures; birds that cannot fly, but can swim quite as well as fish. I had myself seen penguins many times before on the shores of Tierra del Fuego and the Falkland Islands; they are also found along the west coasts of South America and Africa far to the north of the tropic of Capricorn. But in these places, one sees everywhere nothing but dwarfed forms of the bird; it is only here, in their rightful home amid the ice of the South Pole, that one learns to know, in their full development, these, the most peculiar representatives of the Antarctic animal-world. These strange creatures come to meet you far out in the water; no one, who has not seen them before, can say at a distance what kind of animal they are. They come swimming in long rows, hundreds upon hundreds of them; one after another they fling their black, shining spool-shaped bodies out of the water, to dive down again the next minute and, like fishes, continue their journey under the surface. At the sight of these flocks of penguins our thoughts at once turn to the shoals of flying-fish which we have so often beheld in the tropics; that these are birds thus speeding onwards is the last thought that could come into our minds, if we did not now and then see one or two of them swimming through the water with little more than their round, black heads sticking up over the surface. In a certain sense it can be said of the penguin that it forms a link between birds and fishes, and so far occupies the same position as that held by the seal amongst mammals.

It is, however, upon land, where we now meet them, that penguins are of the greatest interest. They live in large colonies containing many thousand individuals so closely packed together, that one can scarcely distinguish a bare spot of ground, and can scarcely force a way between their nests. They do not appear especially interested in our appearance amongst them; in fact, they are quite indifferent as long as they are not disturbed, but if we approach their nests, there



Photo by]

A Weddell seal (*Leptonychotes Weddelli*).

[G. BODMAN.

arises a murmur and a cackling which threatens never to cease. Such a colony of birds lies here, stinking of the guano which covers the ground like a thick dough; and it is only after much hesitation that we venture to penetrate the living mass, in every part of which we meet with the liveliest tokens of dissatisfaction. In every nest can be seen one, two, or more seldom, three, ruffled, dirty, down-clad young ones, resembling small, grey, shapeless balls of clay, and it is these young that the fathers and mothers defend with such stubborn-

ness against the new invaders, whom they probably regard as some hitherto unknown, gigantic relations.

For, however strange it may seem to those who do not know these animals very well, the likeness between penguins and man is so striking that it cannot for a moment be unmarked by anyone who makes their acquaintance out in the open. Their appearance is in every respect remarkable. Imagine a little creature, quite erect, somewhat more than a foot in height, standing on two legs which support a body of almost equal thickness throughout its length, with a large, round head and provided with two narrow, shrunk wings which, when the bird moves about on land, can easily be taken for two arms with the hands drawn up into the wide sleeves. The back is a shining black and ends in a long tail which bears a striking resemblance to the way in which an ordinary dress-suit finishes off. The breast is of a gleaming white, with a black band over the neck; the belly protrudes somewhat. The entire apparition forms the most comical caricature imaginable of a stout, elderly, elegant gentleman, in a dress-suit, with a white waistcoat and black tie, tripping about along the shore with something of a rolling gait, and with a mien which is at once a little conceited and very dignified.

I shall not now detain the reader with any further account of the penguins, as they will be fully described later on in the book. It will suffice to say that it was difficult to tear ourselves away from this most peculiar company, but there was much else to be seen. Thus, for example, this was the first time that we learned to know that interesting Antarctic bird-world which loves especially to congregate in the neighbourhood of penguin colonies, and which, to a great extent, lives upon the offal to be found there. Here we have the little, impertinent *Chionis*, which resembles a snow-white pigeon, to which group of birds it bears some anatomical likeness, but which lives upon meat and eggs, and is often seen sitting and pecking at the bodies of dead penguins. Then we have the Cape pigeons, although they do not breed here.



Photo by]

Thousands of Cape pigeons follow the boats on their return from Harmony Cove to the ship.

Photo by Skarab

The big, brown *Megalestris*, a bird resembling a gull, with a sharp beak, and talons like those of a bird of prey, attracts special attention. Large flocks of the last-named bird gathered round the seals which we shot and skinned, and it was first when they came so near that we could strike at them with a stick, that they unwillingly withdrew, but they did so only to fly around our heads without showing the slightest sign of fear. The day was to come when these birds should become our domestic animals, so to say, and the chief aim of our shooting expeditions, but at the moment it would have been nearly an impossibility to imagine oneself eating the flesh of these most disagreeable creatures.

After a while I went inland to study the geological phenomena and to examine the plant-life. The rock everywhere consisted of a green porphyry, reminding me of certain rocks in the coast-archipelago of Tierra del Fuego; it can very well be of mesozoic age, although it is difficult to give any proof for this assertion. Unfortunately, all the specimens obtained on this island, like the remainder of the geological collections I made during our first summer here, were lost with the *Antarctic*. The rock forms precipitous, fissured crags, and it is upon these slopes that we find most of the representatives of the plant-life of the island, which is much richer than I have seen at any other of our landing-places, although we found merely green knolls of moss and a fairly luxuriant growth of lichens, while there was a total absence of grass or other phanerogamians.

The most interesting discovery we made that day was of a singular little seal that Captain Larsen met with at a great distance off along the shore. Captain Larsen drove the seal before him for a mile or two, as though it had been a domestic animal; the poor victim toiled along quite peaceably and, when the pace became too great, stopped and looked back despairingly upon its pursuer. On arriving at the boat the seal was killed and the skin taken for the purpose of being stuffed. No close examination has yet been made, but it seems to be a true fur-seal, which

shows that these animals are not yet exterminated in these regions.

By breakfast-time we were all on board again, thousands of Cape pigeons following the boats on their return to the ship, and our course was now set southwards. The wind soon freshened, and in the afternoon grew to a storm which lasted the whole night. When I came on deck the next morning it still blew hard, but we had made such good way that we were once more surrounded by new stretches of land. *Astrolabe*

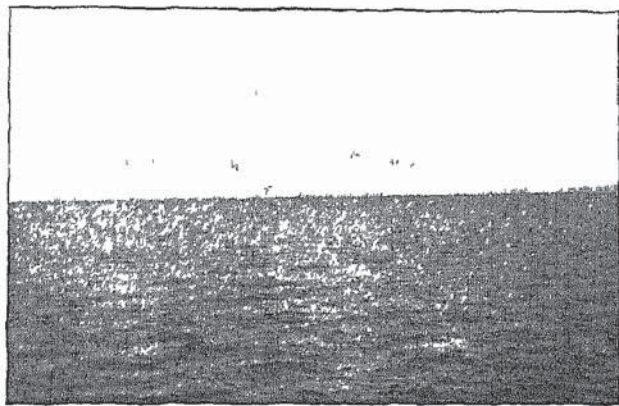


Photo 67]

Snow landscape in Louis Philippe Land

[NORDENSKJÖLD.

Island had just been passed, and before us lay Louis Philippe Land, a genuine Antarctic landscape amid genuine Antarctic weather; it consists of a lofty, wild, Alp-like chain of hills with isolated peaks, amongst which Mount d'Urville is especially prominent. To starboard lay a middling-sized island, succeeded, after a time, by one still larger. These two islands are in reality all that exists of Trinity Land, as they have long been called. I shall return in another chapter to this interesting historical-geographical question.

We now found ourselves at the entrance to the Orleans Channel, as d'Urville called the broad gulf which he saw

between the mainland and Trinity Land I had determined on the examination of this gulf as the first object of our expedition. According to the idea expressed by Larsen, and which was later on adopted by the German geographers who have edited the cartographical material obtained on his voyage, this channel should go in a southerly direction, and divide Louis Philippe Land from Graham Land. Others had thought that it was only a little bay; others, again, that it was a channel with a south-westerly course. The last-named view turned out afterwards to be the correct one.

We were now sailing a sea across which none had hitherto voyaged. The weather had changed as if by magic; it seemed as though the Antarctic world repented of the inhospitable way in which it had received us on the preceding day, or, maybe, it merely wished to entice us deeper into its interior in order the more surely to annihilate us. At all events, we pressed onward, seized by that almost feverish eagerness which can only be felt by an explorer who stands upon the threshold of the great unknown. Everybody wished to see; every photographic apparatus was at work, and Stokes was incessantly occupied with his painting. The land rose in wild, lofty peaks, separated by broad and, as a rule, short glaciers, which in nearly every case united near the shore, forming an ice-foot out of which only a few rocky points projected. It was not merely that new pictures unfolded themselves to the view; it was a strange world, difficult to describe, so different was it to what I had seen before.

On land we had been received by penguins; here it was whales who gave us welcome. These giants of the deep could be seen swimming in hundreds around our vessel, of which they probably entertained the same idea as the penguins had had of ourselves. According to the opinion of authorities, all these whales belong to a species resembling, or identical with, the northern humpback whale (*Megaptera*). Had we had the time I should have liked to try our whaling equipments on one of them; in order, possibly, to have an opportunity of studying these animals a little more closely. On other

occasions, however, we saw in this region numerous examples of the blue whale and the finback whale.

Everything around us grew still as the night came on, and the majestic, snow-clad landscape which extended itself on both sides shimmered in the pale midnight light of the Antarctic summer-night. It was not only that we found ourselves in a sea never before visited by man, but now the feeling grew upon us more and more that we absolutely did not know where we were; that even now we ought to reach

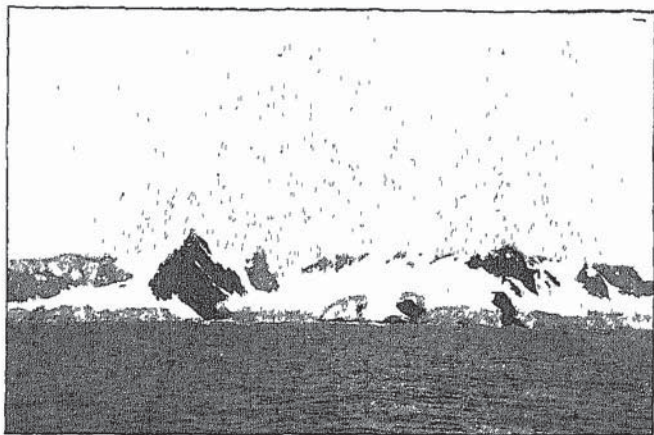


Photo by]

Scenery in Gerlache Channel.

[E. EKKLOP.

tracts where, at least, some landmark could be identified. We had long ago seen that we should not reach the Atlantic with the south-westerly course we now held, and in reality it soon grew clear that Louis Philippe Land must be continuous with Danco Land. Thus it may be said that we had already attained the most important geographical result gained during the whole of the expedition. But whither did this channel lead? Could it be to somewhere within the channel discovered by the Belgian expedition? Did it come to an end, perhaps, even before reaching the beginning of this sound, or was

our sound itself the beginning of the Gerlache Channel ? These were questions which the morrow ought to solve.

It was first after midnight that I went below, and at 4.30 a.m. I was on deck again. Duse still stood on the bridge, drawing and measuring ; he had not slept at all during the night. We had kept the same course the whole time, and we still found ourselves in the same long, continuous channel, with island after island to starboard. It was impossible to determine where we were, but one thing was certain, and that was, that either we had come into a sound which ran parallel to the Gerlache Channel, or that, in some mysterious way, we had, without noticing it, managed to come into that channel itself. The point was to decide how the matter really stood, and I went below after Dr. Cook's description of the Belgian Expedition in order to see if the description agreed with what we now saw. First of all, I compare a peculiar cone-shaped mountain-top with his picture of Mount Allo, but the resemblance is not complete. Then I turn to his illustrations of Cape Murray and Brialmont Bay. I am at once astonished at the resemblance to a dark, projecting cape to port, and become convinced that it is in the Gerlache Channel, or, as it was previously called, the Belgica Strait, that we now find ourselves.

I at once communicated my surmises to Duse, and, although he could not make them agree with the chart drawn up by the Belgian Expedition, he adopted my views for the time being. It is of especial interest for one who is somewhat habituated to finding his way amongst mountains, or in the Polar regions, to carefully note the patches of snow observable upon mountain-slopes and which usually re-assume their peculiar forms year after year and keep them the whole summer through. It is scarcely imaginable that a combination of precisely similar patches of snow can be found in two different places, and just as a criminal is identified by the print of the fine lines of the thumb, so, by means of the patches of snow, do we recognise one amongst thousands of mountain-tops

Cape Murray I had identified, and the chief features of our surroundings seemed to agree, too, with the Belgian chart, but we got no further. All the scientific members of the expedition had, by degrees, again assembled on deck, and there was a general and eager discussion as to our whereabouts. It was determined to continue our course in the hope of being able to identify some other points further on. At first this went very well, Charlotte Bay was something like the drawing

*Photo by]*

Cape Roquemaurel

[NORDENSKIÖLD

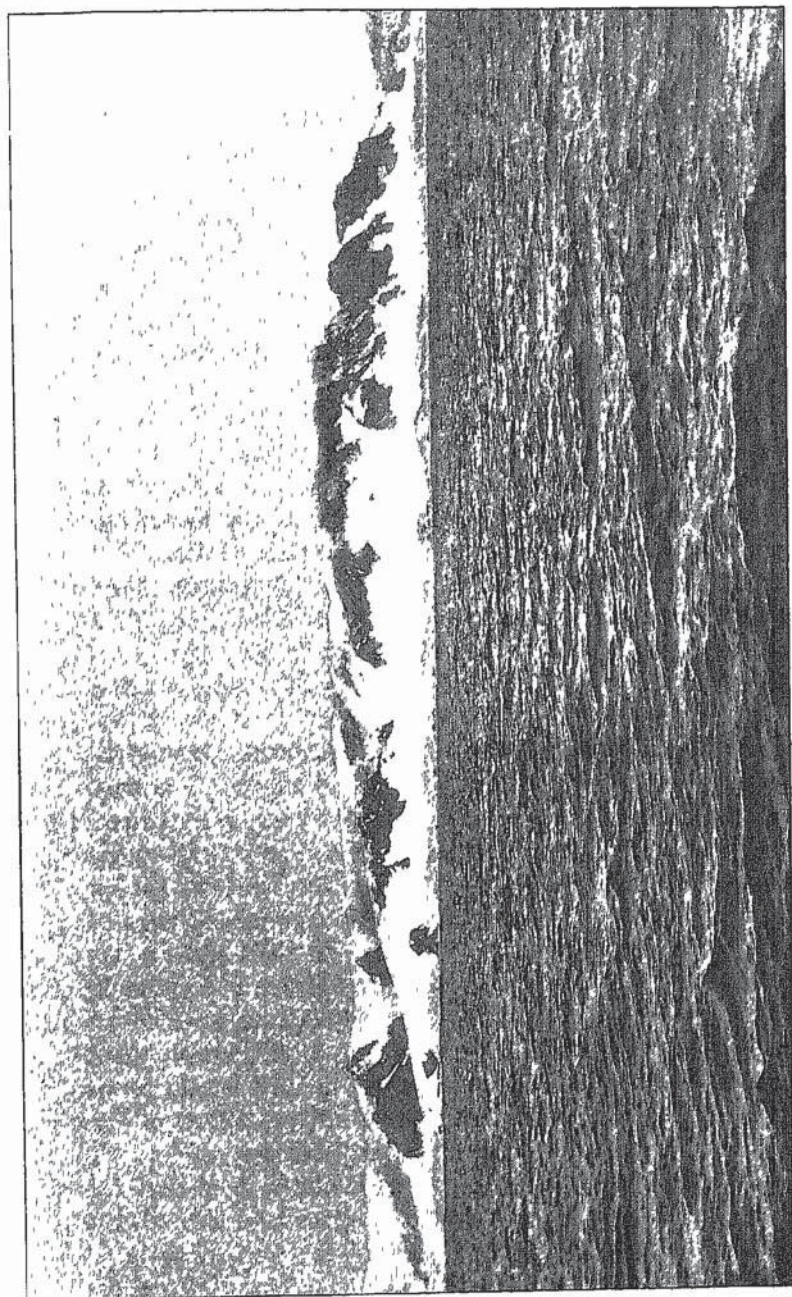
on the chart, but then we turned into Wilhelmina Bay, and here I grew doubtful myself, for now it became impossible to discover our whereabouts with any degree of surety by the aid of the map

We pursued our course towards Cape Anna, and thence across the sound to Cape Ryswyck, with Schollaert Sound in front of us. The general question on board still was. "Are we in the Belgica Strait or not?" Duse, who had previously been persuaded that we were, now began to think it strange, however, that the chart should present such great

differences to what we saw around us. A great temptation arose to make a thorough investigation in order to obtain some decisive proof of the matter, but time pressed, and we had, moreover, come farther to the south-west than I intended. My view of the case was this : on the one side there were these differences in detail from the preliminary Belgian chart—differences which, it is true, seemed in the northern entrance somewhat difficult of explanation, but, still, which are so usual in the drawing of sketch-charts by exploring expeditions, whose chief aim is not, of course, the mapping-out of places ; on the other hand, there was the agreement in the general features ; the impossibility of imagining a sound so large and broad as this one was, and having several transverse channels, as lying to the east of the Belgica Strait without having been observed by the Belgian Expedition ; and, above all, the identically similar patches of snow on Cape Murray. Under such circumstances, it seemed to me scarcely possible to entertain any serious doubts in the matter. And the question would, too, be fully solved the following summer, when we intended to chart the region in detail. I therefore gave orders to turn the ship towards our real field of labour on the east coast of the land.

It is true that I myself never returned to these regions, but we shall hear, in a later part of this work, of the second visit of the *Antarctic*, when the theory I have mentioned above was confirmed, and the Gerlache Channel was really found to be nothing but a continuation of d'Urville's Orleans Channel. The natural peculiarities of the region were then more closely investigated by means of numerous visits to the land, by soundings and by dredgings, and we must not now anticipate the course of events, but reserve for later pages the more detailed description of this tract.

Never shall I forget the feeling which prevailed on board during these two days, and, I may even add, during the two which followed. It was one of feverish eagerness, evoked by our voyaging amidst unknown surroundings where none knew what surprises the next minute might produce. There was



C. SKOTVEDT 1910

Danco Land, near Wilhelmina Bay

Photo by I

in the air a feeling of something great, which everyday life cannot present us ; we felt how both the will and the ability to work grew within us , and, under such circumstances, it is not easy to give the order to change the course. How eagerly I wished that we had come here but a few weeks earlier, and had had the opportunity of beginning our expedition by a systematic exploration of this magnificent region ! It is true that this examination has since been made, but much would have turned out otherwise if it could have been carried out then. I thought, however, of Gerlache, who also wished from the beginning to work upon the east coast, but who, attracted and seduced by the bewitching scenery of this very same channel whither we had ourselves come in seeking for a passage to the east, had been punished by imprisonment throughout a long and dreary winter in the fettering ice. No ; we must not give way to the temptation, for it was more than doubtful if I should have time to carry out what I was come to do

Our journey was thus now back over the course we had just pursued, and, consequently, we were given the opportunity of reposing for a while, and, in the interval of comparative calm, of planning new work for the future. The next morning came with the same glorious sunshine, and at noon we went on shore for the third time, at Cape Roquemaurel, as d'Urville calls the eastern point at the entrance to the Orleans Channel. Cape Roquemaurel is a prominent mass of rock, partly free from snow, of a jagged, broken surface, but without any sharp points. It sheltered within it a veritable little harbour, like a sea-filled ravine, where our boats could put in. We landed on a low rocky shore dotted with small isolated pools, filled with sea-water and covered with a close-grown carpet of seaweeds which awakened the delight of our botanist. The slippery rocks were treacherous ; Stokes fell and damaged a finger, which hindered him a great deal for some time in his artistic work. On the inland side of the shore lie a few seals sunning themselves ; one of them is almost silver-white in colour, probably belonging to the crab-

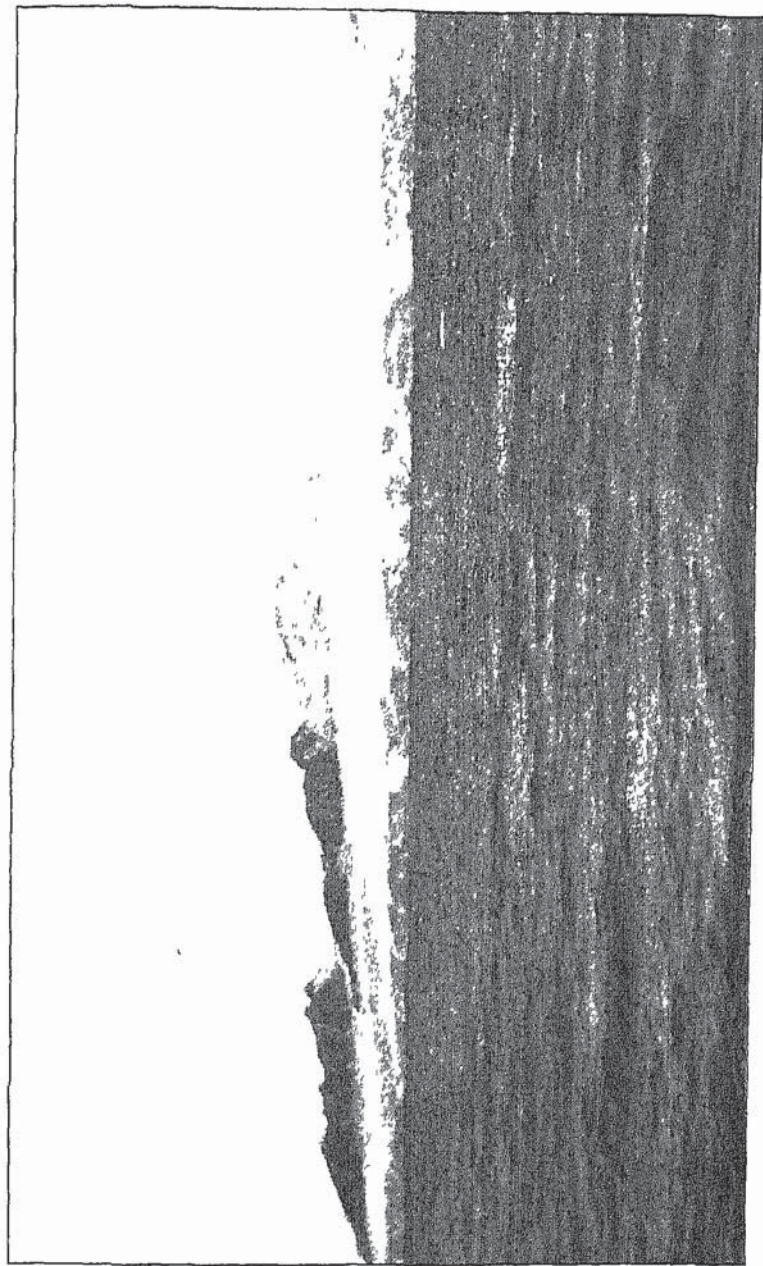


Photo by]

Mount Bransfield from the north

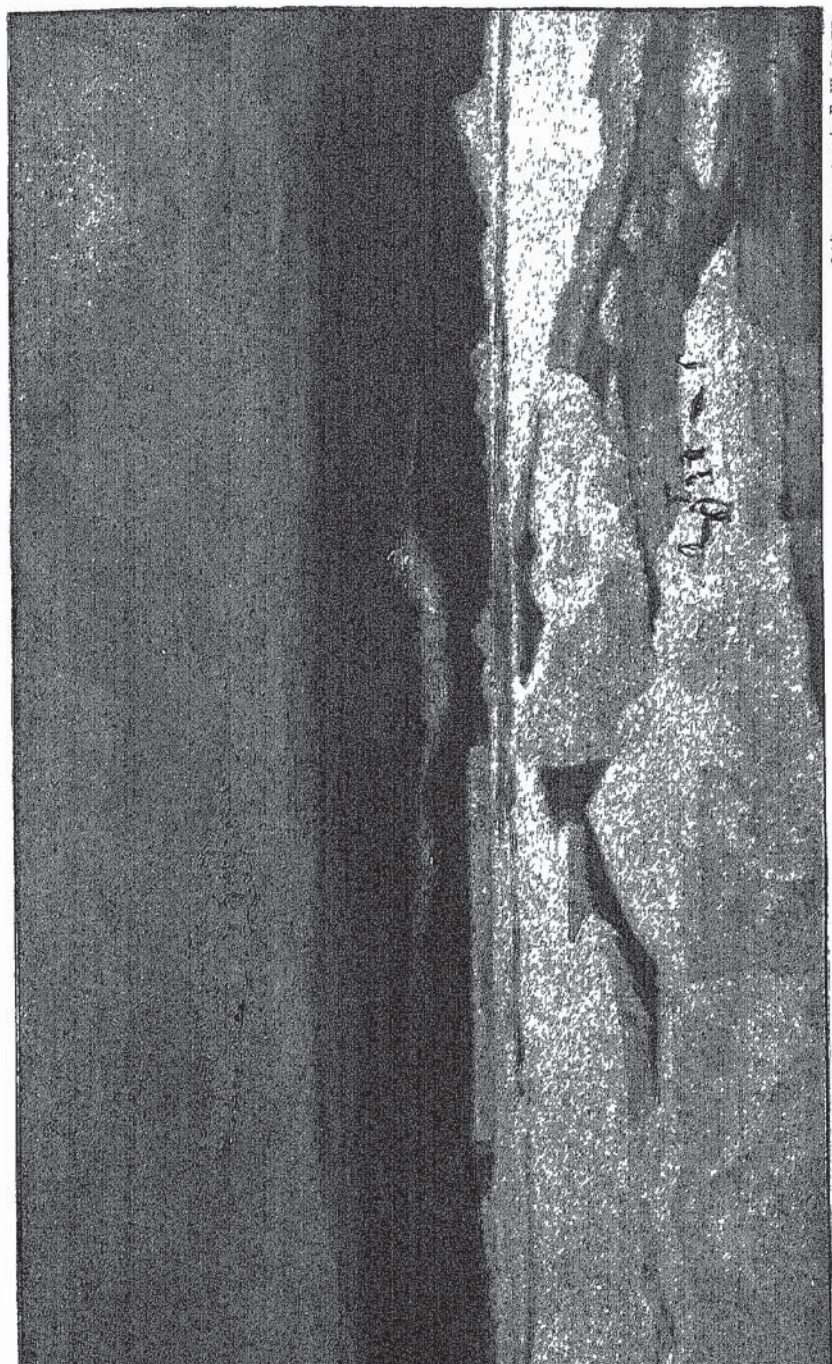
[NORDINSEIOLD

eating species (*Lobodon*). They are allowed, however, to remain in peace, safe on this occasion from all attacks from our side

The rock in here is a grey granite of somewhat peculiar appearance, and is intersected by a number of veins of a dark eruptive rock, showing close lateral bands and containing numerous fragments of granite. The same light-coloured rock is visible in several of the surrounding heights, but, as a rule, the projecting masses of rock in this part of the channel consist of a darker kind, whose nature I could not then determine.

The journey was now continued along the coast of Louis Philippe Land, amidst a whole archipelago of rocky islets and submerged reefs, which taxed the attention of the captain in the highest degree. The land here lies considerably lower, and, as usual, the icy covering becomes, in consequence, still more continuous, and in some places it would probably be pretty easy to traverse the ridges of land in sledges. At all events, there is here an interesting field for future exploration; the unexpectedly rich results gained a year later at our wintering-station at Hope Bay make this region still more enticing.

The evening of this day, too, was wonderfully beautiful, the sunset especally so, with its violet-blue tints upon the white surface of the snow and their strong reflection from the snowy hills. The night was cold and clear, and only to the east could a light mist be seen above the peaks of Joinville Island.



[After a painting by T. W. Stokes]

Sahley Herbert By: 9 p m , 10th February, 1902

The icebergs still shone in the reflection of the last sun-rays

CHAPTER III.

OUR WORK ON THE EAST COAST.

*Our first acquaintance with the future wintering stations—On the way southwards—
The ice compels us to return.*



OUR first task was now completed ; we had followed the coast of Louis Philippe Land in a westerly direction in order to search for an intersecting channel, and had proved that none such existed—none at least which was navigable. We were now ready for

our next step. Where we found ourselves, d'Urville had already seen a sound from the northwards, but what its character was, was quite unknown. The uncertainty in this respect was easily removed. By four o'clock in the morning of January 15th I was on the bridge again ; the sound lay clear before us with a large island in the middle, just as d'Urville has drawn it. The sun rose clear and brilliant, illuminating the white landscape which surrounded us. That part of Joinville Island is low and covered with ice, but, on the mainland, Mount Bransfield lifts its commanding, beautifully-rounded cone high above the surrounding country. The water we sailed through was almost free from ice, and no

difficulties opposed themselves to our course. This we considered to be such a very natural state of things that we thought we had no great reason to be thankful for it, but we afterwards learned that conditions were not always so favourable.

Soon after 6 a.m. we passed a place which attracted my special attention. As this spot afterwards became one of the best known in the history of Polar exploration, and as it will certainly be heard of again in the future, I shall quote literally what I wrote about it in my diary: "It is a spot of special beauty, very suitable for a wintering-station, I called it provisionally, 'Depôt Glacier,' as I pointed it out specially to Duse and Laisen, in the event of my afterwards determining that a depôt should be established here after I had left the vessel. You see a magnificent and extensive valley, amphitheatrical in form, and with precipitous sides, but one's interest is chiefly attracted to an especially well-individualized glacier possessing a couple of beautiful lateral moraines, the only ones I have yet seen in these regions. In conclusion, I ought to mention the broad snow-free foreshore. I do not know what the rock is; it can be sedimentary, but it is perhaps of a basaltic or eruptive character."

It was on this very spot which I now both photographed and sketched, and which I pointed out to Duse as a likely place for a depôt, that a depôt was really established, before the year was out, by John Gunnar Andersson, Duse and Grunden, before they started on their sledge-journey to our station. It was here that these three afterwards spent a long dreary winter, amid storms and cold, shut up in a little hut, where there was scarcely room for them all upon the rubble-stones that composed the floor, after having, week after week, climbed up these very heights to look for the vessel on which we now so proudly sailed past the place. Under the most unfavourable conditions, and with an uncertain future before them, these men here made scientific discoveries which give this spot a greater interest, if possible, than that which it will acquire by the narrative of their adventures. And thus it is

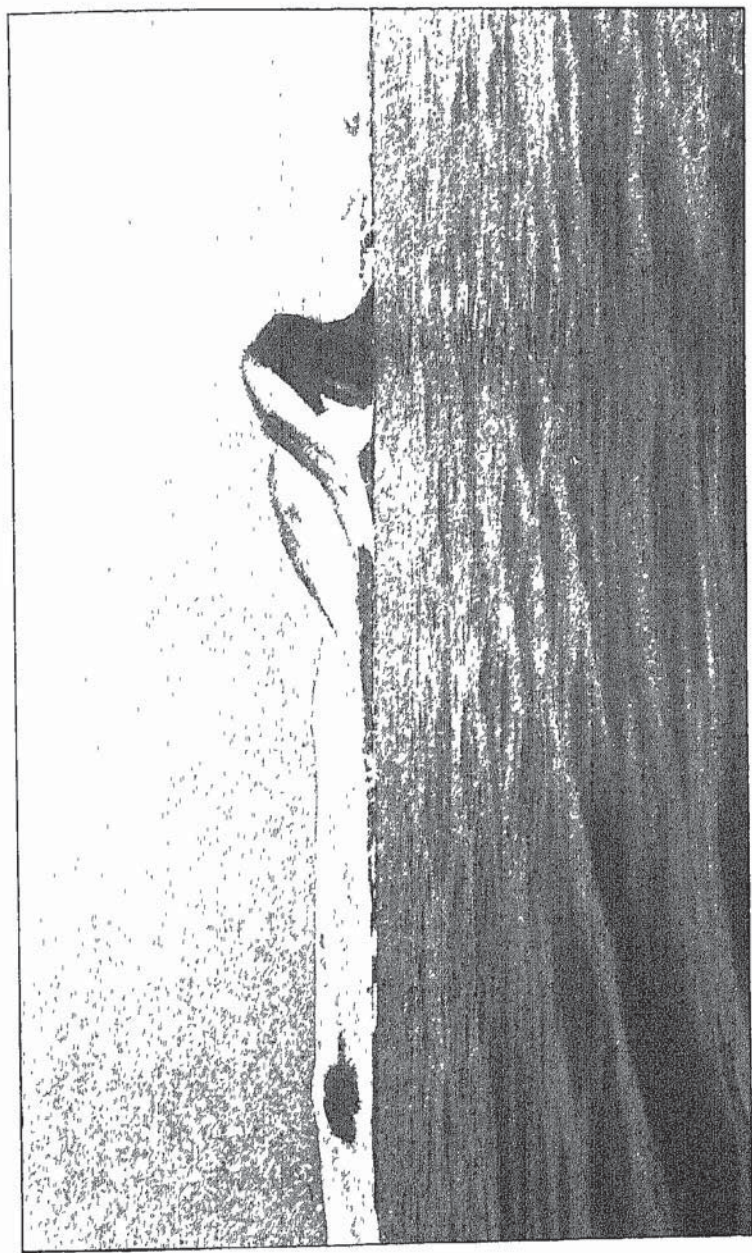


Photo by

In the Antarctic Sound, near the Argentine Islands.

[NORDINSEJOLD]

that the name it now bears, Hope Bay, is the most significant one it could have been given.

There was a sound here, too, but that was almost the only likeness the place had with older charts. I recognised the large island in front of us as d'Urville's Rosamel Island, but there is another one besides, farther to the east, which is still more prominent, and the question arises, why is that not marked upon the map? The observations made from the vessel during the following summer make it seem probable that it is this one which corresponds to Rosamel Island, and, although the real facts of the case can probably never be ascertained, I have let it keep that name. The island first mentioned proved, on our approaching nearer, to be divided into two* by a sound. The large island to the north of Joinville Island (the existence of which was fully proved only later on, however) I have called d'Urville Island, after the celebrated French explorer, who must be esteemed the real discoverer of the whole of this coast.

It is true that the channel itself had not been discovered by us, but we were the first who had sailed through it, and thus, it may be said, opened it for navigation. I acknowledge that, at present, there exists no very great traffic in these parts, but still it is certain that, during the course of time, many vessels will pass through this sound, and it was therefore with a full consciousness of the legitimacy of the claim that I named it after the vessel whose bows first ploughed through its billows—after that same *Antarctic* which did so much good service in the work of Polar exploration, and which was a dear home to us amid the ice till she at length disappeared for ever beneath the waves.

It was manifest that the chart was as incorrect as it possibly could be. We see how the coast-line of Louis Philippe Land turns sharply to the west where there would appear to be a very deep bay. Had we steered our course thither, the Crown Prince Gustaf Channel would, possibly, have been dis-

* Afterwards called Irizar Island and Uruguay Island.

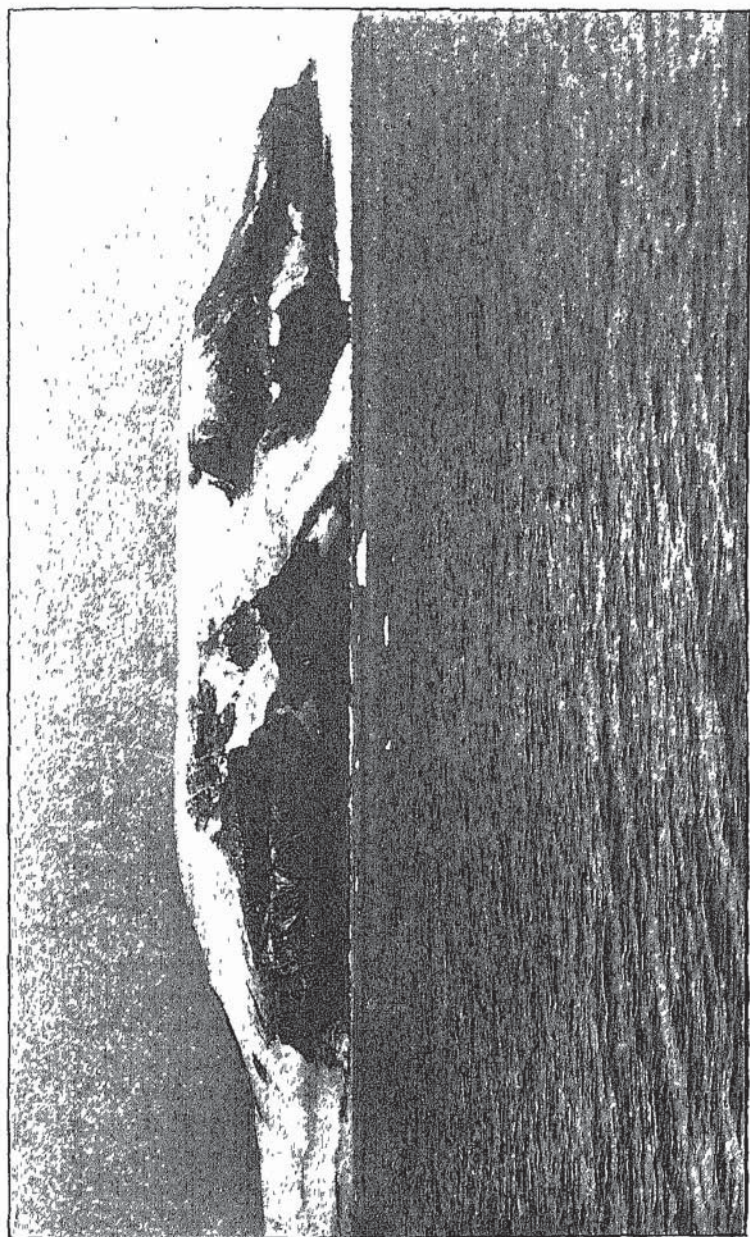


Photo by]

A cape on Louis Philippe Land, south of Hope Bay.

[Condensed.]

covered then, but we followed instead the south coast of Dundee Island towards Paulet Island. The latter rises higher and higher from amid the waves, its precipitous sides recalling Rosamel Island and others of the same type. About four in the afternoon we doubled the island; on its eastern side there exists a deep bight, separated from the sea by a low gravelly shore, towards which the cliffs fall in comparatively gentle declivities. It was here we determined to go ashore.

The doctor put out his canoe, and the other scientific members of the expedition used the Nordland boat, but as we had observed seals along the shore, some of the men were sent ashore in two boats to try their luck in shooting. During the last few days we had not met many traces of Antarctic animal-life, but here it greeted us in a richness of which we could never even have dreamed. Far out in the water were seen whole flocks of penguins; thousands of birds, swimming with that peculiar movement already described. But it was first after we had, with some difficulty, succeeded in landing, that we really got an idea of the life which existed here. It was undoubtedly the largest penguin-colony I have ever seen. Even down upon the shore we were met by thousands of the animals; some newly come out of the sea, others assembled in groups and looking at the surf before committing themselves to the plunge into the water. At last there is one of them, a leader perhaps, who sets a good example, and, with flapping wings, glides through the narrow strip of shallow water near the strand to disappear beneath the surface farther out, and in an instant he is followed by the whole crowd.

High up on the crowning ridge of the shore, where the water cannot reach even in storms, begins the dwelling-place of the colony, and it extends on every side as far as the eye can reach, and far up upon the slopes of the mountain. It is, in truth, remarkable that these animals, which appear to be rather clumsy in their movements on land, do not choose other breeding-places than those which lie so far from the shore. It almost extorts compassion to see them compelled to such toil each time that they betake themselves to and fro from the

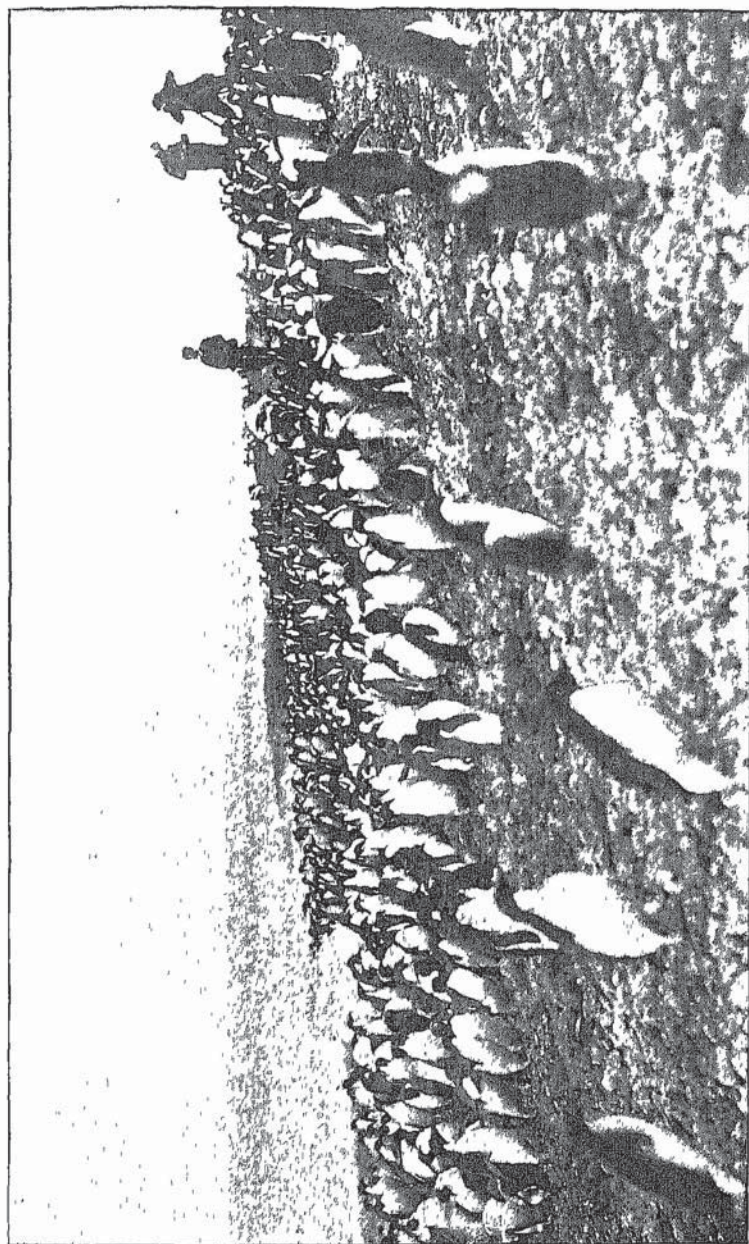


Photo by]

We were surrounded by thousands of penguins when we began our work on the shore

[S. Duse

water to their young ones high up on the steep walls of the cliffs.

It is, however, more unpleasant, perhaps, for a person who wishes to examine their nests, or who, for some other reason, has occasion to pass by the large penguin-colony upon the plain. Even before reaching the spot, one is met by the sentinel birds, who do not for a moment hesitate to attack the curious. The species which exists here is different to the one living on the Shetland Islands, this latter (*Pygoscelis Adeliae*) being a form which occurs exclusively in the immediate neighbourhood of the Antarctic ice; the species in question is somewhat smaller than the allied one, *papua*, and is, moreover, distinguished from the latter by its fierceness and its courage. One suddenly sees a penguin come running forward with its head-feathers erected, and shrieking, "ka! ka! ka!"; it pecks violently and strikes heavy blows with its powerful wings. It is easy to defend oneself against individuals, but when one has reached the main body it becomes another story. The war-cry is repeated from hundreds of throats; at each footstep one comes within striking distance of a crowd of beaks, which aim sharp blows at the invader. It is with difficulty one can avoid treading on the young ones, or in the middle of a nest, and, ere many steps have been taken, one is fatigued by this unfriendly reception. You try to run, and thereby increase the difficulty of the situation. At each step the filth splashes up over one's knees; the blows become more numerous, and, in a few moments, all attempts at investigation are given up, and a despairing rush is made to escape from the crowd and the deafening noise, by the nearest possible road.

I kept at a respectful distance from the penguins as long as I could, and wandered along the shore studying the rock formation. The island consists exclusively of olivenite-basalt, which is found here, however, in many different varieties. In the bight just mentioned there lies a little circle-shaped lake, which at the time of our visit was still partially frozen, and which formed a favourite resort for crowds of penguins.

Along its shores I found numerous fragments of lava and volcanic bombs with vitreous surfaces. There can, then, be scarcely any doubt but that this lake occupies the bed of an ancient crater, and that the island consists of an extinct volcano. I walked round the little lake, making my observations, and keeping company with the penguins who were on the blocks of ice chatting together in the dusk, and were probably recounting among the incidents of the day the



Photo by]

[NORDENSKJÖLD

The penguins have an hour's conversation in the dusk out on the ice

arrival of the beings whose acquaintance it had been their good fortune never to make before.

Richly loaded with spoils and the results of our observations we returned to our vessel about midnight. We took with us young ones and older examples of all the species of birds which were obtainable. Bodman and Sobral had, in addition, made a series of magnetic determinations. The men on board had been by no means idle. Two dredgings had been made, the one at a depth of from 50-100 metres, the other at about 150 metres. The bottom seemed to fall very

precipitously and to a considerable depth. The zoologists had previously been much disappointed that no opportunity for dredging had yet presented itself, although four days had already been spent within Antarctic regions. Now they were so much the more contented, for no one had expected such a wonderfully rich result. The trawling-net came up almost filled, so to speak, with one living mass. It was not alone the number of the individuals and the species which attracted attention, but also their size and peculiar appearance.

It was with pleasant recollections of the place that we left Paulet Island behind us, and it was with pride that I looked back upon the work of the last few days. In this short time we had solved the most important geographical problem in that region, we had made large and valuable botanical and geological collections; we had, it can be truly said, discovered the extraordinarily rich animal world which lives here in the sea.

The changes brought about by fate are marvellous. I had that very same morning portrayed in my sketch-book that place, hitherto unseen by mortal eye, which was to be the wintering-station of one of our parties; when I returned to Paulet Island 22 months later (November 11th, 1903), it was on board of a strange vessel, and in order to bring off a number of my companions who had here spent long months of loneliness and uncertainty. These penguins and seals, now regarded more as scientific curiosities, had rendered it possible for these men to sustain themselves during the whole winter, and every seal-skin they procured signified for them another opportunity of eating warm meat for a few days more. This newly-discovered rich sea-fauna acquired in their eyes a practical interest, and the one little fish we had brought up with the trawl was succeeded by more than 10,000 examples which, during the winter, formed the only variation in their diet of penguin and seal-meat. The little lake, whose waters now seemed to me to be slimy and green, gave them potable water throughout the cold season, and saved them the necessity of using valuable fuel in order to melt ice. And now our steering from Paulet Island to Cape Seymour was synonymous with

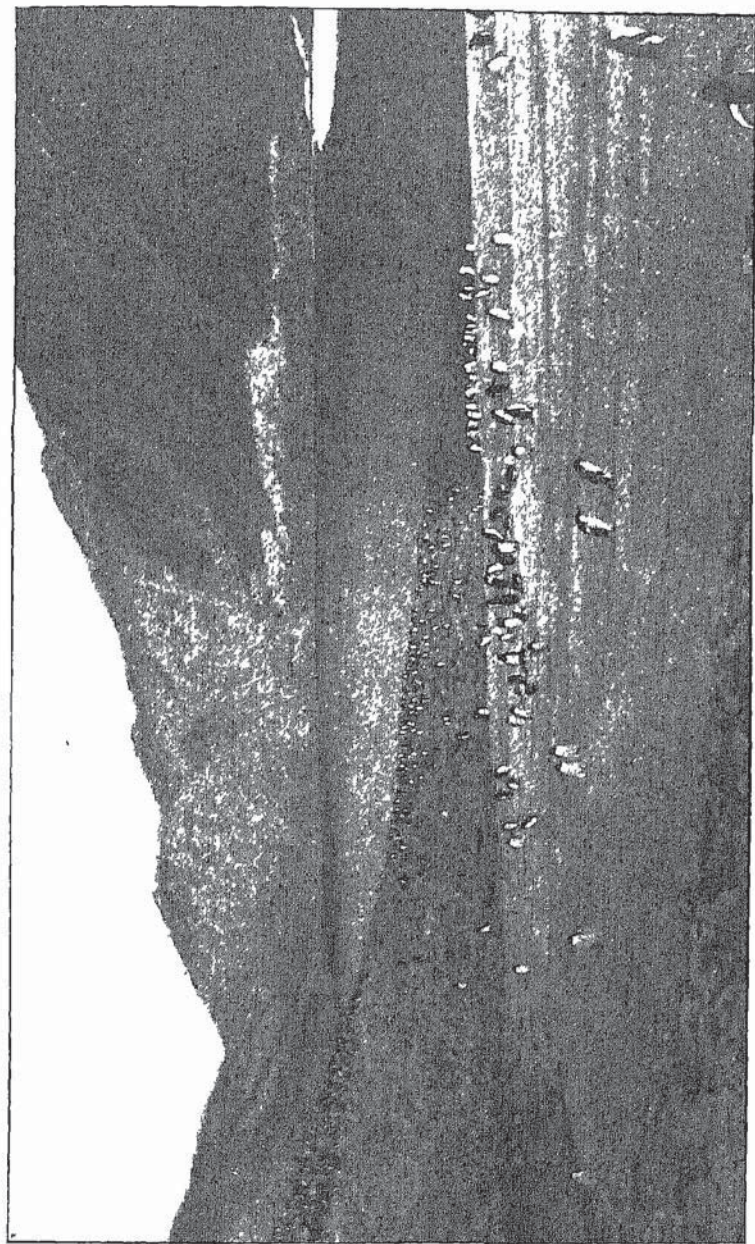


Photo by]

Crater Lake, Pauket Island.

[Nordl. S. S. 1910]

journeying almost directly to the place where I myself was to spend two laborious years.

Both of the future wintering-places were visible in clear weather from the heights above our station on Snow Hill Island. During the second year I was often to cast longing glances towards them, while wondering if some short communications to us might not be lying there; but in my boldest flights of imagination I never supposed that, during that long winter, each of them had been the dwelling-place of a division of our expedition.

Our course, then, was now to be southwards, across Erebus and Terror Gulf, that great bay which Sir James Ross called after his vessels. We had hitherto not seen much of the Antarctic ocean-ice, but now it could be marked that we were approaching it. Here and there lay immense icebergs, some afloat, others aground, and even at a distance we could distinguish a line of pack-ice off Seymour Island. On the morning of the 16th November we were off the northern point of that island, and we forced our way through the sparsely-spread fragments of ice to the middle of the island, up to the headland where, in accordance with our agreement with Bruce, we were to erect a cairn and signal-post and enclose information respecting our future plans.

Seymour Island is one of the most remarkable places in the Antarctic regions. It was discovered by Ross, who could not, however, determine if it formed one island or not. According to observations made from the vessel he came to the conclusion that the island consisted of volcanic lava of more recent date. The first one who ever landed here was Larsen, on December 2nd, 1892, and again on November 18th, 1893. He carried home a number of fossils consisting of petrified wood and mollusca, the first ever met with amid Antarctic ice. I had from the beginning thought of this island as one of our chief centres of exploration, just on account of the great geological interest which attached to the place, and it was my serious intention to make it our wintering-station, in the event of our not being able to find any more suitable place farther to the

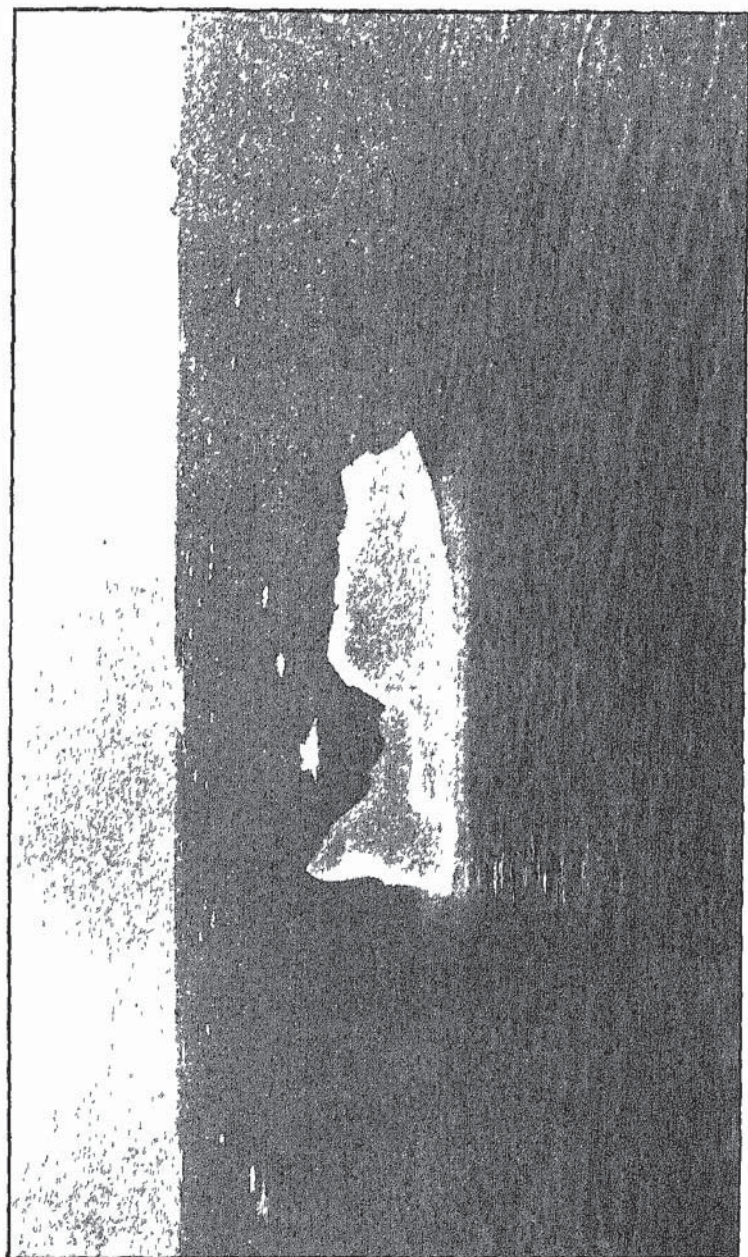


Photo by]

The outposts of the ice.

[O. A. LARSEN.

south. I had, in any case, determined to leave a good *dépôt* here, which could be of use to us should we be compelled to retreat to the place from a more southern station, and thus it can be imagined what great importance I attached to a landing on this island.

Owing to the condition of the ice it was not before the next morning that we were able to carry our plan into execution. Two boats then put off, containing amongst other things a pole of about four metres in length, which we endeavoured to make as visible as possible by means of a streamer, a little paint and a few bits of wood nailed fast to the pole, we also took ashore 75 kgs. dog-biscuit, 50 kgs. shelled barley, 20 kgs. margarine, 10 kgs. sugar, 10 kgs. salt, 12 kgs. dried potatoes, 12 kgs. dried vegetables, 1 box of so-called "boat-journey" provisions, some dried and potted meats, a little *tea*, coffee, chocolate and tobacco, about 30 litres petroleum, matches and spirits for cooking purposes, lasts, pegs for boots, and shoe-soles, an iron bar and a number of small boards, a few yards of sail canvas and 150 gun cartridges.

We landed without meeting with any adventures and carried our things up on shore. The landing-place was on the southern side of a fairly well-marked bay, the same that I afterwards called Penguin Bay, on account of the large penguin colony there, a colony which, apart from the importance it afterwards acquired as one of our chief sources of food during the following winter, is also interesting from the fact that it was the most southerly we met with on that coast during the course of our expedition. I shall afterwards often have reason to speak of this colony, which, for the moment, as we had just come from Paulet Island, appeared to us to be very inconsiderable in size. However, I did not pay much attention to the penguins just then, but hastened to employ the short time we were to spend ashore on an expedition inland. It was the very first occasion that a geologist had had an opportunity of collecting Antarctic fossils, and I was bent to the highest point of expectation. But, as often happens in such cases, my hopes were thoroughly disappointed. It is true that there

were a few fossils consisting of some badly-preserved impressions of mollusca, and numerous large petrified tree-trunks, but nothing of great worth, nothing essentially newer than that which had been already brought home by Larsen. It was not possible for me to know then that just that part of the island was the very poorest in this respect, and that I could have obtained quite a different result had I gone a kilometre farther in any direction. Most undoubtedly the impressions I gained during that landing were decisive of my

*Photo by]*

Penguin Bay, Seymour Island.

[E. EKELOF

determination not to make Seymour Island our wintering-station.

On our noticing that the ice began to close in, and that the vessel drew farther off from the land, we hastened to go on board as soon as possible. On my reaching the shore, the pole was already erected and the letter enclosed in a well-corked bottle. Our dépôt, consisting of one large and several small boxes covered with a tarpaulin and sheltered from storms by means of a number of blocks of stone laid on top, had its place on the slope in the midst of the colony of penguins.

Our next task was to attempt to establish another depôt, either on Christensen Island or at Cape Framnäs, and not before we had that well off our hands could we plunge deeper into the Great Unknown. We had even now reached the most southerly point ever attained here by man, with the exception of Larsen, during his well-known voyage of 1893. Ross had been compelled, after several weeks' fruitless labour, to turn back just south of Snow Hill Land. It could be said that up to the present we had not met with any very difficult ice, but, on the other hand, neither were our prospects very favourable. We steamed and sailed southwards in the midst of ever-thickening mists, between mighty icebergs, which were almost ghastly in appearance when their giant-like, precipitous, blue-white masses suddenly revealed themselves close to the sides of the vessel. But, otherwise, we did not meet with much ice before the next forenoon, when we penetrated a broad belt of dispersed drift-ice, after which we came into an almost open sea again. In spite of the bad weather we succeeded in making a pretty accurate observation, and found that we were in lat. $65^{\circ} 18'$ S. and long. $57^{\circ} 30'$ W. It is true, we could see nothing of the land, but as long as the passage was as free as it was here, we had no wish to delay our progress. In the afternoon, however, we took a series of sea-temperatures and some soundings down to 300 metres' depth (163 fath.) without finding bottom. Towards evening the ice, which consisted partly of immense mile-long ice-floes, began to close in, so that we found ourselves obliged to haul off a little more from the land. I had by no means given up hopes of success in our endeavours, not only to land again, but also in some way to find a passage southwards, for we had hitherto enjoyed the best of good fortune, and, therefore, it was not strange that our dreams of the future should be somewhat aspiring.

It was, then, a hard blow when the second mate came to my cabin by the captain's order the next morning at four, and roused me in order to beg me to come on deck and look at the condition of the ice, "before our being obliged to turn." I was on deck in a minute or two and went up to the captain in

the crow's nest at the top of the mainmast, and saw that, in fact, there was not the slightest hope of penetrating farther southwards at this point. The ice to the south and south-east lay as closely packed as if it had not yet been broken up; to the west we saw in our immediate neighbourhood a perpendicular barrier of ice, the height of which I calculated as being some 40 metres (130 feet), and which stretched as far as the eye could

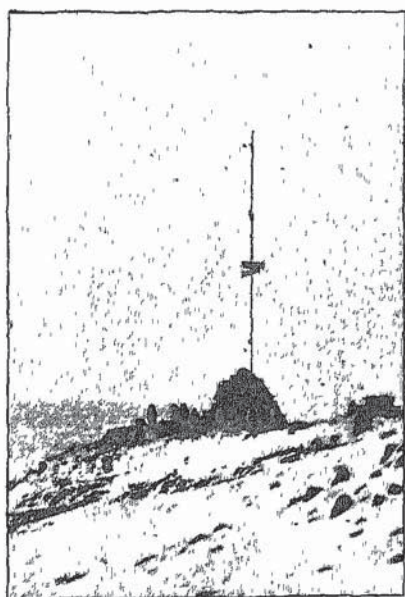


Photo by]

[E. EKELOF

Cairn and signal-post on Seymour Island

reach to the north and south. Even up here in the crow's nest it was only with difficulty that above this barrier we could distinguish the rising tops of snow-free land lying at a distance of several Swedish miles.*

It would be difficult to discover a scene more magnificent than that presented by this mighty wall of ice, with its simple

* 1 Swedish mile = $6\frac{1}{2}$ English miles.—*Trans.*

lines and its uniform, blue-white tint, a scene broken but by sky, sea and drift-ice. It is only in Antarctic regions that the opportunity is given for seeing such pictures on so vast a scale, but there these ice-barriers are a characteristic feature found nearly everywhere on approaching the land on, or south of, the Antarctic circle. But nothing had been hitherto known with certainty as to the occurrence in these parts of West Antarctica of such an immense terrace of ice preventing communication with the land. The scene was, therefore, a new object of great interest; but at the time the impression of the moment became too powerful, and all scientific interests were left unnoticed, all feelings of the beauty of the scenery were stifled. For it grew clear to me that the chief aim of the expedition, my intention to penetrate to unknown regions along the coast of King Oscar's Land, was utterly annihilated by powers of nature against which it would be fruitless to combat. Had it been earlier in the summer, one might have ventured to hope that the ice would be gradually dispersed. But now it was useless to wait, and even had the ice later on possibly permitted of our penetrating somewhat more to the south, it would, in any case, have been too late to allow of our carrying out any very extensive work in that region.

We lay there in that place—the most southerly we reached—for two hours, to give me the opportunity of carefully weighing all possibilities, and then, at 6 a.m., I gave orders to turn the ship about. Our position at that moment cannot be given with perfect exactness, but, according to our reckoning, we must have penetrated, at the most, to 10 to 15 minutes south of the 66th degree of latitude.

It was no easy matter to change at once all our plans for the summer's work. But it was clear to me that, before doing anything else, the tract lying between the spot where we were obliged to turn and Seymour Island should be carefully explored, in order to discover if it was possible to land in any other place. We first steered farther off from the wall of ice, which was soon lost to sight in the mist, and the weather growing brighter towards noon we again tried to reach the coast.

Strangely enough we found no barrier here but, as far as the eye could reach, a low, level surface of ice stretched inwards towards the land. At a considerable distance in we saw some snow-free tops shooting up, which, according to Larsen, were the same as those he had called Mount Jason and Weather Island (Jasonberget, Vaderön). As far as I could see, they were rather low and unimportant; it is therefore very probable that this district consists of a number of



Photo by]

[O. A. LARSEN

The farther south we came, the closer lay the ice.

nunataks of the same description as the Seal Islands proved to be.

It was evident that, in the absence of any *dépôt*, there was not much use in endeavouring to reach the land itself, but I wished, at least, to take this opportunity of examining the quality of the ice in these regions, and therefore had the ship laid-to close to the edge of the ice, where the liveliest picture imaginable was soon exhibited. Even the dogs were allowed to come down from the ship, and attempts were made to use the sledges. I did not see this last incident, as I had at once put on my ski and started off inland as quickly as

I could across the snow. It was heavy going; the snow stuck to the ski and, in spite of the help these gave me, I sometimes sank deep through the snow and the underlying layer of watery sludge down to the fast ice. I found several lakes of fresh water, which it was interesting to discover, as it has been stated that such pools of water were almost non-existent in South Polar regions. It was clear to me that, should the surface freeze ever so little, this ice would form the most excellent ground for a sledge-journey.

I wandered on in this way for a couple of hours until I reached a large iceberg from whence I got a better view inland. My course had not been kept direct towards the island and therefore I did not seem to be much nearer now than when I began my reconnoitering. I did not venture to go further from my party, but returned to the ship, where they had already begun to be anxious on my account, especially as the drift-ice set in all more and more towards the edge of the fast ice. Some scientific observations had been made and an emperor-penguin (*Aptenodytes Forsteri*)—the largest of all the now living species of penguins—had been captured. It was the first specimen of that species which we had hitherto seen during the course of the expedition; it weighed 33 kilogrammes (72½lbs.).

We sailed slowly through the ice-floes, and I was up early the next morning in order to look at a chain of islands which peeped out through the mist. I feel certain that they were the Seal Islands, as they are called; but between them and us lay a broad belt of uneven, broken ice, difficult of penetration, unless an expedition were made with the help both of sledges and of boats. So we continued northwards in the hope of finding a passage there, and during the course of the afternoon we actually did meet with a narrow channel between two immense, more than mile-long floes, which seemed to stretch far inwards towards the land. It would perhaps have been possible to take this channel, but the great ice-floes were in motion, pressing against each other so hard in some places that it was apparent that there would be danger

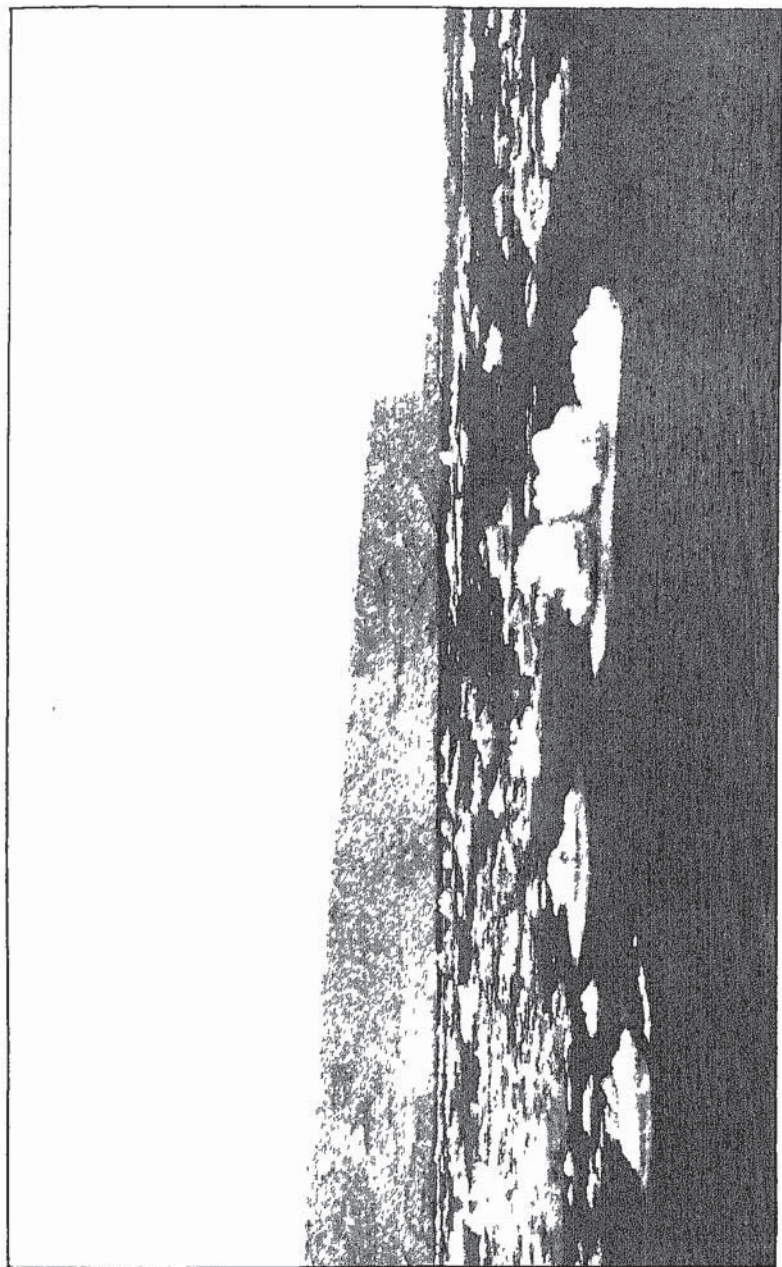


Photo by

Mighty icebergs are sometimes seen amid the ice

[O SKOTTSBURG

in forcing the passage. We determined therefore to pursue our course awhile, on the look-out for a more promising opening. First we went N E, then N, and at last the ice turned direct to the west. The air had been misty and thick the whole time we were manœuvring amid the pack-ice, but now, in a moment, the mist lifted like a curtain, and a picture lay before our eyes surpassed in grandeur by nothing I had hitherto seen; a blue, sun-illuminated sea, with colossal, white-gleaming ice-bergs and, in the far-away background, a land where rose one mighty, commanding cone of ice, while dark, heavy masses of cliffs projected here and there along the coast. We had proceeded so far in the mist, and with such a winding course, that a good time elapsed before we clearly knew where we were. I soon became convinced that this could be nothing else than Mount Haddington; but at first not even the captain would agree to this, taking it to be a part of King Oscar II. Land. In any case, the sight of this picture caused us to resign all further attempts to penetrate to the Seal Islands. We determined instead to examine if a road could be found here leading to some more interior, unknown region. We went ahead at full speed, but the land was so high and of such vast extent that we could scarcely perceive that we came any nearer. Not before the evening did we stop, having reached the edge of the ice, just at the corner where it turned off towards the south. While the zoologists divedged with the usual rich result—obtaining amongst other things a number of fish—I and a few of my companions landed on the ice in order to discover if it was suitable for a sledge-journey to where the land rose from the sea. But it was so criss-crossed with large rifts that it was apparent it would be a very difficult task to make any progress and, in any case, a depôt in this place, so near to Cape Seymour, would not be of any very great service.

However, on the occasion of this landing we made a discovery which at the time, it is true, was as little investigated as the other observations we made, but to which a certain amount of importance must be ascribed; it was that of a

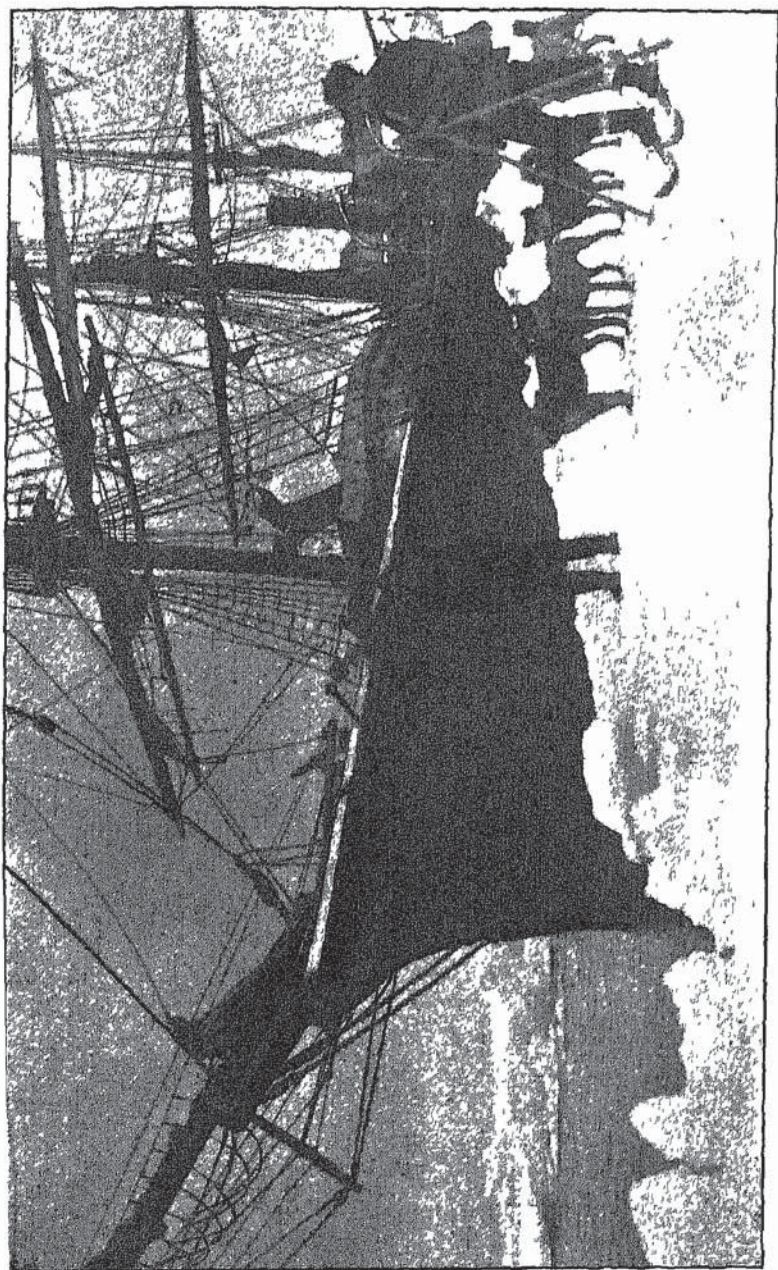


Photo by

Even the dogs were allowed to come down on the ice

[C. A. LARSEN]

lofty, wild Alp-like landscape far away to the west. The distance was so great that we could not make out any details ; neither could we see if it formed a continuous stretch of country, but even then I imagined it to form the east coast of that mainland which was not seen by Larsen during his previous voyage, but with whose opposite coast both the Belgian Expedition and our own had made acquaintance in the Gerlache Channel. This supposition was afterwards confirmed during the course of my sledge-journeys.

At 11 p.m. we steamed to the east, but scarcely were we off the extreme point of Snow Hill than we were overtaken by a violent storm from the north. The vessel was therefore allowed to lie and drive along the coast during the night, endeavouring to come as much as possible under lee of the land.



[After a painting by F. W. S. BOKAL]

Wintering station at Snow Hill, 21st February 1902

CHAPTER IV.

A FEW PAGES FROM THE HISTORY OF ANTARCTIC
EXPLORATION.

The Antarctic mainland and its two divisions, West Antarctica and East Antarctica—Duk Ghennitz, William Smith, Palner, Morell, Bellingshausen, Weddell, Biscoe, Dumont, d'Urville, Ross, Dallmann, Larsen. Gerlache



Sir James Ross

THE great interest which, during the last few years, has in so many quarters attached itself to South Polar regions, has also called forth many more or less popular accounts of the history of its discovery. Although in this history we meet with none of the great tragedies we read of in descriptions of Arctic voyages of discovery, and although it offers none of those great problems the solving of which has, for hundreds of years, enticed the one expedition after another to the ice-

bound north, still it presents many points of great interest, some of which I should like to touch upon a little more nearly. There can be no doubt whatever but that a detailed study of the accounts of early whaling and sealing expeditions would show that there still exists a large field of labour in the domain of historical research in this

matter. Unfortunately, the want of space renders it impossible for me to enter into a detailed examination of the question, and in this chapter, therefore, we shall but briefly mention some of the most important discoveries made in the region where the Swedish Expedition carried out its investigations.

There is one point of view to which I attach especial importance, and which has once more become actual, since, just by means of our Expedition, a clear picture has been obtained of the coast-contours of this region, and it is that of the naming of the different parts of the territory in question. It is true that it but too commonly happens that a geographical name is given to a place for causal reasons, without any connection either with the history of the discovery of the spot, or with the nature of the place; this method, however, is not a desirable one, and when it becomes a question of giving names to districts of such vast extent, it is undoubtedly of interest to look at the matter from its historical side.

We are acquainted at the present day with a large number of stretches of land around the South Pole. It is still a matter of doubt whether these regions stand in connection with each other, and the question will probably never be fully solved, from the fact of the greater part of them being perpetually covered with an enormously thick mantle of ice. But it is just on this account that the matter in question becomes one of no very great importance. A continent lies here, however, although vastly unlike all the others, both in locality and nature, and this continent needs a special name, whether it prove to be a collection of large islands, or whether, in addition to a number of smaller isles, it embraces a continuous stretch of land equal in extent to the least of the other divisions of the globe. The name Antarctica has been proposed, and, in my opinion, it is a most suitable one.

Even a fugitive glance at a map of the South Polar regions shows us that all the known land there is grouped about two centres. On the one side we have Victoria Land and

Wilkes Land, with their sub-divisions; on the other, the land to the south of South America. It is yet an wholly unsolved problem whether these two regions are connected with each other, but even if this should ever be proved to be the case, they would still, to a certain degree, be independent of each other, because of their being so much more accessible than the land which would in that case connect them. It therefore seems desirable to distinguish between these regions by means of some short name and, after long consideration during lonely hours amid the Polar ice, it seemed to me that the best plan would be to call the former tract East Antarctis, and the latter West Antarctis, following the usual plan of naming places in the several hemispheres in which these regions are situated, although, at the same time, I was quite conscious of the fact that, just in this part of the world, the terms, east and west, are of unusually little significance. I found, on my return, that an American explorer, Mr. E. S. Balch, had, during our absence, proposed just these very names, only with the difference that he used the English form, Antarctica. Under such circumstances I banish all hesitation and shall, therefore, in the following pages, call the region which was the scene of our labours by the name of West Antarctica.

I shall pass by entirely the description of Cook's celebrated voyage, and the account of the expedition under the leadership of Dirk Gherritsz, concerning which latter seaman it is now known that he did not visit these tracts at all.

It is by no means wonderful that the result of the discoveries made during Cook's voyage was to create the impression, that the whole of the region surrounding the South Pole was one immense ocean of ice where a few small solitary islands formed the only signs of land. The consequence was that all voyages of discovery in this part of the world ceased for a time, and it is equally easy to understand that when any undeniable discovery of land did take place, the whole thing depended on an accident. Such was the case with that made by Captain William Smith. On a voyage between

Buenos Ayres and Valparaiso on board of the English brig, *Williams*, he tried, in order to escape the severe westerly winds, to take an unusually southerly course past Cape Horn, and, in doing so, discovered land on February 19, 1819, in lat. $62^{\circ} 40'$ S. and about 60° W. long. He could not, on this occasion, make it an object of any close investigation, neither could he do so on his return voyage in June, in the middle of winter, but during the course of a later journey in the October of the same year, he spent several days in exploring the land he had discovered, to which he afterwards gave the name of the New South Shetlands. On the 18th October he landed—the first time in the history of Antarctica that man had trod its shores—at the place which he called the North Foreland, forming the north-eastern extremity of King George Island, on which occasion the territory was taken possession of in the name of the English king.

This discovery of William Smith has by no means taken the place in the history of geographical exploration which it has deserved. Even if we allow that some groups of ocean-islands of a purely Antarctic nature were already known, even if it be possible that both Sheffield and Bellingshausen would shortly, and independently of Smith, have discovered the same district—a thing which is by no means manifest—and if some day it should be proved that earlier navigators had already seen these tracts, or that an American sealer had visited the place at an earlier date without making the fact known—which is not at all inconceivable when we see how short a time was necessary to fill all the waters hereabouts with whales and sealers—still, it is undeniable that he was the first who, in a most indisputable manner, made acquaintance with a part of the Antarctic continent. It is, of course, true that the South Shetlands are merely a group of islands, but it is a group so intimately connected with the neighbouring continent, whose tops are visible in certain places in clear weather, as we ourselves saw, that the first sealer who devoted a few weeks to fishing around these islands

must, of a necessity, have discovered the mainland too. Without at all desiring to depreciate the value of the observations made in these regions during the years which followed, I wish to express the opinion that none of them can, in the slightest degree, be compared in importance with William Smith's discovery.

In that same summer of 1819-20 Smith returned in company with an English naval officer, Edward Bransfield, in order to make a further exploration of the district. The South Shetlands group was mapped out by this officer, but he does not appear to have seen anything of the mainland proper. The reason of this was, that the endeavour to penetrate farther southwards was made so much to the east as long. 52° W.

In the same summer the South Shetland Islands were visited by an American sealer, Sheffield, who killed a great number of the valuable fur-bearing seals. Whether it was the result of information given by him and Smith, or from some other reason, is unknown, but it is said that the very next summer Bellingshausen met here about fifty (according to another version of the story, eighteen) American and English sealers. Nothing more is known of the greater part of them, but some among their captains have acquired renown in the history of exploration in consequence of their work in these southern waters. There is one of them especially, Nathaniel Palmer, an American captain, who has of late years been spoken of as if he was the real discoverer of the Antarctic mainland. This claim is, however, a little exaggerated. According to Fanning's own account—the very man upon whose statements the claim is founded—Palmer was not the first who saw the land, but the honour of the discovery must be ascribed to Captain Pendleton, the leader of the American flotilla, who saw from Deception Island a high mountainous land far to the south. Palmer was sent out again later on in order to explore this land, but we have no mapping-out, or any more detailed information, of the land which, on many charts of the period, bears his name. It

may be also stated that this coast was visited by other vessels just about the same time. Thus, on charts as early as Weddell's, we find the name Trinity Land instead of Palmer Land.

Both the names just mentioned as given to the mainland have had a very changing history, and have sometimes almost disappeared from the maps. But now that the north coast of West Antarctica has been explored, the question arises where these names ought to be put. Gerlache has proposed calling the whole of the western archipelago after Palmer, while other explorers have wished that a part of the mainland itself should bear his name. Having to choose between these two proposals, I have adopted the latter, and so propose to call that stretch of coast explored by us between Louis Philippe Land and Danco Land—partly the same land seen by Pendleton from Deception Island—after the man who, in any case, was as far as we know the first to undertake a voyage of any length along the territory. Trinity Land, on the other hand, disappears as such, but in remembrance of the old designation I have called the largest of the islands lying off Palmer Land by the name of Trinity Island, and the lesser one, Pendleton Island, after the man who first caught sight of the land.

The result of the researches carried out, by Balch especially, proves very plainly how great were the services rendered by American sealers and whalers in respect to the exploration of the region in question, and it can hardly be doubted that they had discovered Graham Land proper long before Biscoe did. On the other hand, there is no special reason to suppose that any of them ever visited the eastern coast, for at present we must consider Morrell's much spoken-of voyage as apocryphal in the highest degree.

While speaking of the whale and seal-fishing expeditions which we have to thank for the first news received of the tract we write of, we must not forget to mention the Englishman Powell, who, in 1821, discovered the South Orkney Islands and has, moreover, left a fairly complete map of, and

much valuable information concerning, the whole of these regions.

But before this, in the same year that Palmer carried out his first work of exploration, another discovery, not less valuable, was made in the same tract. On January 21st, 1821, a Russian exploring expedition under Bellingshausen discovered a large extent of land in about the 69th degree of S. latitude, which received the name of Alexander I Land. During the last few years it has been seen again by Evensen and Gerlache, but nothing further is known about it, not even whether it is continuous with Graham Land, which lies more to the northwards. As I have already mentioned, Bellingshausen afterwards paid a short visit to the South Shetlands, where he carried out some cartographical work.

I shall pass over Weddell's celebrated voyage entirely, since it is so generally known and as it did not have any connection with the land itself, and shall proceed to Biscoe's voyage in 1832. On his way from Australia to the South Shetlands he purposely steered to the southwards in the hope of finding land there. On February 15th he discovered an island in lat. $67^{\circ} 15'$ S. and long. $69^{\circ} 29'$ W., which he called Queen Adelaide Island. During the course of the following days he observed several other new islands and, on February 21st, he landed on what he imagined to be the mainland, although it was probably the island named by Gerlache, Antwerp Island. At all events, Biscoe took possession of the land in the name of England, and on his return home the region was called after the then First Lord of the Admiralty, Sir James Graham, and the name Graham Land has since come into general use to designate the mainland here in its entirety. As the names Palmer Land, Trinity Land, and Alexander Land, as well as several others, are undoubtedly older—unless it should prove that a special and different island was met with—the use of the name Graham Land seems to be unsuited for this purpose, but, on the other hand, it also appears very difficult to decide at present upon using one of the other names just mentioned.

For my own part, I am inclined to call this mass of land Smith Land, but to this it can, not unreasonably, be objected that should the name West Antarctica be adopted, there is no reason for giving any name for the present to the mainland in question. Consequently it can be left to the explorer who, at some future time, may succeed in determining its extent southwards and its relation to East Antarctic lands to give a name to this region.

After Biscoe's voyage there is an interval of over 40 years, during which time scarcely any other exploring expeditions visited the Antarctic seas than the almost contemporaneous ones under Wilkes, Dumont d'Urville and Ross. All three men won most of their reputation in the eastern part of the continent, but they all made discoveries, and some of them important ones, in West Antarctica. We need do no more than mention Wilkes' voyage, as it has left no great traces behind it in the matter of mapping-out the last-named region. One year earlier than Wilkes, d'Urville had visited the South Shetlands during January, 1838, taking Tierra del Fuego as his starting-point, and he also explored the entire stretch of coast of the whole of the land—then known only as far as regarded its general features—which lies south of the islands named, down to the large bay which he called the Orleans Channel. He constructed a tolerably good chart of this district, and he can scarcely be blamed if he gave altogether new names to these stretches of land, names borrowed from persons in his own native country. On the other hand, he gave the name, Trinity Land, only to that tract which lies west of the Orleans Channel. The large island which, according to his discoveries, forms the most eastern portion of this stretch of land, received the name of Joinville Island, while the mainland was called Louis Philippe Land, after the French king.

D'Urville's voyage marks a very considerable amount of progress in our knowledge of these regions, and this is still more so in the case, perhaps, as regards the expedition under Sir James Ross, in 1843. As in East Antarctica, this leader

was not content with exploring the comparatively easily accessible north coast of these regions, but he boldly penetrated farther southwards to their eastern shores, which he mapped out as fully as they could be from the sea. But impenetrable pack-ice was met with as far north as lat $64^{\circ} 30'$ S., and, after several fruitless endeavours to break through, he was obliged to return eastwards with his vessel. It would be of the greatest interest in this connection to give a more detailed account of the discoveries made by Captain Ross during this celebrated voyage, but, just because it has such an intimate connection with our own expedition—it is, amongst other things, so very characteristic how perfectly similar our original plans were and, moreover, the scene of the greater part of our labour was, as may be seen, in or near the regions previously visited by Ross—I shall have many opportunities in the following pages of recurring to the matter again.

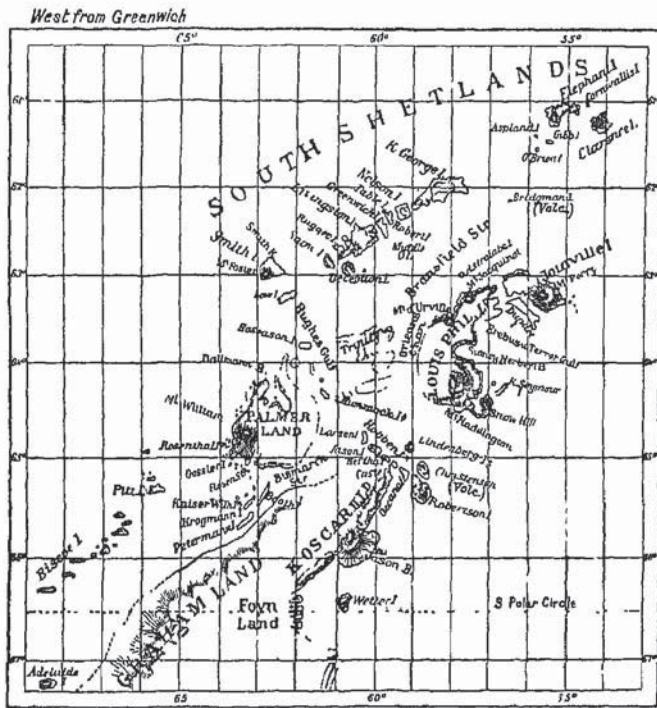
If we omit more than mentioning Smiley's visit in 1842 and the German whaling and sealing expeditions under the leadership of Dallmann in 1874, we now reach our own times. In September, 1892, a flotilla of four vessels, under the command of Captain Fairweather, was sent from Dundee to Erebus and Terror Gulf, in order to look for the Greenland whales of which Ross speaks many times in the account of his journey. These vessels were accompanied by Mr. W. S. Bruce and Dr. Donald as the naturalists of the expedition, and our thanks are due to these gentlemen for much interesting information. Geographically speaking, little of consequence was effected, the most important discovery being that of the sound which divides Joinville Island from Dundee Island, as it has been called. They circumnavigated the last-named island, but the representation on the chart of the sound which I called after the *Antarctic*, and which they must have seen from the south, is rather incorrect.

Simultaneously with these vessels, the Norwegian whaler, the *Jason*, under the command of Captain C. A. Larsen, left for the same waters, commissioned by a firm of ship-

owners in Hamburg Neither did this journey result in any very important geographical discoveries, but, on the occasion of his landing on Seymour Island, Captain Larsen made a discovery which will never be forgotten in the annals of physical research, viz., that of the first fossils ever found in Antarctica. But, while the Scotch shippers had reason to think that the work they had commenced had not turned out a very profitable one for them, Larsen's voyage gave such good economical results that he was able to return the very next summer as the leader of a flotilla of three vessels, and on this occasion, geographical discoveries of importance were also made. Taking advantage of what was evidently an unusually favourable condition of the ice,* he sailed forward upon an almost ice-free sea southwards from Erebus and Terror Gulf and, on December 1st, 1893, he discovered high land which received the name of King Oscar II. Land. A stretch of land which appeared to him to be a far-projecting cape he called Cape Framnäs, then came a great bight with high land visible at a distance, Foyen Land, as it is called, which was followed by a projecting, even slope of ice which undoubtedly corresponds to the ice-terrace with which I made acquaintance during a sledge-journey farther to the north. Larsen followed this ice-edge down to lat. 68° 10' S. without seeing any land in this direction which was free from snow; on reaching the latitude mentioned, the unbroken winter-ice compelled him to return. On his way back he discovered a chain of islands farther to the north and succeeded, by means of ski, in coming over the ice to one of these, which received the name of Christensen Island. Strangely enough, he did not here catch sight of the high land which, farther to the west, forms the continuation of King Oscar Land, and forms, too, the western shore of the

* It is a strange coincidence that the first years of the decade 1890-99 were remarkable for the unusually large masses of icebergs which were met with in the southern parts of the Atlantic and Indian Oceans, and which must have come from South Polar regions. One cannot help imagining that there must be some connection between the favourable condition of the ice which Larsen enjoyed during this journey, and the forces which set these great masses of ice adrift.

great bay in which he now was. In clear weather I have myself been able to make out the land in question, with all its details, from the very same place. At first it was supposed that the land here was intersected by a broad sound, and it was the tract north of that which was called Dirk Gherritsz Land.



The latest map of W. Antarctica before the Belgian and Swedish expeditions (after Fricker).

This expedition of Larsen's stands in such intimate connection with our own that I need not now enter into any further details of the voyage. Viewed from a merely geographical point of view it must be considered, when compared with other whaling expeditions, as one of the richest in results ever undertaken, whether to the North Polar, or to Antarctic

regions. The discoveries made by Larsen on this voyage fully rival in extent those made by men like Palmer, Briscoe and Weddell: the chart he has drawn exaggerates all distances and dimensions, it is true, but still it gives a fairly good representation of the condition of things. His scientific observations and collections also deserve to be warmly commended. The greater part of the latter have unfortunately since been lost; after having been safely carried across a hemisphere, the vessel in which they were being sent home was wrecked off Dover. Later explorers have proposed to call the great bay, whose southern end was observed from Christensen Island, by the name of Larsen Bay. That its more detailed exploration was carried out by the Swedish Expedition in which Larsen took part so meritoriously can, I imagine, only contribute to render his title to the honour still more deserved.

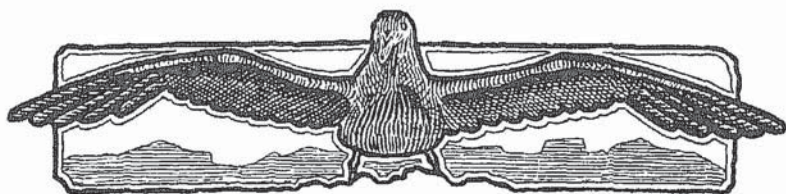
These whaling and sealing expeditions were immediately followed by the voyage of the *Antarctic* to Victoria Land, under the command of Bull and Kristensen, and with Borchgrewink on board. When this expedition returned, the scientific world had already seriously commenced the preliminary work of the great international co-operative scheme of exploration which has now been brought to a successful close with the return of the German, Swedish and English expeditions.

But before these three expeditions started in 1901, two other large exploring parties had gone to the Antarctic waters, and their work may be said to have recommenced the task of the scientific exploration of South Polar regions, which had been laid aside half a century before. And of these two there is one again whose labours more nearly concerned the regions chiefly treated of in this work. Under the leadership of Adrien de Gerlache, a scientific expedition left on board the steamship *Belgica*, for the purpose of making a detailed exploration of South Polar tracts, having Tierra del Fuego as its starting-point. The plan of this voyage seems not to have been fully decided upon beforehand, and

in consequence of various mishaps it was not before the middle of January, 1898, that the expedition could leave Staaten Island. The work of exploration proper was begun in Hughes Bay. From this place was discovered and mapped-out the broad channel which separates the islands already seen by Smiley and Dallmann, from what now was given the name of Danco Land. After three weeks' work of exploration in these tracts, the vessel sailed westward towards the open sea, where, however, it soon fastened in the ice and drifted about in that situation for more than a year before it was released.

The results of this expedition are significant, partly on account of the indications obtained of the existence of a stretch of coast south of the Pacific Ocean, too, and partly in consequence of the excellent scientific work done during the voyage, and amongst which I must above all mention the series of meteorological winter-observations, the first ever made in Antarctica.

It is for the purpose of completing this summary that I wish finally to add, that, of the expeditions which went out simultaneously with us, the English one under Captain Scott spent two winters in the south part of Victoria Land, in lat. $77^{\circ} 50'$ S., from which point a sledging expedition penetrated as far as to lat. $82^{\circ} 17'$ S., whilst the German one, under Professor von Drygalski, wintered in 1902, the newly-discovered Emperor William Land, in lat. $66^{\circ} 2'$ S. and long. $89^{\circ} 48'$ E. The Scotch expedition under Bruce, which left Europe in 1902, spent the winter of 1903 in the South Shetland Islands, that is, in the same region as we, although in somewhat more northern latitudes.



CHAPTER V.

A VOYAGE OF DISCOVERY IN WEDDELL SEA.

Various possibilities for the summer's work—21st January, 1902—Life on board the *Antarctic*—Scientific work—An iceberg instead of a newly discovered island—The Antarctic ice.

EVER since the moment when we had been obliged to turn back from the east Antarctic coast, before even the Polar Circle had been reached, the thoughts of everybody on the *Antarctic* had been directed to the question as to how we could best use that part of the summer which still remained. There were two ways open to us : either we could return to the tracts which we had lately and so successfully visited—the Orleans Channel and the Erebus and Terror Gulf—and there continue our geographical and scientific work until the time was at hand for making the final preparations for landing at the wintering-station, on Seymour Island, for example ; or, in accordance with the plan I had already proposed when in Sweden, we could follow the line of the ice towards the east in the hope of finding an opening somewhere, through which we could penetrate into that open sea which Weddell had once seen and navigated.

After thorough consideration I determined to adopt the latter alternative ; all of us should go eastwards. Should the weather be favourable I hoped to succeed in penetrating to a considerable distance ere it became necessary to land the wintering party. When I came on deck on the 21st of January, we were already a good distance at sea. The day was clear

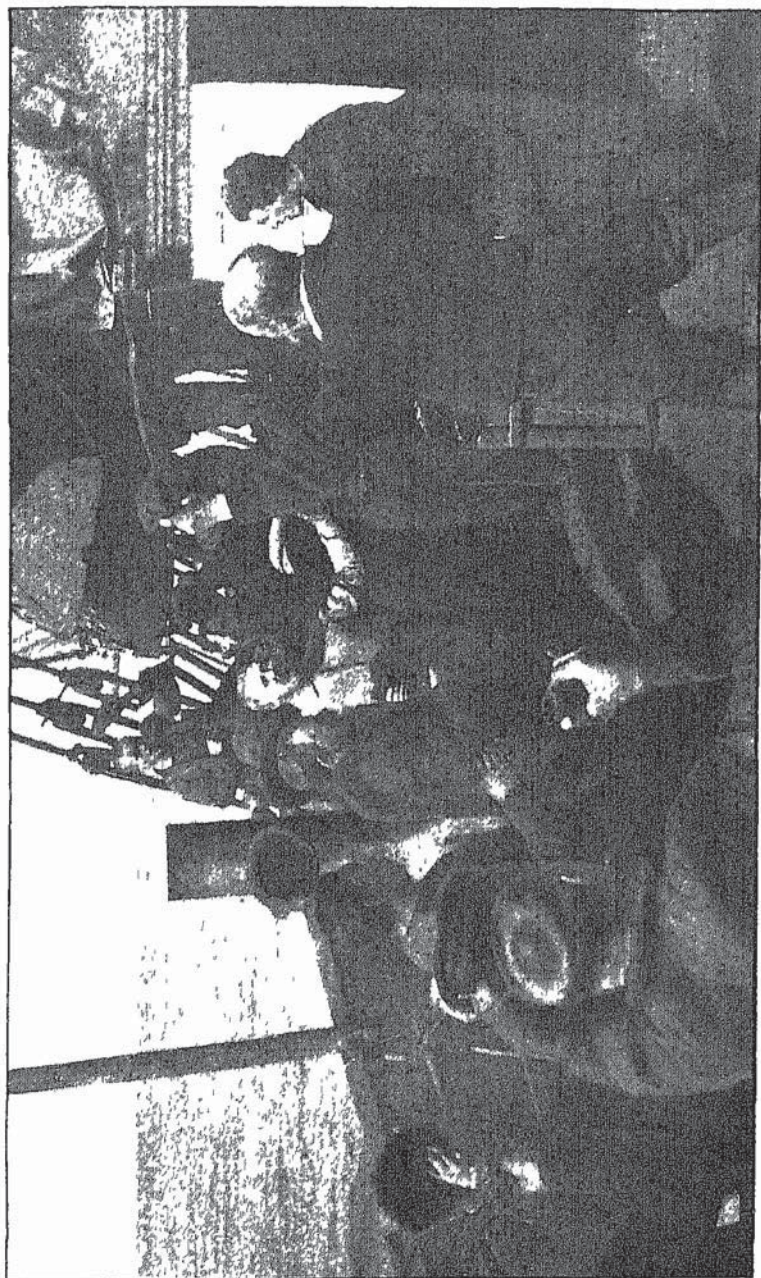


Photo by]

"Here's a health unto His Majesty!"—21st January, 1902

[G. BODMAN.

and sunshiny, one of the most beautiful we had had, and we were glad of the fact, it being our intention to celebrate H.M. King Oscar's birthday by a great and general feast on board. At noon all hands were assembled on deck, the King's health was drunk, and a cheer for His Majesty was proposed and responded to with vigorous Swedish hurrahs. Two whaling-guns had been placed in the fore of the vessel, and scarcely had the hurrahs died away than the shots from these began to echo, one after another, until the full tale of 21 was told. They came a little slowly and irregularly, but it was none the less solemn to stand here amid this desolate, magnificent scenery, and hear the sound given back from the walls of the icy kells.

Then came the festive dinner for all divisions of the ship's party, with wine and speeches and drinking of healths. After dinner was over, the mates and the ship's engineers were invited to the gun-room, and we sat there till far into the small hours, enjoying ourselves in the pleasantest way possible.

On the whole, we spent a very agreeable life on board during this period. Although it was not possible during the actual voyaging to have plenty of occupation for all the men representing so many different branches of science, still it cannot be said that the time seemed long. During the day we preferred staying on deck, observing the one-toned, but always interesting, scenery around us; there was a special pleasure, too, in seeing how our vessel forced her way through the masses of ice.

When not on deck we sat at the gun-room table working, or we lay in our berths reading, or were busied with whatever there was to do. Thanks to the goodwill of the Swedish publishers we had an excellent library on board. Our berths were narrow and, what was worse, almost dark, for the little skylights did not admit much light through the thick glass, but they were pleasant and comfortable in any case, and each of us was glad to have his own little room where he could do as he pleased.

It is not only on deck, however, that we are pressed for room, just at this time when we are so many on board. At meals,

we are ten persons at the gun-room table—that is, almost as many as can find place there. And all the little cabins are occupied; the steward, who had one of them until we reached Buenos Ayres, is now berthed in the photographer's dark-room.

There is, however, a certain monotony in the life we lead



Photo by]

The tow-net comes up.

[B. EKELÖF.

which becomes clearly noticeable, especially after the great excitement of the days, so rich in results, which we spent off the coasts of the land-regions, and it causes a slight irritability in all of us, and a constant longing to see something new. Happily for us, we have a considerable amount of scientific work to do. We did not delay longer than till January 22nd before taking a sounding at a depth of about 1,000 metres (540 fath.),

the temperature and samples of the water being obtained at the same time. Then the trawl was set out, and we went slowly ahead, for two hours, letting it drag behind us. When we commenced hauling it on board, the whole thing suddenly stood still, while the accumulator was strained to the uttermost, so that it looked as if the line would break any minute. Suddenly it loosens with a jerk; we see that something is out of order, but hope it is only that the trawling-bag has been torn to pieces. This turns out to be the case, but, fortunately, in addition to the large trawl we had also hung out a smaller dredge, and in this we obtained samples of the animal life existing here at the bottom. To get this result we had, however, been steadily at work for nearly six hours.

The next sounding was not taken before January 25th, when a depth of 3,750 metres (2,031 fath.) was observed, a depth which remained almost constant during nearly the whole of the time we sailed eastwards. It cannot actually be said that this was anything unexpected, but we were in seas where as yet none had ever taken soundings, and thus every result was of great interest. The conditions of the temperature of these waters were, naturally, also unknown. To illustrate these I will here quote the following series, which were taken farther to the east, on February 2nd.

20 metres*—	1 57° C. = 29.174° F.	200 metres	+ 0 20° C. = 32 360° F.
40 m.	— 1 60° C. = 29 120° F.	300 m.	+ 0.31° C. = 32.558° F.
70 m.	— 1 67° C. = 28.994° F.	500 m.	+ 0.37° C. = 32 666° F.
100 m.	— 1.30° C. = 29.660° F.	1,600 m.	+ 0.0° C. = 32° F.
150 m.	— 0 29° C. = 3 478° F.	3,700 m.	— 0 4° C. = 31 280° F.

The layer of warm water at a certain depth is characteristic of a great part of the Polar Sea. It can be added that this is a rather cold sea; colder, for example, than in those tracts south of the Pacific Ocean examined by the Belgian Expedition.

It was clear that we could not entertain any thoughts of undertaking any dredgings for zoological purposes after having come into the deep-sea zone, for the line we had with us was

* 1 metre = 39 37 inches.

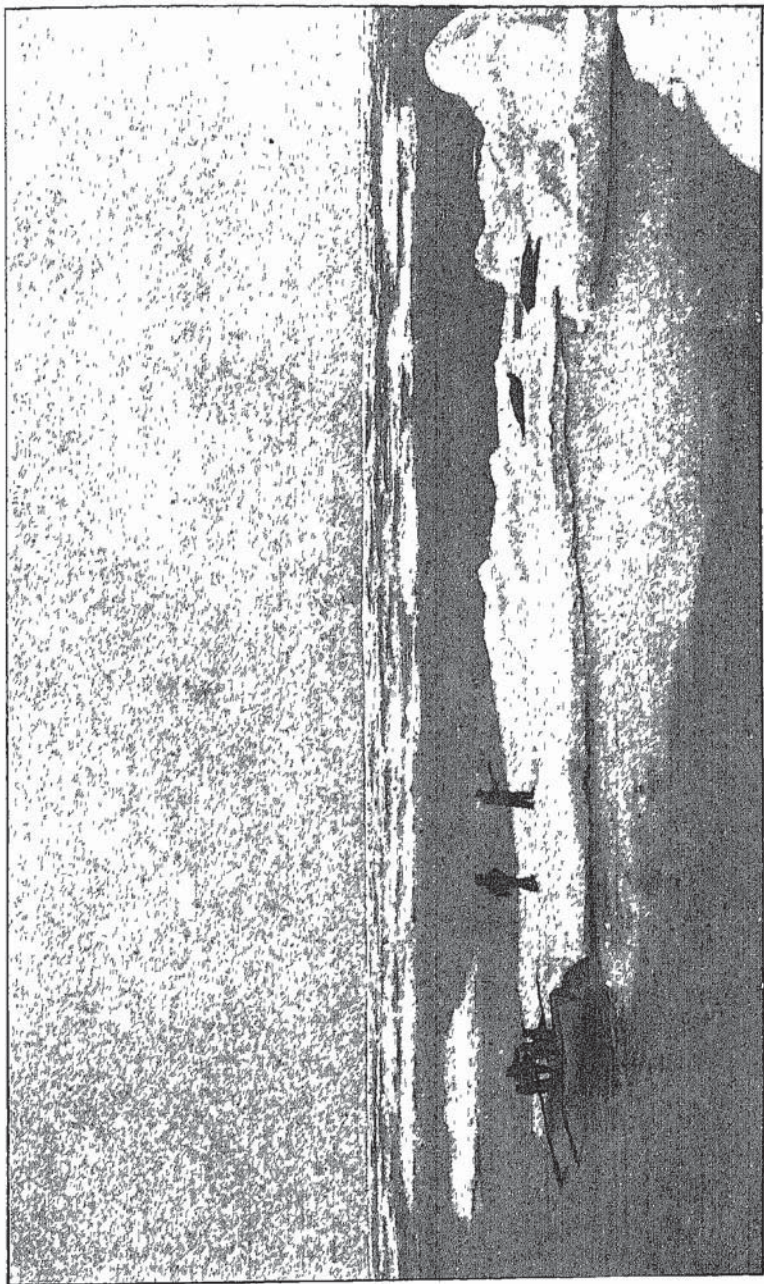


Photo by]

Seals out on drift-ice

[E. ECKLON

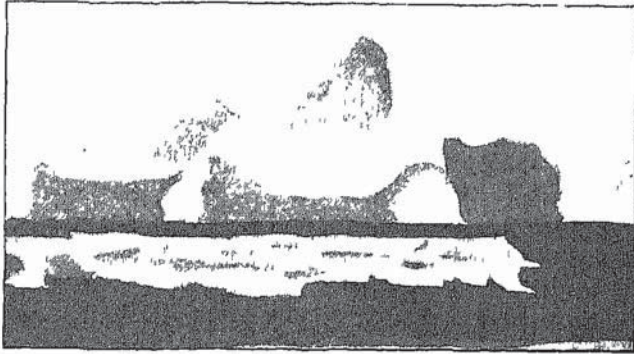
not long enough. We had recourse, instead, to using the tow-net in the deeper layers of water. This method of investigation has of late years given rise to discoveries of extraordinary interest, and especially that of a previously unknown animal-world which lives freely swimming at great depths, without either coming to the surface or going to the bottom. We had with us several different kinds of tow-nets for the purpose of making these investigations. It is true that one does not get the same mass of different forms by using these nets as one does by bottom-dredging, but, on the other hand, the most beautiful, peculiar and delicate animal-types are obtained by this means. Our zoologists are always delighted when the net comes to the surface after having been drawn through the water at the depth of a mile or so.

The rest of the animal-world which surrounded us was, on the contrary, monotonous in form and by no means rich. Small herds of seals, sea-leopards for the most part, were met with here and there, but they never showed themselves in such numbers that it would be worth while for sealers to work in these regions. Whales, on the contrary, were very numerous, and, farthest to the east, where we turned about, we were surrounded by whole schools of immensely large blue-whales, which not unfrequently came to the surface in the immediate vicinity of the ship.

I cannot help specially mentioning a peculiar phenomenon observed by us on February 7th, when, on our return, we passed somewhere near long. 52° W. We saw floating on the water here a large number of dead fish belonging to a species of the group of *scopelodermæ* and not exceeding 1 decimetre (four inches) in length at the most. These fish belong, in general, just to that class of animal-forms which I mentioned a little while ago as living at great depths, although not upon the sea-bottom itself. It is not easy to account for such an occurrence in the middle of the ocean, and, at the time, we supposed it to be owing to a submarine volcanic eruption, but I imagine that, instead of having recourse to this bold hypothesis for the purpose of explaining the matter, the phenomenon can,

with more probability, be ascribed to the effect of ocean-currents.

We continued our course onwards through the ice, or along its edge, without meeting anything of note. The 30th January, however, interrupted this monotony a little. As we glided past a promontory of pack-ice, we caught a distant glimpse of some very large black objects at some distance, which certainly could be seals, but which, on account of their size, reminded one much more of enormous blocks of stone. Several pieces of sea-weed were also seen floating about in the



Drawing by]

[C. SKOTTSBERG

The supposed island turned out to be a large iceberg

water. In the course of the afternoon the captain called my attention to a lofty object of irregular form far away to the south-east, which undeniably had the appearance of land. We were now in long. 48° W., or nearly so, which is just where Morrell places "New South-Greenland," and where Ross has noted on his chart, "appearance of land." It was, therefore, not altogether impossible that here within the ice there could be some hitherto unknown island. We began to think that we stood on the brink of an important discovery, and it was immediately determined to direct our course towards the supposed land. Our pathway, of course, lay right through the midst of the pack-ice; we received several hard blows just at

its edge, but afterwards the floes grew somewhat fewer, and we made our way between them without any difficulty. It was a quiet evening and the sea lay still, whilst we all stood assembled on deck in the growing dusk. We are all warmly interested, but no one dares to state openly that he believes it to be land. Opinions change from minute to minute, sometimes it looks so wonderfully like land—a wide expanse of rolling snow-clad landscape, with a few hills, which are snow-clad too, and in one place we imagine we see a lofty snow-free peak—and then again, when it is revealed in a new light, it seems to be merely an immense ice-fell. We are evidently coming nearer, although at first we can scarcely mark the fact. In the meantime, the dusk comes on more and more, and when at last we come near the object of our search, it is getting on for midnight. We see now that it cannot be very large, but still, at the very last moment the excitement and our hopes are raised to the very highest pitch. The great difference between the dark parts and the light since the sun went down, the perfect resemblance to land, the gently-rounded forms by the side of the highest peak—it could scarcely be possible for it to appear as it does were it merely an ordinary iceberg. At last we found ourselves close beside the supposed island and rounded it, only to find that it consisted of a lofty, peculiarly-formed iceberg which had been turned upside down, and that the patches we had taken for projecting points of land were merely compact, snow-free ice. The great depth of the sea, too, in these parts does not speak for the likelihood of finding any large masses of land hereabouts; neither did we see, this occasion excepted, anything which gave strong indications of the occurrence of islands or large stretches of land in the vicinity of our course.

It was on the afternoon of the 22nd January that we reached the pack-ice, which here extended from south-west to north-east as far as the eye could see. On the extreme edge there was a narrow band of small bits of crushed ice, sharply divided on the inner side from a thick, tightly-packed mass of floes which in places were pretty high. The air was hazy and

muggy so that we could not see far ahead, but, of course, we had scarcely any other choice than to follow along the ice northwards. We did so for two days, passing the one bay after another in the ice, which were very often so deep that in the mist we could not discern their southern ends. In order to make quite sure of not letting any possibilities slip out of our hands, we used, as a rule, to turn into these channels and follow along the edge, but this method of procedure was tedious work, and the wind, moreover, was unfavourable.



Photo by]

Drift-ice.

[O. A. LARSEN,

At last, on the 24th, we determined to make an attempt to force a passage through the ice, since we could see to the north-east that peculiar, dark reflection in the sky, which, when visible above an ice-covered sea, is a sign that large spaces of open water are to be found amid the floes.

We now make acquaintance in earnest with the pack-ice of the South Polar Sea. At first it is somewhat loose, but it soon grows more compact, so that we have a difficult task to make any progress. It is very fine, however, to stand on deck and see how well the vessel manages amid the masses of ice.

From the crow's nest the captain chooses the point of attack, much after the same principle as that adopted by a billiard player, so that not only is the floe which is struck pushed aside in the right direction to a place where there is room for it, but, in consequence of the recoil, the adjacent floe comes into movement too, and makes way for the vessel. We go full speed ahead, then the engines are stopped, and suddenly comes so violent a shock that the ship appears ready to open in all its seams, and one new to the work can easily imagine that every moment will be his last. But matters are not quite so bad, the colossal floe begins to move slowly; the vessel goes almost as slowly ahead, while both the edges of the ice scrape against its sides with a protracted roar which is illusively like the muttering of thunder. Now it becomes a question of using to the full, the advantage we have gained, but when the floes are large the vessel must, as a rule, back several times in order to repeat the attack ere a channel can be cleared. It very often happens that several hours are thus employed before we can break a path through only one narrow band of ice, about half a mile in breadth. It is wonderful how the ship can stand the strain; but, then, these Polar Sea vessels are very solidly built.

The ice which we had to penetrate just here consisted, as a rule, of very large level floes, reminding one of winter ice nearly broken up, and having no long projecting ice-foot. It was, in general, pretty free from pieces of icebergs within its mass, and we seldom saw any marks of severe pressure. In consequence of its compactness and the size of the floes, it was, in my opinion, much more difficult to break through than any of the ice I have seen forced on the eastern coast of Greenland. After fighting strenuously for twenty-four hours it grew clear that we should not succeed in getting through, and we had to make up our minds to turn the ship's head in the direction of the open water visible to the north-east. Towards evening, however, before coming clear of the ice, we stopped in the lee of an enormous iceberg, for it seemed to promise a storm, and the promise was more than kept. We were obliged to stay

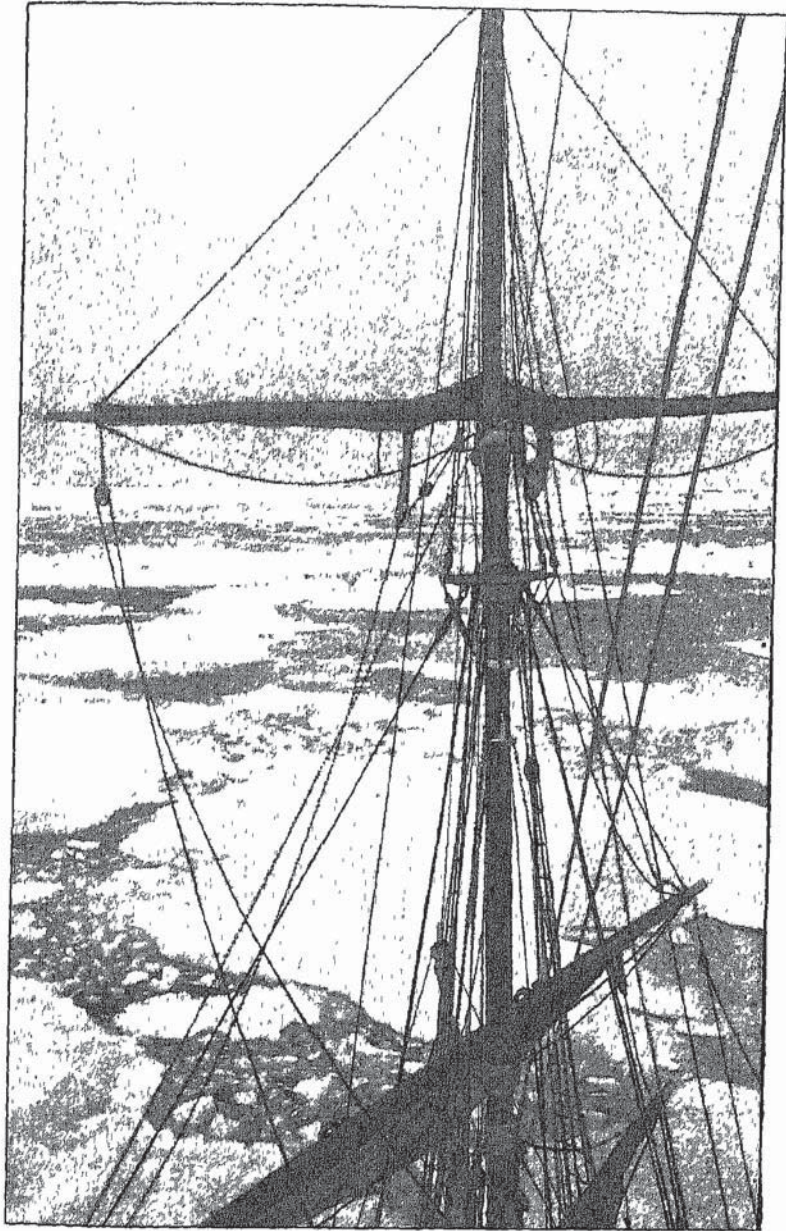


Photo by]

It is fine to see how well our ship manages amid the ice.

[G. BOYMAN.

there during the whole of the next four-and-twenty hours whilst the ice drove past us, the swell being very noticeable even in the channel where we were

From that time onwards, storm and mist became our faithful companions during the whole of the period that we remained in these regions. We made but very little progress eastwards, for the wind was contrary and our already insignificant supply of coal grew rapidly less. The way, too, became much longer in consequence of the incessant recurrence of these great bays in the ice, and every attempt to cut through any of the ice-promontories became adventurous in the foggy air, which never allowed of our seeing the way before us clearly. It was trying work for the captain and the mates to manage the ship in such weather and in such an ice-encumbered sea, especially as the nights began to grow dark quickly. Just when, in a heavy sea perhaps, efforts were being made to avoid some small pieces of ice or scattered patches of drift-ice, it would unexpectedly become the least degree in the world lighter ahead, and there would suddenly emerge from the mists the spectral outline of a blue-white mass of ice, much higher than the tops of our masts, and against whose base the waves were thrown and broken with a noise like the thunder of a waterfall. On such occasions as these we have to be sharp with our turnings, for, should a collision occur with one of these monsters, the *Antarctic* would not have the same chance as in her combats with the pack-ice, and we should be happy to lose nothing but the whole of our rigging at the very first blow.

It is such icebergs which, by their number and their shape, form the most characteristic feature of Antarctic ocean scenery. They are not always seen when nature's gloomy mood finds expression in darkness and storm; in brilliant sunshine they form a picture the magnificence of which can never be forgotten by those who have once seen it. The icebergs of northern waters are, as a rule, uneven, jagged; often high, but never very extensive; this is caused by their having originated in glaciers, which move quickly and are traversed by crevasses. An Antarctic iceberg of typical form

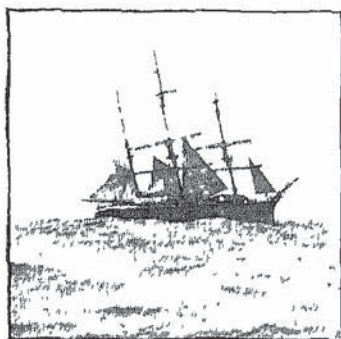
makes a powerful impression chiefly on account of its enormous mass, which, however, never appears overwhelmingly large by reason of the simplicity of its lines. Its height can often be as much as 200 to 230 feet, while its length may be measured in miles; it is even said that icebergs have been observed which covered an area of more than a hundred square miles. When we see these Antarctic icebergs before us, with their even horizontal surfaces and precipitous sides, the one giant mass beside the other, and more behind them, it often seems as though the whole horizon was shut in by a continuous wall. Many of the old stories of the occurrence of ice-barriers far out at sea have probably arisen from a misconception of this phenomenon.

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CHAPTER VI.

ARRIVAL AT THE WINTERING STATION

We return westwards—Preparations for putting the wintering-party ashore—New discoveries in Sidney Herbert Bay—A difficult forcing of the ice—On arrival at Snow Hill—The equipment of the wintering-party



AGAIN we return upon our course, but this time it is determined to put the wintering-party on shore as soon as possible, after doing which we can scarcely hope to perform much more work this summer. On February 1st we had reached lat. $63^{\circ} 30' S.$ and long. $45^{\circ} 7' W.$ During the night there had fallen

a something between rain and snow, and the whole of the rigging was, so to say, iced over, the weather was so thick that we could see but some few hundred yards before us; there was a heavy swell on, and the wind was growing fresher and fresher. It was perfectly clear that, under the circumstances, the prospect of doing anything farther to the east and the south was reduced to a minimum, while there was imminent danger of our supply of coal running short before we had put the wintering-party ashore. So I called together all the scientific members of the expedition, told them how matters stood and asked them for their views of our situation. Everyone was, of course, sorry that we were in a position which left us no



[The station is situated farthest to the left]

Sunset in Admiralty Channel S p m , 13th February, 1902.

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ARRIVAL AT THE WINTERING STATION. 95

choice but to turn back, after having sacrificed so much time and untiring labour on this journey towards the Weddell Sea, but nearly all of those present voted for our commencing the journey back to winter-quarters as soon as possible.

The termination of the first period of the labours of the expedition was approaching with rapid strides, together with the moment when I myself should resign my command on board and go ashore to spend the winter there. I had now definitely determined to establish our station somewhere



Photo by

[C. A. LARSEN]

We lay-to beside some pressure ice to fill our cisterns with ice

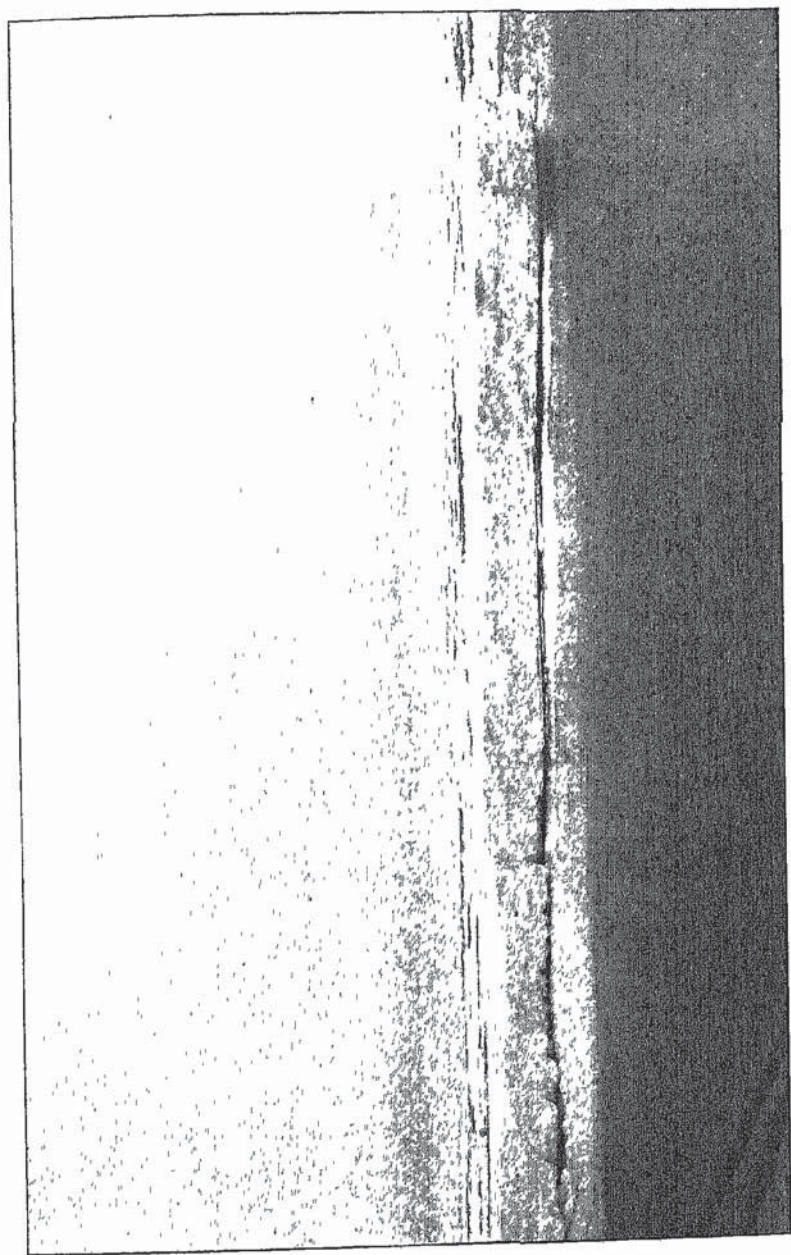
in the neighbourhood of Cape Seymour, preferably in at Admiralty Sound, where I hoped to find more shelter from storms. No other really more southerly place was to be had; the field for magnetic observations within the district fixed upon was a favourable one, and its interesting geology alone made it well deserving of some months' labour.

An important question, decided at the last minute, was the choice of the men who should form the wintering-party at the station. It had been determined in Sweden that Bodman should stay on shore as next to me in command; we have

already mentioned that an agreement which arranged for Sobral's being of the party had been made with the Minister of the Navy for the Argentine, and Jonassen had, as we know, been engaged just for the purpose of being with the wintering-party. I had, moreover, always wished that a doctor should be with us during this time, and had spoken to Ekelöf on the matter before leaving home, but without fully determining the matter. Now I thankfully accepted his offer to remain amongst us. In addition to Jonassen, we were to be accompanied by another of the crew; all of the men were willing to stay, but out of the number I at last chose Åkerland, the youngest man on board, a choice we afterwards had no reason to repent.

There was one person, however, who could only make up his mind at the very last minute whether he would stay with us at the wintering-station or not. It had at first been Mr. Stokes' *intention to pass the winter on shore*, and he had brought with him a house, especially built for the purpose, where he intended to live and have his atelier, but as time went on he grew very doubtful of the matter. In the first place he thought that we were going to take up our quarters a great deal too far to the north—the little prospect there would then be of a chance to paint the aurora australis being here the determining factor—and then there were other reasons which finally induced him to embrace the resolution of continuing to accompany the *Antarctic*.

On the morning of the 9th February we sighted land again, and by noon we were off Cape Seymour, but the wind had once more freshened so much that landing could not be thought of, and in a short time it had grown to a perfect hurricane. A sudden squall tore the jib-sail to shreds, and to protect ourselves from worse damage, it became necessary to turn from the land again and seek shelter under lee of Cockburn Island. This remarkable place, with which we now made acquaintance for the first time, will often be mentioned in succeeding pages. It is of a most peculiar and characteristic form, the sloping base being composed of rocks of



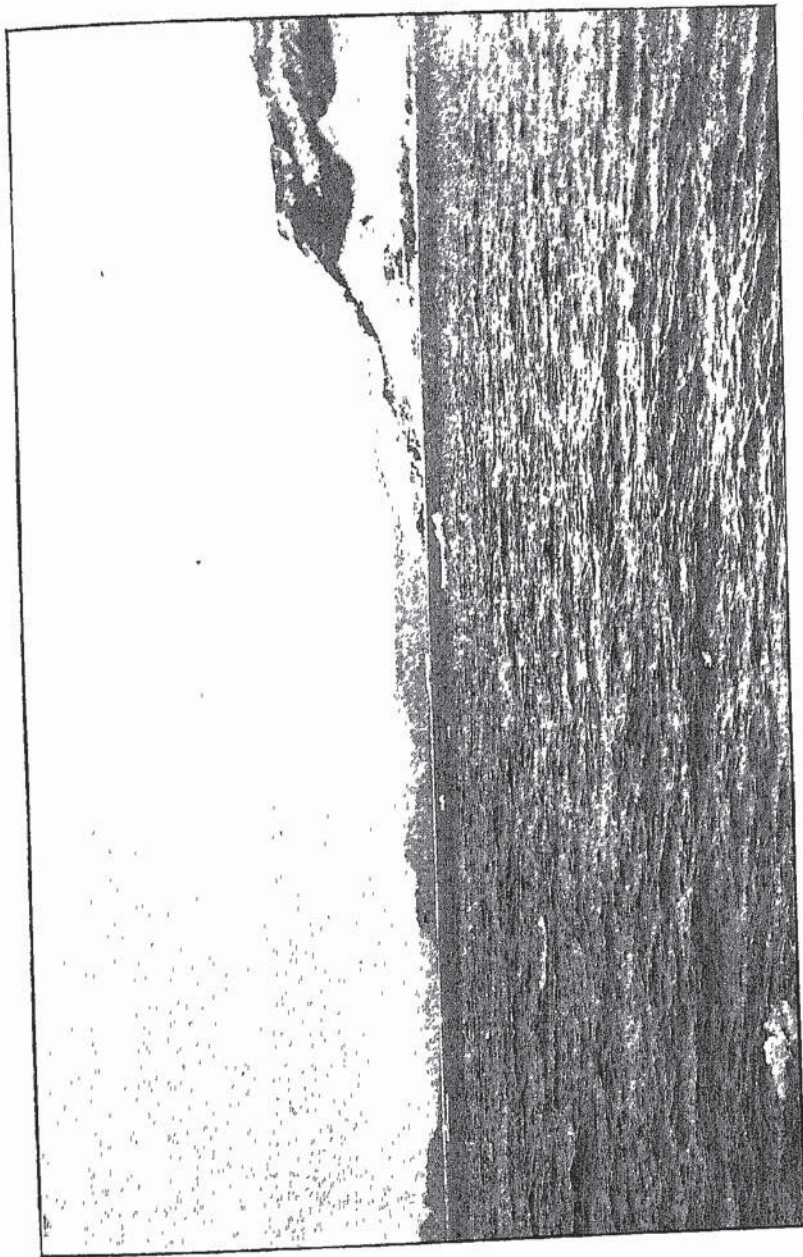
FC SKOTTSBERG.

Thick pack-ice, January 25th

Photo by]

a somewhat friable character; above this is an almost perpendicular bank, the summit of which forms a level plateau, from which, farthest to the north, rises a triangularly-shaped pyramidal top. The island is of especial historical interest as being the only place in these regions where Ross landed; he took possession of it in the name of England, and it was long the most southerly point on the globe where any vegetation was known to exist.

Fortunately, the wind fell in the course of the next forenoon, but we had drifted far towards the north. Before us lay Sidney Herbert Bay, which forms the inner, and hitherto unvisited, part of Erebus and Terror Gulf. As we had now come so near to it we determined to spend some few hours in a visit to the bay in order to make a general survey of the district. The weather had gradually become clear and sunshiny; it seemed as though Antarctic nature wished to give us one last day, rich in memories and results, as a worthy conclusion of the summer's work. We were surrounded by most magnificent scenery; the shores were nearly free from snow and were resplendent in brown or bright-red colours. The lower fells have for the most part very decided plateau-like forms and appear to consist of eruptive rocks. Between the fells immense glaciers find their way to the sea, while Mount Haddington lifts its blue-white crown in the farthest background. But the most interesting observation made was, that the bay, as we could soon assure ourselves, went farther inland than the charts make out. Even now, most of us suspected the possibility of Sidney Herbert Bay itself forming a channel which opened in to some bay or channel behind the land. In the hope of being able to fully solve this problem we directed our course onwards to a peculiar, low, sandy cape, when suddenly the colour of the water changed, and a moment after we saw that our propeller was beginning to tear up the mud from the bottom. The order was at once given to turn the vessel's head, but before we had quite got about, the ship was aground. Luckily we had no great difficulty in getting afloat again, for after hoisting



[NORDENSEJOLD]

It was interesting to find that Sidney Harbour Bay goes in much farther than the charts make out

[Photo by]

the sails and letting the engines go full speed ahead, we glided softly off the sandbank into deep water. After having passed a compact belt of thick ice we again approached Cockburn Island, where the wind once more began to freshen and compelled us to lay-to

The storm continued the whole night, but, as on the previous day, we had fine weather again in the morning. Unfortunately, we had once more drifted pretty far to the north, and immense masses of ice, which had evidently broken loose from somewhere southwards, had placed themselves so that they hindered our approach to Admiralty Sound. We seized the opportunity and did some trawling, and then began to force our way onwards through the ice. It was a very severe task, the worst of the kind we had yet had; more than once it seemed as though we should not succeed, or, in other words, that we should be obliged to turn and wait for a better occasion, which perhaps might never offer itself at this time of the year. But thanks to the energy of our captain and the good qualities of the *Antarctic*, all difficulties were overcome, and when evening came we were at last able to congratulate ourselves on having stood the trial with success and on having made our way to the place where the wintering-station was to be established.

When I went on deck at 4 a.m. on February 12th, in biting cold weather, I stood and gazed for the first time at these islands and shores which were to be our home for nearly two years. One can scarcely imagine any place which differs more from its surroundings than does the perfectly ice-free Seymour Island, with its deep valleys and peculiarly-formed hills. There were plenty of landing-places, but we sailed on in the hope of finding something still better than those we saw. After having passed the sound which forms the southern boundary of Seymour Island, we came to another stretch of land, quite as free from snow as the first, but which formed a much more continuous plateau, with high, steep shores, presenting nowhere any suitable landing-place. The landscape here passes immediately into an extensive,

uninterrupted snow-cap which terminates towards the sea in a perpendicular wall. We have here before us Snow Hill, the same immense glacier which we had seen on another occasion from the south. The mass of ice shoots out towards the north-west in a narrow cape, between which and the high land lies a low shore that, from its position and character

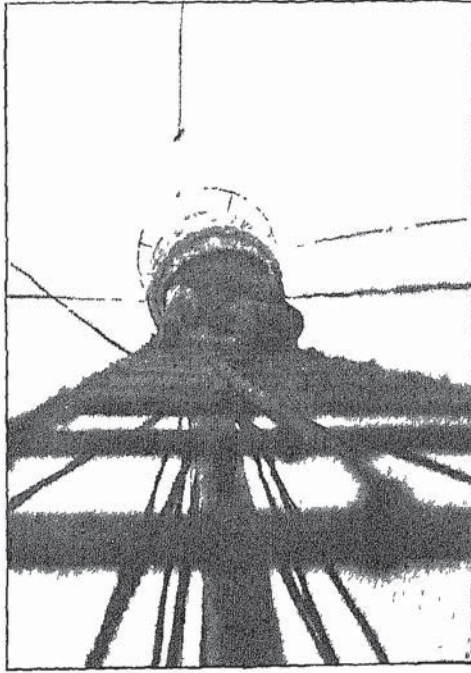


Photo by]

On the way to the crow's-nest

[G. BODMAN

in general, seems to us to have been created for the very purpose of establishing a wintering-station.

I wished, in any case, to examine the place a little more closely, and after a short time, putting off in a boat together with some others who were most interested in the intended investigation, we managed to make our way to the shore

between the blocks of ice which lay aground. The tract of shore just mentioned forms a small triangle whose longest side is a few hundred metres in length, and it is protected in the one direction by the high land, and in the other by the perpendicular wall of ice already mentioned. To our inexperienced eyes it seemed as though the place enjoyed complete shelter from the cold south-winds, and first-rate building-sites were discovered on the low hills with their perfectly level surfaces. The rock consisted of sandstone, traversed, it is true, by a vein of basalt, but this was so narrow however, that there did not appear much probability of its exercising any essential influence on future magnetic observations.

In these respects, then, the position was very favourable, but what finally determined my choice of the place was the great wealth of fossils which were immediately discovered. They were much more numerous than in that part of Seymour Island I had visited, and differed essentially from the fossils with which we had there become acquainted, inasmuch as they included ammonites, which had never before been met with in Antarctic regions. It was quite evident that a sojourn at this place promised to be one of great interest, and after a short interval we returned to the vessel in order to commence landing the stores at once.

It was no small equipment which was to be taken ashore to make it possible for six persons to maintain themselves there for a period of two years; but I shall not dwell upon the subject nor give any complete list of the supplies we had with us. To carry out the transport to the land, we fastened two whale-boats together by means of planks laid transversely upon them, thus forming a kind of large raft which could carry a considerable cargo at one time and which was towed to the shore by means of a third and smaller boat. Everyone was kept busy at the work of transport until late into the night, and at the close of the long day's work we could rejoice in the knowledge that a large part of the supplies for the winter-station were piled up on the shore.



[C. A. LAISEN

We made our way to the shore between the blocks of ice that lay aground.

Photo (y)

Besides superintending the discharge of this cargo, I was occupied during the time in drawing up reports and instructions for the vessel and its personnel. It had been arranged that the *Antarctic* should leave as soon as possible after our being set ashore, in order to go south to attempt to establish a depôt in some suitable place, the doing of which would facilitate provisioning during our future sledge-journeys. My wish had been to accompany the vessel on this trip, but I relinquished the design at the last moment.

I gave a document to Captain Larsen which made him the leader of the expedition on board until such time as they should meet with Dr. Joh. Gunnar Andersson, and my detailed memoranda pointed out the chief tasks that part of the expedition had to undertake. These instructions were given in such general terms, however, that full liberty of action was left to the two tried and prominent men who were to take the direction of things on board and to assume the responsibility for the way in which this party should carry out their work.

The task of landing the supplies continued the whole of the following day. I had no time to go on land myself, but the ship's carpenter, with the aid of some of the crew, began the erection of our winter house and, in the meantime, boat-load after boat-load was sent ashore, and by evening the greater part of our equipment was landed. The next day then, was to be our last one on board, but we had calculated on being able to dispose of the greater part of that time for the finishing-off of the momentous task.

I sat up writing until about three in the morning and then went to take a turn on deck before going to bed. The evening had been magnificent, and I do not remember, either before or since, ever having seen such intense colours in the sky. It was now beginning to grow light; it was a splendid morning and everything around lay still and silent. I exchanged a few words with Reinholdz, the first mate, who had the watch and was walking to and fro. He pointed out to me a lot of ice which had commenced drifting in along

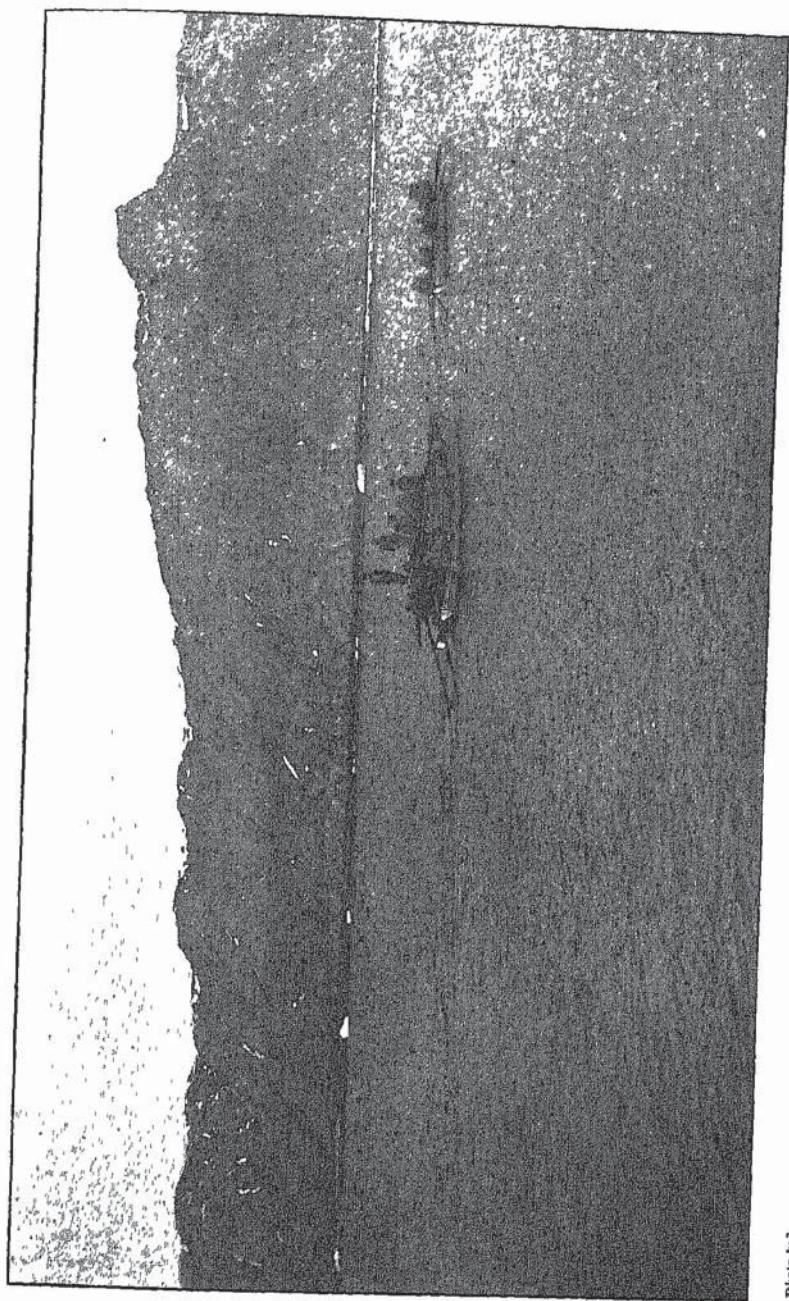


Photo by]

Our things are taken on shore by means of a raft made of two boats and towed by a third

[O. A. LARSEN.

the channel, but there seemed to be nothing which threatened any danger. Scarcely had I fallen asleep in my berth, however, than the captain sent me word that the wind had begun to blow freshly from the north, and that masses of ice were drifting in towards us. I was up at once and, ere many minutes had elapsed, everybody was hard at work again, for we must get ashore the most important things, at least, of all that still remained. However, we could only land a part of our coal, but it was determined that the wintering-station party should take over the supply of petroleum which Mr. Stokes had brought with him for the purpose of warming his hut. The ice came drifting in large pieces, and a sharp look-out had to be kept to prevent them from striking the vessel too violently. At first we felt a little anxious, for a really large floe could have broken our chain-cable and carried us right on to the Snow Hill glacier. There were, naturally, a thousand things to think of just at that moment; personal questions to be disposed of, commissions to be given to those who were going to stay on board, etc., and, in the meantime, the final boat-loads left the ship on their long, time-wasting trips. The hours went by quickly, and soon we saw the boats leave the shore again on their way to the vessel. For us who were to stay here there remained nothing more to do than to say "Good-bye!" and leave for the land.



CHAPTER VII.

THE FIRST WEEKS AT THE WINTERING-STATION.

Our first weeks at the wintering-station—Building operations—The first storm—
The return of the *Antarctic*—Fresh storms.

THE ice did not set in with the speed we had expected, but they were ugly floes which came drifting along, and the captain grew anxious for us to go. The empty boats came back at last, and all that remained to be taken ashore—besides ourselves—was the dogs, some instruments and a few small things previously forgotten. We had also still to take the two boats which it was intended we should keep at the station; one being a pretty old, so-called Tromsøboat, a good sailer, in which I had myself made more than one journey, rowing and sailing, along the coast of Greenland; and, in addition, the little ice-boat which had been built specially for the expedition. They now lay moored to the side of the vessel, while the *Antarctic* weighed anchor and began to steam slowly out towards the channel, and after a short leave-taking we got into them and pushed off. It

seemed a little strange to all of us, but there was no solemn farewell in any case, nothing but a salute from the blue and yellow flag at the peak whilst we fell more and more astern. We had a fairly long way to row, and when we reached the land the *Antarctic* was already a great distance off. There we stood, we six, deserted and alone, we who were to be the first settlers on that desolate strand.

It was ebb-tide in the bay and a large number of blocks of ice, driven in by the north wind, had gone aground, so that we had a difficulty in making our way in with the boat, and no little trouble in getting our things up to the great depôt which had previously been made on the shore. As soon as I could I hurried to the hill-top where the uprights of our future dwelling-house were already erected. I had not been ashore since the building was commenced and had, as a matter of fact, thought of another hill, farther in, as the site of our building. But the matter could not now be helped, and we afterwards learned by experience that had we chosen another place it could scarcely have been any more suitable.

We sat for a minute amongst the goods in order to look at our surroundings and to deliberate upon the arrangement of our work. We determined to begin with the erection of the magnetic observatory, which had been so constructed, that the building, which had been taken to pieces in Sweden, now merely needed to be put together again. In this way we could, with very little work, get a house ready which would at least provide us with a roof above our heads.

So we started by carrying the nineteen large parts which formed the observatory, to the destined place upon a low, level terrace about 100 yards from the house, in a situation which rendered it secure from every disturbing influence of objects made of iron. When once the necessary parts had been brought up and the work had well begun, the task was soon completed, and by twilight the house stood there; somewhat provisionally fastened together it is true, but in other respects ready to give us shelter for the night.

There was plenty of room for all of us on the floor of the

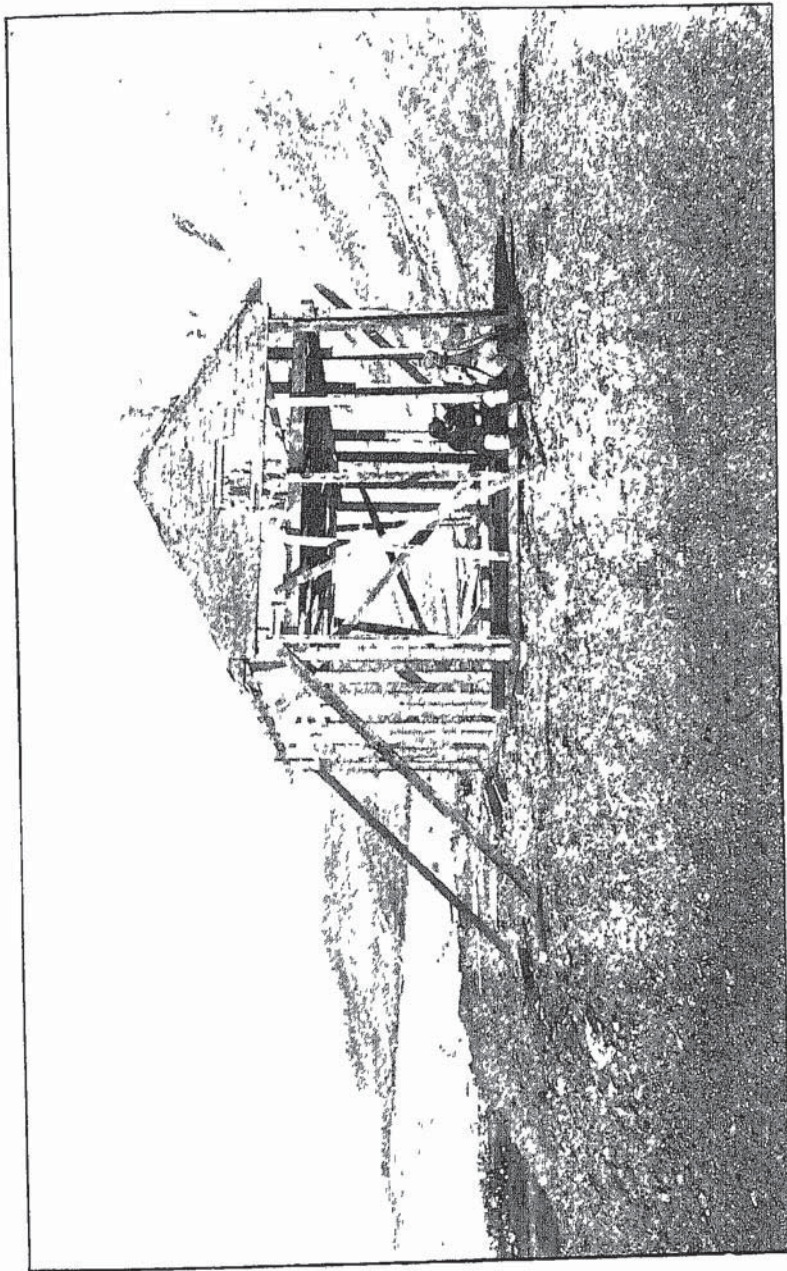


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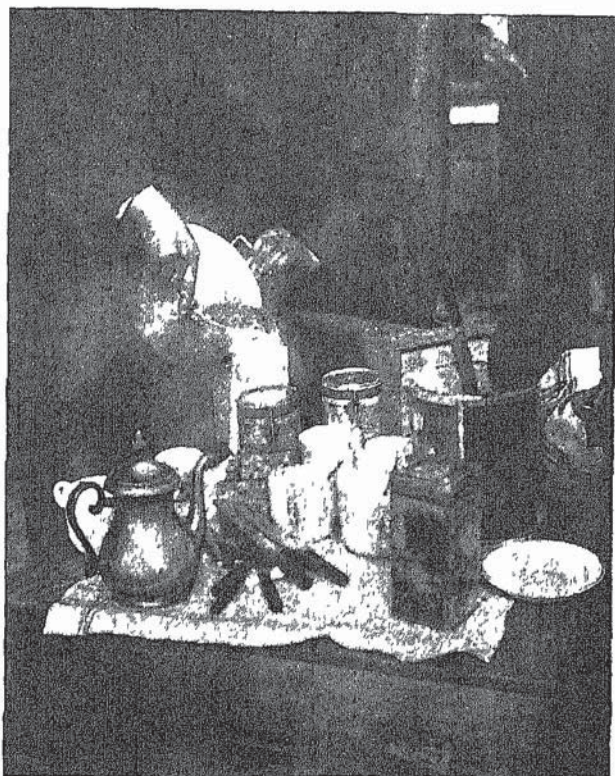
The uprights of our future dwelling house were already raised upon the hill

observatory and I slept there excellently after the first day's work—a dreamless sleep, such as I had not enjoyed for a long time. When we wakened the next morning the weather was cold and raw, with new-fallen snow upon the ground, a thing I had not quite expected in these latitudes in the middle of summer, but then we had not yet made acquaintance with the climate. It would, perhaps, have been wiser had we first made the observatory quite ready, but we did not think about the matter as we were in such haste to get the dwelling-house in order. I had always been in hopes that we should have had effective help in this work on the part of the ship's crew, but unfortunately we did not get very much. Sobral and I spent nearly the whole day carrying up planks and other necessary materials from the shore, whilst the others went to work at the building of the house, and in the course of the afternoon so much progress had been made that we could begin to nail on the boards of the gable-end of the building. We all of us felt quite proud of our day's work when we went back to the observatory in the evening.

It was a piece of good fortune for us that the weather was so fine the next day. After having finished a thorough day's work of the normal eight-hours' type, nailing and hammering on walls and roof, I felt that I had the right to an afternoon's walk up to the hill-top in order to take a survey of our kingdom and obtain some idea of the condition of the ice, and of the chances of the return of the vessel. My way lay up the steep ascent which I afterwards climbed so many times. What masses of magnificent fossils lie scattered around!—but now I cannot wait, for I imagine that I shall have time in the future to examine them. After having ascended the last steep I find myself on the highest plateau, which has never before been trodden by human foot. There is very much here to attract one's attention; it is a very pattern-card of the rocks of the island, varied here and there by blocks of foreign stone whose presence in the place demands its own explanation. There is so much which could chain

FIRST WEEKS AT THE WINTERING-STATION 111

one to the spot, were it not for the wish to go farther inland. The path leads along the edge of deep ravines, mighty masses of rock rise above the surrounding land, sometimes resembling fortresses with walls, battlements and towers,



[Photo by]

[G. BODMAN]

The first meal in our improvised dining room on the shore.

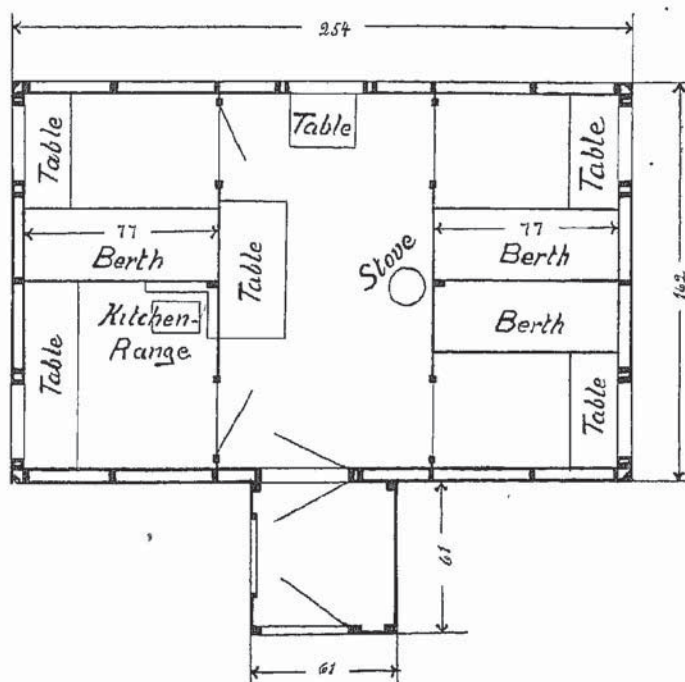
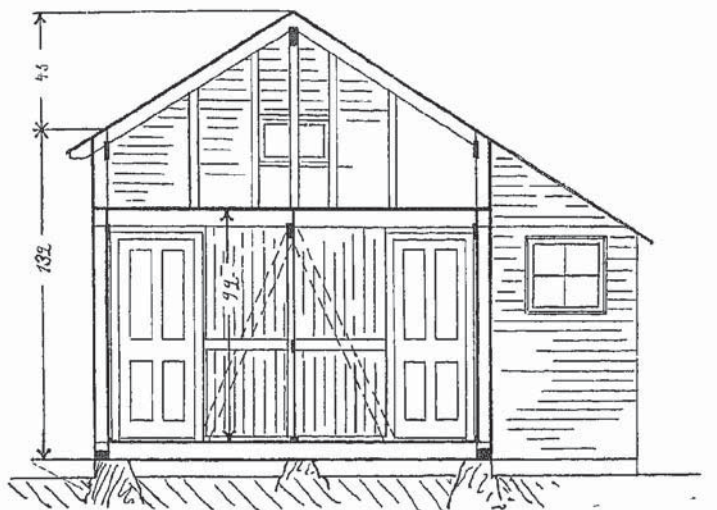
sometimes putting on fantastic forms—gigantic sphinxes amid the loose mass of earth. I am tempted to carry the comparison further, for around me stretches a wilderness more terrible than the Sahara. Nowhere is there a trace of vegetation, not even the sand can lie in its place, for everything

that can be carried away by the storms is gone, so that the ground consists either of a closely packed mass of stones, or of naked rocks which have received their form from the action of the wind.

I go still further inland. To the south there extends before me an endless, slightly billowing plain of ice and snow. That is Snow Hill—"the dome of snow"—after which I have called the whole island, although somewhat incongruously so, as it is not for the sake of the snow, but for that of the snow-free land here, that this island has been chosen as the place for our wintering-station, thereby earning its title to remembrance by man in future times. I direct my steps to the place, for from thence I shall have an unobstructed view on both sides. Towards the east my gaze flies across the boundless sea, which is full of ice so broken up that the vessel should be able to force a passage through it without difficulty. Neither is there much ice in Admiralty Sound, and it became evident that the hurried departure of the ship was somewhat unnecessary, although that could not be known at the time.

I stood there amid the grandeur of the scenery, while the sun sank slowly behind the haughty, ice-covered crown of Mount Haddington, and gilded the ice-field far away on the eastern horizon. No sound was to be heard around me; one could not be more alone, more isolated. This desert spot is to be, for a long time forward, home, everything, for me, for my companions! Here we shall stand face to face with Nature in its mightiest majesty, and, combatting with it, shall strive to make it reveal to us its many secrets. Shall we succeed? At the moment I felt a strong faith in the future, everything lay bright and promising before me, I felt full of gratitude at being at last able to begin our real work; that work which, it is true, would not result in the discovery of any far-stretching land, but work which ought to form the foundation of scientific investigation, and such investigation was the chief aim of the expedition.

The dusk was deepening rapidly when I returned. I



Station-house at Snow Hill
Vertical section, and plan of ground-floor
Lengths given in inches.

stopped for a moment on the extreme edge, and looked down into the deep valley where our house was erected. I could scarcely distinguish the forms of my companions, but I heard the blows of the hammer which bore witness to the fact that they had not yet left off work, and I was soon down amongst them once more.

The next three days passed without any incident of note, although it is true that every hour brought us something or other that was new. By the 17th February we had made such progress with our building that we could move in our kitchen-utensils and take our first meal in the house, which great event was honoured by the drinking of a glass of Swedish punch. We did not make very many speeches during the time we were alone at Snow Hill, but on this occasion I said a few words to my comrades expressive of my hopes of a good result of our endeavours, of hearty collaboration in our work, of good-fellowship under that roof, and also expressive of my conviction that everyone would do his best to ensure the fulfilment of these expectations.

The house, the opening of which was thus celebrated, was constructed from plans which had been made for Amdrup's first wintering-party expedition to East Greenland. The members of that party were five in number; in our own case, I had increased the space to a trifling extent, so as to find accommodation for six persons; some modifications and improvements also had been made. The exterior dimensions were, roughly: length 21 feet, breadth $13\frac{1}{2}$ feet. The house had double walls of $\frac{3}{4}$ -inch boards, with an intervening layer of air; the roof was a single one. The whole of the outside of the house, both walls and roof, was covered with tarred paste-board, and all the outer walls of the dwelling-rooms had been covered interiorly with the same material. The floor was double, with a layer of tarred paste-board between the planks, and it was covered with a carpet of thick felt, on top of which was laid linoleum. The entrance to the house was through a little porch which at least prevented

the snow and the storms from forcing a way in direct, when the door was opened. We often thought that this porch could just as well, or even better, have been extended so as to form a corridor along the whole front of the house, where such a room would have been useful to us in very many respects.

Our chief store-room consisted of the loft, which occupied all the upper part of the house. As the roof was a single one, it was, of course, always cold up there, but still this garret helped considerably in keeping it warm indoors. On the ground floor there were five rooms, which, however, were pretty small ones; the largest of them was situated in the middle of the house and occupied its whole breadth, and on each side lay two small rooms, one of which formed our kitchen and the other three our bedrooms. I shall return in another chapter to describe our indoor life.

On the evening of the 19th February we had, as usual, gone to bed in the observatory, after having finished our day's work. I was awakened very early the next morning by the howling of the storm, but paid no attention to the noise and only crept farther into the warm sleeping-bag. But at half-past six it began to grow worse than ever; the snow came driving in through the cracks of the door, and Jonassen got up to see if everything was all right with the dwelling-house. Bodman and Åkerlund went out too after some time, whilst we others still lay indoors, although I could not think of any more sleep. Suddenly I saw how the south edge of the roof above us was lifted now and then by the force of the wind a foot or so from its place, and it flashed into my mind that the house was about to fall in. I jumped up, roused Ekelöf and Sobral by telling them to get up at once if they did not wish to be buried under the ruins, and went outside after half-dressing myself. Ugh! such *summer* weather it was, to be sure! It blew a hurricane, such as we had by the hundreds afterwards and learned to grow careless of, for there even came a time when we paid no attention to such trifles; but now it felt different when we

were first making acquaintance with the terrible severity of the Antarctic climate. The velocity of the wind was about 20 metres per second (45 E. miles per hour), and the thermometer showed -10° C. (14° F.); one could stand erect, but with difficulty, and the air was a thick, whirling mass of fine snow-dust which rushed past with the speed of an express; so dense was the snow-cloud that we could not even see the dwelling-house when but a hundred yards off. I made my way thither, and the four of us there worked assiduously at tightening doors and windows, and at taking other measures for obtaining some degree of protection against the storm. Ekelof and Sobral came up directly afterwards and said they thought the observatory would weather the storm, but on Jonassen looking out half an hour later, the roof and one wall had given way. We had no other choice than to hurry away from our work indoors, dress ourselves as well as we could, and go down to the place to save what we might of the instruments there, no very light task in such a raging storm. Fortunately, the instruments proved to be as good as uninjured, and even a couple of watches which had been hanging on the wall were found unharmed amongst the ruins.

While we stood there at the work, what was left of the walls gave way, and the whole of the observatory was transformed into a heap of pieces of wood lying on the ground. Nothing could be done for the time being, and as soon as we had rescued what we could, we returned to the dwelling-house and recommenced working there. We finished what was still left undone of the floor and the inside walls, erected the greater part of these latter, and nailed card-board on to the north side of the house, where we made both rooms ready. The window frames were protected with card-board firmly nailed on outside. It was a long, hard, toilsome day, but when, long after midnight, we thought of going to bed, we had the pleasure of knowing that we had made great progress with the work. We now slept for the first time under our new roof, and with the feeling that we were sheltered, in

some degree at least, from all adversities of the weather I need not add that we slept well that night.

During the preceding days we had now and then spoken of the possibility of the return of the *Antarctic* and, although no one really believed in it, many longing looks were turned towards the bay during the course of the 19th. The stormy day that followed gave us no opportunity of keeping a look-out, but on the 21st I was the first on my legs (although it was about 10 in the forenoon) and, on getting outside the door, I saw to my great joy and astonishment the *Antarctic* making for the land, to which it was already quite near. I called to Ekelöf, who had had his sleeping-place next to mine during the night, to "come out and look at the sloop!" and told him to waken the others, and they came out, drunk with sleep, and only half-believing, on to the hill-top.

I at once went down to the shore with Jonassen in order to make one of the boats clear, meaning to row out and meet the arrivals, but it proved to be unnecessary. First came Larsen and the scientists of his party in the little flat-bottomed pram, and, directly afterwards two of the ship's-boats laden with about 30 sacks of coal. It would be difficult to express with what joy I met the new comers, and I gave my especial thanks to the captain for this new proof of his interest in the welfare of the expedition. We all went back to the house which spoke in unmistakable terms of the diligence we had displayed during the previous week, although, it is true, it did not present itself in such an attractive state that anyone could reasonably envy us the prospect of passing the winter there. Even the crew seemed to be glad that we had such good quarters, and nothing but expressions of good will and interest greeted us on all sides.

Bodman, Ekelöf and Sobral went on board the *Antarctic* at once, whilst the scientists of the vessel stayed on shore several hours, wandering about in the surrounding country. I hurriedly wrote a couple of letters and then accompanied the captain and the others when they returned to the ship. It was strange that such a short absence could give us such a

different view of everything. Our narrow vessel now seemed so large and commodious, so full of conveniences and comforts, that we fancied that we could scarcely recognise it again. And what a pleasure it was to wash oneself properly once more! I had various matters to arrange on board, where several of the crew plied me with questions which needed deciding, and then we took a hasty dinner composed of the choicest food there was at hand. This was followed by a cup of coffee and a glass of Swedish punch; some words of farewell were exchanged and we separated, wishing each other all possible good during the months to come. It may be supposed that our thoughts were serious ones, but, happily, none of us could divine that a long time was to pass ere we met each other once more; that our dear old vessel should never return, and that none of us who now stayed behind should ever behold her again. The flag was hoisted in salute when we pushed off in our little boat; I called for a hurrah, which was returned from the vessel, the steam-whistle gave us a last greeting, and—we were cut off from the world.

As a matter of fact, it is not many people who have been so alone and isolated as we, if we consider how few we were in number, how completely impossible it was for us to liberate ourselves from our place of exile, or to put ourselves into communication with the outer world. I knew that our equipment was good and complete, but then it was not one of the valuable, thoroughly complete sort that I should have wished to procure had the financial position of the expedition permitted of my doing so. The remarks in my diary, written immediately after the departure of the vessel, seem a little sad, but anxiety can nowhere be described, and they conclude with the words that, so certainly as it was our duty to make every sacrifice in order to uphold the traditions of previous Swedish exploring expeditions, I was equally certain that our little circle could be fully relied on to do so.

Unfortunately, the *Antarctic* had not succeeded in the attempt to establish a depôt for us farther to the south. On the 16th January the *Antarctic* had come to within 20 sea

miles of Christensen's Island, but almost unbroken ice then lay between the vessel and the land, and, of course, a long sledge journey could not be thought of under the circumstances. They were, therefore, obliged to give up all thoughts of attempting to penetrate farther southwards, as the small supply of coal on board made it an impossibility to think of forcing these masses of pack-ice. A few dredgings and soundings had been made. A most remarkable fact was, that large flocks of emperor-penguins had been met with, on several occasions as many as ten in a group, which had apparently come up at this time of the year from more southern regions.

Once more alone, we immediately recommenced our work, which now mostly concerned the interior arrangement of our dwelling. But, unfortunately, we were not long allowed to devote ourselves undisturbed to these labours, for a fresh hurricane broke out on the night of the 23rd, and when we awoke in the morning the thermometer in our bed rooms showed but -7°C (19.4°F .), and the walls inside were coated with snow. It was the same kind of weather as on the 20th, but now we were better protected, and, at first, took the whole matter very pleasantly. But when the storm continued three days more, we began by degrees to find the matter somewhat more serious. And thus was in reality our very first acquaintance with these terrible Antarctic hurricanes, whose most distinguishing feature is that they are so persistent and lasting. During the whole of the time the temperature varied between -10° to -12°C . (14° — 10.4°F .), while the velocity of the wind was about 20 metres (45 miles) per second. When it is remembered that we were still in the month which corresponds to August in the northern hemisphere, it can well be said that this weather was a little unexpected. The time went slowly, but everything was as yet so new to us, that we must have been in very bad spirits indeed had we been depressed by this little trial. Still, the hurricane shook the house; it was several degrees below freezing point in the rooms; we could not go out, and there was not much to keep us busy inside.

But this storm was to occasion us a still more serious mishap. On the evening of the 24th I had brought the Falkland bitch and her puppies into the dining-room, whilst the eight-day old Greenland whelps lay in their temporarily-constructed box down on the shore, where I thought they could manage very well now in the middle of the summer. On the following morning Jonassen went down to give them water, but instantly came back quite out of spirits and said that all the puppies lay there frozen to death. The mother had grown tired of being shut in, and, as the door was nailed-to, she had forced a way out through the roof, leaving the young ones to their fate. This was a hard blow to me, for I had placed great hopes on these animals, and I believe that had they survived they would have been of great service to us as draught animals, even by the following spring. Now it was plain that all the sledge journeys we might undertake would have to be done with the help of our four Greenland dogs, together with what little assistance could be given by the Falklands.

We had now begun to be a little better acquainted with our dogs. On board they had only been numbers, which we saw once a day, standing fastened up in an out-of-the-way corner, or when they were let loose on deck; they got a pat now and then, maybe, but otherwise they were scarcely noticed. During this time there grew up amongst them a kind of clan-ship, the animals which belonged to the same race uniting in order to carry on warfare against the other dogs. Then the Falkland hounds had the best of it, in consequence of their superiority in number and their quickness of movement; but here on shore it was quite another matter. The Greenlanders combined to form one staunch and compact troop, which, with most pronounced, carnivorous instinct, hunted down each wretched Falklander that dared to separate himself from his friends. When two of our dogs began fighting, the whole troop would at once rush up to help the stronger. No trace of chivalrous feeling could be observed, and when a Greenland dog bites he does so with emphasis. One after another the

Falklanders were bitten to death, the last of them being killed in this way fourteen months after our landing.

During [the storm the poor animals lay in the best shelter they could find, almost invisible from the snow which covered them and fastened in their coats. The drifting snow had been tremendously heavy the first two or three days, but it afterwards decreased somewhat, so that by degrees we caught a glimpse of the blue sky. It was grand to stand outside in the evening and look across the firth upon a wildly

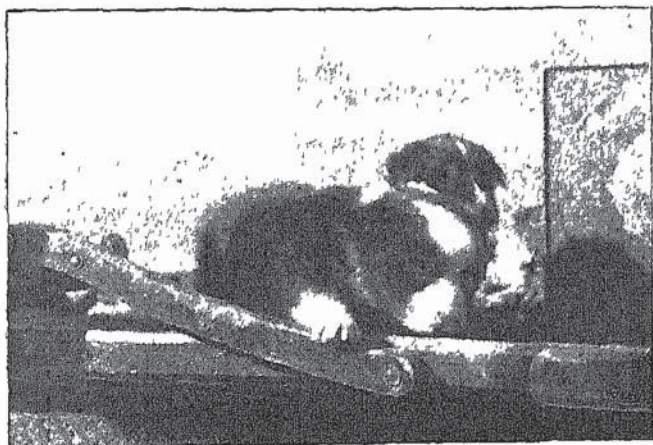


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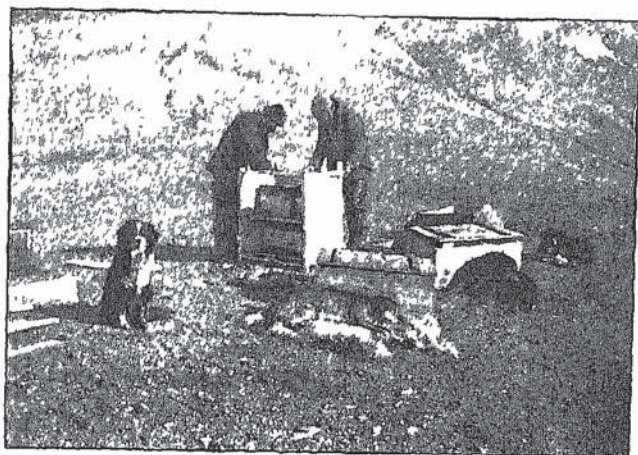
The puppies' resting place.

[G. BODMAN.

magnificent, lonely, golden-white picture, with the moonlight high in the zenith breaking through the driving masses of mist.

"Poor *Antarctic*, without coal and without ballast, you will be surely obliged to leave these regions!" were the words I wrote in my diary during the course of one of these days, and even long afterwards, when we were expecting the vessel, it was this storm which formed the background, so to say, of the picture which our guessings formed of the fate which perhaps was hers. The day came when we were to learn how nearly

our fears had been realised. After a vain attempt to round Joinville Island, the *Antarctic* had succeeded on the 24th February in coming out through the sound which bears its name, but in Bransfield Strait the storm had met her in all its terrific force, while, at the same time, the air was so impenetrably thick that it was impossible to determine the ship's whereabouts. Attempts were made to moderate the waves by means of oil, but to little effect. Great seas broke incessantly over the ship, one of them carrying away our fine new whale-boat, which had been built specially for the expedition, and at last it became almost impossible to keep the ship's head to the wind. Everybody on board was told of the danger in which the vessel lay, and all knew that there was no possibility of safety should she come too near the South Shetlands. After incredibly hard work, they succeeded, however, on the morning of the 27th in weathering the northernmost cape of King George Island, though at a distance of but four miles. The ship was now safe and could betake itself to milder climes, bearing information of the first summer's work and of our landing at the foot of the icy cupola of Snow Hill.



CHAPTER VIII.

AN ADVENTUROUS BOATING JOURNEY.

Excursions in the neighbourhood—Our boating-journey westward—Our first sledge-trip—A dangerous situation—The journey home

THE month of March commenced with the finest weather we had experienced since our arrival in these regions. Our dwelling-house was now so far ready that we could leave the finishing of necessary, but lesser, details to some future day. Jonassen went on with this work for a little while longer, however, whilst we helped Bodman to put the scientific observatories and their apparatus in order. The screens for the thermometers were erected on the 1st; on the 2nd we set up the anemometer, and on the following day the magnetic observatory was re-erected, but this time with the entrance towards the north—our lee-side, as we had discovered—and so it stood until the journey home.

Then we got a few days of variable weather. When it was calm, new ice was formed at night out in the sound, to be broken up again by the wind. On the 4th we had a storm; on the 6th came a warm wind, which made the thermometer

rise to $+6^{\circ}\text{C}$. (42.8°F), this being followed by as speedy a fall to freezing-point. I began to make short excursions in our immediate neighbourhood during my spare time, in order to study the physical features of the place and collect fossils; the longest I made was one in company with Sobral, on Sunday, March 9th—a ten hours' journey southwards from Snow Hill. We started in brilliant sunshine; we came back from our wanderings high up on the hill-ridge, in the midst of a thick mist, and groping our way along by the aid of the morning's footprints. The snow was, as a rule, firm and hard, with uneven ridges, so that our ski were of no great use. The crevasses we found were all of them very narrow. The greatest height attained was, according to the barometer, about 300 metres*, instead of 600 metres† as marked on the chart. We discovered three nunataks sticking up out of the ice, which are not mentioned by Ross in his description of these parts. One is almost tempted to believe that the snow must have considerably diminished in depth during the sixty years which have elapsed since his visit. This is, of course, difficult to prove, and it must also be acknowledged that it seems to be almost an impossibility for the snow to have melted so much in such a short space of time. The ice forms several hills, separated by deep depressions, and clearly seems to follow the topography of the underlying ground.

These little excursions were only preparatory to a more lengthy journey which I intended making ere the ice had gathered all the surrounding sea in its embrace. The house was now stayed and propped up, the tarred card-board had been nailed on, and the most important details of the fitting were in order. In the observatory there was now work for only Bodman himself, with the arrangement of the instruments. We could await the future with calmness; but, on the other hand, it was high time for us to start if we wished to use the boat for the journey, as I intended doing, for the *Antarctic* had not succeeded in establishing any depôt, and it was only in a boat that we could take such a load as it would be necessary to have on this occasion.

* 1,000 ft.

† 2,000 ft



Photo-b6]

We took advantage of the flood-tide to launch our heavily laden boat.

G. BODMAN.

I requested Sobral and Jonassen to accompany me. On the 10th we worked the whole day at getting the boat and our equipment in order, and we started early the next morning.

There were two aims I had in view in undertaking this journey. The first was that already mentioned—the establishment of a large depôt as far to the south as possible, and for this purpose we took, besides what we ourselves needed during the expedition, seven boxes of the specially-packed boat- and sledge-journey provisions and about 80 kg (180 lbs.) of dog-pemmican. As there was reason to suppose that we should not be able to reach the land itself with our boat, we took with us all the Greenland dogs, and Jim, one of our Falklanders, intending to test his usefulness.

But the other object of the journey was, that this should really be an exploring expedition. We had already learned so much from our place of observation on the heights near the station, that we knew that the map had not many points of resemblance to the reality. And even if we thus needed plenty of time to explore our nearest surroundings, still, the field of work was large, too, and in many respects much more might be done by means of a boat journey than by our intended sledge expeditions.

Taking advantage of high-water to launch our heavily-laden Tromsø boat more easily, we started on our first long expedition. It was a beautiful day, but a little too warm, perhaps, and we now and then caught breaths of these strange *warm southerly* winds for whose origin we could never fully satisfactorily account. Otherwise the weather was almost quite calm, and the whole fiord lay covered with a thin coating of newly-formed ice, which made it rather difficult work rowing. We were obliged to take a winding course between close masses of low drift-ice, which was, however, high enough to prevent us from seeing our way, and this compelled us to stop every now and then and climb on to one of the highest of the pressure floes in order to get a view of our surroundings. Here and there on the ice there was a group of penguins looking at us with much curiosity, or a seal lying motionless and sunning

itself. This, too, was the only time that I saw the large Snow Hill glacier in all its splendour, viewed from the open water.

By degrees we come nearer the other shore, the point which probably corresponds to what Ross calls Cape Hamilton. I note the geological conditions with great interest; the lower, softly-swelling hills which must certainly consist of sedimentary sandstones and slates, of the same kind as those of Snow Hill, and the higher, exceedingly wild rocks, which formed lofty cliffs. High up there rises a narrow, perpendicular ridge of rock, reminding one of a cyclopean wall, and ending anteriorly in a massive, mighty tower, which I have called the Watch Tower, from which one could look down upon tracts as yet unseen by human eye. Here we can quite convince ourselves that we are in an actual channel, divided into two by the large island lying before us—Lockyer Island. Ross says in the account of his voyage, that Snow Hill seems to be joined to the land opposite by a low mass of ice, which appeared to him to resemble a projecting glacier. As far as I know, no such phenomenon exists in any other regions, and therefore I had already made up my mind that this theory of Ross' was most improbable; but now that I have made acquaintance with the conditions of the ice elsewhere along this remarkable coast, it seems to me not at all impossible that such a mass of ice may have existed in Ross' time. Should this supposition be correct it would be a further proof of the assertion that a milder climate now prevails in these regions than sixty years ago.

We made rapid progress; in a little while we were even able to use a sail, and by three o'clock we were pretty close to Lockyer Island. Here it was my intention to establish our first depôt, but the place did not look very inviting at this distance, with its high, perfectly precipitous walls of basalt-like rock and, here and there, great glacier masses with perpendicular terminations. However, there seemed to be open water the whole way in, and we fancied we should be sure of finding some place where we could leave all that we wished.

But what strange noise is that which comes towards us in

the silence ? At first it sounds like a low, almost indiscernible crackling and rustling, which gradually grows in strength, and at last becomes a mighty, protracted, rumbling roar, like that of the sea on the approach of a storm. A look ahead shows us that the ice is in movement and is driving onwards to meet us in one immense, irresistible, wall-like mass. It is genuine pressure ice, with wildly towering ice-blocks which, from our little boat, seem to be mountain-high ; no vessel could force a passage here. It rushes onwards like a tidal wave, throwing out long tongues, mostly towards the western land. We can do nothing but turn immediately and scud rapidly away—no difficult task as we drive as fast as the ice itself. It was the mighty wave of the spring-tide which had put the ice in motion, forming a maelstrom which now carried our boat along with it. At first we tried to row in towards the nearest land to the west, but the ice moved too rapidly and we could not reach the place we wished to. Then we turned to the east again, towards the other side of the island, but there was too much ice here too, although it had now commenced to stop drifting, and the current now only carried the ice-blocks round in a whirling dance. The evening was coming on, and for the moment it was impossible to think of landing on the island with our heavily-laden boat. Neither could we wait for the change in the direction of the current when the tide turned, for then it would be dark, so we were obliged to make up our minds to steer westwards once more, and, finally, we landed on a low solid ice-foot a mile or two south of Cape Hamilton and about half-a-mile from the shore. We drew the boat up on to the ice and pitched our tent, made a good meal of bovril-pemmican and cocoa, after which we passed a quiet night in our three-man sleeping-bag of reindeer skin.

We were early afoot the next morning, for we meant to make a serious effort to force a way through the masses of ice. But unhappily it appeared that the tide-currents of the previous night had affected them but little ; they lay impenetrable as before between us and the island, and rowing was

but further impeded by the crust of newly-formed ice on the water. We were not so equipped that we could make our way onwards with the boat under such circumstances, and I determined to go forwards towards the eastern wall of ice which forms the continuation of Snow Hill Land, and which appeared possible of ascent just at this point, and we should thus be able to get a view southwards. There was no ice to impede us and we made our way without difficulty up the ice-slope, which was about five yards high. On going on a little farther I found that we were on a piece of ice, separated from the land-ice by a narrow fissure over which was a snow-bridge. It was clearly an iceberg in process of formation, which would be lifted by some future very high tide and be set free, and it explained how the great bight in the ice-barrier had arisen. However, I obtained from this spot a good survey of our surroundings, and saw that some distance further in a little nunatak stuck up out of the ice. We could, of course, have made our way to the place, but it would have been of little use to establish a *depôt* there. The ice appeared to lie pretty loose all the way to Lockyer Island, but it would certainly have cost us much labour to force a passage thither. But in the west, whence we had come, there lay a level surface of ice which seemed to promise excellent ground for our dog-sledge, while the coast, as far as was visible, trended to the south-west; the wisest thing we could do, then, was to return there and look for a suitable situation for the establishment of our *depôt*.

We rowed slowly between the drifting floes, first along the edge of the ice and then across the sound, without experiencing on that day's change of tides anything like the episode of the preceding evening. A slow current carried the ice northwards, however, and the floes were large, so that we had much work, both with oars and ice-hooks, in making our way amongst, and sometimes over, them. When at last we landed on the fast ice at about three in the afternoon, we found a number of preserved-food tins and bits of paper lying scattered about, a few steps from our landing place, and saw that after an

unpleasant day of hard work we had returned without result to the very spot we had left in the morning.

It was not our intention to make any long trip with the dog-sledge, neither was the period of the year seasonable for so doing, and, in order to lose no time, we determined to use the remaining hours of the day in bearing the contents of the intended dépôt to the place we had pitched upon, which was situated behind a far-projecting promontory. We soon loaded the sledge with what we meant to take—dog-pemmican, four boxes of sledge-journey provisions, a tank of petroleum, etc., weighing altogether about 230 kg (500 lbs.). We ate nothing but a bit of chocolate and started at once, it being our first attempt at driving dogs in these regions. All the dogs went well over the smooth ice, even Jim proved not at all so impossible, although he tried a couple of times to release himself by biting through the traces.

The coast here forms a mighty promontory sloping almost perpendicularly to the sea; it consists of a peculiar kind of rock, with which I now made acquaintance for the first time, and which plays a very prominent rôle throughout this tract; it is an unstratified tuff containing numerous fragments of lava and in this place, remarkably enough, a number of spherical crystals of pure olivine. We stored our dépôt on the solid slope of the hill and thought that we had done the work very well, for we were quite certain of always finding our provisions unless a land-slip occurred.

When these cares were over I climbed the mountain-side in order to obtain a view southwards. The land just here goes for some distance in an almost westerly direction, but then suddenly ceases, and the eye meets nothing else before it than the endless white surface of the ice. The sun had just disappeared beneath the horizon, but a rosy shimmer was still thrown over the icy wall of Snow Hill and over the whole of the southern horizon and these unknown regions which lay before us, so inviting and yet so inaccessible. A strange light, with heavy, leaden-coloured and purple clouds, was gathering in the south-west, but I cannot say that I liked

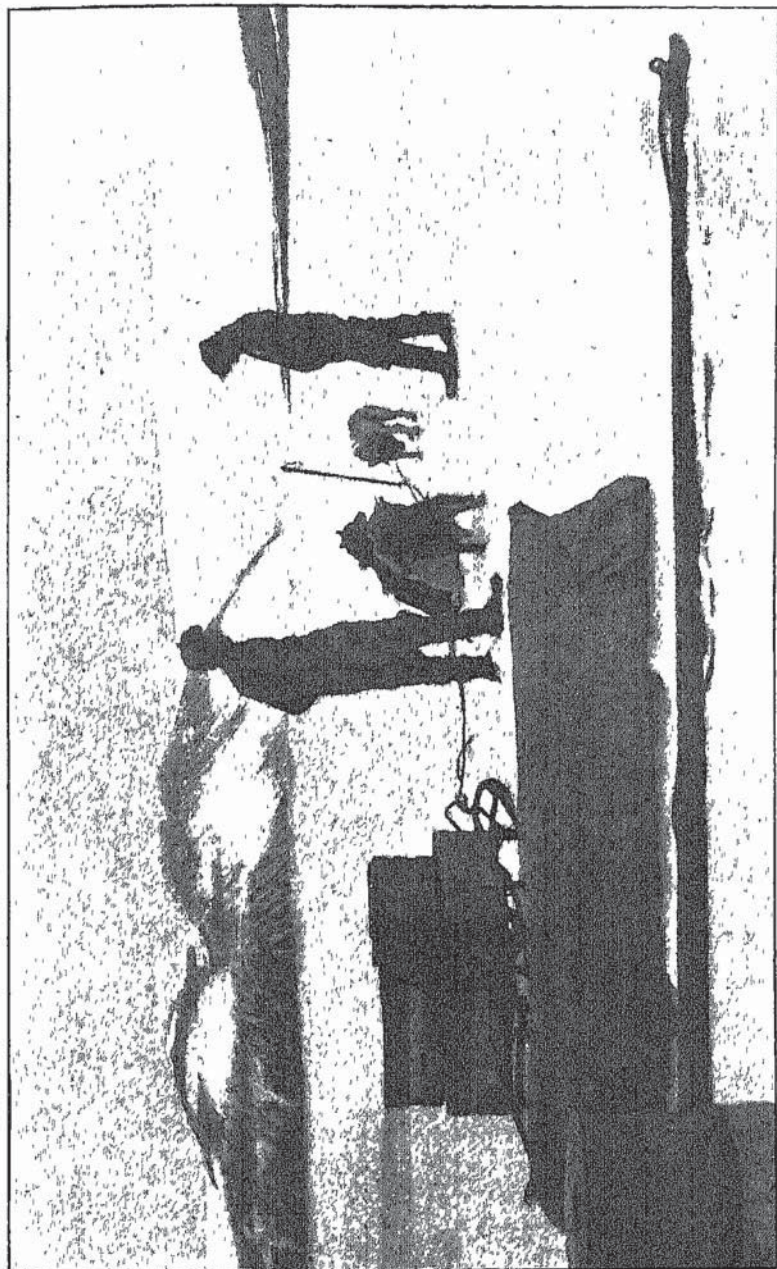


Photo by]

It was our first attempt at driving dogs in these regions,

[NORDENSKJOLD

its appearance. A few seals lay out on the ice uttering weird, complaining sounds from time to time. We were obliged to hurry back to where we had left the boat, in order not to be overtaken by the dark, and on our arrival were prudent enough to draw the boat farther up on to the ice, a precaution which probably saved our lives.

We raised our tent in lee of the boat, made a little soup and soon crept into the sleeping-bag. A little longer sojourn in these regions taught us to understand the significance of nature's warnings, such as now presented themselves to us—the warm south winds, the rapid fall of the barometer, the peculiar light in the south-west—but as yet we had no idea what these things foreboded. We had scarcely entered the tent ere the storm came on. The boat was, of course, a good protection, and we did not feel the storm much when inside our sleeping-bags, but at home, on Snow Hill, the anemometer-wire was torn off when the hurricane had lasted a couple of hours, the velocity then being 26 metres per second (58 miles per hour). But it felt cold, in any case, lying there, and it is not such an easy thing to sleep in the same bag as two other men; habit, acquired by long practice, is needed ere one can enjoy such slumber. The inconvenience of the companionship is marked most when the weather is cold and each wishes to creep to the bottom of the sack and then lies there crosswise, or in some other unauthorized position. So we slept badly enough, but thought, all the same, that we were very well off where we were, and, when the day dawned, still lay there without making any sign that we intended to leave our bed.

But all our dreams were suddenly interrupted by Jonassen, who lay on the side nearest to the ice, and who suddenly jumped up exclaiming that the water was making its way into the tent. And he was right, for the storm had broken the ice and flung the waves in across that part of it on which we were encamped, right up to the edge of the tent. It needed but a second to put on the few clothes we had taken off and to rush out. First casting aside the smaller

articles, we all took a firm grasp of the boat and with a simultaneous exertion of strength soon had it hauled so far up that we were safe, for the moment at least. It was fortunate that the incident had not taken place during the night, in which case it is impossible to say what might have happened.

We did not dare to rest many minutes before again removing the boat and our things. It was well we did so, for a little later the storm broke off our piece of ice along a crack just about where we were standing a few minutes before. We continued pulling up the boat and carried it altogether a distance of about 300 metres, which gave us work enough. There were a number of fissures in the ice, which occasioned us some uneasiness, but otherwise it was very solid, and it afterwards proved to have suffered very little from the storm.

We had no thermometer with us, but at the station they had -18° C (-0.4° F); the velocity of the wind has already been mentioned. The storm came howling from the south-west, sweeping before it immense masses of snow, so that one could seldom catch a glimpse of the high land which lay but half-a-mile away. Perhaps it might have been possible for us to erect our tent again in lee of the boat, but we dared not do so after our late experience, for we could easily imagine the ice breaking along a fissure farther in and then drifting out to sea with us. We had no winter clothes with us; we could with more reason be said to be dressed for autumn weather. I crept into the boat under protection of the sail and endeavoured to cook a little food, but even there it was cold work sitting still. Jonassen walked to and fro, trampling down a deep grave by the side of the boat, whilst Sobral stood somewhat quieter. The dogs had crept as deep down into the snow as they could. It was a long day, but anxiety shortened the hours for us to a degree we could never have expected. We were in doubt as to what we should do for the night, but we had scarcely any other choice than to remain by the boat and make ourselves as comfortable as we could.

We succeeded in putting up the tent and spread out our sleeping-bag, which was now quite wet and frozen through, but we crept into it fully dressed, at about half-past seven in the evening.

Sobral got a finger frost-bitten, which ached very much; Jonassen had his feet quite wet; lay there complaining over it, and would not leave the tent. I kept a kind of watch until midnight, that is, I sometimes sat up inside the tent and sometimes went out into the storm, which, in the darkness, was still more awful and more wild. A hundred paces away nothing could be seen of the boat, and so I was unable to go as far as was needful in order to examine the edge of the ice. But as, from where I stood, I could detect no cause for alarm, and as, in any case, no look-out could save us in the event of a sudden catastrophe, I went to bed for good and all about 12 o'clock and really managed to get a little sleep, although the others afterwards said they had not succeeded in doing so.

At half-past five Jonassen waked me with the intelligence that the wind seemed to be abating, and that the sky was clearer, but I lay an hour longer in the sleeping-bag, after which I got up and made coffee for the whole party. The sun was then shining brightly and the horizon was quite free from clouds. The velocity of the wind was considerably diminished, although it still blew freshly. The sea, which had not made any very visible inroads on the ice, lay quite clear right up to the island. Had we had such a sea as now from the beginning, and good weather into the bargain, it would have been an easy task to reach the place and afterwards to survey the whole country southwards, but now we could not even think of doing so. It was dismal work enough to rise, our clothes, having thawed inside the sleeping-bag, froze again directly we came into the open air. The "Primus" petroleum-stove would not burn, and I was obliged to go out and look for the cleaning-wire, but all was to no use, and I had to go out once more and search for the ordinary petroleum-stove, which was quite buried in the snow. At

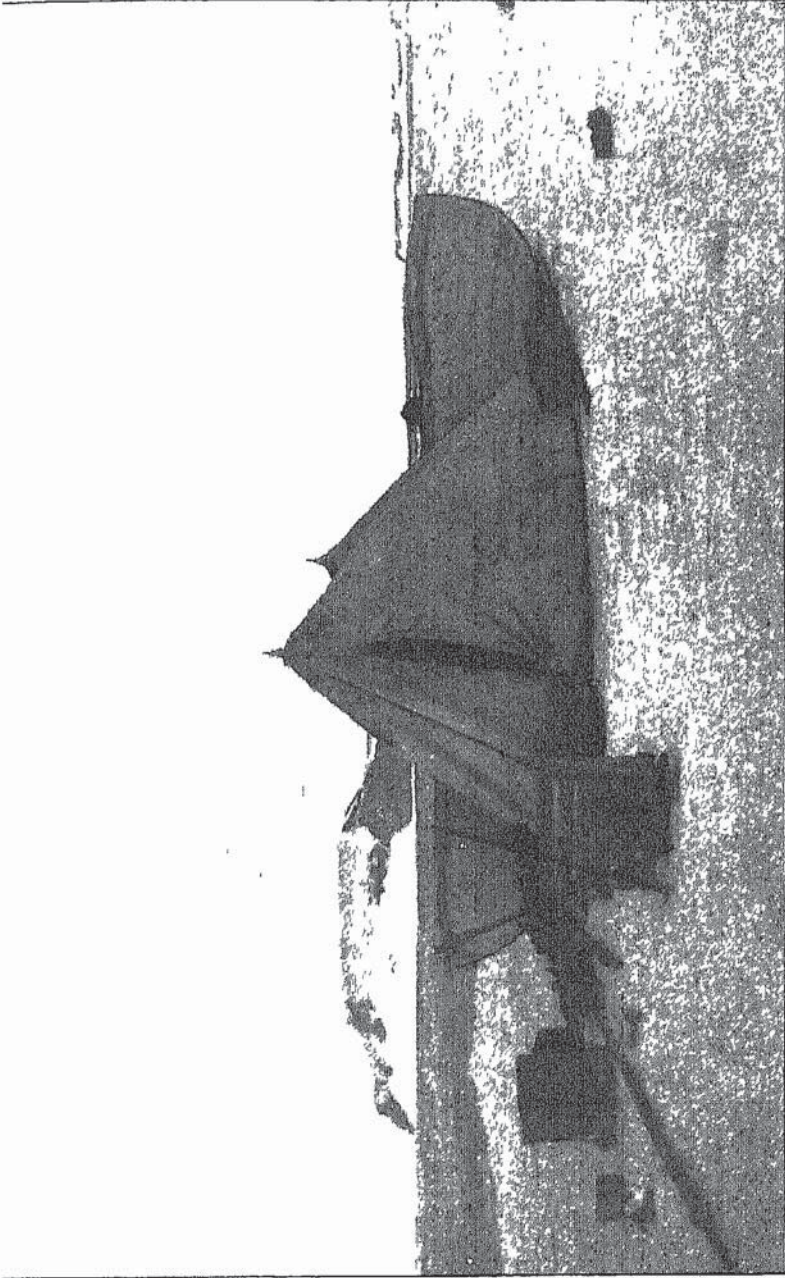


Photo by]

Our camping-place off Lockyer Island

DNORDENSKIOLD

last I managed to get the stove to burn and breakfast was soon ready

During this time Jonassen had dug the boat out of the snow, but there still remained the labour of carrying it and all our things down to the shore, so that it was nearly ten o'clock before we started. It was still harder work to get clear of the ice. The wind blew violently on to the land and seas broke incessantly over the boat; Jonassen got his fingers frost-bitten, and it was only by exerting our strength to the utmost that, at the very last minute, we succeeded in passing the great glacier south of Cape Hamilton. Had we been driven in such weather against that upright wall of ice our chance of safety would have been as small as if the ice had broken up under us during the night while we lay sleeping in the tent.

But once in open water we made rapid progress. We had reefed our sail as much as possible, but it was still too large, and so we hoisted only a part of it, while the lower end dragged after us in the water. It must have been a peculiar picture had anyone seen us scudding before the storm-wind thus strangely equipped. Jonassen took the helm and Sobral and I attended to the sail. Only now and then did a band of sludge and fragments of ice hinder our journey a little. The whole journey home occupied little more than three hours, for by midday we rounded the corner of the Snow Hill glacier and saw before us the little black house which, even after this short expedition, was in our eyes the representative of good living, of luxury, of civilization. It was low water, so that we could not come in with the boat, but had to wade to the edge of the ice in order to put our things ashore, and there we were soon welcomed by our comrades, who had doubtlessly thought of us with some degree of anxiety during the preceding day of storm.

The hurricane had done much damage at home, too. Flood-tide on the 12th had been unusually high, so that it became necessary to carry up from the depôt on the shore a number of things which were more liable to damage than the others.

The house, however, had withstood the tempest staunchly, but the windows to windward had to be nailed up.

The chief aim of the expedition had been attained ; a good depôt had been established on the mainland, as a help for us on future journeys and a source of security on such occasions when there was reason to fear being cut off from our own island. We had also done some reconnoitring ; I had made acquaintance with that level ice over which our future sledge journeys southwards—journeys many days' marches long—should be undertaken. We had learned with certainty that Admiralty Bay, as it was called, was a sound ; that Snow Hill was an island, and we now knew the chief features of the physical geography of the region immediately surrounding us.

CHAPTER IX.

WAITING FOR WINTER.

Conclusion of the building-work—Our scientific labours—Our dwelling-house and its fittings—Dietary regulations—Sledge journey to Seymour Island.



IT was fortunate that we had not allowed anything to entice us to lengthen our expedition, for the days which immediately followed our return were also accompanied by bad weather, and we should thus have been unable to do anything of use. At home we continued our preparations for the winter, but the most important details of the outdoor work were now completed. Jonassen built a house of planks for the dogs, a necessary shelter in this climate, for the Falklanders at least; then

he took in hand the erection of the astronomical observatory and the arrangement of our effects, at which work I assisted him. We made a continuation of the porch by setting up a row of bread-barrels above which we laid provision-boxes, so that we got a kind of outer corridor, although we had not sufficient materials to make anything which could be at all compared with the complete outer wall which Peary built around his dwelling-house. But we got, in the way I have

just described, a little well-sheltered corner, which received the inviting name of "the arbour." It was afterwards taken possession of by the dogs, who there found excellent shelter against the storms.

In addition to this, the greater part of our supplies were piled up on the north side—the lee side—of the house. But in order not to run the danger of losing all our provisions in case of a fire, I made two depôts at some distance off, the one consisting of our specially-packed sledge-journey provisions, the other of a number of articles of food and other necessities chosen for the purpose. The supply of petroleum was also stored up at some distance from the house.

Thus day after day passes in such labours, and we come nearer and nearer to the first winter ever spent by human beings in these tracts. The days grow shorter and shorter, the sun at noon stands lower and lower in the northern heavens, the air outside grows colder and colder. It is true that the latitude where our station lies is all too northerly for us to fear the terrors of the real polar-night, for even in midwinter the sun remains more than four hours above the horizon. But even had we ever dreamed that we consequently need not experience the feelings awakened by wintering in North Polar regions, still we had long ago begun to suspect that the natural forces with which we should here have to contend would occasion us extraordinarily great difficulties in other respects.

Each of us had by this time gradually become taken up with the scientific work for the sake of which we had made all these arrangements, all these sacrifices, and which had given rise to this wintering-station of ours. As a matter of fact, one should not, in this connection, speak of "sacrifices," but it would be difficult for those who have never made the experiment to imagine with what zeal and with what interest such work is carried out, when one knows that it is the first time such labours are performed in a region which is as large as a small continent. Everything is new, everything is interesting—the weather, the movements of the instruments, the life of organisms in the course of their development at different

seasons of the year—and it is not necessary to go on long expeditions in order to learn all this ; at home, at the station, one is always ignorant of what new and surprising things the morrow can bring forth.

And thus we had zealously commenced to attack our work. The most important of these were the magnetic and meteorological observations which had to be carried out in agreement with the international scheme of work. It was Bodman who had charge of these, and Sobral undertook to be his first assistant. Bodman had, however, assumed the sole charge of the magnetic labours for the present, and during the month of March he was mostly occupied with the erection of the variation instrument.

In respect to magnetic observations, it is just the polar-tracts which are of the greatest interest, but the southern pole has hitherto been very little studied. The most prominent scientific authorities have over and over again expressed the opinion that the absence of accurate investigations in the Antarctic regions rendered all real progress in respect to the theory of terrestrial magnetism quite impossible, and all attempts to determine for any length of time the position of the magnetic powers on the surface of the earth quite unavailing. And such questions are, when they bear upon the variation of the compass, of the very greatest practical importance. The international scheme of work embraced observations concerning changes in declination, inclination, and magnetic horizontal intensity. These observations were to be carried out by means of variation instruments on the 1st and the 15th of each month, and should last the entire four-and-twenty hours, with observations every whole hour according to Greenwich time. Thus when we were busied here with such observations we knew that similar ones were being carried out, not only by our sister-expeditions and on Kerguelen and Staaten Islands, but also at all observatories in the southern half of the globe, and at some in the northern.

In addition to the ordinary variation instruments, the German and English Expeditions were provided with a series

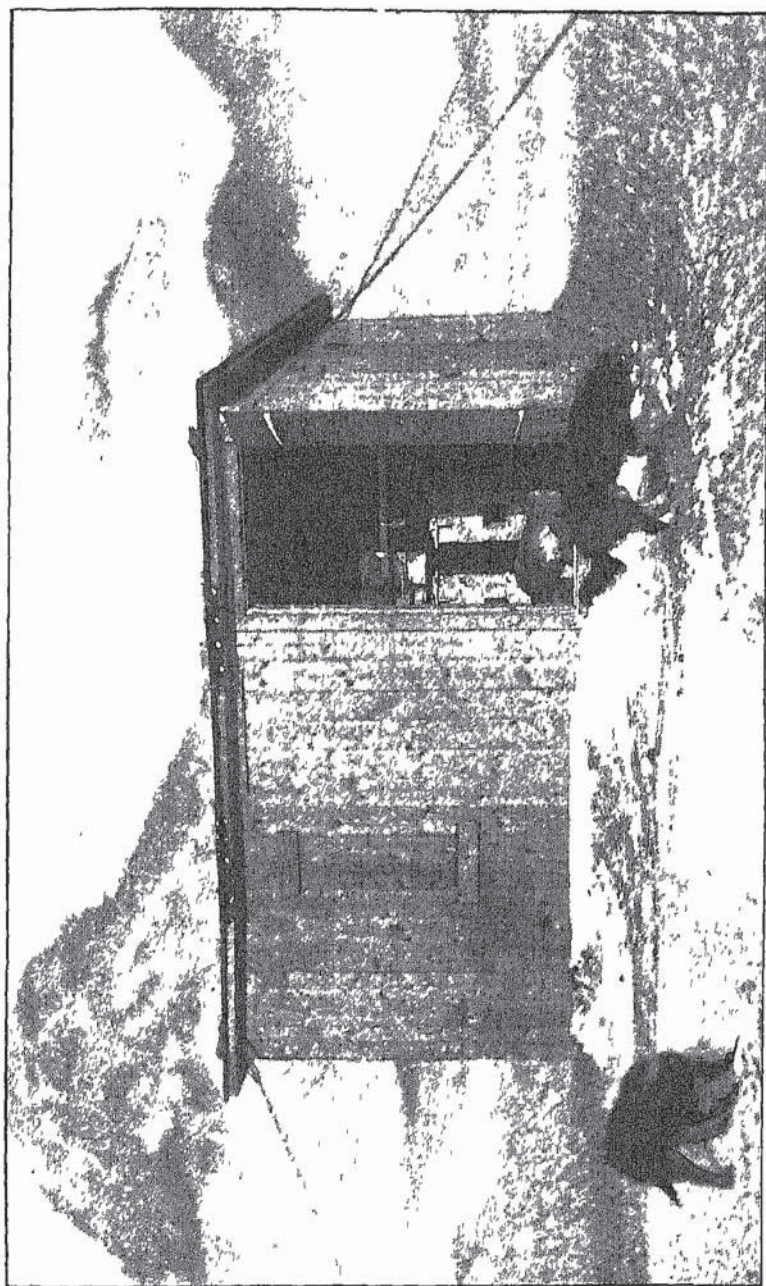


Photo by]

The magnetic observatory.

[G. JODMAN

of self-registering apparatus, by means of which an unbroken sequence of observations could be obtained with a moderate amount of labour. I should gladly have procured similar instruments, but had no opportunity of doing so. But we had, instead, in accordance with arrangements made with the observatory on Staaten Island, determined to extend the scope of our work, so that, in addition to the work entailed by the scheme mentioned above, we were to carry out observations on the Tuesdays and Fridays of every third month, beginning with April. [.]

As a matter of fact, each observation should not have occupied more than two minutes, but as at the beginning we were not quite sure of our Greenwich time, we were obliged to lengthen them to as much as eight minutes.

Just at present, the meteorological observations—in which all the scientists took part—were of much greater general interest. A couple of thermometrical screens were erected on the hill outside the house, in one of which were placed a self-registering thermograph and a hygrometer for the determination of the temperature and humidity of the air, and in the other, thermometers of different kinds. On a shelf in the dining-room stood a self-registering barograph, and a mercurial barometer hung in there as well. A hill 220 feet above the station had been fixed upon as the site of the anemometer,* this instrument registering the velocity of the wind upon a strip of paper by means of an electric wire, the paper going round a wheel set in motion by a clock which hung upon the dining-room wall.

In addition to these we had a self-registering sunshine recorder, and every hour we took observations of the direction of the wind and cloud-formation. In the beginning, when we had so many other things to do, we contented ourselves with making these observations during the daytime only. Bodman and Sobral then took turns, one day at a time, at making four complete observations of all the instruments, viz., at 7 and

* This place afterwards proving unsuitable, the anemometer was removed to a little hill just below our dwelling-house.

8 a.m., and 2 and 9 p.m. But towards the middle of April night observations were also taken, and then each of us had to take it in turns to sit up till two in the morning ; no observa-



Photo by]

[G. BODMAN

The thermometer screen (with thermograph and hygrometer and an evaporation gauge on the roof)

tion was taken at 3 a.m., but a new man took observations at 4 and 6 a.m., after which the day was supposed to begin.

As soon as we had the house in order, Ekelöf set up his bacteriological apparatus and commenced his investigations. These chiefly concerned the bacterial flora of the surface soil,

a domain which no one had ever endeavoured to explore, even in North Polar regions. Interesting results were obtained from the very beginning; results which showed that in these regions the surface soil must almost be considered as the place of origin of bacteria, and results which, pursued during different seasons and with regard to different kinds of earth, have given rise to wholly new ideas concerning the conditions of bacterial life within the Polar regions.

The one who was most hindered in his work was myself, although it is true that I had fossils in great numbers on every side, and that just at this time I made great collections of them. It was, however, my intention to make a careful examination of the tract in connection with an accurate mapping-out of the district, but I had been hoping to have many fine days during the autumn at my disposal, and, perhaps, in these low latitudes, some in the winter too. Our second winter campaign has shown that these hopes were not unreasonable, but such weather as we now had, and which I shall describe more fully in the next chapter, really did not offer many opportunities for carrying out this work. One can grow accustomed to cold, so that measurements can still be taken, but a storm renders this absolutely impossible, and wind of even moderate velocity, together with cold, prevents almost all outdoor work of observation.

The remainder of the month of March presented no remarkable features, if we except the closing days of severe storms and a temperature of -20° C. (-4° F.). We had previously had fine weather, but on Easter-Eve I was awakened by the well-known hollow booming of the hurricane from the south-west. The house shook, the stays and the card-board hammered and banged, and I lay there with the peculiar feeling one has when one knows oneself to be protected against the weather, but still asks with disquiet how long this state of security will last. As a proof of the violence of the storm, it may be mentioned that a large box, quite full of fossils, which stood by the steps, was blown down from the slope and all the specimens strewn around.

Our life indoors was not at all dull. During the day I lay in my berth and read, we lived very harmoniously together,



Photo by]

[B. EKELÖF.

A wall of the dining-room, with some of the bacteriological apparatus.

and conversation could be heard going on in every corner of the house. We kept Easter-Eve* with the usual eating of rice-

* In Sweden such feasts as May-Eve, Easter-Eve, and Midsummer-Eve are kept with a warm fidelity to ancient usages, forgotten, or almost so, in England.—*Trans.*

porridge, in addition to a specially-prepared egg-cake with preserved fruits and fruit-syrup sauce, followed by coffee, with Swedish punch, toddy, mineral water and all manner of sweetmeats. We forgot both storm and snow, while we called up recollections of former Easter-Eves and chatted with free hearts to each other.

As happened very often during the storms about this time, the self-registering anemometer would not act just this evening, and so we determined to keep watch in turns and take observations with the hand-anemometer. Bodman was up till 3 a.m., and I got up at 4, to find that the wind had fallen considerably, and that the moon was shining clearly, in company with some large stars. At daybreak I took a turn down to the shore. The ice had been broken to pieces, but further out it still formed narrow belts and streaks. The waves broke with hurricane-like force amidst the rounded blocks of ice by the shore, and it would not have been advisable for anyone to have approached the glassy masses too nearly as long as the storm lasted. Sea, ice, and the great icebergs out in the sound are faintly discernible; on the farther shore, fell and glacier peep out from under the curtaining mist, to be illumined by the pure, faint violet of the dawn. It is such an Easter morn as one can only think of as breaking amidst Polar regions, amidst the very wildest forces of Nature.

In this way pass the days of our sojourn here, the one after the other. The arrangement of the interior of our house has been completed long ago; all that remains to be done is to make the small improvements which experience now and then suggests to us. We began to make everything around us as cosy as possible. I had brought with me, for myself and the other members of the expedition, a number of trifles such as pictures, small ornaments, mats, embroidered table-cloths and cushions, and we had procured a few simple, red-chequered window-curtains, which we fastened up with gaily-coloured ribbons and gold-cord tassels. Colour is a thing one longs for in this place, where Nature offers so little in that way. But all attempts to remedy this want led to a miserable fiasco, and



Photo by]

Bodman sitting at work at the dining-table

[NORDENSKJÖLD

On the wall can be seen the barograph, evaporimeter, the registering apparatus of the anemometer, the paper for the sunshine recorder, an aneroid, etc

10*

no long time passed ere we completely lost all interest in the matter. There were three enemies which brought about this sorrowful result—the smoke from the kitchen, the damp, and the mildew. Whether we kept up our fire with coal or fat, the result was the same; there perpetually rose sooty, sticky fumes which settled on all our things, and penetrated into the remotest corners. By degrees everything assumed a greyish tinge: walls, ceiling, photographs, and curtains, the books on the shelves and the clothes we wore. But we note it little in the bustle of each day's work, for it does its work gradually, and it is divided so equally that there is nothing in the house which can serve as a means of comparison, for everything is dirty. But stay! There *were* some things we saw a few times—some new packs of cards, taken from their hiding-place in a chest—which brought back the memory of a thing called cleanliness; we sat and enjoyed the sight of the coloured figures as though they were masterpieces by some renowned artist.

Damp and mildew are still more unpleasant. Vapour is condensed on the walls, and on waking in the morning we see these clad in glittering white masses of snow and ice, which radiate from every little nail-head in the card-board. This snow and ice melts during the course of the day, and the water sinks into the card-board, which is transformed by degrees into a sticky mass. The same thing happens to all the things which hang on the wall. The damp soaks into them and whether they be clothes or pictures they are quite wet to the touch. In some rooms my comrades simply tore down the card-board, hoping that then the moisture would not make its presence felt so much. I adopted quite an opposite plan, and tried to cover the card-board with whatever I could come across that was suitable for the purpose. Linoleum was of no use at all, but blankets and carpets I found very serviceable, and they also gave the rooms a warmer and pleasanter appearance. Unfortunately we had not very much material we could use as tapestry

When such was the state of things on the walls it was, of



Photo by]

The rounded blocks of ice on the shore.

[NORDENSEFJELD.

course, many times worse in the corners and along the floor. All the moisture which runs down from the walls gathers there and freezes, not to thaw again for a considerable time. In this way a great cake of ice is formed, which grows larger and larger and in which many objects are engulfed and disappear. When we need them again we are obliged to take a pick and hew them loose. It is worst under the beds and the so-called writing-tables, where at last great hills of ice are formed, and to prevent this state of things from becoming too inconvenient we are now and then obliged to chop the indoor ice to pieces and carry it outside in buckets.

But in spite of all this, the reader must not imagine that it was cold inside the house during the daytime. The kitchen-range burned from early in the morning to late in the evening and was our chief source of warmth. In the dining-room we had a little iron-stove, but we found that it was not very practical; it was difficult to get it to burn, but when once it had begun to do so, it soon became red hot and gave too much warmth. When it went out it grew cold again as speedily, so that when we wished to raise the temperature of the room in the most convenient way we mostly used the "Primus" petroleum stove, which Ekelöf had brought with him for purposes of sterilization. In this way the thermometer inside stood, during the day, at about 14° — 17° C. (57.2 — 62.6° F.),

Still it really mattered very little at what degree the thermometer stood, for down on the floor there was, as I have said, always ice to be found, while at the same time it could be broiling hot near the ceiling; when we stood upright the difference between the temperatures near the head and down at the feet was, in general, 10° — 12° C. (18° — 21.6° F.). Therefore, we had to be most careful to keep the feet warm; a principle, founded on experience, which can never be too well imprinted in the minds of the members of every expedition which has to live under conditions similar to ours. For slippers I used a pair of seal-skin shoes, with the hair still on, and with thick wooden soles. Together with these

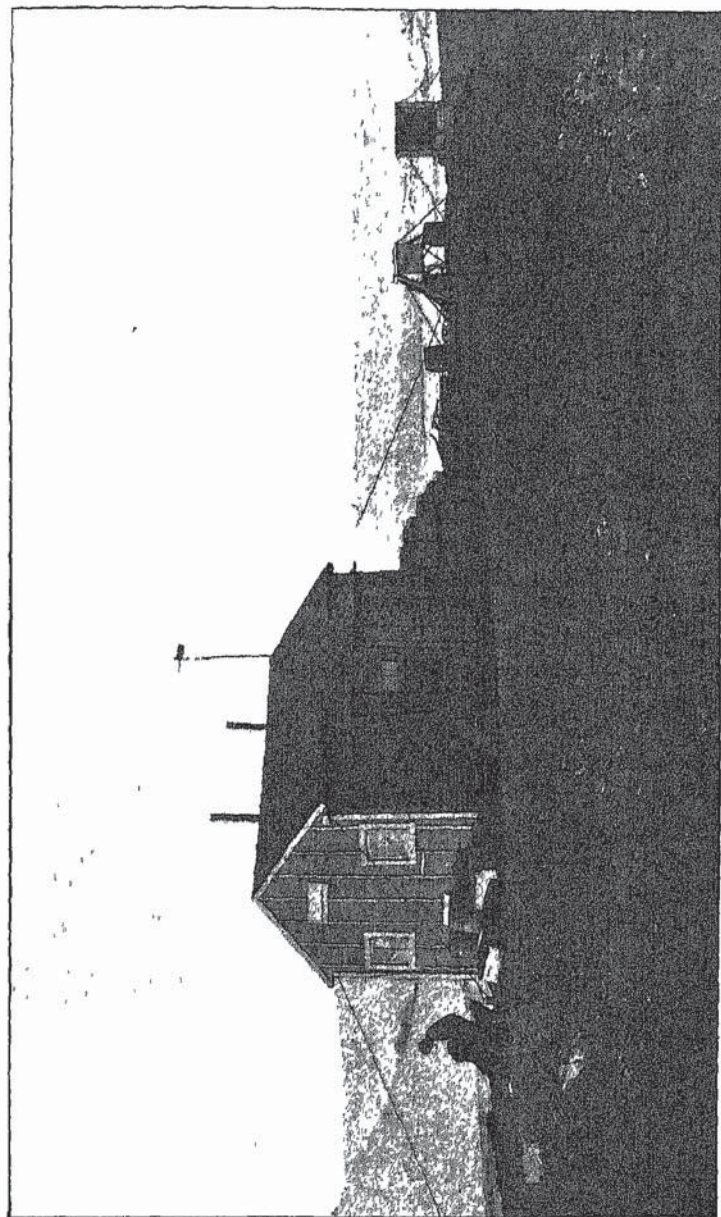


Photo by]

The wintering station, with the thermometer screen and the astronomical observatory.

[G. Bodman.

I wore coarse socks of goat-hair, and I found that this foot-covering answered its purpose admirably.

When we let the fire die out in the evening, the temperature sank very quickly of course; especially when the midwinter storms raged, with the severe cold that always accompanied them, for in the corners of the house and around the windows—not to speak of the walls themselves and the floor of the loft—there were all too many cracks and openings where the warmth could find an exit. Still it was comparatively seldom, even in the mornings, that the thermometer stood below zero, the coldest temperature we had inside, after we had once got everything there in perfect order, was -5° C. (23° F.), observed during the severe June storm. That our rooms kept thus warm during the nights was to the greatest degree a result of our night-watches, which made it necessary to keep up the warmth indoors in some way; this was usually done by keeping the "Primus" stove burning.

It is true that we had many things to keep us busy, but still it may willingly be confessed that during the winter two things seemed to us of especial importance—viz., to sleep and to eat. In consequence of the night-watches our sleeping hours became, of course, very irregular, and, besides, it was not so very easy to sleep in that little house, where every word that was said was heard right across the building; where there was always someone about, every hour of the four-and-twenty, and where the Primus-stove, the alarm-clock, the dogs and the storm strove to out-voice each other. When the days were shortest we lay in our berths as much as possible, but the consequence was that it was not so easy to sleep at night, and it not unfrequently happened that one had not succeeded in doing so when, at four in the morning, there came the necessity of rising in order to begin the first watch.

Our eating regulations form a chapter which is not without its interest. Åkerlund had sole charge of the kitchen, and he had, in truth, not a little to do. According to the original arrangement, we were to take breakfast at 8 a.m., dine at 1 p.m., and take supper at 8 p.m., but in the course of the

winter the hour at which the first two repasts were taken became considerably delayed. The scheme of meals for the first half of the winter was as follows :

SUNDAY.—*Breakfast*, porridge ; *dinner*, tinned meat, potatoes and vegetables, meat-soup, dessert ; *supper*, lobscouse.

MONDAY.—*Breakfast*, herrings and potatoes ; *dinner*, pork and broad beans, gruel or cocoa ; *supper*, small pancakes.

TUESDAY.—*Breakfast*, tinned meat, potatoes ; *dinner*, dried fish, potatoes, tinned soup, dessert ; *supper*, porridge.

WEDNESDAY.—*Breakfast*, herring and potatoes ; *dinner*, tinned meat, vegetables, fruit soup ; *supper*, lobscouse

THURSDAY.—*Breakfast*, porridge ; *dinner*, pease-soup and pork, small pancakes ; *supper*, lobscouse.

FRIDAY.—*Breakfast*, herrings and potatoes ; *dinner*, blood-pudding or sausages, tinned soup ; *supper*, macaroni.

SATURDAY.—*Breakfast*, "palt"-bread ;* *dinner*, salt meat, potatoes, vegetables ; *supper*, fruit-cream.

In addition, coffee was drunk at breakfast and in the afternoon, and tea or cocoa was taken at supper.

Of the preserved (tinned) foods a fixed quantity, generous in amount, was taken to the meals of which they formed part, and of all the other kinds everybody was, as a rule, allowed to eat as much as he liked, for none of us thought that we could be shut in for another winter, and so we imagined that we need not be sparing with our provisions, especially when we found that the climatic conditions were more trying than could have been foreseen. The day came when we repented of this free-handedness, but for the time our table was in every respect excellent. The preserved foods proved to be very good, and I need scarcely say that I never saw anyone really grow tired of them, and this in spite of the fact that we scarcely tasted fresh meat during the whole of that winter.

Spirits, in the form of a glass of hollands, were served at dinner to those who wished to have them, but this only during

* A kind of cake, baked of blood, rye-meal and spices. It can be kept a whole winter, but Englishmen would probably keep it still longer —*Trans.*

the winter-time proper ; in addition to this, claret was served at dinner on Sundays, and on Thursdays we had warm Swedish punch with our pease. As often as any occasion occurred—and occasions are not difficult to find when one desires to do so—we had during this season little festive dinners, or an extra glass of punch or toddy was served out in the evening. Some may, perhaps, think that too much mention is made of punch-drinking, but those who criticise us should first try to really understand what it means to live such a life as we did. The one who stays at home, surrounded by the sometimes all too various diversions of cultured life—newspapers and books, new faces, theatres, travels and a thousand other things which are so common that no attention is paid to them—can hardly imagine how important to us were these small occasions of unconstrained intercourse at the close of a day's work. If at other times one could sit silent by oneself, or be busied with reading or some other occupation, *then* conversation became general ; stories and reminiscences of the outside world were recounted, plans and questions were made respecting our life here and our labours. It is not my meaning when I say this to express the opinion that the use of spirits, and especially of those of the stronger sort, cannot be dispensed with during a Polar expedition. Amongst our party Licut. Sobral was the only one who used no spirits during the expedition, and he got on very well indeed in every respect without them. In any case, it is better to have too small a supply of such goods on board than too large a one ; but then, in my opinion, it is absolutely necessary to be able to offer something else in its place, and it cannot be an advantage to employ any substitute manufactured on the spot of spirit intended for other purposes.

At the end of April, Ekelöf, Jonassen and myself undertook our first sledge-journey. We had now been for a whole month absolutely shut up on our island, and we could not think of making a boat expedition ; but then, again, the ice would not yet bear. Wind and currents caused great leads in our sound even in the middle of the month, but about the 20th

we had a succession of fine calm days with some mist and cold which made the ice fast. I wished to go over to Seymour Island, partly to see if the cairn and the signal-post were in order, but also to look for fossils now that I had become tolerably well acquainted with those of our own island. We were ready to start on the 24th, but luckily did not do so, for one of the usual hurricanes came on and lasted three days without interruption, so that it was not before the 27th that we left.

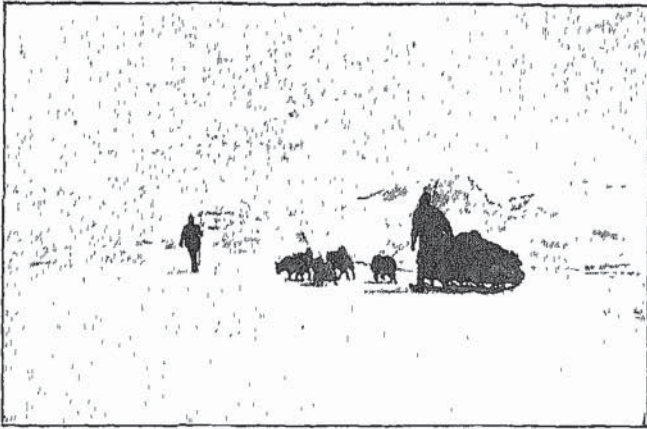


Photo by]

On a sledge-expedition.

[E. EKDLOF.

The ice was, on the whole, smooth and good, but here and there it was covered with pretty much sand, and in other places it was damp with sea-water. In both the sledging was very heavy. Before coming to the northern point of Snow Hill Island we were surrounded by so dense a mist that it became impossible to see our way before us, and by mistake we followed the coast much too far towards the east. When we at length noticed that we had gone astray we were obliged to sit down and wait until the air grew lighter, but fortunately soon caught a glimpse of the land we intended to make, enough to enable us to cross the sound separating the two islands and

to continue our journey. We followed the shore on our arrival, but soon found that both men and dogs were unaccustomed to such toil, and, therefore, on reaching a beautiful valley which seemed to promise easy access to the island, I determined to drive inland and make our camping-place there. Thanks to practice and experience we afterwards learned to consider it a trifle to go three times the distance done this day with heavier loads, but now the last bit of the way between the closely-packed blocks of ice and the pressure-ice seemed very tiring. At last we came to a little terrace at the mouth of the valley, where we pitched our tent.

The days were short, and as, unfortunately, we had forgotten to take any light with us, we made a meal ready as soon as we could and crept into our large sleeping-bag. It was a fine, calm evening, but it felt cold, and, consequently, our slumber left much to be wished for. This expedition and the former one gave me a very poor opinion of the advantages of using a three-man sleeping-bag, and I never tried the experiment again.

The next day I made a little expedition, in order to study the district and to search for fossils. My landing from the *Antarctic* had not been a very profitable one in this respect, but on this occasion I had come to a richer part of the island. I have written in my diary: "Seymour Island is most undoubtedly a wonderful land, and it is decidedly unfortunate that we have not chosen it as the site of our winter-station." The island is lower and much more intersected by valleys than Snow Hill Island, and consists of friable sandstones containing in many places numerous and well-preserved mollusca, ammonites, etc. I was much astonished at the occurrence of the latter, which I imagined were only to be found on Snow Hill, but it became clear that a part, at least, of Seymour Island must also be ascribed to mesozoic formations.

The dogs had hurried back to the camp in advance of us and made their way into the tent, where they devoured our whole supply of butter. At six o'clock we were again obliged to creep into our sleeping-bag.

On the following morning we paid a visit to the cairn and signal-post which we had raised in January, and enclosed a letter giving information of the position of our wintering-station. Everything was as we had left it and had suffered no damage from the storms. All was dead and still around us, and formed a most complete contrast to our last visit, when we were a dozen persons on land and were surrounded by thousands of penguins. The dogs now ferretted out a few dead young birds which they ate, and that was all that was



Ice formations on the shore.

left of mementoes from that time. We returned to the camp, and as I had now attained the chief aim of the expedition, and the weather, in spite of sunshine and the calm, being in any case almost too cold for us to be able to carry out detailed scientific work, I at once gave orders to break up. We carried our things over the pressure-ice close to the land and started off, and after a rapid march were home again at the station by dusk.

We were really very fortunate as regards the weather on this occasion, for one could not have wished for finer days in these tracts during the winter. The sunset on the 27th was gorgeous; not least from its reflection in the east, where the long rows of enormous icebergs, glimmering in the last rays of the sun, resembled white castles in an enchanted city, whilst over them a broad belt of clouds in shifting violets and deep reds overspread the sky like the thick smoke from some gigantic conflagration. When the dark came on and the stars were lit, and a dying streak still lingered in the south-west, and paled from purple to gold and from gold to silver, I went out alone a little way on the ice until the camp became invisible, until nothing met the eye but the dark outline of that precipitous coast, the far-stretching ramparts of snow and the towering blocks of ice. Not a breath of air was in motion, not a sound could be heard; for the distant barking of a dog did not seem to break the stillness when the mind grasped how infinitely small was the rôle played by a chance visit of a few men and their attendants to this desert world of ice. The land lies hidden there, and even the unbroken masses of ice have no appearance of life. But the stillness is not eternal; for soon, and often repeated, a creaking and a booming is heard, and the ice moves beneath the feet. It is the throbbing of the mighty pulse of the ocean which thus makes itself felt; the ocean, which is bound but is not dead, and which often rises and rends its chains to fragments. And we know, we are certain, that in the waters beneath us there is life. Could we but come out to the leads and to the open sea around the icebergs, we should of a surety find more proofs than one of the existence of an animal world, even in these regions.

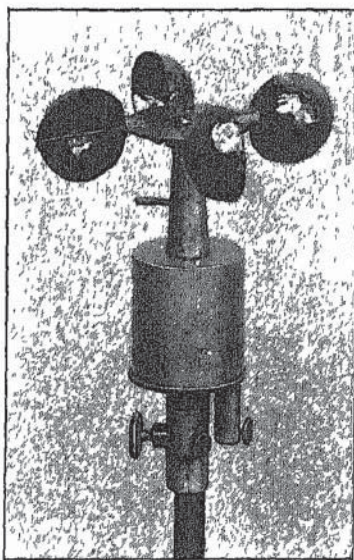
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If one can in any sense speak of an autumn in Antarctic tracts, where it is really winter the whole year round, then we must suppose that for us it came to an end with the expedition just mentioned. Our sledging equipment was put up into the loft once more and the dogs were allowed three whole months of rest ere we again spoke of putting them into harness.

CHAPTER X.

STORMS AND COLD.

May-day—The period of severe storms during May and June—Midwinter—Our tidal observations—A sledge journey during the winter—Our coldest days



Our anemometer.

THE first of May ! How many memories are awakened by this day ? Far away in our home-land on the confines of the Northern Pole, everyone is now in movement to meet the approaching spring. But how different does not everything appear here ! There is not much cause to praise the summer which is enjoyed in these regions, a summer without warmth and without verdure, but the little signs there have been of such a season are now left behind us, and when we look forward, the Polar winter looms there with darkness and cold. But we celebrate the day all the same,

and we have good reason for so doing, for we have been longing for winter ; it is during the winter that we hope to be able to gain all these new experiences for the sake of which we have come hither. The Swedish flag is hoisted

for the first time since we landed; for the first time upon Antarctic soil, and a great banquet is prepared. In this latter respect at least we could not have been better off had we been at home, and a pleasant and cosy party we made of it, too.

We had already had in the forenoon that remarkable, warm weather—bringing the thermometer up to $+5^{\circ}$ C ($+41^{\circ}$ F.), which we had already learned to recognize as a bad omen. While we were dining there came a few strong blasts of wind, but it was not before the evening that the storm broke loose, while the thermometer sank to -19° C (-2.2° F.), and then there came a hurricane, the like of which we had not before experienced. On the morning of the 31d, the velocity of the wind rose to 30 metres per second (67 miles per hour) and occasionally to much more. The hatch of the thermometer-screen was blown to pieces, and the flag-staff on the roof was broken off. The wind subsided gradually the next day, so that by the evening it was quite calm again, but the thermometer still showed 30° C. cold (-22° F.).

The view seawards that day was most magnificent; the ice had been broken up and partly dispersed by the storm, and above all these newly-formed openings and leads rose the finest "sea-smoke" imaginable. The water was so much warmer than the air that the rising vapour became at once condensed by the terrible cold, and the whole sea appeared to boil and steam like an open kettle; it need scarcely be said that the phenomenon appeared specially beautiful in the clear sunlight.

It would become too monotonous should I here give a detailed description in chronological order of our winter campaign, with all the storms we experienced during the time. I shall instead endeavour to give a general view of the experience gained in this respect during these months. The storm which began on May 1st was the introduction to a period which can scarcely have had its equal in any place where man has lived. At first, however, we had several days when we could work out-doors and continue our preparations for

the winter. I had spoken with Bodman of the desirability of arranging a few extra observation-days in May and June, and after he had accepted my offer of assistance on these occasions, we agreed to let the 8th May be the first of these "voluntary" days. The weather in the forenoon was calm



Photo 7]

[E. EKELOF.

"Niggei," one of our Falkland dogs.

and fine, and I went out for a moment up on to the glacier. There I had raised a row of bamboo-rods which had to be measured and attended to as often as possible, and in a wooden box buried in the ice I had sunk a couple of thermometers in order to take the temperature there at different depths. In fine weather, such walks were amongst the pleasantest changes in our monotonous existence. Even when every-

thing goes well, it can sometimes be pleasant to go out for a while alone, or accompanied only by the faithful dogs, and fancy oneself back again over the seas, or to dream ambitious plans of future exploring expeditions.

But to-day it seemed as though the dogs felt that bad weather was coming on, and when I returned to the station about 3 p.m. the storm began, and in a trice we were surrounded by whirling snow-dust which shut out every view. In the evening we observed for the first time a most peculiar phenomenon which was afterwards repeated on the occasions of the greatest storms; the air was, as it were, saturated with electricity; when outside, one could see in the dark a luminous appearance around the finger-tips or the hat-band, and in the dining-room the registering apparatus of the anemometer gave such violent shocks that one most unwillingly touched the metallic parts. It is not easy to find the cause of this phenomenon, but I have heard somewhere that in simoons in the desert, the sand-filled atmosphere becomes charged with electricity to the same degree as was now the case, so that one can perhaps find an explanation of the fact in supposing that it is brought about by the friction caused amongst the dry grains of snow when they are driven onwards by the hurricane.

By ten o'clock the storm was so violent that it was with difficulty I could scramble down to the observatory where I was to take the next observation at eleven. In order to get round the corner of the dwelling-house I was obliged to lie down and creep on my hands and knees, after which I had to seize an opportunity of resting for a moment against the wall. Then I made up my mind to go on, but instead of going directly against the wind, which quite took away the breath, I went a very little to one side, and was immediately seized by the hurricane and driven away in a half-circle a long way off to leeward. I tried again to beat up against the wind and actually succeeded in getting down into the valley, where I searched for the faint remains of what had once been a footpath through the snow. Of this path

there now remained only the trampled foot-prints in relief; the snow once around them having blown away. But it was impossible for me to persevere in the combat with darkness and storm. The hour when the observation should have been taken was already past, and consequently I had no other choice but to return to the house with my errand undone. At midnight I made another attempt, and although the weather was unchanged—the average velocity of the wind during the hour having been about 30 metres per second—and although I was blown off my feet several times on the way, I succeeded, more by chance I expect, in reaching the observatory. I found it impractical, however, to continue under such circumstances, not only on account of the unpleasantness and the danger, but also, and chiefly, because the observations made became uncertain, and we ran the danger of disturbing the instruments, a thing which had most of all to be avoided. It was not until the morning that the storm subsided.

The two following weeks were cold and wretched and accompanied by numerous storms, though we had several fine days which gave us the opportunity of finishing some work which had been hanging over us, and it was not until the latter part of the month that the weather grew absolutely bad. In this connection I give some extracts from my diary for that period :

May 22nd. "The weather was not altogether impossible, but cold and sunless. We had a strong breeze in the morning which freshened still more, so that there could be no thought of doing anything of use out on the fell. Bodman, however, began to work at a snow-house for the absolute magnetic determinations, and Jonassen too did a little work out-doors."

Sunday, May 25th. "To-day was the national fête-day of the Argentine Republic, and we kept it with a special banquet. The wind, whose velocity in the forenoon had been about 10 metres per second (22 miles per hour) had freshened towards the afternoon, and just at present we have a violent

snow-storm, the moon peeps out now and then, so that it is fairly light outside. We are having very nasty weather; we have not seen the sun for several weeks and, with the exception of a couple of hours yesterday, we have not had one moment's calm during that time, so it must be confessed that this is a bad climate."

May 28th. "We began to think that now we had had quite enough of snow-storms, and I almost expected that there would have come an interval of those extremely fine days we have had before, but the wind to-night has freshened still more. I ought to have begun my watch at four o'clock but was awakened at three by the howling of the storm around the corners of the house. During the day-time one has no feeling that it is terrifying or dangerous, but at night, when everything else is silent and one lies alone in one's berth, or sits up watching, the continual din grows almost unendurable. The cardboard and the ropes strike against the walls, and the whole house shakes; it becomes no better when one goes out into the open air. Only one sound can be heard there—the howling of the storm as it thrashes against ground and walls, clothes and face. All is dark round about, one cannot distinguish objects scarcely 20 yards away. And where does it really come from, this fine snow which sweeps along the ground in one incessant tide? It is apparently one of the most important factors in the economy of nature here, but nothing is known of it. To-day, the registering apparatus of the anemometer has given off sparks again, and the very paper which the needle pricks was so electrified, that it was attracted by metal objects which were brought near to it.

"Someone of us has compared our house in this storm to a railway-train, and the comparison is not at all bad. The shaking, which is so severe that the water in a basin on the table trembles as if there were an earthquake; the rattling in the kitchen-range damper; the howling and booming in all keys; the door which is opened and slammed-to again, letting in each time the winter-cold and a thick cloud of

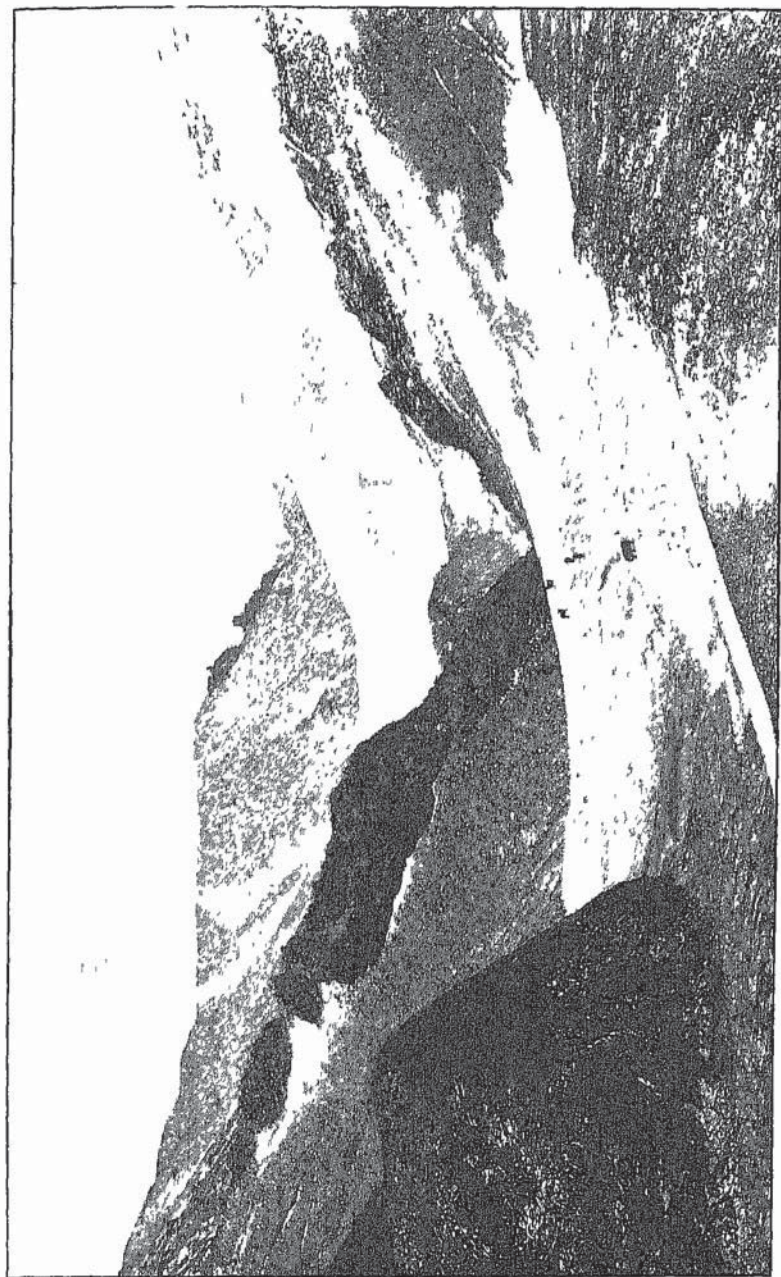


Photo by]

Ravine valley near the dwelling house at the station

[G. FODMAN.

condensed vapour—everything reminds one vividly of the sleeping-car of an express-train rushing along a line which is not too solidly constructed."

May 30th. "The storm has continued with undiminished strength, and early this morning it was -4°C (24.8°F.) in the dining-room, but it grew a little better towards the forenoon. There is an immense difference between wind-velocities of 28 metres and 20 metres per second (62 and 44.7 miles per hour), in the first case, one cannot stand erect; the second velocity is unpleasant, but not so very bad. At 3 p.m. we still had 16 metres per second (35.8 miles per hour), but at eight in the evening Åkerlund came and complained of the kitchen-range, which would not burn because there was no draught. I thought that he could very well be content with what wind we had, but then looked at the anemometer paper and was quite surprised to find that there was now not a single prick on it. I at once thought that something must be out of order and went out to attend to it, when I marked to my intense astonishment that there was a dead calm, and that we had the finest, star-light night one could wish for."

May 31st. "The first sun-rise we have seen for a long time; gorgeous and beautiful. The morning was so clear and bright that I absolutely do not know with what to compare it. A faint violet light lay along the horizon and over Cockburn Island, which forms the central point of the view from the station. The sky gleams with a darker blue, and across it float long streamers of ribbon-like clouds which shine and flame in red. But even in the colour there is something pale, a paleness which predominates with indescribable delicateness of tone in the tints of the horizon, and in the blue and white shades of the stretches of land which contrast so strongly with the dull brown of our immediate neighbourhood and even with the sharply defined ice-wall of Snow Hill. At about ten o'clock a glowing spot begins to be visible on the horizon and, presaged by a perpendicular pillar of fire, there rises what should be the orb of the sun, but which, in consequence of refraction,

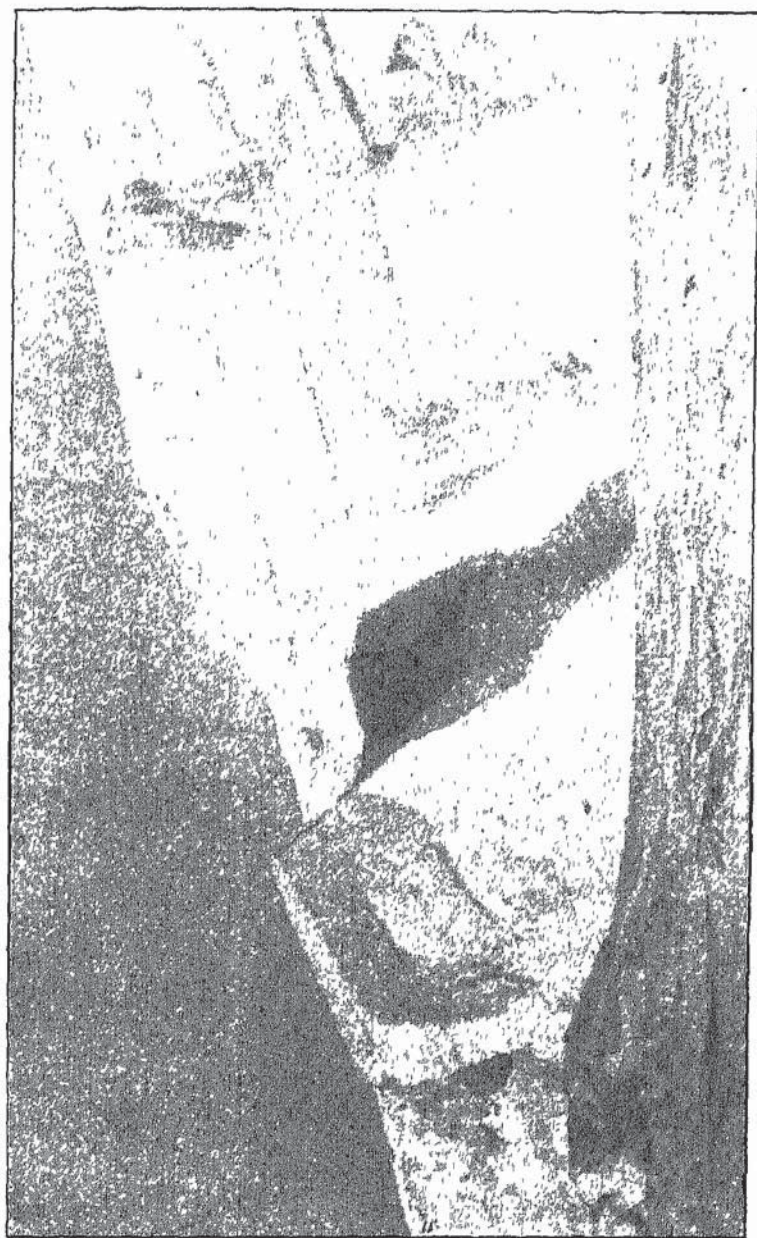


Photo by]

The perpendicular termination (Chinese wall) of Snow Hill glacier, projecting into the sea

(Shows the regular new stratification.)

[G. BODIN]

appears to us to be a broad, flaming, moving belt of fire. On each side of the sun there are two shining, intensely rainbow-coloured belts, forming parts of a ring which, however, can be seen but imperfectly. The sun rises higher in the heavens and assumes, by degrees, his ordinary appearance, whereupon these accessory phenomena disappear, together with the moon, whose crescent has been visible in the sky until the last possible moment."

June 1st. "Before midnight the night was as still as the day, not a breath of wind being in motion, but it seems that about 1 a.m. a kind of veil had spread over the sky and a moment later the storm broke out without any further warning. It was well that the change in the weather did not take place when any of us were far away, for it would not have been at all an easy thing to weather the storm. I woke at once when the wind began to blow in the house-stays, and had not fallen to sleep again when the alarm clock called me on duty at four o'clock. It was a wild scene outside. The velocity of the wind was about 20 metres per second and the snow had not yet had time to get properly into movement, so that the moon and a little bit of the starlit sky peeped through the whirling snow-masses, while the outlines of the nearest hills showed ghostly-grey in the night."

June 5th. "Since the beginning of the month we have now had incessantly a wind-velocity of over 20 metres per second, and the temperature has varied between -25° and -30° C. (-13° and -22° F.) but to-day it is 'fine weather,' the figures being respectively merely 16 metres and -25° C. —a mere nothing! I wonder how many at home have ever experienced the like. It was my intention, however, to make use of the opportunity and determined to go up on to the glacier, dressed in the full 'wind' dress, of the kind* which we used in such weather as this, and provided

* This dress, which is made of thin, wind-proof canvas, consists of trousers and a jacket with a hood (biggon) intended to be drawn over the head, and therefore made in one piece, without any opening which needs to be buttoned.



Photo by]

I dressed myself in full wind-dress

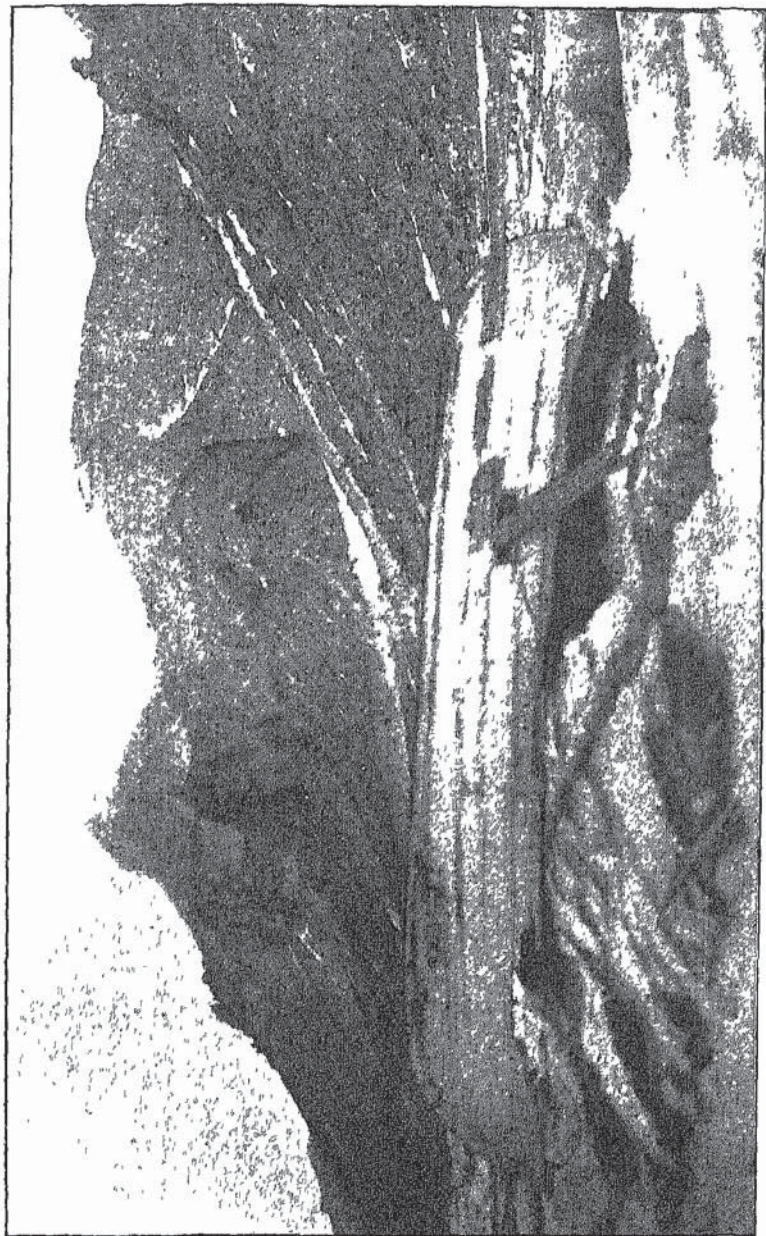
[G. BODMAN.

in addition with hood, mittens and 'storm-spectacles.' The heavy clothes, the heavy going, the storm, and the covering over the nose, made it almost impossible to breathe, and the whole day I have had an unpleasant feeling of over-exertion."

June 7th. "In a way, one can grow accustomed to anything, but this weather promises to become tiring in the length. One consolation, although a poor one, is, that it can be considered as a 'record' storm. Jonassen's: 'I think the wind's falling' does nothing now but awaken general merriment, and the 'express-tram rushes on at a dizzy speed.' The mean velocity of the wind for the last four-and-twenty hours has been greater than for any other similar period during the whole month."

June 8th. "At last we have a short respite, and it is long enough to allow us to go out and view the ravages of the storm, which have been bad enough. A barrel of bread had blown away, but was afterwards found stuck fast between some ice-blocks on the shore. One great loss has been suffered, for we see that our large boat has been blown to a distance of some 21 yards along the shore and over the other boat, being then stopped by some ice-rocks against which it still lay, keel in the air, and with the greater part of one side smashed in; the oars, thwarts and loose, inside planks scattered about and broken; even the zinc-plate sheeting has been wrenched off and scattered about. Remarkably enough, it still lay with its length at right angles to the direction of the wind, a thing which one would have thought to be quite impossible.

"I afterwards went up on to the glacier and had a view of a sunset which formed a magnificent picture. To the south lay a faint, rose-red streak; to the east over Snow Hill hung a dark violet-blue cloud which looked very like a watery sky, while to the north the heavens were grey, with a low-lying belt of faint yellow and red violet tones. Right across the bay stretched a light ribbon of mist, resembling a fairy veil, the streaming ends of which fluttered into the valleys of our island. There came a few puffs of wind, and simul-



[Photo by]

Our big boat had blown away along the shore and lay smashed against the ice

[G. BODMAN]

taneously one could see how the mists rose in the north-east and darkened into mingled violet and carmine, like the smoke from a great fire. On the opposite shore, Mount Haddington began to be surrounded by whirling snow-dust and assumed a gloomy, threatening appearance; ten minutes later I was myself enshrouded in the snow-mist and an hour afterwards the velocity of the wind was 27 metres per second ($60\frac{1}{2}$ miles per hour), and the thermometer had fallen to 32° C. ($-25\ 6^{\circ}$ F.).”

June 9th. “To-day I have had more reasons than one for thinking about Sweden, but under such conditions as our own it is no easy task to lead our thoughts to the paths we wish, and to call up remembrances of happy people and flowers and sunshine. Naturally, the explorer of Polar regions is not supposed to enjoy fine weather every day, but this is really about the worst day we have had. It is not, of course, the details themselves of the storm which are so remarkable, it is the conjuncture of all these adverse circumstances which seem to wish to make it impossible for us to show that we really desired to do our best to perform something here. It had been our intention to have to-day one of these voluntary ‘magnet-days,’ and I had promised to take the watch until four the next morning. In the forenoon this occasioned no difficulty, but then Jonassen came dragging in Castor in a dying condition. He had been fighting with the other dogs and had no visible wound, but looked very bad. The doctor said that the lung was injured and attempted an operation in order to sew up the wound, but it was evident that, in any case, the dog could not be saved. The storm began to howl more and more, and it grew dark outside; it was difficult to lie there and hear the poor animal, the best-tempered of them all, fighting for breath whilst his lungs filled with blood. The only consolation was the knowledge that it was none of my human companions who had met with an accident—I do not know how it would be possible to support such a misfortune. The dog died about five o’clock and was opened by the doctor. It is extremely

strange how he could have received such injuries as these from the other dogs. Here, as in the case of the boat, one could almost be brought to believe in the existence of some evil wizards who wander about, when none see them, for the purpose of doing us harm.

"The storm increased to a violence whose like we had never before witnessed. This time I made up my mind not to put off our observations, but of course it was madness in this weather to go out every hour, and so I confined myself to taking observations at 10 p.m., at midnight and at 2 a.m., whilst Bodman was to begin at 4. By 10 p.m. it was already blowing a hurricane, the mean velocity of the wind, according to the anemometer, being $31\frac{1}{2}$ metres per second ($70\frac{1}{2}$ miles per hour). I managed to get to the observatory, however, by creeping on my hands and knees, but it would have been impossible to do so had I not known every snow-mark on the way by heart. At midnight the anemometer indicated a somewhat lesser velocity, and I began to expect a change for the better—but found that it grew worse instead. The whole observatory shook, and inside it was almost terrifying to hear the roof rattle, and the stays and cardboard banging against the walls. One of the lamps had fallen from its stand; I put it back into its place and relit it, and it fell again. The temperature inside was -25° C. (-13° F.), which was not at all agreeable when, after having exerted oneself to the utmost to come to the place, one had to sit and take uninterrupted observations. On the way home, creeping on all fours, and having to turn the corner, there came a gust of wind which caught me, and threw me out towards the steep of the hill, in spite of my lying at full length and holding on with both hands and feet. It was only at the very last minute I could save myself from being blown down the slope.

"Directly after 1 a.m. the anemometer suddenly ceased to register; as we discovered afterwards, it had been broken by the storm, the cross-piece with the cups having been blown away, and this put an end to our observations of wind-

velocities. It seemed, however, as if the weather improved somewhat in the morning."

June 10th. "Storm! Storm! Storm! But the wind has certainly decreased in strength during the course of the day."

June 12th. "It is cold outside, but the wind has almost ceased. In the morning I took a trip out on the ice to look for a bread-barrel which had blown away, and which Jonassen had not succeeded in finding. It seemed almost like witchcraft, but I found it at last on the shore near the boats. An immense snow-drift, many metres high, has been formed as a kind of prolongation of Snow Hill glacier. A number of small stones have been blown out on to the ice; Bodman weighed one of the largest and found its weight to be about 36 grammes (1.27 ozs.). Thus ended this storm-period, which I imagine was almost singular of its kind. The mean velocity of the wind from May 27th to June 10th was, the hours of calm included, 18.6 metres per second ($41\frac{1}{2}$ miles per hour), whilst the average temperature for the same time was about -25° C. (-13° F.). If we continue our former similitude of comparing our house to an express train—which may be considered a very striking one, the only difference being that it is the air which roars past us, and not we who move—we shall find that had we journeyed at the average speed of the storm we should, during the half month, have traversed a distance of 24,000 kilometres (14,900 miles), that is to say, we could have paid a visit to Sweden and have come halfway back again."

* * * * *

Now came a period of comparatively fine weather, sometimes quite warm, so that we sat at the open door and fancied that it could just as well be midsummer as winter. We had now arrived at the noteworthy day when the sun was to turn in its course and the days grow longer and longer, and if any persons ever felt themselves called upon to celebrate the day it was surely we. We began on the evening of the 23rd by a little feast, which was kept almost as Christmas-Eve had

been, with stock-fish, rice-porridge, and a Yule-candle burning before each plate. But the chiel festival was to be celebrated on the following day. Then we were regaled with what was probably the stateliest banquet of the whole of our Antarctic sojourn, and I cannot help publishing the menu: "Cold and warm snacks* (extra good), with two kinds of hollands; nettle-porridge; turtle soup; beef, potatoes and vegetables (English army rations); stewed corn-cobs; cold bird in jelly, with rice; beet and stewed cauliflower; fruit pudding, sweet-meats, cheese and cakes."

At the beginning of this period, too, we put our tide-measurer in order. These observations, which were to be taken each hour for a whole month, and were made at a distance of about 320 yards from the house, demanded a new division of the watches. Bodman and Sobral continued to take the whole of the forenoon, and Åkerlund took one hour in the morning, but the rest of the twenty-four hours was equally divided between the four scientists and Jonassen, in such a way that we each had watch every fifth night only, but then it lasted till 5 a.m. When the weather was fine, this affair caused but little trouble, but when a storm raged we had a hard time of it. I shall let the diary speak again:

July 3rd. "Dressed in wind-clothes with hood (biggon) and cap, and a stocking to protect the nose with, one can manage pretty well, even in this weather. But still the wind penetrates the clothes a little, and what with a number of small defects in the dress, bad protection for the face, short mittens, etc., such a night does not pass without leaving a few mementoes in the form of frost-bites. It takes a quarter of an hour to make the observations, especially when, on coming down to the ice, one has to take away the snow which has gathered in the hole. First comes the difficulty of finding a way in the dark down the slope of the hill; then there is the long way down to the shore, with the storm howling at one's back and the air so thick with drifting snow that everything

* In Swedish, "smorgåsbord," which means *something* like "sandwich-table"—*Trans.*

has become invisible. Having found the boat, half buried in ice, which forms our landmark, one has afterwards to creep along between the projecting, rounded masses of ice, a great part of the road being covered with perfectly smooth ice, where it is impossible to stand in the prevailing winds. And should the lantern go out just at the minute one has reached the spot, one must go back and begin all over again. It is difficult enough to find the instrument, but to read the record is worse. But if the figures have been read off, then comes the worst of all—the getting home in the teeth of the wind. Fingers and face ache with the cold, but the most unpleasant part of the business is that the eyes are injured by the cold and the sharp particles of snow.”

On the 14th July we finished these tide-observations, which had then been carried on for the space of four weeks. In their stead I wished to undertake a short sledge-journey as soon as possible, in order to begin the work I intended to carry out in the surrounding country, and I hoped that, after the storms which had so plagued us without intermission, we should now be able to count on fine weather. But, instead, there commenced a month which was quite as unpleasant as the foregoing period; not, indeed, on account of its storms, but in consequence of the severe cold in conjunction with the high winds. From the 15th to the 24th of July there blew one continual storm, the temperature being about -30° C. During this time I made everything ready for the journey, and now that calm weather ensued I determined on starting the following day, Åkerlund having been chosen to accompany me this time, together with Sobral and Jonassen.

Our way lay over Admiralty Sound to the opposite shore, where the land, from all that I had already seen of it, promised to be of great geological interest, and where I also intended to carry out a little cartographical work, study the glaciers, and take a number of photographs. But the chief object of the journey was to prove the suitability of our equipment for a winter expedition, and to gain experience in every respect. I had, therefore, made careful preparations for the journey,

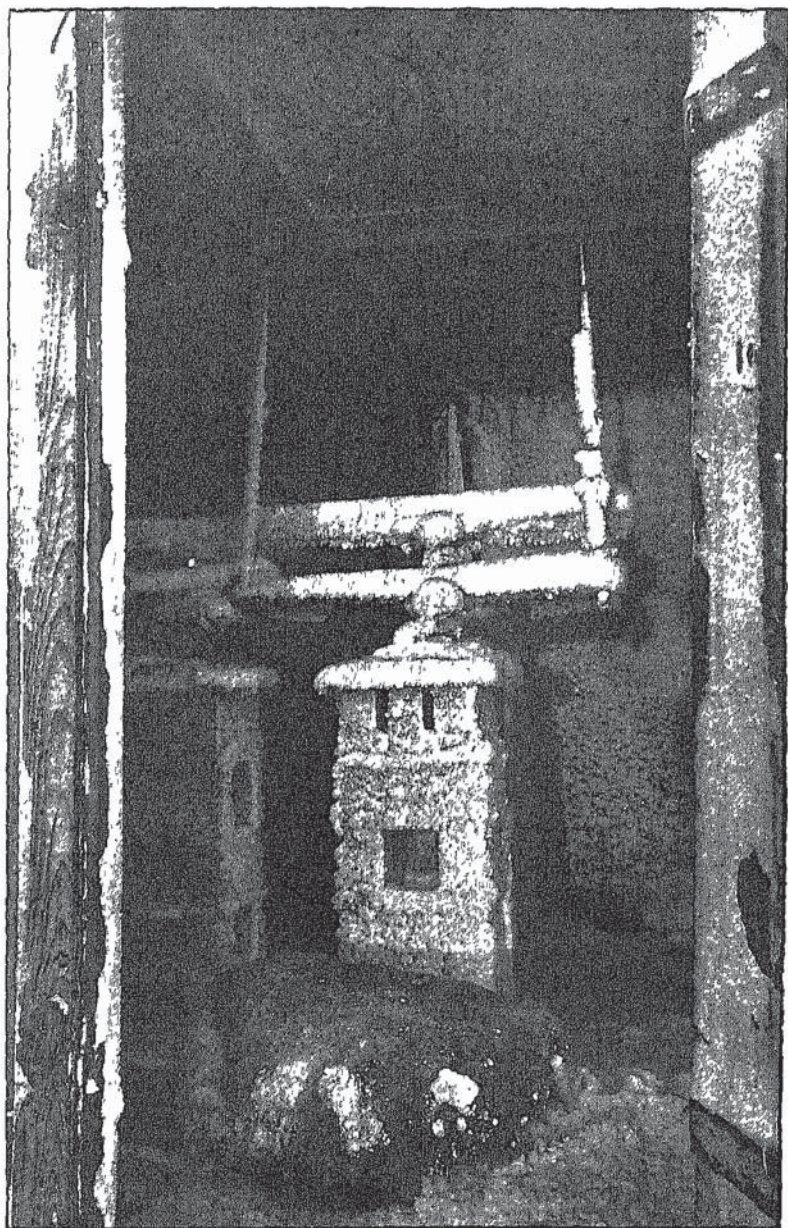


Photo by]

Covering of snow on the instruments after a severe storm.

[G. HOLMAN,

and we took with us a supply of provisions, the amount of which was carefully calculated in accordance with the plan I had made for our future more extended expedition.

When I awoke in the morning, the weather was almost quite calm, and the thermometer showed -31°C. (-23.8°F.). There was a great deal to get in order and we did not start much before midday. My dress consisted of double woollen under-clothing, wash-leather trousers, socks, shoes of reindeer-skin, and my ordinary clothes of home-spun, and, as the weather then was, this was more than sufficient. Our equipment, which was not so very heavy, had been placed on a sledge drawn by the four Greenland dogs, and by Kurre, the yellow Falklander. This last-named animal had never had my confidence, but, strangely enough, our trial-journeys showed him to be the most docile of all we now had left. Although we went at a good speed, it was not till long after sunset that we reached our destined camping-place in the bay inside Cape Hamilton. One of the unpleasantest moments of the day is when one, in such weather and warm and perspiring after the march, has to sit down and make all the arrangements for the camp. Even to light the Primus petroleum stove is no easy task, when all the metallic parts burn as if they were glowing hot instead of being cold.

The three-man sleeping-bag, already tried, had been brought for my three companions, for my own part, I intended to try a new plan, viz., to be in clothes of reindeer-skin, without any sleeping-bag. I pulled a pair of sheep-skin socks over my feet, and I should have had closed mittens for my hands, but had laid them aside in the course of the evening and could not find them now in the darkness. I passed an uneasy night, it is true, but the plan proved feasible, and would have succeeded better had I arranged things a little more practically than I had now done. I woke early, and, as none of the others made any signs of stirring, I rose and began to get the breakfast ready, which was no very agreeable occupation with the temperature, as now, at about -35°C. (-31°F.).

During the day I undertook a long trip up the bay, where

I visited the great glacier, which was interesting from the structure of the ice here differing so essentially from that which is seen in the calotte-glaciers of the Snow Hill type, the ice in the former case resembling that of ordinary glaciers in mountain districts, being intersected with upright layers of a blue ice-mass, whilst in the latter type one finds regular horizontal stratification.

I returned to the camp about four o'clock, and after we had eaten supper it did not take long for us to creep into our sleeping-clothes again. Everything around us was so still that I hoped for a favourable morning; nothing broke the silence but the creaking of the ice at the change of tide. But still it was not silent inside the tent; no one could sleep comfortably, and least of all the three who shared the sleeping-bag. Suddenly I heard a long-drawn, distant booming, and my thoughts at once flew to the south-west storms, although I hoped to the last minute that it was but the sound of some movement of the ice-masses inland. All at once, however, the dogs came huddling close against the tent; Jonassen shouted to them, but broke off with the words: "Here she is!" And sure enough, it was the storm which began to howl and to shake our tent, which had not been so very carefully erected, and suddenly the one tent-pole after the other gave way before the united assaults of snow, wind and dogs. We tried for a time to lie still; a mass which each moment grew heavier and heavier occupying the space between me and the sleeping-bag. I was now, comparatively, the one best off, for the others were in danger of being suffocated, and at last Jonassen was obliged to creep out and make the tent clear.

Fortunately the storm was not of long duration, for towards morning the weather began to be fine again. I thought, however, that we had gained experience enough, and after placing a supply of suitable provisions in a *dépôt* for the event of our needing another point of support on that coast, we started for home, which we reached before dusk.

Now followed a period of comparatively less wind, but of continual cold. August 6th was our coldest day. In the

forenoon we had for a while a wind velocity of 20 metres per second and a temperature of -35° C (-32° F.) During the course of the afternoon the temperature sunk still lower, and in the evening Bodman came in with quicksilver which had been allowed to freeze in a glass-beaker to one coherent crystal mass. The cold had now reached its maximum with -41.3° C. (-42.3° F.), while a storm blew of somewhat lesser force than in the morning, viz., about 14 metres per second ($31\frac{1}{2}$ miles per hour). I went for a long time up and down the open place before our house, in order to try the effect of the weather when I had on my wind-dress and when I was without it, and I have never so plainly experienced what an excellent article of attire the costume is. No cold penetrated it, but without it one grew cold to the very marrow of the bones. It was almost unendurable to go out with uncovered hands; neither could one do without some protection for the face when moving against the wind, as then the eyes were very soon attacked.

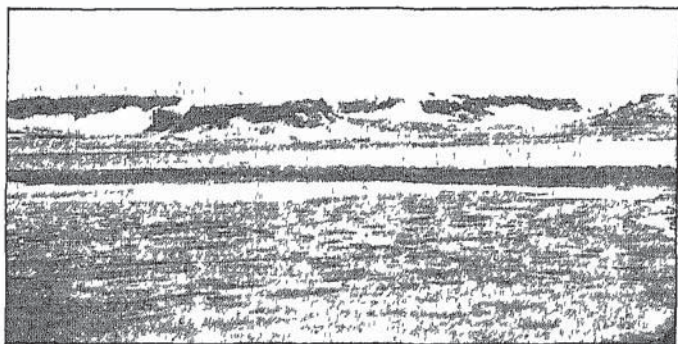
The wind soon fell, but the cold continued throughout the next day. On the 8th, however, the temperature rose suddenly to -11° C. (12.2° F.), and it seemed as though it had suddenly become summer; I scarcely felt any difference when I came with unbuttoned coat from the room where we had $+20^{\circ}$ C (68° F.), into the open air. Of the following day I wrote in my diary as follows:

August 9th. "The thermometer did not stop at -11° C., and my prophecy that there would soon be a storm was quickly fulfilled. This morning we had a dense fog, and the thermometer had been up to -4° C. (24.8° F.), a difference of 37° C (66.6° F) within forty-eight hours. Then it grew colder again, and at about midday the south-wester came suddenly, and without the slightest warning, in the form of a violent hurricane with severe cold. This evening we have -30° C. again."

The following day was, as far as regards the weather, about the most unpleasant we spent during the whole of our Antarctic campaign, the mean velocity of the wind going up to about

27½ metres per second (61½ miles per hour), and the average temperature being -31.1°C. (-24°F.). Luckily the tempest did not last long, and the next morning we were able to go out again and look for the things which had blown away, first amongst them being the roof of the astronomical observatory, the fragments of which were found a long way past the boats. It must have been carried there entire and then smashed against the rocks.

It seemed as if the full power of winter had been broken with this last violent exhibition of strength, and although the reader will see later on that we still had to endure many and severe storms ere spring-time came, yet we never again experienced that combination of storm and cold which had hitherto prevailed.



Ross Island and Mount Haddington.

CHAPTER XI.

THE DAYS BEGIN TO GROW LONGER.

Sealing; animal life during the winter—Life indoors—A sledge-journey under difficulties—Summer weather in the middle of winter—Preparations for the great sledge-expedition southwards.

It ought not to appear at all surprising that in winter-time the animal-world withdraws from a land where the climate is so uninviting as that we had experienced. Nature lies around us silent and deserted, and it would be difficult to experience feelings more depressing than those called up by these variations of unendurable storms and perfectly still, sunshiny days—days, however, which are not able to develop any life in our surroundings.

It was, therefore, quite a day of rejoicing when, on the 4th July, on making a little trip with the sledge for the purpose of taking a sounding out in the channel, I found behind an iceberg one of these little holes in the ice, which seals keep open in order to be able to come to the surface and breathe, and also saw beside it unmistakable traces of a seal, and of one, too, which had lately been up on the ice. "Now we shall soon have fresh meat, and maybe there is fish here besides," I at once wrote in my diary, and hurried to relate my discovery to those at home.

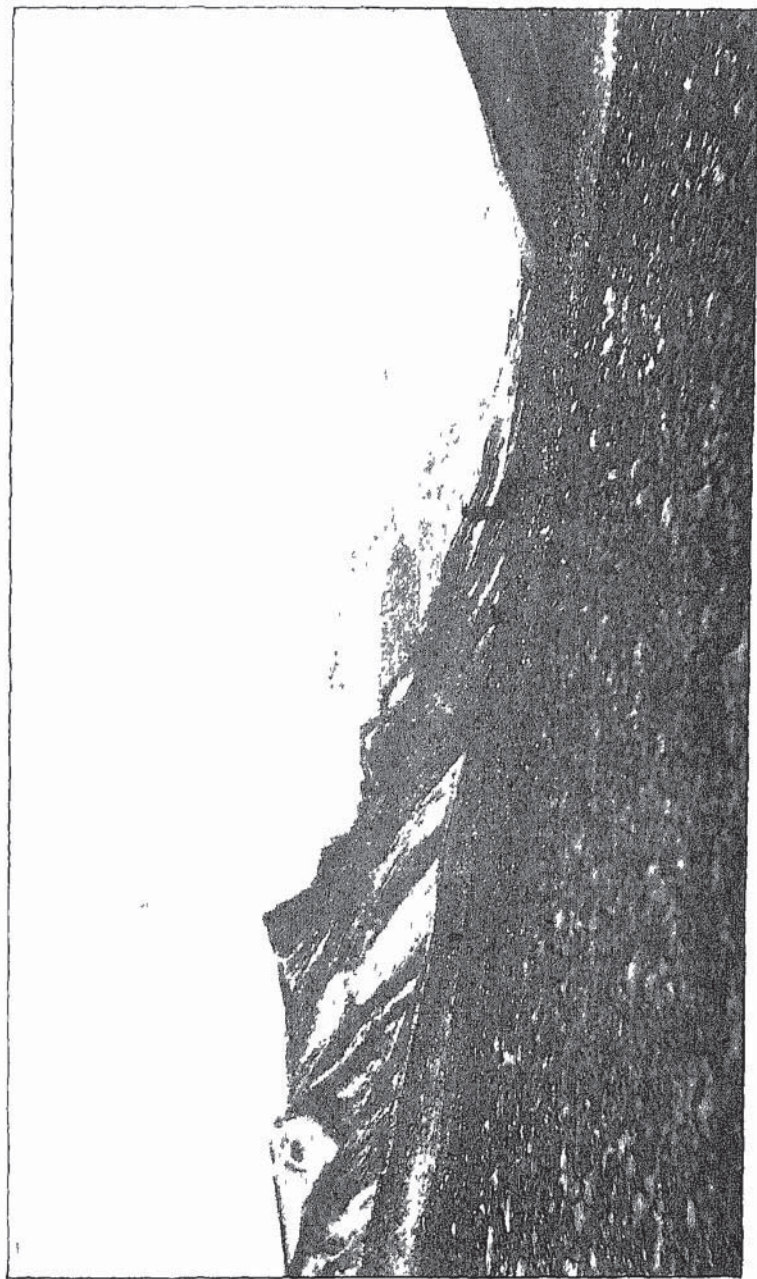


Photo 57]

View from the heights north of the station (To the left is seen the basalt peak, in the middle the nunatak and the ravine where the station was situated; to the right is caught a glimpse of Lockyer Island)

[G. BODMAN,

Our later experience showed that one cannot count upon finding seals during the darkest months of the year, even though the winter be mild. But, on the 18th August, we had a remarkably fine, warm day after the lengthy period of cold already described. I was at home at the station busied with the first preparations for the coming sledge-expedition, when Bodman came running in from the ice with the news that a seal lay out there. In the middle of the sound, about three miles from the station, there was a huge iceberg aground, in shape resembling a church with a high square tower, and forming together with Cockburn Island the central point of our daily view, and it was here that Bodman had seen the animal in question. Ekclöf at once ran in for a gun; I took the Mauser pistol and we both hurried off. Even at a distance we could perceive two dark objects on the ice, and they soon showed themselves to be actually two seals lying there. They were greenish-grey in colour, with some not very pronounced spots, and had short heads with broad projecting muzzles. When we came somewhat nearer they lifted their heads a little and moved themselves to and fro, to scent these unexpected visitors, of whom, however, they did not otherwise exhibit the slightest fear. This enabled us to go close up to them, and two shots put a speedy end to their lives.

This was a good catch, for it meant fresh meat for ourselves and many dainty meals for our by no means well-fed dogs. For the present we contented ourselves with ripping them up and cutting out some of the best bits, after which we hurried back to avoid an approaching south-west storm; but it need not be said that we felt satisfied with our day's work. In the evening we ate seal-beef, but according to the entry in my diary, it did not come up to my expectations, nor to theirs whose longing for fresh meat was greater than mine. In any case, this latter fact should be a most unequivocal proof that we had good tinned meats and good cookery, for there can be no doubt but that seal-flesh, fried in butter and served in the way we had it, is most excellent food.

The seals were not the only traces of animal life observed

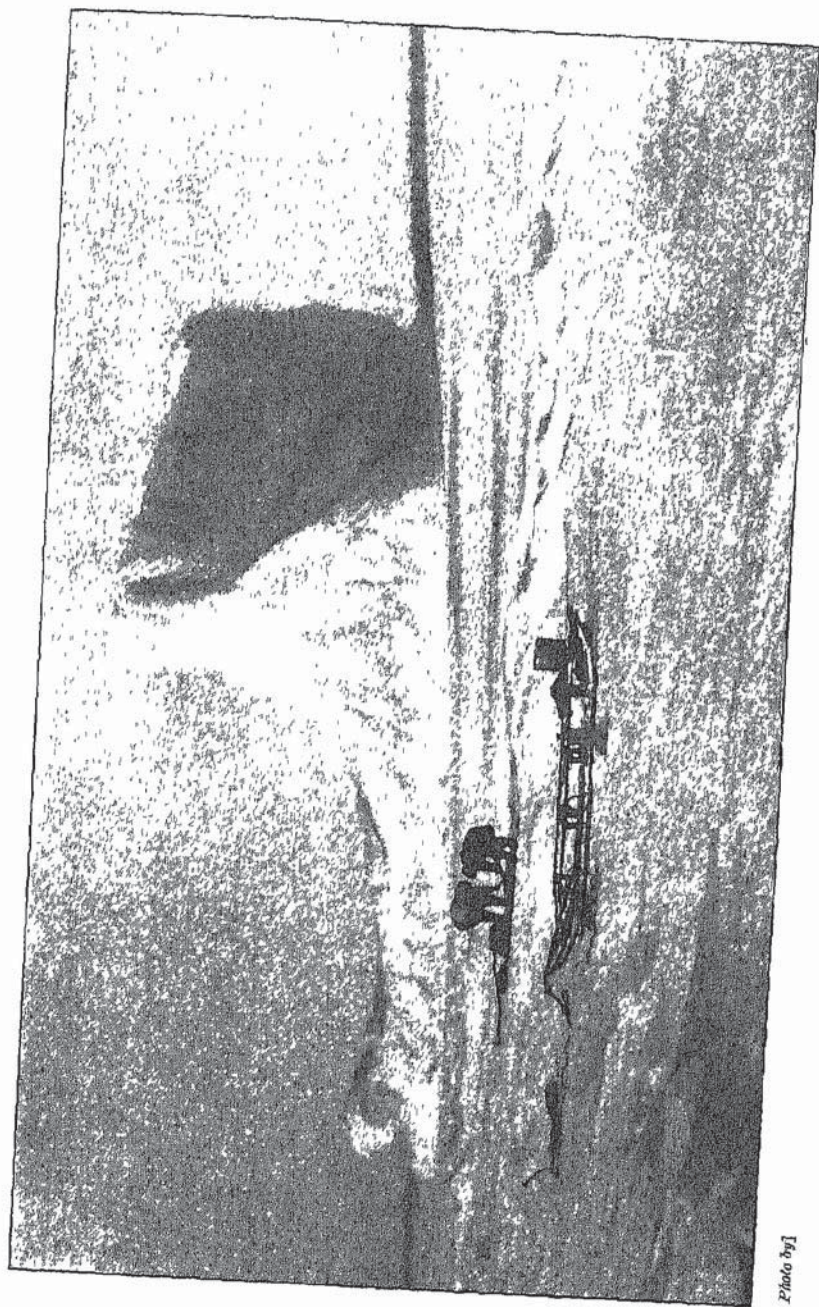


Photo by]

Playing our first seal

[NORDENSKOLD.

during the winter, for we saw cormorants a couple of times, and even so near to the middle of winter as during our sledge-journey in July, one of them was seen sitting on the snow in the vicinity of our camping-place. With these exceptions, the snowy petrel, *Pagodroma*, seems to be the only bird which can be met with so far south at this time of the year.

Although we did our best to busy ourselves out-of-doors as much as possible, both as regards work and recreation, still the greater part of our time during these months was spent within the four walls of our dwelling-house. It is a peculiar life one leads under such conditions; those who have not tried it can hardly imagine what it means to spend a whole winter thus deprived of the possibility of moving beyond narrowed limits and restricted to a circle of companions so small as ours was. The members of an expedition on board of a vessel are much better off in these respects. It is easiest to hold together at the beginning, ere everyone has learned to know everybody else thoroughly—inside out, so to say—for it so easily happens that it is the weak sides of the party that then become most noticeable. For the sake of harmony it is undoubtedly desirable that such a “hermit” company should be as homogeneously composed as possible. For ourselves, we never neglected any high-days or holidays, and when there was none in the calendar, we very often made occasion for one. Such times were always cosy and agreeable, and in between these feasts each one did, as a rule, his own work, and what with all this work that rested upon us and what with our rich supply of reading, we were never obliged this winter to take refuge in card-playing, or other such ways of passing the time.

It is strange that, under such circumstances, one thinks so little of what can be taking place in the outer world, and does not miss the news of daily changes. We had brought with us a number of old newspapers, which, it is true, were read and re-read until their contents were known almost by heart; but in spite of this it appeared to us almost as if these chronicles were something outside and foreign to us, nor did we often speak to each other on such subjects. Just about

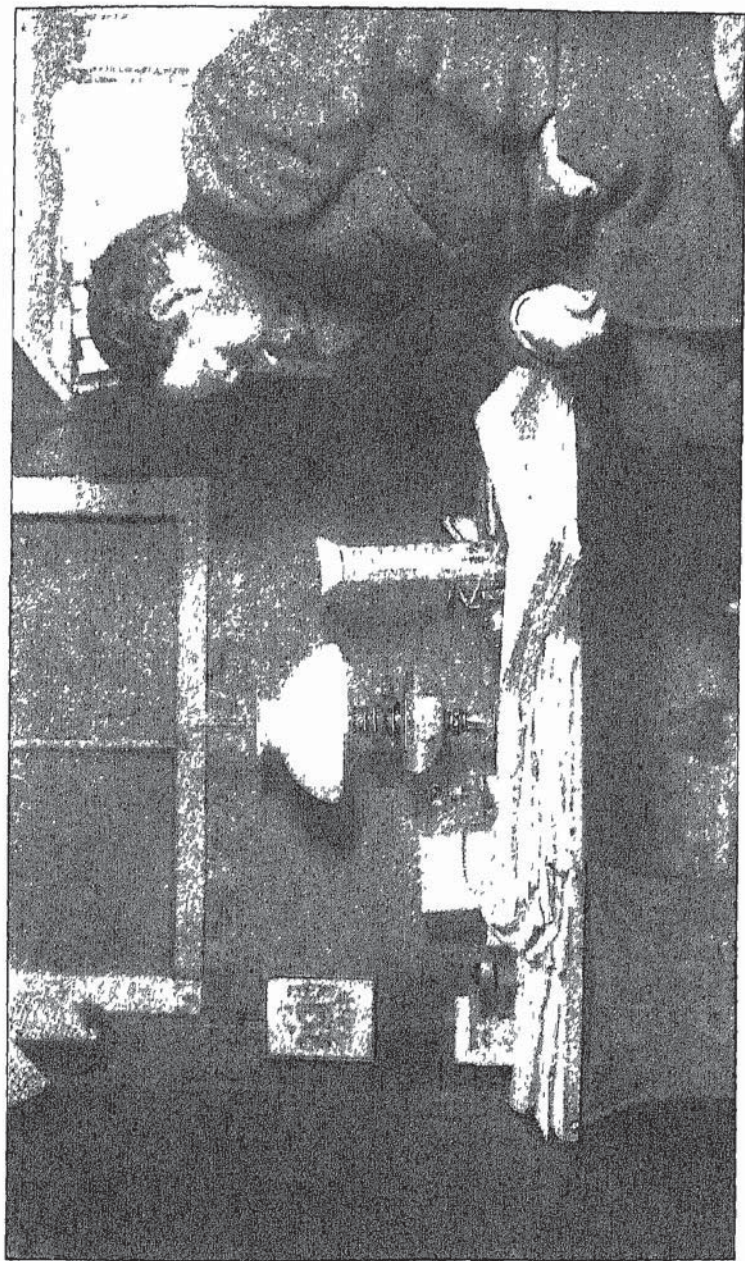


Photo by]

At the writing-table

O Nordenskjöld

[G. BODMAN

this period I wrote in my diary that I had the feeling that, should circumstances render it necessary, one could so accustom oneself to this mode of life that one would never feel the need of anything else; this sentiment was, however, exaggerated, and I cannot now adhere to it after the longer experience I had in the matter.

We were, on the whole, very well satisfied with our house. We had gradually got everything inside well arranged, and by means of making the greatest possible use of the space—putting up shelves in all imaginable places, etc.—we had good room for our things. I think almost that we suffered the greatest inconvenience from the warm periods which now and then succeeded the storms and cold, for then the layers of ice along the walls melted, and formed, together with the snow and sand we brought in on our boots, a thick mud in which one was obliged almost to wade. Several of our things were spoiled by this damp; boxes, for instance, which stood by the walls, loosened in the joints, so that when one went to lift a box, the top part would come off and leave the bottom frozen fast in the ice on the floor.

At these warm periods, too, the moisture on the floor always had its counterpart in the droppings from the ceiling, for of course ice had also formed up in the loft, and now this melted and ran down on us so that those who lay in the upper berths had to make special contrivances in order not to become wet through. And it was not always water alone which thus dripped on to us, for we had a large number of flasks and bottles in the loft, the contents of which froze and often burst their envelopes. Such cases were least unpleasant when, on nearer examination, it was found to be claret which thus trickled down from above; or, at least, we thought so as long as we had such a supply of the article that we need not grieve for the loss of a bottle or two. But it was a more serious matter when there came a little stream of black ink, or some drops of a corrosive and poisonous photographic developing-mixture.

The short sledge-journey in July had only been a preparatory one, and immediately after my return from it I com-

menced to plan a longer expedition. From our experience of the preceding summer, we calculated that the *Antarctic* could be expected at any time after the middle of November, and so we thought that we had but till that date for the execution of such journeys; and I knew very well, too, that we had a great deal to do in our immediate surroundings, much of which could be carried out only in warmer weather. Thus it was not at all strange that I hesitated ere I determined on an expedition to other tracts which should occupy my time and attention during the whole of the spring. At the beginning of August I made the following entry in my diary: "I go now every day thinking how I shall manage about the sledge-journey. Had we but a sufficient number of dogs, I should have no doubts in the matter at all; but when we have only four or five serviceable animals; when our party is so small that I have scarcely any choice in the matter of companions, and when we have so much work here in the neighbourhood and are fully conscious of the fact that the observations at home here will suffer by our sledge-journey, there is good reason for consideration on the subject. And still I consider that we have no choice in the matter, for it is one of our most important tasks to find out what this so much talked-of Graham Land really is, whether it is a continuous stretch of country or a group of islands; how far it goes to the southward, etc., and then, should we have the same ice-conditions as we experienced last summer, it will be impossible to carry out this work from the ship. Everything that is known of this coast shows that it is one of extraordinary interest in scientific respects, and it would be a shame for a wintering-party to lie here a whole winter and not extend its knowledge beyond that which can be acquired by every ship's expedition in a short summer. No! We must do our best to explore these tracts, and even should we not come so far south as I wish to do, we shall not, in any case, be in want of work, nor our labour, I hope, be entirely without result."

It was evident to me from the beginning that if we wished to penetrate far to the south—farther, for instance, than

Larsen reached in 1893—we must be in possession of one or more depôts, situated as far to the south as possible, in order that we might be able to complete our supplies from them. But as it had been impossible the previous summer to establish any such points of support, with the exception of those which were made during the course of our boat-journeys, we had no other resource than to endeavour to do whatever was possible in this respect by means of a special sledge-journey made before the start of the principal expedition. It was, therefore, my intention to make a great effort in the immediate future to establish such a depôt on the Seal Islands, but it was plain enough that, with such conditions of the weather as now prevailed, this journey would be both difficult and dangerous. Sobral and Jonassen were to accompany me on the expedition, which I intended to undertake as soon as possible after the middle of August, when it was to be hoped that the worst part of the stormy weather would be past.

Unfortunately, from the very beginning we met with a series of mishaps which did not cease ere our whole plan for the depôt had been rendered impossible. In August, one of the Greenland bitches had puppies, of which, perhaps, we could expect help in the future, but the present result was that one-fourth of our pack was rendered useless. And just when all preparations were well finished, on August 26th, an accident occurred which disabled another dog. Thus to draw our load we had now only three dogs at our disposition, even if we included Kurre, the Falklander, and under such circumstances it became from the very first scarcely advisable to extend the journey as far as to the Seal Islands; for in the middle of September I should be obliged to begin my preparations for the chief expedition, while the provisioning-party would be actually impossible if we thought of establishing a depôt of any size, as it, of course, had been our intention to do. One essential difference between these tracts and North Polar regions must be remembered, and that is, that the storms here, as a rule, compel an expedition to lie still almost half

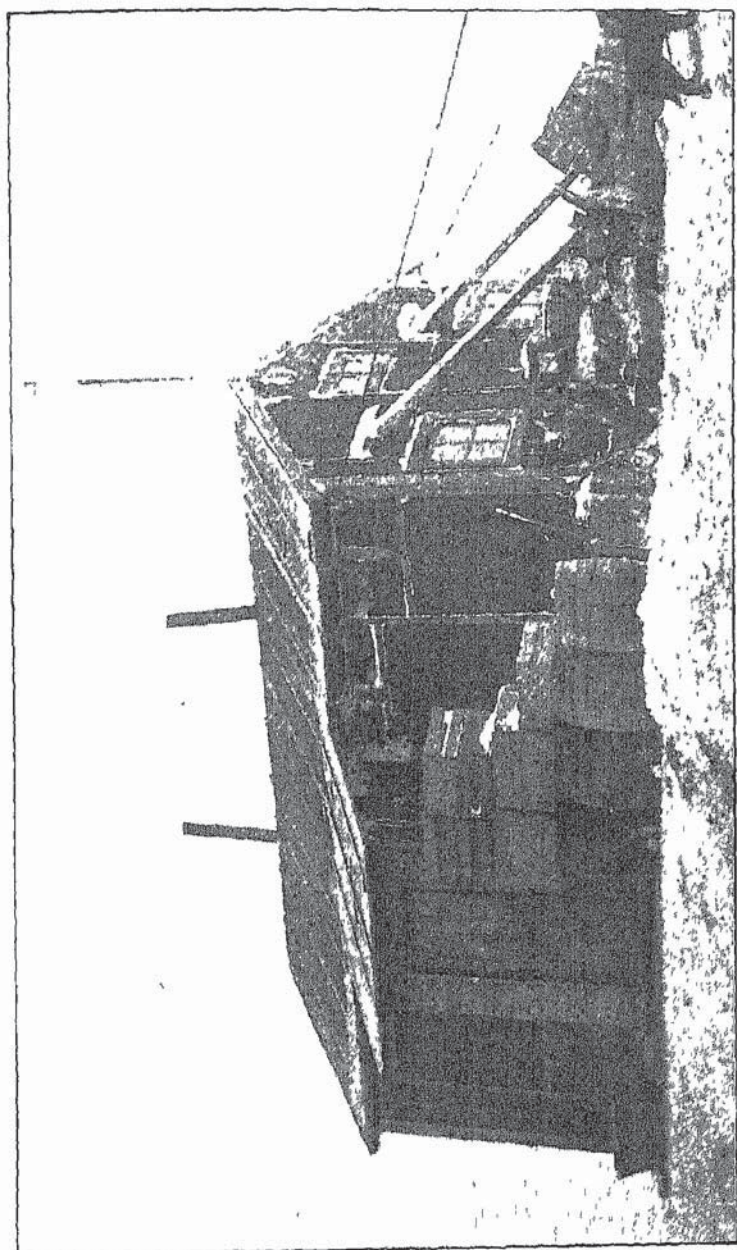


Photo 3g.

We were, on the whole, well satisfied with our dwelling-house

[NORPERSROAD.]

the time, and this necessitates being equipped with much larger supplies than would be otherwise necessary.

However, we started on the 30th August, intending to go first of all to the depôt made in March, to examine it, and, should it prove necessary, open it, and remove a part of its stores as far towards the south as possible, intending, in case of emergency, to use some large-sized iceberg which was fast frozen in the pack-ice, as our store-house. So when we left the station our load was not specially heavy, but we were obliged to draw it ourselves to a very great degree, and in spite of all our efforts darkness came on before we could reach the depôt. However, we had only a mile or two left when we pitched our tent out on the ice, where we were sheltered pretty well by a large ice-hummock.

But during the night we were harassed by our old enemy, the storm, and we were obliged to stay in the tent the whole of the following day. It was rather cold, the thermometer inside showing -30° C. (-22° F.), and Sobral, who on this occasion tried the fur-dress in a somewhat improved form, felt the cold a little, but the time passed pretty quickly, enlivened with small talk. The next morning, September 1st, the weather was happily calm again, but when I stepped outside the tent I made a discovery which most essentially modified the plan of this journey. The only one of the dogs who was visible was Kurro, who lay half-buried in the snow; the other two animals had disappeared, and no amount of calling and shouting could bring them back. Of course, it had been very unwise of us not to fasten them up, but they had never before tried to escape. On this occasion, however, their longing for their comrades at home had been too powerful for them, and they had followed our tracks back to the station. It would take at least two days to go there and fetch them again, and afterwards we might be at once overtaken by a storm of longer duration, and as we were already in September, there was nothing else for us to do than to give up all thoughts of a depôt further to the south and to concentrate our energy still more upon the chief expedition.

We let the tent remain standing, and filled our knapsacks with the things which were to be added to those in the *depôt*, after which we went thither on foot, and found it, as we had expected, in the same state as it had been left half a year earlier, with the exception that it had been covered with a little snow



Photo by]

[B. EKSLÖF.

Jonassen with one of the Greenland dogs.

during the winter. After having arranged the *depôt* we made some short excursions in the neighbourhood, each one going his own road, and I turned my steps in the direction of Cape Foster, where I made a careful study of the ice and the conditions of the terrain, and collected specimens of rock under the perpendicular tuff-cliffs, from which enormous blocks fell now and then, smashing the ice in their fall.

On the next day we began our journey home, and of course had no other choice than to harness ourselves to the sledge, for Kurre by himself was of more trouble than use. It took seven hours to cover a distance of 20 kilometres (12 miles) with a load which weighed in all about 135 kilogrammes (297 lbs.). In want of training as we were, this was the greatest exertion of which we were capable, but I was glad of the experience, for now I could complete my calculations in this respect, too, for the proposed long sledge-journey.

I had determined that this last-named expedition should start southwards on the first fine day after the 20th September, and we had a laborious time until then. We had our usual winter weather to begin with, even if it was not so cold as it had been, but in the middle of the month there came a period which, in meteorological respects, was a very remarkable one. The only kinds of weather which had hitherto shown any signs of lasting had been either the severe south-west storms with cold, or calms which sometimes ended with faint winds from the north-east. But now we had an exceedingly strong north-west wind almost uninterruptedly for a week, which brought such warmth with it as we had never experienced here before. On the 16th September, the mean temperature was as much as $+2^{\circ}$ C. (35.6° F.), and these twenty-four hours were the warmest period we had, not only during the time which had already elapsed, but also during the whole of our first year here, the summer included. But it was still more wonderful that, even at this time, which, of course, must be considered as belonging to the winter, the ice in the open sea began to break up and drive out from land to such an extent that we had open water as far as we could see, both to the north and south. It was strange to recollect this phenomenon when at a later period, and during the so-called summer, we went up on the heights and always saw the same closely-packed masses of ice. Thus, if the *Antarctic* had only lain ready to start, she would have been able to communicate with us even now in September. The experience gained during these days had much influence on our plans for the future, both that it made



Photo by]

View from one of the ravines at the station . Mount Haddington in the background

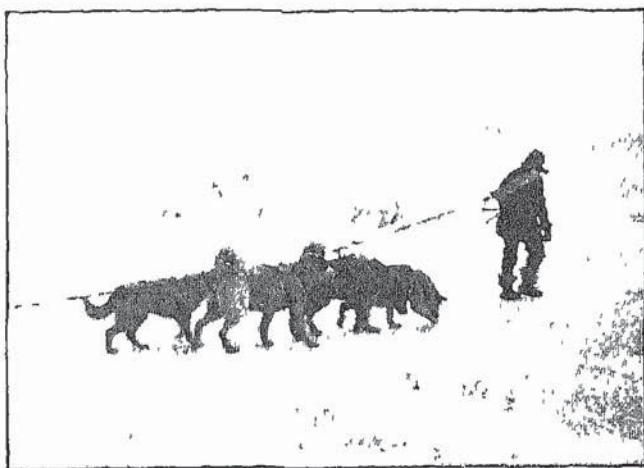
[G. BODMAN

us all of the opinion that we could expect open water and the *Antarctic* at an early period of the summer, and also that it gave us a sharp warning against making sledge-journeys without having a boat at hand, on ice which thus showed that it could be dispersed so easily.

The wind was the whole time so violent that it would have been anything but pleasant to be out on the march; but these days were of great service to us on account of the work of various kinds which had to be done in the open. When we were nearly ready to start, however, the weather had once more changed, and the equinoctial storms began to let us feel their impetuous strength; we had one of the usual hurricanes from the south-west, and it continued four days without interruption. The snow did not drift so heavily as before, but it formed a thick cloud round about the glacier, and on the plain the snow whirled forward in long, thin, snake-like, plaited lines, reminding one of faint, undulating smoke. The wind came in heavy gusts and the stones flew against the walls with more violence and to a greater height than usual, so that one of the window-panes was broken.

This change in the weather had a very depressing influence on us all, and there was no question but that we grew more weary of the storms now than during the winter. I wrote in my diary: "*Now* I should not like to stay here for another winter at a stretch." The days passed slowly, although I was busily employed making out the best instructions I could for the vessel and for the men who were to remain at the station, and also in superintending our equipment. At last, in the forenoon of the 29th, the weather grew a little better, so that I could go up on to the highest plateau. What a change the ice outside had undergone! Everything was once more as winter-like as ever it had been, and there was not a trace of open water.

When the evening fell, it was quite calm again; the barometer was high, and we had everything in order for beginning on the morrow this long-determined-on sledge-expedition.



CHAPTER XII.

THE SLEDGE-EXPEDITION, 1902: THE FIRST WEEK.

Preparations and equipment for, and plan of, our expedition southwards.—We leave the station—The journey over the ice in Larsen Bay—Arrival at Christensen Island and discovery of the great ice terrace.

At length the much-longed-for day had arrived—the day when, after a year's imprisonment, I was to start on my journey of exploration with a whole world open before me. Everything was to be new to me; I should have constant work—hard work it is true, but how much better that would be than the long days of storm and winter-darkness in our narrow hut. Whatever the result might be, I could always feel certain of being richly rewarded for my labour.

For the space of two months I had been incessantly occupied with the preparations for this journey. Jonassen had been my assistant; he had repaired, strengthened, and partly rebuilt the two sledges, and put in order all their accessories; out of the little three-cornered silk-tent, sewn after Nansen's model, and which had shown itself quite unsuitable for the unexampled storms for which we must be prepared, he had

constructed a four-cornered, light and convenient tent, which we always afterwards employed on our expeditions, and which proved to be especially suited for its purpose. He had arranged the implements we were to take, and had made ten large bags of canvas, intended for our provisions, and of such a length that they could be laid right across the sledge. Sobral had also had much to do, and as for myself, I had arranged the scientific apparatus belonging to our equipment and also the provisioning. The rations had been weighed and re-packed, so as to be of the least possible volume and weight, and in this respect we had every reason to be contented with the results obtained.

But besides these cares my time had also been devoted to the working-out of the plan of the journey, and of instructions for those who were to remain at the station. Even now I saw that, on the one hand, it would have been of a certain advantage to have arranged for taking only one companion and one sledge; but, apart from other reasons, I was also of opinion that, as the conditions farther south were so little known, it was of a certain importance for our security that the party should consist of three persons and two sledges—and the expedition was equipped in accordance with this latter alternative. Sobral and I should pull the one sledge and shape the course, whilst Jonassen was to come behind with the other sledge and the five dogs, for we were once more able to employ all the four Greenlanders. I had hoped to be able to stay away about sixty days if need be, but as it was not possible to take a full equipment for the whole of this period, I resolved to take dog-pemmican for three weeks only, trusting to complete the provisions for the animals by means of killing seals and penguins on the way.

It is an old rule that nothing can be of greater importance when it concerns such a journey than to endeavour to avoid, if possible, taking the same way back, or, at least, to try by all possible means to facilitate and shorten the return march. In order to attain this object I left an order at the station that, on the 23rd November, the *Antarctic* should leave for the south



Bodman.
Jonassen.

Ekelof
Nordenskjöld

Åkerlund
Sobral

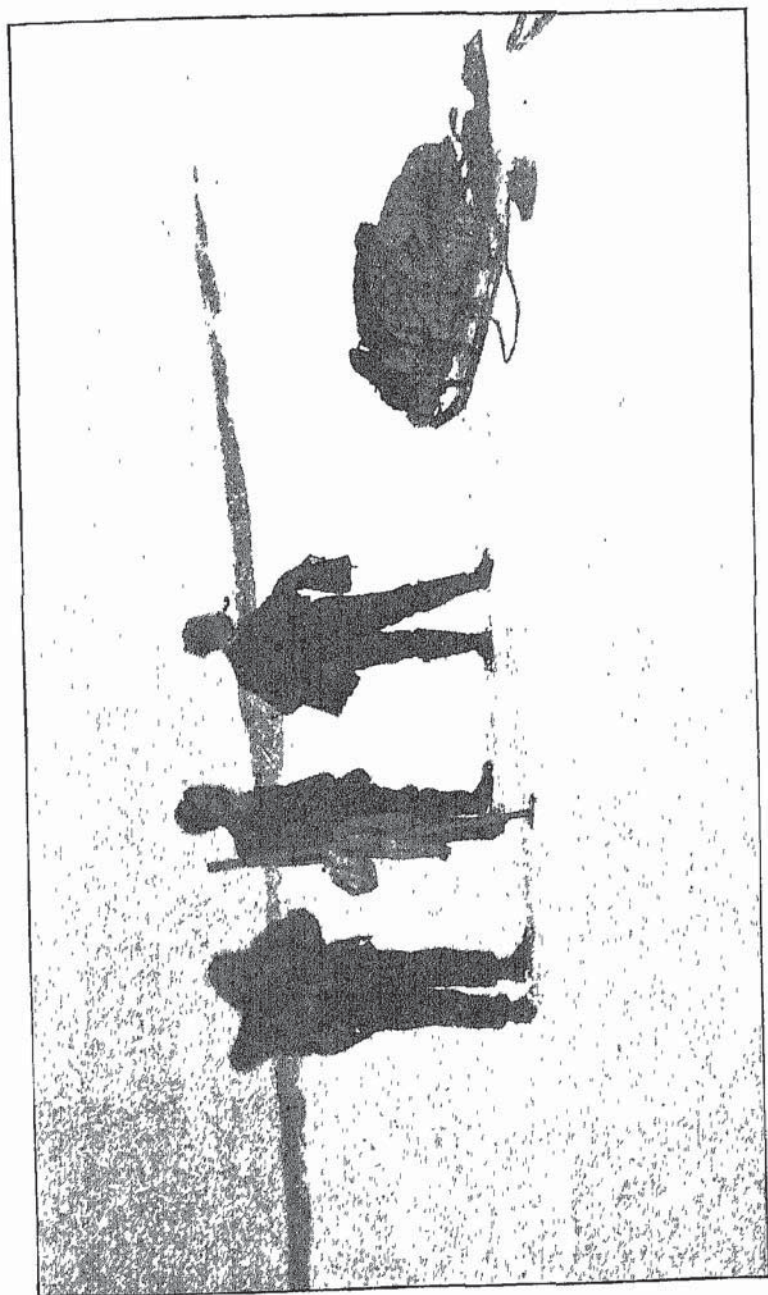
*. Etc we started a photograph was taken of all six of us

and look for us at Christensen Island, for I considered it very probable that the vessel would arrive before that date, and during the intervening period our expedition would, if circumstances were favourable, be undoubtedly able to reach a very high degree of southern latitude.

To make certain of rising in time on the appointed day, I undertook the meteorological watch from 4 a.m. The weather was calm and fine, without being too cold. The last moments of such a start are always accompanied by many different and time-wasting cares which it is impossible to fully provide against beforehand, however much one may wish to do so; and this remark applies with special force to such a long expedition as our own, where one must not forget a single "trifle," the neglect of which will affect not only comfort, but, it may be, even life itself.

We made a good breakfast and then photographed ourselves all six together. The dogs were harnessed to the sledges and more photographs were taken down on the ice, but only of those who were going away; a parting glass of wine was drunk, a few words of farewell were spoken, and we started a few minutes before noon.

Our first destination was the dépôt beyond Cape Hamilton, where our supplies were to be completed and the loads put into complete order. The route at first lay over old well-known paths beneath the wall of ice where we used to wander almost every day, and our comrades accompanied us for a little while. Nearly the whole of the load was on the dogs' sledge, but the animals did not seem at all affected by the fact, but were more lively and more interested in their work than I had ever seen them; it was quite as if they had some idea of the importance of the work which now lay before them. Out by an iceberg near the point of the glacier, and just about the place where I discovered the first seal blow-hole, there lay a large seal sunning itself. The temptation was too great, and our companions resolved to stay in order to make themselves masters of the animal, so at 1 p.m. we took a final leave of each other. I had no great fear for the safety of either party, but consi-



[NORDENSEJOLD.]

The stayers-at-home

Photo by]

dered it very likely that we should not be back before the arrival of the *Antarctic* had completely altered the state of things at the station. I little thought that we had still more than a year to pass together ere relief came.

The ice in the sound was as level as a floor and of a nice hardness, so that the dogs drew the two sledges—for we had fastened ours behind theirs—at such a speed that we were almost obliged to run to keep up with them. Behind Cape Hamilton the ice began to be much more covered with snow, a phenomenon we had found on the occasion of each of our journeys. Although this made the going heavier we were still able to cross the last high wall of ice and snow and to reach the *dépôt* by about 6 o'clock. From this point the ice lay before us free and open, and without hindrance as far as the eye could see towards the south. Behind Cape Foster lay, like a faint line, the “land of longing,” that stretch of land to which in clear weather my gaze had been so often turned. “Shall we find there what we seek,” I wrote in my diary, “or will this faint enticing vision deceive us, though now it promises so fair?”

It began to blow a little during the night, but we were not at all inconvenienced by it. I quote again. “It grows almost too warm sleeping with one’s clothes on, and I shall be obliged to take off some of them if this weather continues.”

When we awoke, a new month had commenced, and with it began our work in unknown regions. I was up early and made a cup of chocolate, after which we all helped to arrange the food supply. It being the last occasion for a long time that we should have a superfluity of food and fuel, we seized the opportunity to take a good breakfast, and also tried to induce the dogs to eat heartily, but this with little success, for they were not yet accustomed to dry food. By noon our work was done and the sledges loaded, and off we went along the smooth surface, across fissures, snow-bridges and walls of ice. Our expedition was begun in earnest. The load we had when we left the *dépôt* was divided in the following way: the front sledge, which had not been strengthened and was drawn

by Sobral and myself, carried the tent, sleeping-bags and some private equipment, together with skis, a spade, ice-axe, and a little bag of instruments, such as might be needed during the journey, the total weight, sledge included, being about 90 kilogrammes (200 lbs.); the second sledge, which had been much strengthened in order to be able to carry its heavy burden, was loaded with the remainder of the equipment, the provisions, the petroleum, cooking-apparatus, etc., amounting to some 220 kilogrammes (485 lbs.) in weight, and was drawn by the five dogs under the guidance of Jonassen.

The air was very warm when we came out on to the ice; the sun felt burning hot and it was quite still. The going was not very good, for the snow lay rather deep, often in the form of low walls lying nearly in the line of direction of the coast, and thus obliquely to our course. These snow-walls are the same as those called in North Polar regions by the Russian name of "sastrugi"; they have a long, even slope to windward and end with a perpendicular or an overhanging notch.

As we have seen, the difference in the weights of the two sledges was considerable, and therefore I was in the highest degree astonished when I saw how incomparably easier it was for them to draw their load than it was for us to pull ours. Although I did my utmost to march briskly, and at the same time tried to husband our strength by means of pauses every half-hour, it appeared really difficult for the dogs to go as slowly as we did, and Jonassen was able to sit on his sledge and ride for long distances. All this was quite the contrary of the experience I had hitherto gained, for otherwise many of our arrangements would have been made very differently, but now it was too late to make any changes, and it was, of course, impossible to put all the load on the dogs'-sledge.

I shall leave it chiefly to my diary to describe the events of the following days.

October 2nd — "The morning was still fresh and cold, but without wind. We moved one of our sacks of provisions on to Jonassen's sledge, which made marching a little easier.

Although the temperature did not rise above -10° C. (14° F.), the sun felt hot and we had not a breath of wind to cool us. 'I think it feels quite as hot as it does in Buenos Ayres during the summer!' was Sobral's remark. It was heavy going, there was much snow on the ice, which was as dry as sand, and we had incessantly to cross new sastrugi. The burning sun, together with the cold, acted powerfully on the skin of the face, which peeled under the nose, while the lips cracked and became swollen. We were most distressed by thirst, which was only momentarily relieved by lime-juice pastilles and bits of apples. We stayed once in order to melt a little snow to use as drinking-water, but this had no lasting effect either. Nansen says that during his wanderings over the ice, he felt nothing of the 'Arctic thirst,' and explains the matter by the fact that he had the opportunity of drinking as much as he wanted every morning and evening. Our experiences do not agree in this respect, for we were in no want of water at meal-times. In cold weather with strong wind one is not thirsty, at least when one does not work too hard, but when one is obliged to slave so that the whole body becomes wet with perspiration, I believe that it is impossible to escape in any way from a thirst which, just under such conditions, becomes increased to the uttermost.

"By 2 p.m. we had passed Cape Foster, and gazed with curiosity and interest at our new world. Without making any other change in its character, the coast of Haddington Land made a great sweep backwards, and we saw before us a bight which stretched northwards as far as the eye could reach.* The opposite side of this bight consists of a high, snow-covered, mountainous land, with sharp, pyramidal peaks rising amidst the snow; one long promontory especially was filled with an enormous, shapeless mass of land. It was the continuation of King Oscar's Land, the same tract which had been first seen by human eyes from the deck of the *Antarctic* on the 20th January.

* This was the entrance to the great Crown Prince Gustaf Channel, which we explored more thoroughly during a sledge-expedition a year later.

"After eight hours' march we stopped at 6 p.m., and I was more fatigued than I remember ever having been before. After the warm sunshine the evening felt quite cold, although it was not more than -17° C. (1.4° F.)."

October 3rd.—"We have now to determine which course we shall hold. The charts give the impression that, even at this distance, one should be able to catch a glimpse of the Seal Islands on a clear day, but we at least can see nothing in that direction. But stay! Directly south-west lies a little, indistinct, shining point which may be an iceberg, but is possibly land. I determine to direct our course thither. Of course, we were tempted to steer nearer in to King Oscar's Land, but as this stretches so far towards the west, our doing so would have excluded every thought of penetrating farther southwards, not to speak of such a thing being in direct opposition to the agreement we had made, to deposit the first news of our journey on Christensen Island.

"We are still without wind, and to-day is still warmer than yesterday; the fact of the sun hiding behind clouds makes the light yet more dazzling to the eyes, and however uncomfortable snow-spectacles may be, I am now reduced to using them. Though the meshes at the sides are almost too large, the glasses are often covered with perspiration, which afterwards freezes, so that one's patience is tried to the uttermost by the necessity of constantly wiping the spectacles, especially when it is already difficult enough in such light to steer a true course amid 'nothingness,' for it is only now and then that our iceberg looms dimly on the quivering, deceptive horizon. At last I change our course, and make for a dark and very distant point which has more the appearance of land."

October 4th.—"In the dusk of last night the 'iceberg-island' looked so dark that I almost believed it to be a previously unknown island, but in to-day's morning light we could see that it was an iceberg. We passed it about noon, but then we began to be convinced that the dark spot observed since yesterday really was land, and, in that case, must be one of

the Seal Islands. It is a good thing to have some object towards which to steer, for the light is most trying to the eyes."

October 5th—"Wind from the south-west, with dense masses of whirling snow, which make it impossible to think of continuing our march. I shall not complain, however, for a day of rest will do us good, and, besides, it is Sunday. I have not been so tired the last few evenings as I was at first; I suppose one grows accustomed to this kind of life, but it is a hard one in any case."

October 7th—"Off before 9 a.m. We did not a moment doubt but that we should reach our island to-day, but we meant, in any case, to march briskly, in order to be able to do as much as possible on arrival. When one has been travelling on nothing but ice for a whole week one soon acquires a longing for the solid earth and solid food, a good seal-steak would be most appetising, and we trust to get one at the 'Seal' Islands. Before us lies the island, an immense dome of snow, pierced by a high pillar-like mass of rock. Sometimes it appears so near that it seems possible to reach it in a couple of hours, and then it grows distant again. We soon discover that the last opinion is the correct one, when, under the rocky pillar itself, we notice a perpendicular, dark line of shore make its appearance on the horizon, and find that it is first *now* that we begin to see the lower land. We march as quickly as we can, but still a long while elapses ere we can mark that we come any nearer to the island. Towards evening we made a last effort; we hooked our sledge on to that drawn by the dogs, which Sobral then helped to manage, and I marched ahead for more than an hour at my bliskest pace. This had a good effect, but the dogs were tired out too, and as I wished to reach our goal to-day, we were once more obliged to harness ourselves to our sledge. We could, of course, have stayed for the night where we were, but we were, as always, afraid of the storm, and then, too, I hoped we should be spared much work the next day if we managed to reach our goal that evening; for I could not think at the time that it would be the other way about, and that we should be obliged to retrace a great part

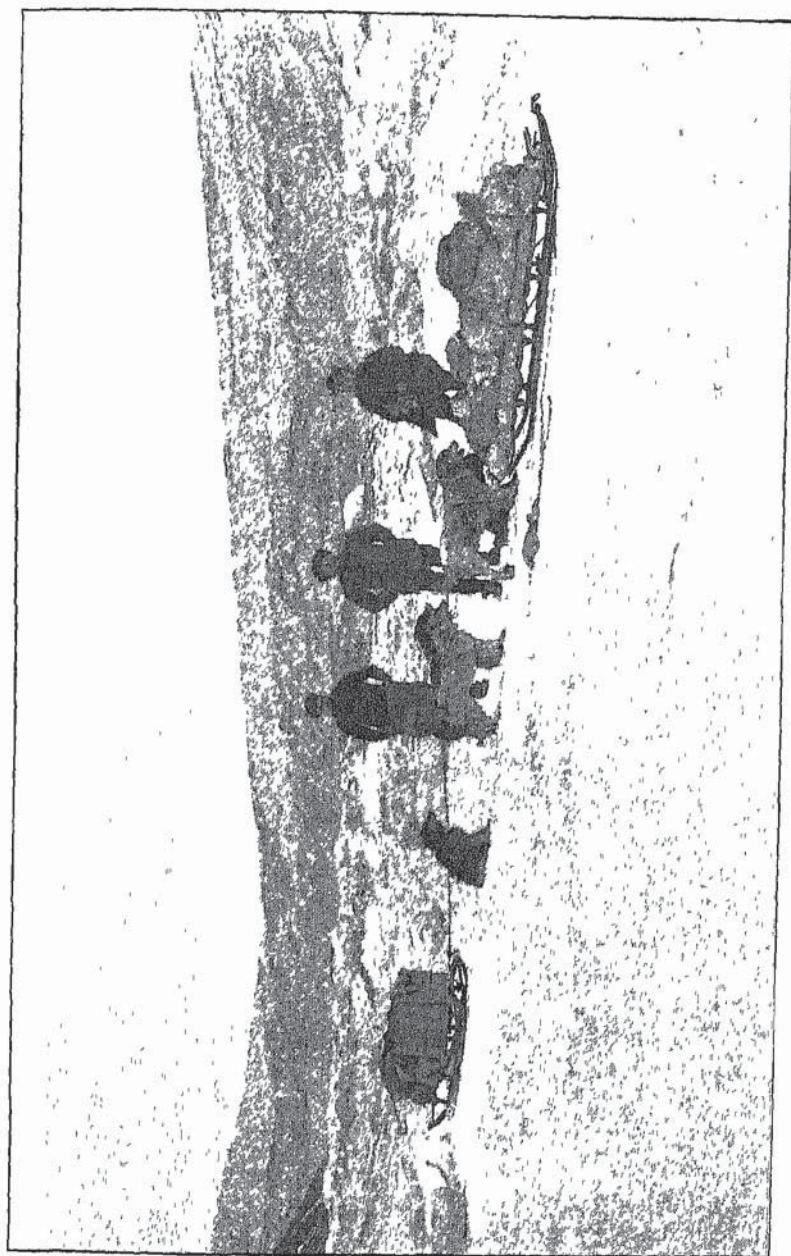


Photo by]

The wayfarers.

[G. BOOMAN.

of our way. At last, after nearly eleven hours' march, and long after sunset, we reached the smooth, snow-free ice close under the island. Here we were obliged to pick our way over crevasses and fissures, and between mighty loose-lying blocks of ice, ere we could pitch our tent near the foot of the land itself."

October 8th.—"It was to-day that we were to be still and explore new land. But is it really new? It does not bear much resemblance to the charts, but still, I think I know where we are. Behind this land, with its snow-free rocks and its mantle of ice, I see a lofty, continuous dome of ice, which stretches southwards as far as the eye can reach—a land which in every respect reminds one of Snow Hill. It must be Robertson Island, and in that case it is clear that we have come to Christensen Island, and that little dark pyramid visible to the north-west is the island called by Larsen, Lindenberg's Sugar-Loaf, and behind it peep out the Seal Islands proper. All the islands are smaller than they appear to be on the chart, which is not so very incorrect in other respects. As soon as it was possible I ascended the hill in company with Jonassen. After climbing a very precipitous steep, where we were often obliged to hew steps in the snow, we came to a beautiful, semi-circular terrace situated about 65 metres (212 feet) above the sea. This is probably a part of the ancient crater. We then continued by a less steep, but still fairly troublesome, path up to the top, at the height of about 300 metres (975 feet). The rock everywhere consists of lava and tuff, but any volcanic activity has certainly not occurred here for long ages back.

"The interest with which we viewed the surrounding landscape from that spot can easily be understood. An ice-wall extended from the foot of the mountain, and stretched as far as one could see, past Lindenberg Island. I could not at first understand the significance of this, but Jonassen, who was of a more pessimistic nature, and less inclined to set faith on the accuracy of previously-existing maps, was the first to grasp the situation. Everything that lay before us to the west and

south-west, everything that surrounded the Seal Islands, was one immense mass of ice, in a word, the Seal Islands *are not* islands, but mere nunataks* ; neither are they ever visited by seals. From where we were the ice-wall seemed to be of no height, but it was evident that it would cause us much trouble, for our way lay up and over it. To steer to the east of Robertson Island would have been the same thing as to cut ourselves off from all possibility of work and geographical explorations on land.



Photo by]

[NORDENSKJOLD.

Mount Chustensen from the lower terrace.

"I at once began my measurements and other work up there, whilst Jonassen returned to the shore to try and get a seal for food, for although these animals were not to be found at the Seal Islands, they were numerous enough here. We met with both young and old seals; the former, most beautiful little animals with light, soft skins, and as round as balls with the milk they lay sucking in. When I returned, one young one had already been disposed of; the dogs lay

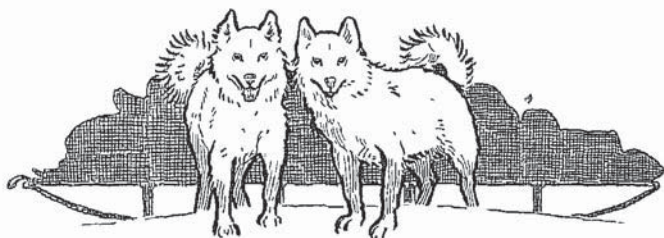
* "A nunatak is a rocky hill, generally glaciated, projecting from an ice-sheet, or from an inland ice."—*The Antarctic Manual*, 1901.

there so glutted that they could scarcely move, and Jonassen was frying some tit-bits. I must confess that during all my journeys in uncivilized regions I have scarcely eaten any dish that tasted so well as this did. The meat had not the least taste of train-oil, neither had it that toughness which is common to all the land animals of the Arctic regions, and even to the birds down here. But it may very well have been that the soup-diet of the preceding week influenced this judgment in some degree.

"Sobral had been down on the shore the whole time, making an astronomical observation.* After dinner I took a long walk in order to make an examination of the newly-discovered glacier-edge. This at first seemed to be quite inaccessible, but after walking for a couple of hours in the direction of Lindenberg Island, I at last found a place where I hoped we should be able to get our sledges up.

"It is my intention to leave a supply of the less necessary provisions at Christensen Island, and fetch them on the return march, should it lead us this way. But I shall not establish a complete depôt here, so as not to deprive ourselves of all possibility of taking a route home nearer to King Oscar's Land. A letter with information as to our journey is deposited in the cairn in a well-corked tube. The next place where I now promise to give further news is at Cape Framnäs; the future will show if ever we reach that place."

* It showed that we were in lat. $65^{\circ} 4' S.$ and long. $59^{\circ} 3' W.$ The length of the way we had come in our seven days' march was about 140 kilometres (84 miles).



CHAPTER XIII.

THE SLEDGE EXPEDITION, 1902 (CONTINUED): TOWARDS KING OSCAR'S LAND.

Ascent of the ice-terrace, and journey between the Seal nunataks—Plan of the day's marching—Some long day's marches—The period of storms begins—Over fissures and crevasses to the land—A day of misfortunes

OCTOBER 9TH.—“ There came a few gusts of wind this morning which made me remain in the sleeping-bag until seven, but then I hurried up, for provisions for a new week had to be taken out, and we had to finish the arrangement of the dépôt. The sun had never felt so broiling hot as now, when we picked our way along the foot of the ice-wall and amid the innumerable icebergs of all sizes that lay in its front. It took us a good three hours' march in an almost direct line back before we found a place where the barrier could be ascended without adventure, along an enormous snow-drift, which had formed at its base in the shelter of a long iceberg, and it was not before 4 p.m. that we had regained the level of our morning's starting-point. Our course now lay directly towards the most easterly of the nunataks which rose amid the ice, and the road was at first a very steep one. It was in the greatest uncertainty of the difficulties we might meet with here that I began this journey on the land-ice; but happily the ice was excellent, level, covered with hard snow, almost free from sastrugi, and, above all, was quite without wide fissures—the things of which we had the greatest fear. In the evening we pitched our tent

quite near the extensive *âs**, which had been our goal the whole of the day. The same evening I made a ramble in the neighbourhood. It was already dusk when I came up amidst these exceedingly wild, black peaks, which still displayed the distorted forms in which the once glowing, molten lava had hardened. But one can hardly give the name of volcano to this mountain, which I have called Oceana-nunatak. The weather in the evening looked very threatening, but we managed to escape a storm. We have had quite an exceptional period of fine weather—eleven days and but one storm—and this has been of the greatest importance for our sledge-journey, for otherwise we should not have been able to come so far just at the time when our loads were heaviest.”

But this day saw the close of the period of good fortune. When we came down to the level ice the next morning, we directed our course towards the next nunatak, but we had not gone far ere a storm from the south, accompanied with a heavy snowdrift, suddenly broke loose upon us. I turned in towards the land in order to gain shelter under its nearest and western point, which we succeeded in reaching after an hour's hard march in the face of the storm. On reaching the place we found, running along the entire length of the mountain a deep gully, or depression in the ice, formed by the warmth of the sun being so strongly concentrated on the dark wall of the cliff. As we hoped to find lee in this valley we meant to take our sledges there; the descent was both great and steep, but whilst I went to look for a place where we could go down, Jonassen, growing impatient, drove dogs and sledge straight down the ice-wall. The sledge turned over at the steepest part of the incline and the next moment man, dogs, and sledge rolled pell-mell on top of each other down into the hole. I rushed forward in terror, for one could not an instant imagine that Jonassen would come off scot-free; the least I expected was that he had broken a limb. But wonderful to relate, neither he nor the dogs had injured themselves in the least, and the only thing that showed itself in want of repairs was

* An *âs* is a ridge of stone or gravel, believed to have been formed by glacial action.”—*The Antarctic Manual*.

one of the petroleum-cisterns, which leaked badly. We put up our tent and lay in the ice-valley for the remainder of the day. I finished my diary-entry for the day with the words: "So this day is ended; we shall see what we have to meet with next. We have occasion enough for anxiety in our little party, but we must hope that we shall not encounter too great natural difficulties. We have an entirely unknown region before us; a region where none knows with what surprises we shall meet. I intend heading south-west, where I hope to

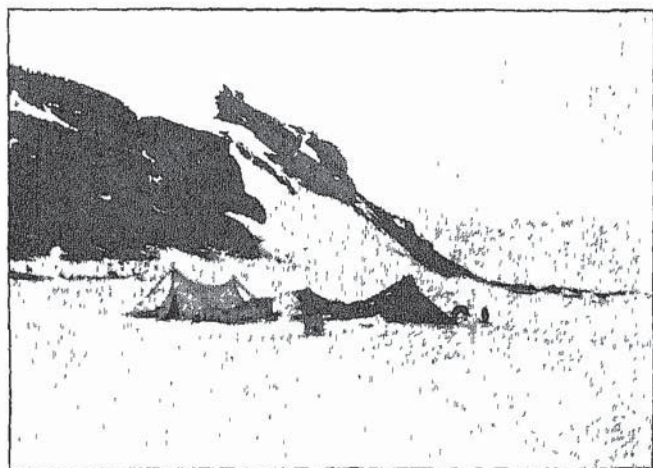


Photo by]

[NORDENSKJOLD

Our camping-ground at the Castor Nunatak.

reach land, but this glacier here makes it clear for me that there will be little probability of finding food for the dogs, and in that case, of course, all hope will disappear of being able to remain away as long as I had hoped to do "

The next day began with cold and mist. Our first business was to come up out of our cave, and then we had to ascend the high snow-wall which unites the nunataks called Castor and Hertha. But even when we had gained the heights we could see nothing on account of the fog, which lay heavily along the lower levels, and we were obliged to steer by compass

to the south-west, in the hope that we should not fall in with any perpendicular descent. We were fortunate in this respect, for the sledges glided down a gentle decline and the wind behind helped our progress. The mist lightened in the course of the afternoon, and by degrees we caught sight of the whole southern extension of King Oscar's Land, where it seemed to end in a few isolated peaks showing dimly in the far distance.

The wind from the north had increased steadily during the day, and after the weather we had now so long enjoyed, we began half to suspect that it was not the south-west wind which was the dangerous one at this season of the year; and so, on arriving at our camping-ground, we determined, for once in a way, to pitch our tent with the entrance towards the south—a most imprudent step, especially as we ought to have been prepared for a storm. When we first went into the tent, the north-easter freshened considerably, but only to cease as hastily and leave us with about five minutes of absolute calm. Then a sudden distant roar was heard, and the next instant our tent was shaken by a wind which was instantly recognised as “it.” We were in hopes that it would prove a passing squall, but the wind continued to increase, and it grew quite cold inside the tent, where both wind and snow came in through the opening. Still, the tent held fast until Sobral went out in the morning to take the meteorological observations, but then the wind came in with so much force, that it was impossible to close the opening, and we were obliged to rise and turn the tent. This we succeeded in doing without having to move our belongings outside, and after a cup of coffee we crept into the sleeping-bags again.

The wind fell once more during the night, and then followed three days of work—days which, in consequence of the long marches we made, were amongst the most toilsome we had on the journey, but they were also days amongst the richest in results. The air was biting cold, and we had a sharp wind in our faces the whole time. I will give a description of one of these days, in order that the reader may have a clear picture of our life during this expedition.

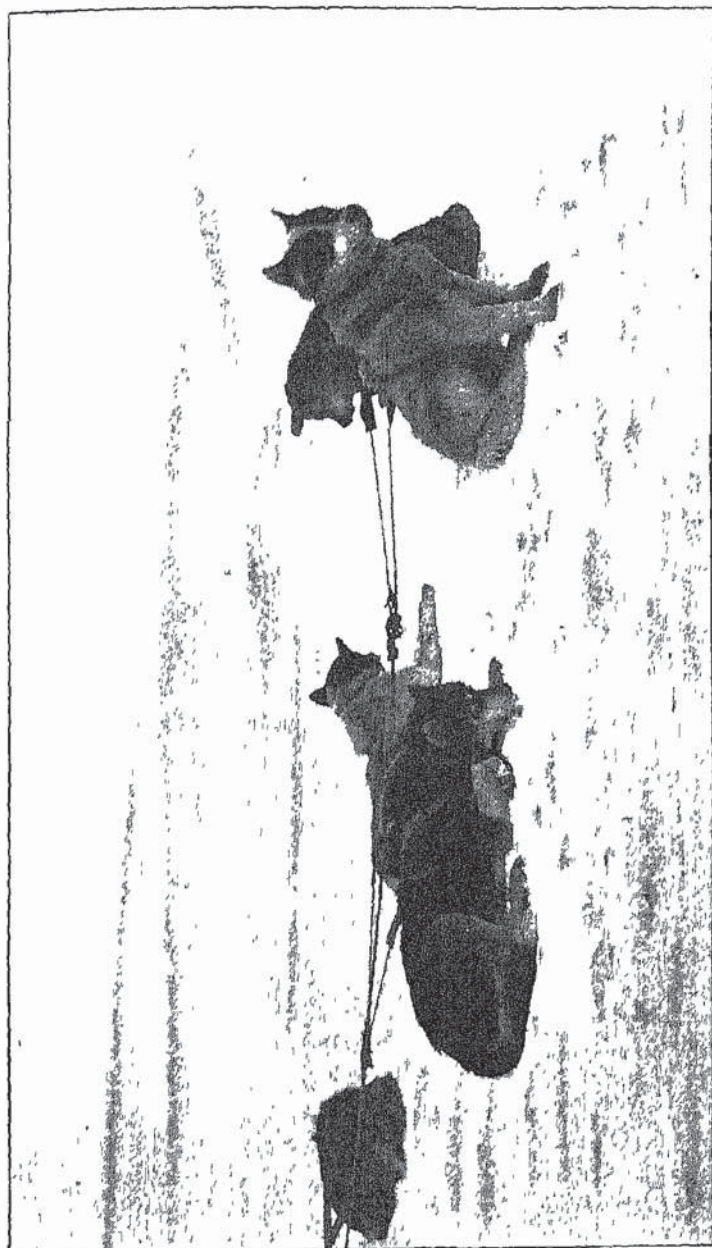


Photo by]

Our four footed comrades.

[G. DODMAN

In these latitudes at this season it is as good as light the whole night through, but usually none of us rise earlier than about seven o'clock. It has become the rule for me to leave the sleeping-bag first, and make breakfast; this latter task being a sour one enough under present circumstances. Our clothes, which have gradually become wet through with moisture and perspiration, stiffen in the air as soon as we leave our cold beds. Before the tent-opening is unbuttoned one's hands are as cold as ice, and they must be thrust into the mittens again as hastily as possible in order to thaw. The reflection in my diary, "It's cold work cooking," includes a world of remembrances, for it was little pleasure to take out with freezing fingers all the necessary apparatus, light the Primus-stove, and set on the ice-filled pot.

The bill of fare for breakfast is always the same, the chief dish being pemmican, made into a thick, porridge-like soup, the nutritive qualities of which one seems actually to feel. In addition we have coffee, meat-biscuits, butter and sugar. These rations have to last us the whole day, and they do, for really we experience no hunger till evening.

As it is my business to cook, so it is Jonassen's to take down the tent, load the big sledge and harness the dogs. Our sledge is usually made ready by Sobral. We start between nine and ten, and at present the march goes briskly, as we rest only once every hour, not counting the halts made for taking observations. The speed depends upon the rate at which Sobral and I can drag our sledge, for the dogs always follow close at our heels. When we have gone forward in this way for about nine hours, we begin to look about for a suitable camping-place—level, and covered with snow which is neither too loose nor too hard—and when we have found the right place we take our sledges there. One of these is placed on either side of the tent, which is made fast by means of iron pins driven into the snow, and also by stays, some of which are attached to the tent-poles and others to two horizontal bamboo-poles placed laterally. These latter stays are fastened to the sledges. Jonassen puts up the tent and takes from the sledges what is

wanted, after which he feeds the dogs, and in the meantime I begin, with the help of Sobral, to get our supper ready. This meal is not at all such a substantial one as the breakfast, and consists of lentil- or pease-soup, alternately, and meat-chocolate, with bread, butter and pie, or, sometimes bacon. As soon as the meal is disposed of, the sleeping-bags are spread out. Jonassen and I creep into the large two-man bag of reindeer-skin. We take off our coats and put them under our heads, together with our shoes, these latter being stuffed full of hay, in order not to lose their form too much when they freeze during the night. Each of us has his guanaco-skin, which is wrapped around the upper part of the body. These skins are, in my opinion, a most valuable addition to the ordinary outfit, for they weigh very little, but, thanks to them, one never, or seldom, feels the cold, and, what is more, those in the sleeping-bag become, by their use, independent of each other, so that the one who wants to lie with his head free can do so without disturbing the other.

Sobral had brought with him a small sleeping-bag of his own, made of canvas and treble blankets. It is not so warm as ours, and he is obliged to sleep fully dressed in order not to feel the cold.

The clothes I wore during the day consisted of a homespun suit and two suits of underclothing, a fur cap, mittens, stockings and socks (the latter a mixture of wool and human hair), and over the socks, "skallar" * of reindeer-skin. During storms I had, in addition, wind-clothes of canvas, but it was very seldom these were needed. As long as one is in movement, one feels but little of the cold.

According to our pedometer, we marched during each of these days a distance of 50,000 steps, or about 35 kilometres (21 miles). I need not say that during this time we made many new observations. The whole of that extensive Alpine landscape which we now approached in an oblique line must be regarded as unknown. Before us lay the tract called by Larsen, Mount Jason. As far as we could see, this, like

* Soft boots with upturned toes, used with skis.

Robertson Island, consists of a continuous ice-cap, at the edge of which some unimportant nunataks project from the ice.

But the most interesting thing of all was the remarkable ice-terrace over which we journeyed. At the end of these three days I had not fully made up my mind whether it was old sea-ice or not that we were on, although the absence of all fissures and icebergs spoke against its being so. From a scientific point of view it is possible that such an idea was, at bottom, the most correct one, but the experience of the following days went to show that we had here no sea-ice that could be compared with the phenomenon as previously known in other regions.

I shall give from my diary some impressions of the days that followed.

October 17th.—"At last the storm has come in earnest; here we lie in our bags and have nothing else to do than be patient. A fine dinner we had on the 16th (as agreed on with those at the station), in order to celebrate the anniversary of our departure from Sweden! A little chocolate, the water for which we obtained from snow which blew into the tent, and some bread and butter—our supper was dry bread and cocoa. It seemed for a moment as if the wind was going to fall, and through the low, whirling snow-drift we saw the wild, riven, jagged points, which here form King Oscar's Land, in a glorious golden light, whilst in the north-east the full moon stood in a dark, deep-blue, smoky sky, which by no means boded good for to-day. And no long time passed either ere the wind was once more in motion, and now the air is once more as 'thick as pease-soup.'

"This evening the weather is a little better, and we must hope for a fine day to-morrow. Things have now gone so far that if I wish the expedition to obtain any decided results, everything must be concentrated on a rapid forward march. Afterwards, I shall have to trust to good fortune, good-will and good weather on the return journey, in order to be able to make a closer investigation of the tracts we have discovered. So I have determined to leave the little sledge here on the ice



Drawing by]

Several times we sank through broad fissures, and then we had to take prompt measures.

[E. LANGE

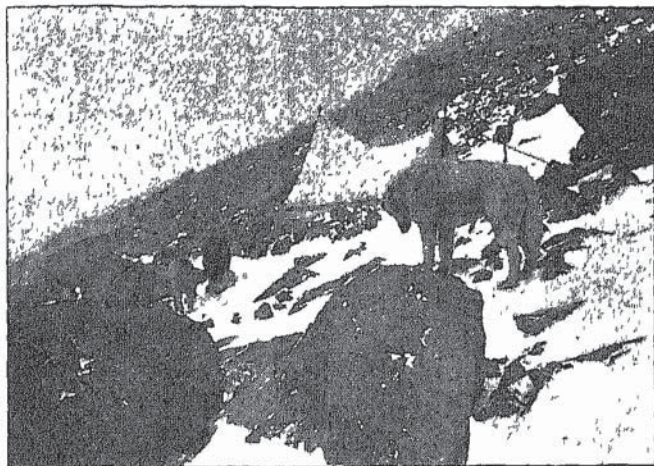
together with what equipment we do not absolutely need, and then to go forward with provisions for eight days only "

October 18th — " It blew hard again this morning and the prospects of being able to march seemed very few indeed, but the wind fell for a time and we started about noon. The wind soon freshened again but, at all events, our marching was brisker now that we had only one sledge. I went in front at as quick a rate as I could and the dogs had no difficulty in following. My intention was to reach the farthest of the peaks visible to the south. I calculated that it was a two days' march off, and hoped afterwards to get a third day of fine weather in order to be able to continue our investigations on skis.

" Until now I had been in doubt whether it was sea-ice or glacier-ice we were on, but we met almost immediately with some fissures which showed that it was the latter kind. This discovery annihilated all hope of being able to replenish our stock of provisions with seal-meat. And scarcely had we become persuaded of this ere we observed another phenomenon which was both unexpected and unwelcome. Quite near our front rose the beginning of a long ice-wall, which started from the land to the west and disappeared on the horizon in the east, where it probably met the masses of ice around Mount Jason. We should thus be obliged to ascend a new and lofty glacier-terrace, and we could see, even at a distance, that its ice was not so level as that we had just crossed. The contrary wind we had, increased at the same moment, and the chances of our being able to make a long march became as few as they could be.

" We soon reached the ice-wall, the lowest edge of which we mounted with ease, but when we had climbed this we found much more difficult ground before us ; the ice for the space of about six miles being everywhere divided by innumerable crevasses, which, fortunately, lay for the most part at a sharp angle to our line of march, and were covered by pretty firm ice-bridges. In spite of the last favourable conditions it was unpleasant to march at a rapid pace in an entirely new tract,

without having time to reconnoitre the ground, and at the ever-recurring risk of falling into a crevasse so deep as probably to exclude all possibility of rescue. Our path lay close to broad, bottomless, yawning, blue abysses many yards deep, and over flimsy bridges of snow, which, on one side at least, were usually so thin that the foot went through. Several times I sank to my middle, but the worst adventure was over a broad crevasse, met unexpectedly after passing the real zone of fissures. Ere I could properly grasp the situation I

*Photo by]*

[NORDENSEJOLD

At last we succeeded in finding a somewhat sheltered spot up amongst the rocks.

sank to the armpits ; luckily I had time to place my ski-staff across the crevasse and managed to scramble up. The sledge and the dogs were close behind me and could not be checked before they were in the middle of the crevasse, and there Jonassen went through too. He caught hold of the sledge which, fortunately, stood, fast on the surface, and our united efforts brought the whole party safely over. The crevasse was large enough to have swallowed us, dogs, sledge and all, without leaving any trace of the occurrence. I need not say that I was glad to reach firmer ice. Our route then lay for

a time down a gentle decline, where we lost sight of our peak for a while ; we then ascended a long slope and came at last on level, hard, blue ice, with very little snow on it, up to the very foot of the hilly land, which we reached about six o'clock in the evening.

"We had had the south-west wind in our faces the whole day, but here it felt quite calm. We did not make much ado about choosing our camping-ground, but pitched the tent on the ice at the foot of a projecting, brown, weather-worn, rocky headland, torn by the frost into a mass of mighty blocks. The reader can easily imagine with what feelings I hurried forward to these rocks, the first spot trodden by human foot on the whole of the eastern coast of the mainland of West Antarctica. The rocks consisted of a porphyry containing numerous fragments of some darker-coloured rock."

October 19th.—"It seems as if all Sundays were our black-letter days, but this has been the worst of them. Still, I ought to feel glad, when I write this, that we had already reached what had been the principal goal of the journey, for I fancy there will be but little opportunity in the future of doing much more. When we crept into our sleeping-bags it appeared to be pretty calm outside, but at 2 30 a.m. the storm came on with increased violence and we soon found that we had not chosen a good camping-place. Close by there was a deep gully, between the mountain-side and the ice, of the same description as the one in which we found such good shelter at the Castor nunatak. We had thought, too, in the evening, that we ought to take refuge there, and at 4 a.m., when the storm had grown too violent, we rose and went down into the place with all our things. It was unfortunate for us that the wind fell a little just at the moment, for this caused us to underestimate its strength, and made us believe ourselves in security when we had pitched our tent in a place which appeared well protected. I had gone into the tent to arrange our things, when I could hear by Jonassen's voice outside that some mishap had occurred. He came in the next minute, pale and exhausted, and said that he had almost broken his left

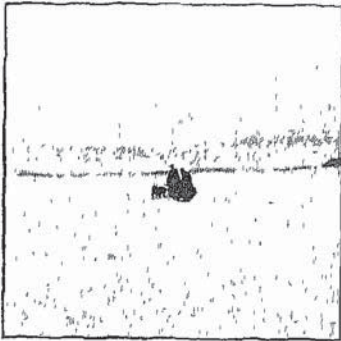
arm with a block of stone which he had been carrying up to stay the tent with. He had slipped upon the smooth ice, and it was a piece of good fortune that he had not smashed his arm-bone, but as it was the arm swelled up at once and became quite blue. It cannot be wondered at if, for the moment, I pictured the future in very gloomy colours, just because none of us could judge of the extent of the injury, at the very least it would be difficult for him to use the arm for heavy work during the time we were away from the station.

"And we were not left in peace in our new camping-quarters either. The violence of the hurricane increased until at midday our tent split and there was nothing else to do but to leave it as quickly as we could. Greatly by the help of the wind we got our sledge up the now perfectly smooth ice, in order to try and find lee on the other side of the headland, where we had first pitched our tent. The gusts of wind came from both sides, but none of them had any real power. Jonassen sewed the tent together in the midst of the wind, and got all the fingers of one hand frostbitten. In the meanwhile, Sobral and I were at work high up amongst the rocks, where we cut a level place in a little ice-drift and made a terrace of stones, which was large enough to form a foundation for our tent. By 6 p.m. everything was in order, and I could begin to make dinner ready; it was a delightful feeling that came over us when, having once more a roof over our heads, and having had a warm meal, we could again creep deep into our sleeping-bags."

CHAPTER XIV.

THE SLEDGE EXPEDITION, 1902: THE JOURNEY HOME.

We determine to turn back—View southwards from the most southern point reached
 —A period of severe storms—Another storm period—Once more on the sea-ice
 —A long march—Arrival at the station.



AFTER the events described above we had but one choice—that of returning to the station as speedily as we could. There were many other circumstances that concurred to make us adopt this resolution—the deep and numerous crevasses, which made it actually impossible to travel on other than fine days; the difficult ground which lay before us; the storm-period

in which we were, and the diminution in our supply of provisions—for that very night the dogs discovered the sack in which was preserved what little there was left of their pemmican, and had not only eaten up that supply, but had also devoured the greater part of the sack, some harness and our whip. The torn tent must also be remembered, and what was perhaps the gravest obstacle of all—Jonassen's injured arm, of the condition of which I could not judge.

Still, in spite of all I might perhaps have made an attempt to push on at least one day's march farther south, were it not

for the hope I had of being more easily able to explore just those regions with the vessel. With the knowledge we now had of the tract, it ought not, in that event, to be difficult to penetrate with a light sledge so far southwards as to be able to explore the continuation of the land.

But I was at least determined not to return ere I had in some degree reaped the fruits of our having reached so far south as we had. Unfortunately the storm continued uninterruptedly, so that it was not before the afternoon that I could go on my ski up the top of the mountain at whose base we were encamped.* The ascent was not so very difficult; but there was too much wind and driving snow for me to have any very extensive view. I had to content myself, therefore, with some geological observations, which were of especial interest in respect to the numerous erratics which lay on the summit, carried there at a time when the ice must have been at least 300 metres (975 feet) thicker than now. I also collected some specimens of the scanty growth of lichens there.

Happily it was somewhat clearer the next morning, so that I could make the desired observations from the top. The land continues a little farther to the south, but seems to consist only of isolated peaks, of which even those farthest off are not very distant. Unless the land does not altogether cease, it apparently bends off here to the west. A narrow "sound" westward† was especially noticeable, which ran in between two high mountain-crests as far as the eye could reach. It was, however, filled entirely with glacier-ice, and it is certain that no navigable strait exists between the northern end of Louis Philippe Land and southwards past the Polar Circle.

The weather was not fine, but as it was pretty clear and we had a favourable wind we determined to leave the land and

* To this hill I have given the name of Borchgrewink Nunatak

† This "sound" has been named Richthofen Valley. It is of interest that the Belgian Expedition observed on the west coast and in just the same latitude a bay so deep that its eastern boundary could not be observed. The future may perhaps show that the name Graham Land ought properly to be confined to the region south of this deep inlet.

return to our former camping-place. The spirit of the wind followed us for a while, sougning and whispering, and driving the snow whirling before us as we hurried down the steep of slippery ice. We followed our old tracks as far as possible, these sometimes standing out in marble-white relief against the blue-white ice, but sometimes also being concealed by newly-formed snow-drifts. By their means we managed to pass the crevasse-zone without any very great difficulty, and to come down on to the lower ice-terrace. Here, too, we tried to follow our tracks, but we found it almost impossible to find the sledge we had left, for it was nearly covered with snow. We stayed here for the night, and I arranged the next week's provisions. The dogs were obliged to be contented in future with $\frac{1}{2}$ kilogramme (9 ozs) of our pemmican daily.

My plan was to follow the land as closely as possible on the way home, and our first mark was a projecting headland almost directly north. Here I hoped to be able to reach the land, in order to make a closer examination of the coast. Luckily we had a magnificent day on the 22nd October—the only time between our leaving the Seal Islands and our arrival home. Sobral made an observation of our position,* Jonassen employing the meanwhile in mending a leaky petroleum-cistern

The march went forward briskly. My eyes being bad, I had a difficulty in seeing all the contours of the ice, but fancied, myself, that it looked rather unpromising in front, and my companions, too, thought we should fall in with a new glacier. So I steered a little more off the land, but still could not imagine but that our camping-place would lie so near the coast that I could reach the shore on foot. But what I had called "Cape Desire" was to turn into Cape "Disappointment." At our noonday rest I was nearly falling into a broad crevasse, but said nothing of the matter, in order not to make the others anxious. But all of a sudden the ice became more uneven, and at 5 p m. our march came to a sudden and unexpected end in front of a canal-like crevasse, some 20 metres

* Lat. $65^{\circ} 48'$ S. and long. $62^{\circ} 11'$ W.

(65 feet) broad and almost as deep, which seemed to run in towards the land as far as the eye could reach. This crevasse was of great interest as it gave us a very clear idea of the inner structure of the ice. The same splendid stratification could be seen here as that which often occurs in the large icebergs, thus proving that the ice had been formed of layers of snow deposited, during long periods, the one upon the other, and being, too, a new proof of the transition, found in these

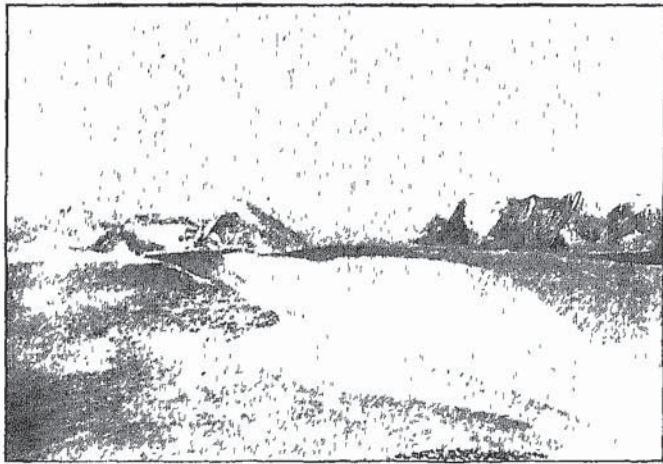


Photo by]

[NORDENSKJÖLD.

View from our most southerly point, towards King Oscar II. Land,
with Richthofen Valley.

regions, from glacier to sea-ice. I think, too, that the Antarctic icebergs need not necessarily have their origin on land, but that they can also be built up on a base of sea-ice in shallow water near the land.

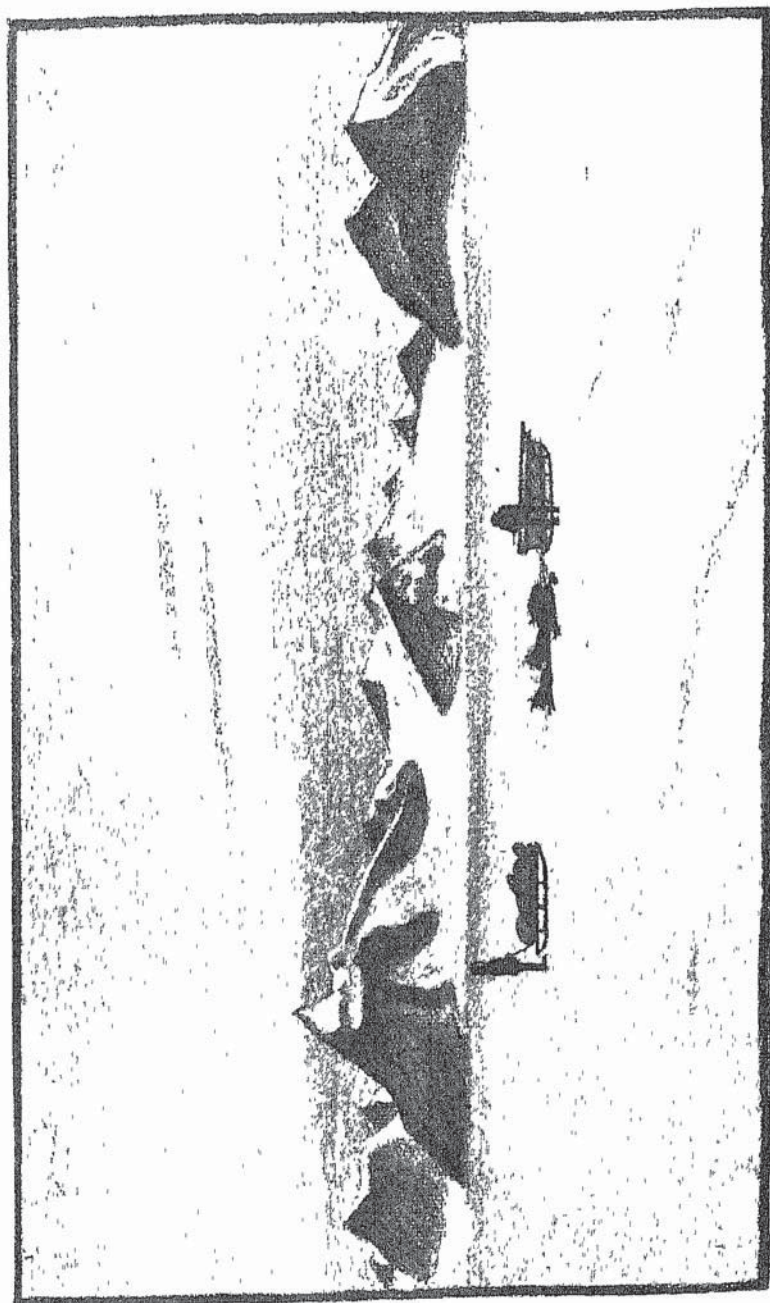
Instructive as this view was of the history of ice-formation, it was, on the other hand, equally unpleasant for us to be hindered in our march, for I saw at once that, under the circumstances, we should meet with almost insuperable obstacles in the endeavour to reach land. We were obliged to march for nearly half-an-hour eastward ere we were able to cross the

crevasse by means of a thin snow-bridge, and when we attempted to advance, we found that we were involved in a network of similar channels. To avoid being obliged to camp in a tract where the least suspicion of fog would form an insuperable obstacle to our further progress, we made a forced march, which continued until late in the evening. The ice-conditions were then better, although there were numerous fissures in the neighbourhood of our tent.

October 23rd.—"Had the weather but continued fine, no crevasses should have hindered me from going to the land, but the step became quite impossible with a fog which only now and then allowed us glimpses of the headland we had made such efforts to reach. It would, too, I thought, be inexcusable to allow the expedition to be delayed by an uncertain expectation of being able to reach the land on the morrow, and so I continued our march northwards—but with an aching heart. It took a couple of hours ere we could escape from the fissure-zone and once more go forward without being every moment obliged to fear the sudden opening of an abyss before our feet.

"Although our sledge had been still further lightened by the transference of our sleeping-bag to the dogs'-sledge, this day's march was one of the worst I have ever experienced. My eyes, especially the left one, had been greatly affected by the continual strain in contrary winds and sunshine, imposed by the necessity of steering a true course. But the light we now experienced, without wind or sun, was the most trying thing for the eyes that can be imagined, and I experienced no relief, although I used both spectacles and veil. I am certain we took a crooked road to-day, but still we made good progress. I did not trouble about using the pedometer, and we scarcely knew where we were when we stopped marching in the evening."

October 24th.—"I was up at 7; the weather was the same as yesterday's, but we could not think of staying here with this level ice, so I asked Sobral to undertake the leading of the party whilst I drew our sledge by myself. After a while,



Drawn by]

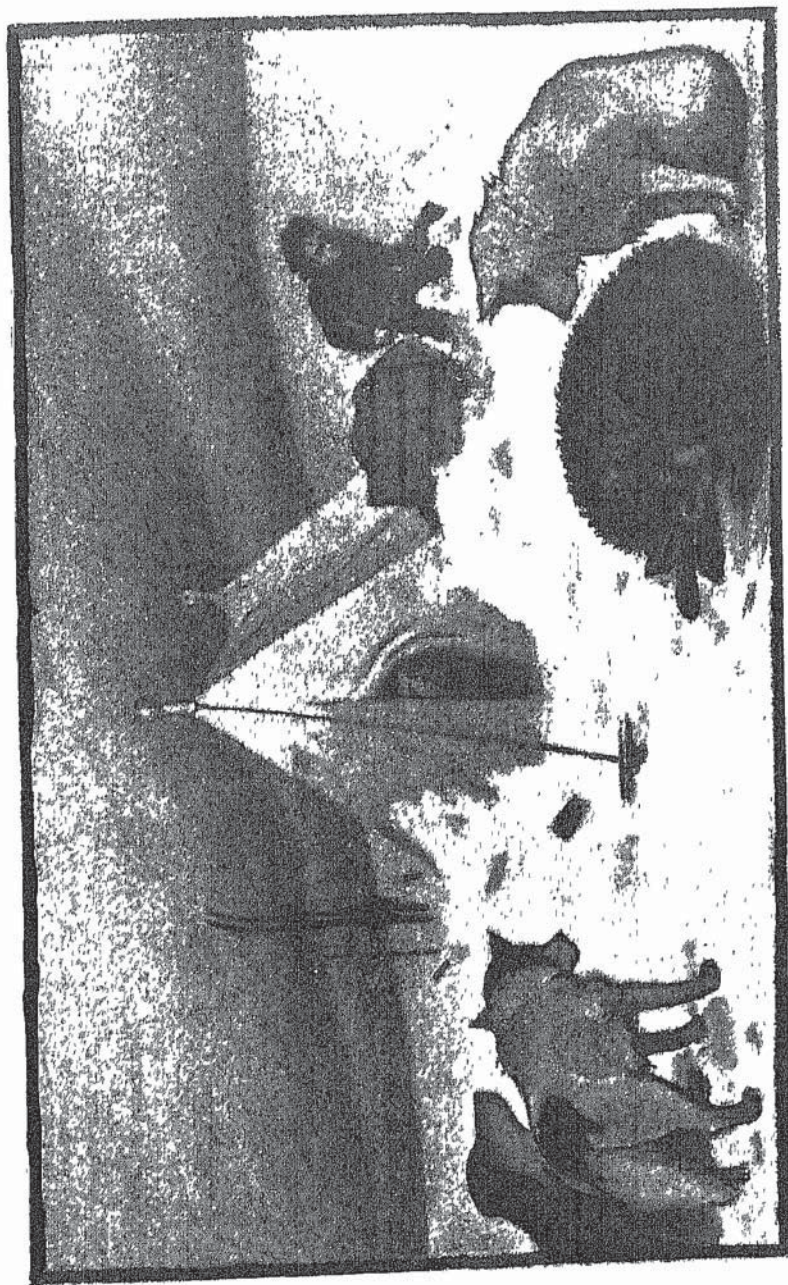
King Oscar II. Land in lat. $65^{\circ} 45' S$.

[L. KUMMEN, from a photograph.

however, we put our sledge on top of the dogs', and it was interesting to convince oneself with what comparative ease this latter heavy sledge, thus additionally burdened, was drawn by our five poor, exhausted dogs. After a while Jonassen relieved Sobral as guide, but both of them had a difficulty in avoiding too great deviations from the course, and so we continued our march only until 4 p.m. for fear of coming too much out of the right path. I hope that as this south-west wind increases we shall get clearer weather."

October 26th.—"Our good luck is at an end, and we must be glad that we have done so much as we have. The weather, far from changing for the better, grew so stormy that it caused us two of the worst days we have had. I have not been out of the tent the whole time, and the snow we needed for cooking-purposes was taken in through the tent-opening by means of a ladle. We had just got dinner over when it grew high time to look to our tent. We took away the foremost pole; the strap was fastened to the ice-axe which we buried in the snow; the tent-cloth was then laid along the ground and snow was piled over it. Under such conditions it is no easy task to creep in and out, but the principle itself is not at all impractical, and one should be able to construct a tent in accordance with it which could withstand even Antarctic storms.

"And thus we have lain the whole of Sunday. It is like a prison, but at the same time worse than one, for it is not possible to move, and to lie thus uninterruptedly in the same sleeping-bag with another becomes almost a torture. One feels almost like a fever patient, lying there without occupation, staring at the roof and making the spots in the cloth assume strange forms and, with these figures to start with, seeing long scenes from real life pass by one, and dreaming of the past and the future and, above all, of action. It is no grand airy castle that I build, for we are none of us here disposed to do so just now, but I dream of an ordered and thorough investigation of the unknown and most interesting region which is the field of our operations—such work it is almost our duty to carry out. Had we but had our work



[L. KUHLMAN.]

After the storm.

Drawing by

completed it would not be difficult to remain still, like Nansen in his stone hut ; but it is not easy to reconcile oneself to lying here uselessly and listen to the howling of the storm, and to know nothing but that our provisions are coming to an end and that our poor dogs are becoming weaker from day to day, in consequence of cold and starvation."

October 27th.—"After lying still for forty-eight hours we made a fresh start to-day at 4 p.m. ; the weather had before then cleared up so much that we caught glimpses of the Seal Islands. We had gone much more to the west than I imagined, and were obliged to make quite a sharp turn in order to reach Christensen Island. We marched for four hours, and should have gone on much further had we not been obliged to stop to repair our tent before the evening grew too cold. A nasty, blue-grey, cold sky, with thick banks of clouds over the land."

October 29th.—"Two more days of storm ; four hours' march in five days ! There is no danger, of course, for we have a good supply of provisions yet, ere we begin to think of killing and eating the dogs. Yesterday we lay and occasionally carried on quite a lively conversation, glad at having repaired the tent before the storm came on, but to-day we are silent and listen to the misery outside—to the faint hissing of the driving snow, like that of snakes or of flames—to the howling of the wind and the slamming of the tent, which is unfortunately beginning to give in every possible direction. The barometer is rising ; perhaps we shall have fine weather to-morrow."

Happily this last guess turned out to be a true one, and during the remainder of the journey we were not obliged to lie still on account of the storms, although the south-west wind continued, and often blew so violently that it would have been impossible to make head against it. We had clear weather while passing between the Seal Nunataks, so that I was able to complete my map, but we did not reach Christensen Island before the 31st, when, after a long march through a heavy fog, we came down on to the sea-ice. Unfortunately, this pre-



Photo by

The wind was blindingly cold and it would have been impossible to march had it not been behind us.

[NONPERSPECTIVE]

vented me from having any opportunity of studying the ice-edge, but we were now accustomed to this kind of bad fortune with storms and mists. We reached our old camping-place early in the afternoon, and stayed there over-night in order to repair the tent, dry our sleeping-bags as much as possible, and procure seal-meat both for ourselves and the dogs.

The month of November began without bringing about any change in the weather we had had so long. Still, there was a little sunshine when I rose at 6 a.m. From the ice we caught a last glimpse of King Oscar's Land, of Christensen Island, the nunataks and the ice-wall, all in the most brilliant light. Had everything stood out as clearly when we went southwards we should have been spared much labour. There was a very striking difference between the sea-ice and that on which we had lately travelled; down here, too, there was much more loose snow. It had now become Jonassen's turn to suffer from snow-blindness, and although we made a long march I cannot say that we had a pleasant day. The next day was not so very much better either. At the same time that there blew a sharp biting wind, everything around us was enveloped in mist, and the greater part of the journey had to be made compass in hand. I had held fast as long as possible to the hope of being able to turn off to the west at this point, and of once more setting foot upon the mainland, but this now became impossible. Although we could see nothing before us, we felt certain that we had come a great deal nearer the station when we encamped for the night.

Our last interesting march on November 3rd is described in my diary in the following terms:

"When I awoke, the wind and drifting snow still beat so heavily against the tent that I did not feel the least inclination to rise, but at 8 a.m. it seemed as though the sun began to shine, and when I cast a look outside immediately afterwards, I was pleasantly surprised to see before us, and apparently quite near at hand, Lockyer Island, and the land at the base of Mount Haddington. It is true that there was still much wind and whirling snow; all the peaks were hidden in clouds,

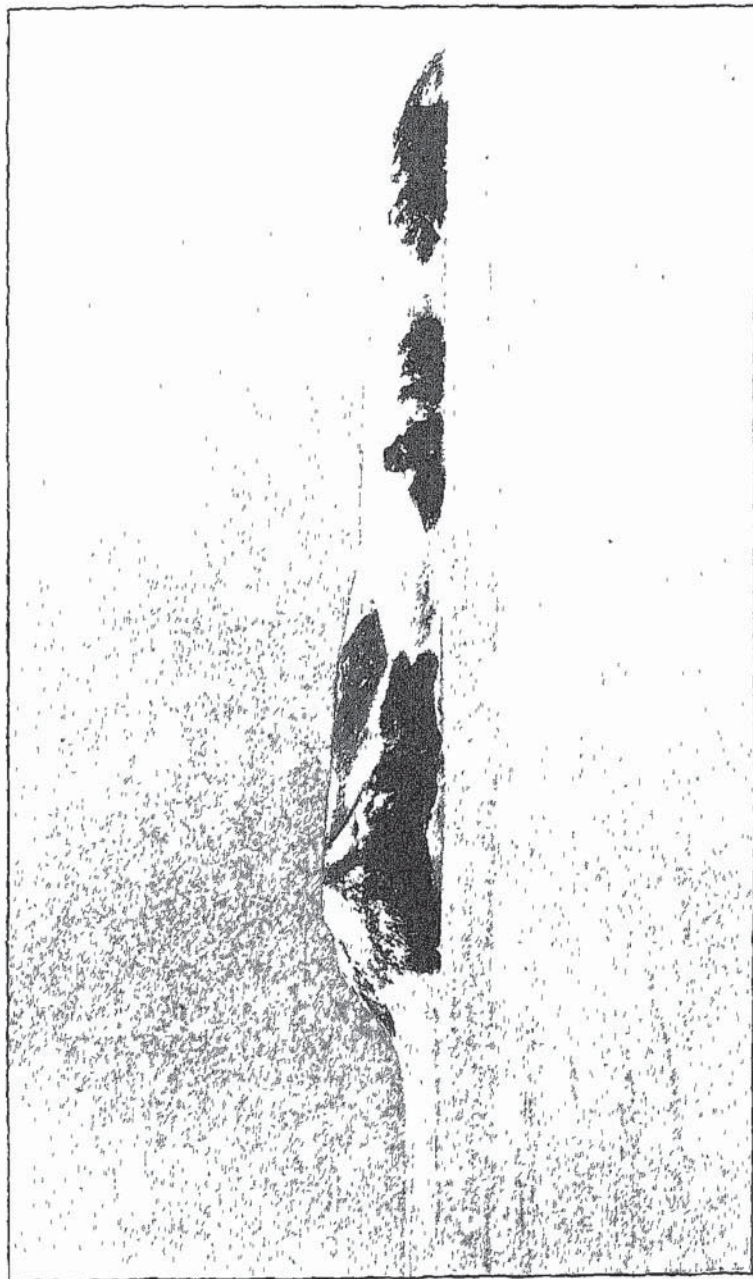


Photo by

The wild, dark-brown precipices of Lockyer Island.

[NORDENSKJOLD.]

and Snow Hill was not to be seen; but what did that matter? It was clear that we must take advantage of the circumstances, and breakfast was soon disposed of. Had we imagined it was the last meal we should have on the ice we should probably have taken more time over it.

"It was ten o'clock ere we could make a start. Instead of leather shoes, which, once wet through, seemed in that weather as if they had been made of thick steel-plate, and made every bending of the foot impossible, I put on my "skallar" for the last time, stuffing them with what remained of the dry grass.* It is true that one shoe was so ragged that it was soon filled with snow, but the other one was whole, and it would, in any case, have been impossible to make the march we did without them.

"The wind was much stronger than on the preceding days, and the weather would have been considered impossible had it not been for the sunshine, but off we went at full speed; the sledges seemed to fly along of themselves; we should never have had a better opportunity of using a sail had it but been ready to be added to our present equipment. Sometimes the land was seen pretty clearly, sometimes it was wrapped in clouds, but I managed to keep a direct course for *Dépôt Point*, from whence we meant to fetch a part of the things we had left there, but which were now of no service in their present situation. In the course of the day *Jonassen* made the proposal that, the weather being as it was, we should not stop at the *dépôt*, but make direct for home, and fetch the things on some favourable opportunity. It is true that he made out the way home to be shorter than it really was, but as I myself had not the least reason for being in a hurry with the moving of the *dépôt*, and as *Sobral* was also very much inclined to try to get home the same day, I thought it would be interesting to see how such a long march would turn out. It is most unpleasant, too, to be obliged to encamp in the midst of such weather as we then had, especially when one does not know how long one may be obliged to stay, so I gave

* "Saennagras"—a Swedish grass used in boots to keep the feet warm.

orders to march direct for home. "I imagine we can be at the station by nine," said Jonassen. "No, we can scarcely hope to be home before two in the morning at the earliest," was my reply.

Not before 7 p.m. did we pass the south point of Lockyer Island, a magnificently wild, dark-brown, precipitous cliff. From the heights a couple of almost perpendicular glaciers shoot forwards to the sea; in front of each of them lay a long row of calf-ice frozen in. Here through the mist of driving snow we at last caught sight of the land round about the station—the basalt-top, the nunatak, and all the other well-known places—and the view acted, of course, most encouragingly. I do not know if the dogs were inspired by the same feelings as our own or by any others, but off they went at full speed, so that Jonassen sat on the sledge and went far ahead of us. But he soon stopped, and when we caught him up he had taken out a little chocolate, of which each of us put a cake into his pocket, for the weather was too bad for anyone to be inclined to stop and eat.

We had drawn the sledge for more than ten hours, but we began to be seriously tired just when it became evident that, if we wished to reach home that day, we should be obliged to push on at our utmost speed. So we put our sledge on top of that drawn by the dogs and bound them firmly together. Sobral went on the one side to support the load, and Jonassen went on the other with the traces; I went in front and steered for the basalt peak, and off we started again—and this for the last time. I hurried ahead at a half-running gait and the wind pushed behind, so that one could scarcely stop. We rested for a moment about half-past nine, Lockyer Island then lying far behind us, but the wind and the driving snow had increased so much that Snow Hill was no longer visible.

I should like to be an artist, in order to be able to describe the magnificent picture that surrounded us on that memorable night. Above us was the vault of a cloudless sky—first of a light, then growing of a darker blue—in which the stars were slowly kindled one after another—Jupiter and Sirius, with the

Southern Cross in the zenith, and then, straight in front, the flaming belt of Orion. Far down in the west comes the newly-lighted crescent of the moon, and, where the sun has gone down, the heavens glow an intense dark, blood-red, against which the sharp contours of Lockyer Island, with the precipitous headlands, the snowy dome and the glorious row of glaciers, are distinctly lined. It grows darker and darker, more stars, and still more, come peeping out, and soon we see nothing before us but a far-reaching, fading shadow, which may be land, which may be sea.

Suddenly we catch sight of a large, dark object, which must be Cockburn Island. Perhaps at this moment we turned off a little to the left, for after pursuing our march for a while we come right into the ice-wall. It was now midnight and pretty dark, but we often thought we saw an opening in the barrier, and found as often that we had made a mistake. The dogs began to grow tired, and we were no less fatigued, but there was now no time for rest. At last we reached the ice-cape and with it the end of our difficulties. We could observe a growing light in the heavens, and the clouds began to be tinged with violet in the earliest dawn. The dogs could scarcely move, but now that we had come on well-known ground, I tried to encourage them by beginning a half-run again. One last effort brought us across the great tongue of snow; the dogs rushed along at headlong speed, and at half-past one at night we stopped before the last ice-block on the shore in front of the station. We took only a few of the most important things from the sledge up to the house. Poor Kurre was quite crippled and fell over into the snow when we took the traces off him. The house lay dark and silent, but on entering we were met on all sides with cries of welcome, which were first a little anxious in tone till our comrades learned that all was well.

My first thought was to wind up the chronometer, and the next to look at the pedometer, which showed 92,000.* Then I cast a glance at my companions, who were half black in the

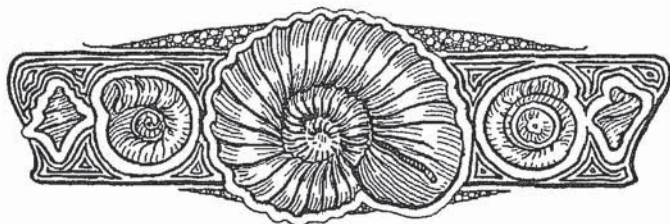
* A distance, for the day, of $38\frac{1}{2}$ miles

face, and more like Indians than anything else. Sobral had sunk down in a chair near the door, but suddenly said that he felt ill, and the next moment fell fainting to the floor. We rushed to his aid; he was undressed and carried to bed, where he soon recovered. At the same time I noticed that everything seemed to go round, and I hurried out into the fresh air, where, with an effort, I succeeded in overcoming the attack, so that I could soon go in and take a seat at the table. Jonassen said afterwards that he, too, had experienced a strange feeling when he first breathed the indoors air, to which we had so long been strangers. We drank a cup of coffee and took a little hard rye-bread, with butter and mutton, together with an incredible amount of water. We enjoyed it, but were too tired to do so much. We spoke of the most important events that had happened during the time we had been separated, but I found that it was useless to ask for any news of the *Antarctic*.

Nothing showed more plainly the exertions we had undergone during the expedition than our loss in weight. Before breakfast the next morning, when I probably already weighed a little more than on our arrival the evening before, it was found that I was 7 kilogrammes ($15\frac{1}{2}$ lbs.) lighter than at the beginning of the journey. I regained 4 kilogrammes ($8\frac{1}{2}$ lbs.) during the day, and in the course of the following day, $1\frac{1}{2}$ kilogrammes more ($3\frac{3}{10}$ lbs.), after which my weight remained pretty constant. The case was quite the same with the other two members of the expedition.

The length of the route traversed during the journey amounted to over 650 kilometres (400 miles). It is true that, in consequence of the exceptionally severe weather, and of the impossibility of completing our supplies of provisions up on the ice-terrace, we had not been able to stay away as long, nor to extend our journey as far as I had wished, but still I considered that we had every reason to be satisfied with the results obtained. We had discovered an extensive stretch of coast and thereby proved the connection between Louis Philippe Land and the tracts seen by Larsen, the charts

of these regions becoming completely changed in consequence of our expedition. We had made meteorological and biological observations, and had, above all, made collections, which were of great value for a knowledge of the geology of the tracts in question, whilst our proving the existence of the great ice-terrace could be considered as in itself worth a great part of the labour expended on the journey.



CHAPTER XV.

THE SUMMER : ITS WORK AND RESULTS.

We begin to expect relief—Some features of our summer-life—A sledge-journey to Seymour Island—Fossil penguins ; plant fossils ; general geological features of the islands—Antarctic summer weather—Christmas, 1902

NONE of us could sleep well in a proper bed the first night. My feet were tender and swollen, my lips swollen and cracked, and directly after our home-coming I had a difficulty in reading, as the letters danced before my eyes. Sobral had a severe attack of bad eyes which lasted several days. Our beards had whitened, and the dog Kurre had quite changed colour, being now a pale yellowish grey instead of a bright yellow.

Little of importance had happened at the station during our absence. Five of the seven Greenland whelps had died, but the other two had grown into very promising youngsters, and were of great use to us during the following year. The weather had become much better during our absence, but it was still cold and windy.

What at first made the great difference between the early part of our residence here and the period which now began was, partly, the so-called summer and the conditions which arose in consequence of the new season, and also our waiting for the *Antarctic*. When the summer closed we commenced our second and forced wintering. It will be seen from the following entry in my diary that we had begun at an early period to expect relief.

"November 7th —Bodman and Ekelof have been up on the plateau and say that a narrow lead can be seen to the south-east, but that the ice to the north lies quite compact. Who can tell, under the circumstances, when the boat will be able to come? Either we are experiencing a very bad year, or our predecessors have had uncommonly good fortune. We are now having a consultation as to when we may expect to reopen our communications with the outside world. Bodman keeps to the 20th November, but some of the others say the 20th December or the 20th January.

"On the 5th, Bodman and Ekelof each shot their *Megalestris* (Skua, or Port Egmont hen); the birds were feasting on one of the dead dogs. I had at first an objection to eating these carrion-birds, but they tasted excellent when served with apple sauce; there was not the least trace of train-oil about them, but they reminded me most of an old and pretty tough capercaillie.

"It is remarkable what bird-life we have around us now. It is mostly terns, the black-backed gull (*Larus domin.*), and a few skuas and cormorants that are seen, but the penguins I have not observed as yet . . ."

On the 21st November Bodman, Ekelöf and Jonassen made a sledge-journey to Cockburn and Seymour Islands, in order to look to the cairn and signal-post, to hunt and to collect eggs. I accompanied them to the southern corner of Seymour Island, where I spent the rest of the day in geological work. They did not come back before the 25th. They had followed the west coast of Seymour Island to the most northern headland visible from the station, and there turned off into a large bay, where they discovered a deep valley which ran right through the island. From thence they had gone to the cairn, which was found in good order, and had taken a part of the provision-supply from the depôt, potatoes amongst the rest, of which article of food we began to run short; but on going to draw off some petroleum from one of the two cisterns there, it was found that both of them contained linseed oil! The party then went over to Cockburn Island, which was close by,

and pitched its tent almost in the same place where Ross had landed nearly 60 years earlier. The penguin colony here is much smaller than that on Seymour Island, but bird-life is, in its entirety, richer and more various on Cockburn Island, which is especially a great breeding-place for cormorants. These birds build much finer nests than the penguins, resembling high cones in form, the insides being lined with red seaweed and looking quite pretty when they are newly finished.

A beautiful collection of fossils, including some uncommonly

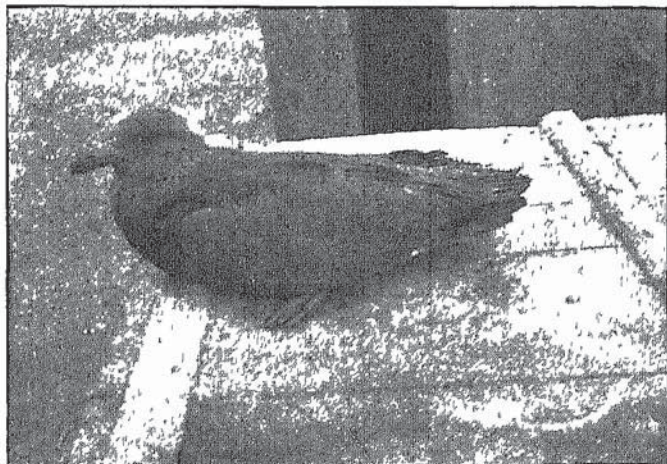


Photo by]

The Skua (*Megalestris*), our chief game-bird.

[E. EKELOF

well-preserved ammonites, was brought from Seymour Island, while from Cockburn Island were brought specimens of rock, all, however, consisting of volcanic tuff. As this last circumstance seemed to agree with the account given by Ross, I became convinced that it was of no very great use to make further geological investigations on this island, and the consequence was that it was reserved for some one else to make the valuable geological discoveries which were made, most fortunately, ere we left these regions.

The sledge-party also brought home some cormorant-meat,

which tasted excellently, and penguin eggs, which we at once tried. The white becomes semi-transparent and a little bluish on boiling; the yellow has a somewhat reddish tinge, but the taste does not differ much from that of a hen's egg, and the find was of great value to us as providing a change in our diet. But the supply brought was not large, and I immediately resolved to undertake a new sledge-expedition to Seymour Island, partly for the sake of collecting eggs and partly for continuing my geological studies in the northern part of the island. The last days of November were cold and unpleasant, but we were obliged to hurry in order not to come too late for the egg season, and so I started on the 2nd December, accompanied by Jonassen and Åkerlund, and reached the depôt without any great difficulty. Farther out on the ice we could see large crowds of seals, amounting to several hundreds in number.

I at once made for the newly-discovered cross-valley, and in a grey shale amongst the shore rocks near its southern entrance I caught sight, for the first time, of something which made me surmise that petrified wood was not the only vegetable fossil of Antarctic regions. I went along the slope of the valley right across the island, studying and collecting from each knoll, but although I everywhere found traces of vegetable petrifications I could not succeed in finding one which allowed of any determination. I returned to the camp late in the evening, and enjoyed a good supper of fresh penguin meat.

Some of the penguins which had for the second time been deprived of their eggs had gone out to sea, but otherwise they did not seem to make much-to-do about the thefts. A few lay quietly in the empty nests as if nothing had happened, whilst others were said to have carried rotten or cracked eggs to their rifled homes and sat upon them.

The next morning, December 3rd, I went out early along the shore, past the cross-valley and towards the north headland of the island, which here forms a high, level, extensive plateau. I did not ascend the plateau on this occasion, but



Photo by]

Breeding-place of cormorants on Cockburn Island

(G. LORIAN,

stayed on a little terrace some distance below the top, which was traversed by valleys and had small irregular knolls of hard rock. In this place I made a most interesting discovery consisting of the loose, scattered fossil bones of a vertebrate, but I could not investigate the matter more closely on the spot.

A more important discovery of its kind could scarcely be made by such an expedition as ours. One of the greatest problems that exists in the investigation of the geography of ancient epochs is that which concerns the *rôle* played by the South Polar regions during that important period when higher animals and plants of modern types began to appear upon the earth, *i.e.*, during the latter part of the Cretaceous, and the first part of the Tertiary systems. The distribution of land-organisms on the southern half of the globe presents many peculiarities, especially in the circumstance that nearly-related forms occur in South America, Africa and Australia, while these continents are not now in any way connected by land. These phenomena could best be explained could we suppose the existence of a great mass of land around the South Pole, formerly continuous with these three divisions of the globe, and across which animals and plants could migrate from the one side of the earth to the other. But no proof of the correctness of such an hypothesis had been discovered before the advent of our expedition to Antarctic regions.

The discovery just mentioned has not, however, been able to fully decide the correctness of the theory. Apart from some large, and as yet undetermined, bones, nearly all of those that I found belong to a species of penguin considerably larger than the largest now living—the emperor penguin. It is true that this discovery is in itself of exceeding interest, as it demonstrates that even at such a distant epoch—probably the beginning of the Tertiary period—the penguin was an inhabitant of the Antarctic regions; but for the solving of the general problem, it is clear that it would be of still greater importance to discover here the remains of land vertebrates.

But I was to make another discovery on this memorable

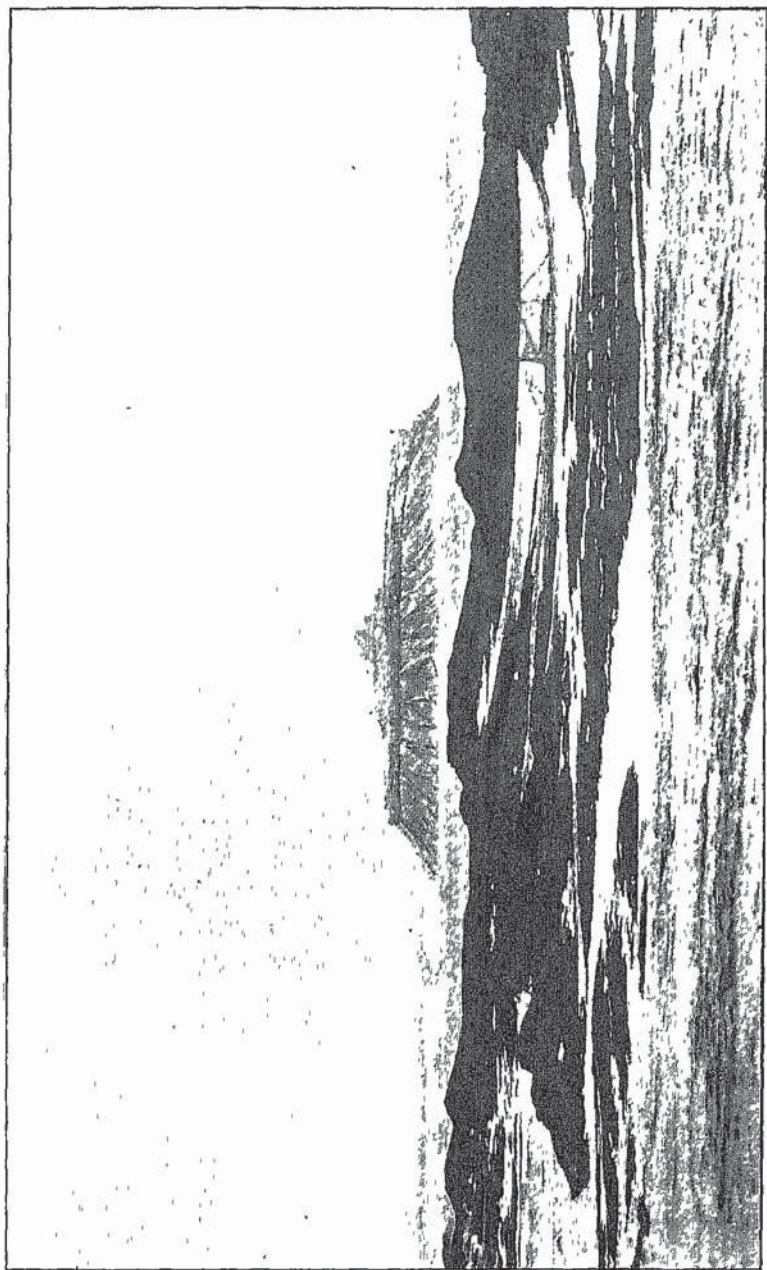


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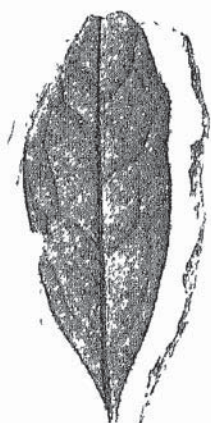
View of the cross valley in which the plant fossils were found Cockburn Island in the background.

[G. BOBMAN.

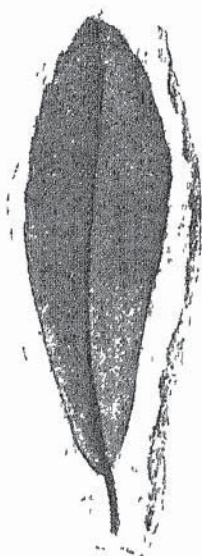
day, which strongly supports the hypothesis mentioned above. When I came back to the cross-valley I stopped there to continue my search among its rocks for plant fossils. I looked a long time without finding anything but fragments, until my eyes fell upon a brown, coarse, hard, tuff-like rock, and in this I at last found what I had sought for so long. numerous, large and quite distinct leaves—although, as a rule, by no means well preserved or easily determinable—belonging to a variety of different forms of exogenous trees, firs and ferns. It is difficult to express the joy I felt at this moment. Could it have been a dream which led me to choose just these tracts for my field of labour? For if there was one hope whose fulfilment or non-fulfilment was, in my thoughts, almost synonymous with the success or failure of the expedition, it was just that of being able to discover in these regions determinable Tertiary vegetable fossils.

Professor Nathorst, to whom the material brought home was submitted for a preliminary examination, has placed at my disposal the figures reproduced here, and has written a short paper on the discovery. After giving an account of the well-known discovery made by Larsen, and after pointing out that the conditions of the examples is such that their determination necessitates a most laborious examination, he writes as follows :

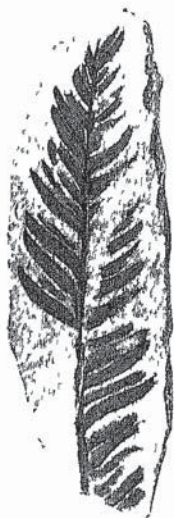
“The fir-trees, as well as the exogenous trees and the ferns, have come to hand. Amongst the specimens of firs I should like to call special attention to a branch (Fig. 3) with symmetrically placed leaves, reminding one of the *Sequoias*, although a nearer examination of the specimen shows that it probably belongs to another family. Of special interest is a large leaf which, though badly preserved, can safely be said to belong to an *Araucaria* of the same type as the South American, *A. brasiliensis*. The leaves of the exogenous trees are relatively small and narrow; their habitus calls to mind similar fossils from the Tertiary formations of central and southern Europe, but also certain South American types of leaves (Figs. 1 and 2). I should specially mention that I



1.



3



2



4.

Tertiary plant fossils from Seymour Island (drawings by Prof. A. G. Nathorst).

have found several fragments of leaves of the beech, *Fagus*, which prove that such trees existed in that part of the world even during the Eocene period. The ferns belong to many different types, but are very fragmentary, and consequently their determination will be difficult."

The finds of beech and *Araucaria* are specially interesting, as these fossils occur in the collections belonging to the older Tertiary period which I had previously made in the district around the Straits of Magellan. Thus it seems as if these families, like the penguins, were real Antarctic types. It remains to be seen in what degree our collections otherwise support the migration theory before mentioned, but the possibility of such a migration must now be unconditionally acknowledged.

In this connection some words ought to be said respecting the geological conditions here in other respects.

Before our expedition, no other fossils from Antarctic regions were known than the petrified tree-trunks and some shells taken home by Larsen from the north part of Seymour Island. These alone were not sufficient, however, to determine the geological age of the islands, but the deposits were taken as belonging to the older Tertiary period. It was, therefore, a surprise on our first landing at Snow Hill to find there numerous ammonites, a form of life which was already extinct at the period named, and the presence of which showed that at least two formations were represented in these regions. Our investigations have proved that these islands are built up of a connected series of deposits, which become more recent the more one comes to the north. The oldest strata, which are found in the district immediately surrounding the station, belong to the middle or upper cretaceous system, and contain numerous ammonites and mollusca, as well as sea-urchins and crustaceans. On Snow Hill Island the fossils are, in general, not very well preserved; the opposite is usually the case on Seymour Island, where, moreover, the store of fossils is greater. Ammonites are found on the last-named island too, but belonging to other types, and it seems most probable that the



Photo by]

[TENOW.

Fossils from Cretaceous system; found on Seymour and Snow Hill Islands.

deposits there belong to the youngest chalk formation. Ammonites are wanting, however, in the northern part of the island, their place being taken by numerous new forms of mollusca, brachiopods, encrinurus liliiformis, etc., and it was in these deposits, too, that the fossil bones and leaves found were discovered.

The collections of fossils we have brought home will be the thread which will gradually lead to discoveries enabling us to form a picture of the chief features of the nature of the Antarctic regions, from the Jurassic period down to our own times. And it must be remembered that it is a continent which has thus been opened to scientific investigation, and a continent which, during the period of the earth's development just named, was not an icy waste, but a land with luxuriant vegetation and extensive coasts, where, maybe, many types of animals and plants were first developed that afterwards found their way as far as to northern lands.

It had been my intention to return to the station the same night, but now I was doubtful for a moment if I ought not rather to stay here some time. But I had not brought with me any outfit for the collection of such sensitive forms; the *Antarctic* would probably be here in a few days with new resources, and even should this not be the case, I hoped to be easily able to arrange another journey to the spot, and under more favourable circumstances; so we packed our things on the sledge and started for home.

Whilst the prevalent weather had hitherto been cold and unpleasant, it now began to be more summer-like—if one can speak of summer in these regions, and during this year in particular. This latter reservation is of need, for the present year has been unusually badly favoured in this respect. With the exception of their cold summers the South Polar tracts can be compared with corresponding regions in the north, but in the respect named they differ most essentially. Every description of South Polar nature gives an incomplete picture of the reality unless this peculiarity be well pointed out. It is true that we had fine sunny days, when we could sit outside

and warm ourselves in the sun, and when the surface soil showed 30° C. (86° F.) of warmth; but, as a rule, the thermometer stood at some degrees below 0° C. (32° F.), and mist and snow belonged to the order of the day—the same kind of weather as we have in Sweden during the winter.

The following table shows our mean temperature during the three summer months, as compared with the two coldest summers which have hitherto been the subject of meteorological observations, viz., that experienced by Nansen's Expedition at the most northerly point reached, and that by the *Belgica*. Comparison is also made with Godthaab, in Greenland, and in a degree of latitude corresponding to that of Snow Hill, and with Lund, in southern Sweden.

<i>Snow Hill</i>	<i>Belgica.</i>	<i>"Fram,"*</i>
$64^{\circ} 22'$.	c. a 71° .	c. a 84° .
<i>S. lat.</i>	<i>S. lat.</i>	<i>N. lat.</i>
December, -2.0° (28.4° F.)	-2.2° (28.04° F.)	-2.2° (28.04° F.)
January, -0.9° (30.4° F.)	-1.2° (29.84° F.)	-0.3° (31.46° F.)
February, -3.5° (25.7° F.)	-1.0° (30.2° F.)	-2.5° (27.5° F.)
	<i>Godthaab.*</i>	<i>Lund†</i>
	64° .	$55^{\circ} 42'$
	<i>N. lat</i>	<i>N. lat</i>
December, $+4.0^{\circ}$ (39.2° F.)	$+0.2^{\circ}$ (32.36° F.)	
January, $+6.0^{\circ}$ (42.8° F.)	-0.8° (30.56° F.)	
February, $+5.9^{\circ}$ (42.6° F.)	-1.0° (30.2° F.)	

These figures show that this was the coldest summer ever experienced †, although the *Belgica* and the *Fram* Expeditions spent a corresponding season in the pack-ice, the one 7, and the other 20, degrees of latitude nearer to the Pole. They also prove that there is a tremendous difference between an Arctic and an Antarctic summer climate, and that our summer was colder than winters in southern Sweden. But the temperature alone does not give one a true idea of the conditions in

* June, July, and August.

† Winter months

‡ The English South Polar Expedition had, however, simultaneously with us, still colder weather 13° further south, at Victoria Land.

South Polar regions, and the following example will serve to illustrate some other points of view. I had arranged a row of bamboo rods on the glacier, in order to measure the changes in the height of the ice caused by thawing and snow-falls. During the winter this height was found to be constant, and not the slightest part of the snow which then fell remained on the glacier. But during the summer, on the other hand, the height of the snowy covering increased by 25 centimetres (9.75 inches), and this amount still remained when we left these tracts one year later.

Thus the reader must imagine a climate where winter is as severe as in western Siberia, and so stormy that every particle of snow blows away; where the summer, even in the low latitudes where we were, is as cold as near the North Pole, and is, moreover, such, that snow-drifts and glaciers increase during the warmest season of the year. It will then first be possible for him to understand how it is possible for an expedition lying two degrees north of the South Polar Circle to be forced to winter there, when the ice-conditions do not permit of a vessel's penetrating the mass.

* * * * *

I made several other sledge-journeys of greater or lesser length, and soon began to think of making a new expedition to Seymour Island, in order to continue the studies I had commenced there, and one day in December, Bodman and I made up our minds to go across to the southern part of the island in question. We went over the plateau to the channel, where we beheld an unexpected sight, for in the place of the unbroken ice along the shore there were several stretches of open water. It is true that there were ice-bridges which seemed to extend to the opposite shore, but after I had put one foot through the ice, we thought it wisest not to continue our wanderings. Of course, we had still one way there across the ice in Admiralty Sound, but from that date all possibilities of making sledge-journeys to the depôt and the fossils on the east coast were irrecoverably lost.

The days sped on rapidly towards Christmas, the great feast of the year. Christmas Eve was a fine sunshiny day, but it was not before late in the afternoon that arrangements were made calculated to call forth feelings peculiar to the festival. The table was decorated with flags, and a bouquet was formed

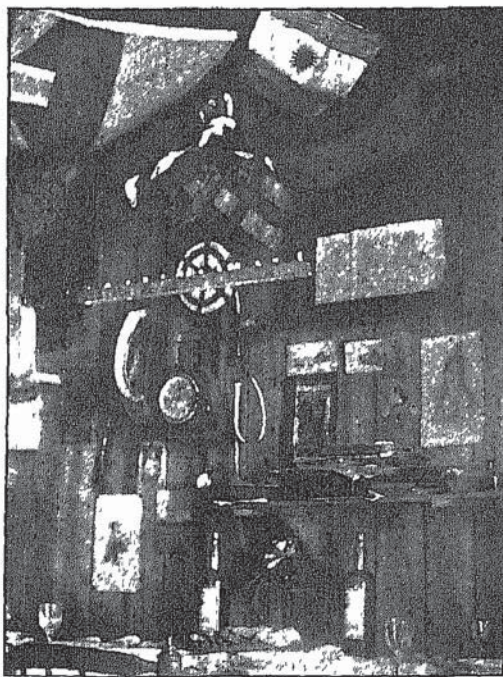


Photo by]

[NORDENSKJÖLD.

Our festive Christmas table

of the best materials the station afforded—chosen stalks of shoe-hay, and the withered remains of a Christmas nosegay I had received a year before. Supper consisted, according to the good old Swedish custom, of stock-fish, porridge and mince-pies. When the phonograph was taken out and played the old Yule hymn, "All hail, thou Morning Star so fair!"

I fancy everyone dreamed himself far away across the sea, though none expressed his thoughts in words.

Outside in the early Christmas morning the fresh cold breeze reminded us of winter, and the thermometer showed 9 degrees below freezing point (15.8° F.).



CHAPTER XVI.

VAIN EXPECTATIONS.

Our feelings during the period of waiting—New Year, 1903—January storms and their effects—Preparations for a new wintering—Collecting seal-blubber for fuel—Boat-journey to Seymour Island—Slaughtering penguins—Pictures from penguin-life—The decisive day

THE time between Christmas and New Year passed in the same monotonous way as the preceding days, several of us going up to the plateau every fine day in order to look for the vessel.

It need scarcely be said that all this fruitless expectation reacted strongly on our work. It is true that the observations were taken with the usual regularity—were increased in number, I may even say—but none of us felt any desire to begin work of any great continuity. Least of all was there talk of our making expeditions which should last for any length of time. It may willingly be acknowledged that much work could have been done during December, and pro-

bably would have been done, had we not had reason to expect the arrival of the vessel late in the summer.

Our humour, too, suffered in consequence of this waiting ; there fell a nervousness upon all of us, although, it is true, this took no other form than an unnecessary warmth in discussions even on the most ordinary subjects. But there was none of us who even dreamed of the possibility of our having to remain here for another winter.

The New Year, 1903, came with a pretty fresh wind from the north that gave fresh life to our hopes, which were still more encouraged when, on January 5th, the wind veered round to the south-west and increased to a slight storm. The howling gusts, the rattling of the empty petroleum cans and preserved-food tins as they rolled away ; the drifting snow, the darkening air—everything recalled periods to which we were formerly so accustomed, but now each stormy sign was greeted with feelings of joy. We did not have fine weather again until the 7th, and then, of course, every man of us made a pilgrimage to the top of the basalt hill. North of Cockburn Island could be seen some open water, which continued past the northern point of Seymour Island, but there merely as a narrow band. There were also a number of small leads to the east of the island, while to the south-south-east the sea was nearly clear of ice as far as I could see through the misty air. The outlook could have been better, but we were glad as long as we could mark that progress had been made in the dispersion of the ice.

After the 9th January the wind once more began to blow strongly from the south or south-south-east, and, during the first few days, with blinding, whirling snow, which almost entirely shut out the view. But we were contented with every wind that blew, and hoped for the best, so that I naturally felt it as a hard blow when Jonassen, who, as usual, had been the first to go up on the hill, came home and told us that the ice lay everywhere closely packed on the east side. There was nothing to be done but to arm ourselves with patience and trust to the future. It was fortunate that none of us

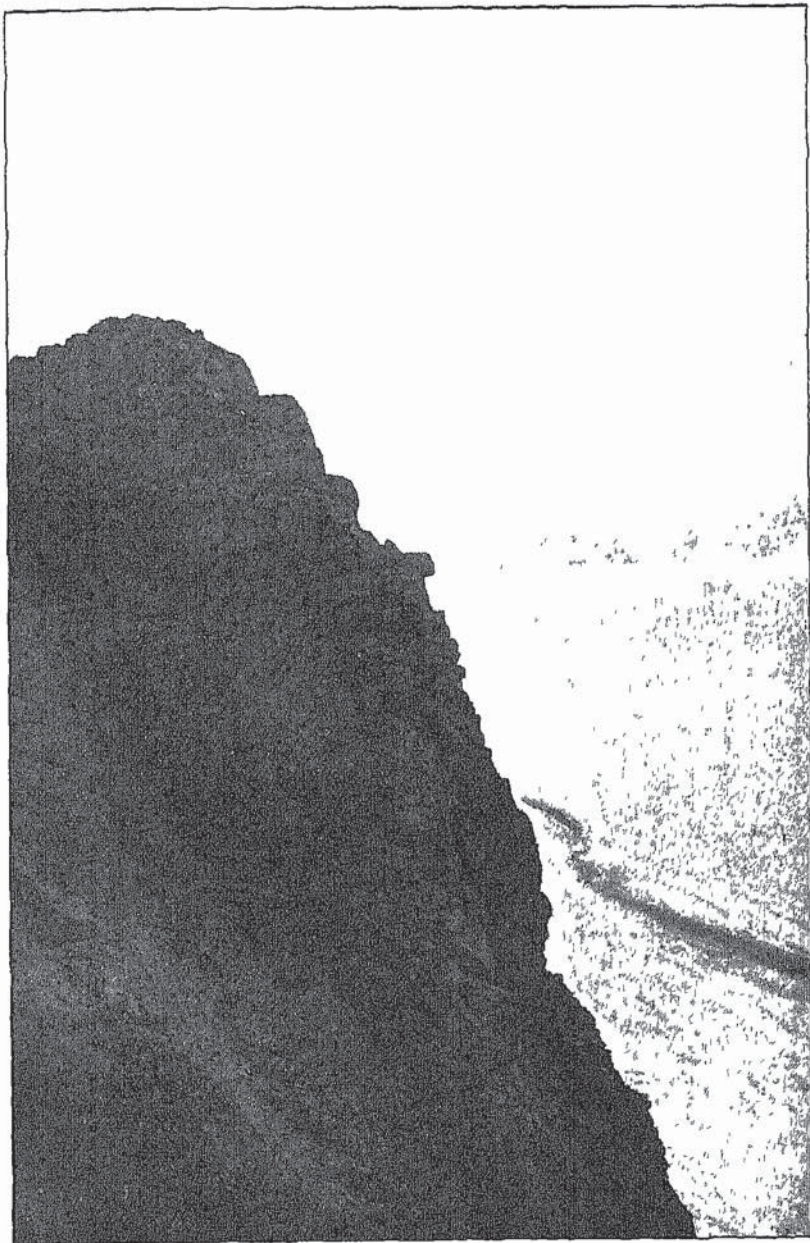


Photo by]

The basalt hill.

[G BODMAN

17*

could then think that this storm had given the death-blow to all possibilities of relief, and that the crushing ice-masses had changed our dear old *Antarctic* to a drifting wreck.

The summer was now pretty far advanced, and the weather of late had been such as to preclude all thought of extensive work out-of-doors, but our last disappointment made us seriously consider the question how we could best make preparations for another, and a forced, wintering here, for there was now no time for delay but merely for action. My intention had been to go over to Seymour Island, but the result of a discussion with Bodman and Ekelof was, that I stayed at home for some days longer in order to prepare a thorough change in our method of living and our work. I compiled a new and preliminary scheme for our dietary, after having made an inventory of our chief articles of provision and made some statistical investigations. But it was clearly the question of fuel which was of the most importance for us. We thought we could be sure of obtaining a sufficient supply of penguin- and seal-meat, but our remaining supply of coals was far from sufficient for a new winter, and we had had no experience of the use of seal-blubber. We determined, therefore, to begin at once and kill all the seals we could and keep their skins, while, in order to spare our fuel, we left off making up fires in the kitchen-range in the evening and contented ourselves with a cup of tea made with the help of the Primus petroleum-stove.

After I had made a short visit to Seymour Island in order to look at the penguin colony, and to bring home some fossils, we began to devote ourselves in earnest to seal-catching, in which we all took part, while Jonassen had also to drive the skins home. The species of seal most common at the station was the Weddell, already mentioned. Compared with the species frequenting northern waters this one is rather large, and can be more than 3.5 metres (11½ feet) in length, but at this season of the year they were not, unfortunately, so very fat. Happily they were not scarce, however, for on the 19th and 20th we killed 7 altogether. If to these we add the

Megalestris and penguins killed on the same days it can be understood that the animal life at this time was fairly rich. It was seldom that we saved the seal-meat now, as the transport was so difficult, and as we also thought that the birds tasted better

The days which followed were the warmest we had during this summer, though neither the maximum nor the mean temperatures were as high as what we had had during the course of the winter. On the night before the 24th we had a



Photo by]

[E EKELOF.

Bodman carrying out magnetic observations.

really strong north wind for the first time for many days. Jonassen, who had gone up on the hill to look at the ice, came back with one of his usual, superlatively sanguine descriptions of the state of things. The best proof of the anxiety with which we hoped for a change in the ice-conditions was our readiness to believe in these accounts, although they had already often deceived us. But this time the ice had really opened a little. "It is perhaps a little better now than it was last September," is the remark in my diary, but there was really no great change. The narrow lead along the land

had opened again, however, so that it seemed almost possible to get to Seymour Island by rowing, and we determined to carry out our intention of bearing our boat down to the open water as soon as possible.

At the station we had now so much open water along the shore that one could row past the basalt hill, so we started on the 29th, the boat being transported by five men and five dogs. The going was comparatively easy, the boat was light and the dogs willing. We spoke about old-time expeditions, and how they had been obliged to pull heavy boats across the ice in this way, and I could not but think with admiration of the toilsome work carried out by our predecessors, little dreaming of the painful wandering across the ice with heavy boats which others were to undertake in our neighbourhood a few weeks later.

We had now to make the long-planned journey to Seymour Island for the purpose of completing our supply of provisions. Had we understood how good seal-meat was, we should have taken more care of the flesh of the eighteen seals we had now killed; but, as it was, it was chiefly upon the penguins that we relied for our food supply. The ice had soon packed again, preventing all possibility of using the boat, but on the 4th and 5th February we had a breeze from the north-east which once more drove the ice from the land. Having carried most of our pack over to the eastern shore of the station during the preceding days, we were able to make a start on the 6th. Ekelöf and Jonassen accompanied me on this important journey, which I will describe with the aid of my diary.

Two of us in turn rowed the boat, while the third steered. The weather was dull and foggy, and it was no easy task to make our way between the fragments of ice, but we kept as much as we could along the fast ice which lay along the coast, for there was usually a channel there sufficiently broad for our needs. On the way we saw some seals, and a flock of thousands of cormorants flew close over our heads on their way northwards to a more open sea. A few penguins, too, met us a long way out, some standing on the ice and others



Photo by]

"Ekelof's Rocks"; jagged, precipitous sandstone rocks in the north eastern part of Snow Hill Island

[D. Ekelof.

swimming around us in their peculiar "flying-fish" manner. They passed us easily; it was as though they were hurrying home to make preparations for our visit. Poor things! They little knew our evil intentions.

After pitching our tent on the shore of Seymour Island, and snatching a hasty meal, we went at once to survey the penguin colony. It was surprising to see how big the young ones were already, only a few having their downy dresses still on, so that most of them looked quite neat in their new, shining suit of feathers. They reminded me not a little of gulls coming from a ball with white dresses and fur cloaks.

But we had not much time to spend in looking at them, and there was no reason for delaying our work, so we armed ourselves with seal-hacks and commenced to attack the poor animals. It would be difficult to imagine a more disgusting task. At first they usually made an attempt to escape, it was only the largest and boldest, and those who stood near their young, or were posted as sentinels around the camp, who tried to defend themselves, but when they saw it was impossible to escape they made a desperate stand; a blow on the head could strike them to the earth, but it was nearly always necessary to chop the head to pieces ere the bird died.

It was only bitter need which could compel us to this horrible slaughter; nothing else could have prevailed upon me to take part in it. It may seem difficult in other countries to be obliged to kill animals in numbers, but it becomes still more repulsive here, where the creatures have not yet learned to fear man. When the disturber of their peace approaches, they look at him with mild, astonished eyes; or, maybe, make a bold attack without paying the least regard to their immense inferiority in strength. But it seems most dreadful of all to kill these penguins, these peculiar birds, which one over and over again has compared with human beings, and which, in these deserted tracts, come to be considered almost as good comrades and friends. Much as I had longed for the *Antarctic* during the course of this summer, I never did so more than during these few days, and when it blew a hard wind from the

north-west during the following night, I almost took it as a sign that my wish would be granted, and that the vessel would come for the penguins' sake, before we had slain all those we needed for our winter supply.

The wind fell towards morning and Ekelöf and myself naturally took advantage of the occasion to make a trip to the top of the high northern plateau, in order to see how the ice lay, and after a long walk we managed to obtain a good view of it. The ice lay close, it could not be denied, but it was broken right on to Joinville Island and as far as we could see. Even as matters stood I could not repress the thought that a vessel like the *Antarctic* ought to be able to force her way through. In any case, it would not need much to scatter the ice a great deal more.

And the little that was wanted came very soon. During the following night a new storm raged, from the west-south-west this time; and not only did it blow more heavily than the night before, but it was actually the most violent storm we had had since the winter. We were obliged to remain in our tent the whole of Sunday, and it was not before the evening that I could go out and make my way to the top of a high peak far inland. But here at last I caught sight of great stretches of open water. The entire southern part of Erebus and Terror Gulf was ice-free, almost the whole way to Cockburn Island; it was only on the horizon that lines of ice could be seen, but there it was visible in all directions. The joy was great in the tent when I came home with the news, and we should have celebrated the day had we been able. We determined to go on with our penguin-killing, it is true, but to content ourselves with the least possible number, which was put at 400.

I do not intend to give any detailed description of the days which followed and the varying moods they witnessed. The weather was cold and stormy; it could be marked that winter was approaching, for the ice began to drive in again, and we were, moreover, visited by an impenetrable mist which entirely shut out the view. Now and then there came fresh storms

which carried the ice away again, turning it once more into a scattered, drifting mass, but we never had fine weather simultaneously with good ice-conditions for such a long time together that the absence of the *Antarctic* made us feel uneasy. I shall never forget the days we spent imprisoned in our tent, or in slaughtering penguins, or in going as often as opportunity offered to some detached peak, in order to look for the *Antarctic*—for the vessel which, ere we left this place, was to disappear in a watery grave only a few miles from where we were. Neither can I forget my evening walks along the shore with the full moon starting out from behind the storm-clouds, and with the penguins standing at attention in long rows, and seemingly always ready for a conversation would one but deign to speak to them.

This penguin colony, which became of such inestimable value to us, was not a very large one; I calculated the number of young ones at about 2,500, and I suppose that in a bad year like this one could hardly count more than one such in every nest, and that would make the number of old birds to be about 5,000. The young ones were now being left to themselves by the old birds, and a great number of the latter were beginning to moult. Ekelöf was able to ascertain that these latter birds were in much better condition than the other old ones, which were nearly all in want of blubber.

The young ones, however, can scarcely provide themselves with food, and I imagine that both the fathers and mothers share in this work. If the reader wishes to have an idea of how the old penguins spend their day, the facts are somewhat as follows. Early in the morning they swim out to sea, where they dive and swim about, often in flocks and, pretty easily, as I think, supply themselves with what food they need, which chiefly consists of small crustacea, *Euphausia*. They return with the flood tide, either in small groups or singly. They come swimming under the water; there is a little splashing amidst the breaking waves, and up they come on to the shore, stretching themselves and shaking both body and wings and making a sniffing noise. They are in no hurry to reach the

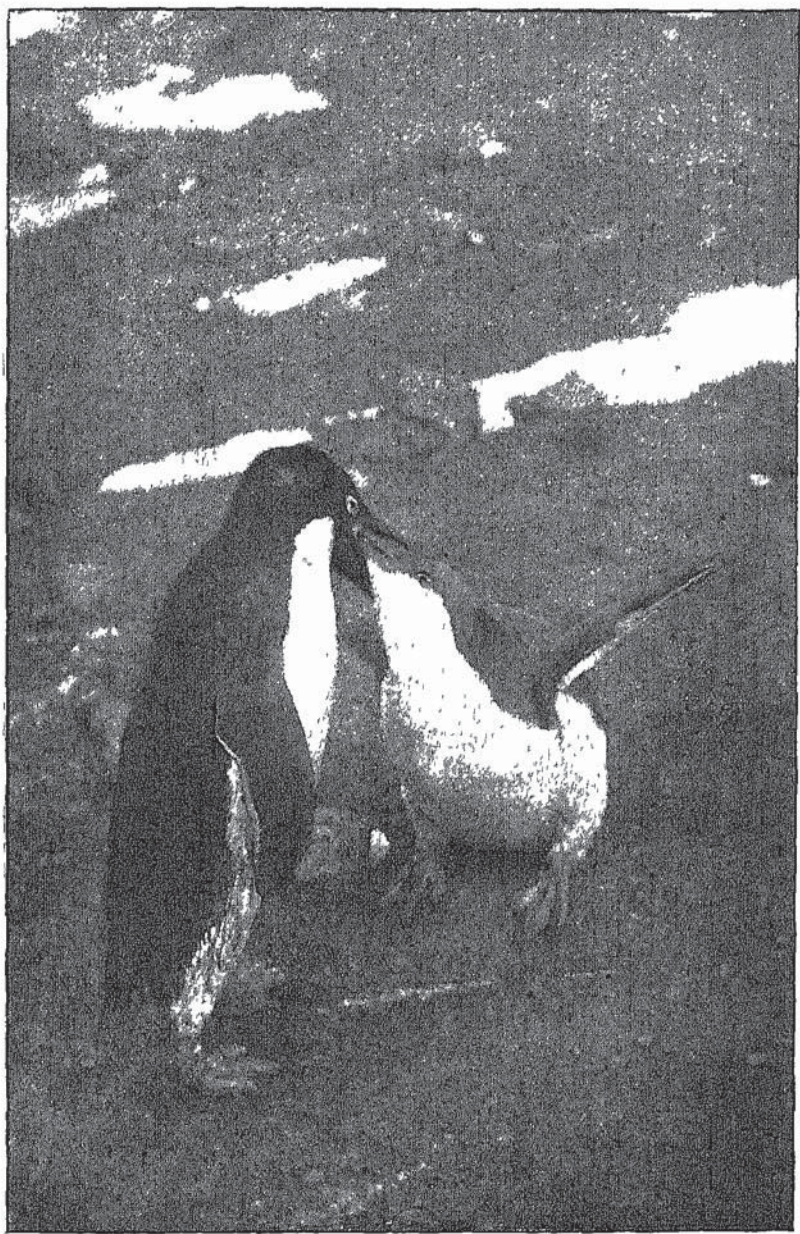


Photo by]

[B. BECK

The young penguin receiving the food collected by the mother during the day.

necks where their young are awaiting them, arranged in long rows. The youngsters often rush forward to meet the old birds as these latter climb the steep rocks. Whether it be of ill-will, or merely in order to entice their young to some more secluded spot, or for any other reason, I do not know, but the old ones then often retreat at full speed down the slope, pursued by one or two squealing young ones running as fast as their little legs can carry them. Sometimes I have seen the old birds fly in earnest and the young ones return disappointed, but as a rule the former allow themselves to be overtaken, and then follows, amidst incessant cackling, an interesting and even touching scene. The mother, or father as I have said, bends down her head and brings up in masses the shrimps she has collected; the young one stands with its bill stuck inside the mother's and greedily devours its meal, but it is not so entirely taken up with its feast but that it marks and flies from anyone who may approach. The feeding takes a long time, after which the young ones usually return to the camp, or breeding-place, and the old ones go down to the shore. Should there be two young ones to be fed by the same old bird, they endeavour to push each other aside, but I never saw any actual fighting between them.

On the 12th February we killed the last of the penguins we meant to carry home; but on both of the following days the wind was so strong that we could not think of returning. On the evening of the 14th, the anniversary of our landing at the station, I was able to communicate the joyful tidings that the ice-conditions looked better than ever. We started the next morning, but it was hard work rowing, the boat being loaded with all that mass of meat, and the fog being so thick besides, that it was only occasionally we caught sight of land; while we had often to row through long stretches of sludge-ice, where it seemed as if the boat made no progress in spite of all our labour. At the entrance to Admiralty Sound the ice-conditions had not been essentially altered by the storm, and there we were at last able to enter a little ice fiord along the edge of the great shore-drift. Here we left the birds to

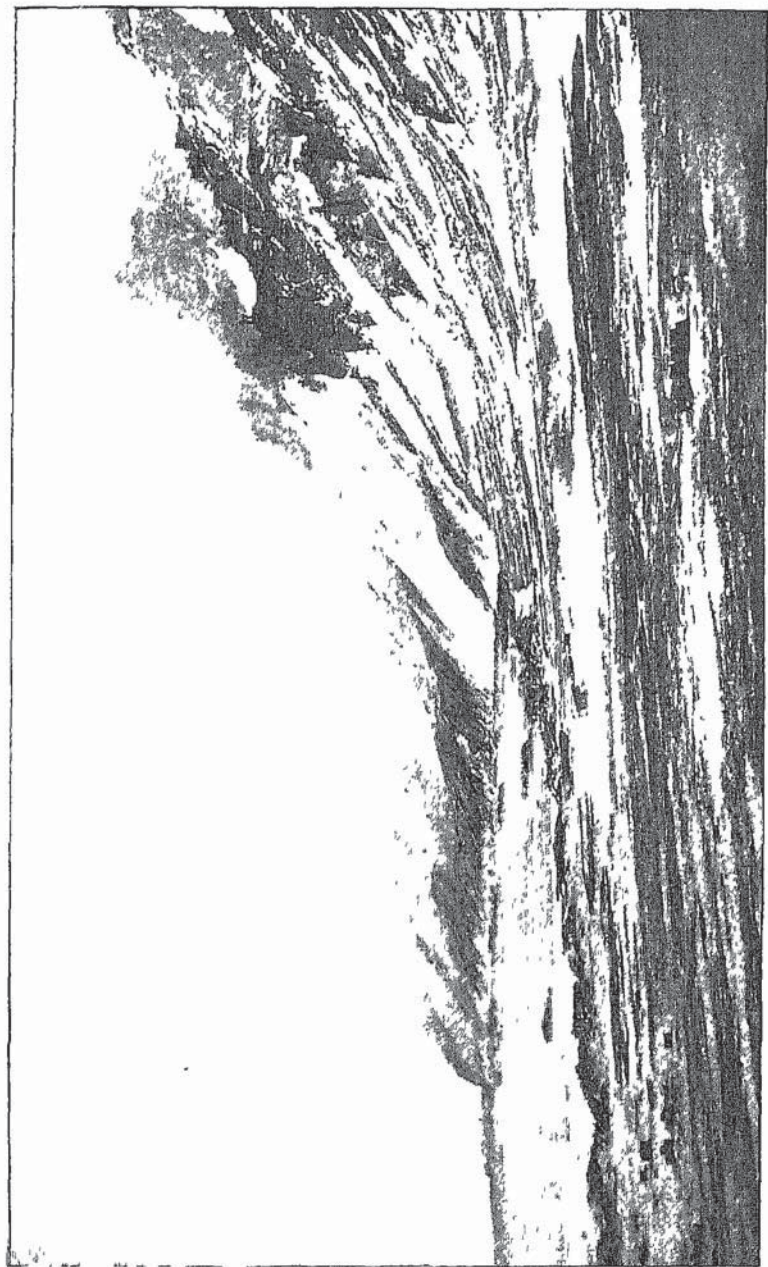


Photo by]

View from wintering station the basalt hill is visible, but a mist lies over the plain

[L. EKELÖF

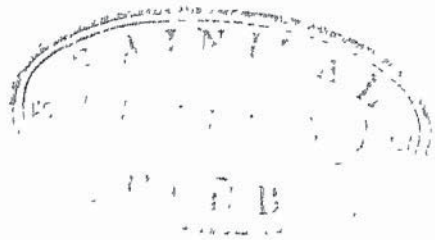
be fetched afterwards, and then we rowed round the cape and pulled the boat up into the valley at the north-west corner of the island, where it probably remains to this very day.

We were home at the station by 3, and it was a pleasure to wash off all the blood and dirt with which we were covered. I undertook the magnetic observations at 5 the next morning, the 16th, in order to relieve Bodman, who, as he had confided to me, had such sanguine hopes that the boat would come on the morrow that he would like to get his fill of sleep beforehand. Luckily we had fine weather that day, so that I could go with Jonassen to fetch the first sledge-load of birds, in the evening he went out alone to bring home the remainder of the meat. The same evening a new storm came on, first from the south-south-west, and then more west-south-west. The same wind had shown itself able to drive away the ice on the preceding day and so we were filled with the liveliest expectations. It was with forebodings of evil I learned on the 18th that the temperature had fallen to nearly -10° C. (14° F.), but it was not before late in the evening, when on my midnight watch, that I suddenly became aware of the fact that the summer was at an end. The storm, driving before it dense masses of snow, blew so hard that I could scarcely make head against it. It was a pitch-dark night, and so cold that I nearly had the fingers of one hand frostbitten by going out without mittens to read off the terrestrial thermometer.

The wind continued the next day, although a little decreased in velocity, but towards evening I felt myself obliged to go and see what our fate was to be, so I put on my wind clothes and climbed the basalt top. And my curiosity was satisfied, for I saw before me an ice-covered sea, such as had not been visible the whole summer; there was ice in every direction, north, east and south, and it lay closely packed against the land.

And now for the first time the feeling came over me in earnest that we were to be imprisoned here for another year. A fortunate accident, a miracle, could still release us, but

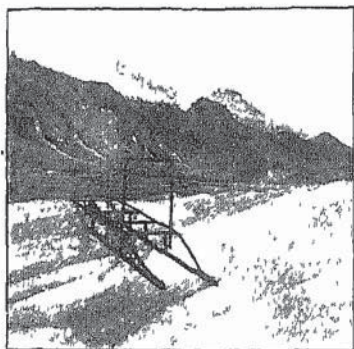
human aid would avail us nothing. And none could say what our fate would be. But of all my thoughts the bitterest were those which recalled the friends waiting for us at home, who would now be left for a year without news. For myself, personally, this was a day to be remembered, and I knew, or hoped at least, that warm thoughts were speeding to me across the ice. It was no joyful intelligence I had to communicate to my comrades when I returned to the station. Maybe they did not consider the matter to be so fully decided as I did ; but I wish in this place to express my thanks to them for the manner in which they received the news of this severe blow. No one complained, no one showed any signs of fear, but from that moment we spoke no more of relief. When we mentioned the future it was but to consult on the best means of preparing for, and employing, our second winter.



CHAPTER XVII.

THE SECOND WINTER

We continue to collect food-supplies Our weekly bill of fare during the winter—
 March storms—Arrangement of the scientific work—Midwinter feast Peculiar
 winter weather—Preparations for the sledge-journey



A "sparkstotting."

WINTER did not set in directly after these storms, for February gave us several fine days, but it would have been difficult later on to make our way to Seymour Island by boat, so that we were glad to have such an important supply of provisions as the penguin meat formed, collected at the station. A hundred penguin breasts were hung up in the open air, where the cold preserved them

perfectly; the rest of the meat was salted in barrels. This last procedure was an unnecessary precaution for which we paid dearly enough afterwards, but we were in want of experience in such matters and dared not expose ourselves to any risk. We zealously continued our collection of seal-skins, and it was no easy thing for a seal to come on to the ice in our neighbourhood unnoticed.

On the 23rd, Sobral had killed and skinned a seal near a little iceberg in the sound, and I determined to go with our

"*sparkstötting*" * and fetch in the skin. We had hitherto scarcely tried this means of transport, but I had thought that in expeditions which suffered from a scarcity of dogs, this kind of sledge would prove suitable for the level, hard ice which I expected to find (and have done) in these regions, and so I had had one made for the expedition, after a model of my own. In order to get it stronger and steadier I had sacrificed



Photo by]

[NORDENSKJÖLD,

The Doctor busied with physiological investigations.

some of the advantages a "*sparkstötting*" offers, but I consider that the principle is a correct one, and is worthy of attention in the equipment of polar expeditions, although further trials are necessary ere the best model can be fixed upon.

The skin thus carried home was the 33rd in our supply. We burned both blubber and skin together in the kitchen-range,

* A kind of light sledge with long, narrow runners, in the middle of which lies a small seat with a high back, behind which one stands, and to which one holds fast. One foot is placed on a rest on the runner, while the other foot, armed with a clumper, propels the machine forward by means of a succession of backward kicks, from whence the Swedish name "*kick-pusher*." (See illustration, page 272.)—*Trans.*

and thirty skins proved a sufficient fuel supply, both for purposes of cooking and the warming of the house during the winter, no special economy being of necessity.

The following list shows the weekly bill of fare arranged to last until the end of November, by which time we hoped relief would have come, and when, in any case, we should be able to procure new supplies of eggs, birds, etc. When that time came we should have left, apart from some selected articles which were regarded as really belonging to our medical stores, a few boxes of boat-provisions, flour and rice, oats, etc., a quantity of pemmican and some dried and preserved vegetables

SUNDAY.—*Breakfast*, lobscouse of kohl-rabi; *dinner*, preserved meat and potted vegetables, potted soup, dessert; *supper*, sardines and cold bird

MONDAY.—*Breakfast*, porridge and (for the present) herrings and potatoes; *dinner*, penguin and dried vegetables, small pancakes and jam; *supper*, pastry and cold bird

TUESDAY.—*Breakfast*, seal-steak and dried greens; *dinner*, blood-pudding or blood-sausage, potted soup, *supper*, warmed-up steak

WEDNESDAY —*Breakfast*, porridge; *dinner*, salt meat (later on, penguin) and beans, fruit soup; *supper*, cold bird.

THURSDAY.—*Breakfast*, seal-steak; *dinner*, pea-soup and salt penguin, small pancakes and jam; *supper*, warmed-up steak

FRIDAY —*Breakfast*, porridge, *dinner*, penguin and macaroni or rice, "salt-soup"; *supper*, pastry and cold bird.

SATURDAY.—*Breakfast*, seal-steak; *dinner*, salt or dried fish and dried vegetables, chocolate-soup; *supper*, warmed-up seal-steak

In addition, we had coffee in the morning and also after dinner, with tea or cocoa in the evening. We had bread at every meal, and butter three times (later on, twice) daily. At first we were afraid that we should run short of coffee, but by boiling the grounds thoroughly we managed to get a fairly palatable liquid twice a day throughout the winter.

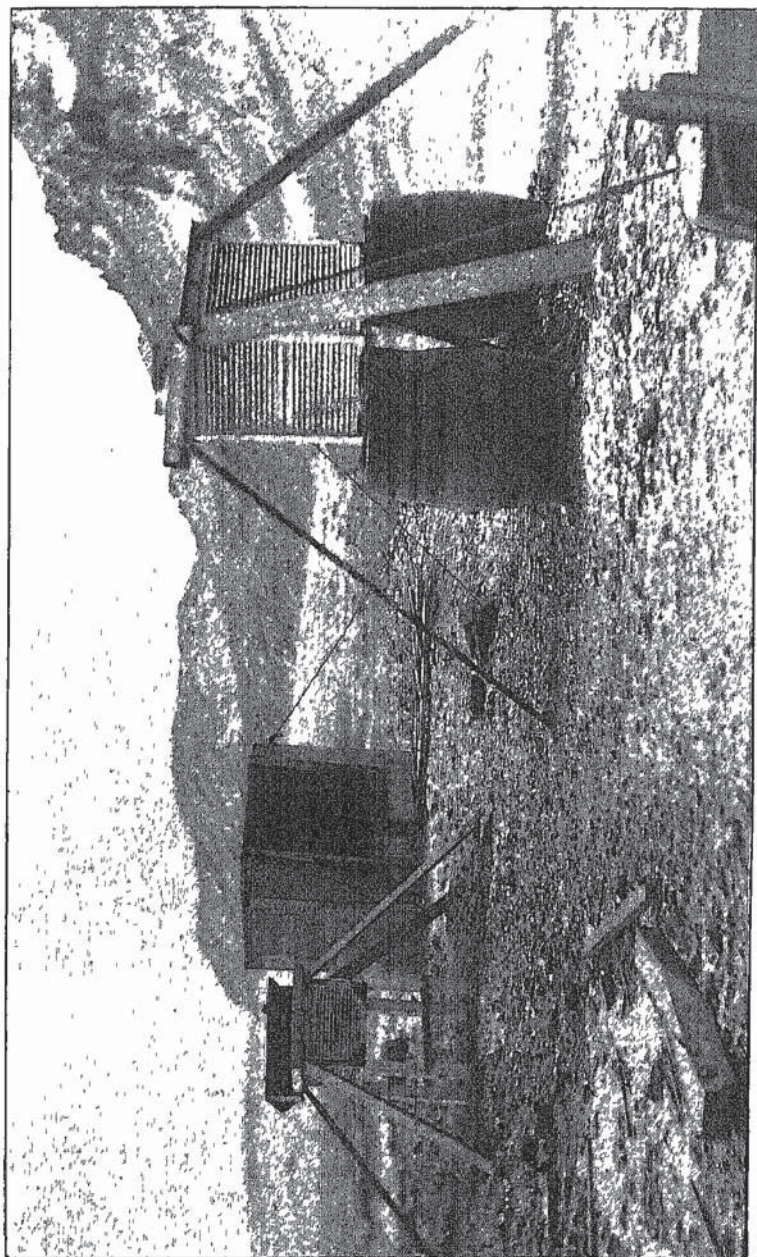


Photo by

The hill outside the dwelling-house . the thermometer screens and the astronomical observatory.

[NORDENSKJÖLD

Of course this menu does not look at all bad on paper, but it was terribly monotonous. I shall return to this subject later on, and point out the deficiencies which made themselves most felt.

But the reader must not imagine that it was only corporeal cares that occupied our thoughts at this period. No human being had hitherto spent two winters in succession in Antarctic regions, and we endeavoured to exert our faculties to the utmost in order to make the best use of this rare opportunity. It was, of course, the meteorological observations which would profit most by the lengthened stay, and the important results obtained in this respect alone might well balance all the sacrifices we were to make. But in addition to this, the value of nearly all the other work we had carried out, the astronomical, magnetical, bacteriological, cartographical, and our investigation of the ice, etc., would be increased in no inconsiderable degree by its continuation through this extended period, and we endeavoured from the very beginning to discover new lines and methods of investigation.

At the close of February and the beginning of March we had very unsettled and, oftentimes, stormy weather. On the 5th March we experienced a natural phenomenon, most peculiar in these regions, viz., a fall of rain. We had occasionally had a few drops before, but this time it continued the whole day, and was sometimes so heavy that it was unpleasant to go out of doors. But a change came on rapidly. Bodman is said to have written in his diary that winter began to-day at 6.30 p.m.; if he did, our meteorologist's prognostication was fulfilled better than he himself perhaps expected. For now followed a period of storm and cold, which, even in our experience, was unusually severe for the time of the year, the month of March showing a mean temperature of $-11^{\circ} 4$ C. ($11^{\circ} 5$ F), and the wind an average velocity of $13\frac{1}{2}$ metres (43.8 feet) per second, and this in spite of the relatively calm and warm days at the commencement of the month.

April began with finer weather, and for three months there prevailed in general severe cold with comparatively few

storms I was now able to begin my long intended work of making a series of soundings and observations of temperature out in Admiralty Sound. It proved that the temperature of the water the whole way to the bottom, a depth of 130 metres (422½ feet), was everywhere the same, amounting during the winter to about $-1^{\circ}.9$ C. ($28.^{\circ}.58$ F). In connection with



[Sketched from a photograph.]

A snorting seal looks out at us from his hole.

these soundings Ekelóf, too, carried out some experiments for bacteriological purposes.

It was at this time that the fate of the Falkland dogs was finally determined. A couple of them, including Kurre, our four-footed friend from the sledge expedition, had already been killed by the other dogs during the course of the summer. A peculiar circumstance which I had several times observed was, that before a dog was bitten to death by the others he always seemed to be aware of what was in store for him, quite as if he had previously received notice of his death sentence. One

day in May the last of these Falklanders disappeared; I looked for him a long time in vain, but at last found him lying dead among some blocks of ice on the shore. I felt his loss very much; he had followed me faithfully on all my wanderings, and was the last of the dogs who was a companion and a friend.

At the beginning of April we were fortunate enough to be able to kill no less than six uncommonly large seals. Thanks to their meat, which was carefully preserved, we escaped being obliged to eat only salted penguin for a great part of the winter, and their skins, which were unusually well-lined with blubber, gave us fuel for more than a month.

Thus week after week passed. At the beginning of May I made a sledge-journey to Seymour Island, in order to fetch the tent we had left there on a previous visit and also some of the contents of the dépôt. After a long period of cold we were now favoured with some exceptionally warm days, which enabled me to resume my cartographic work, but this lasted only for a short time. The barometer fell with extreme rapidity, and on the night of the 2nd June reached the minimum for the whole period we spent in these tracts—708 millimetres (27.874 inches). There came a hurricane at the same time, probably the severest we experienced, but happily it lasted only a few hours. It brought back old remembrances when we afterwards had to go and look for the things which had blown away.

We had celebrated the midwinter of the preceding year, and no one can wonder if we did the same this year, but with still greater satisfaction. It was a dark time, that which lay behind us, a time of nervous excitement and waiting, of gloomy views of the future, of many difficult situations; a time when none could know how the coming months should be. But by the help of goodwill everything had passed off as well as one could expect, and now every coming day would be lighter than its predecessor, until we once more had summer with us. It would be wrong to say that we were merry as we sat gathered together, but we were possessed by a feeling of security and



Photo by]

The shortest day of the year - the sun looks out from behind Cockburn Island

[G. BODMAN;

hope, for we knew that it depended in the greatest degree upon ourselves if valuable results were to reward our long waiting. Our feast was, perhaps, not so varied as that of the previous year, but maybe it tasted better.

Bodman photographed the sun that day when it was at its lowest, just when it swept from behind Cockburn Island, which had for a moment hidden her from our gaze as though it were an actual eclipse. She went down at 1.40 p.m. on this, our shortest day, but at 3 p.m. we could still read off the thermometers without using a lantern.

It would be difficult to imagine a greater difference in the weather than that presented by these two years. It is true that the second winter was considerably colder at the beginning, but it was incomparably less stormy, although a climate in which the wind has a mean velocity per month of 6 metres (19½ feet) per second must, of course, be always considered very windy. But, as it was, it made a considerable difference to us as we were nearly always able to be out of doors, this latter fact being the only reason that the time did not seem to pass more slowly than it did. Some of us even thought that the time went rapidly; one said that the weeks went quickly and the months slowly; as for myself I had no clear idea whether the time passed quickly or not. I only know that when I looked back, everything appeared to me equally remote, whether it had happened one month or six previously. Of course we had some storms, but these merely reminded us how thankful we should be for the weather we usually enjoyed.

But we had continually before our imaginations the picture of the storm which we felt certain *must* come after such a long succession of calm days, we painted in lively colours the terrors of the cold which might be expected when the early part of the winter had already been so severe in spite of the absence of south-west winds. And we called to mind that it was about the middle of July that we had experienced the greatest cold of the preceding year.

It was, therefore, to say the least, very surprising when,

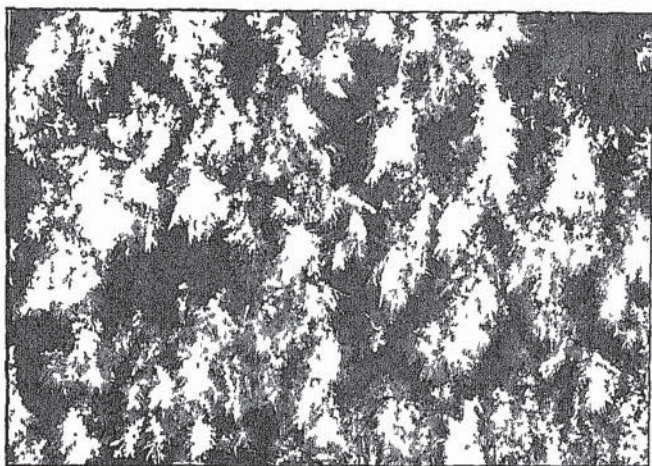
on the 17th July, after a morning which showed about -30° C. (-22° F.), the wind suddenly changed into a storm from the north, whilst in the evening the thermometer rose to $+4^{\circ}$ C. ($39^{\circ} 2$ F.), for we had had such weather as this only once or twice during all the previous months. When we went to the top of the hill we could see that extensive leads had been formed in the ice, and someone repeated the well-known summer cry: "Ossifraga!" and we saw a great storm-bird, a giant petrel, circling over the station.

Three days later the warm wind disappeared as suddenly as it had come; after an almost momentary calm, the south-west storm arrived as unexpectedly, driving the temperature down to -20° C. (-4° F.). But the break of warm weather just mentioned was, however, not an exceptional phenomenon, for during the course of the following months the same north winds came over and over again, and always accompanied by the formation of extensive leads amongst the ice. The difference in the mean temperatures for the two years we were here was exceedingly great, for during this July we had -12° C. ($10^{\circ} 4$ F.), instead of -28° C. ($-18^{\circ} 4$ F.), while on the 5th August of this same year we had a maximum of $9^{\circ} 3$ C. ($48^{\circ} 74$ F.), the highest temperature observed in Antarctic regions, not only by us, but also by anyone who has visited these tracts. And this in the midst of winter!

Had this weather been reliable, it would have been possible to begin our sledge-journeys now, in spite of the shortness of the days. But the mild weather was interrupted every now and then by severe storms and cold, whilst it was itself accompanied by heavy winds. It was first on the 20th August that we made a short trip to the dépôt behind Cape Hamilton. We took home a part of the contents with us, the remainder being left for future needs. I had intended visiting Cape Gage on the return journey, but as we had a storm the next day, and the 22nd threatened one too, we turned back to the station, which we reached before the hurricane came on in earnest.

The fine weather was now at an end for a long time to come,

the remainder of August and the whole of September being comparatively cold and stormy. It is true that we had a few fine days, but during the latter half of September we had exceedingly bad weather, just as in the preceding year ; and although I hoped every day to be able to begin a sledge-expedition, for which we had long made preparations, it always proved impossible to start.



CHAPTER XVIII.

MOODS AND MODES OF LIFE DURING THE WINTER.

Our position at the beginning of the winter—Food—Condition of health—Clothes—How we spent our days—Firing—Berths—Thoughts of the future—What we missed—Dreams—Longing for active work—Our scientific labours.

It is now my intention to give a connected description of our moods and modes of life during this second wintering thus forced upon us.

It is such a usual thing for Polar expeditions to spend three and even four years amid the ice, that two years ought not to have appeared such a very long period. But in making such a comparison one should first set aside the expeditions that have wintered in the vicinity of Esquimaux colonies, and it should also be remembered that our first winter here, in consequence of its stormy character, was certainly much more trying than the combination of cold and darkness which encounters the explorer in North Polar tracts. In addition to this, our party was an unusually small one, and all too

little homogeneous in its composition for such a long companionship. But the weightiest consideration of all was, perhaps, that we were so perfectly unprepared for the eventuality. Had we but landed, having planned a two years' residence here, we should certainly never have experienced any feelings of despondency; had we fixed upon a station where we might have foreseen the probability of such a lengthy stay we should certainly have taken larger stores with us, and had the blow then come, it would have been anticipated, and, therefore, easier to bear. But as matters now were, the four months of uncertainty awakened a nervous expectancy, and when the fear of being confined here for another year was changed into a certainty, this, in its turn, bred complete mistrust in the future. We thought that when we had once been thus disappointed, there was nothing we could rely on that had regard to relief and summer weather.

We had brought with us reserve supplies of food, which had become diminished in consequence of our having used them too freely during the first year, and of which we had now to make a second reserve for the event of our having to spend a third winter here. The insufficiency thus caused was most felt in regard to articles which, happily, were not amongst those absolutely necessary, such as sugar, coffee and milk; so that otherwise we should not have had any reasonable cause of complaint of our food had we but always had a supply of fresh meat. But we had, unfortunately, already salted down the greater part of the penguin-meat, and even as early as July it was only a few times weekly that we could have fresh seal- or penguin-meat, so that, although we managed to catch one little seal in August, we were for the most part compelled to eat the strongly-salted penguin-meat twice daily, and it was as hard and as tough as leather. The last day before we again killed some seals in September I made a special entry in my diary that we had been put on very unpleasant diet: salt penguin for breakfast, dinner and supper, and, in addition, an uncommonly salt soup at dinner, consisting of dried greens boiled with salt penguin-meat.

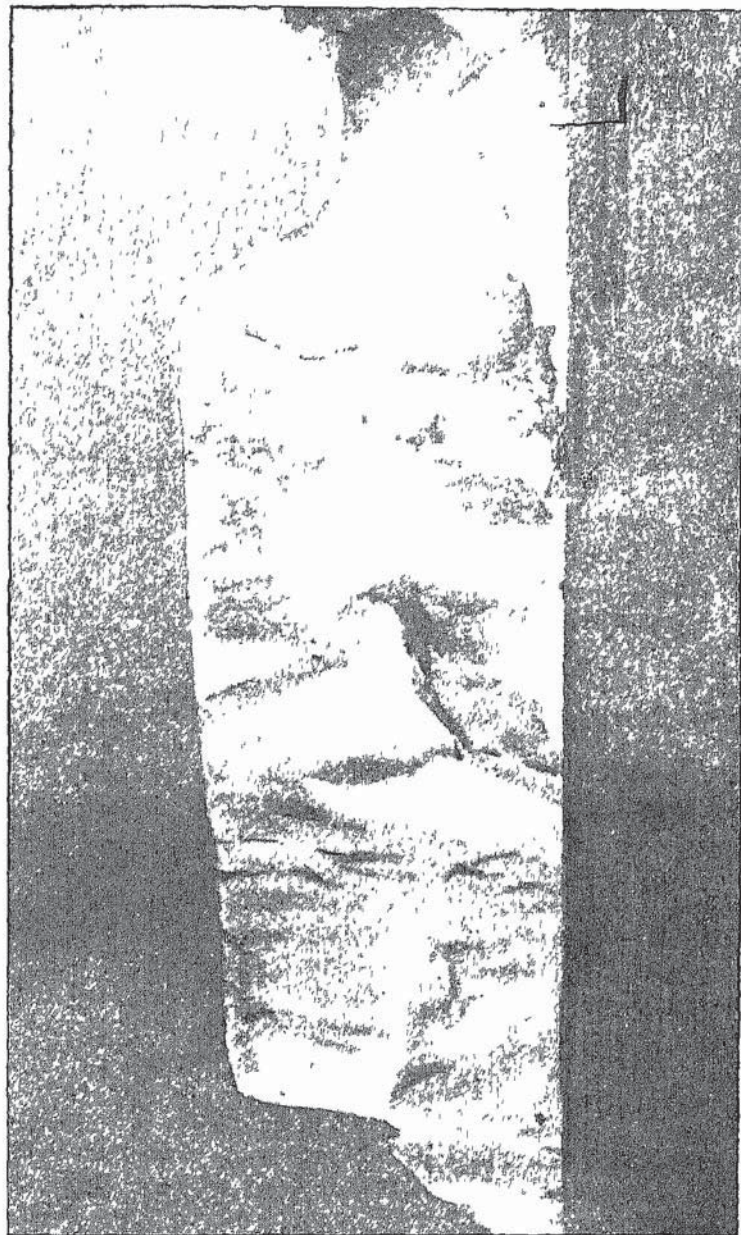


Photo by

The large iceberg in Admiralty Sound.

[NORONAKJOLD]

But then the fresh seal-meat tasted so much better when it came !

We did not like the dried greens at first, but we soon grew used to them, and afterwards thought we could never have enough of them. The penguin-meat was served boiled or roasted for dinner, and cut in slices, and at breakfast time as a kind of steak boiled in a frying-pan without butter, or nearly so. We never tried to use seal-blubber for food. I may add that penguin-meat does not taste badly, at least when it is fresh, and penguin-meat boiled with pea-soup was an excellent dish.

We had ship's biscuits on the table twice a day ; at the other two meals we had home-made bread. There was a plentiful supply of flour, but unfortunately we had taken too little baking-powder with us. It must, therefore, be regarded as a piece of great good fortune that we were able, in the midst of the wilderness, to discover a means of procuring yeast for baking purposes. At the close of March, when we were going to use the last remains of our dried potatoes, we found them quite black and unfit for use. But on Ekelof's studying a specimen under the microscope he observed an organism resembling a yeast-fungus. He commenced to cultivate this in a specially prepared dough, which was allowed to remain some days in a narrow open flask, and it was found that the dough could actually be made to ferment. From that time we were supplied with properly-leavened bread during the whole of the winter, and it tasted much better than that prepared with baking-powder. Still I am not sure but that the bread so prepared contributed somewhat to produce the stomach complaints from which we often suffered during residence at the station, but never during the sledge-expeditions.

But it was not only our food-supplies which thus gradually came to an end. Our stearine candles rapidly diminished in number, but ere they came to an end we laid by a sufficient number for the continuation of our observations by lantern-light "next winter." Matters were worse with our clothes. It is true that we had a sufficient supply of underclothing, but

our ordinary outer clothes began to look a little strange with big patches sewn on in every possible direction. We were worse off for boots, which were soon worn out in our stony, almost snow-free surroundings.

It contributed much to our comfort that we succeeded so well in the attempt to use blubber for firing. We had still a considerable amount of coal left, but we never touched it during the winter, as we soon found that it was more advantageous to use blubber. Although we threw both skin and blubber into the stove we could never observe any unpleasant smell, while it gave greater warmth than coal and was easier to light. We were thus saved the necessity of paying perpetual attention to the fire, and although we seldom lighted the kitchen-range in the evening, it was warmer indoors now than during the preceding winter. But we suffered some inconveniences in consequence of this method of firing, for while the blubber burned, much fluid fat ran through the bars; and although we placed an iron pan underneath we could not prevent the stuff from coming on to the floor, where it gradually spread, forming a sticky mass which retained dirt and dust, and was as unpleasant to see as to tread on.

It is true that we were still contented with our little house, but it had not improved beneath the hand of time. When our candles came to an end, and a hanging-lamp was placed in our cabin, I wrote in my diary: "The lamp lights up the room almost too well, for it is not pleasant to see its clear gleam fall upon walls covered with sticky cardboard, adorned with snow crystals, drops of water and mildew, and hung with dirty clothes and shoes. The poor pictures are black and damp; all articles of iron are rusty, and the bed-clothes are falling to pieces." And the following entry is drastic evidence of the ravages of damp in our small rooms: "My books and papers which I keep in a box on the floor are wet and mouldy, and would be destroyed in a few weeks were they not taken out now and then to be dried. After having been away for a few days I was the more easily able to distin-

guish the sour, apple-like smell of mildew in my bed. A pea that had found its way into the bed had begun to grow there, and had not only thrown out roots two or three inches in length, but was also provided with a long stalk and small undeveloped leaves. But these latter were yellow enough, for they had been unable to get any sun ! ”

What did we think of during that period ? Well, we did not often speak of relief, but I suppose that subject was often in our minds. As far as I know there existed amongst us an unwavering belief that it would be the *Antarctic* that would come to fetch us off, we merely wondered what our comrades were doing the meanwhile, and if any of them had gone home

But much more actual was the question, as to whether we should do anything towards our own rescue, should the ice next summer prove to lie as closely packed as it had done this. We could all see that it would be exceedingly difficult to travel over the ice during the summer time for the distance necessary ere we could calculate on seeing a vessel, and also that there was very little probability of our succeeding in the effort ; but I really believe that in the event I have mentioned, something would have been attempted in preference to remaining here in inaction ; and, having the prospect of being able to catch seals on the way, and having our dogs as draught-animals, and with our light boat, I imagine we should have travelled no little distance, and it would have been long ere we should have allowed anything to compel us to return.

In order that such a hermit's life as ours can be at all endurable it is indispensable that the harmony amongst the members of the party shall be as great as possible. Community of labour is here the strongest factor ; next to this I place community in amusements—card-playing, for example. It is, naturally, the course of daily life which plays the chief rôle in such an existence, even if a festive occasion is also of importance as a salutary interruption of the monotony. Our feasts this winter were not many, being only Midsummer day

and birthdays, but those that came were celebrated as heartily and as thoroughly as possible

But in spite of all this, one always felt lonely, and it was first after we met our comrades from Hope Bay that we perceived how much we had longed for news from the outer world, and to meet with other people. And there were a great many other things we missed. "Cigars, music and

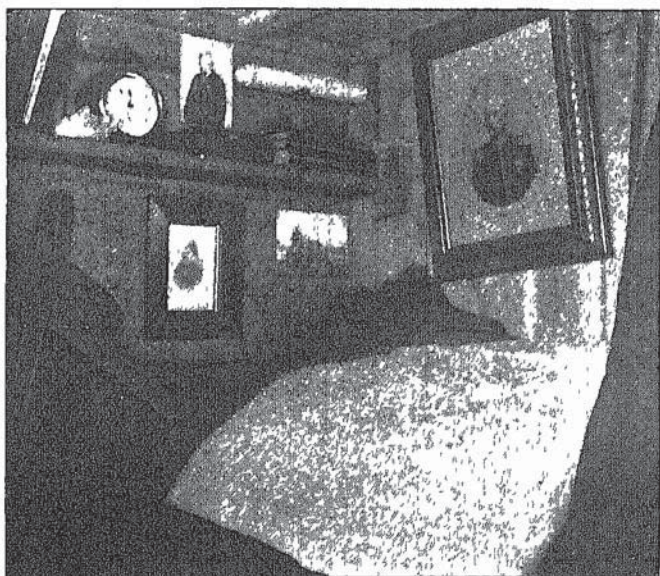


Photo by]

One of the berths

[E EKLUP

books " were what someone said he most longed for. Although the scenery which surrounded us was of uncommon interest, and was, too, magnificently grand, it had in the long run a fatiguing and depressing influence upon us. I, at least, very much missed the presence of verdure; with what delight should we not have greeted one little blade of grass! The absence of colours was also felt exceedingly. Red, green and yellow—that is, the colours which, more than all others, have

a stimulating influence upon the senses—were almost entirely wanting, both indoors and out; one saw only white, blue, brown, and those almost preternaturally fine, pale, pure tints which are so characteristic of winter in Polar lands. They can never be reproduced by the artist's brush, but they attract the beholder with wondrous power, although they seem to radiate a something which resembles the chill of death.

Very illustrative of the direction of our innermost thoughts were our dreams, which were never more vivid and numerous than now. Even those of us who otherwise dreamed but seldom, had long stories to tell in the morning when we compared our latest experiences from this world of fantasy. All of our visions concerned the outer world which now lay so distant from us, but were usually applied to our present circumstances. One of the most characteristic dreams was that where one of us fancied he had gone back to his school-bench, in order to learn how to flay miniature seals which were of a size just suitable for use in instructing a class. But meat and drink were usually the centres around which our dreams revolved. One of us who made a specialty of going to banquets in his visions was highly pleased one morning when he could relate that "last night I managed to get through three courses." Naturally we were also busied in our visions with more impossible things, but the want of fantasy in almost all the dreams I had, or those which I heard related, was most apparent; still I think it would have been of great psychological interest had all these dreams been taken down.

A thing that I missed above all things was regular, ordered work. All the preceding pages must have shown the difficulty there was in arranging such labour, whether indoor work or outdoor. But we were differently situated in this respect; Jonassen and Åkerlund, in a still greater degree, had their fixed daily occupations, and, as regards the scientists, the physical observations demanded schematically allotted labour. Bodman and Sobral undertook several astronomical observations, and the magnetical observations in which we all took

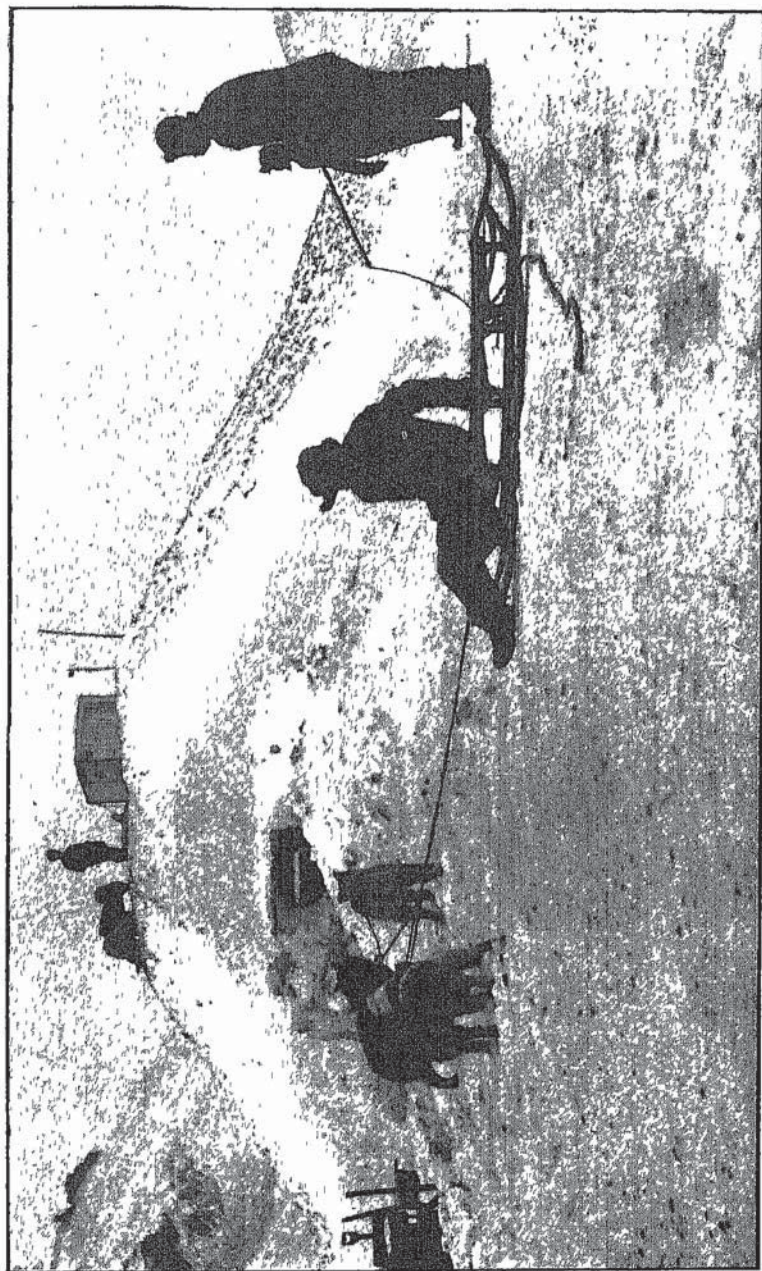


Photo by]

End of a sledge-journey

[B. EKELOF.

part were made twice and, in some cases, four times a month *

As far as regards the possibility of devoting ourselves uninterruptedly to the work of scientific investigation, Ekelöf and myself were the least happily situated, although we did the best that lay in our power to remedy this state of things. Besides taking part in the general observations, Ekelöf watched over the general health, and collected statistical material respecting our provisioning, but he was chiefly and regularly occupied with bacteriological investigations. These gave interesting results from the very beginning, and their scope was varied in many ways in order to gain a more intimate knowledge of the conditions of bacterial life in these regions. Some very interesting physiological examinations were also made. As for myself I collected fossils from our immediate vicinity and made, with the comparatively unsuitable instruments at my disposal, a triangulation of the island to serve as the framework of a more exact mapping-out of the tract. But with such work one is absolutely dependent on the weather, and even when it was calm down at the station there was often too much wind up on the plateau for anything to be done.

The examination of the ice on Snow Hill gave more interesting results. The temperature series was this year more complete than that of the foregoing; I was able to confirm the observation that, even under such a winter as the one we then had, there was but little increase on the free surface of the ice, while it was especially instructive to follow the transformation of the same snow which I had seen fall during the summer of the preceding year, into granulated ice or a crystallized mass. But, on the other hand, it was more difficult now than then, to study the structure of the ice in the

* It is self-evident that the experience gained during these two winters, so different to each other in meteorological respects, must have been of great importance, especially when we remember that both the English South Polar Expedition and the Argentine Station were still at work and that, in addition to this, the Scotch Expedition had its field of activity so near to us, while similar observations were also being made on Paulet Island.

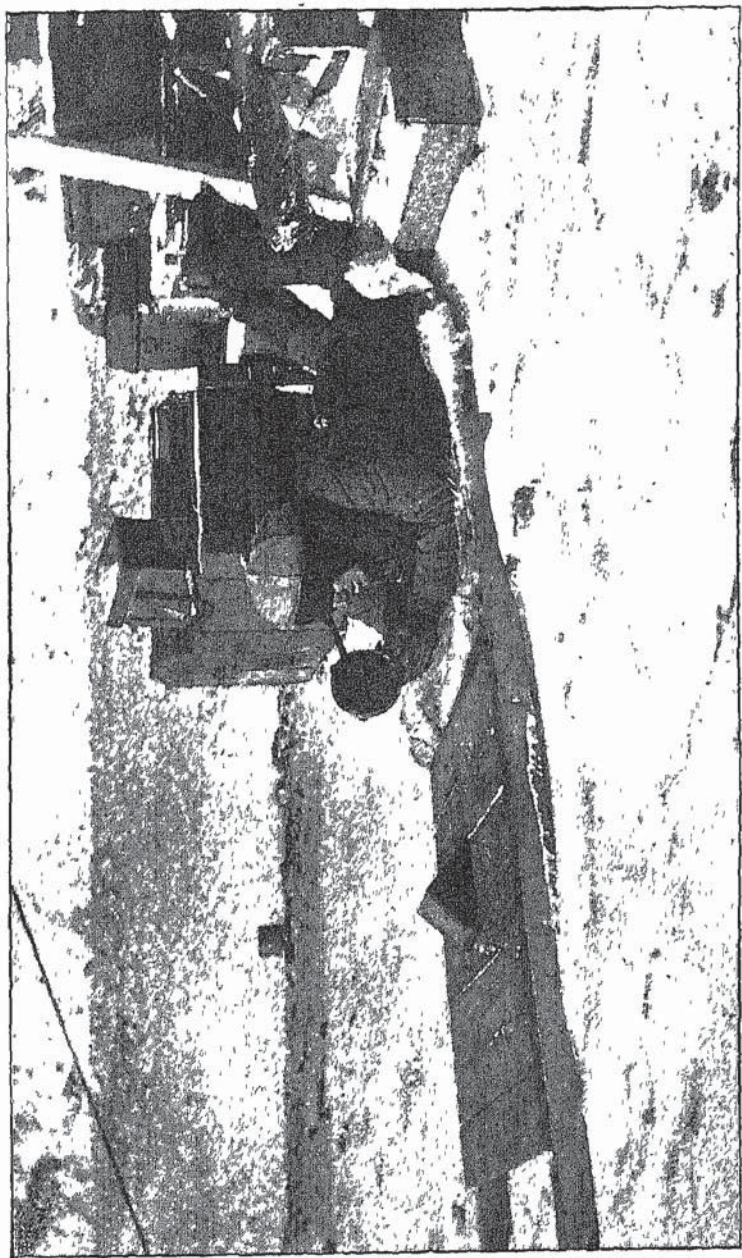


Photo by]

Sobral "shooting the sun" in winter weather.

[G. BOOMAN

ice-wall towards the sea, as this had been partially destroyed, and was partly concealed by the masses of snow which had heaped themselves in its front.

There were also some calculations which had to be done indoors, but even with this my work was insufficient to occupy all my time. When the days were fine too, they were not long enough for me to extend my walk to less known tracts, and, therefore, my longings turned towards spring and summer. Then first could I study new and unknown regions on my sledge-expedition, and then, too, would the *Antarctic* return, and we should have still some months before us, before returning to the north, to further investigate the rich fields of labour whose existence here we had proved



CHAPTER XIX.

DISCOVERY OF CROWN PRINCE GUSTAF CHANNEL.

Plans and equipment for the sledge-expedition.—An unsuccessful start—Our tent blown to pieces—We return to the station—A new attempt—Crown Prince Gustaf Channel ; its scenery and surroundings

I HAD not for a moment doubted that I should be able to undertake a sledge-expedition this year too. Such a journey had other attractions now, when the surrounding country was no longer new and unknown, and, in any case, the labour it might cost me would come as an unspeakable relief from the long monotony of life at the station. On examining the charts of the coast where we were, we clearly perceived how completely unknown the tract immediately north of the station was. One might hope to obtain specially rich geological results there, whilst as regards its geography, I had come to the conclusion—although, it is true, without fully sufficient grounds—that the great gulf we had discovered the previous year behind Cape Foster unites with the bay to the rear of Cape Gordon to form one mighty channel, and it was this that I intended making the chief object of my investigations.

Our position in regard to sledge-expeditions was considerably altered in many respects since the preceding year. Our team of dogs was a better one ; the four veterans from the

long expedition were still alive, and in the place of Kuire we had two splendid young Newfoundlanders. This gain was somewhat discounted by the fact of Suggen, our best dog, having injured his foot on a piece of sharp iron, so that it became a question whether he could support the fatigues of a severe journey. The younger dogs were not yet strong enough for such work, but still they could be of service to the men remaining at the station in carrying home the meat and skins of seals and penguins.

Our food-supplies were, on the whole, little worse than those of the year before, for we still had a sufficient quantity of the most important article both for men and dogs—pemmican—and we could always count upon having lentilsoup for supper. It is true that we should be obliged to observe economy with the other articles, but still, the supply was large enough to allow of our arranging for the same fare as before, although we had to reduce the consumption of tea and coffee pretty considerably.

But I attached special importance to the experience gained during the foregoing year's expedition. We then learned the great importance of having a dog-team sufficiently large to do away with the necessity of taking a second sledge, were it ever so light, intended to be drawn by the members of the party. And as it would not be practical to divide our six dogs between two sledges I resolved on this occasion to take but one sledge. And, contrasted with the very essential increase in both weight and volume caused by the carriage of the sleeping-clothes, provisions, petroleum, etc., which would be required should a third person accompany the party in addition to the two who were necessary for such a journey, his usefulness would play but a very small rôle. It was, of course, possible that our dogs could now draw a month's supplies for three persons, even should we meet with difficult ice at the commencement of the journey, but the heavy burden would certainly cause much inconvenience, and inevitably delay the march. I therefore chose Jonassen alone to be my companion on the expedition.

As regards the provisions we took, they were calculated to last us 30 days and the dogs about 20. I also took 18 litres (31.7 pints) of petroleum, two pairs of skis and a pretty large reserve supply of clothes. In order that we should be able to complete the whole of our programme for the winter it was of importance for us to start as soon as possible. But the 28th



Photo by]

We begin our march.

[E. BEDŁÓF

September was as cold and stormy as the preceding days, with a wind velocity of nearly 20 metres (65 feet) per second, so that matters did not look promising; but on rising the next morning I found the weather fairly fine, although the thermometer showed -25° C. (-13° F.), and the barometer was no higher than 740 millim. (29.13 inches). Still, we had often had fine weather with a low barometer and *vice versa*,

and as the weather grew still better during the next hour I hesitated no longer, but wakened Jonassen, and at once began to load the sledge.

Even before we started clouds had begun to gather in all directions, and Mount Haddington was wrapped in mist; but our intention being to go first to Lockyer Island, we hoped to find lee there, even should we be overtaken by a storm. We meant then to continue our march past Cape Foster, but we did not intend touching the depôt at Cape Hamilton, where it was to remain as a reserve in the event of the ice in the channel breaking up.

The march went briskly over the hard, smooth ice nearest the station, and one of us could easily ride on the sledge whilst the other went in front and set the course. Behind Cape Hamilton the going grew worse, the crust on the layer of snow which we found there on the ice being so thin that men, dogs, and sledge broke through, and the wound on Suggen's foot opened again, the poor animal leaving behind him tracks of blood. To add to all this, a south-west wind began to blow direct in our faces, and now, instead of being able to sit upon the load, it became our turn to help the dogs. But thanks to our skis we managed to proceed pretty easily, and by six o'clock we encamped at the foot of the immense snow-drift which had accumulated against the north side of Lockyer Island.

When I looked through our provisions the next morning I found that a sack of bread had been forgotten—nearly one-half of the supply we had thought necessary. Unless we wished to return to the station, or to run the risk of being obliged to partially dispense with this important article, we had no other resource than to turn aside to the depôt which was close by, and take the supply of bread laid up there.

A storm prevented us from continuing our journey that day, and we had hoped for an improvement in the weather; but the next morning, October 1st, it proved to be worse than ever, and we were obliged to remain in the sleeping-bag. After taking dinner and having tried to sweep out our tent

and make it as cosy as possible, we had once more crept into our sack and lay listening to the storm when, without any previous warning, the whole tent was blown over our heads. The strop of the farther tent-pole had been wrenched loose, and several large holes were made in the tent-cloth. The damage done was pretty considerable, and we were obliged to do our best at once to mend it. Luckily we were able to repair it so far that we could still lie inside, but with one pole

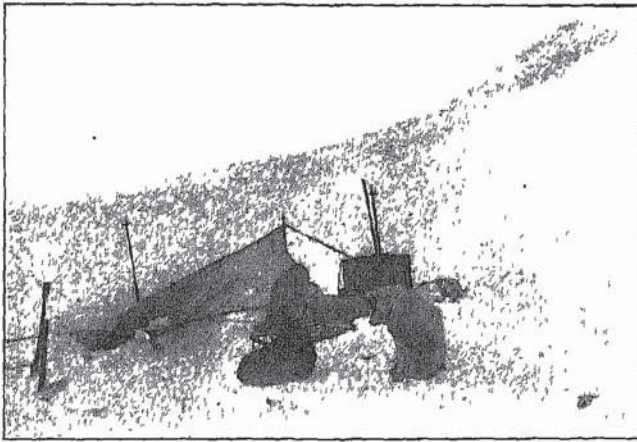


Photo by]

[NORDENSKJOLD

In the morning a great part of our tent was buried in the snow

taken down and the front part of the cloth hanging down and partly covered with the snow we had heaped upon it

Under these circumstances it was clear that we must return to the station ere we could continue our journey. Such a step would have been advisable for the sake of the bread-supply alone, but now it would also be of advantage to replenish the provisions we had uselessly consumed during those days of storm.

When we worked our way out of the tent the next morning we found the weather considerably improved, so that we could make a start homewards. We left the greater part of the

equipment in a large depot, and this made our load much lighter to draw, and when we came to the old tracks near the station both of us could sit on the sledge and ride, doing the whole distance of nearly 30 kilometres (18 miles) in three hours and a half. Matters were soon explained, and after looking to the baggage we resumed our ordinary labours again. It cannot be denied that it was a little irritating for our long-prepared expedition to come to such an ignominious end. We did not create much to-do about it, but made up our minds that the delay should be as short a one as possible.

On the evening of the following day we got a north-west wind once more. It increased during the night, but as it was a favourable breeze, and the temperature was nearly up to freezing-point, I considered that we ought to make a start, and the wind falling towards morning we had still less reason for delay. No one accompanied us on the way, and no solemn farewells marked the commencement of what proved the most remarkable of all the sledge-journeys carried out by the Expedition.

Our load was light, but we were in no hurry to reach Lockyer Island, where we intended camping for the night. On reaching the place, we pitched our tent quite near the spot where we had lately spent so many unpleasant hours, and I had time to make a series of measurements away near the headland. Round about me hovered flocks of ice-petrels, which have their nests high up on the precipitous dark wall of basalt. One hears their cooing—their croaking one might almost call it—which is rather loud for such a little and, in appearance, ethereal bird.

In the evening we suddenly had a pretty strong, but warm and equable, wind of quite a different character to the one we had before. But the following morning the weather had changed once more, and we had fog and snow with a faint breeze from the south-west, but it did not prevent our starting again. The snow was, on the whole, pretty deep, but it bore us so well that I did not trouble myself about using skis as I went ahead and set the course, with the dogs and

the sledge close at my heels. Directly south of the island we saw a dark object in the snow, and on steering thither we found a dead seal with its head buried deeply in the snow. It had probably frozen to death—and one can imagine the weather that could thus be the death of a full-grown seal.

We gradually approached Cape Foster and swung round the headland into the magnificent gulf which we had seen for the first time just one year previously. A great bight penetrates the land here towards the east, and here we chose a good camping-place, and stayed for the night among some frozen-in blocks of ice. Some seals lay close by, and we killed a young one for ourselves and the dogs. I once more give some extracts from my diary.

October 6th—"The day was cloudy and windy to begin with, but the weather has since been brilliant. We have passed quite a number of fissures and inequalities in the ice, as well as deep depressions with walls on both sides. One can mark that this is sea-ice by the seals. To-day will always be memorable for me on account of the magnificence of the panorama by which we are here surrounded. It is first now that we can mark what an extensive stretch of water we have discovered, whether it be a bay or a channel. One can see that the shores gradually approach each other. The land to our west, the continuation of King Oscar's Land, consists of a high, continuous ice-plateau, which is better visible the farther off from it one is. In front of this lie wild ridges and even isolated peaks, the latter often of a very regular pyramidal form. Nearest the sea can frequently be observed a continuous ice-foot.

"Quite different is the scenery on the eastern side, the land presenting the same fell-formation as that observable from our winter-station—a high, commanding cone of ice, whose top, however, is not visible from here, and the side of which towards the sea is broken by semi-circular valleys with almost perpendicular black and red walls of basalt. At the bottom of these valleys are great bodies of ice, and between them project black, shapeless, mountainous masses which fall

precipitously to the sea. Sharp ridges and peaks, form nothing but details in this picture."

October 8th.—"We have been obliged to camp here two whole days, but I have been able to make some short excursions. It was interesting to discover a sandstone here, too, with vegetable fossils, although these are unfortunately quite undeterminable. Above the sandstone lies spread the coarse basalt tuff, which is also found at Admiralty Sound. Judging from the geological formation it appears probable that Mount Haddington is an ancient volcano, and its form would confirm this view."

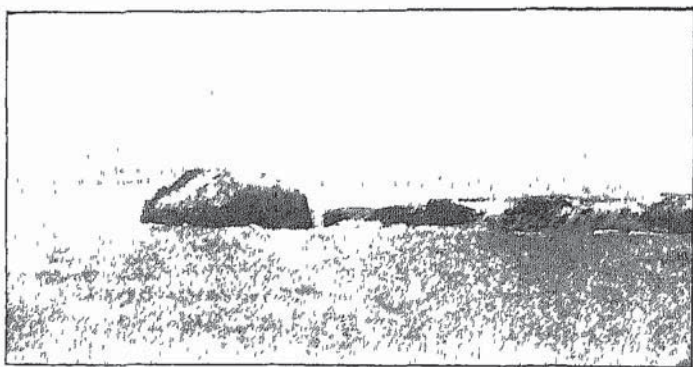


Photo by]

[NORDI ASKJÖD]

Before us lay a peculiar, almost hemispherical island,

October 9th.—"The day has been magnificent. We passed the one projecting peninsula after the other, separated by bays, which in one or two cases were terminated only by a low naze. The geological conditions are interesting, and it is clear that I must stay and examine them ere quitting these tracts.

"Our march was directed towards a little, peculiarly-formed, almost hemispherical island,* much resembling Rosamel Island. The ice was in places excellent to travel across, but each bay was marked by one of those belts of ice-

* Named Wilhelm Carlsson's Island, after one of the chief financial promoters of the Swedish Expedition.

blocks which were now so common. Finally, we saw the mainland run out in a long point, not more than 10 to 20 metres ($32\frac{1}{2}$ —65 feet) high, and here we camped for the night behind a lofty hummock. There were in the neighbourhood an uncommonly large number of icebergs, some pretty large, and fragments of others. The evening was as fine as the day has been. To the west and north extends King Oscar's Land, with the witching light of evening falling on its stupendous,

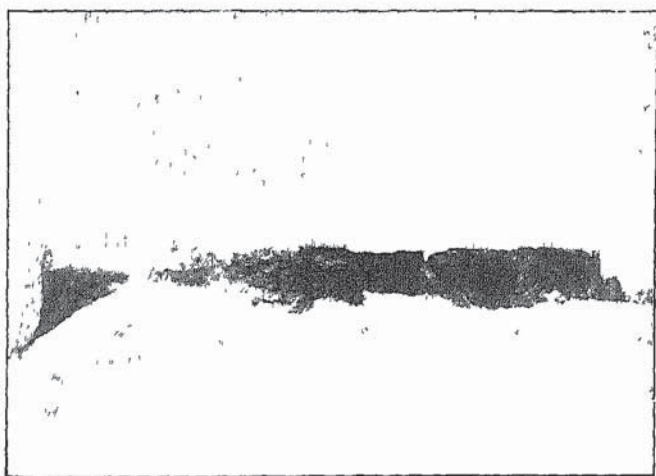


Photo by]

Cape Lagrelus.

[NORDENSKJÖLD.

white-glancing glaciers, its bold ridges and its peaks. Many of these are isolated, but towards the interior they close to form a high, insurmountable mountain-wall. In the north-east lies the strange black island I have just mentioned, and then comes a low cape, the only one that now shuts out the view in the direction where the problem we have travelled hither to solve will be unriddled—the question whether this water be a channel or not. To the east extends that land whose coast we have now so long followed, with its variegated perpendicular cliffs, which remind me of a landscape I have previously seen only in Greenland.

Everything around me was quiet and still, while I looked at a picture which as I imagined had never before been seen by human eye. I little thought at that moment that, scarcely more than a day's march from us, there were others who, perhaps at the very same hour, were gazing at the scene now before me—at regions which I believed to be quite unknown.”

October 10th —“ We have lain in the same place the whole of to-day, partly on account of the misty weather, and partly because I wished to examine the remarkable geological conditions in the vicinity. The cliffs by the shore consist of a conglomerate of a type which I have not seen before in these regions, with volcanic tuff lying above it.”

October 11th.—“ Once more a good long day's march behind us—a day so rich in discoveries that it exceeds all that have gone before it. The mystery which has hitherto enshrouded the geography of this tract is now unveiled. We have passed through a magnificent channel* which separates the great island on which Mount Haddington lies, from the mainland. The only important question which still remains to be solved is whether this channel has any connection with Sidney Herbert Bay, and thus if the land to the east which we have passed be two islands or one. It is not impossible but that this may be so, and I hope to be able to solve the problem on our next sledge-expedition.

“ The mist lay a long time in the morning and we could not start before 10. The little four-cornered island proved to be of considerable extent towards the north-east when it falls precipitously towards the sea, with tower-like rocks of dark

* This channel, which has been named after H.R.H. the Crown Prince of Sweden, is of very great interest in scientific respects, chiefly on the ground of the analogy it possesses with the deep depressions which, in many places in Patagonia, exist along the eastern slopes of the Cordilleras, and there separate the mountain-chain proper from a more eastern highland which, as here, is built up of volcanic rocks and more recent sedimentary deposits. The cause of origin of this channel was probably essentially different from those of the channels found on the west coast—the Orleans and the Gerlache Channels. I have named the larger of the islands on the east side of the channel after the discoverer of this coast—Ross Island, and the smaller one, Vega Island.

basalt marked with red irregular patches. The north coast of the large island was of about the same appearance as the parts we had previously seen, with numerous bays and comparatively softly-rounded mountain-sides, often with brilliant colouring

"The ice was uneven and full of small frozen-in ice-blocks. I was not quite certain which was the most suitable direction for our march, but at the beginning I kept as much as possible to the north, and then for a time towards the last cape visible

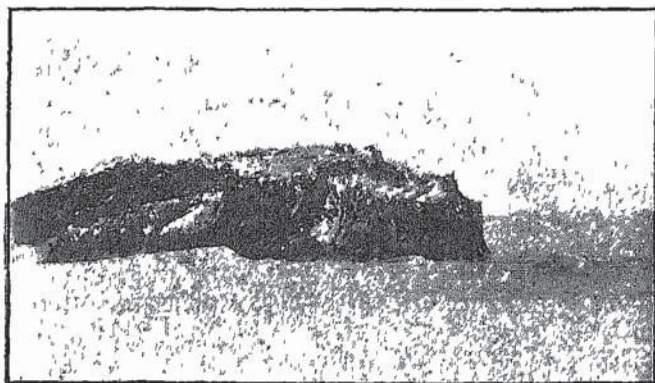


Photo by]

Wilhelm Carlson Island from the east

[NORDENSKJÖLD.

southwards, in the direction where I imagined Cape Gordon to be situated, but at last I turned definitely towards an island situated in the middle of the channel. We could already observe that the sea to the east lay open before us. During the afternoon we passed a narrow, deep bay, with Mount Haddington in all its magnificence in the background. After a rapid march we came about 7 o'clock to the island just mentioned—a high and perfectly precipitous rock of red tuff with irregular narrow courses of basalt. Ice-petrels and gulls flew in flocks around our camp amongst the rocks of ice, in the last place where we should spend a night by ourselves."



CHAPTER XX.

AN UNEXPECTED MEETING.

The twelfth of October—We meet with J Gunnar Andersson, Duse and Grunden on the ice—Brief sketch of their adventures—Our march homewards through the channel to Sidney Heibert Bay—Difficult going—Arrival at the station.

THE 12th October began like the preceding days with mist, but it was not difficult to see that this would soon be dispersed by the powerful rays of the sun.

Whilst we sat taking our pemmican and coffee we began to speak of the arrangement of the latter part of our journey. North of us, and close at hand, lay the south coast of Louis Philippe Land, but I considered that if the journey was to be extended, Paulet Island should be the place we should make for. The ice lay smooth and unbroken as far as we could see in that direction, but some thin, dark water-sky hinted that we should meet with open water further off in those tracts. To go far from the land without being in possession of even a canoe was to run a risk out of all proportion to what we might hope to gain, and, therefore, before deciding the question, I thought it best to make our way to the land nearest to the south of our present camping-place, where, from Cape Corry or Cape Gordon, there would be a prospect of obtaining an unobstructed view, and of judging of the condition of the ice farther to the south.

It was manifest that the coast in question had not many points of resemblance to previously existing charts, and I did not yet know where the capes in question were situated. But at no very considerable distance I observed a well-marked,

dark and prominent headland which attracted my attention each time I looked in its direction. It was as though a premonitory feeling told me that something important and remarkable awaited us there. So, without looking upon this short southward march as the beginning of our journey homeward, I determined to go first to this cape and then to continue until I had gained some clear idea of the condition of the ice in the Erebus and Terror Gulf.

We approach the southern strand, which rises high and precipitous, the lower rocks consisting of tuff with inclined stratification, whilst above there appear some perfectly horizontal banks of volcanic rock. Jonassen says, pointing to the rocks, "I suppose it is not possible that there can be a *depôt* in there by the shore?" but I merely smile at the very idea.

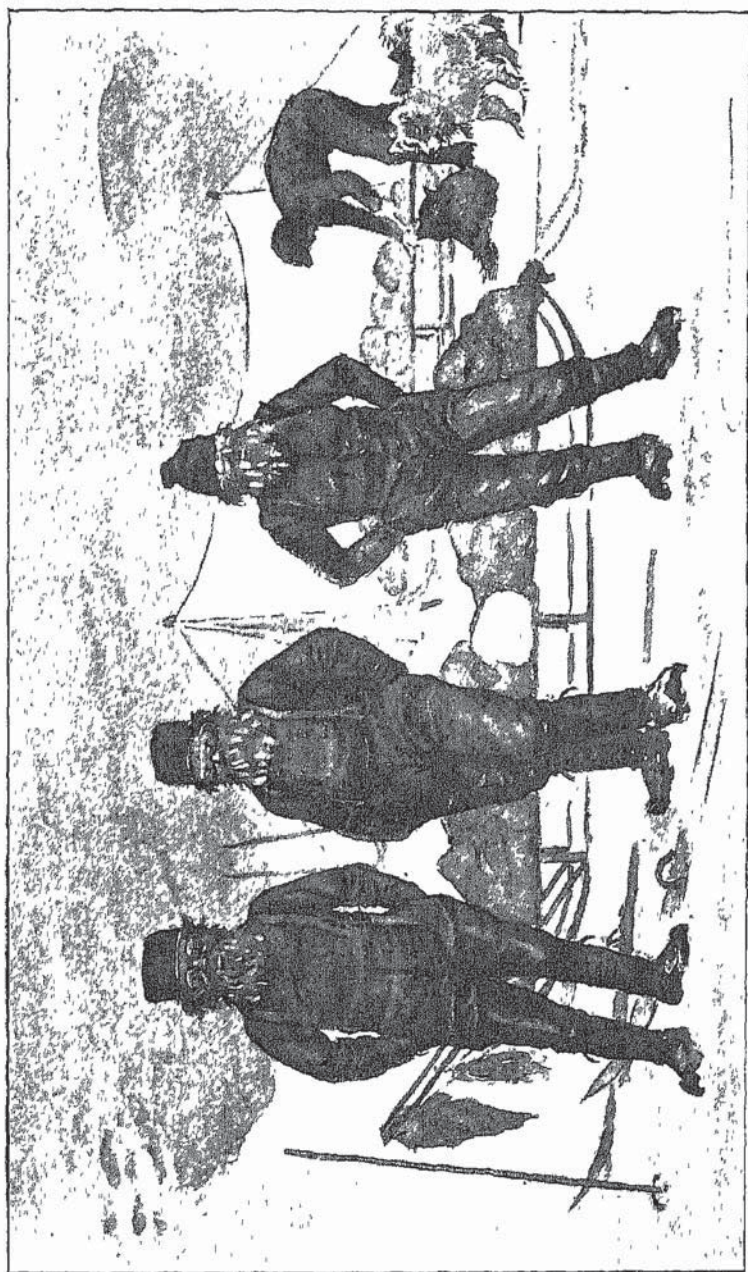
We soon reach the cape mentioned, and I imagine for a moment that I can catch a glimpse of something of an unusual appearance, but pay no further attention to it, when Jonassen speaks again: "What's that strange thing there close by the land?" I glance thither and say. "Yes, it looks like men, but it can't be, of course, I suppose it is some penguins!" and continue to march onwards. But Jonassen says at once: "Hadn't we better stay so that you can see what it is?" For the third time I look at the objects in question; of a certainty they do look strange, and a feeling tells me that something of importance is there. I take my field-glass. My hand trembles a little when I put it to my eyes, and it trembles still more when the first look convinces me that it is really men that I see! I do not stop to see if they are two or three, or what they have with them, but hurry to put away the glass; the sledge is turned and we hurry shorewards at a run. It becomes more and more apparent that it is two men on skis who are approaching us. I soon hear a faint cry, which I take to be an "hurrah!" I do not answer, for the matter is as yet all too mystical for me, and I can now see so much that I mark the strangeness of the figures that are coming towards us. It cannot be that these two creatures are of the same race of men who were once my companions on board the *Antarctic*

Jonassen calls out something which I do not catch, but he afterwards told me it was a question whether I had not better take out my revolver in order to be prepared for all eventualities

And what is it I at last see before me ? Two men, black as soot from top to toe ; men with black clothes, black faces and high black caps, and with their eyes hidden by peculiar wooden frames, which are so attached to the face that they remind one of black silk masks with pierced pieces of wood for the eyes. Never before have I seen such a mixture of civilization and the extremest degree of barbarousness ; my powers of guessing fail me when I endeavour to imagine to what race of men these creatures belong. They hold out their hands with a hearty, "How do you do ?" in the purest English. "Thanks, how are you ?" was my answer. "Have you heard anything of the boat ?" they continue "No !" "Neither have we ! How do you like the station ?" "Oh, very well in every respect." Then comes a moment's pause, and I puzzle my brains without result. They are members of the *Antarctic* Expedition, but still they know nothing of the vessel. A dim idea comes into my mind that I ought to ask who they are, and why they are here.

But we had not to wait long for an explanation. "We tried to reach you last summer, but couldn't, then we expected to be fetched by the *Antarctic*, but have been obliged to winter in a stone-hut north of this place, and are now on our way to your station. Don't you know who I am ?" "No, it's not very easy to recognise you !" "Oh, I'm Duse, and this is Gunnar Andersson !"

Thus the riddle was solved. How often had I had waking and sleeping dreams of our first meeting with men from the outer world, and had wondered if they would remark any great difference in our appearance and manners when we once more came together with people who had not completely torn asunder the ties that bound them to civilization. But here it was I who was civilized, and these men were the savages,



Drawn by

We pitched our tent by the side of their sledge.

[E. LANGOL from a photograph.]

reminding one of Australian aborigines, or some other low race of human beings !

But there was still much to explain. "Grunden is the third in our party, he is over there near the sledge and the tent ; I suppose you'll come there with us ? He is hard at work cooking." And then came Jonassen's turn to be greeted, after which we went towards their tent, which could be seen from the edge of the shore, and ere many moments had elapsed we were welcomed with unfeigned joy by the fifth man in the company thus unexpectedly brought together.

Leaving the dogs and sledge to take care of themselves a little while, we forgot everything for a moment to listen to the wonderful tale our friends related. When the ice-conditions had shown themselves so difficult the preceding summer that they feared they would be unable to reach the station with the vessel, our friends here had left the *Antarctic* on the 29th December, in order to reach us by a sledge-journey over the ice. This, too, had proved impracticable and they had been forced to return to their starting-point, where they awaited in vain for the return of the *Antarctic*. At the beginning of March they had taken up their quarters in a winter-hut of stone. They had provisions for nine men for two months, but during the winter they had lived chiefly on seal- and penguin-meat, and had used blubber as fuel. Luckily they had been in no want of such supplies, but in all other respects they had lived under such conditions that we, who neither were, nor considered ourselves to be, pampered men, asked them in stupefied amazement how it had been possible for them to exist. And the one feeling that for a long time overpowered all the others that possessed me was that of undivided sympathy for these men who had suffered so much for our sakes.

We at once determined to stay for the night at Cape "Well Met." Our tent was pitched by the side of theirs. We hoisted the Swedish flag we had with us, and then we all partook of the food Grunden had prepared—the only thing that reminded us that the provisions had not been taken out

of the station-supplies being the soot-black colour of the sugar. They showed us a big tin of home-made pemmican, consisting of fried seal-meat and seal-fat, which had been prepared especially for this journey. "It tastes no end good!" was *their* opinion of the dainty dish.

In spite of the restless night we spent we were early afoot the next morning. After enjoying the best of health during the whole winter, both Duse and Grunden were now suffering from frostbitten feet, and were in great need of rest and medical help. This circumstance alone forbade all idea of continuing the expedition for the sake of further exploration—exploration which was all the more unnecessary as our companions had already become acquainted with the surrounding tracts, amongst other things observing open water so near to Cape Gordon that it became a question whether we could pass that headland with our sledge. They had also discovered that the land on which we now were was a separate island, and that there really was a connection between Sidney Herbert Bay and the great bay I had seen on the 11th October. We hoped to find a good route home by taking this way, which also promised to be one of interest in cartographical respects, and so we determined to return to the station by the road mentioned.

It was also settled that we should not take back the whole of our equipment with us, but only so much as was absolutely necessary, leaving the most valuable of the remaining supplies at a depôt in a sheltered spot near the shore. It was almost touching to see with what regret our comrades parted with things which had so long formed their chiefest treasures. Although the dogs had now to draw about 350 kilogrammes (772 lbs.), the pace soon began to be brisk. But when we swung round into the great bay we met with numerous icebergs and inequalities in the surface, and for a long time it seemed uncertain whether there really was any way out eastward, but we found the channel behind a projecting cape, and pitched our tents with a free view eastwards along the sound, which, in the middle, expands to a rounded bight,

further sight outwards being prevented by a peculiar, low headland and some islands and hills. My diary can speak of the rest of the journey.

October 14th—"We were ready early the next morning, for we had to make the most of the fine weather, which could by no means be considered reliable. When we came down on to the sea-ice we saw the bay lying smooth and clear before us, and believed that all our difficulties were now overcome. But the snow grew deeper and deeper, and in the glorious sunshine we had, everything sank lower and lower, and ere long it grew heavy going on skis, even unburdened as we were. I had never seen the like in these regions. The sledge was turned into a snow-plough; the dogs sank past their bellies and our party moved on at a snail's pace, and we were at last obliged to give up all thoughts of going round Cape Gage, and tried instead to keep nearer in towards land, where the going proved quite as bad. But since the increase of our party everybody works with a light heart; we laugh at difficulties and joke at troubles, no one wishing to seem more fainthearted than the others."

October 15th—"Our march was arranged in the same way as yesterday, Duse now helping the dogs to draw, whilst Andersson and I took as heavy loads as we could bear. We had unheard-of labour, and even on skis one sank deep into the snow. But the farther we went the better grew the way, and at last we could lay back our knapsacks on the sledge. Off Cockburn Island we saw open water quite near to us, and at Cape Gage we were hindered by a couple of very bad crevasses marked by a high wall of pressure-hummocks, which we managed to pass at great risk. A number of seals lay on the ice with their young, and while Andersson stood looking at one of these latter he was suddenly attacked from the rear by the mother. It was only with difficulty that he could defend himself from the attack of the infuriated animal.

"After safely passing the last fissure we found ourselves once more in the old well-known Admiralty Sound, with its comparatively easy ice, but as it was still pretty heavy going,



Photo by]

An emperor penguin.

[G BODMAN

and we did not wish to reach the station during the night, we camped once more and for the last time."

October 16th.—"We were up early, and by eight o'clock we had breakfasted and begun our march. It would seem as if in the sound here the wind must be stronger than elsewhere, as no snow remains on the ice.

"The march goes briskly, and we stop only twice during the remainder of the journey. We come nearer and nearer to well-known tracts, and are able to point out to our companions the one remarkable place after the other in the vicinity of the station. At last a sharp eye can distinguish the dark outlines of our dwelling-house. Just here near the shore the sun has acted so powerfully that there is much water on the ice, but this does not delay us, and at last we swing in over the last snow-banks towards the land. I look at my watch; it is between 10 and 11, the same hour that our expedition left Sweden, two years ago to a day.

"At first everything is still and silent at the station. Can it be possible that no one has noticed us? All of a sudden we hear a wild barking, and the home-staying dogs rush down to meet us, but stop doubtfully at sight of the black, unknown figures. Then out come our comrades running down towards the shore. Sobral is the first to catch sight of us, but Bodman gets down first. Duse goes up to him and says, in English, 'How do you do?' We see in Bodman's face an indescribable astonishment mingled with doubtful uncertainty; one can mark how he is cudgelling his brains. 'Very well, thank you,' comes the slow answer. But Duse claps him heartily on the shoulder and says, but this time in Swedish, 'Don't you know me?' 'Why, of course, it's Duse!' And the greetings continue and a brief explanation of the situation is given, whilst I hasten to inform Sobral of the important news that peace is established between the Argentine Republic and Chili. And thus is completed the union between the two stations of Snow Hill and Hope Bay.

"What more shall I say of this day? That it was celebrated with a banquet need scarcely be mentioned; a dinner



Photo by]

Gruunfen.

Anderson

Duse

Our new-found comrades on their arrival at Snow Hill.

[G. BODMAN.

when we were served with a dish I had never before tasted—roast emperor penguin. The bird had come walking past the station a few days before, and had been photographed and studied ere being killed to make a dish for the anniversary of our leaving Sweden.

“But before dinner great changes had taken place. All available photographic plates had been used to immortalize the newcomers, after which we dived deep down into our hiding-places; and, although we had previously thought ourselves poor in everything that went by the name of clothes, a fairly large supply of garments was soon at the disposition of our friends. Then there was a great cutting of hair and washing, and a couple of hours changed the savages into ordinary civilized men. But however great the difference appeared to [us, I am] sure that none but the newcomers could appreciate and describe it as it should be.”

In the following chapters Dr Andersson will describe the events which took place after the departure of the *Antarctic* from our station and until the remarkable meeting with us on the ice of Crown Prince Gustaf Channel.

Part II.

BY

DR. J. GUNNAR ANDERSSON,

DR. O. NORDENSKJÖLD, C. J. SKOTTSBERG,

AND

CAPT. LARSEN.

Of this part, Chapters I. to XIII., inclusive, are by Dr J. G. Andersson; Chapters XIV. to XVI. by Dr O. Nordenskjöld, Chapters XVII to XXII. and Chapter XXIV., by C. J. Skottsberg, B.A.; Chapter XXIII., by Captain Larsen, and the concluding pages (Chapters XXV and XXVI.), by Dr. O. Nordenskjöld.



Joh. Gunnar Anderson.



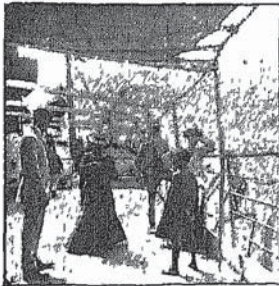
Photo by]

[S. BIRGER

CHAPTER I.

TO THE FALKLAND ISLANDS

From Gothenburg to Port Stanley—With the *Fair Rosamond* along the south coast of the Falkland Islands.



I LEFT Gothenburg on the 17th January, 1902, for Port Stanley, via Edinburgh and Liverpool, intending to join the Expedition on its return to the Falkland Islands from its first visit to South Polar waters. I took the route I did in order to be able to meet Mr. Bruce, the leader of the intended Scotch Antarctic Expedition, who showed

me every attention during my stay in Edinburgh. A night train, not a very comfortable one, I must say, took me to Liverpool, and on the 23rd January I embarked on the *Orellana*, which became my home for the following month.

A long ocean voyage of this kind always grows monotonous, but the tediousness is somewhat relieved when one can enjoy, as I did, lively intercourse with numerous and interesting travelling companions of different nationalities. The calls the vessel made at different ports formed agreeable interruptions in the journey; but at last, after leaving the quarantine station of Flores Island, outside Montevideo, where the passengers who were going up to Buenos Ayres, or who meant to

cross the Cordilleras to Chili, quitted the vessel, the *Orellana* steamed southwards towards my destination. The oppressive heat of the tropics was past, and the air felt cool and agreeable again.

Early on the morning of the 21st February I observed floating in the sea numerous branches of kelp (*Macrocystis*), which had been torn away from their place of growth, this giant seaweed being peculiar to the sub-antarctic region to which the Falkland Islands belong. And we soon descried in the distance the dim outlines of land, which grew gradually clearer and revealed rounded hills with slightly undulating lowland between them, the whole being of a sad, grey-brown colour, and perfectly free from woodland. On the easternmost headland rose a lighthouse, which marks the entrance to Port Stanley. We had scarcely come near the coast than we experienced one of those sudden "overfalls" which are of almost daily occurrence here, and it was amid a howling tempest that the *Orellana* at length cast anchor in the harbour. As it would be almost another month ere the *Antarctic* could be expected from her first journey southwards, I made up my mind to carry out a scientific exploration of the group of islands, whose geology has remained almost untouched since the "thirties," when Charles Darwin brought home the first fossils from these tracts.

The country has for the stranger a by no means inviting appearance. The naked, rounded mountain ridges are bewilderingly alike; the plains bear the gloomy stamp of lonely heaths, or steppes; while the extensive mosses are treacherous bogs, in which more than one rider, uncertain of the path, has lost horse or even life itself. Across this land there sweeps almost continually a sharp, penetrating wind which often grows to a hurricane-like storm, or, maybe, turns to irritating gusts, when short glimpses of the sun are mingled every half-hour with noisy showers.

And the little capital, too, does not look at all prepossessing at the first glance. Out in the harbour lie quite a number of old hulks—wrecks which have been towed hither and are now

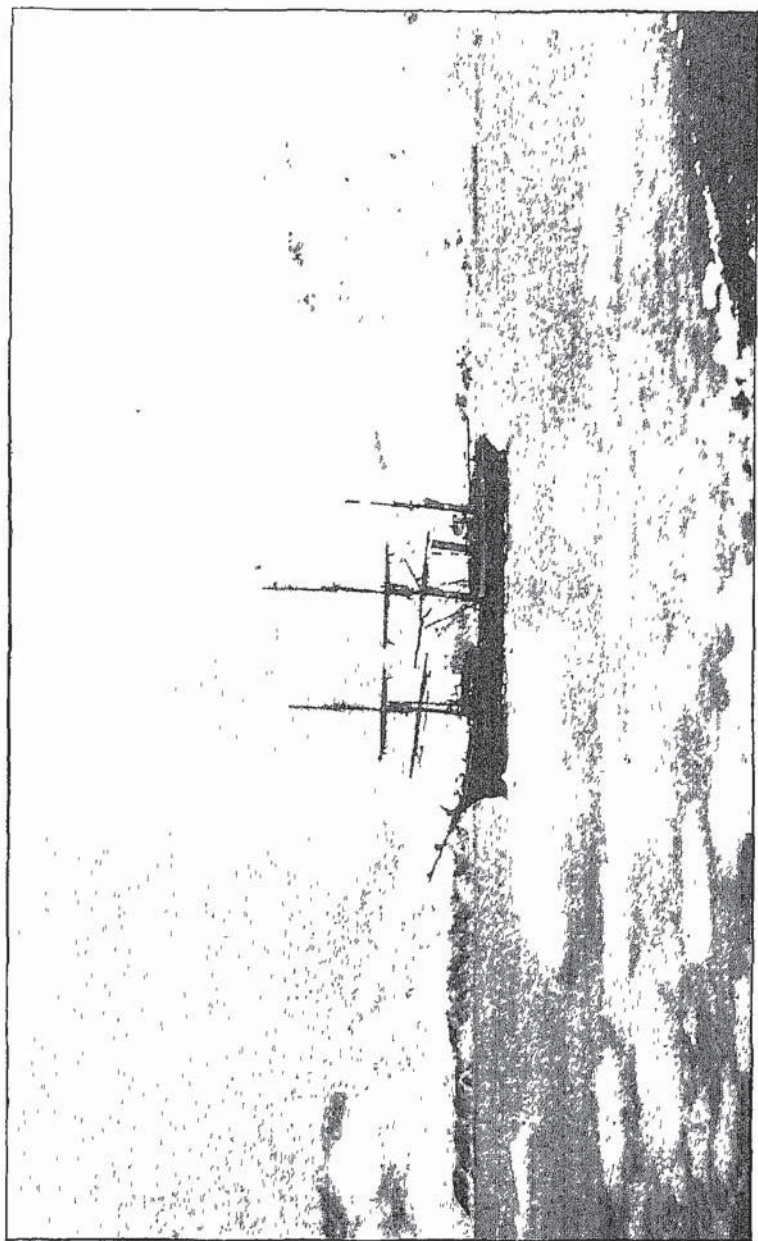


Photo by]

The *Anfa ette* in Cumberland Bay.

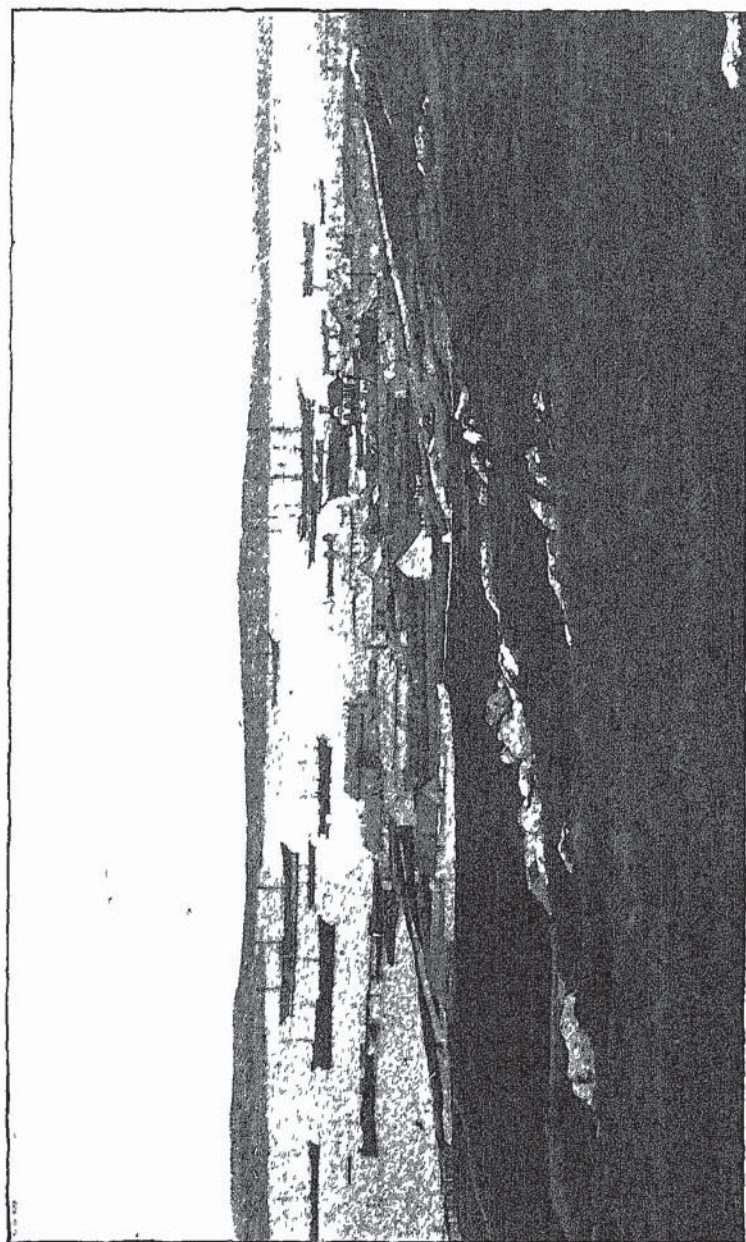
[J. G. ANDERSSON.

used as floating warehouses. Amongst the 900 inhabitants of Port Stanley there are, too, not a few whose histories are in some way connected with these dismantled vessels in the roads. Bold, careless seamen, Scandinavians many of them, they have been wrecked out here, or their badly damaged ship has been condemned, and now they go without wish or will to find their way home again, working on board the small coasting vessels, or looking for occasional jobs, and in between whiles making pilgrimages from the one to the other of the six "hotels" in the town, in order to drown all reflections on life's misery in a glass of whiskey.

But the little town has also a body of industrious, energetic, settled inhabitants, in whom we find the ability the Anglo-Saxon race has to adapt itself to unfavourable natural conditions, to combine for mutual amusement and to hold steadfastly to the customs of the mother country.

During the winter the monotony of life is broken only by the arrival of the mail boats, once a month from Europe and once from the west coast of South America. All of "the upper ten" who can, usually spend that season somewhere else—in Buenos Ayres or in England. But at the commencement of the summer, the English station ships come down here from Montevideo. And then the hearts of the ladies of Port Stanley beat quicker in anticipation of invitations to the festive balls on board the men-of-war, and lines for the transmission of electric-power for lighting purposes are laid from the cruiser to the "Assembly Hall" of the town, where the naval lieutenants and the maidens of the place give private theatricals, and play pantomimes for appreciative audiences of the "sisters, cousins and the aunts," and other relatives and friends of the lady performers.

In a few days I had roamed through all the surroundings of the town, and then I wanted to go out to other islands of the group. I was afforded an excellent opportunity of doing so by the head of the principal and dominant business company, 'The Falkland Island Co.," who proposed that I should go



Fort Stanley

to West Falkland on one of the company's schooners as a guest.

* * * * *

The *Fair Rosamond* lies at anchor for a day in Seal Cove, on the south-east coast of East Falkland, waiting for a fair wind. A heavy squall rolls in towards the bar that shelters the anchorage, and, coming to the outer edge of the rocks, flings itself skywards, to fall in a dazzlingly white cascade and then glide onwards with diminished force across the shoals. In the smooth-rolling, even waves we see rising and falling close masses of yellow-brown leaves, which float on the surface, but are attached to the bottom by long, flaccid stems which can be fifty or sixty yards long, or more. This is the giant alga of the southern seas, the kelp, which in many places quite fills the sea for a mile or so from land, where the bottom is rocky and the water shallow. This giant amid ocean flora is so intimately connected with the picture of the Falkland coasts, that popular wit there has transferred the name to the inhabitants of the islands and calls them "*the kelpers*."

The bar extends from the shore to a tussock-clad island, which catches the eye even at a distance with its pleasant, light-green colour, and its slightly rounded surface covered with vegetation right down to high-water mark. The gigantic tussock grass grows in small crowded knolls, a metre or more across, which consist of a half-decayed mass of withered leaf-sheaths from which the fresh blades shoot up to a height of four or five feet. Small, irregular, winding paths run between these tussock-knolls, by means of which one can penetrate to the interior of the island. But caution is needed, for one can suddenly stand face to face with the lord of the tussock-forest—a stately sea-lion, who guards his wives, who are of much lesser size than he, with raging jealousy. He shakes his mane, and roars angrily and with a savage bite is capable of maiming the invader in a terrible manner.

When the first settlers came to Falkland, tussock grass grew on the main islands, too, but the sheep have destroyed it, so

that in many parts it is replaced by fields of drifting sand. It is only on the small islands where there are no sheep, that this grass still thrives

A little way from the shore, near the outer edge of the mass of kelp, swim a few stoutly built ducks (*Tachyeres cinereus*). On the approach of my boat they attempt to fly away, but, their wings being too short for flight, they flap along the surface of the water, which is beaten into foam by the short, sounding blows, and they leave quite a wake behind them.

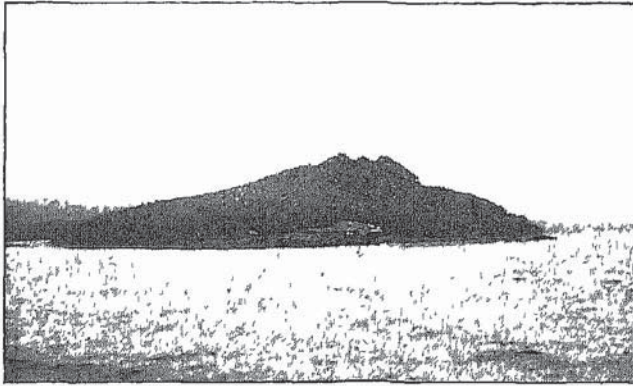


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Tussock-covered Island. Port Stephens

This peculiar method of flight of theirs has procured them the name of "steam ducks," or "steamers"

On one of the rocks left dry by the ebb-tide stands another picturesque pair of birds, the male perfectly white and the female with beautiful, brown markings. It is the kelp-goose (*Chloephaga hybrida*), the most characteristic bird of the ebb-shore of the Falkland Islands. They go feeding phlegmatically amongst the small algæ which grow between the wave-washed rocks and are not at all disturbed when I approach to photograph them. Fearlessness is a distinguishing feature of almost the whole of the rich bird-world of these islands.

Up on the slope of the shore lies a flock of the exceedingly natty, red-billed and red-legged Scoresby gull (*Leucophæus scoresbii*). The birds feel as secure as pigeons do in the streets of a city, they rise and trip away if one comes quite close to them, but lie down again immediately.

In a little lagoon swim some coveys of a small species of duck, and a number of land geese nibble the fine juicy grass on the

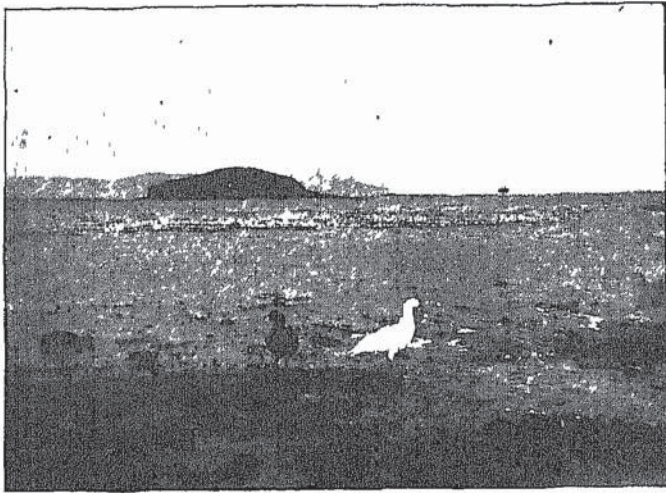


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A shore picture from the Falklands, with a pair of kelp geese (*Chloephaga hybida*).

Off the shore can be seen a band of the floating masses of leaves of the kelp (*Macrocystis*).

low, flat shore of the lake. Into the midst of this idyllic scene come the sailors with their fowling-pieces; the ducks take wing at the first discharge, but the geese are calmer, and first move a little to one side and then come back to look at their fallen companions. A couple of swans out in the bay, watchful and shy in their proud loneliness, are stalked by the seamen, but the birds always preserve a safe distance between themselves and their pursuers, and at last they fly off in earnest and disappear behind the land.

After studying the bird- and insect-life on the shore I take a turn inland. The gloomy and desert landscape consists of slopes and narrow valleys sparsely clad with grass, of hilly moorland, clothed with crowberry (*Empetrum rubrum*), and forming a low-lying plain covered with a bewildering monotony of small ridges. Here and there I come across a flock of sheep, and lonely couples of the great land-goose (*Chlo phaga magellanica*). From a hill, which is a little higher than the



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Group of gulls (*Leucophaeus scoresbii*).

others, I have, as I suppose, a view over half the southern portion of East Falkland. Far away in the north, the rounded ridges of Wickham Heights rise to a height of 700 metres (2,300 feet), their tops lightly powdered with new fallen snow; westwards and southwards I catch a glimpse of the sea, whose long narrow bays run far into the land. Farthest away in the outer line of water lies a multitude of smaller islands, around which the waves break in snow-white foam.

In the middle of the desert plain stands a little shepherd's

hut. A cage of iron wire to keep mutton in, a cabbage garden surrounded by a stone wall, a rail to which the horses are fastened, and a heap of turf, constitute all that is to be seen—around it there is nothing else than the empty, rolling plain. The shepherd comes to meet me whilst I am still a long way off, and asks me in. He is overjoyed when I give him a little tobacco, of which he has long been in want, and his wife offers me newly-strained milk and fresh wheaten bread. While I sit talking with these good folk, their half grown-up son comes riding to the cottage. He was born out here and is a



Photo by]

Aitch Island

[J. G. ANDERSSON

genuine kelper. He knows his parents' Highland home only by hearsay; he has not yet been as far as Port Stanley, but he has seen the Falkland Company's schooners in the nearest harbours, North Arm and Port Darwin, and once, a man-of-war at anchor off Lively Island. He knows horses and can sit fast in the saddle, is master of three sheep dogs, knows all the fords in the "camp," and can make riding-whips with artistically twisted thongs.

* * * * *

Fair Rosamond's trip began to grow a long one, and the *Antarctic* was expected every day at Port Stanley, so that I was anxious to reach Fox Bay in order to be able to return

to the capital by the mail schooner *Estrella*. It is true that I could reach Port Stanley by a couple of days' riding across country from Port Stephens where we now lay, but I still felt inclined to stay on board the *Rosamond* a few days longer, in order to see a little more of the enticing geology of West Falkland. But an unexpected occurrence rendered all further plans about the matter quite unnecessary. While we lay at anchor in the last-mentioned harbour, I was awakened on the morning of the 18th by the captain's going up on deck. The schooner was rolling in a way that was simply amazing when we consider that she lay in a bay completely sheltered from the open sea. I could hear how the waves rolled past the

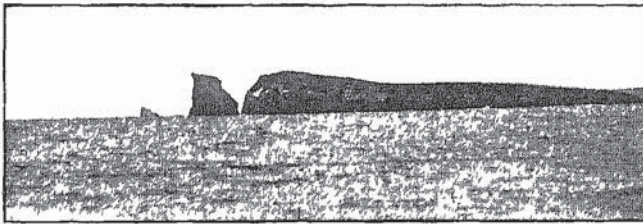


Photo by]

[J G ANDERSON.

A part of the coast outside Port Stephens.

vessel's side, the wind whistled through the rigging, and a heavy rain came pelting down, while hurried footsteps and commands were heard from the deck. At half-past four there came some short, hard blows which shook the whole vessel, and this was repeated with each sea that struck us. There was no room for doubt; both anchors had dragged, and the schooner now lay bumping upon the stones on the shore. It was still half-dark when I came up on deck. I fancy that I have experienced pretty severe storms both in the Arctic waters and on the west coast of Sweden, but they were nothing to the one that now raged. To windward there could be seen only the boiling smoke from the sea, out of which came rolling the waves that washed far over the piers, while foam and fragments of kelp flew far inland.

The *Fair Rosamond* was now in a sad plight. She creaked and groaned in the stern embrace of the breakers, and lurched violently in between the seas, now towards the land and again to starboard and the bay. Meanwhile the day broke, and the people of the settlement began to awake. Mr. Hennah, manager at the place, came down to the shore, and we managed to get a line on land, and the storm showing no signs of abating, I determined to endeavour to get ashore by the aid



Photo by]

The *Fair Rosamond* after the storm.

[J. G. ANDERSSON.

of the rope. I secure my diaries, the glass-tubes with the insects, and a couple of boxes of photographic plates about my person, buttoning my jacket above these treasures, and begin to climb down towards the land; but the rope bends beneath my weight, and my progress is as much in the water as out of it, so that I reach the shore in a somewhat wretched condition. But the jacket has held, and my plates and diaries are saved.

The change from misery to comfort was sudden and complete, and after a change of clothes I soon found myself sitting

in Mr. Hennah's parlour in front of a glimmering turf fire on the open hearth. The storm is still howling outside, but the first glimpses of the sun come peeping into the room through a conservatory filled with the most magnificent flowering ornamental plants, while Miss Lucie, the golden-haired daughter of the house, plays a few sweet melodies for me, and I feel myself surrounded by the peace of a good and hospitable home.

I had now to make my way overland to Fox Bay. Mr. Hennah, my helpful host, arranged the matter for me, and on the 21st I commenced the journey with his brother-in-law, Mr. Dickson, as my guide, and on the afternoon of the following day we arrived at my destination, where I at once made my way to Mr. Hurst, the Chief Constable of West Falkland. I told my story in a few words, and said that I had come to the place in order to wait for the mail boat, the *Estrella*. "Can you let me stay with you till she comes?" was the conclusion of my speech.

Mr. Hurst looked a little dubious.

"Won't you have a cup of tea?" he said.

"Thanks," I replied, "but I should like to know at once, as my guide is waiting outside and means to return as soon as he knows I have a roof over my head."

Mr. Hurst asked me once more to take tea, but on my earnest entreaty he went to take counsel of his wife. Two minutes later the matter was arranged, and during the six days I stayed at Fox Bay I was treated with the warmest hospitality by these amiable people. Their youthful son Robert accompanied me almost every day on my excursions. He was a lively, intelligent lad, whose love of country was inspiring and noble. He devoured histories of England, and those of the later military expeditions in India and the Soudan, and he knew by heart the greater part of the vessels on the Navy lists. We disputed the whole day long about the war in South Africa; he was a full-blooded imperialist, whilst I was a pro-Boer, but still we grew greater friends every day.

One day we made a discovery which much interested both

of us, for in the fine laminated sandstone found here everywhere along the low edges of the shore, we discovered numerous fossils of the same Devonian marine types as those discovered in East Falkland by Darwin in the "thirties." In addition to the species occurring in Darwin's collection we found several new ones, and amongst others a trilobite, a now extinct animal form related to the crustaceans. In order to give Bob an idea of the nature of the find I told him that it was a lobster. That lobsters live in the sea was for him merely an abstract idea; his experience had taught him only that they occur in tins, and now when he found that they could be procured from sandstone too, there were no bounds to his delight.

The *Estrella* came on the 27th March. When she left Port Stanley two days before, the *Antarctic* had not yet arrived, but was expected every hour. I stood expectantly on deck when the *Estrella*, on her return, approached the narrow entrance to the harbour. Would the *Antarctic* lie there with weighty news from South Polar waters, or should I be obliged to wait in the town without the possibility of undertaking excursions of any length. The schooner glides past the concealing rocks on the shore. And see! There she lies; easily recognisable by her lofty rig and the white crow's-nest. The wind is dead against us, but with a rapid tack or two the *Estrella* comes abreast of the *Antarctic* and rushes past her bows. On her deck stands a group of old friends waving a greeting towards me. I see Larsen's broad, steady figure, the tall slim form of Skottsberg; there are Karl Andreas Andersson and my old comrades from the voyage of the *Antarctic* in North Polar Seas—Ohlin and Haslum.

Scarcely has the *Estrella* dropped anchor than the *Antarctic's* pram comes alongside with Andreassen, the first mate, to fetch me on board. His Norwegian words of greeting sound like a real welcome from home to one who has been speaking nothing but English for the last two months. I soon climb over the rail of our vessel, and am at once wrapped in Larsen's hearty embrace. From all sides come my old friends crowding round

me, and behind them stand a couple of men whom I do not know. The short one is the American panter, Stokes, now on his way home; the other, a big, powerfully-built figure, blonde of complexion, and with a pretty luxuriant beard, who speaks to me in Swedish. This is Lieutenant Duse, the cartographer of the Expedition, who joined the *Antarctic* at Falmouth, and with whom, therefore, I am not acquainted.

Now I am overwhelmed with news from the south. Nordenskjöld and his five companions have been put ashore at Snow Hill, that is, quite near to Seymour Island, where Larsen found the first Antarctic fossils in 1893. And this promises well for the geological work. But look! Here they show me on every side fossils which have been found at the station itself, at Snow Hill! They are magnificent ammonites, clearly belonging to the Cretaceous formation, and are thus a perfectly new find from South Polar regions.

Then I see scientific treasures of all descriptions. Skottsberg shows me the most magnificent algæ from the Antarctic Ocean, and Karl Andreas Andersson tells me that off Seymour Island he re-found one of the greatest rarities of ocean zoology, that peculiar animal, the *Cephalodiscus*, which was discovered in 1875 by the *Challenger* Expedition, but which has never been seen again until this occasion. Duse describes a voyage along the north-west coast of Louis Philippe Land, which was a remarkable one in cartographical respects, and Larsen tells me how the *Antarctic* was nearly lost on her return journey northwards during a violent storm off the South Shetlands.

It is with wonder, and perhaps a little envy, that I look at these men who have made such important finds in their first summer campaign in the South Polar Ocean, and who have gone through the most imminent deadly perils with unimpaired vivacity of spirits. And when they told me now, too, that the *Antarctic* had filled her coal bunkers at Ushuaia, and that, although the winter was at hand, they intended to start at once for a cruise off South Georgia, I felt proud and happy

to become one of the circle, to work amongst them and to share their fate.

Now followed some days of hurried labour. The ship's carpenters in the service of the Falkland Company repaired the damage the *Antarctic* had suffered during the great storm ; the collections were packed up and sent ashore to be kept till we returned, and we finished some extensive correspondence. Our free hours were devoted to social intercourse. The hospitable homes of the little town were always open to us, and the officers of the English war vessels—the cruiser *Cambrian* and the gunboat *Basilisk*—paid us every possible attention, even promising to add a special "Antarctic-song" to the pantomime they were getting up with the Port Stanley ladies, if only we would stay till the day of performance.

But on the morning of the 11th April everything was ready for our departure, and at 10 a.m. the *Antarctic* weighed anchor and steamed round the men-of-war with lowered flag, whilst the Swedish national air was heard from the deck of the *Cambrian*. The men of the English barque, the *Cypromene*, hurrahed when we passed, and the girls of Port Stanley waved a last farewell as we sailed away on our winter journey.



Photo by]

[J. G. ANDERSSON

They were game, both of them. Motive from Royal Bay.

CHAPTER II.

THE FIRST DAYS IN THE LAND OF THE SEA-ELEPHANTS.

South Georgia—Our first days in the land of the sea-elephants—A visit to Royal Bay
—Glacier movement.

WE were now in the sea of the western winds. The weather changed from storm to calm, but the *Antarctic's* canvas was almost continually filled with a favourable wind which daily carried us nearer our distant goal to the east. On the 21st, our reckoning made us out to be in the neighbourhood of South Georgia, but heavy banks of fog hindered the view in the direction of the land.

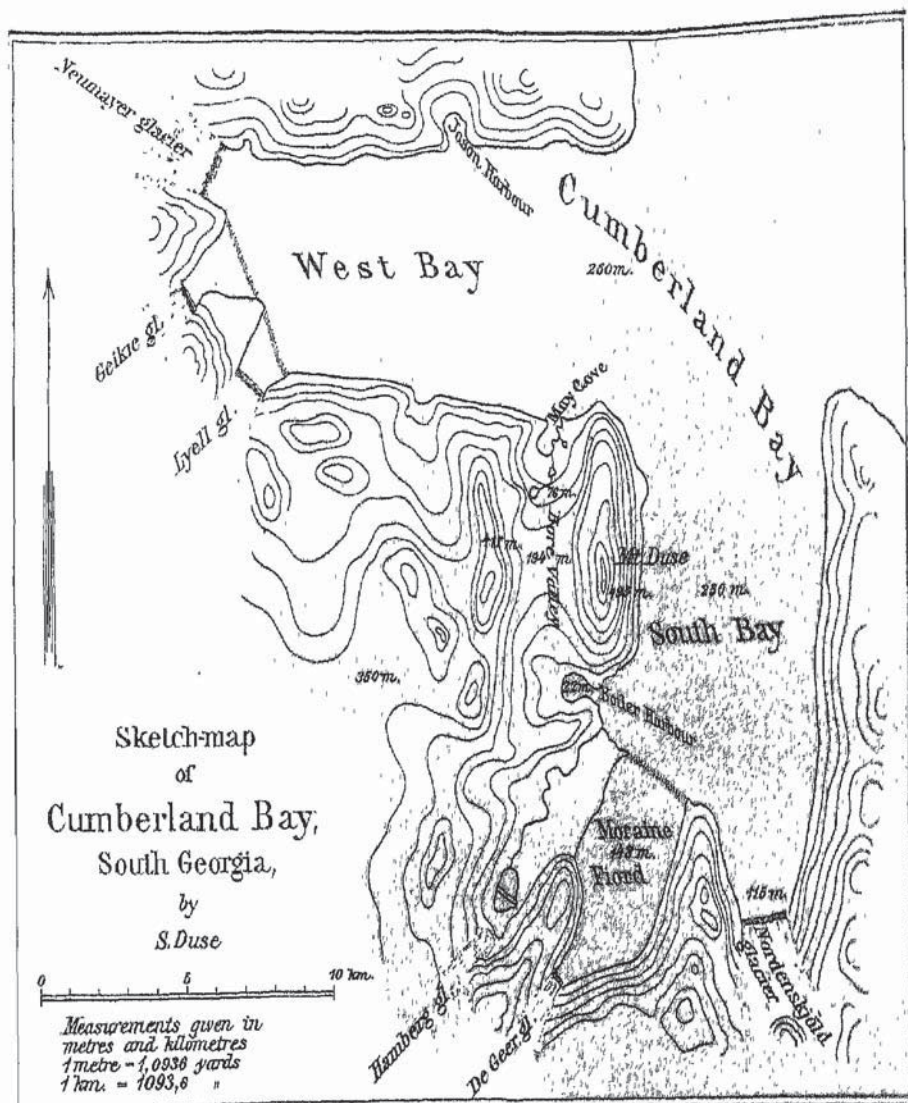
When I came on deck at seven o'clock the next morning the horizon around us was clear. The huge, fleece-edged waves gleamed a deep-blue in the morning-light as they came rolling on towards the ship; the breeze was bitingly cold, but it brought the freshness of winter with it. South-

wards, a magnificent Alpine country, illumined by the rising sun, rose slowly from the sea; there were mighty fells with snowy crowns and with sharp, uncovered teeth, around the valleys through which enormous, broad rivers of ice came flowing to the sea.

Far away in the west rose some solitary peaks above the sky-line. They might possibly be precipitous islands, they could, too, be united by lower stretches of land at present hidden beneath the horizon. To starboard, but far to the southwards, we saw a continuous wall of mountains where three mighty glaciers shot out into the sea, while straight before us lay a broad, open bay, towards which we steered whilst spying around us for a suitable field of work, and to the south-east, that is to larboard, we noticed another large fiord (the farther end of which received a broad glacier). By degrees we came so near that the lower land, too, became visible. In most places the coast consisted of a low, perpendicular shore, shaped by the breakers. But above this precipitous line one could see almost everywhere on the hill-slopes a verdant border, evidently overgrown with that giant product of sub-Antarctic regions—the tussock grass.

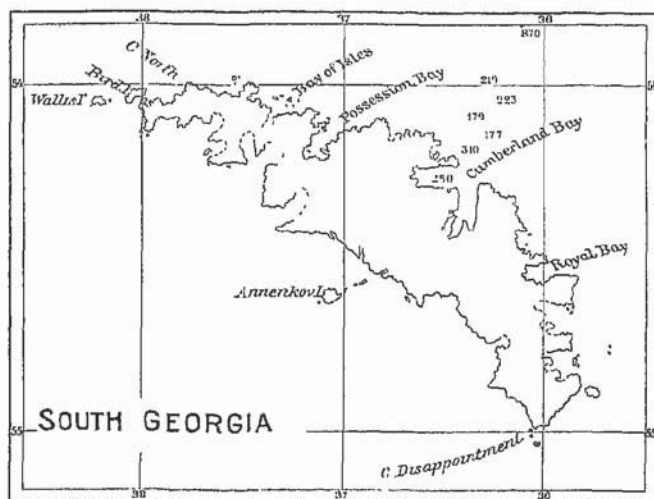
The bay before us was continued inwards by a broad, flat, snow-free dale, around which the land rose towards precipitous white-topped mountains. In the north-west of the bay we observed several tussock-clad islands, and the whole picture was a very inviting one. But suddenly there was a change in the colour of the water, which all at once became of a yellow-white tint, and struck the captain as being very suspicious. And with the aid of a glass we could see rocks and belts of kelp in front of us, so we turned as quickly as we could and steamed south-eastwards, along the coast, away from these dangerous banks and reefs, towards the nearest large fiord.

Hitherto the English rough sketch-map had not allowed of our positively identifying what we had seen of the land, but scarcely had we entered the new bay than Larsen recognized the place from his visit to South Georgia.



in 1894. This large fiord was Cumberland Bay, and in its western arm our captain had lain at anchor with the *Jason*, in a little bay into which we now steered and which we afterwards called Jason Harbour.

It was already twilight when the *Antarctic* came to anchor. This first evening in South Georgia was wonderfully beautiful, and I stood long on deck, listening to the hollow, grating thunder of the waves which was carried back to us through



Map of South Georgia.

the still night; echoed from the frame of hills around the bay, with rise and fall, and measured pause amidst the booming; made mysterious by the darkness that wrapped in the shore. Out in the bay played the glistening moonlight, but we lay in the darkness cast by the mountain wall which, in this peculiar distance-destroying *chiaro oscuro*, seemed to rise directly above our heads, in deepest black at the water's edge, but with the shimmer of faintly-lighted slopes of snow about the highest ridges whose outlines stood sharply lined against the blue expanse above.

And when I came on deck the next day and saw the fells, mysterious in night, clad in the sunny light of morning, I was seized by a strong and strange feeling that I here stood in the presence of Nature in an aspect that was entirely new to me.

* * * * *

On the previous day when I had examined the coast of South Georgia at a distance, with its snowy peaks and mighty streams of ice, I was at once reminded of certain parts of the north coast of Spitzbergen, but now, when I had a piece of South Georgian scenery close at hand, it at once became evident that the similarity existed only in the general features of the landscape. Mountains and fiords follow each other in the same way, but the fells of South Georgia rise in most places precipitously from the coast to almost inaccessible ridges. This island, situated in lat 54° S., has glaciers and rivers of ice as large as those of Spitzbergen, in lat 80° N.

This, our first day of work in South Georgia (23rd April), corresponded to the same part of the month of October in the northern hemisphere, *i.e.*, a season of the year when the northern part of Spitzbergen already lies buried in winter cold and darkness. Here the sun shone down, not only on snow-mantled mountains, but also on sloping shores, verdant with a rich growth of tussock grass; a hundred brooks rippled down the steeps and filtered through thick beds of moss; here and there a beetle or a little black spider could be seen in the sunshine, hurrying out from under a stone, and some pools of fresh water which our zoologists examined, swarmed with small crustaceans and water-beetles. The higher orders of plants had ceased blooming long ago, but in other respects the landscape had quite a summer-like appearance.

During the course of the day we roamed in little parties around the bay, and when we met on board in the evening we were all much satisfied with the results of the day's work. But in spite of the twilight having fallen, one party went ashore again, for, during the course of the day, a couple of

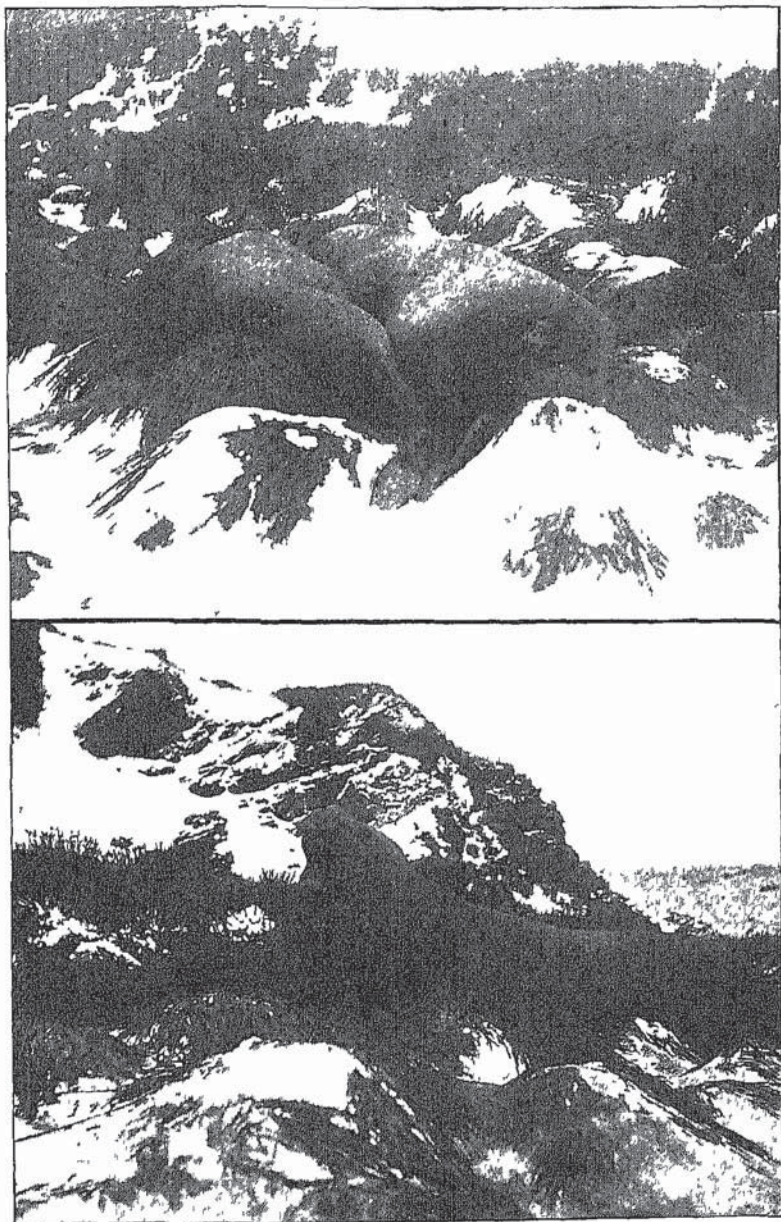


Photo by]

They were awakened from indolent repose. (Full grown sea elephants) Motive from
Cumberland Bay

[J G ANDERSSON

full-grown sea-elephants had been discovered resting at their ease in some flattened tussock-grass, a few yards from the shore and directly in front of the spot where we lay at anchor. It was now the intention to kill these monsters, and, as we meant to preserve both skin and skeleton of one of them, we wished to drive him right down to the shore before shooting him. A marksman was left near the water's edge and we went up into the grass with our pockets full of stones in order to awaken the sleeping giant. He looked like an enormously large, shapeless sack, or a dark, rounded rock, and only his heavy snoring betrayed that he was a living creature. We began our stone-throwing in order to put more life into him. At first he only turned lazily a little to one side, but when the stones came flying thickly about his head he grew irritated. With head uplifted and with wide-opened mouth, he puffed up his nose till it became a long snout which bore a faint resemblance to an elephant's trunk, and, uttering an angry, deep, trumpeting sound, he cast himself a couple of yards forward with unwieldy movements towards the most troublesome of his assailants. But when our supply of stones came to an end and we went down to the shore for a fresh one, he lay impotently down again.

At last we managed to start him, and he dragged himself, with clumsy jerkings of the heavy body, through the tussock-grass, down the sloping shore. Shot now followed shot in rapid succession, but, though wounded, he managed to rush into the water and escape.

The hunters then turned their attention to the other elephant, and a wild and peculiar scene was played in the midst of the darkness, what with the savage roaring of the animal, the eager shouting of the men and the shooting, and, finally, the gurgling noise from the dying animal when the streaming blood threatened to choke him. The difficulty of aiming surely in the darkness and our ignorance of the right spot to hit in the animal's head, protracted the death-struggle of the poor animal to a horrible degree. A few weeks later

on, when our hunters had grown accustomed to this kind of hunting, they could nearly always kill the animal with a single ball.

The following day the capricious South Georgian weather showed herself in another guise. Large, wet snow-flakes fell in quantities, and during the course of the day the lower slopes were also covered with snow.

The ground-plan of our work in South Georgia now lay clear before us. From what we could see by our two days'

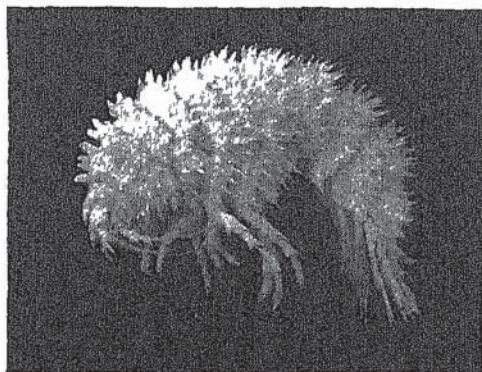


Photo by]

[O. TAYLOR

Amphipod.

South Georgia. Entrance to Cumberland Bay.

135—168 fath. Mud bottom.

One and a-half times enlarged.

reconnoitring, there was a most attractive field of work for us here in Cumberland Bay. On the headland that projected between the two principal arms of the great fiord, a party was to be put ashore in order to prosecute cartographical, geological and biological work for at least a week, while the *Antarctic* undertook dredgings along the coast. But before putting the programme into execution, we determined to carry out another investigation.

South-east of, and not far distant from, Cumberland Bay lies another, lesser fiord, Royal Bay, where a German scientific

station carried out its labours during the international observation years, 1882-3. The originator of this scientific undertaking, the aged but always enthusiastic zealot for the exploration of the South Polar regions, Professor Neumayer of Hamburg, had begged us to visit the German station, if possible, and examine the present condition of the buildings, and as other and scientific reasons also made us wish to undertake this trip to Royal Bay, we determined to do so before the first-named exploration-party went ashore



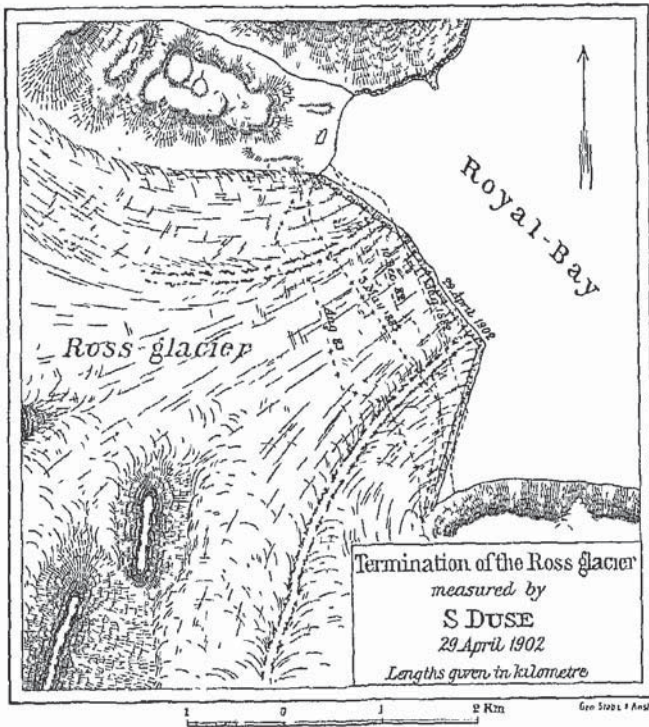
Photo by]

[G. A. LARSEN.

Dwelling house of the German station. Royal Bay.

A severe storm prevented us putting into the place in question before the 27th, when we anchored in *Moltke Hafen*, the Germans' "harbour"—a perfectly open, unprotected bay. The following day we had a westerly storm again and snow-hurricanes, so that it was not till the 29th came with calm, sunny weather, that we could manage to land. Larsen and I walked along the north shore of the bay to the German station, where we found the dwelling-house in a pretty good condition. In one of the rooms we found on the wall a note that the whalers *Castor* and *Hertha* had called here in April.

1894. In another part of the house we found some forgotten vegetable food, the greater part of which, however, had been spoiled by damp and mould. The astronomical and magnetic observatories were in a very bad state, with the roofs blown off by the wind, and one of the buildings half destroyed.



The dotted lines show the gradual retreat of the glacier, 20 years ago, as measured by the German Expeditions.

In another part of the bay, Duse was occupied with an interesting investigation. In consequence of the results of a series of measurements made during their stay, the German scientists had come to the conclusion that the area of the glaciers within the southern hemisphere was now diminishing. Duse's examination resulted in the discovery that the *perpen-*

dicular termination of the Ross glacier—on the retreat of which the Germans had based their theory—now (29th April, 1902) lay somewhat beyond the outermost of the positions observed by the German scientists, proving that after the minimum of August 1883, there must have occurred a new and mighty extension of the glacier.

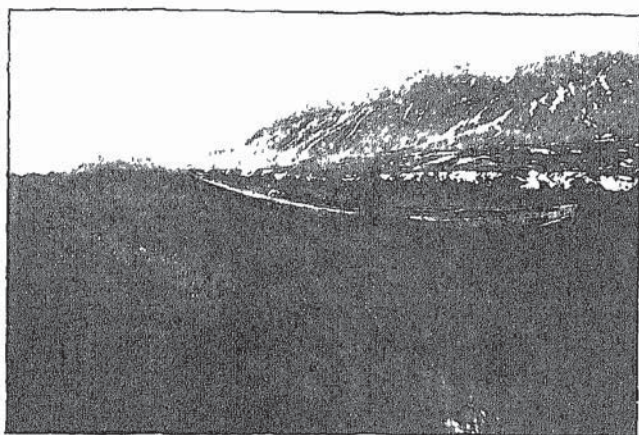


Photo by]

The old centre-board boat at Boiler Bay.

[J. G. ANDERSON.

CHAPTER III.

TENT LIFE AND BOAT EXPEDITIONS.

Tent life and boat expeditions—Discovery of a boat and boilers—An Antarctic grave-yard—A dangerous adventure—Return to Cumberland Bay.

It was amid calm sunshiny weather on the morning of the 1st May that we steamed back into Cumberland Bay, whose waters, but lately whipped into foam by violent squalls and storms, now lay unstirred by wind. The *Antarctic* moved onwards towards the precipitous cape that lies between the two great arms of the fiord, where a valley on the western side of the headland enticed us with the luxuriant growth of tussock grass upon its slopes. On the top of the fell that separated this valley from the southern arm of the fiord, our cartographer should be able to obtain an unobstructed view of the system of fiords; inland along the valley the way seemed open for fairly extensive excursions, and the shore of a little bay at the embouchure of the valley seemed to promise us good camping ground.

We are four in number—Duse, Skottsberg and I, and a Falkland lad named Andrew, who has been engaged for this South Georgian trip. We row towards the bay just mentioned, while the *Antarctic* steams out to sea again. The roar of the breakers comes louder and louder from a point where we can descry a tower-shaped rock near the mouth of the bay. Our boat glides past the belt of kelp near this point, and we see a little creek with a low pebbly shore—an ideal boat harbour—and we row in through the giant sea-weed which almost closes the entrance. Inside, the water is like a mirror, and when we lean over and look down into its depths, we see on the rocky bottom some of the most richly-coloured dwellers of the sea—pink algæ, which grow like a crust-like covering on the stones; dark-red algæ, with most graceful leaf-forms, and great orange-coloured sea-stars. Near the boat a sea-leopard sticks his long, narrow, lizard-like head out of the water, while on the shore in front of us lie two or three lazy fellows of his race, sunning themselves in the vicinity of a little brook that ripples and glitters across the gravel on the beach.

As soon as our things are landed and the boat is drawn up on the shore, Duse ascends the nearest hill in order to begin his mapping, taking Andrew with him as his assistant, while Skottsberg and I put the camp in order. We raise the tent near the brook, the sea-leopards waking at the unusual noise. They peer craftily at us, roll a little while backwards and forwards, and then glide lithely away for a few yards, there to fall again into their lethargic repose. We put up a little tent to be used as a store-room for the instruments and collections. The provisions are collected into a heap, which we cover with a tarpaulin, and then we set to work to get the large tent in order. The time goes quickly with all these preparations, and the short winter day is already at an end when we sit down to dinner, and as we drink our coffee in the dusk we empty a glass of punch in honour of May Day, and christen our cosy little harbour, “May Cove.”

The next morning all of us left the camp at an early hour,



Photo by]

The west shore of May Cove,

[O SKOTSHERG

Duse, Skottsberg and Andrew going up the sharp mountain ridge just above the camp, to which I afterwards gave the name of Mount Duse. I myself went up the valley, in order to see how far we could extend our excursions in that direction. I found a couple of small frozen lakes quite close to our camping-ground, the second and larger of them being an expansion of a fairly large river flowing into May Cove. I found traces everywhere of a former ice-covering, with moraine-gravel and beautifully scored glacier-stones, which proved that an immense mass of ice had once filled the entire valley, and I consequently called the place Bore Valley.

The river I mentioned fell in a foaming cataract over a pretty high precipice, and when I climbed the rock I caught sight of a third lake, which lay free from ice and was much larger than the other two. A little beyond this lake the valley seemed to form a mountain pass, on the other side of which there was probably a descent to the, as yet, invisible lower-lying land. Eager to see if our region of investigation could be extended in that direction, I made my way up to the top of the pass, and was much astonished by what I saw from that point. Towards the south, that is, towards the interior of the island, lay an extensive system of valleys, the highest part of which were as yet partly invisible to me, whilst far to the south-south-east lay a large stretch of water where floating blocks of glacier ice contrasted sharply with the deep-blue surface. At first I supposed that this could be nothing else than a large lake, but on climbing some distance up Mount Duse in order to obtain a better view, I soon perceived my mistake. Cumberland Bay penetrated the land in various directions to a much greater extent than I had hitherto imagined, and the water I had just seen belonged to an arm of the fiord, which was almost separated from the main bay by an immense terminal moraine. Here, too, there were traces of a former ice-covering; traces on such a large scale and so unusually clear that, in spite of the great distance, I at once fully perceived the importance of this remarkable evidence.

But if my geologist's heart beat more quickly than usual



Photo by J

May Cove and Mt. Duse.

JO. SKOTSHERG

when I first caught view of "Moraine Fiord," it grew more than calm when, on going a little further down the slope, I stopped for a moment in breathless wonder before a most astonishing sight. Close under the mountain crept a little bay I had not seen before, with a low point shooting out between it and the main fiord, and—now comes the strange part of the story—on this point, and drawn up some distance from the shore, lay *a large green-painted boat*. The boat had evidently lain there many years, for the tussock grass grew high and close around it. It was a large undecked centre-board boat, thirty feet long and eleven feet wide, almost too large to have been brought here as a deck-boat on board a vessel, but yet too small to have sailed alone here to this stormy coast.

The boat was not the only trace I found of human beings. On the edge of the shore lay a heap of bricks, and near the boat was a large pan, or boiler, of cast-iron, in which lay some large pieces of sealskin. Nearer the water lay six more boilers of the same description, and on one of them I read the mark :

Johnson & Co.

W—ping Dock,

London.

In consequence of this find I gave the place the name of Boiler Bay.

In May Cove, too, we found traces of the former presence of man. Just above the mouth of the river which came from the ice-free lake mentioned above, we found a grotto in the precipitous wall of the cliff. This cavern, whose mouth is partly concealed by a bank covered with tussock-grass, consists of an exterior chamber 65 feet long by 26 feet wide, with a narrow passage running 16 feet inwards in an oblique direction. In this cave we found the remains of two camp-fires, a cork, a tin can, a bit of leather, and the bones of the animals which had been eaten by the inhabitants of the place.

A few days later Skottsberg and I found a number of whalers' graves at the south side of our bay. It was a pretty little

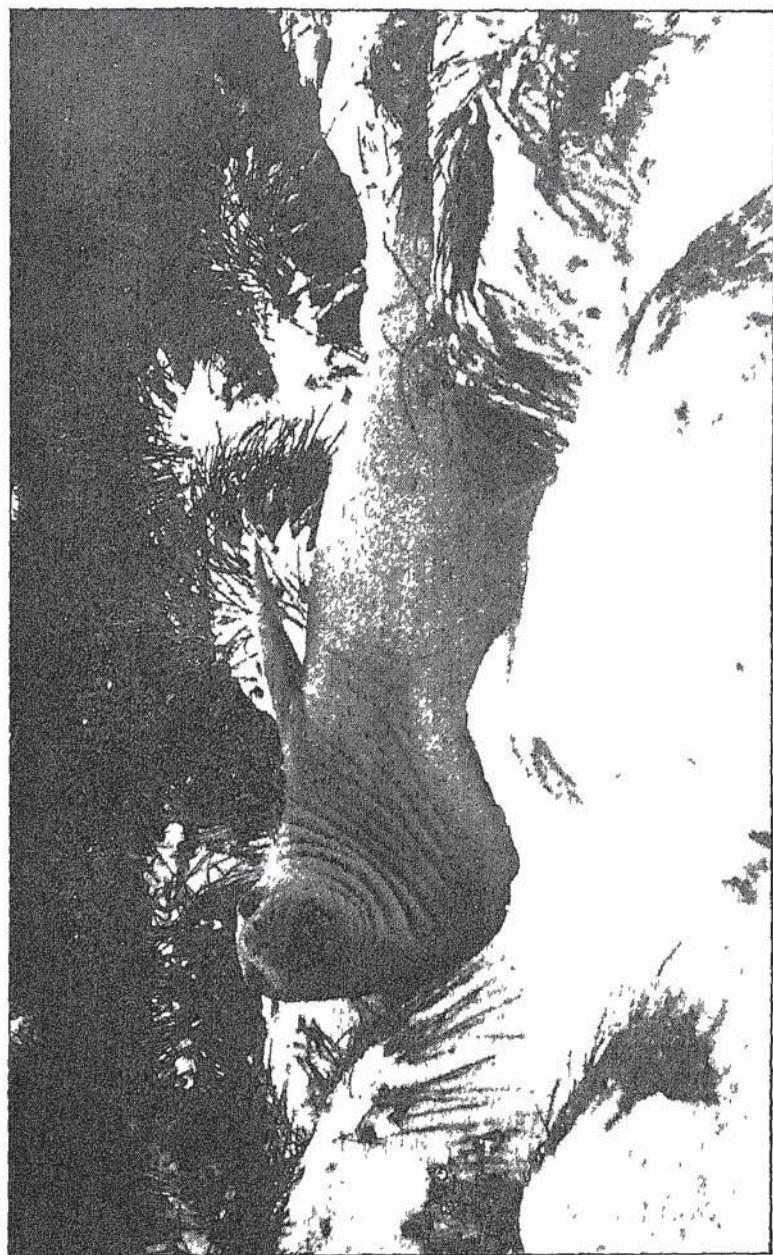


Photo by]

Young male sea elephant Cumberland Bay

[J. G. ANDERSON.

appearance as, with most solemn mien, they came marching towards us like a patrol with the corporal at its head.

We made a bed of tussock-grass in the bottom of the boat, but felt the boards pretty plainly the whole night, and one of the company vowed that he would never lie in that boat again.

The following morning we ascended the mountain above our camp, and obtained a magnificent view towards the great glacier of West Fiord (the Neumayer glacier), a view that enticed us to plan a journey on the ice in the event of the *Antarctic* not returning within the next few days.

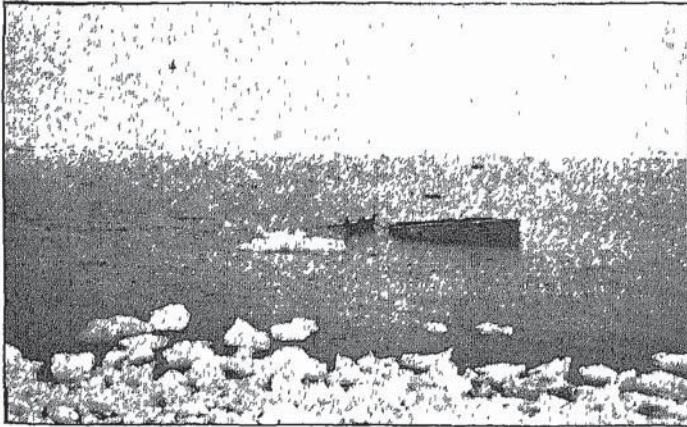


Photo by]

[J. G. ANDERSON

Floating pieces of glacier-ice in Moraine Fiord.

While Dusc continued his cartographical labours up on the fell which we had ascended first, Skottsberg and I went across the broad, kettle-shaped valley and up to a pass 1,360 feet high, from whence, to our great astonishment, we had an unobstructed view far over Bore Valley to Moraine Fiord and the inner part of South Fiord.

But during our ascent of the pass we had seen between the mountains far away in the west a large sheet of water, with small floating icebergs, and a belt of kelp at the entrance, which greatly reminded us of our earliest view of Moraine



Photo by]

Sea leopard Cumberland Bay

J. G. ANDERSON

Fiord. On Skottsborg's climbing a little way up the mountain slope above the pass, he found that what we had seen was two small arms of the fiord, perfect copies in miniature of Moraine Fiord, separated from each other by a moraine-formed point, and from West Fiord by a submarine reef, whose position was marked by the rows of kelp which stretched between the extreme points of the arms of the small bays. Into these bays flow two streams of ice which I have called the Lyell and Giekie glaciers.

While we were sitting near the boat at dinner, with some penguin-soup in front of us, we saw the *Antarctic* far away by the opposite shore slowly entering the bay. After dark we made a big bonfire of seal-blubber and dry tussock-grass, in order to signal our whereabouts to the vessel, which was now anchored in Jason Harbour, and ere long a lantern was soon hoisted in answer to our fire.

The next morning, as we were anxious to finish our exploration of the interior of the fiord, we stuck a pole in the gravel with a short note fastened to it, informing Captain Larsen of our plans, and then continued our boat journey along the shore. The morning was sunny and calm, and it was easy work rowing, so that we soon arrived at the moraine-point between the two small bays, and two hours later Duse had finished his cartographical labours in West Fiord, and we were ready to start for Jason Harbour.

The weather had become threatening, however, and the air lay dark above the bay over whose surface the first gusts of wind came dancing merrily. But we longed to come on board in order to get a little proper food, a good bed and cheerful companions, and so we cast aside all hesitation and steered out across the bay. We had not gone very far, however, ere we discovered we were playing a dangerous game. Squalls came rushing down the glacier on to the bay, the waves of which they lashed into whirling foam, and swept on towards us amid clouds of sea-smoke, howling and whistling as they passed the boat. To prevent our craft from capsizing I kept her as near the wind as



[photo by]

Tussock grass (*Poa caespitosa*). Cumberland Bay

[C. SKOTINBERG

possible, but the consequence was that we merely "marked time," while the rowers exhausted their powers in the work of holding the boat up against the wind. But this plan did not pay in the long run, for the storm grew madder every moment, and so we determined to scud obliquely towards the opposite shore. I waited until there came a pause between the gusts, and then we pulled like one man, and in a trice the dangerous turning was accomplished. Now we go along at a very different rate. Swiftly we speed out through the bay, gradually edging nearer the shore we intend to reach, and we soon come close under the land to the north. There is a little bay just before us, and we determine to try to land there until the storm is over. But on approaching the mouth of the bay, I can see from my seat in the stern a whole row of boiling breakers, towards which we are rushing at headlong speed. Certain destruction awaits us there. No, we must try to reach Jason Harbour and the *Antarctic*. We edge off from the shore again; once more we speed past points and foaming bars and are soon at the headland where Jason Harbour begins. Now we have rounded it and are in smoother water, although the storm continues to whistle as though it came from a giant-bellows in the bay. The *Antarctic* lies far, far off, and still looks very small. We labour onwards close under land, gaining a little in between the squalls, marking time when the slants of wind come, or dropping astern a little. The rowers exert their strength to the uttermost; muscles are strained; the oars bend elastically at each stroke. Hurrah! We are gaining ground. Pull hard! Pull hard!

The *Antarctic* grows larger and larger as we approach. They catch sight of us on board, and her rail is soon black with people, and when we at last lay our boat alongside, we are greeted with a hearty, thundering hurrah.

The steward quickly got dinner ready for us in the gun-room, and while we eat, Larsen relates the chief features of the *Antarctic's* expedition along the coast. They had been up to the north-western part of the island, in Possession Bay and



Photo

Hamberg glacier and its old terminal moraines

[J. G. ANDERSON]

the Bay of Isles, the weather being almost the whole time exceedingly unfavourable, snow-hurricanes coming in rapid succession and rendering navigation amongst the innumerable islets and reefs a work of much difficulty. But, in spite of all dangers and hardships, the party on the vessel had carried out very valuable investigations; some good trawlings, observations respecting the former extent of the land-ice, and the discovery of breeding pairs of the great albatross (*Diomedea exulans*), and some unfledged young ones, being the chief results of this journey.

The morning after we rejoined the *Antarctic* the vessel weighed anchor and steamed across to May Cove, where we took our tent, collections, etc., on board, and then she went into South Fiord, and after making a sounding in the middle of this piece of water we cast anchor in Boiler Bay, where the vessel remained for a month, until our departure from South Georgia on the 15th June.

During the first part of our stay in this harbour, our scientific labours were greatly favoured by calm and sunny weather. The snow which had fallen, now melted almost all away; the temperature was almost always above zero, and the country had quite a summer-like appearance. Our cartographer was everywhere at work; geological studies were pursued under the most favourable conditions; the zoologists and the botanist were fully occupied. The vessel made little trips out to the fiord for the purpose of taking soundings and for zoological work, returning to Boiler Bay at nightfall.

During a visit I paid to Moraine Fiord on the 26th May, I discovered embedded in an enormous block of stone the first fossil found in South Georgia. The discovery was one of the greatest importance, but the little mollusc lay in such a position amid the level surface of the rock that we had to set on foot a little expedition, consisting of Skottsberg, myself and two sailors, armed with drills and blasting powder and a tent and provisions for several days, and we had to work for two days, boring and blasting, ere we succeeded in getting the little fossil loose.



Photo by]

Mt. Duse

The *Antarctic* in Boller Bay

Cape, with boat
and boilers.

[J. G. ANDERSON



Photo by]

Anderson

Grundten.

Wennergaard.

The "quarrying camp."

[C SCOTTSHENG

A recreation much in favour for a time was that of fishing. Boiler Bay proved to be immensely rich in fish, and we caught, direct from the vessel's side, more than 700 large and palatable fish belonging to two different species of the *Notothenia*, peculiar to the Antarctic seas, and, for a period of some three weeks, fresh fish formed an important part of our daily fare on board.

At the end of May the fine weather came to a close, and between the 5th and the 12th June, snowstorms, many of them very violent, raged almost incessantly, and covered the country with a white mantle about one yard in thickness. Winter had at last deprived us in earnest of all possibility of continuing our work on land, and so on the 15th June the *Antarctic* steamed out of Cumberland Bay, steering first direct from the coast, and taking, the meanwhile, a series of soundings, in order to determine the depth and breadth of the coast-bank (see sketch map, page 339).

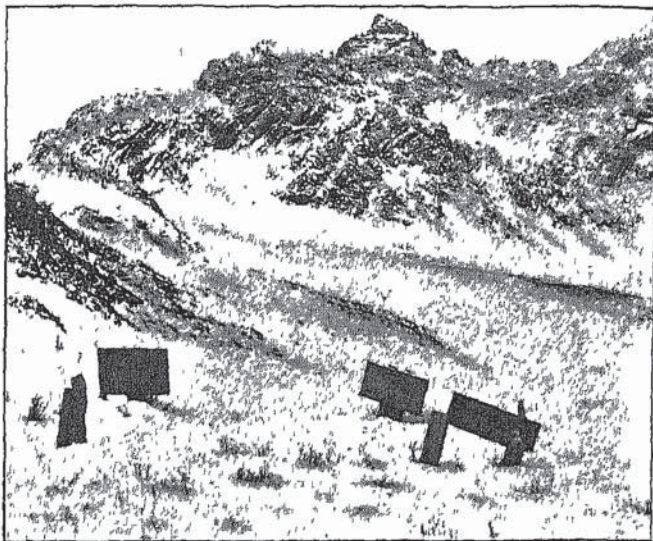
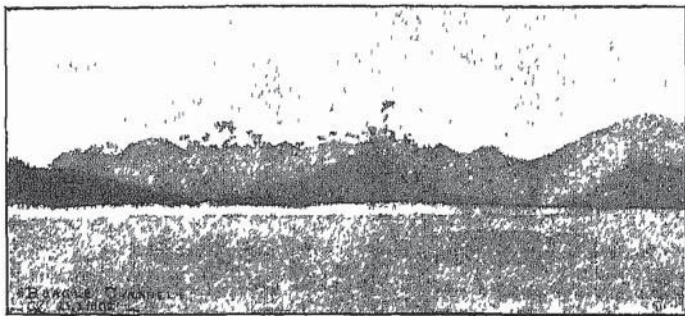


Photo by]

The old graveyard

[J. G. ANDERSSON.



From a water-colour painting by]

[C. SKOTTSBERG.

Motive from Beagle Channel.

CHAPTER IV.

TIERRA DEL FUEGO AND THE ONA INDIANS

We return to Port Stanley—Axel Ohlin returns to Sweden—Tierra del Fuego and the Onas—Anikin and Modesto.

WE left the coast of South Georgia on the 15th June, and after a long cruise up northwards reached Port Stanley in safety on the 4th July. The *Antarctic* was to lie here till the end of the winter, and we had now to endeavour to make the best possible arrangements for the naturalists of the party, in order that they might be able to continue their labours. A farmer, Mr V. Packe, very obligingly placed his unoccupied "cook-house" in Port Louis at our disposal, and here Skottsberg and myself spent nearly a month of the last part of the winter, occupied in various botanical and geological investigations. In the middle of August we returned to Port Stanley and the *Antarctic*, in order to make the necessary arrangements for our approaching journey to Tierra del Fuego.

Just at this time the Expedition experienced a painful loss, the elder of the two geologists of the party, Mr. Axel Ohlin,

being compelled to return to Sweden on account of his health.

* * * * *

After thankful good-byes to the amiable and hospitable inhabitants of the Falkland Islands, we gladly left the waste tundra-lands, where, during the short winter days, we had suffered so much from the rapid alternations of snow and thaw. Spring was now at hand, and the *Antarctic* turned her



Axel Ohlin.
Died in Sweden, 12th July, 1903.

proceed towards the magnificent channels and forest-skirted mountains of Tierra del Fuego.

We left Port Stanley on the 6th September, and after a call at Port Albemarle in West Falkland, steered southwards to the Burdwood-bank, where three fine trawlings were made, our course being then laid for Beagle Channel, which we entered on September 15th.

The chief end of our visit to Tierra del Fuego was to thoroughly repair the sails and rigging of the *Antarctic* at Ushuaia before beginning the second summer voyage to the South

Polar seas, and to take on board a full supply of coal and a necessary supply of reserve provisions, all of which, thanks to the munificence of the Argentine Republic, we found at our disposal at the port named.

But it was also our wish to use every opportunity of extending our knowledge of the natural features of Tierra del Fuego. On the occasion of the first visit of the *Antarctic* to Ushuaia (in March), Skottsberg had penetrated the neighbouring belt of forest, and had studied the mountain flora to a height of nearly 1,300 metres (4,250 feet). He and K. A. Andersson now continued the exploration of the Ushuaia district and went together to Lago Roca, in the country behind Lapataia Bay, whilst I intended to solve a problem, the previous history of which was as follows.

When an Argentine-Chilian Commission was engaged in the first half of the "nineties" in determining the frontiers of the two countries, a lake of considerable dimensions—one of sixty miles in length—was discovered in the interior of Tierra del Fuego, and was named after a Pater Fagnano, who believed that he had caught sight of this piece of water a few years earlier. Lago Fagnano empties itself by a river some nine miles long—the Rio Azopardo—into the Almirantazgo, a bay in the Straits of Magellan. The Boundary Commission made a sketch-map of the contour of the lake, and it is also said that they made some soundings at considerable depths. In February-March, 1896, Nordenskjöld and Ohlin, who were then on an expedition to these parts, made an attempt to force their way up the Rio Azopardo, in order to carry out zoological investigations in Lago Fagnano, but the endeavour failed on account of want of time.

As, therefore, a zoological examination of this large lake in the interior of Tierra del Fuego would, from many points of view, be one of importance and interest, I determined to carry a light boat to the lake and explore the unknown water by means of trawl and tow-net. I remembered that during my trip on the *Fair Rosamond*, Captain Willis had once told me that some Indians belonging to the Onas, a tribe dwelling in

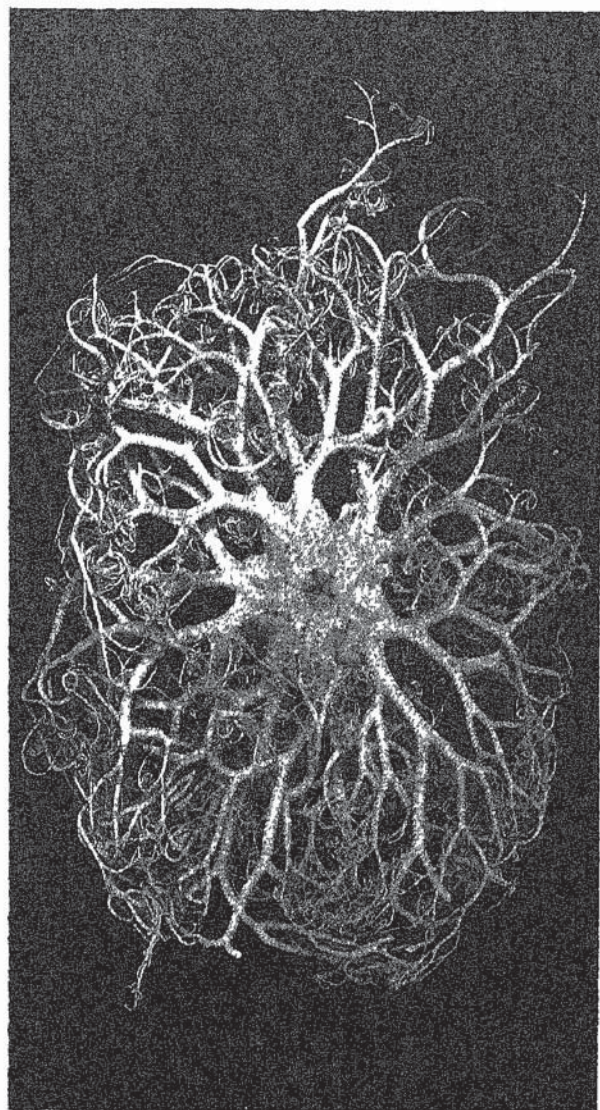


Plate 59]

Gorgonocephalus
Star fish with branching arms. Burdwood bank. 76 fath
of natural size

[U. T. L. S. O. W.]

that part of Tierra del Fuego north of the cordillera, *i.e.*, in the mountain region, had come from the east end of Lago Fagnano right down to the Beagle Channel at Harberton, through a pass in the mountains.

Very fortunately for my purpose, there was at the time in Port Stanley one of the three brothers who are the proprietors of the settlement in Harberton, a Mr. William Bridges, youngest son of Thomas Bridges, the now deceased English missionary to the Yahgan Indians. This young man told me that he and his brothers, helped by Ona workmen, had cut a riding path through the forest up to the pass in question, and on its farther side, past Lake Fagnano, right across to the eastern coast of Tierra del Fuego, where they had rented a new tract of land from the Argentine Government, and he also said that at Harberton they had a canvas-boat, which I could borrow for the purpose of zoological work on the lake.

Provided with a letter of introduction from Mr. William to the other members of the family, I quitted the *Antarctic* on the 15th September, the vessel continuing its journey westward through Beagle Channel to Ushuaia. In Harberton I was received in a most hospitable manner by the eldest of the three brothers, Mr. Despard Bridges, and his young wife.

As I have said, the father had been dead for some years on the occasion of my visit, but his energetic sons continued the development of the farm, which was now the most flourishing along the Beagle Channel. There were always Ona families in larger or smaller numbers living in the vicinity of Harberton, but scarcely any of them could be considered as settled there. When the desire for wandering seizes them they go their ways and cross the cordillera far to the north of Lago Fagnano. They come and go, but the Bridges have by degrees entered into a kind of business connection with all the Onas south of the Rio Grande, so that the brothers are never in want of willing workmen.

The Ona was once the lord of Tierra del Fuego, roving wherever he would in pursuit of the guanaco. Stormy and cold was the climate in his land; a guanaco-fleece, loosely

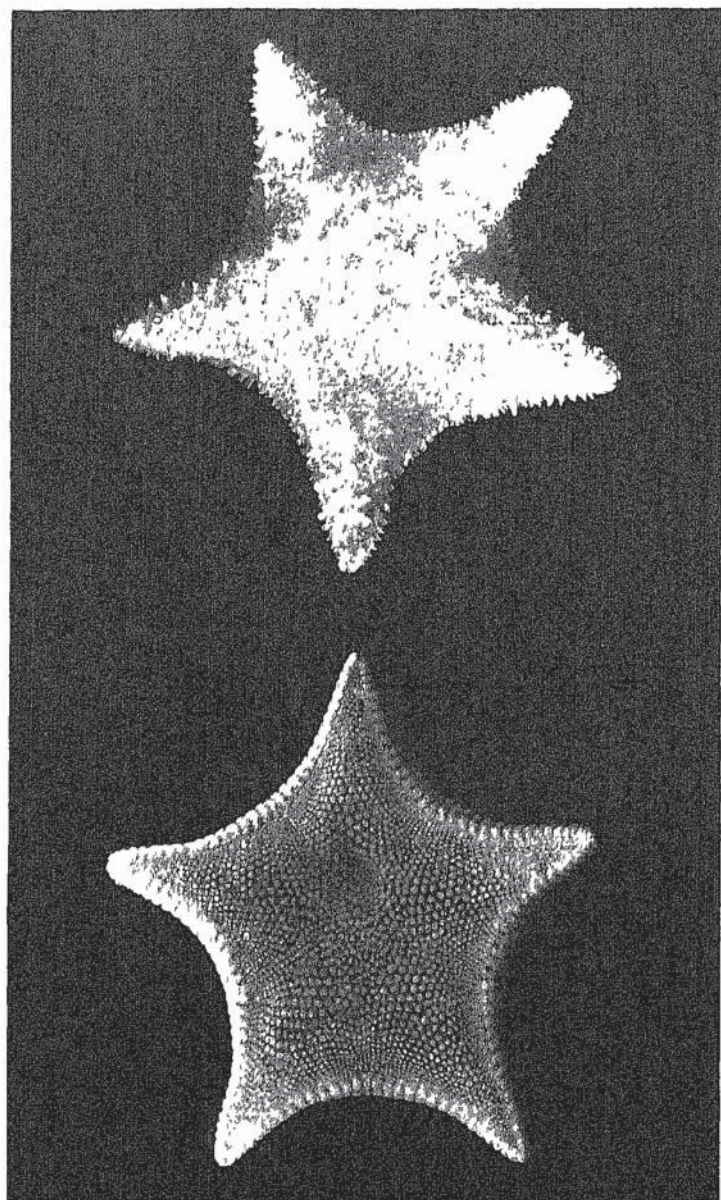


Photo by]

Pentagonaster

Star-fish from Budwood bank. 76 fath
 $\frac{1}{3}$ of natural size.

Forania

[O. T. S. O. V.

wrapped about his body, was his only garment ; his weapons were simple, and food was often scarce. But he was a free nomad. But in the "eighties" the white invaders—gold-diggers and sheep-farmers—made their appearance, and the work of extermination was soon in full play. One day a number of the Onas made their appearance near Harberton, where the Bridges received them from the very first in a friendly manner, and, by means of firm and consequent, but kindly treatment, made of them an inexpensive and easily-directed body of labourers.

By degrees the young Bridges had extended their domains northwards towards the mountains. Accompanied by the Onas they had crossed the hull-cham by the pass, which was the Indians' road (and which I have marked on a sketch-map by the name of this Indian tribe), and after penetrating to the east coast south of Rio Grande and there finding unoccupied territory suitable for sheep-farming, the brothers undertook the wonderful and gigantic task of hewing a path through the forest from sea to sea.

When I reached Harberton the first signs of spring had just shown themselves. Near the shore the earth was bare in most places, but great masses of snow still lay in the woods, where they had accumulated during a winter which was one of the severest in the memory of man.

My intention was, to endeavour to take the canvas-boat, provisions and the rest of our equipment, on a ski-sledge made by Reinholdz, third mate of the *Antarctic*. My companions on the journey were to be the young sailor Wenersgaard from the *Antarctic*, and two Indians chosen for me by Mr. Despard. The elder of these Onas, quite a young man, but the husband of two wives, was called Anikin, which was his native appellation ; his comrade, Modesto, had been given his name from the Spanish, the language always used by Mr. Bridges when he spoke to the Indians.

These two Onas were far from being agreeable and law-abiding fellows according to European ideas. On the contrary, they were a couple of savage murderers, but, maybe,



Group of Ona Indians

they thereby best reached the standard of an honourable and capable man amongst their own people.

Ancient vendettas exist between many of the small family groups into which the Ona tribe is split. The original cause of the quarrel can often be so old that it has fallen into forgetfulness, but the blood-feud is carried on amidst the primeval forests as fiercely and as devastatingly as ever—the domestic enemy of a race of human beings, grand in their wildness, but now decimated by the satanic gifts of the white man—rifle-balls, consumption, and other infectious diseases.

Anikin's and Modesto's people had a group of enemies somewhere in the woods north of Lago Fagnano. These North Indians—as I shall call them for the sake of making a distinction—had once killed two men belonging to Anikin's friends. This in itself was nothing unusual, and would not alone been sufficient to occasion such a violent feud as now arose. But a rumour was borne by wandering Onas to Anikin's and Modesto's people that the women of the North Indians had taken the dead bodies and given them to their dogs. Such an unheard of outrage called for revenge; bloody, annihilating revenge, not on the fighting-men alone, but also, and principally on the women. It called for the extinction of the entire horde.

A white man, a gold-seeker, an "explorer," wished to obtain guides through the forests and over the mountains from Harborton to the Atlantic coast. Anikin and all the men of his clan showed the greatest willingness to accompany him, and on very cheap terms. The gold-seeker had a Winchester repeater, but the Indians told him it was not sufficient. The woods were not safe just now, they said. So they went with the white man to a saw-mills in the vicinity of Harborton, and there he borrowed two more guns.

When the party had gone a little way past Lago Fagnano, the Indians proposed that the white man should stay and take care of the baggage while they went with the guns and shot some guanacos. On the Indians coming a little way into the woods they stopped to take off their shoes of guanaco-



Photo by]

Ona woman carrying the family tent

[O SKOTSHORU

skin, a custom among the Onas before they go to fight. The boy Modesto, as being the youngest of the party, was put to watch the things.

While he sat with the bundle of shoes beside him, waiting breathlessly for the result of the strife, the warriors crept forward with noiseless steps.

Suddenly, unexpectedly, they broke into the camp of their foes. There came a crackling fire, and a hissing of arrows through the air. When the fight was over, eleven of the enemy lay dead, men, women and children, but Anikin's party had also its tale of dead and wounded.

This had taken place but a short half year before my arrival at Harberton, and the affair was still fresh in people's minds. The Indians had been punished by the Bridges by being refused permission to work for them, and they did not dare go alone into the forests for fear of the revenge the other side would surely endeavour to take, and so at last they had come with humble mien to the settlement, and begged to be received into favour once more.

But I had nothing to fear on the part of Anikin and Modesto, for even if the two men should entertain the foolish idea of attacking me and Wenneisgaard in order to make themselves masters of our weapons and other belongings, they knew that such a course would have the most far-reaching results. Anikin would never more be able to return to his wives and children, who were kept in Harberton as hostages for our safety, and the little allowances enjoyed by Modesto's mother during her son's absence would be stopped. After a certain day agreed upon, Mr. Bridges and his workmen were to come out to search for us, and Anikin and Modesto had many enemies in the forest who would only be too glad to be able to help in tracking them should it be necessary. And the two Indians knew of old that Señor Despard had a hard hand when he punished, even if he was the mildest of the three brothers.

Thus, of these two companions I had nothing to fear; but how matters would stand should we meet any of their enemies

in the forest was quite another question. Still, I was quite certain that my Indians would be on their guard, in order to protect themselves in the case of such an eventuality by seeking shelter behind the Mauser pistol and the rifle, carried by Wengersgaard and myself



Photo by]

[J. G. ANDERSON.

Wenneisgaard in the canvas boat on Lago Fagnano.

CHAPTER V.

TO LAGO FAGNANO.

Difficulties at starting—We are forced to return—We increase the number of our men and make preparations for a new start—The river Henuen-shiki—Lago Fagnano—On a massage—Ascent of Mount Hcohopen—Wading the Rio Varela—A “mind’s eye” picture of Ole Wenneisgaard

WE started from Harberton on the morning of the 18th September. In crossing the tree-less and snow-free land nearest the shore, we were obliged to carry our things made up into several burdens; but on reaching the wooded slopes, where the snow still lay deep, we put everything on to the sledge. It was only with great difficulty, however, that we succeeded in moving the load a few yards forward, and we saw at once that we should have to divide it and make

double journeys, so we went forward with the first half of the baggage as far as we calculated we could come with the remainder before it grew dark. When evening came, we had not gone many miles from Harberton, and the necessity of thus going over the ground twice, made our prospects of



Plutty]

Ona man

[O SCOTT HEIR

In front lies his dress, and to the left his quiver

success look very black indeed, but still we hoped to be able to make better progress on the following day

Now we had to make a camp-fire, and this work the Indians understood best, of course. But it was not so easy for one to speak to them, and I—the “civilized” man—found myself placed in a peculiar position in this regard, for they

(the savages) could speak a European tongue of which I knew little. However, with my little stock of Spanish phrases, and with the aid of signs when words failed, I managed to make myself pretty well understood. I said "fuego," and made gestures which were meant to signify ascending smoke. The Indians nodded and laughed. With an admirable knowledge of their work, they gathered excellent dry wood, and a roaring log fire soon cast its flickering light between the trees

All the food was shared out. I buttered the ship's biscuits myself, and the same number of bits of sugar were put into all four tea-basins. Everything was divided equally, to the Indians as well as to ourselves.

In order to make our burdens as light as possible, we had not brought any tent with us, but Wenersgaard and I crept into our sleeping-bags under shelter of the canvas-boat, while the Indians lay in the open in the bags I had given them. We all lay as close as we could to the still glowing fire. The Indians lay awhile and chatted to each other in their own strange, difficult language; the peculiar rolling sounds of which are very difficult for European tongues to pronounce.

On the following morning we made an early start. After a troublesome toiling up hill and down dale; once deep down in a valley, around a river that happily was still frozen over; sometimes on steep slopes where the sledge often slipped in wrong directions and once or twice turned upside down, towards evening we at last brought our whole load to one of the belts of open woodland, near the border of the treeless mountain-valley. But when in the morning of our third march-day we waded up to a flat ridge, from whence we could see the yet distant cordillera, I found it necessary to cry "Halt" and consider the matter a little. With this time-wasting marching forwards and backwards, it would take us two full days more ere we crossed the mountain pass, and then we had a four days' march to Lago Fagnano. This would never do, as our provisions would not suffice for such

a slow journey. Modesto, who had the whole time seemed to disapprove of our method of marching, now came forward

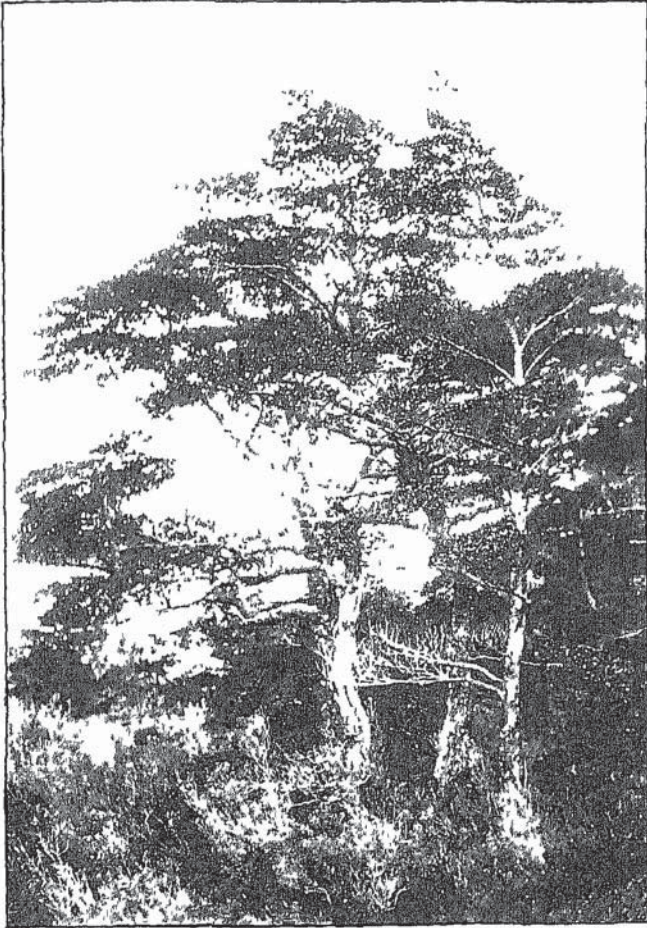


Photo by]

The winter-green beech (*Fagus lucidoides*).

[O. SKOTTSBERG

and held up all his ten fingers, in order to signify how many days it would take us to reach our destination, and I finally found that there was no other choice for us but to return

to Harborton and make a new start with appliances more suited for the journey, for it was evident that the ski-sledge was not adapted for use in these dreadful woods

We left the boat and a quantity of provisions in a grove, and thus relieved of the most troublesome part of our load, we returned at full speed, following our own tracks back to Harborton. Near the Indian camp, which lay near the inner part of the bay, we stopped for a few minutes in order to rest a while. We were immediately surrounded by a confused crowd of inquisitive, dirty old women, dried up old men, stout young damsels, and half-naked youngsters. They all spoke at once, questioning Ankin and Modesto; looked at me and laughed. One old fellow especially was immensely amused. "Hi-hi-hi! Hi-hi-hi," came his guffaws, until he was nearly out of breath. I, of course, could not understand a syllable of the harsh, peculiar sounds that rose around me in endless confusion, but it was no difficult task to grasp the meaning of it all—that the crowd was enjoying itself heartily at my expense. But the very next day the Indians found out that "*el doctor*," in spite of his first ill-success, had not forgotten his intention to visit Lago Fagnano.

On making inquiries I found four Onas who were willing to carry the canvas boat and a part of the provisions over the cordillera to the lake. These men were now equipped with a small but, according to their ideas, a good supply of provisions, consisting of ship's biscuits, a couple of tins of corned beef, and some tea and sugar. Mr. Bridges lent them a Winchester repeater, and some cartridges, in order that they might be able to eke out their supplies by guanaco hunting. The two new men who, on this occasion, joined my old followers Anikin and Modesto, were called Halimink and Hattah, the latter a stately young fellow who, although he was rather too fat for European ideas of beauty, was most certainly an adorable being in the eyes of the Ona ladies. The three elder Indians took their wives with them on the expedition, and Modesto, who was still a bachelor, procured an unmarried woman to accompany him. I have good reason

to believe that the women's participation in the trip, was not for pleasure merely, but that, as is usually the case in the wanderings of the Indians, the females had to carry the heaviest part of the burdens. The little troop started on the 24th of September, and in spite of a continuous snow-storm, they were back at Harberton again on the 3rd of October, and informed me that they had carried out their commission.

In the meanwhile I had been occupied with geological work in the surrounding district, and had made a little sailing-trip in a cutter to Sloggel Bay, near the eastern entrance to the Beagle Channel, where there was an interesting outcrop of coal.

A number of preparations had also been made in Harberton for the fresh journey to Lago Fagnano. The sleeping-bags of felt used by us on the first trip weighed altogether more than 7.9 kilogrammes (17½ lbs.). I had now got the Indian women to make sleeping-bags of guanaco-skins sewed together by means of the sinews of the same animal. Such a sleeping-bag weighed only 3.7 kilogrammes (8½ lbs.), or only one-half of what the old ones did. We also procured a couple of pairs of snow-shoes of canvas stretched over a frame of coarse iron wire.

We started on the 7th of October, the party being the same as on the first trip, and each of us carrying his share of the pack. The Rio Varela which, on the occasion of our first attempt, had been quite frozen over, now proved to have an open channel in the middle; but with a little caution we managed to cross the river pretty easily.

When we came to the treeless patches of mountain moorland which, in the upper part of the forest regions, lie between the highest thin belts of timber, we found it very muddy going. I went first on my snow-shoes to trample down the snow for those behind me, but it sometimes happened that the one or the other of us disappeared altogether in the snow, when he was unlucky enough to come into the hidden space between the branches of a snow-covered bush.

At 4.30 in the afternoon, we camped in the last grove at

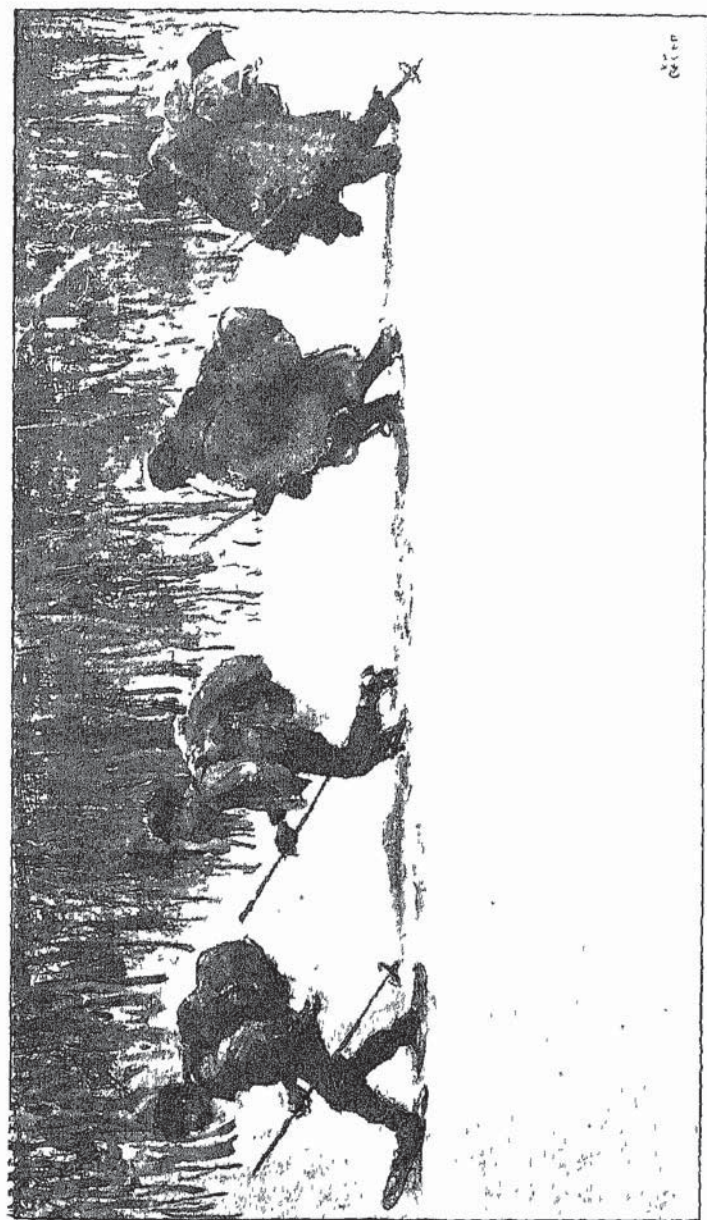
the foot of the mountain-ridge. The district through which we had now journeyed for a whole day from the Beagle Channel to the mountains is a forest of two species of beeches—*Fagus antarctica* and *F. betuloides*—the former of which sheds its leaves, while the latter is green through the winter. When we put newly-broken branches of the last kind of beech in the tent as a bed on which to place our sleeping-bags, they spread there the same fine scent as that given by fresh birch leaves, so that even in this respect, too, it deserves its name of "*betuloides*."

Early the next morning I saw from the hill-slopes on the western side of the pass, and for the first time, the glassy surface of Lago Fagnano, gleaming amid the dark, enframing woodland, far off to the northwards, and immediately at the end of an almost straight valley into which we were about to make our way.

The descent was very steep, and had been made more difficult during the course of the winter by the fact that the wind had just here heaped an immense snow-drift which, in some places, overhung the valley. From this drift great blocks of snow had loosened during the days of thaw, and had rolled a good way down, growing in size by additions from the soft mantle of snow on the hill-side. Some of these small avalanches had swept a way through the brush-wood, breaking down trees and bushes.

Going through the open glades at the upper end of the valley, the sun was so intensely hot that Wenersgaard and I perspired, although we had taken off our jackets and waistcoats, but the Indians seemed quite indifferent to both cold and heat. Not a drop of sweat could be seen on their big, red-brown faces, although they carried their ample guanaco robes thrown around them outside of the clothes of European cut, which they wore during this journey.

We then followed the course of a river which flows into Lago Fagnano and which is called in the Ona tongue, Henuen-shiki. In the upper part of the valley its course is pretty straight, but lower down it runs in sinuous windings, so



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Drawings by]

Andersson

Weimersgaard

On the way to Lago Fagnano

Modeno

[J BAUER from a photograph
Ankon

that during the day we were obliged to cross it at least ten times.

The forest here was of quite another character than that on the southern side of the cordillera. The pretty winter-green beech had quite disappeared, and *Fagus antarctica* was the sole ruler of the woods, its leafless branches, hung with long festoons of tree-hair, giving the forest a peculiar touch of gloom which was deepened by the rain-mist under a lowering, tempestuous sky.

The following day we continued our journey along the river to a point where the stream, now running through a deep ravine, makes a turn to the N.N.W. and keeps that direction through a somewhat hilly forest-land until it comes to Lago Fagnano. Here the path cut by the Bridges leaves the course of the river, and runs pretty straight towards the N.N.E. to the foot of the isolated mountain called by the Onas, Heohopen, lying at the south-eastern corner of the lake. Here the Indians made signs that we should leave the path and take a northerly direction through the woods. It was first during the toilsome journey which now ensued, over fallen trunks, through brushwood and lumber, that we clearly understood what use we had had of the cleared road we had hitherto followed.

Half-past six in the evening found us near the shore of a pretty, little lagoon close to Lago Fagnano. Modesto pointed out to me, with visible satisfaction, that the boat with the provisions inside of it was hanging upside down between a couple of trees, quite in accordance with the instructions I had given the Indians who had brought the things here. It was evident that the men had carried out their task in a perfectly satisfactory manner.

The next three days were devoted to the zoological investigations which were the chief end of the expedition, Wennergsgaard and I taking it in turns to row on the lake in the cranky little canvas boat, for the purpose of trawling and of using the tow-net to obtain plancton forms.

When we left Harberton, the two Indians were suffering

from an attack of influenza, which disease was, at the time, general amongst both the whites and the natives, and, very naturally, their condition grew worse in consequence of the wading through ice-cold streams, and of their wearing their drenched guanaco-cloaks day and night—to say nothing of the forced march while laden with heavy burdens. Consequently, when we were encamped at Lago Fagnano, I gave them very little to do, in order that they might gain a little strength for the return journey. Anikin's case was the worse of the two and I gave him the best remedy I had at hand, viz., sulphate of quinine. After taking a few doses, he made signs that he felt a noise in the ears—a thing which, as is well known, can be occasioned by too large doses of this particular medicine. I at once stopped giving him any more of the remedy, but this was not sufficient for Anikin, who set about arranging a native antidote against the new evil. Happening to look out of my tent I saw a most remarkable sight—the only thing, by the way, during the whole time we were together with these two Indians that reminded us that they were children of a savage race—and it was this: Anikin lay stretched on the ground with one ear upwards and Modesto was standing on his friend's head and trampling on it with his bare feet! It is true that I knew that the Onas use massage, often given with the feet, as a general cure for all kinds of illnesses, but still, I was amazed to find the treatment used to cure a ringing in the ears. But the next day Anikin was quite relieved of this trouble, and the happy result most naturally strengthened his belief in the primitive cure.

It was my intention to devote the last day of our stay at Lago Fagnano to making an ascent of Mount Heohopen, which rises above the limits of the forest and from which I hoped to obtain an open view in all directions and be thus enabled to complete my map of the tract through which we had journeyed.

On the morning of the 13th, when I was making preparations for the ascent, both the Indians were very bad with the

influenza, and so I determined to undertake the ascent accompanied by Wengersgaard alone. When the Indians saw us ready to leave the camp, taking with us both the gun and the Mauser pistol, they showed signs of much uneasiness, pointing towards the forest and saying something about "Onas malos" (bad Onas). They were apparently afraid of being left defenceless against ancient enemies, who might make their appearance during our absence, so I gave them the gun and some cartridges and this restored their confidence and they quietly lay down to rest again beside the camp-fire.

Our ascent of Mount Heohopen was favoured by fine, clear weather, and I had from the top the most extensive and varied view I ever enjoyed. Towards the west could be seen the greater part of the 60 miles-long Lake Fagnano; S.W. by S. and S.S.E. we marked the northern slopes of the cordillera of Tierra del Fuego, while E. and by N. stretched the low-lying plains of the country. In the last named directions, for a considerable distance along the horizon, could be discerned the waters of the Atlantic, whose mighty waves, viewed through a glass, resembled fine, wavy, lines. Out of the forests to the north, there rose in a couple of places the smoke of the Indians' camp-fires.

On the following morning (October 14th), we began our return journey, and after a march of two days and a half, we were once more in Harberton. I shall relate but a single episode of this part of our expedition.

It was during the last day's march between the cordillera and the Beagle Channel. We had already had various intimations that spring had begun in earnest with its work of snow-melting; long stretches of the path through the forest were now quite bare, and down in the dells it was covered with pools of water. But the great surprise was waiting for us at the crossing of the Rio Varela which had now become a real "rio malo," as the Indians called it, and rushed, foaming and deep, between steep and rocky banks. To me it seemed impossible to wade across the river without

danger of being swept away by its swift, whirling tide. So I chose an old, gigantic beech which stood leaning across the flood, and began to attack it with our little axe, in the hope that it would fall so that we could cross the deepest and most rapid part of the stream on the trunk.

But the Indians, who had, most certainly, much experience in wading through the rivers of Tierra del Fuego, did not await the result of my attempt, but got down into the water with their loads fastened high up on their backs, and each armed with a ski-staff. Slowly and carefully feeling for a fast footing amongst the stones in the bed of the river, they moved onwards until the water reached to their waists, just at the place where the stream whirled along most fiercely. Twice they had to turn back, but at last they found a place where they could manage to cross. After placing their burdens on the opposite shore, they returned and took our knapsacks over. I was a little doubtful as to the intentions of the Indians, for if they meant us to wade after them, I was afraid that the attempt would be an unsuccessful one, unaccustomed as Wennergard and I were to this kind of sport. But the Indians returned again and made signs to us, as though it was the most natural thing in the world, to place ourselves on their backs. Anikin took me, and Modesto carried Wennergard, and they waded into the stream with slow and cautious steps. I was seized with a most unpleasant sensation of dizziness, as I sat there, crouching on the Indian's back and staring down at the foaming whirlpools, and was obliged to exercise the greatest restraint upon myself lest an involuntary movement on my part should cause Anikin to lose his balance. After a few doubtful, groping steps, my bearer's movements became more confident and quicker, and we soon reached the southern bank of the river in safety.

When, a few minutes later, I sat before a flaming log-fire, where the Indians were endeavouring to dry their dripping clothes, I looked at my wild companions with feelings, not only of gratitude, but also of envy—I may even say, shame.

For they were not in such good health as Wennersgaard and I, and their limbs trembled, not only with cold after the bath in the icy waters of the Rio Varela, but also with the fever, which had increased in consequence of the long and toilsome march.

And these were a couple of the savages whom the white man hunts as though they were dangerous animals! Savages, who need but a little friendly treatment for them to show a willing perseverance in work, a blithe and lively disposition, and an even, calm attachment to their employer! It makes one's heart burn to think of all the wrongs inflicted by the whites upon these children of the wastes. Who can then be astonished if, under such circumstances, the Ona meets evil with evil, cunning with cunning, and death with death? Which of us shall dare to blame the poor barbarian who has endeavoured to defend his little spot of earth against the white invader, whose one wish seems to be a desire to bring all the kingdoms of the earth beneath his dominion?

* * * * *

This expedition to Lago Fagnano has given no other results than pleasant memories and a few notes, together with sketch-maps, and some practical experience which should be of use to me on another visit to Tierra del Fuego, which I am now planning. All the collections made during the course of our little expedition were taken by me on board of the *Antarctic* when she started southwards, and went to the bottom with her.

And my companion on this journey over the cordillera—the young Norwegian seaman, Ole Wennersgaard—fell a victim to the hardships we encountered in our conflict with the ice and a South Polar winter. The cairn which covers his remains lies on Paulet Island, where the silence is broken in winter by nothing but the souging of the storms, and where the summer hears only the confused cries of innumerable flocks of penguins.

When my thoughts sometimes go back to our camp-life

in the primeval forests of Tierra del Fuego, they willingly linger before a picture they see there.

It is evening, and we lie around the camp fire while our supper is boiling. Modesto and Wenersgaard have thrown themselves on the ground quite close to each other, and are carrying on a curious conversation. The latter of the two is asking all manner of questions in the purest Norwegian, and the Ona answers with a long rigmarole in his harsh, strange tongue. This goes on for a time until their mirth overpowers them, and then the droll titter of the Indian mingles with the ringing laugh of the youthful Northman.

And both the merry laughter and the man are now naught but dreams.



Ole Wenersgaard.
Died at Paulet Island, 7th June, 1903.



CHAPTER VI.

SOUTHWARDS.

Once more on board the *Antarctic*—In the pack ice—A dangerous neighbour—Deception Island—Middle Island disappears for ever—The coldest bottom-water of the ocean—Cartographic labours—Cape Murray and Cape Neyt—A tribute to the officers and men of the *Antarctic*—Penguin eggs.

DURING the time I was making my scientific investigations at Lago Fagnano and in the district of Harberton, the *Antarctic* lay at Ushuaia completing her stores for the summer's journey to the South Polar Ocean, and the crew had had plenty to do, putting the various parts of the ship in order. The bottom of the vessel was scraped free from the coating of algæ and small sea-animals, whose presence had of late greatly diminished the speed of the ship; new sails were sewn, parts of the rigging were repaired, and so on; and when this work was finished, a large supply of provisions and of coal was sent on board from the Argentine store-ship *El tiempo*.

On the 30th October the *Antarctic* came to Harberton in order to fetch off Skottsberg and myself—the former having arrived a few days previously—and to obtain a supply of fresh

mutton On the 4th November the vessel returned to Ushuaia with all on board, and early the next morning we commenced our journey southwards. Amongst the letters posted at Ushuaia were two of similar contents, the one written to the Secretary of the Swedish Anthropological and Geographical Society, and the other to the Swedish-Norwegian Consul-General in Buenos Ayres. They gave directions for the measures of relief which should be taken in the event of the non-arrival of the *Antarctic* after a certain date.

Late in the evening of the 7th November our vessel crossed the latitude of Cape Horn, at a point south-west of Hermite Island, and the whole of the following day we steered south-east by south at a good rate under sail alone. At 2 p.m. the next day our first iceberg came into view; it was rather small and irregular in shape. On the night of the 9th, when we were in lat. $59^{\circ} 30'$ S. and long. 66° W, we met the first wave-worn cakes of floating pack-ice.

This latter incident was an unexpected one. The South Shetland Islands are usually accessible without the least hindrance on the part of the ice, and the preceding year—at a later period of the summer, it is true—the *Antarctic* had found nothing but ice-free water.

Two days later, on the night between the 11th and the 12th, our further progress was stayed by the edge of close pack-ice, and, after making a few attempts at forcing it, we soon found ourselves fast in impenetrable ice. For the next few days the weather was calm and sunny. As soon as the pack grew more open, Larsen rammed his way forward a bit, but the ice closed round us again, and we had to content ourselves with making measurements of the pieces and letting down our plancton nets in the small open spaces at the sides of the vessel, or with looking at little flocks of penguins that were occasionally visible on the small floes in the neighbourhood. During the course of these clear days we could stand on the bridge and count fifty icebergs of varying form around us, some of them being the immense table-like giants with smooth, perpendicular sides, which are peculiar to South Polar waters.

But by noon on the 17th the fine weather had come to an end. The air grew foggy and foggier, and the wind freshened, until by night-time it had grown to a heavy storm. The ice soon came in motion; leads were formed here and there amid the pieces of ice, which elsewhere lay closely packed pressing and rubbing against each other. At 2 a.m. the *Antarctic* was made fast to a large patch of ice, which broke into several fragments during the course of the next morning, and the vessel began drifting. The ship drifted faster than the ice, its lofty rigging catching the wind so much. She surges and glides onwards between the pieces of ice, which scrape against her sides with a continuous roar. Several times we are obliged to let the engines work us forward through the ice in order to avoid one or other of the icebergs towards which the movement of the pack-ice is carrying us.

The storm was of long duration. At 2.30 a.m. on the 21st November, I was awakened by loud orders from the captain's bridge, and I dressed myself hurriedly and hastened on deck. Three or four ship's lengths on our larboard lay an iceberg which was considerably higher than our mainmast and about three times as long as the vessel. The iceberg shot up in overhanging masses, the highest of which were in places partly disconnected from the main body of the iceberg. We were in evident danger of being carried by the pack which lay close around the *Antarctic*, right on to the ice-mountain. To add to our difficulties we were in the midst of a blinding snowstorm. The engines were going at full speed, and we had the jib and the fore-sail set. For a long time the vessel moved slowly forward a few yards, only to be pressed back by the floes, but after a while the pieces of ice gave way before the united pressure of steam and sail, and the *Antarctic* glided past the iceberg into the lead which had been formed in its lee.

During the night of the 22nd the storm subsided, and the next afternoon we could once more begin to force our way towards the land, through ice which first lay pretty close, but which gradually became more open. At 9 p.m. we reached



Drawing by

Drifting towards an iceberg.
The morning of November 21st.

[E. LANGE.]

the open coast-waters of the South Shetlands, the nearest of which, Smith Island, now lay before us at an estimated distance of thirty nautical miles, and the following day we entered Bransfield Strait near the west coast of Snow Island, and made a hasty visit to a couple of small islands in the neighbourhood of the one just named, after which we steered for Deception Island, where the ice conditions proved to be much more favourable. Some scattered belts of ice in our way were so loose that they scarcely retarded the progress of the vessel.

Deception Island is, as is well known, one of the most typical and one of the largest of the crater-islands of the earth. It is annular in shape, being about 19 kilometres ($11\frac{1}{2}$ miles) across in its greatest breadth, and has a crater in the middle which is connected with the ocean by means of a narrow opening.

When the place was visited in 1828 by Captain Forster, in command of the English frigate *Chanticleer*, emanations of sulphuretted hydrogen and steam were observed near the shore at the foot of the crater, and hot springs with a temperature of 88° C. ($190^{\circ}.4$ F.) were met with near these fumaroles.

Smiley, the American seaman, who called at the island in 1842, reported that the whole south side was in a state of lively volcanic activity, and that there were no less than thirteen "places of eruption."

As there are no later accounts of the island in existence, it was with much interest that we prepared to land there, in order to investigate its present condition, but we met with a great disappointment on reaching the spot on the evening of the 23rd. The entrance to the crater was blocked by pack-ice, and we could perceive through the narrow opening that the crater was filled with closely-packed and, possibly, unbroken ice. All idea of investigating the volcano, had therefore, to be abandoned. Exteriorly there was not the least trace of recent volcanic activity. On the southern side of the approach, the waves had made a fine perpendicular cutting in the walls of the volcano, exposing its interior structure, with stratification sloping both inwards and outwards.

We lay by the island during the night, and early the next morning Skottsberg and I rowed to a point on the southern shore near the little rocky islet south-south-west of the entrance to the ciater. The island just here was covered with ice, and we had an opportunity of observing the peculiar alternation of deposits of glacier-ice and volcanic ashes already mentioned by earlier visitors to the place, and which need not, I am certain, be ascribed to repeated eruptions of ashes, but merely to the violent storms which have now and then spread



[Photo by]

[C. A. LARSEN.]

Antarctic penguins.

layers of the ashes already existing on the spot, over the land-ice. Up on the slope, on the hills of ashes sticking up out of the covering of ice, and even out on the inland-ice where this was covered by a thin layer of volcanic ashes, we found a pretty large colony of penguins (*Pygoscelis antarctica*), where the egg-laying season was at its height. While Skottsberg and one of the seamen eagerly collected and took down to the boat hatful after hatful of eggs, I went alone up the slope of ice, in the hope of being able to obtain a view of the crater from the top, but I soon became involved in such

a labyrinth of ice-fissures that I was obliged to return without having accomplished the task

From Deception Island we made for McFarlane Sound, between Livingstone and Greenwich Islands, on the latter of which we had arranged, while we were in Ushuaia, to leave some information respecting our journey. The sound was, however, full of close pack-ice, which blocked the approach to the appointed bay on the west side of Greenwich Island,* so we had to be satisfied with a hurried landing on the easternmost part of Livingstone Island, where we found a little colony of Antarctic penguins, who were robbed of all the eggs we could find in their nests

Ever since we entered Bransfield Strait, the weather had been calm and fine, and remarkably clear. On the further side of the broad channel we could plainly distinguish the mountain-tops and the snow-covered plateaux on both sides of the Orleans Channel—the old Trinity Land. But nothing could be seen of Middle Island, the one which, according to the charts, is situated in Bransfield Strait between McFarlane Sound and Astrolabe Island. The existence of Middle Island has already been called in question†, and we had now to obtain such satisfactory proofs as would justify us in blotting its name out of the map. So on the morning of the 25th of November we steered from McFarlane Sound out towards the place where Middle Island was supposed to lie. Here we took a sounding and found a depth of 1,450 metres (780 fathoms). The horizon was so clear at the time that there is no probability that the island really does exist, but that its position has been incorrectly given.

On the spot which had been given as the position of Middle Island we made a remarkable hydrographical discovery, viz., that the deep water, 500–1,450 metres (270–780 fathoms) just here has a far lower temperature than the bottom water in any other part of the Antarctic Ocean, the normal

* Such a communication was deposited on the 26th of November on a little headland on the N.W. side of Astrolabe Island, by the side of a signal-post.

† v. Fricker *Antarctica*, pp. 127–128.

temperature of which never falls below $-0^{\circ}.5$ C. ($31^{\circ}.1$ F.), whilst the average for the given depths at this spot was $-1^{\circ}.47$ C. ($29^{\circ}.35$ F.), the temperature at the lowest depth being $-1^{\circ}.65$ C. ($29^{\circ}.03$ F.), and that consequently *we have here the coldest deep water known in any part of the globe*, colder even than the deep water of the Norwegian Polar Sea (-1.5° C. or 29.3° F.) Just as the tract of sea just named, which is separated from the North Atlantic by an immense submerged bank (the Faroe Islands—Iceland—Greenland),

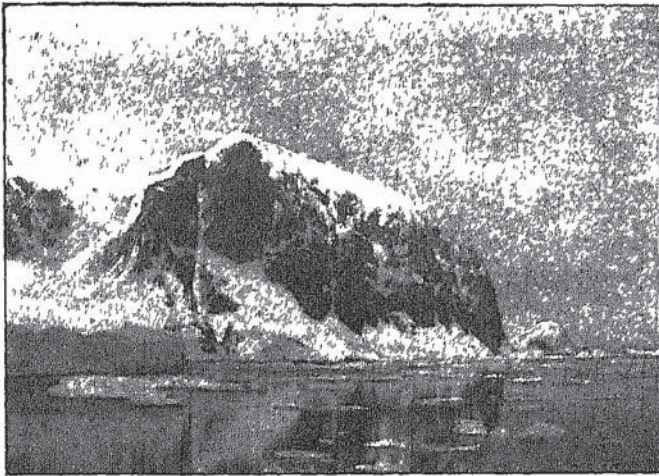


Photo by]

[C. A. LARSEN.

A part of the east shore of Trinity Island

is cut off from unobstructed connection with the North Atlantic, whose relatively warm deep water ($+1.3^{\circ}$ to 2.4° C or 34.34° to 36.3° F.) is prevented from streaming into the Arctic Ocean—thus Bransfield Strait must be a basin isolated by submerged thresholds, and cooled by constant connection with sea-ice and icebergs. Soundings taken on December 12th, when we were drifting southward, showed, at 7.30 a.m., 560 fathoms; at 11 a.m., 470 fathoms, and at 2.30 p.m., 346 fathoms. The next day we had 338 fathoms, but two days later, on the 15th, in latitude $61^{\circ}.35'$ S. and longitude

53° W. we found a depth of 884 fathoms, with a bottom temperature of -0.4°C (31.3°F.)

When we steamed away from the spot where Middle Island was *not*, and crossed Bransfield Strait over to Astrolabe Island, there lay before us a most important cartographical task. In January, 1898, the *Belgica* had penetrated amongst the islands of the archipelago lying along the north-west coast of Graham Land, and had there discovered a long, extensive channel running between the island-wall and that part of the mainland which then received the name of Danco Land. The new sound (the *Belgica*, or, as it was afterwards called, the Gerlache Channel), was mapped out from that point (Cape Neyt) where the *Belgica* entered it, down to its south-west extremity. But its continuation towards the N.E. and the trend of the coast of the mainland in that direction remained unknown, and the sketch-charts made by different members of the Belgian Expedition offer most varying solutions of the problem.

During the course of the first journey of our expedition along the coasts of Graham Land, the *Antarctic* sailed into the entrance of that sound of hitherto unknown nature, called by Dumont d'Urville, the Orleans Channel, and which was now discovered to be a passage trending to the south-west, and inside of a chain of islands which at first was not a very continuous one. The *Antarctic* soon came to a place where Nordenskjöld thought that he could recognize certain features distinguishing the Gerlache Channel of the Belgian Expedition, one cape being almost positively indentified as that marked Cape Murray on the Belgian charts, of which a view is given in Dr. Cook's account of the voyage (cf. Nordenskjöld's remarks and the photograph, on page 36). But the differences between the headlands, bays and islands which were now passed, and the contours given on the Belgian chart, were so great, and the indentification in itself was of so uncertain a nature that Duse, our cartographer, found himself obliged to choose between two alternatives; either that the testimony given by the photograph of Cape Murray

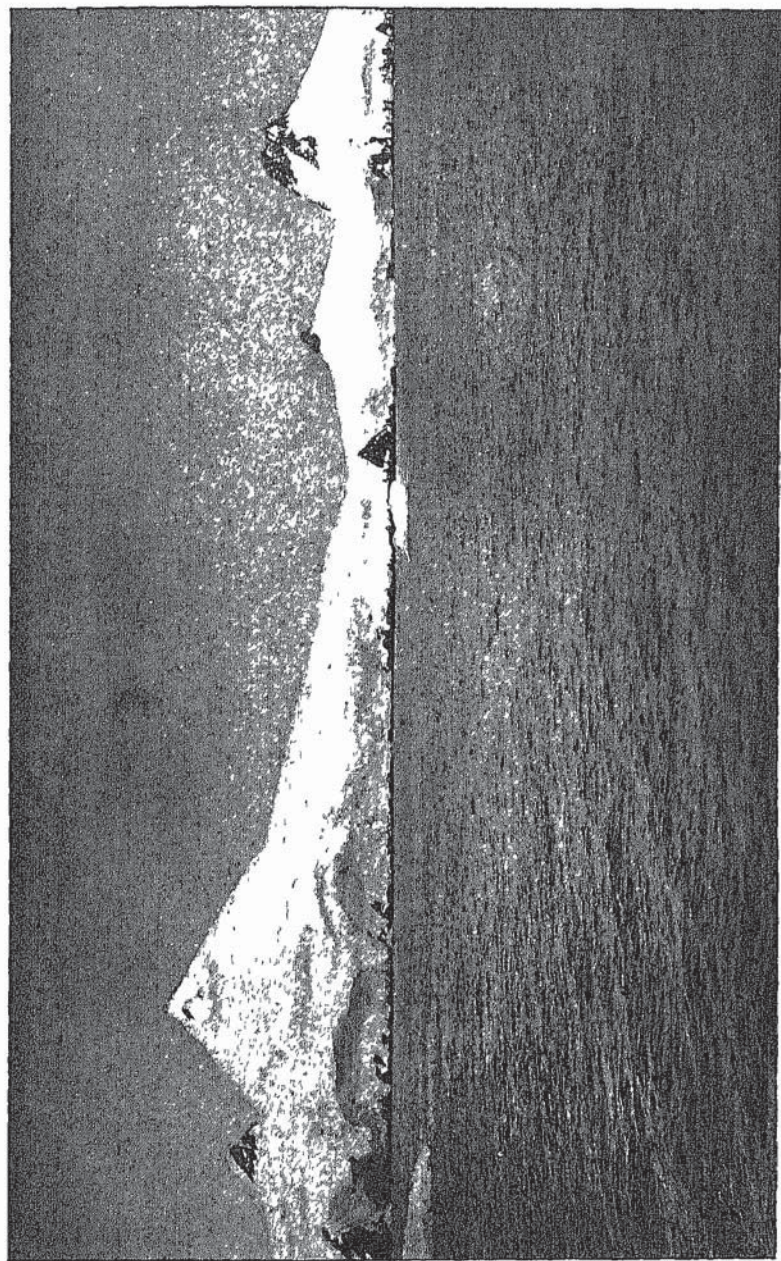


Photo by]

Cape Neyt and Mont Allo

[C. SKOTTSBERG.

was of a doubtful nature and the identification consequently false, or that the details of the Belgian chart were almost everywhere incorrect as far as regards the stretch of water which had been navigated.

This was how the matter stood when the *Antarctic* left these tracts the first summer, after two days' examination of the coast-line, and now our task was to definitely solve the problem. To do this we had—(1) to obtain a clear and certain grasp of the facts of the case; (2) to show the connection of this channel with the Belgian chart, and to base this connection on undisputable evidence; and (3) to make out the Orleans Channel. It now proved that Nordenskjöld had been correct in his identification of Cape Murray, and in his assumption that the Orleans Channel and the Belgica Channel were only different parts of one and the same long passage, but, on the other hand, Duse, during the course of his cartographical labours, was able in some cases to give direct proofs of the inaccuracy of the Belgian chart, a state of the case he had the previous summer considered as being highly probable, and which had then rendered the work of identification so difficult.

When we reached Cape Murray on the evening of the 1st of December, we considered that we could determine our position partly by means of the cape mentioned, and partly by the resemblance between Two Hummocks Island and the drawing of it reproduced by Arctowski.* But the next day, when Duse mapped out the coast of the mainland in Hughes Bay, from Cape Murray to Cape von Steineck, he pointed out such important deviations from the Belgian chart that we once more felt ourselves "at sea." A comparison between the Belgians' *croquis provisoire*—which has been reproduced on many different scales, but has not as yet been followed by any definite edition—and Duse's work, proves this to the full. On the Belgian chart there is no indication of the islands to the north of Cape Murray, and the Cape W. Spring we

* "Exploration of Antarctic Lands." *Geog. Journal*, Feb. 1901.

find on that map, resolves itself in reality into a group of pretty large islands.

From this spot we steered right across the channel in order to indentify that picture of Cape Neyt and Mont Allo which has been published by several members of the Belgian Expedition,* and this we quite succeeded in doing. The accompanying illustration (page 401) reproduces the landscape in question, with a fidelity to even the slightest

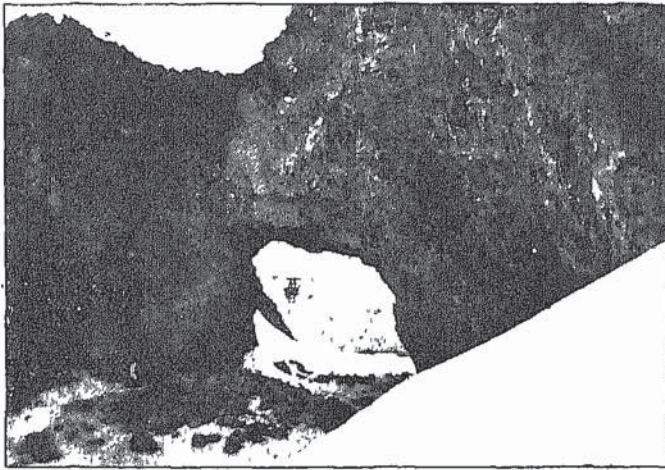


Photo by]

[O. A. LARSEN.

Motive from the Orleans Channel.

The *Antarctic* is visible through the rocky portal.

details which leaves no room for doubt. It is only the presence in our photograph of some small icebergs in front of the shore which shows that the views were taken at different times.

These photographs of the two headlands, Capes Murray and Neyt—situated at the south-western boundary of the district mapped out by Duse, connect this tract in a most undisputable way with the chart published by the Belgian Expedition. It is in reality a most fortunate circumstance

* Racovitza. "*Vers le pôle sud*," p. 181. Paris, 1900.

that these photographs were published before our visit to these parts, for without them no certain connection could well have been established by the aid of the Belgian chart, which is crowded with faults

Let us take merely one example more. In a north-easterly direction from Cape Neyt there extends, as Duse's chart shows, a very characteristic wall of islands, consisting of two larger islands and some smaller ones. These correspond to the *Iles Christiana* of the Belgian chart, but the position given there is quite incorrect, and they are represented as being much smaller than they really are.

It is a most unpleasant duty to be obliged to make these remarks respecting the cartographic work of the *Belgica* Expedition, both because we know from our own experience the difficulties the cartographer has to contend with in these tracts, and also because the scientists of that expedition have rendered us the greatest assistance in very many respects.

This detailed account has been requisite in order that the reader might be able to understand with what contradictions between charts and nature we had to contend, ere we could gain a clear insight into the connection that existed between the Orleans and the Gerlache Channels. Future expeditions that may visit the waters navigated by the *Belgica* and the *Antarctic* will be fully able to appreciate our difficulties.

During the days necessary for mapping the Orleans Channel (November 26th—December 5th), the vessel was placed almost entirely at Duse's disposition. He determined the ship's course, and the landings necessary for his work. On nearly every one of these eighteen landings he was accompanied by Skottsberg and myself, we two seizing every opportunity of making botanical and geological collections, whilst Karl Andreas Andersson, at work on the vessel, used the trawl to procure specimens of the rich ocean fauna.

No other period of our long journey was so full of forced, varied, and richly rewarded labour, as these beautiful, me-

morable days in the Orleans Channel. And it may with justice be acknowledged that the rich results obtained are not ascribable solely to the adamantine tenacity of the cartographer and the naturalists' zeal for collections, but that the willing help given by the crew of the *Antarctic* and its officers should also have its meed of praise. Calls were made upon these men which went far beyond the requirements of their ordinary duties. There were now no free watches; the scientific work went on uninterruptedly, both in the



Photo by]

Robbing penguin nests in Antarctica.

[O A LARSEN.

light night-time and during the day. But, without any sign of discontent, and sharing our interest and pleasure in the rich results of our labours, these fine seamen stood by us with a readiness as worthy of praise as is the intrepid courage with which they afterwards battled with the drifting ice in Erebus Gulf, and against the hardships of a long Polar winter.

The heavier and more bulky part of the collections made at this time were lost with the *Antarctic*. But K. A. Andersson and Skottsberg had, with calm foresight, made a portable

selection of the most valuable parts of our scientific harvest some days before the vessel sank. This selection they carried to Paulet Island and it was thus saved.

I cannot leave the chapter relating to our stay in the Orleans Channel without mentioning a "catch" of practical importance that we made there. On several small islets we found rather large penguin colonies, belonging to but one species—*Pygoscelis antarctica*,—where the egg-laying season was drawing to a close, and we seized every opportunity of enriching our supply of provisions with the dainty food. Once we took a whole boat's load on board, and several casks were filled with eggs packed in salt.

The egg of the penguin is about the size of a goose-egg. On boiling, the white coagulates to an almost glass-clear mass (not of a porcelain-white like that of a hen's egg), a circumstance which gave rise to some hesitation in the case of certain prejudiced individuals when the eggs came on the table. But the egg of the penguin is very palatable when boiled, and does not possess that peculiar taste which renders eider-eggs somewhat unpleasant. The rich supply of fresh eggs reacted upon the whole of our meals. The cook and the steward felt continually called upon to produce fresh dishes, and almost every day had its surprise in the form of a new omelette or a fine cake.

Future Antarctic Expeditions, and especially those that mean to winter in these regions, cannot be too strongly advised to find out a penguin colony in good time and provide themselves with a plentiful supply of eggs.



Photo by]

Pillai-shaped rocky islets near Pendleton Island

[C. A. LARSEN

CHAPTER VII.

THE WAY CLOSED.

We looked forward to meeting our comrades at Snow Hill—Antarctic Sound blocked by ice—Chief natural features of this channel—The Argentine Islands, Rosamel Island—Captain Larsen tries to force the ice—Fast in the ice—Christmas Day—Preparation for a relief sledge party—Its equipment.

THE work of mapping Orleans Channel was finished at 3 p.m. on the 5th of December. Duse, who had been standing with the captain on the bridge taking bearings with the azimuth compasses, closed his sketch-books and replaced his instruments in their cases.

"Now I'm ready," said he, simply.

The first engineer stood below on the deck talking with Karl Andreas Andersson, who was bending over pails and tins.

"Karlsen!" called the captain from the bridge, "now we'll be off to the wintering-station!"

The engineer looked up, nodded and smiled contentedly.

This little episode remains fresh in my mind, together with the memory of a beautiful Antarctic summer day.

The sea lay smooth as a mirror. Far away to the north on the other side of the broad channel could be seen (probably the effect of mirage) the snowy mountains of Livingstone Island. In towards Louis Philippe Land the fog lay thick, but a sun-illuminated mountain slope could be seen through a rift high up in the bank of mist.

The geographical problem of the connection between the Gerlache and the Orleans Channels had so taken up our interest, that it was not until the mystery was solved and the excitement over, that we began to realise that the meeting with our comrades at Snow Hill was near at hand. To them we should come as the bearers of letters from home, and as the bringers of all manner of tidings from the outer world. And of them we should hear the description of the lonely winter life, with its sledge expeditions and work of observation. We hoped that all our fears for their well-being would prove unfounded, and that the meeting would be a happy one in every respect.

We were also prepared to give them a hearty reception on board. Up in the *Antarctic's* foretop hung fresh legs of mutton and wild geese from Tierra del Fuego, with which dainties we meant to regale them on the occasion of our first dinner together. And we intended to decorate Nordenskjöld's cabin with fresh branches of the evergreen beech of the Land of Fire, as a greeting from that land to which his first journey of exploration had been directed.

In two or three days we should be at our destination.

After riding out a southerly storm in lee of Louis Philippe Land, we approached the northern entrance of the sound lying between Joinville Island and the mainland, which is now called the Antarctic Sound. Away to larboard, towards Bransfield Strait, we saw large fields of pack-ice; the open lead through which we steamed along the shore grew narrower and narrower, until, below Mount Bransfield, the ice-edge came close up to the land. The passage towards the sound seemed here to

be quite blocked up; outwards and forwards there was nothing but close ice; only behind us was there a narrow road through which we could retreat, and even this threatened every moment to close at a spot where a headland of ice shot forwards towards the shore. It seemed as though we had no other choice than to return and then endeavour to find a way outside Joinville Island, outside of the mass of ice we had to our north and north-east.

But before doing so we determined to go on shore, in order



Photo by]

[O. A. LARSEN.

North coast of Louis Philipp Land.

to be able to gain a better view of the ice-conditions in the Antarctic Sound. We lowered the pram, and K. A. Andersson, Skottsberg and I, with two men, rowed ashore just below Mount Bransfield. After ascending a pretty high ice-foot we crossed some rock-strewn gravel-ridges (moraine-walls), brought together by glacier ice, and whose materials were probably derived from the nunataks (or collection of hilltops projecting through the land-ice), which have been called Mount Bransfield. When we came to this spot, Skottsberg stayed to collect mosses and lichens, whilst Andersson

and myself went further on across the inland ice in the direction of the channel.

The melting of the snow which, according to old accounts, is inconsiderable in South Polar regions, could be here everywhere observed. The hard surface-snow of the inland-ice was in many places covered by overlapping sheets of slippery ice, and streams of snow-water rippled through the snow-drifts near the moraine walls.

The inland ice was traversed by numerous perpendicular crevasses, but it was only exceptionally that they were more than a yard wide. Prudence compelled us to march with great caution however, as the greater part of the fissures were concealed under treacherous bridges of snow. When we bent over the edge of one of these crevasses, we could perceive beneath the white arch the beautiful deep-blue shimmer of the ice-walls, which, lower down, were lost in formless gloom.

After passing a couple of the undulations of the billowy ice, we gained at last an unobstructed view towards the inner part of the channel. Here I saw for the first time a scene which, from a point somewhat further southwards, was many times to meet my gaze during the lonely days of a forced wintering in these tracts.

The land view northwards towards Bransfield Strait was closed by the low, smooth snowy round of d'Urville Island. From the point where we stood, this low icy hill appeared to be merely a far-projecting headland belonging to Joinville Island, but during the course of the next few weeks' cruising along the north coast of this latter place we were able to note that the land first named constituted a little, but quite independent, island, concealed by a perfectly smooth covering of ice sloping down to the sea. To this island we gave the name of the French explorer who was the first to map these coasts.

Towards the east, the boundary of the Antarctic Sound is formed by the flat ice-caps of Joinville and Dundee Islands, where the smooth roundings of the snowy coverings, especially on the first-named and larger island, were broken by

projecting mountain tops, nearly all of which were also wrapped in snow.

In the southernmost part of the channel lie three islands, so placed, that they divide the extreme end of the sound into three smaller entrances directed towards the Erebus and Terror Gulf. Two of the islands, which lie close to each other and are separated from the mainland by quite a narrow channel, we have called the Argentine Islands (Uruguay Island and Irizar Island) after the land which gave our Expedition such prompt and great assistance.

The third island occupies the middle of the channel and lies between the Argentine Islands and Dundee Island. Its form is very characteristic, with high, perpendicular coasts and a low, conical top. This little island lies quite by itself, and, in consequence of its high and easily recognisable form, can easily be marked even at considerable distances, both when approaching it from the Erebus Gulf and also on nearing the channel from Bransfield Strait. It must, therefore, be this island which Dumont d'Urville saw and placed in his chart under the name of Rosamel Island, in the sound between Joinville Island and Louis Philippe Land.*

Past the Argentine Islands and Rosamel Island we had an unobstructed view for some distance across the Erebus and Terror Gulf, which now presented itself as a dazzlingly white expanse of ice without a single streak of open water. The Antarctic Sound, too, north of the small islands, was filled for the greater part of its extent with thick pack-ice, but close to Joinville Island some extensive leads could be observed, with narrow lanes stretching right through the pack-ice towards Mount Bransfield, where the *Antarctic* now lay. Thus it appeared that, even should it be possible to force a passage through the ice down to Rosamel Island, the way to the Gulf would still be blocked by close pack-ice.

On returning to the ship at 4 p.m., and informing the captain

* L'île haute qui semblait occuper la moitié du canal laissé entre les deux grandes terres, reçut le nom d'île Rosamel.—Dumont d'Urville, "Voyage au Pôle Sud," Tome II p. 148.

of the result of our reconnoitring, he determined to make an attempt to ram his way into the channel.

Whenever it was a question of a really serious forcing of the ice, Larsen himself always went up into the crow's nest and took the ship in hand. The mates and the seamen had only one opinion of Larsen's handling of the vessel under such circumstances, and that was, that he played billiards with the small ice-floes in a superlative manner. He was never so much in his element as when up in the crow's-nest, with a brown comforter twisted round his neck, his fur cap drawn down over his ears, and his weather-bitten features visible over the edge of the barrel. He is constantly in motion. Now he is looking through the glass to find a way to a distant lead, now he is calculating the probable effects of the next bump against the piece of ice in front of our bows; now he is hanging over the edge of the nest with all his interest concentrated upon a treacherous ice-foot, which projects under the vessel's stern and threatens the propeller. He rings down to the engine-room, and the double-bladed propeller stops instantly in a perpendicular and safe position. The ship glides past the ice-foot and the danger is past. Two strokes of the bell and her speed increases. The captain's orders to the steersman come thick and fast, and the wheel whirls round almost incessantly. "Hard-a-starboard! Steady! Port!" One stroke of the bell—the engine stops, and the boat glides noiselessly along through the little lead towards the piece of ice that blocks the way. She strikes, and, with a crash and a grating sound, bores her bows a foot or so into the edge of the ice. The shock runs shivering along the heavy hull of the vessel and flies to the top of the mainmast, where the crow's-nest is set swinging.

But the piece of ice is still there. The ship backs and makes a new assault. The hindering ice begins to twist round and to move a little to one side. The smaller pieces in the immediate neighbourhood spin round, whilst the water streams and bubbles about them. The third attack is successful, and the big piece of ice scrapes and rattles along

the sides of the vessel as she presses forward amidst the "small ice."

By degrees we came into more open ice, and at last reached the great leads under Joinville Island. By 9 p.m. we were down at the small islands, but there we were stayed by a close mass of pack-ice which filled the Erebus Gulf as far as could be descried from the crow's-nest. But the easternmost portion of Uruguay Island was, for the moment, free of ice, and I landed here late in the evening in order to make some geo-

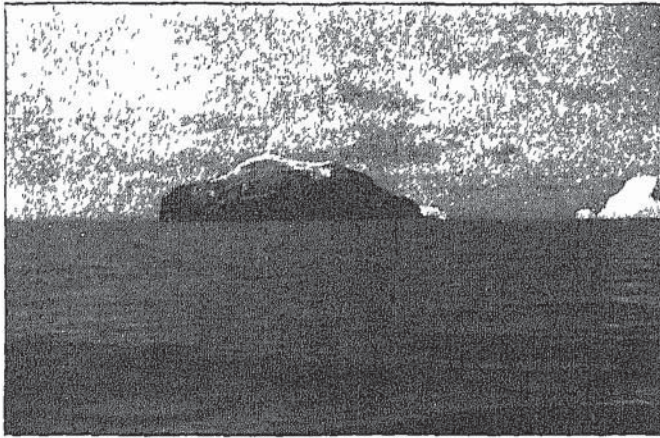


Photo by]

Rosamel Island

[NORDENSKJOLD, *January, 1902*

logical investigations. Just at this spot the island rises perpendicularly out of the sea, and the wild inaccessibleness of the lofty precipice corresponds very well with the chaotic and gloomy appearance of the place, which consists of an irregular mass of dark-coloured volcanic tuff built up of basalt-blocks, intersected by lighter, brick or chocolate-red banks.

High up near the topmost verge a large number of birds were wheeling about the projecting rocks. The distance was so great that they looked like mere small, pale snow-flakes, but their perfectly white colour and vigorous, elegant flight made it easy to recognise them. It was a flock of ice petrels

(*Pagodroma mvca*), who must certainly have had their breeding-place up there.

As there was no possibility—for the present, at least—of getting [further towards the Gulf in this direction, Larsen began early the next morning (December 8th) to force his way out of the sound again, intending to endeavour to find a passage outside of Joinville Island. Sometimes our progress could be reckoned by inches only, but at last we forced our way through, and then steamed, amid mist and snow-haze, round d'Urville Island and a little way along the north coast of Joinville Island. But in the neighbourhood of Française Point we once more encountered the edge of the pack-ice. Thus our progress was prevented in this direction too. The only thing left for us to do was to follow the ice-edge—which here stretched from Joinville Island northwards out to Bransfield Strait—in order to see if we could anywhere find an opening towards the east, and by means of taking a circuitous route discover a passage leading in a southerly direction.

I have written in my diary under the dates :—

“*December 9th.*—Our prospects of reaching the wintering-station by an easterly course do not appear very bright. I have begun to consider the possibility of reaching Snow Hill by an overland route from the channel inside Joinville Island, or from Cape Roquemaurel.”

“*December 10th.*—In the forenoon we were able to hold an easterly course, but we soon discovered that we had only come into a bay of the close pack-ice. Were therefore obliged to return towards the north-west and north. Much thick pressure-ice.

“We have now seriously discussed the plan of trying a land route, the one from Cape Roquemaurel seeming the best. Duse wishes to be of the party.

“We gained a clear view of the Elephant Islands this morning.”

During the next few days we lay fast in the pack-ice, drifting passively along with it. We were carried towards the north-east—that is, each day further and further away from our

destination. There was nothing we could do but wait, and use these days of imprisonment to the best advantage. Our sounding apparatus was in constant use, and sometimes the wires with the reversing thermometers and deep-sea water-bottles were going up and down the whole day in the small patches of open water by the side of the vessel.

During our imprisonment in the pack-ice we also began to make preparations for the sledge-journey to Snow Hill, every one being willing to help in equipping us who were to leave the vessel, in the best possible way. The third mate mended our shoes, the smith shod the ski-sledge, the sail-maker sewed bread-sacks, etc.

We had now quite made up our plan for the journey. We intended to find some suitable starting-point in Louis Philippe Land, as soon as ever we were clear of the ice. At this place the sledge-party, consisting of Duse and myself, and the seaman Grunden who had volunteered to join us, was to be set on shore with the necessary equipment. It would then be our task to endeavour to reach the party at Snow Hill, and, in the event of the *Antarctic* not succeeding in reaching the winter-station before an appointed day, we were to bring Nordenskjöld and his companions back to our starting point, to which place the ship should return at the close of the summer in order to fetch off the party.

The one thing about which we were not as yet quite clear was where we should fix the starting point of the sledge-expedition. In the neighbourhood of Mount Bransfield there was every likelihood of our being able to find a suitable landing-place, and the inland ice bordering the Antarctic Sound consisted of low, smooth, rounded surfaces that actually seemed to invite us to sledge-journeys.

But we were tempted by another spot, too, and one considerably nearer to Snow Hill, viz., a bay at the entrance to the Orleans Channel, south of Cape Roquemaurel. During Duse's cartographical labours we had noticed that the character of the inland-ice there was the reverse of what usually existed in that mountainous and broken country, and that it

rose gently and equally from the interior of the bay mentioned up to a level surface. This gave us reason to think that the land here was very narrow and pretty low, and that the land-ice sloped similarly on both sides from coast to coast. Bearing this in mind we were much tempted to start from the bay mentioned above, south of Cape Roquemaurel.

On the evening of the 19th we were once more off the north coast of Joinville Island. The ice here was as impenetrable as on the occasion of our first visit eleven days before, and it had even extended itself further to the west. A renewed reconnoitring of the ice-conditions in the Antarctic Channel was equally depressing in its results, for a good way north of the spot reached by us on the 7th our road was barred by a close pack of ice. Had any on board still entertained doubts of the necessity of attempting to reach Snow Hill by means of a sledge-journey, their hesitation vanished completely at the sight of the impenetrable pack-ice that still covered the Erebus and Terror Gulf.

We lay here fast in the ice over Christmas—a Yule spent amid dazzling sunshine, but darkened by gloomy apprehensions. Day after day the same cloudless, calm, sunny weather prevailed—weather so clear that from the crow's-nest we could see Cockburn Island far away to the south. The distance was so great that the precipitous shore lay hidden below the horizon, but the plateau and the conical peak were easily distinguishable. Cockburn Island! That was almost the same thing as Snow Hill—only twelve miles from the wintering station. Every time our comrades there looked out of the windows of their sleeping rooms, or came out of the house, they could not help but immediately catch sight of this immense sea-mark at the entrance of the Admiralty Sound or Admiralty Inlet, as we then called it. When we stood up in the crow's-nest and looked at the dark little speck that rose far away amidst the world of whiteness, we felt more deeply than ever the bitterness of our impotence. Ever since the fight with the ice began we had been hoping for a change, for an opening in the ice, for a path southwards, that would

at least enable us to keep Christmas together. And now, the goal almost within sight, we lay imprisoned here, while the days went past, and the sun, whose nightly course had grown wondrously short, glided past its meridian, and left us "cabined, cribbed, confined, bound in to saucy doubts and fears."

Skottsberg took the fresh green branches of beech which we had brought with us from Tierra del Fuego for the purpose of decorating Nordenskjöld's cabin, and made garlands with them for the lamps in the gun-room as a kind of reminder that it was Yule-tide. On Christmas Eve we all assembled in the gun-room, and Larsen, in a few hearty words, proposed the health of our comrades at Snow Hill. We sat there a long time together, singing and joking, but on the whole, it was a sad Christmas.

There was only one thing that could enliven us during these days and that was the thought of the approaching sledge journey. The work of preparation was now nearly completed, and on Boxing Day we rammed our way northwards out of the ice again, in order to be able to choose our starting-point near the entrance of the Orleans Channel.

But on nearer examination it was found that the inland-ice at the bay before mentioned, south of Cape Roquemaurel, was exceedingly difficult of access, and we were obliged to relinquish the idea of starting from this point and to return to the Antarctic Sound. On the way to the latter place, on the 28th of December, I left another letter at Astrolabe Island, with further information concerning the events of the last few weeks. The signal-post was now coloured red in order to stand out well against both the white snow and the black rocks, and I painted a great round spot in red on the perpendicular face of the cliff inside the headland where the post stands.

The following forenoon (December 29th) we reconnoitred the coast north of Mount Bransfield, but we found no good landing-place here either, so we steamed into the sound, in order to examine the condition of things in a bay that Captain Larsen had recommended to us the whole time.

At 6 p m. I went on shore, taking with me the greater part of the sledge-equipment and a part of the dépôt provisions, the boat returning to the ship in order to bring off Duse, Grunden, and the rest of the baggage.

During the row across the mouth of the bay I had an opportunity of looking around me a little more.

At the further end of the inlet, which runs a mile or two into the land in a south-westerly direction, a fine valley-glacier descends into the sea, the valley being flanked by steep, sharp-ridged mountains. On the north-west side of the bay the coast-line consists of the Chinese wall of the inland-ice—a steep wall of ice, traversed by fissures and crevasses, the dark rock being seen in only a very few places. The opposite side of the bay presents quite a different appearance, the inland-ice here falling with an even slope down to a snow-free foreland of small hills.

It was upon this snow-free lowland that we intended to make our provision-dépôt, in order afterwards to begin our sledge-journey up the slope of the land-ice.

On coming nearer we saw that all the hills were occupied by flocks of birds, and when I was left alone on the shore I took a turn up towards the ice.

I must most certainly have been the first man whose presence ever disturbed this immense community of birds. Nearest the shore, scattered groups of phlegmatic, good-natured *papua*-penguins had their breeding places, and these birds voluntarily, although with an anxious hiss, got out of my way as I came near their nests. But on the rock-bestrewn hills further inland lived an irritable, choleric race. Thousands upon thousands of *Adelie* penguins were there, breeding in immense, close groups. When I came near one of these breeding-places, the old penguins at once rushed upon me with an angry, hoarse cackling the most fiery pecking at my legs, and making deep scratches in my boots.

On climbing the steepest part of the slope * and coming to

* At the edge of the land-ice some parts of the snow had a more or less well-marked rose-red colour, evidently attributable to snow-algae. This was the first and only time during our expedition that "red-snow" was observed on the Antarctic land-ice.

a little moraine-ridge sticking out of the ice, I found that the inland-ice extended pretty evenly, although with small undulations, some distance in a south-westerly direction past a lofty, pyramidal nunatak. This promised well for the beginning of our journey.

Out in the bay I could see the boat coming back with my two companions, and we soon had our equipment safely landed, Andreasen, who had charge of the boat, and his men helping us to carry the heaviest things to the place where we intended to establish our depôt. The sailors once more wished us good-luck on our enterprise, and returned to the ship.

We had a little more work to do ere we had the depôt in order. When it was covered with an old tarpauln and fastened by means of ropes attached to blocks of stone, we were ready to load our sledge and prepare for the start.

* * * * *

At this moment, when we are about to begin the sledge journey, I will make a moment's pause in order to devote a few words to the description of our equipment.

All the utensils intended for use on sledge-journeys had been taken on shore at the wintering-station, as it lay outside of the original plan of work for the division of the Expedition that was on the ship to undertake such sledge-trips. Thus our party had been obliged to content itself with picking out and arranging the things we succeeded in finding on the vessel.

Our first care was to get a good ski-sledge. One had been made on board for my journey to Lago Fagnano, and this had now been strengthened by being shod with hoop-iron. It went pretty light in the thawing weather of the first journey we now undertook, but in October, on the occasion of our second journey southwards, when we travelled, as a rule, with the temperature far below freezing-point, the rusty iron made the going insufferably heavy.

The two sleeping-bags of guanaco-skin, made for Wengersgaard and myself on the Fagnano expedition, were now used

by Grunden and me, while Dusc had one made of some guanaco-skin found on board. We took, in addition, my little two-man's tent, where the space for three was small enough.

For the preparation of our food we took two "Primus" petroleum stoves with 10 litres (2·2 gallons) of oil, and two aluminium pots. We had also three soup-plates of enamelled iron, and the same number of spoons; but plates, cups, forks and teaspoons we regarded as unnecessary, burdensome luxuries.

We took in addition a number of useful and necessary things, such as a Mauser pistol and cartridges, two field-glasses, snow-spectacles, a supply of medicine, matches in soldered-up boxes, boots and shoes, etc. In the ship's library there were only two descriptions of travels containing plans of equipment which could serve as a guide for us in the calculation of our provision-supply. These were A. E. Nordenskjöld's account of his journey over the ice of Greenland in 1883, and Nansen's "Across Greenland on Skis." We made up our plan of provisioning by the help of these two books, but with the essential modification that we made our daily rations (1267 grammes = $2\frac{7}{8}$ lbs.) considerably larger than Nansen's, especially (circa 1 kilogramme = $2\frac{1}{8}$ lbs.). He had used specially concentrated, water-free provisions which we could not get.

The daily ration for one man had the following composition : *Bread*, 600 grammes ; *margarine*, 67 gr. ; *tinned meat and fish*, 413 gr. ; *sugar*, 27 gr. ; *coffee*, 20 gr. ; *chocolate and cocoa*, 68 gr. ; *tinned soup*, 72 gr. ; Total—1,267 gr. (100 grammes = $\frac{1}{16}$ lb.). Our supply of provisions, calculated in accordance with the above, for three men for a period of 25 days, was composed as follows :—

Hard rye-bread, 7 kilogrammes ; *cakes*, 1 kg. ; *ship's biscuits*, 35 kg. ; *tinned meat*, 30 kg. ; *tinned mackerel*, 1 kg. ; *margarine*, 5 kg. ; *sugar*, 2 kg. ; *coffee*, $1\frac{1}{2}$ kg. ; *cocoa*, $\frac{1}{2}$ kg. ; *chocolate*, $4\frac{1}{2}$ kg. ; *tea*, $\frac{1}{2}$ kg. ; *dried preserved soups*, $\frac{3}{8}$ kg. ; *beef-tea capsules*, $\frac{1}{16}$ kg. ; *dried fruits*, $1\frac{1}{2}$ kg. ; *condensed milk*,

1 kg. ; oatmeal, $\frac{1}{2}$ kg. ; fruit jellies, $\frac{7}{10}$ kg. ; dried greens, 1 kg. ; salt, $\frac{1}{10}$ kg. ; cognac, $\frac{1}{2}$ kg. ; Total—93.7 kg.

Our total equipment, sledge and skis included, had a gross weight of 240.5 kg. (530 lbs.).

As I have already mentioned, a depôt had been established at the place where we landed, to provide against possible future needs. Its contents were:—*Ship's bread*, 225 kilogrammes; *margarine*, 30 kg.; *tinned meat*, 95 kg.; *preserved herrings and other fish*, 105 kg.; *sugar*, 10 kg.; *coffee*, 5 kg.; *cocoa*, 5 kg.; *tea*, 1 kg.; *tinned soups*, 35 kg.; *dried fruits*, 3 kg.; *condensed milk*, 8 kg.; *barley*, 25 kg.; *dried greens*, 12 kg.; *salt*, 7 kg.; Total—566 kg. (1 kg.=2.204 lbs.).

The contents of the depôt were intended for us and the members of the party at the wintering station during the period of waiting for the return of the *Antarctic* (see account of the agreement made with Larsen), or for nine men during a period of two months. Owing to a fault of mine, the quantity of bread was less than it should have been (*i.e.*, 270 kg.), and this deficit was afterwards felt very much.

Besides these provisions, the depôt also contained a large tent and a table, petroleum, candles, spirits of wine, some reserve clothes, etc.

In order to be able to rightly criticise the scantiness of these supplies, the reader must first understand the peculiar position in which we were. It is true that the ice-conditions were so adverse that this effort to reach Snow Hill by means of a sledge-party had become a matter of necessity. But, on the other hand, we did not consider that we had reason to quite relinquish our early optimistic views of the possibilities of scientific work during the summer. It is an old Antarctic experience that relatively ice-free water of considerable extent can often be reached after having once penetrated a belt of close pack-ice of considerable width. The thick masses of pack-ice which now filled the Erebus and Terror Gulf made us suppose that there was, in all probability, a corresponding extensive break in the ice-field further to the south; so that, on leaving the *Antarctic*, we spoke confi-

dently of our all meeting at the wintering-station. In such a case, and after the Snow Hill party had been taken on board, the question would probably arise of undertaking a journey further to the south, with the possibility of the vessel being enclosed in the ice, when every bit of our none too rich supply of provisions and clothes would be greatly needed. Consequently, we had no desire to embarrass Nordenskjöld's future plans by forming here a large and valuable depôt, the contents of which would have to be taken on board again ere any eventual southern expedition could be made.

Before leaving the vessel I made the following written agreement with Captain Larsen :—

- “ 1. *In the event of the Antarctic alone reaching the station.*—Should the land-party not have arrived before the 25th January it must be taken for granted that it has found the road blocked, and the party shall be brought off from the depôt place.
- “ 2. *In the event of the land-party alone reaching the station.*—Should the *Antarctic* not have communicated with the wintering-station before February 10th, all the men there shall travel overland to the depôt place. The *Antarctic* will then have to call at the depôt place during the period, February 25th—March 10th, before which last date the search for the party at the depôt place should not be relinquished, unless in consequence of imperative necessity.”

These, then, were the presuppositions that guided our deliberations ere we commenced the attempt to reach Snow Hill Island by way of the inland ice.



Photo by]

[S. A. DISE

Breaking up camp after the snow-storm of Jan 8-11

CHAPTER VIII.

IN AN UNKNOWN ARCHIPELAGO.

Our last view of the Antarctic—Close sleeping quarters—The Bay of the Thousand Icebergs—Wet going across the sea-ice—On the land-ice again—The way closed! --The return journey to the dépôt place

WE find it impossible to draw all our heavy load at one journey up the steepest part of the slope of the land-ice. We make two trips of it, and it is still a burdensome task. Two men are harnessed in front of the sledge, and the third pushes behind, and we strain and we haul, with a hearty tug all together, and we go slowly upwards until, at last, we have all the baggage gathered at the place we had fixed upon as our camping-ground. Here, at 181 metres (600 feet) above the sea, the land-ice begins to be rounded off into easier ascents, so that we intend trying to draw the entire burden at once, when we start on the morrow

Far away in the channel we can still see a little dark

speck amid the drift-ice. It is the *Antarctic*, which is picking its way eastward amidst the small floes, in order to once more try to find a passage outside Joinville Island.

But there is little time to stand looking after the old *Antarctic*, for we have to see how we can manage to place ourselves with our sleeping-bags inside of the little tent. Grunden and I lie down with our feet towards the door side of the tent, and Duse, after having closed the opening, squeezes himself down with his feet in the opposite direction. We are now literally "stowed" away, for there is not a hand's breadth of the floor that is not occupied by our sleeping-sacks, and the long sides of the tent bulge out under the pressure of Grunden's body and mine. But we are glad that the attempt has succeeded so well, and we pull our night-caps over our eyes to protect them from the light, for all these preparations have taken us until four in the morning ere they are completed.

We crept out of our bags about one o'clock the next afternoon, and a couple of hours later we have breakfasted, taken down the tent and loaded all our baggage on the sledge. We had feared that the load would be too heavy, and that we should be obliged to leave a part of the provisions behind us; but we managed pretty well in the parts where the ice was level. It was toilsome work up the slopes, of course, but, on the whole, we were very much contented with this first experience of ours in drawing sledges.

One's thoughts dwell mostly upon three subjects while one marches along, and stamps, and tugs away at the sledge—the good food we shall get when the day's drudgery is over the distance we have covered, and the condition of the next stretch of road. According to Ross' chart of the Erebus and Terror Gulf, we have calculated that we should keep a south south-westerly course in order to come to the inner part of Sidney Herbert Bay. Now we reckon and calculate what time will be necessary to reach that place, and all our calculations resolve themselves into a hope that we may continue to have the same good, level going.

The land-ice rises and falls in irregular, flat waves, and here and there dark, snow-free, pointed or sharp-ridged hill-tops rise out of the mantling snow. Right in front of us lies a snow-ridge, higher than the preceding ones. We reach the top and a new view begins to meet our eyes—distant chains of mountains and flattened snowy cupolas bounded by dark precipices. But what is that below us? We stand silent and perplexed, and gaze at the new and wonderful scene. Mile upon mile of snowy plain, such as we have never seen before, meets our eyes; one can actually imagine that a gigantic snow-clad city lies before us, with houses, and palaces in thousands, and in hundreds of changing, irregular forms—towers and spires, and all the wonders of the world.

At first sight it really appears incomprehensible, but it must be, after all, a bay covered with a frozen-in mass of numberless icebergs. It would seem as though the bay had been a long time covered with such a continuous mantle of ice—for several years at least—and as though the land ice, whose long sloping termination everywhere forms the shore of the bay, had not been able to get rid of its superfluous mass by calving,* since the bay froze. It had consequently moved slowly further and further out into the bay, pushing aside and pressing together the sea-ice with irresistible force. I had never before been able even to imagine such a picture of the sovereign dominion of ice, as the one offered by this landscape. The sea with its innumerable icebergs and hummocks, and its thick, ancient covering of ice (which in parts lay split and squeezed together by the pressure from the still mightier covering of the land-ice)—this sea was a frozen world which awakened memories of what has been written about the hypothetical paleocrystic ice of the North Polar Sea—ice which seems to be a reality in a bay of the Antarctic mainland.

Now there was an end to our hopes of a good road to Snow Hill. The coast swung round the new bay in a wide sweep

* Calving—"This word may (also) be applied to an iceberg breaking off a glacier" The Antarctic Manual, 1901.

to the west, and quite near our front the surface of the land-ice began to be uneven and full of yawning crevasses, while, on the further side of the bay, the broken ice-ridges of the mountains pressed on right down to the shore. To continue the journey round the bay on the land-ice would be an extremely toilsome and time-wasting task; it even seemed doubtful if we should be able to make our way amongst the mountain-tops and glacier-crevasses. Everything pointed to the necessity of choosing another road; to go down to, and through the labyrinth of, the frozen city—out to the smoother sea-ice of which we could catch a distant glimpse, and onwards to the land whose dark precipitous shores rose furthest south-wards. But we did not quite know where we were. Ross' chart of the Erebus and Terror Gulf gave no indication of the existence of this extensive stretch of frozen water which we saw before us. The bay which was nearest broadened into a large fiord, which separated us from the land farthest to the south, and which must have communication with the open sea towards the south-east, in which direction the view was closed by an intervening mountain ridge. But was this fiord the same bay which on Ross' chart is called Sidney Herbert Bay? Duse, who had been in this last-named bay the preceding summer with the *Antarctic*, could not recognise anything of what he saw here. So we determined to camp where we were, intending the next day to climb the mountain-ridge to the south-east in order to obtain a better idea of the state of things.

When we awoke the following morning, the sun shone down from the now cloudless sky with blinding splendour upon the snow landscape and the Bay of the Thousand Icebergs. While climbing the ridge we all had snow-glasses on, but when we reached the top, Duse took his off in order to see better when taking bearings and making sketches for his cartographical work. But he afterwards paid dearly for this rashness, and in a way that incited us all to the greatest caution for the future.

Even from the mountain top the view towards the sea

was still obstructed by high land further away in a southeasterly direction. But what we saw was instructive in many respects: the ice in the great fiord was clearly unbroken, with only a few icebergs sticking up out of the sea-ice. The land on the further side of the fiord was, for the most part, inaccessible; with precipitous, dark coast-cliffs, but in one place the land-ice appeared to fall with an even slope down to the sea. Here, then, was a possibility of coming up on the land-ice which seemed to stretch away, in even, rounded forms, to a completely snow-covered, conical mountain-top, whose contours, but dimly visible against the light sky, rose above all the surrounding country. That enormous, ice-bemantled cone must be the Mount Haddington of Ross' chart. Over there lies Admiralty Inlet and Snow Hill station! And the fiord before us must, after all, be Sidney Herbert Bay.

Our plan was now clear. We should go over the sea-ice to the point on the southern land where we could see a way up on to the land-ice, and then pursue our route past Mount Haddington on to Admiralty Inlet. We did not know whether the stretch of water just named was a sound or a bay, and we left it to the future to decide how we should manage to cross it.

On our return to the tent, we loaded the sledge and started for the bay. We put on our skis for the first time, and went at a brisk pace down the long, smooth slope to the shore. The last hundred yards of the land-ice were troublesome enough, however; the snow there being so soft that the sledge cut through it and stuck fast, time after time. Down on the sea-ice things were quite as bad. We now found ourselves in the midst of the extensive labyrinth of icebergs, and it appeared doubtful if we could find a way through it, so we determined to camp, and while Duse put up the tent, Grunden and I went ahead on skis in order to reconnoitre. After picking our way for a good while between innumerable hummocks which obstructed the view in every direction, we at last reached a pretty lofty iceberg, up which

we climbed, and then we saw to our great joy, that the hummocks soon thinned out in the direction of our route.

On returning to the tent Duse informed me that he had suddenly become snow-blind of the left eye, which smarted exceedingly. I dropped in a solution of sulphate of zinc and boracic acid, the only remedy for affections of the eyes that I had with me. Duse found that it assuaged the pain a great deal and, as a preventive measure, I afterwards dropped some of the solution into my own eyes and Grunden's every day.

On awaking the next afternoon—for it was three a.m. on New Year's morning when we crept to bed—Duse's bad eye was exceedingly painful, and very sensitive to light. In addition to this drawback, the sun had made the snow so loose that we sunk in it down to our hips, and we found ourselves obliged to lie still till sunset, Duse employing the time to make a shade for his eye with a piece of dark-coloured cloth.

We made a fresh start at ten p.m., the going being at first wretched, but matters very soon grew better, and after a few hours' brisk marching we reached the great fiord; the place where this opened into the Erebus and Terror Gulf now lying visible before us. To the right lay an island with high, snow-free cliffs, whose clearly marked, slightly concave stratification enticed me to make a closer investigation of the place, and while my companions rested for a while by the sledge, I turned a little way aside to the island. I had never so plainly perceived the excellence of skis as on this occasion. A person on foot would have gone through the newly-formed ice on the foot-deep surface-pools at every step, whilst the skis glided lightly and sustainingly over its surface.

The rocks of the island consist of a coarse volcanic tuff. Rather considerable streams ran from the melted snow and ice and flung themselves down the dark precipices and the immense *tah* or heaps of rocks, at their base, and fell in foaming cascades to the shore.

On this occasion we camped out on the ice of the fiord.

We had now made the arrangement that we should rest during the days, and work at night, the going being better then, and the light less troublesome. When our camp broke up again on the evening of the 2nd January, we still had a northerly wind, and, with the aid of a long bamboo ski-staff as mast and two short sticks as yards, we fitted up the tent-floor as a sail for the sledge, and had a droll sailing-trip for a couple of hours, the sledge sometimes going so fast that it was as much as we could do to keep up with it. When the gusts came, she quite jumped along, so that one was obliged to leap out of the way to avoid being run down. But our joy was of short duration. The wind fell more and more, and all of a sudden it threw our sail aback, and we had to trudge onwards again in the endeavour to reach the land which rose before us. We soon came once more amidst numerous icebergs and immense deep ponds formed by the melted ice, and here we had icy-cold foot baths up to the knee, and much ado to free the sledge from the sludge, into which it often stuck fast. It begins to snow, and plunging through water and sludge we move on slowly towards an island, which sometimes disappears in the whirling snow. We reach it at length, but the steep walls of tuff do not look inviting and we determine to make at once for the mainland, which cannot be many hundred yards away, although it is quite concealed in a fog of snow. Worn out with fifteen hours' exertion, dripping with water and shivering with cold, but exceedingly glad to have something hard and dry once more beneath our feet, we at length stand on the low edge of the inland-ice. The "Primus" is soon buzzing its cheerful song in our little tent, and after eating and taking a glass of cognac, we creep into our wet sleeping-bags, where fatigue soon renders us insensible to cold and moisture.

On awaking at 11 at night (Jan. 3rd.), our first thought was of drying our soaked baggage, and when the sun rose, our camping ground was changed to an exhibition of sleeping-bags, clothes, stockings, mittens and night-caps, spread out on the tent and the sledge, or hung up on ropes

stretched between the skis, whilst we ourselves walked about in our few remaining garments, which were allowed to dry on us. Our spirits rose as the clothes dried, and we began to entertain the liveliest expectations of what the next few days would bring forth. Sidney Herbert Bay now lay behind us. It is true that it seemed somewhat peculiar that the land between our starting point and the Bay of the Thousand Icebergs had been so narrow, but we felt certain that the broad fiord now behind us to the north, must be Sidney Herbert Bay, unless it was quite a new fiord which is not marked in Ross' chart. We were now in hopes of being able to travel along the inland ice all the way to Admiralty Inlet. It would be a journey across many ice-ridges round Mount Haddington's immense base, but we should at least be able to march on dry land, until we came to the stretch of water on the further side of which the wintering-station lay.

It is very strange, now that all our adventures and difficulties are things of the past, to remember with what feelings we took our departure from the "Clothes-drying Camp." We hoped to be at the station in eight or ten days. Probably we might be obliged to propose to our comrades there that we should all return northwards as soon as possible, before the ice became quite impracticable. Still, we might be so fortunate as to find that the *Antarctic* had discovered a way through the pack-ice and then, of course, we should all meet at Snow Hill. At any rate, we expected to learn very soon how matters stood at the wintering station. We began to recall the news we had for our comrades from the outside world, and discussed how we should be best able to communicate to Nordenskjöld the sad tidings of his father's death.

We began our ascent of the inland ice about eight o'clock on the evening of the 4th January. The snow was soft, and the sledge went heavily, and when we had come a good way up the slope it became quite impossible for us to draw the heavy load we had. We took three sacks from the sledge.

and leaving this behind us, we went on with them up the gentle incline. We glide side by side for a long time towards the south-east, until we are close to the crown of the hill, where a dark cliff is seen sticking out of the ice. A few strokes more of the ski and we come to a standstill with a cry of dismay. *The way is closed!* is the first thought that flashes across our minds like lightning at the unexpected sight before us. Our questions come swiftly and eagerly. An arm of the sea lies before us. Is it Admiralty Inlet? Does the wintering-station lie on the further shore? Impossible! Dusc begins to recognise it as something he saw from the *Antarctic* the preceding summer. It is Sidney Herbert Bay! I recall Larsen's description—a channel diminishing inwards to narrows, past which lies a large expanse of water. That agrees exactly with what we have here, and it seems as though we were on a large island. Sidney Herbert Bay would appear to be a channel communicating on the other side of our island with the new fiord behind us.

It is impossible for us to cross here. As far as the eye can reach across the sound, the ice has that blue-green colour the import of which we learned during our late, wet wandering upon the sea-ice. The way is closed!

To the east rose the extreme headland of our island, the Cape Gordon of Ross' chart. We went there in order to obtain a view of the ice-conditions towards the Erebus Gulf. From here, we saw far northwards, in front of that part of the mainland lying south of our starting-point, a large expanse of blue, ice-free water, stretching as far as we could see through the misty air. South of this ice-free water, the smooth bay-ice was intersected by small leads right up to the cape where we stood. It was a joyful surprise to see so much open water in the Gulf, and we endeavoured to diminish the depressing effects of our own non-success by the hope that the *Antarctic* would be able to make her way to the wintering station.

While we followed our tracks back to the sledge, it began

to snow, and when we were ready for bed, the approaching snow-storm began to howl around the tent, and our sleep became an uneasy slumber, broken by reflections on our gloomy situation.

During the course of the 7th the weather improved so much that at five p.m. we could begin our return journey. Fortunately for us, the temperature soon fell to some degrees below freezing point, and this enabled us to make good use of the thick carpet of new-fallen snow. We took a more easterly route in order to come up on the mainland nearer the mouth of the great fiord, and thereby avoid the puzzling and troublesome labyrinth of the thousand icebergs. After a forced march we reached the shore-ice of the mainland at six a.m. on the 8th. We had crossed at the right moment, for a few hours later the snowstorm was once more shrieking around the tent. But we submitted calmly to the delay thus forced upon us, secure in the knowledge, that we lay on the same land as the depôt, near the Antarctic Sound.

On the evening of the 9th, we began to make preparations for starting, but the slope of the land-ice was so great that we could not get the sledge up with its full load. So we carried some things up and laid them down near a large block of stone, and then hurried back to bring up the sledge, but the snow-storm coming on again with redoubled violence, compelled us to a new period of inaction. We lay in our tent under a high moraine-wall, but the storm shook our shelter so, that we sometimes feared it would be torn to pieces.

Our thoughts went out to the *Antarctic*. Where was the good old boat, and how did our comrades fare in this storm? After the lapse of many, many days we learned, that early that morning, the morning of the 11th of January, while we sat in the tent prophesying a fortunate fate for her, the *Antarctic* had received the blow, amidst violent pressure from the ice, that finally sent her to the bottom of the Gulf.

The next afternoon, when we resumed our journey, we found that snow-drifts concealed the great block of stone close to which



Combination of two photographs by]

Back to the depot place
The "Pyramid" nunatak in the background.

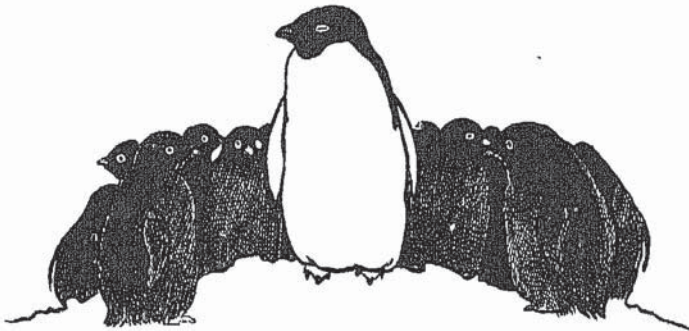
[S A DUSE.

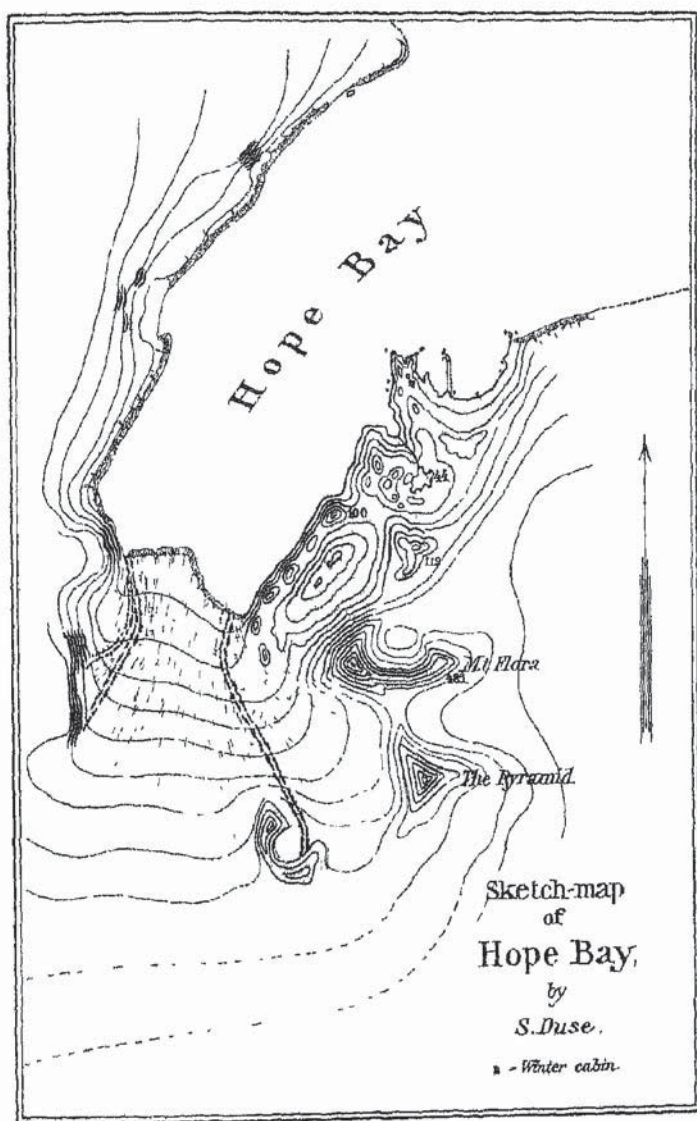
we had deposited many of our things, and although we dug for a couple of hours with our skis we sought in vain. It was a severe loss for us—two small kodaks, with all the plates and films (except a dozen in Duse's large apparatus), our supply of medicines, cartographical material, etc

From the inland ice we had a clear view over the Gulf right down to Cockburn and Seymour Islands and we once more saw leads amidst the drift-ice. But the clear weather was only of short duration, and hour after hour we were forced to march at hap-hazard, guided only by the compass.

We climb higher and higher up a long-sloping ascent. Suddenly we come to a downward slope which grows steeper and steeper. This 'gives us pause' and we pitch our tent on an incline so precipitous that we are first obliged to dig out a level floor. A few minutes after we have encamped, the mist disappears and an unexpected sight is presented to our view. Deep below us at the foot of the slope, extends a level, sun-illuminated field of inland-ice, and near us to the north we see the deep blue waters of the Antarctic Sound. We had stopped at the last moment, for close to our camping ground, and in the line of our route, the land-ice formed an immense precipice, broken by huge, yawning crevasses.

But below us, the way lay open to the dépôt-place, and on the morning of the 13th we pitched our little tent there amid the screaming crowd of penguins.







Captain S. A. Duse.

CHAPTER IX.

WAITING.—WE BUILD A WINTER HUT.

Waiting—Geological discoveries—Our shoes—The *Antarctic* does not return—We begin to build our winter hut, and to repair it—Our hut—An indoor temperature under freezing point.

WHERE was the *Antarctic*?

Had Larsen found a way outside Joinville Island, or did the ice still form an impenetrable barrier there? It was plain that no one had visited the *dépôt* while we had been absent on our sledge journey, but if the eastern way were closed by ice we could expect the *Antarctic* back every day.

We erected the big tent and made everything as comfortable as possible, the little tent having to serve as a store-house for all kinds of things.

We now returned to the plan of sleeping at night and of spending the day in action and work. Down here amidst the dark snow-free hills we need not fear the sunlight, and at midnight the dusk now began to grow deeper every day.

The day after our return from the sledge expedition, when making my first geological excursion, I found an indistinct impression of a fossil fern in a block of stone. This discovery urged me to continue my search and I soon had a whole harvest of stone slabs gathered in the little tent—rich in remains of ferns, cycads, and pines. It was evident that I had brought to light a fossil flora from the Triassic or Jurassic systems, quite a new find in South Polar regions, and one of immense importance for a determination of the former climate of the earth.

But wandering over the sharp stones that were strewn about the hills here, played havoc with our boots. Soles and heels disappeared rapidly, the binding soles became full of holes and loosened from the uppers. While we were building our winter dwelling we limped about with gaping holes in the bottom of our boots, and the snow and the cold soon found their way through the torn, dirty stockings direct to the feet. There was an amusing aspect of the case too, for we found that we could soon cut our toe-nails without taking off our boots. This is rather a coarse picture, maybe, but it shows the condition in which we were. It was the first rough grasp of the hand from harshly grinning Distress.

The days came and the days went, and weeks became months, but no *Antarctic* arrived. The necessity of wintering in this place—a thing we had at first discussed as a distant possibility—grew gradually to a threatening certainty. We should soon stand face to face with the Polar Winter, provided only with two storm-torn tents and an insufficient supply of food; we must in some way wrest from Nature the simplest means of preserving life—shelter, food and firing.

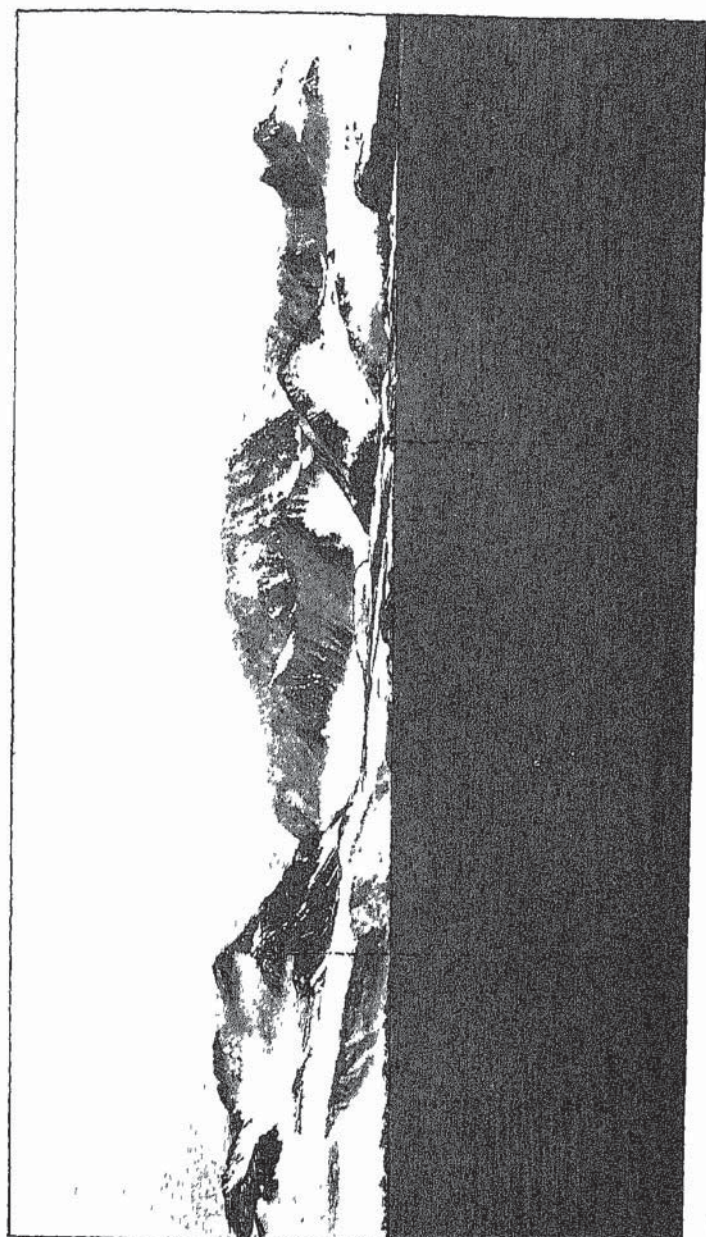


Photo 691

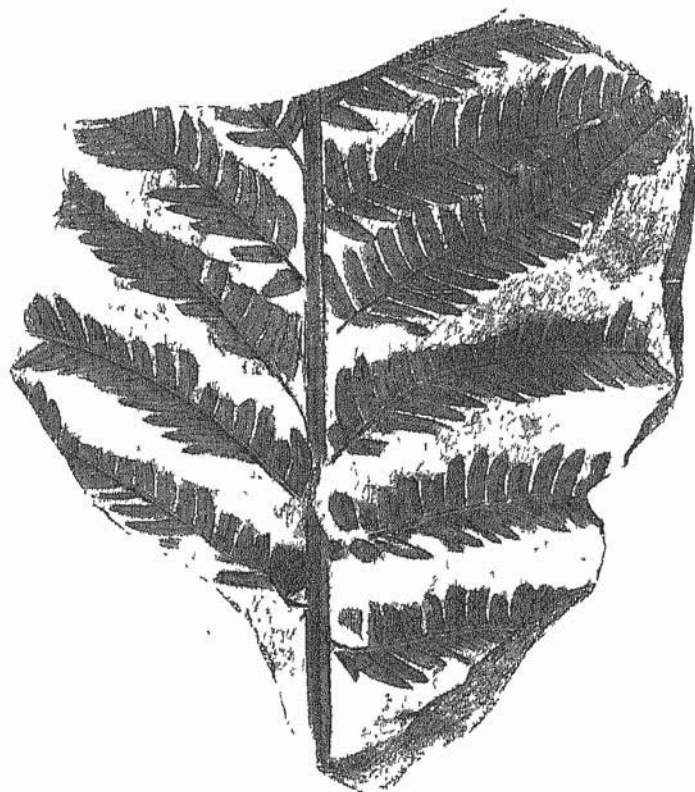
Sticta confutum; plant fossils
Mt. Flora

Hope Bay.

Water hut

[G. HOLMES]

We soon came to a perfect agreement respecting the plan of work for the building of a winter-hut. Solid walls of blocks of stones should be built up to the full height of a man, the frame of the roof was to be made of the sledge and some



Cladophlebis.

1 cm from the Jurassic flora at Hope Bay. One half the natural size

poles and pieces of plank we had brought on shore with us, and over this we intended to spread the old tarpaulin, hitherto used to shelter the provision-depôt. Then we meant to raise the big tent inside this hut, after flattening the top (of the tent) and lessening the size of the floor so that in shape the whole would be something like a cube. This

arrangement would give us a two-fold shelter against cold and storm.

As the site of the stone-hut, we chose the level and comparatively dry piece of ground near the large tent, which was to remain standing to serve as a provisional dwelling until we could move into the hut. Fortun-

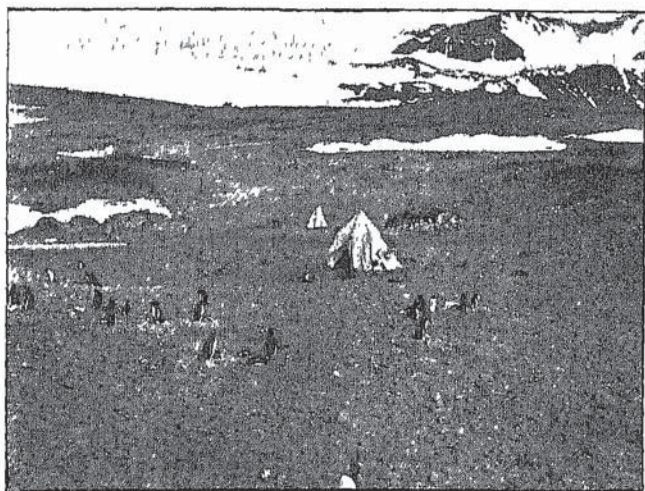


Photo by]

Camp Expectation

[S. A. DUSL

ately there were plenty of blocks of stone and large stone slabs very suitable for our purpose, lying about the camping-ground. On the 11th of February we began the work by bearing down several stones, and two days later, Grunden made a kind of hand-barrow of a couple of tent poles and some pieces of plank, and we took it in turns, by pairs, to carry on this the blocks of stone which the third man broke loose from the somewhat frozen earth. On the 17th, we laid all the foundations of the walls, which were considerably more than a yard thick near the ground, and which afterwards daily rose slowly in height; the holes and crannies being filled with masses of fine gravel from the shore.

But still we worked with comfortable slowness until at the beginning of March it became a matter of vital importance to have the house ready as soon as possible, our tent bearing evident signs of exposure to the storms.

Winter came upon us suddenly. On the 6th of March, the house was filled with snow, which we cleared away while the storm was still blowing, and continued our work. On the 8th, the wind was still strong, but on the 9th, we worked away during an increasing snow-storm which was so violent the following day that we were compelled to remain inactive. The weather unproved on the 11th, when the sledge was built into its place, upside down, to serve as the roof-tree, and we completed the walls. The 12th was a day of hard work. Duse made a kind of carpet of penguin-skins which was to be laid under the floor-tarpaulin of the tent to serve as an insulator against the cold earth. Grunden mended the old ship's tarpaulin which was to form the roof, and I took the wing of a giant storm-petrel and swept the house clear of snow. When everything was ready we moved the tent in, and put on the roof-tarpaulin, which was held fast by large blocks of stone and by corner-stays attached to the solid walls.

It was evening ere we had time to listen to the demands of the stomach. We had an extremely plain little banquet, and over a glass of hollands, congratulated each other on having come within walls over which the storm had no power. The first night in the hut afforded us, too, a deep, quiet sleep—a wonderful refreshment after the anxious, storm-disturbed slumbers of the foregoing nights.

It is true that we had moved into the hut, but the place was far from being ready. Our first task now was to build an outer passage resembling those of the winter-huts of the Esquimaux. We made ours angular in shape, a plan which saved us building materials, which were difficult to get now that the ground was hard frozen, and it also prevented the wind from blowing direct into the tent when the entrance was opened.



[S. A. DUSE]

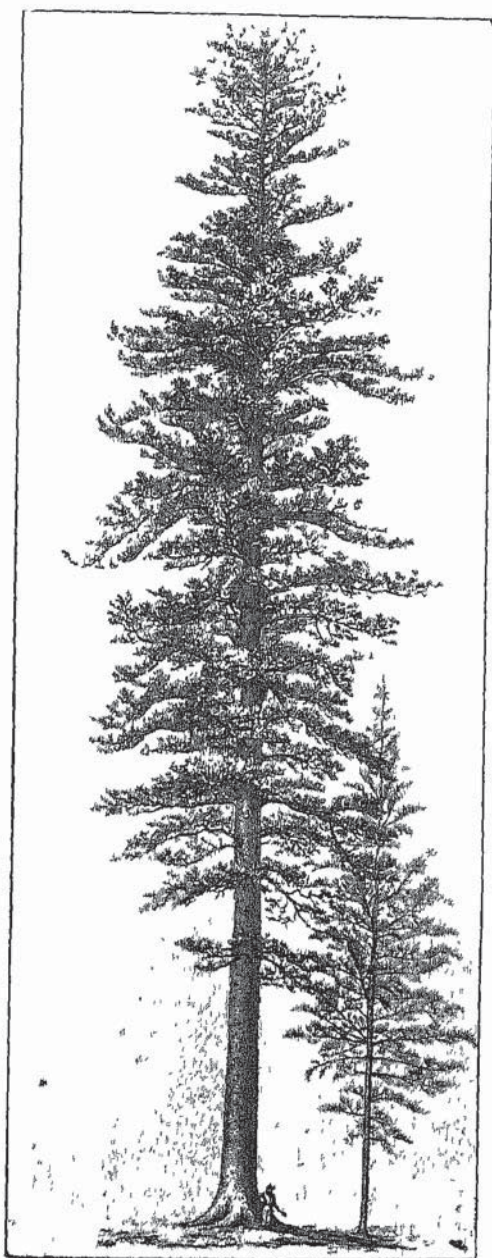
Winter hut at Hope Bay while the outside passage was building.

Photo by

The passage was covered with the floor-tarpaulin of the little tent and the outer door was made in the following way. The threshold—a very lofty one in proportion to the whole—consisted of a box of petroleum, containing a still untouched cistern we were keeping for the journey we intended to make in the spring. The side pieces of the frame of the door consisted of two boxes, containing plant fossils, and standing on their ends. Over these was placed a third box of fossils and the whole was built over with blocks of stone. The door opening thus obtained was about $2\frac{1}{4}$ feet square, and so, of course, there was no question of *walking* in: we had to creep very carefully, this taking the form, when entering, of putting the legs backwards over the threshold, falling on one's knees, and then crawling in backwards. Duse made a door of the lids of two of the fossil-boxes, which fitted the door-opening exactly. It was pushed to its place from inside the passage, and when closed lay against narrow lists where it was held fast by a little wooden clamp, the whole being plainly, practically and ingeniously made.

It was a matter of necessity that the door should open inwards, for, later on in the winter when the hut was quite buried in snow, it would have been impossible to move the door had it opened outwards. When we were snowed in, we simply took the door into the passage and then found before us a wall of pure snow from which we took what we wanted for melting in the kitchen pot. If we happened to be snowed in for a number of days in succession, we 'ate' ourselves out by degrees past the door-opening, and thus had the advantage of being a good way onwards to the open air when we had to dig ourselves out at the close of the snow-storm.

At the side of the door-opening, we left another large hole in the wall when we were building. It had at first been our intention to fill this opening with clean snow from which we could obtain our water supply on stormy days without being obliged to creep out into the midst of the storm. This "snow-cellar" proved unnecessary, as we have just seen,



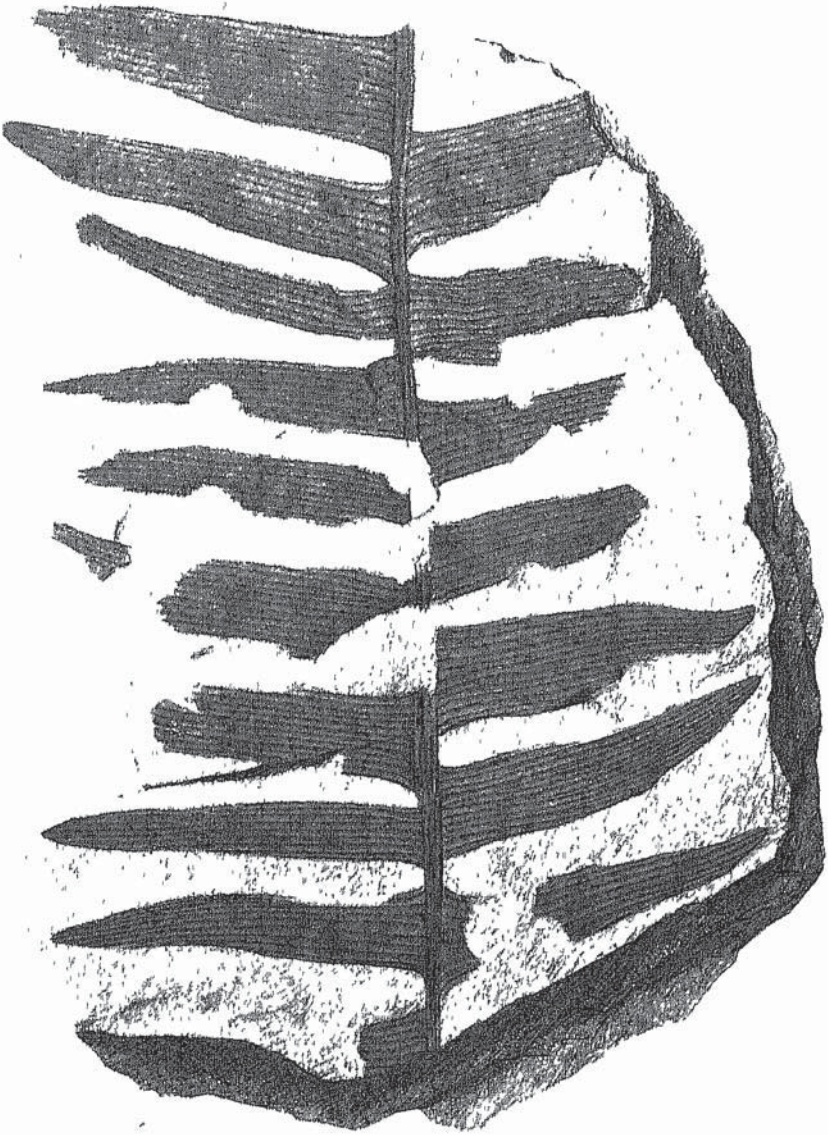
Araucaria excelsa Norfolk Is , to the east of Australia.
This still living form is nearly related to a species
belonging to the Jurassic flora at Ilol e Bay

but it was of great use as a store-house for meat and blubber, our first care after one snowstorm being to prepare for another by filling the cellar with provisions

In the corner of the angular passage was made a recess, which was used as a w c, the low temperature prevailing in our hut allowing of its presence there without any serious inconvenience, while the arrangement became of absolute necessity during the winter, when we were sometimes snowed-in for a week at a time.

The "*kitchen*" was situated in front of the entrance to the tent. Its roof consisted of a couple of immense flat stones, under which, on the one side, there was a little niche in the wall. In the passage, in front of this fire-place, stood a large tin box containing dried vegetables and forming the cook's somewhat chilly seat of office

We have now come to the tent-opening and can there obtain a view of the interior arrangements. There are several objects whose place is always the same—the low, open box for example, intended for culinary utensils, etc—a box with varied contents—a couple of small boxes—the petroleum carboy, and the tent-pole, on which was a round table that could either be hoisted close up to the tent-ceiling or let down to an horizontal position when we wished to work sitting around the table. (See illus., page 455). The position of the sleeping-bags when in use is seen by the illustration (p 463). When not wanted, they were rolled up and placed beside each other along the back wall of the tent. The box just mentioned was placed at night in front of the tent-entrance. When we were all up, it served as a seat for one of us; but when, on stormy days, only the cook was about, it was placed where his sleeping-bag usually lay, and was then used as a dining-table, or as a rough dumb waiter. The upper part of the cooking-apparatus, which was not in use during the winter, was made to shelter pots containing warm meat which then cooled but slowly. The lower part was used as a seat during the day, and at night, as a fire-proof place for the burning lamp. There was scarcely anything



Pterophyllum.
From the Jurassic flora at Hope Bay. Four-fifths of the natural size.

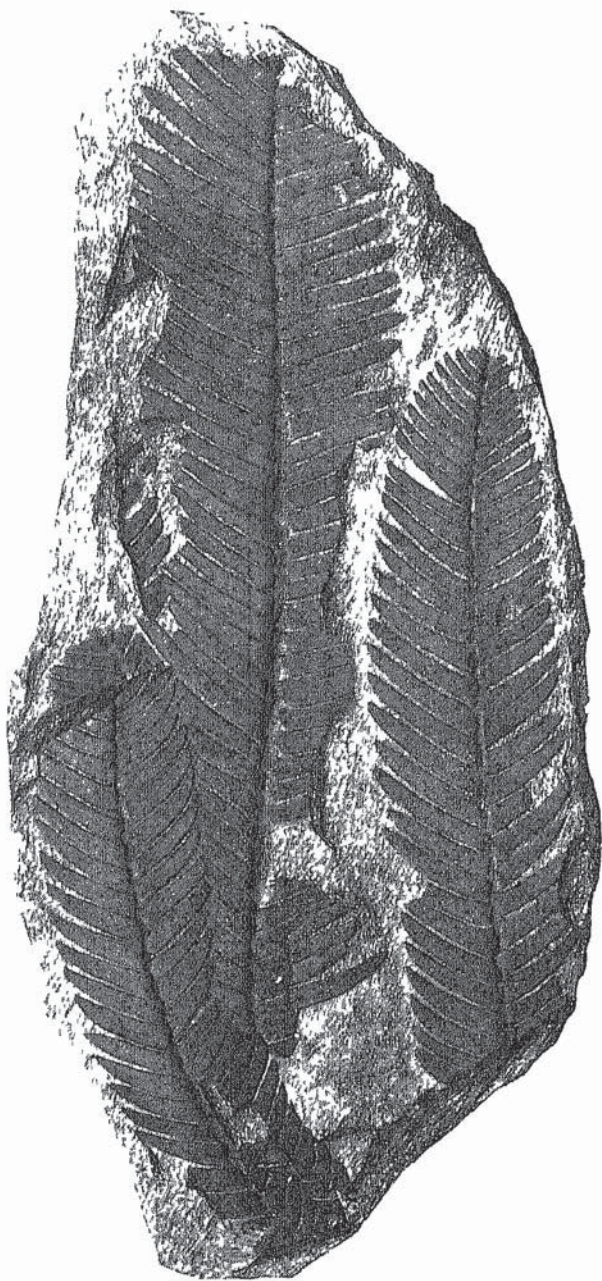
of all that we had brought on shore that was not now put to some use. Ends of rope, bits of wood, empty tins even, were preserved and put by for future needs

I have related how happy we felt when we moved out of the storm-torn tent into the solid hut. But our satisfaction was not unalloyed. We had, it is true, put much fine gravel and sand amongst the stones of the walls and had also tried to stop up the holes with sea-weed. But still there were innumerable small crannies and holes through which the wind and the snow found entrance

We moved into the hut on the 12th March. Two days later we found considerable quantities of snow between the stone wall and the walls of the tent. We put algæ into all the holes we could find and plastered the walls outside with snow. But on the 15th, a violent snow-storm swept away all this "plaster" and pressed masses of snow through the wall and against the tent, which actually bent beneath its weight. On the 16th, we swept out all the snow with much difficulty, and the following day, the outside walls were once more plastered with a mixture of snow and sea-water which froze to solid ice. Then came four days of storm (March 18th—March 21st.), after which we had to plaster the walls again. The illustration on page 441 shows the hut as it looked with snow-mantled walls, and with the passage under building.

Fresh storms soon destroy the result of our toilsome labour. On the 27th, the walls require fresh plaster, and on the 30th, we find that they are once more full of holes. On the 1st of April we begin to cover the wall to windward with a thick, sloping wall of snow. The work goes slowly and the wind wears the wall away almost as quickly as we can build it. But matters improve as the winter goes on, and natural snow-drifts, packed hard by the wind, are formed by the side of our walls, and by "midsummer" the hut lies completely hidden in the extensive, smooth hill of snow which has been gradually formed round it.

But before this improvement took place we had some severe combats with the cold. On the 24th of April, it was my turn



Otozamites.
From the Jurassic flora at Hope Bay. Natural size

to be cook, and when I lit the lamp in the morning, the thermometer showed -14° C ($6\ 8^{\circ}$ F) near the roof of the tent, and -20° C (-4° F.), on the floor; while outside in the kitchen it was still colder. Later on, with our snow-tight walls, the temperature kept pretty constant, remaining at a few degrees below freezing-point, a degree of comparative warmth to which we soon grew quite accustomed, so that we could sit working or chatting in our jerseys, with naked hands and uncovered heads. And, however strange it may appear, we even wished with all our hearts that the indoor temperature would continue to remain under freezing-point, for we knew from wretched experience, that every thaw produced violent showers of melting rime-frost from the tarpaulin ceiling, this downpour turning the hut into a perfect Gehenna of sticky, semi-fluid dirt.

CHAPTER X.

FOOD AND FIRING.

Our bread supply—The weekly fare at Hope Bay—Killing penguins—Construction of tent-camp and kitchen “blubber-stoves.”



IN the preceding chapter I have described our building-cares up to the time when the hut, buried in an immense mass of snow, offered us a shelter within which we could calmly await the onslaught of future storms. We shall now return to the beginning of the winter in order to show the reader how we procured food and firing.

Until the close of February, being in expectation of the speedy return of the *Antarctic*, we had lived chiefly on the provisions stored in the dépôt on the occasion of our landing. But at the beginning of March we made a complete alteration in our manner of living, changing hastily from enjoying perfectly civilized fare to supporting ourselves almost exclusively on the products of the land around us.

As I have already mentioned, the quantity of bread sent ashore was considerably less than the intended supply—this, owing to a piece of negligence on my part. Of the original amount brought with us (225 kilogrammes, circa 500 lbs.)

there remained at the beginning of the winter about 170 kg (375 lbs.), and this scanty supply we husbanded in the following manner:—Every three weeks a sack containing about 12 kg (26½ lbs.) was filled from the original bread barrel, and this quantity of bread was then divided into three equal parts, for which we drew lots. During the three weeks that ensued before the next distribution, each one could do as he pleased with his 4 kg. of bread (not quite half a pound of bread daily).

Of the tinned meat, bread, butter, cocoa, coffee, sugar, and petroleum, we reserved at the beginning of the winter as much as we thought would be needed during our intended sledge-journey to Snow Hill in the spring. The remainder of the depôt provisions was not more, when portioned out for the whole of the winter, than was just sufficient to form a little change in the dismal monotony of the food supplied us by Nature.

OUR WINTER FARE AT HOPE BAY.

MONDAY.—*Breakfast*: Fried penguin or seal-meat, coffee, *dinner*, soup made of penguin or seal-meat and dried vegetables, fried meat; *supper*, fried meat, tea.

TUESDAY.—*Breakfast*, as on Monday; *dinner*, canned herrings, soup (see Monday), fried meat; *supper*, as on Monday.

WEDNESDAY.—*Breakfast*, *dinner* and *tea*, as on Monday.

THURSDAY.—*Breakfast* and *dinner*, as on Monday; *supper*, porridge, fried meat, tea.

FRIDAY.—*Breakfast*, *dinner* and *tea*, as on Tuesday.

SATURDAY.—*Breakfast*, *dinner* and *tea*, as on Monday.

SUNDAY.—*Breakfast*: Fried meat, coffee with condensed milk (*during the first part of the winter we had cocoa, with sugar and condensed milk*); *dinner*, canned herrings, tinned meat and tinned soup, fried meat, "extra coffee"; *supper*, fried meat, tea.

The above list shows the weekly fare during the winter until the 1st of June, when, as the fuel began to run short, we determined to prepare only two meals daily. From that day

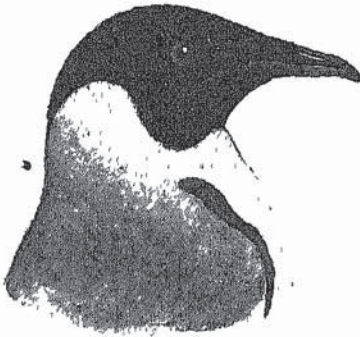
we arranged matters so that dinner and supper were made into one meal, consisting, on Mondays, for example, of penguin-soup, seal-meat and tea, and, on Thursdays, of porridge, fried meat and tea. It may be also noted that every fortnight



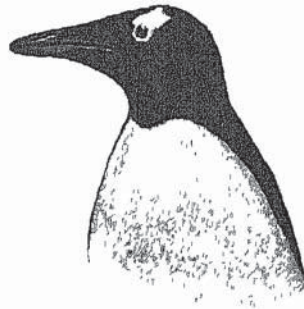
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4.

The Antarctic penguins

- 1 The emperor penguin (*Aptenodytes Forsteri*).
- 2, *Pygoscelis Adelia*.
- 3, " *antarctica*.
- 4, " *papua*.

All the figures are about $\frac{1}{2}$ the natural size.

Drawing by]

[E. LANGE.

we had canned herrings three times during the week, and four times during the other week.

The coffee we took during the winter was very innocent in nature, the daily ration being one tablespoonful of ground coffee to $1\frac{1}{2}$ litres ($2\frac{1}{2}$ pints) of water. The "extra coffee"

we had on Sundays and on one or two other festive occasions was made of the coffee-grounds saved during the week. The evening tea was, in its way, as weak as the morning coffee, but we made it taste a little better by adding a crystal or two of citric acid.

The porridge we had twice a week was a great luxury in the midst of our chronic hunger for carbohydrates. The barley, which mould had partly converted into a soft, lumpy mass, was boiled in a mixture of melted snow and sea-water,* but no milk porridge with the lump of butter sweetly dissolving in its centre has ever tasted so well at home in Sweden as did this wretched dish in our stone hut. To spare ourselves the trouble of boiling it twice weekly, we used to boil the week's supply at once, keeping half of it for the next porridge-day, when it was served fried in seal-oil, and often interlarded with browned squares of seal-fat. Prepared in the manner just mentioned, it became a much longed-for luxury.

Several times during the course of the winter we gladdened our hearts with a peculiar kind of pastry Grunden had learned to prepare, while he was on whaling and sealing expeditions in the Arctic Ocean, and which was called "danga." This remarkable dish consisted of bread-crumbs, softened in a mixture of salt-water and fresh-water, and then fried in seal-oil. It is very difficult to make a danga well, so that it shall be of a proper saltiness and be thoroughly done without being burned. Browned squares of seal-fat added to the taste of this dish, too.

Sundays were our great festivals; all three meals—dinner especially—offering a much longed-for change from the scanty monotony of the week's fare. But glorious beyond all description were the first Sundays in every month, when we got a glass of hollands at dinner. Duse had a little pocket-flask, with a metal cup, which went round the circle on these solemn occasions. When the "monthly-dram" was drunk, we con-

* At the beginning of March we had prepared our penguin soup with the addition of a little sea-water, in order to save the salt. The magnesium in this water occasioned us a severe and long attack of diarrhoea.



Drawing by

A giant petrel killing a young Adeline penguin.

[R. LANGE.]

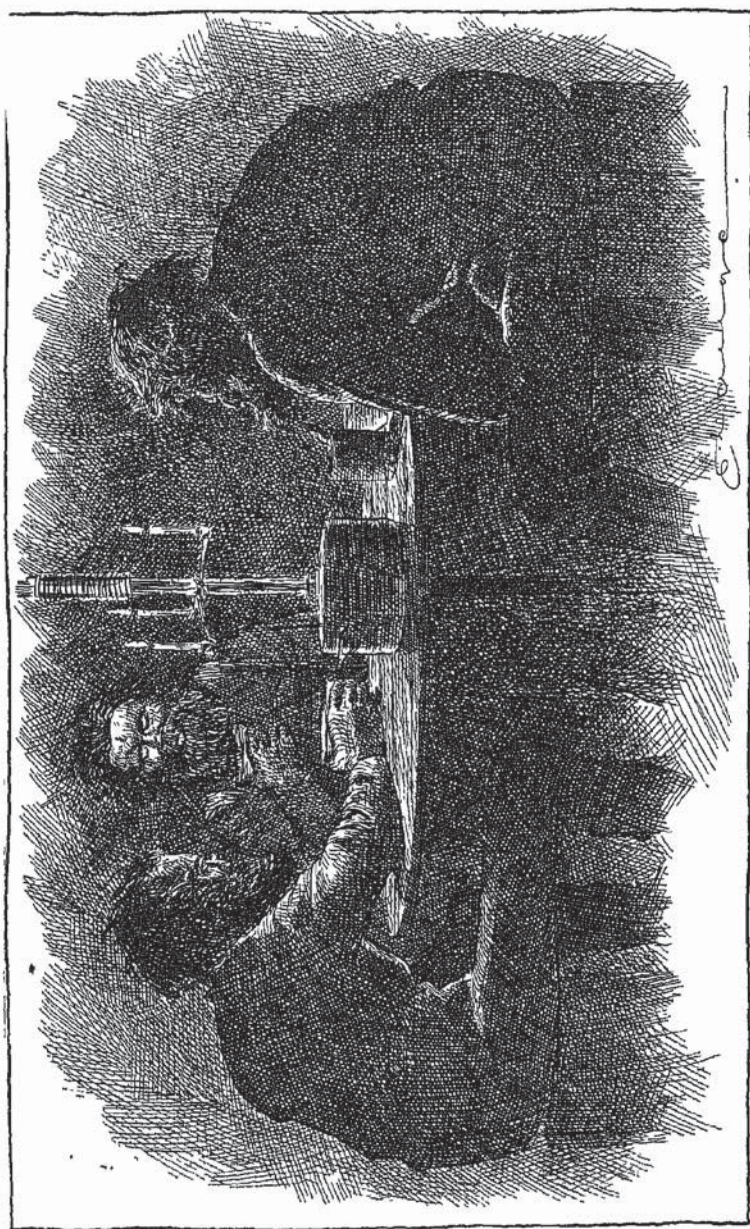
gratulated each other on having struggled through another month towards the goal so eagerly wished for—the spring. It once happened that one of us by mistake drank his dram too quickly. He fretted about it a whole month, and when the next drink at last came, he took it with deep gravity and let it slowly, very slowly, run down his throat.

On one or two occasions there were extra “dram days.” First amongst these occasions should be named our three birthdays, which all fell during the period we resided in the stone hut. And on the 17th of May—the Norwegians’ national day—Duse and I prepared a little surprise for Grunden. I was cook for the day, and when my companions returned from work, our little flag waved from a ski-staff, and I gave them for dinner a well-burned bread-crumble cake, made of some fragments of dried fruits, a few bits of sugar, and a couple of spoonfuls of condensed milk.

Midsummer Day is, in a certain sense, the Christmas Day of southern winters. By some peculiar chance we had brought on shore with us the remains of the three-branched Yule-candle we had had on board the *Antarctic*. Grunden bound three sticks fast to the tent-pole, and at the outer end of each of these pieces of wood was fastened a candle. When the banquet of fried meat and fruit soup was ready, the train-oil lamp was put out and the three Christmas lights were lit, their clear rays illumining every corner of the sooty tent. Duse made a short speech, concluding in a wish that the latter end of the winter would find us as untouched by the difficulties of existence as we were now, that we should continue to live as good comrades, and that the spring would bring a favourable solution of all the serious questions which continually occupied our thoughts.

* * * * *

I have now described our few and poor festivals, and have shown that while our supply of “cultured” provisions was certainly small, it was still sufficient to form a welcome variety in the indescribable monotony of an existence which had been rendered possible only by the fact, that at the beginning of the



Drawing by

Midwinter feast at Hope Bay, June 24th, 1903

[E LANGR.]

winter we had had an opportunity of laying the animal world around us under tribute—a tribute which gave us both firing and food.

On the 19th of February we made our great slaughter of the penguins. The Adeliæ young ones were now almost ready to go out into the sea, and it was amongst them we chose our first victims. It was raw and bloody work, but “necessity has no law.” We killed that day no less than 150 penguins.

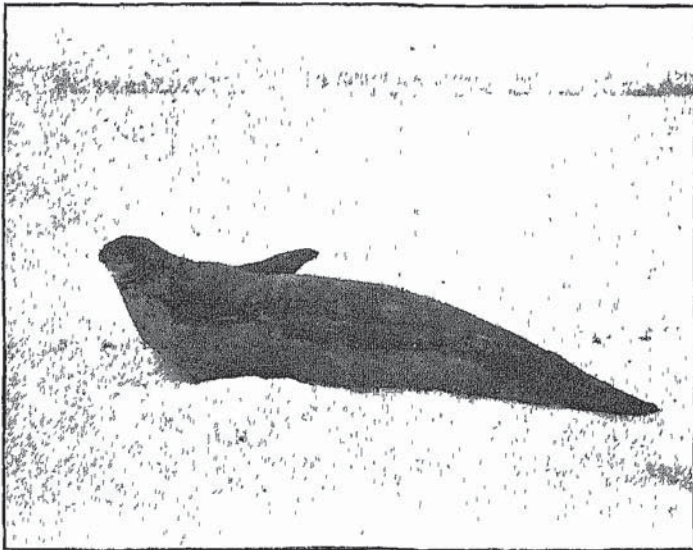
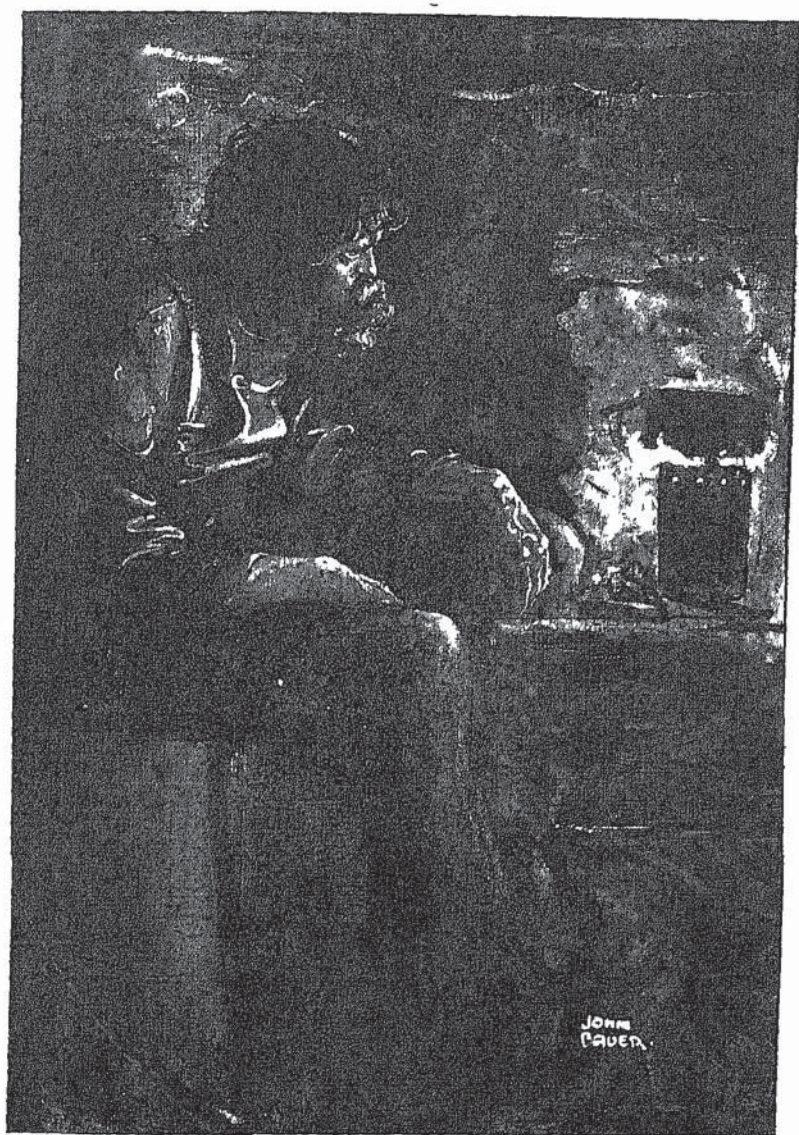


Photo by]

Weddell seal.

[E EKELOF.

But the great mass of the penguins had already gone^o out to sea, and those who remained grew shyer after every hunt. After the 7th of April there were only a few hundreds of birds left on shore, all of them very shy, and we needed quite a hundred of them ere we could feel sure that we had a sufficient supply for the winter. An idea came to my head that we could possibly use the loose snow, which hindered our progress so much and facilitated that of the penguins in an equal degree,



Drawing by]

Kitchen interior

[J. BAUER.

to make a trap for the birds. The plan succeeded beyond all expectation, and on the 8th of April we obtained no less than 101 penguins in this way. Including those killed now and then by the cook for the day ("I'm going out to kill the dinner," he used to say sometimes), no less than 700 penguins were dispatched by us at Hope Bay. It was faithless and ungrateful of us to thus destroy the peace of an hitherto untroubled world of birds, but no one can rightly blame us for killing the number of animals we considered absolutely necessary to supply our wants—a number which would, in reality, not have saved us from the touch of famine had we not later on increased our food supplies with a number of well-needed winter-seals.

As the winter came on we began to think of new ways of preparing our penguin-meat. Penguin-beef fried in the fat found beneath the skin and in the entrails of the birds, proved an excellent dish, and Duse made an admirable discovery—grilled penguin—the meat being rolled in the fine crumbs obtained from ship's-biscuits. And one day, shortly after we had moved into the stone-hut, Grunden gave us some seal-meat of an extremely clean and agreeable taste. It had been fried in seal-oil.*

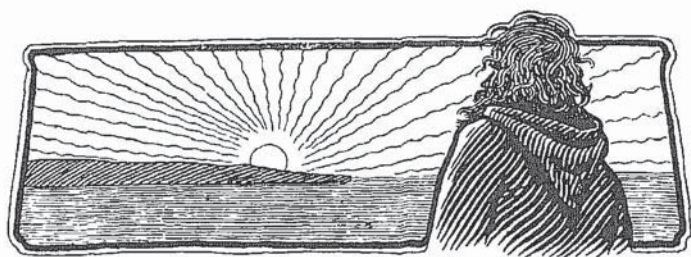
Even while we were in the tent we began the experiment of trying to make fires with blubber, but it was first after several weeks' residence in the hut that we succeeded in overcoming all difficulties in the arrangement and care of the train-oil lamps, of which we needed two kinds, a small one for the purposes of illumination, and a larger one for the kitchen. For the tent-lamp we had a flat herring-tin, which was filled with small squares of blubber in the midst of which was put a wick made of tent-rope. The two big preserve-tin "smoker-stoves" we had in the kitchen required such long and thick ropes, however, that it soon seemed as though we should soon have no wick-material left, but we at last made the fortunate discovery that they could burn without any wick at all

* It should be mentioned that our flying-pan consisted of a flat preserve tin, with a nail and a bit of wood for a handle.

At first we had much trouble in getting the lamps to burn, so that it sometimes took five or six hours to boil the penguin-soup, but by the end of the winter we had become real *virtuosos* in the art of turning the blubber into a burning mass of flames, smoke and soot, and all within the space of a minute or two.

We called our lamps by the abusive name of "*smokers*," and not without good reason, for sometimes when the snow-storms stopped up a chimney we had made of old tins, and which led into the open air, the smoke became so dense that we could scarcely distinguish each other's faces. The tent-lamp, which burned all night in order to warm the air a little, was placed on a fireproof place in the bottom of a large unused, cooking apparatus. Sometimes it burned calmly the whole night through, but as a rule it went out towards the morning. Once it went wrong altogether the whole mass of partly-burned blubber suddenly taking fire and developing a heavy smoke, which might have suffocated the whole party had not one of us awakened and put the thing out.

From the day we moved into the hut it was agreed that we should share the work equally. Every third day came each one's turn to sit on the vegetable-box and prepare the plain food. When the toilsome time in the kitchen was ended, the cook crept into his sack with a pleasant, lazy thought of the two free days to come. But inactivity was no lasting joy. On the second day one lay wishing to be at work again out in the kitchen, so our plan evidently provided us with a most necessary change amidst the monotony of winter life.



CHAPTER XI.

M I D W I N T E R .

Grunden sings—and lays the table—Our evenings—Shoe-making—The misery of
thaws—Good fellowship

“ A sailor am I, I’ll always be a sailor ,
Poor am I too, rich I’ll never be ,
But I have a sailor’s heart so honest,
And I love a girl who is true to me ”

It is Grunden who is singing.

He is cook for the day, and while the thin ice in the coffee pot is thawing, and the seal-blubber crackles in the pan, he sits and hums an air, or sings. But now he grows silent. It is evident that some important work is occupying the whole of his attention.

Grunden sings merrily once more while he sits turning the penguin-steaks in the pan. He has a varied collection of songs, has Grunden. Sometimes it is a music-hall ditty, often an American negro-song learned while he was on the Florida coasts, or, again, some amusing Norwegian verses about a girl who went to a ball in borrowed shoes and put hay in the toes because they were too large. But he always comes back to his songs of the sea and a sailor’s life; not a few of them epics of salt-sea life, and with their heavy stanzas interlarded with seamen’s terms.

Our good Grunden is a sailor, heart and soul. One can hear that, for the moment, he is far away from us, his companions in misfortune; far away from this life amidst dirt and darkness, this life in a dead, white land—he lies in a reeking storm off the Norwegian coast and is hauling off the land for dear life, while he sings:—

“ Oh, for I was born on the old Norwegian coast,
Where the vessels proud do sail;
And a seaman’s life, it took my fancy most,
Since I turned o’ fifteen year.”

His songs are as changeful as his own life has been. He can sing of hard days, when life depended on the capability of the pumps keeping some wretched tub afloat, or of jolly days ashore when money went to the last farthing, and, the drunken bout over, he found himself shanghai’d on a strange vessel. He can sing of white sweethearts, and yellow and black; he has learned songs of English, German and American chums, and has sung in Australian streets to earn a penny. But he is a Norwegian, and in spite of his roving nature he loves most to sing of the old country:—

“ From the Western Sea to Kolen’s rand,
From Arctic Ocean to Kristiansand,
Oh! there my home is;
There can I join in
My country’s song ”

But breakfast is ready. Grunden comes in and dries his black, oily hands upon the tent-cloth, and begins to lay the table—(wooden box.) The white enamel of the soup plates (coffee cups) can be seen here and there under the sticky, dirty layer of soot and fat. When we drink the warm coffee, a clean, white mark is left at the edge of the plate, where the under lip has been. But this is merely the week-day state of things, for the “china” is always scoured clean with snow, ready for Sunday’s dinner. The plates for the meat consist of empty preserve-tins, whose low form and strong, tinned iron make them very suitable for the purpose.

When we have finished breakfast, Duse and I express our acknowledgments by saying "Thank you!" Grunden answers "Don't mention it!"* These civilities are always exchanged after each meal between the cook for the day and the two 'gentlemen at ease', and it was really a relief, in this wild-man's life of ours, to hear in this little interchange of courtesies, a distant echo of the language of polite intercourse amid more civilized surroundings.

When the last meal for the day was ended, the cook had much hard work still left. He had to melt the snow for the morrow's coffee, mince the meat and cut the blubber—in a word, put everything in order for the next day's breakfast, so that his successor should not have to sit too long in the early chill ere the meal was ready. The cook's last piece of work before resigning his important office was to cut and plait together a couple of wicks for the tent lamps, and give them and the box of matches in use at the time, to the man who was to have the same labour the next day.

The evening is the pleasantest part of the whole day. Before Grunden creeps into his bag he puts the lamp into its place for the night. The tent is now quite dark except for a large, round spot on the ceiling where the night-lamp casts a flickering gleam. There is something of the cosy feeling of the Swedish evening fire in this rough interior of ours; memory brings back the childhood's hour for stories told in the half shadow of the glowing embers, while the snow whirled around the house, and the winter darkness lay heavy o'er the land.

Now our best time for chatting has come. We take it in turns to entertain the company. One evening Duse makes some military question clear for us—the mechanism of a modern cannon, for example, or the construction of the Swedish automatic rifle and its superiority over other types, Grunden and I adding our modest experiences from our conscript

* In Sweden it is the custom that after each meal, the husband, children, or guests return thanks to the wife, mother or hostess, who replies in some such way as Grunden did.—*Trans.*



JOHN
BAUER

[J. BAUER.

Meal-time in the stone hut at Hope Bay

Drawn by]

days Warlike subjects interest us greatly; sometimes we are at Colenso, sometimes at Sedan. Grunden's ideal sailor is Tordenskjold,* and we recount for him the glorious story of Psilander† Anon, our hereditary enemy is upon us; Norwegians and Swedes stand shoulder to shoulder in northern Sweden, and the naval flags of the sister nations wave side by side amidst the Swedish archipelago. Thoughts fly fast and free in the wilderness!

We have no books. When we wish to delight the eye with a few printed words, we take out our tins of "Le lait condensé, préparé par Henri Nestlé," or of "Boiled Beef," and read the labels. We endeavour to make up for this want of light reading, by recalling what we have learned under happier circumstances and relating stories—Duse and I, for example, recounting for Grunden all that we remember of "Monte Cristo" and the "Three Musketeers"

Very often we lay of an evening and made glorious plans of existence for the time when we should be at length released from this banishment. Once Grunden and I, in jest, made Duse promise that he would marry an heiress as soon as possible after his arrival home; after which—and this was the important part—he was to purchase a pleasure yacht of which Grunden was to be the captain, my share in the plan being, that I was to accompany the party on a trip to the Mediterranean

Perhaps this account of our intellectual amusements has given the reader the impression that, in this respect, at least, our existence was pretty tolerable. But, unfortunately, such was not the case. Chat, jokes, and tales were rare oases in a desert of intellectual nothingness, and we ourselves marked with astonishment how our thoughts produced

* A Norwegian naval hero of the first decade of the 18th century.

† Gustaf von Psilander 1669—1738 This Swedish officer, when in command of the *Oland*, of 50 guns, sustained a 4½ hours' attack from eight English ships of the line and one frigate, under the command of W. Whetstone, off Orfordness, on the 28th July, 1704 — *Trans*



Drawing by

The cook comes out of the hut after a snowstorm

[J. BAURR]

nothing but a strange and wretched assortment of the most common-place reminiscences.

Strangely enough, it was but seldom we experienced any oppressive feeling that time passed at a snail's pace. On the contrary, we often wondered that the days slipped by while we were busy with one thing or another—work forced upon us by this hard struggle for existence. Thus, for example, we had unending labour endeavouring to get our winter-boots into

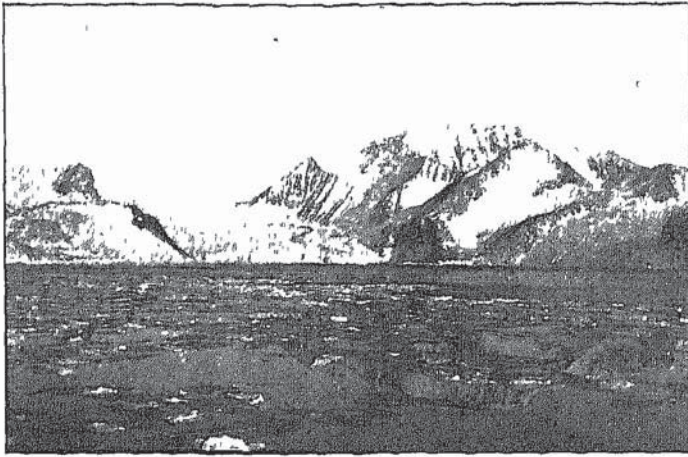


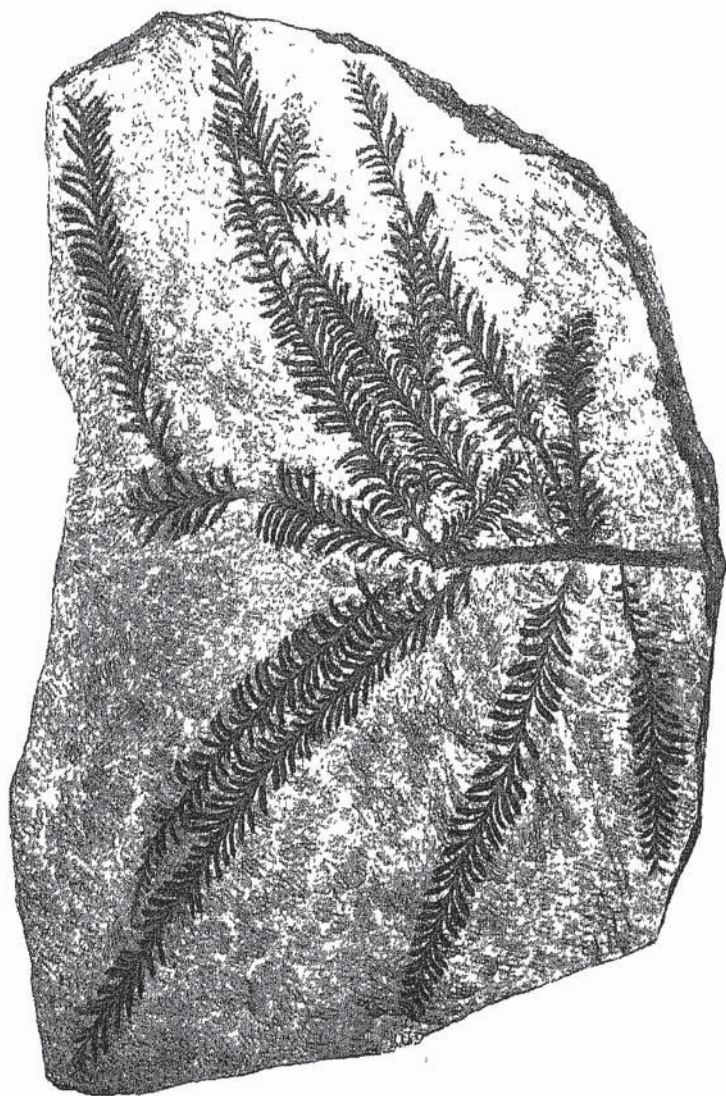
Photo by]

[S. A. DUSE

Inner part of Hope Bay

Showing the valley glacier, with perpendicular termination, and lateral moraine, and, to the left, the rounded hill formerly covered by the valley glacier.

proper condition. We had only one sail-needle, and it was a great piece of good fortune that it never broke as we tugged with might and main to draw it, and the thick thongs, through the seal-skin we used. Grunden and I made shoes after the same simple plan. Our now bottomless Lapp-shoes were provided with inner and outer soles of the skin of the full-grown penguin, and outside the whole we sewed an outer-shoe of seal-skin with a seal-skin sole. It is easy to describe, the making of such a shoe, but it took weeks to get one ready.



Araucarioxylon.
From the Jurassic flora at Hope Bay Natural size

Twenty or thirty stitches per day, with the tools we had, was a very good day's work

Duse made himself a pair of artistic outer shoes with wooden soles, the material for which he obtained from the bottom of one of our bread-barrels. In order to fasten the seal-skin shoe to this sole, he had to carve a deep groove with a very blunt knife, round the edge of the hard bit of oak. The seal-skin was stuffed into the groove and held fast there with oak-pegs driven in vertically. If one considers the circumstances under which these shoes were made, they were a most remarkable piece of work. They had one great advantage over ours, that they did not become so wet during the thaws, Duse being able to go about dry-footed on his wooden soles, whilst our seal-skin soles flapped like wringing-wet rags about our feet.

When the cold storms raged, our hut was a secure home which we praised in grateful words. But when milder weather set in, we cursed it as a most unendurable hole, for we had concealed not only the walls, but also the roof, beneath a heap of snow, and ere many days passed, the thaw outside and the warmth inside caused the "roof-snow" to melt, and we had quite a shower of rain inside the hut.

North winds, with a temperature near, or just over, the freezing-point, and biting cold south-west storms, now succeeded each other in rapid succession. Later on in the winter, thaws became rarer, but my diary mentions *rain* in the month of August. One night we were all drenched to the skin by the water that flooded the floor. Several nights passed ere the warmth of our bodies could at all dry the sleeping-bags, and just about that time it required no little courage to creep into the sodden, cold sacks at night. Duse, who had the worst bed-place, suffered exceedingly from the wet, till at last he thought of putting a couple of barrel-bottoms under his sleeping-bag, after which he could lie pretty dry, and he unhesitatingly preferred the "woody taste" the bed now had, to running the risk of a new drenching.

When mild weather came occasionally, with the dripping from the tent ceiling, and with pools of dirty water, life in the hut grew unendurable. The two who were free for the day used to leave the unhappy cook to his fate and walk abroad in the open air. In these moments of lonely wanderings, the pressure of adverse fortune disappeared and, forgetful of the bitter harshness of the present, our thoughts flew unfettered far, far away, to happier days and milder climes.

There never existed amongst us any of that unforgiving, ever increasing illwill of which so much is related in accounts of other winterings under far more fortunate conditions. On the contrary; as time passed on and we learned to know every wrinkle of each other's humours and turns of mind, we learned to hold still faster together in this brotherhood of hardships and evil days, a brotherhood which will certainly be remembered by us all in the coming years with unfeigned joy. I, for my part, have cause to feel the greatest thankfulness towards my companions in misery, who ever met me with unfailing good-will, although they had reason to blame one who had led them, so poorly equipped, into undertaking an enterprise which had resulted in this wintering.

It is true that we quarrelled on a few occasions during the course of the winter, sometimes about an unimportant detail of our daily life, sometimes about things a thousand miles away, and then unpremeditated, harsh words were heard from both parties. But these "shines," were merely short, refreshing thunderstorms, breaking suddenly amidst the sultry calm of our life.

The following day brought reconciliation, when the hands of the wranglers met, and eyes grew moist and our voices warm, while we all agreed that it was necessary to work together harmoniously in order that our wretched existence might be as endurable as possible.

And from these days of gloomy gravity we have won, too, a life's treasure—the knowledge of the strong power that warm and honest friendship has, to proudly subdue the dark might of isolation and of extreme distress.

CHAPTER XII

WINTER SEALS AND SIGNS OF SPRING.

We catch a few seals—A fishing story—Thoughts of departure—Our preparations—
State of our clothes—Ready to start.



THERE came a day at the close of May when we found that we stood face to face with a threatening scarcity of fuel. Hitherto, our three "kitchen-smokers" had flamed the whole day long, and we had had our three full meals daily. But

we were now obliged to limit the number of our chief meals to two, and to content ourselves with a mid-day repast of warmed-up meat which had been fried at breakfast time

We lived in this way until far into the month of June, when we found that even the little collation had become a dangerous luxury which must be abolished. We took it for the last time on the 23rd June, but on the very same day there occurred an incident of a very pleasant description, viz., that Duse and Grunden shot a seal out on the point. We afterwards shot a few seals on the ice in the bay, and killed in all 21 of them during our residence at Hope Bay.

On the 6th July, Grunden and I shot a seal whose stomach



Drawing by]

There really was a fish struggling at the end of the seal-skin rope.

[J. BAUER.

was quite full of fish. This discovery gave fresh impetus to certain vague plans we had had of trying to catch a few fish, and as soon as we came back from the seal-hunt, I asked Duse to try his hand at making some suitable fishing gear.

A hook was the first thing we wanted. After a little meditation on the advisability of using nails, fragments of seal-skulls, etc., as his raw material, Duse made his choice, and began the manufacture of the hook out of the bone-handle of his knife, and he soon had one ready with a sharp point, a barb, and at the top, a knob where the line was to be fastened. The gut-line was made of the remains of a fishing-line, the greater part of which had been turned into thread. The line itself was cut by Duse out of a seal-skin, it was from $\frac{2}{3}$ to $\frac{3}{4}$ of an inch wide and had a small coating of fat on the one side and of hair on the other. It was an uncouth contrivance when ready; 38 yards of it rolled up forming a ball as big as a man's head, and both hook and line were worthy of a savage from the stone age. A piece of broken tent-peg of iron was used as a sinker, and we had seal blubber for bait.

We made our first attempt at fishing on the 25th July. It was far from agreeable pulling in the line with our naked hands, but doing so with mittens on was still worse, for they were at once filled with sea-water. We took turns with the line. Grunden, who had had the most experience in such matters, thought several times that he had a bite, but the hook always came up innocent of fish. As Duse and I were walking about on the ice to keep ourselves warm, however, Grunden suddenly began to haul in the line at a more rapid rate than before, and this time there really was a fish struggling at the end of the seal-skin rope. Off came our caps and we cheered the floundering rogue heartily.

On this occasion, we caught, in all, two fish. They were nearly one foot long (*Notothenides*), with big, broad heads and tremendous mouths. Fried in seal-oil, with the addition

of a little sea-water, they formed indescribable dainties amidst the sameness of a perpetual meat-diet.

We lost our bone hook one day after a tremendous bite, the fish going off with both hook and sinker. Duse made a new hook out of a brass shoe-buckle and we caught a few fish with the new gear, but, towards the latter part of August, we fished several times without getting a single bite. Twenty fish was the sum-total of all our takes, so that our fishing had given us more employment and recreation than food.

* * * * *

Early in the latter part of the winter we began to have notice of the approach of spring, no unmixed pleasure under the circumstances. Our position, too, was most peculiar.

Relief was to come from the north, but in order that this help should avail us it was necessary for us to go south to the wintering station, as in the event of the *Antarctic* having been lost with all her crew—an eventuality which, in spite of all our hopes, we could not put out of consideration—there would be none who were aware that we were living at Hope Bay, and did we not leave this place, we might see the relief-vessel passing through the sound without our being able to attract its attention by means of signal fires or other means. Our lives seemed to depend upon our reaching Snow Hill, and, in order to arrive at that station, we needed ice to march on. The sea-ice, which had been our inexorable foe the preceding summer, ruining all our plans and imprisoning us here, had now become an eagerly longed-for friend. But it appeared to have disappeared entirely; the bay, after south-west storms, sometimes lying calm, blue and ice-free right up to the shore, and we were seized by woeful apprehensions that possibly there was not a bit of ice between us and inhabited tracts. We



Fishing-hook made
out of a shoe-
buckle.
Natural size

made up the wildest plans. We spoke of travelling across the inland- and the sea-ice as far as we could, and then, with the sledge for boat-ribs and the tarpaulin as a covering, we should make a flat-bottomed craft in which one of us was to attempt to reach Snow Hill.

But on the 7th August, Grunden and I took a walk up on to the land-ice in order to obtain a glimpse of the ice-conditions towards the Erebus and Terror Gulf. What we saw was highly encouraging. Past Rosamel Island and the group now called the Argentine Islands, we could perceive nothing but a white field of pack-ice, amidst which we thought we saw the same icebergs which had lain there in February.

Our next reconnoitring trip was for the purpose of examining the ice-conditions in the nearest part of the Crown Prince Gustaf Channel (as it is now called), which we should have to pass on the way to Vega Island. As my boots held together best, it fell to my lot to be the bearer of good tidings to my companions from that quarter.

I started on skis at 9 a.m., on the 2nd of September. It felt pleasant to be away for a day from the darkness and dirt of the stone-hut, and it seemed to me as if the gloomy loneliness of the winter were dispelled by this first long journey over the land-ice.

My expectations were excited to the highest pitch as I climbed the ice-ridge from whence we had for the first time seen the Bay of the Thousand Icebergs on the occasion of our sledge-journey. Fortune smiled upon us, for the ice lay unbroken over all the visible part of the channel right up to Vega Island, the last land we had reached when on that expedition.

I was home again by 4 in the afternoon with the joyous news that the ice was safe—to Vega Island at least. The unusual bodily exercise brought on a slight indisposition, but my companions, with the same helpfulness which had allowed of my making the morning's trip, undertook my kitchen work until I was well again.

To add to our small supply of sledge-journey provisions we



Drawing by]

Duse shoots a seal

[J. BAUER.

at once began the manufacture of what we called "Antarctic preserved food" For quite a number of days in succession the cook was busily engaged, between the preparation of the meals, in frying meat over both the "food-smokers" In this way we obtained a supply of about 300 small penguin- and seal-steaks, or enough for 20 meals for the three of us, and these we packed in three large tin boxes. We also counted upon finding a little depôt we had left at Vega Island.

Thanks to our economy during the winter we had a pretty large supply of two articles of provisions—coffee and sugar. The bits of sugar, 554 in number, were carefully packed in a suitable tin. We calculated that we should be able to have coffee twice or three times daily, using three good table-spoonsful on each occasion; that is, we should have then more coffee per day than we had now during a whole week. I may add here that, during the sledge-journey, we never experienced the slightest injurious effects from this sudden increase in the use of the stimulus in question, but that the good, warm coffee contributed greatly to our comfort, and to the pleasantness of our meal-times—a psychical effect of no slight importance in the wretched condition we were in. The same thing can be said of the glass of spirits which we took now and then to the last meal when the day's toil was done.

Duse's constructive abilities were again called into requisition in order to make a wooden candlestick, which could be hung by a string, and was intended for a little packet of candles we had saved for the purpose of lighting up the tent during the evenings on the coming sledge-journey. Another piece of carpentry which took much time was the carving out of wooden "barnacles" to replace the snow-spectacles of glass which Duse and I had lost. Duse made a very nice, loosely-sitting pair out of a stave of an oaken barrel, the parts being joined by a string, but I made mine in one piece and the strangeness of their appearance was further increased by the bits of cloth which had to be fastened to the sides, as the wooden part did not fully exclude the light (see the illus-

trations on pages 309 and 487). Both types served their purpose, and were used during the whole of the journey to Snow Hill. The slit for looking through was, in both cases, a horizontal one, with a perpendicular cut downwards to widen the range of vision in that direction.

As I have mentioned in a preceding chapter, we owned but one sail needle between us, and now during the spring it was in constant use the whole of the day, passing from one man to the other in due order, for the purpose of mending shoes, or of making a pair of mittens out of an old hat. Now and then during the winter we had been obliged to darn the ever-enlarging holes in our dirty stockings. The yarn we obtained from the brown tent stay-line, but for the sledge-journey we thought that we ought to mend the holes with some softer and better material, so we cut off the legs of a couple of stockings and unravelled them in order to procure darning worsted.

Speaking of foot-attire makes me think of the question of cleanliness. I once tried to wash a pair of stockings in the Esquimaux way—by using urine as a means of dissolving the fat—and succeeded to my full satisfaction.

At the very beginning of our stay here we at once gave up all thoughts of washing either hands or face, but once or twice during the winter we washed our feet in warm water in the only basins we had—our soup plates.

All our woollen under-linen had naturally become very dirty and ragged. I shall relate my own experiences. I had taken two shirts on shore with me from the *Antarctic*. When the month of January was ended I imagined that it would be a month at the most ere the vessel returned, and so—I changed my shirt. I wore the new shirt for $7\frac{1}{2}$ months, until just before our departure from Hope Bay, when I put on the January shirt once more, for now *that* was the clean one.

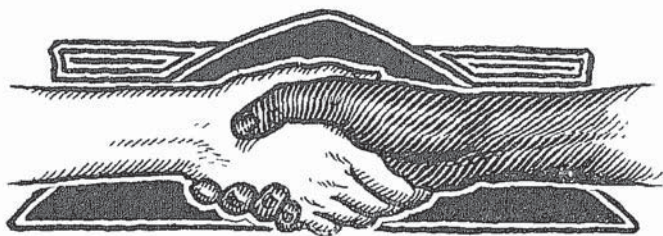
When we had arranged our private outfits to our satisfaction, there still remained much to do ere we had the general equipment ready. The large tent tarpaulin was loosened and the sledge taken down, and on examining the latter we

made a welcome discovery. On board the ship it had been bound about with a good strong string, which we now replaced by a simpler binding, the string being unravelled and used as thread to mend our small sledge-journey tent, which had been sadly damaged by the autumn storms, and now was repaired a little by Grunden by means of pieces taken from the large tent.

There was also some scientific work to be done ere we took our departure. Duse completed his sketch-map of Hope Bay, and I made some supplementary investigations concerning the former and more extensive ice-covering here.

But even when we had completed our preparations by about the 20th of September, we did not commence our journey, for a snowstorm kept us imprisoned day after day. It was a gloomy time, the excitement and pleasure of preparation being over. Our supply of food began to run short, since we had packed up nearly all our food for the purposes of the journey, and the rude stone walls scowled at us through the holes in the big tent. We were now determined to start on the first day that the weather was at all favourable, for we longed, with heart and soul, to leave this house of darkness, which Grunden, with grim pleasantry, had once called "the Crystal Palace."





CHAPTER XIII.

“CAPE WELL MET!”

Final preparations for leaving Hope Bay—Caught in a snow storm—Favourable ice-conditions in the Eiebus and Terioi Gulf—Frost-bite!—We reach Vega Island—Discovery of the depôt—Cape Well Met

On the 29th of September, 1903, dawned the day of departure from Hope Bay.

The door opening was snowed up as usual after a storm; but on this occasion the cook did not take the trouble to dig himself out in the ordinary manner. As soon as he found that the weather was calm and “reasonable,” he threw off the temporary roof of the passage and climbed out that way. The sky was overclouded and the air misty, but there was no reason for hesitating longer. It was not half-past five when he awakened his companions.

There still remained a little miscellaneous work to do, ere we could leave the place. We broke away the three heavy boxes of fossils from their places in the door, and placed them in a little depôt, covered by the roof tarpaulin, which we made on the slope of the little hill north of the hut.

During the last days of storm Duse had cut the following inscription on a piece of wood:—

J. G. ANDERSSON, S. DUSE, T. GRUNDEN,
from S.S. *Antarctic*,
wintered here 11/3—28/9, 1903.

This board was lashed fast to the pole of the large tent, which was afterwards made fast in the wall of the hut. Under the board was placed a bottle containing a short communication in English, which Duse and I had written during the last few days. It gave a short account of our fate here, and some directions to the relief-vessel, which might come to this place in consequence of the contents of the despatches left on Astrolabe Island. I shall give but a few lines of the document in question—those containing a conjecture which afterwards proved to be correct:—

“We have all reason to suppose that captain Larsen, after our landing has tried to penetrate the pack outside Joinville Island. Thus, fragments of the *Antarctic*, and its crew are to be looked for on the N., E. and S. coasts of Joinville Island and adjacent small islands.”

It was four in the afternoon when all this was ready and the sledge packed. At half-past six we camped near a moraine-ridge on the slope of the land-ice, whither we had carried some provisions a few days earlier. While we were making ourselves at home for the night a suspicious wind began to sweep around the tent, and by morning the “wild hunt” was in full cry. Our sleeping-bags were frozen stiff, the tent shook beneath the force of the gusts, and I, who had my place to windward, lay beneath a heavy mass of snow, which had packed itself against the tent wall. Duse, who had under taken the anything but agreeable task of being “mamma” during the sledge journey, crept out of his sack during the course of the morning and boiled some porridge, but he was obliged to have gloves on while handling the pots and the “Primus” stove.

The storm grew more and more violent, while the cold increased in intensity, and during the following night the tent-wall fell on my head and the snow packed itself over me, so that I lay fast as though in a vice. I was not released from my position until the storm had subsided, some thirty hours later. During the following day there was no thought of getting up to prepare any meals, but Duse gave us a ship’s



Drawing by

Onwards to Snow Hill

[E. LANGE.]

biscuit to nibble at. Five of these were all the food we had that day.

Fortunately for us the tempest had blown itself out the next day, and Grunden crept out of the bag and made a glorious meal ready for us. I was afterwards able to scramble out and move my stiffened limbs.

The sky was now clear and blue, and the sun shone brilliantly over the channel and the white slopes of the ice. Down by our old headland we could distinguish the hut as a dark spot, with the signal-post rising above the wall.

During the next few days we toiled slowly forwards in changeable and, most often, bad weather. We held the same course as when we started on the first sledge-journey, and by the 6th of October we had reached the place formerly described as the Bay of the Thousand Icebergs. But now the snow lay firm, even and smooth between the innumerable hummocks, so that we made pretty rapid progress.

We had chosen the time for our journey to the wintering-station, so that we could calculate on being able, if necessary, to support ourselves there on seals and penguins; for we considered it extremely improbable that, after two years' residence at Snow Hill, our comrades could have anything left for three unexpected guests. So we had most lively hopes of being able to find some seals even in this sea, though it was covered with fast ice, and now began to look eagerly about us for the first one.

Quite near our camping-ground on the sea-ice we soon observed a couple of Weddell seals, that had crept up near the lane of water near the shore which the tide always keeps open. We saw hundreds of them during the following days, sometimes alone, or a few together, and sometimes in groups of as many as twenty together. They all belonged to the same species, the Weddell seal, which evidently is a pronounced shore and fast-ice form, in the same degree that the other ordinary Antarctic species, the crab-eating seal, belongs to the drift-ice, and those parts of the sea that lie far from the coast. It is plain that the Weddell seals remain the whole

winter in places ten miles or so from the outer edge of the fast-ice, for we saw in the level ice-field the holes through which the seals go up and down, and which they must incessantly keep open after the ice has attained to a certain, slight degree of thickness, through which they are unable to break.

On October 7th, the second day of our journey across the sea-ice, we went a little out of our way to the place where we

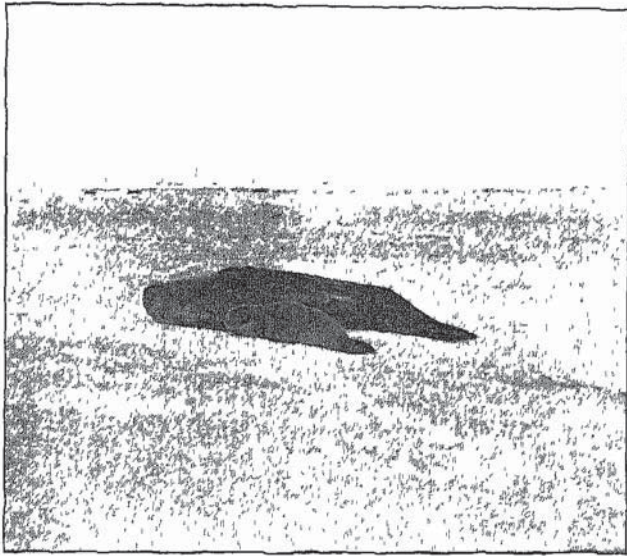


Photo by]

[G. BODMAN

Female Weddell seal, with young one
Motive from Cockburn Island.

had lost a number of valuable effects during the snowstorm of the 8th—10th January. The snow-drifts had diminished, it is true, but they were still large enough to conceal our things, so that we were soon obliged to give up the search. From this spot we obtained a most valuable view of the ice-conditions in the Erebus Gulf. From a point some few miles farther east of the mainland on which we were, the ice-edge stretched right across the entrance of Crown Prince Gustaf

Channel (as it is now called) to some distance inside of Cape Gordon on Vega Island. Beyond this headland could be seen a belt of ice, but to the east of the fast-ice edge just mentioned the sea lay perfectly open as far as we could see in the misty air. These were observations which spoke to us in unequivocal language. Round Cape Gordon there was no fast-ice, and if we could manage to reach Snow Hill by crossing Vega Island, or by going round its western shore, we could be pretty sure that the *Antarctic*, or a relief vessel, would be able to come to us at the station during the course of the summer. *The ice-conditions in the Gulf were plainly more favourable now, at the beginning of October, than they had been in the middle of January during the preceding summer*, and in the Antarctic Sound, which had been full of ice the whole of the summer, there was now perfectly open water all the way down to Rosamel Island, a state of things we had observed several times during the course of the last few weeks.

The whole of the forenoon we had had a fresh north-north-west wind and slush. At noon, whilst we were searching for our things, there came a violent downpour of sleet which drenched us through, and in order to keep warm we hurried back to the sledge, and went across the sound at full speed towards Vega Island. After three hours the weather cleared up and became pretty fine.

Then happened one of those sudden changes of temperature which make this climate so treacherous and dangerous. The north wind died away; for a few minutes the air stood quite still, and then came some breaths of wind from the south, which grew stronger and stronger, and in a short while the temperature had fallen far below freezing-point. Our wet clothes became as stiff as steel armour; they creaked at every step we took and our boots were stone hard. We were already speaking of stopping and camping when we saw a group of seals before us on the ice. How nice some good seal-soup would taste! There were three full-grown ones and a young one—the latter, the first of its kind we found, was

chosen unhesitatingly for our prize. He was $5\frac{1}{2}$ feet long, a sweet, chubby creature, brown on top and with light spots on the belly.

While we were killing the animal the wind had grown in strength and was biting cold. When we got the tent up and had crept inside, Grunden at once sat down on his sleeping-bag, and with anxious looks began to unfasten the bindings of his left shoe. He did so quite silently, but when he had the boot off he said, with a discordant touch of tear in his voice—a touch quite foreign to the intrepid, courageous man "There's an end of that foot!" When I turned towards him I saw a dreadful sight. His socks—he had on two—were frozen hard inside the boot he had just drawn off, and when I grasped his foot I touched two toes—the two biggest—which were quite hard and shrivelled. I pinched them and pricked them, but he felt nothing, so I took in a basin of snow and began to rub them. I rubbed and rubbed without any change being visible, after a quarter of an hour the toes were quite as hard, shrivelled and numb as ever. But I thought that the rubbing could not make the matter worse at all events, and told Grunden not to become impatient. And, in fact, after a time the blood began to circulate again, and the frozen parts grew soft and assumed their usual size, while sensation returned to the two toes. We all three felt a simultaneous thrill of joy run through us when we saw the happy end of what had threatened to be a day of misfortune.

While we were still in the winter hut and there thought of our future prospects, we felt pretty certain of being able to find the little depôt of provisions we had laid up on Vega Island. We had chosen the place with the greatest care—a little isolated hill lying on the slope of the mountain—and the sack of bread had been placed upside down, and supported by three stays, on the very top of the hill, where it stood like a kind of signal-post.

But when we reached Vega Island on the forenoon of the 9th of October, we had another proof of the difference made

in the appearance of a landscape by alterations in the snow-conditions. Of all the little hills and great heaps of fallen rocks which we had seen here on our former visit, we now saw nothing but one single block of stone, which was clearly not the right one. We made up our minds, however, not to give up the search so easily, and while Duse and Grunden walked along the shore to look for a seal, I went farther up the ice-slope in order to search for the dépôt.

I walked on for a couple of minutes and gazed around at the smooth, white mantle where no mark, no sign could be seen. But suddenly I caught sight of some dark patches, and in their midst stood our dear old sack of bread. Everything was in good order; the tinned provisions, the box of butter, and the rest; frozen hard, it is true, but whole and in as good condition as when we left them. I turned my mittens inside out, and put a few rusks into them as titbits for Duse and Grunden. Then I glided down along my old ski-tracks back to the sledge on the sea-ice.

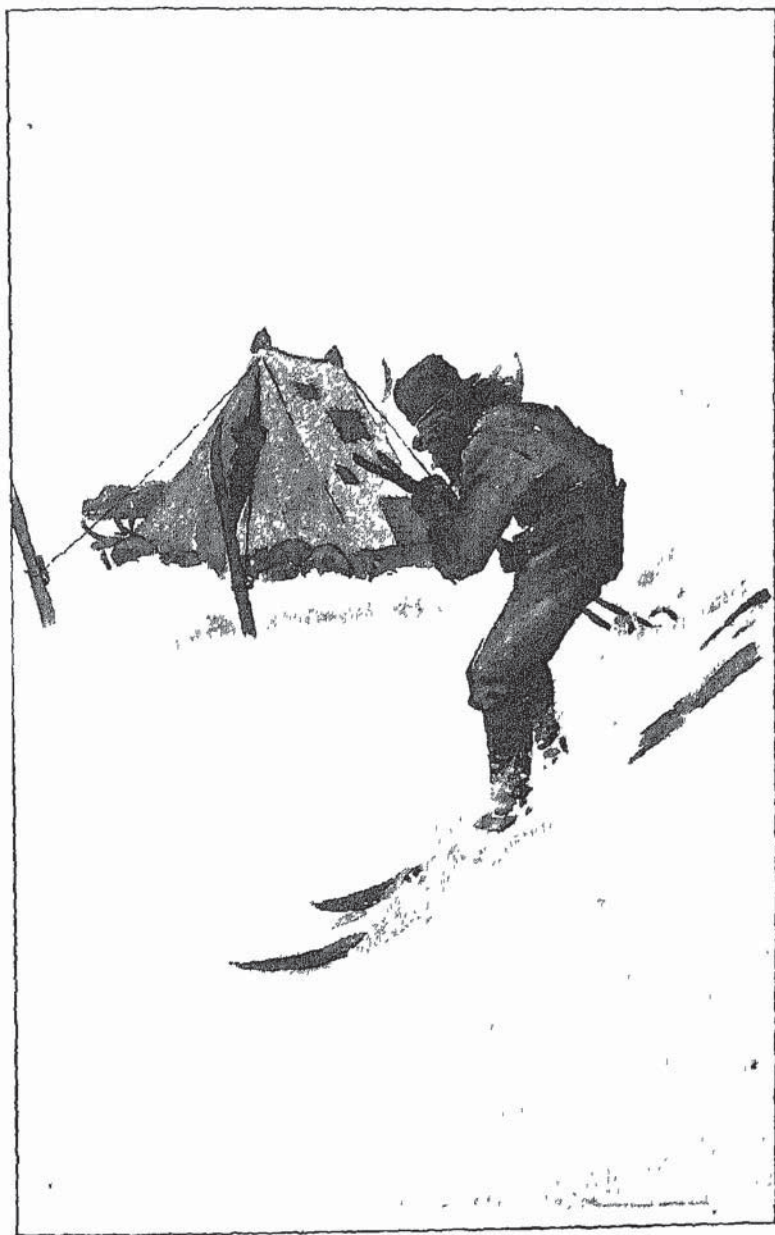
When Duse and Grunden came back with the damtiest parts of a seal they had shot, I was sitting silently on the sledge. I could not, for the life of me, shout or wave to them. There was too much gravity in the joy I felt; it was a fortune we had regained, upon which our safety, perhaps, depended.

As was natural, my companions were misled by my silence, and calm and self-controlled as they were, they found it useless to put a question to which they were certain of obtaining a negative reply.

And then I could be silent no longer, but held out my mittens, which I carried attached to a ribbon around my neck. "Look here," I said, "I have brought you a taste from the bread-sack!"

They looked at me, and then their eyes began to light up with gladness, and the gravity in their wild, black visages resolved itself into a happy smile. And there was joy and much eating of bread on this eventful day.

We pitched our tent on the slope of the inland-ice. The following day was misty and snowy, so that nothing could be



Drawing by]

I went down the hill to the tent at a whizzing pace

[B. LANGE.

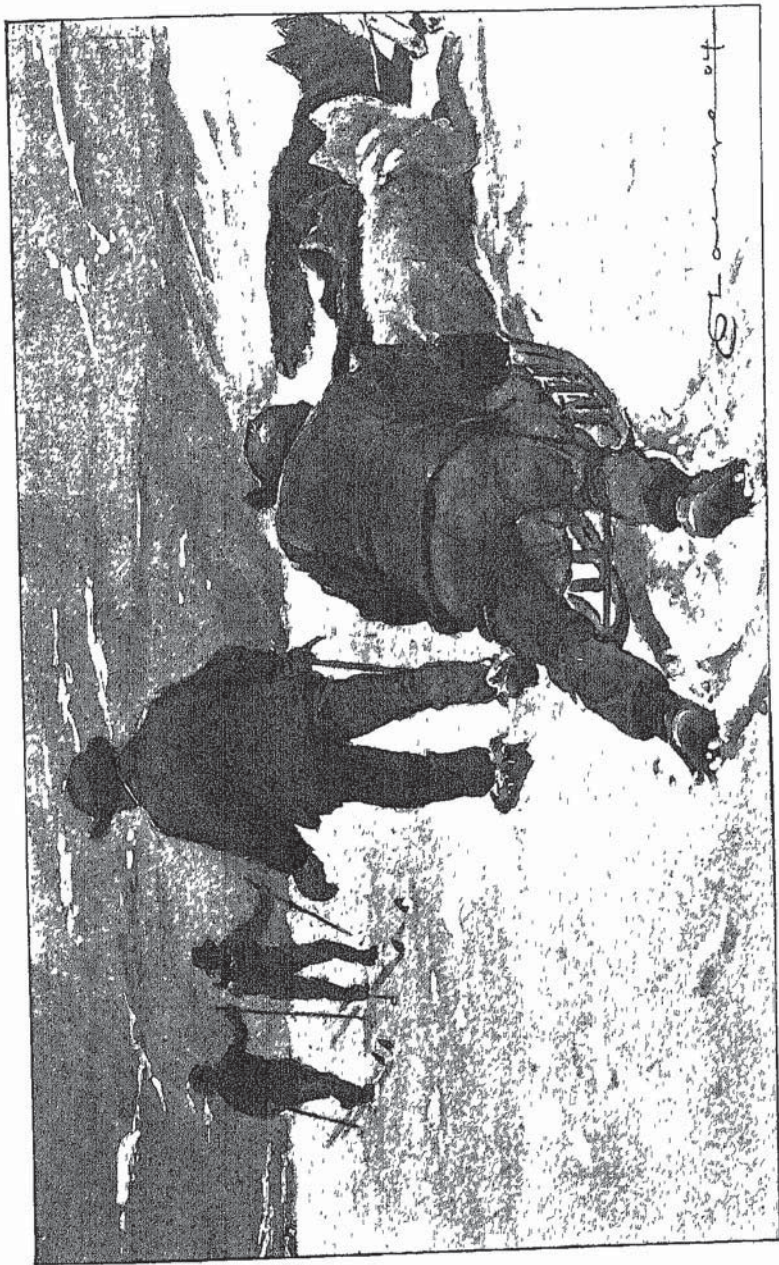
done. And now we could mark the after-effects of the attack of frost-bite I have already mentioned. Large blisters began to appear on all the toes of Grunden's left foot, and one of Duse's little toes showed signs of frost-bite. We lanced the blisters with the sail-needle and applied a little antiseptic cotton-wool we had, and then bound some dirty bandages around the whole.

In spite of their frost-bitten feet, my comrades were still inclined to devote some time to the cartographical and geological investigations which were necessary, if we were to gain any insight into the physical features of the tracts we had traversed.

The next day (October 11th) the mist lightened in parts and gave way to brilliant sunshine. Grunden remained by the camp to rest his bad foot and to dry our wet sleeping-bags in the sun. Duse went up the slope of the inland-ice on skis in order to complete his sketch map and to definitely determine whether we were on an island or not. I took my way towards Cape Gordon, partly to collect some specimens of rock from the highest nunataks which projected from the ice, and also to obtain a survey of the ice-conditions in the outer part of Sidney Herbert Sound. I succeeded in my first endeavour, but was only so far successful in the second that I caught a glimpse, through the heavy fog-banks south of Cape Gordon, of a fast field of ice, with seals on it here and there.

Just at sunset I made my way homewards down the land-ice. It was the finest and the longest ski-hill I have ever been on, falling some 300 metres (1,000 feet, nearly), with a uniform slope, and excellent going, and I went down at a whizzing pace, using my staves as brakes, and making long sweeps now to the left and now to the right, in order to moderate the speed a little.

Duse had just returned to the camp. He had made out quite clearly that Sidney Herbert Sound was connected with Crown Prince Gustaf Channel inside Vega Island, and, as he had the same opinion as myself, viz. that the descent from the inland-ice of the island southwards towards Sidney Herbert Sound would be exceedingly difficult, if not abso-



Drawing by

J. LANGE

The dogs make a wild dash to one side on catching sight of the two wild men

lutely impossible, we determined to go back to the sea-ice and round the island along its inner coast.

The next morning came with sunshine and a clear atmosphere. We descended the slope of the land-ice quickly and easily, and then marched round "Devil's Island" * westward to a jutting headland on Vega Island, to which we had formerly given the name of "Cape Dreyfus," but which—thanks to a wonderful event—we now had reason to rechristen by the name of *Cape Well Met*.

At 1 p.m. we had halted at the cape in order to prepare dinner. Groups of seals lay here and there upon the ice, we had just passed by a couple of the animals, and a large family lay some distance farther out.

"What the deuce can those seals be, standing up there bolt upright?" says one of us, pointing to some small, dark objects far away on the ice, in towards the channel.

"They are moving," cries another.

A delirious eagerness seizes us. A field-glass is pulled out "*It's men! It's men!*" we shout.

Duse fired off a couple of pistol-shots and then he and I put on our skis hurriedly and sped away to intercept the little party that was moving past us far in our front.

"Who are they?" Is it a sledge-party from the wintering station or can it be people from the *Antarctic*? Now they have caught sight of us and come to meet us. It is two men and a dog-sledge, so they must be from Snow Hill, and in the man who is running in front of the team we can now recognize Norden-skjold. When we come a little nearer, the Greenland dogs make a dash to one side on catching sight of the two wild men.

I could not clearly comprehend what happened in the first confused instants of the meeting. I remember only, that Duse asked for news of the *Antarctic* and that I, forgetful of my barbarized appearance, held out my hand to Norden-skjold with a "How do you do, Otto?"

"Thanks, how are you?" answered he in his calm, friendly way, but he did not grasp the situation until Duse mentioned our names.

* A small island, so called by us, to the north of Vega Island.

Thus, in a few words, is the story of a meeting which has been engraved for ever in my memory, as with a vehement, almost incomprehensible, glow of joy. And thus, at last, came the long-delayed union, but in a way we never could have conceived, we, who had originally started upon a relief expedition, being ourselves discovered when in a most distressed condition.

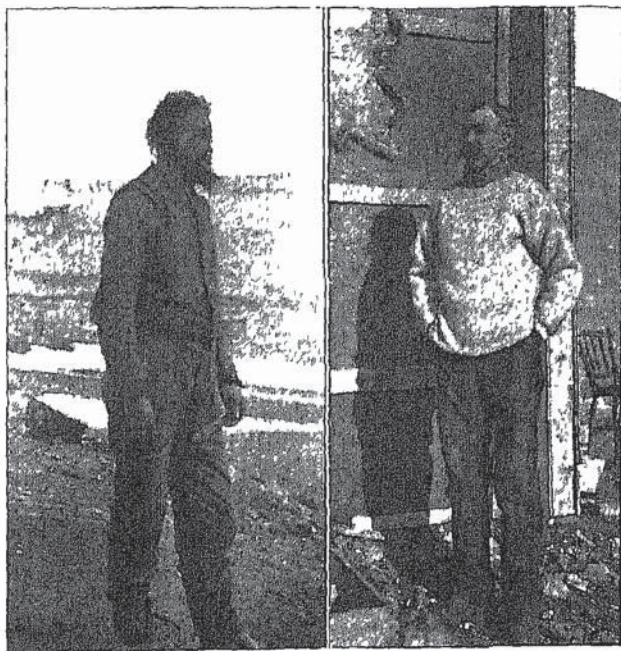


Photo by]

Grunden before and after his transformation

[G. BODMAN.

And all that we could give to Nordenskjöld and our other companions at Snow Hill in return for the exceeding good-will they showed us was the news that, before our departure from Ushuaia, we had sent instructions home to Sweden in the event of a relief expedition being necessary, and also that, from what we had seen, the sea-route already lay open far into the Erebus and Terror Gulf.

CHAPTER XIV.*

AFTER THE MEETING.

Plans for our future work—Sledge journey to Cockburn Island—Camp life and work at Seymour Island—Andersson meets with an accident

WITH the advent of our newly-discovered comrades to the wintering-station began a new era in the story of our Expedition. None of us then knew how short was to be the remainder of our stay in these tracts, but the weeks we spent together were in every respect so unlike those which had passed, that we could scarcely recognize that the greater part of the staff was the same as before.

We determined first to organize a short trip to Cockburn Island for the purposes of bringing home some seal and penguin meat and of giving Andersson an opportunity of making biological studies. I should have very much liked to accompany the party, but as my co-operation was not necessary, I gave up my place to Bodman; Jonassen going with them to manage the dogs and do the hunting. On their return, Andersson, Sobral and I were to go over to Seymour Island as soon as possible, and remain there a couple of weeks for geological and magnetic investigations. Duse was to begin some cartographical work as soon as his foot would permit.

The sledge-party left on the 21st, and came back on the 23rd exceedingly pleased with the results they had obtained. Andersson had made some interesting geological discoveries.

* Here the narrative is resumed by Dr Nordenskjöld.

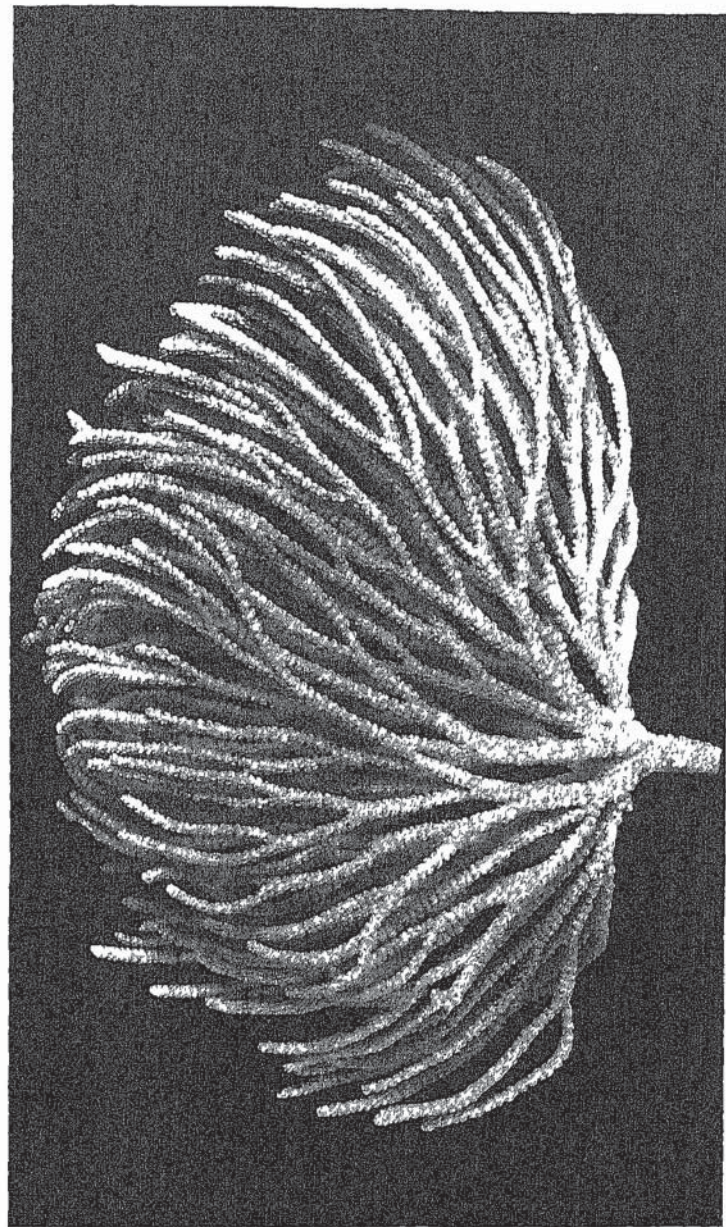


Photo by]

Horn coral.
Off Seymon Island 80 fath $\frac{2}{3}$ of natural size

The lower part of the island had proved to consist of sedimentary formations of the same appearance and age as those of Snow Hill, but had in parts a richer fossil fauna. Over these extended the hard bank of basalt which gives the island its characteristic appearance, and above this there appeared to be another fossiliferous deposit, altogether different to those we had hitherto discovered in these regions. Bodman had succeeded in climbing to the highest point of

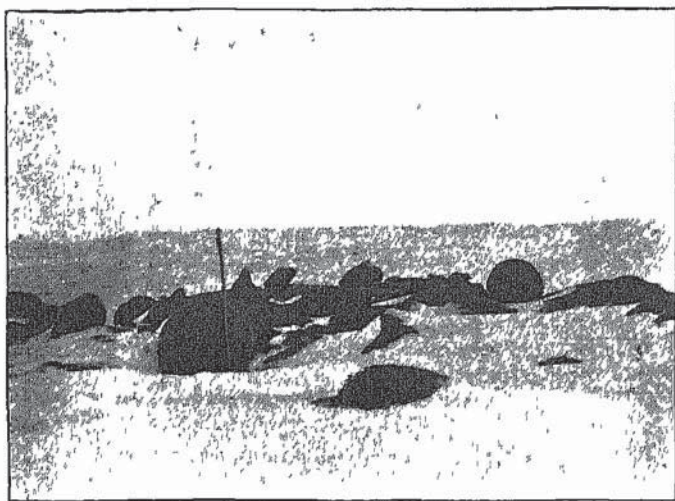


Photo by]

[G. BODMAN,

Weather worn masses of rock, containing fossils, on the plateau at Snow Hill Island.

the island—450 metres (1,470 feet) above the sea. He described the upper plateau as being a verdant meadow of moss. He brought with him some specimens of basalt-lava, but the island cannot be considered as a real volcano.

On October 26th, Andersson, Sobral and I set out on our sledge-journey, having one sledge and four dogs. The going was very bad and we were soon obliged to harness ourselves to the sledge, and five hours elapsed ere we reached the dépôt



Photo by]

Andersson and Jonassen brought back the meat of about 70 cormorants and penguins from Cockburn Island

[G BODMAN

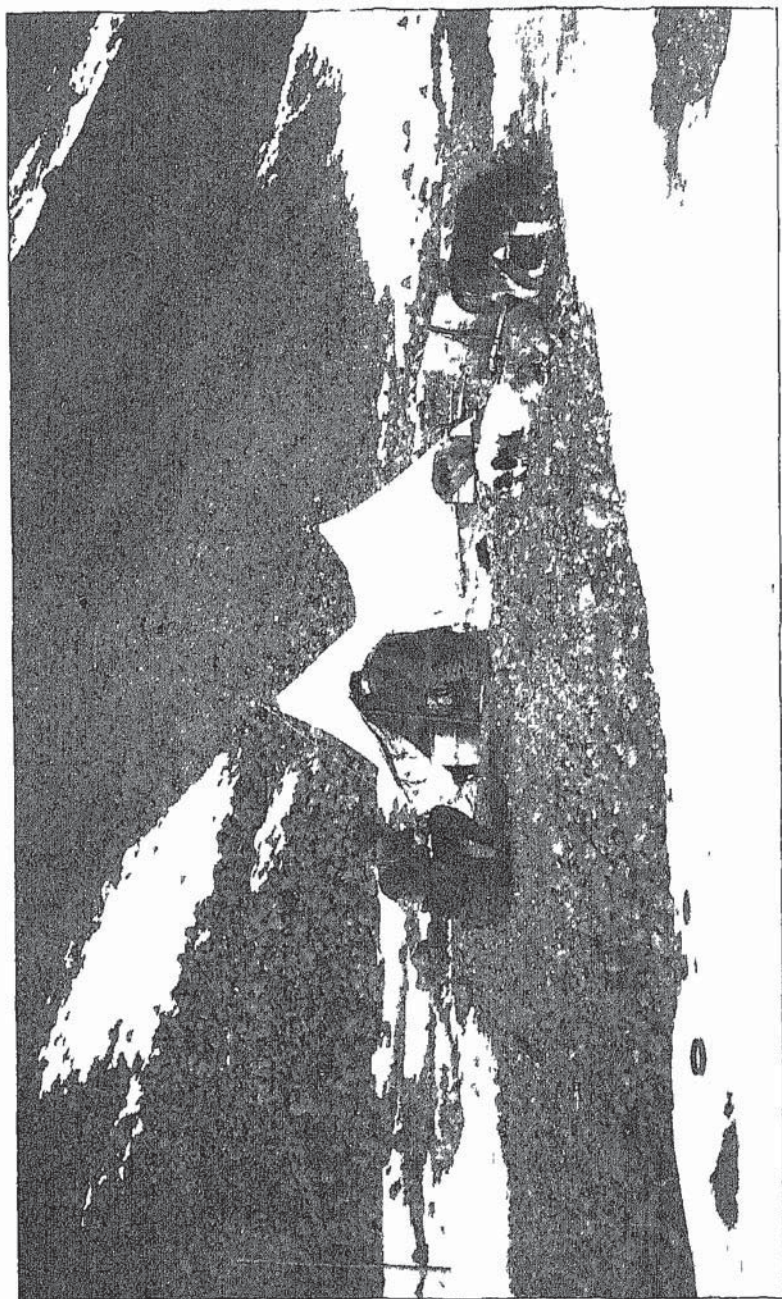


Photo by]

J G. Anderson.

*Jonassen
The camp at Cockburn Island.*

[G. Bodman.



Photo by

Ekelof at the microscope

[G. BODMAN

on Seymour Island. It had been my intention to continue the journey farther northwards, but we found it all too convenient and tempting to have the penguin colony around us, and when we had once pitched our tent nothing more was said about going farther on. On the first day we visited the site of the plant fossils, but with the bad weather we had, we made no very rich finds. On the following days we made expeditions, each of us in different directions. We had no fine weather until the 30th, when Sobral began his magnetic work, leaving Andersson and myself to go northwards along the shore, up to the hills where I had found the fossil penguin-bones a year before. We obtained a good supply of material, but we did not succeed in finding any new, rich localities of the same description, as I had long hoped we should do, my former visit having been of such short duration.

I have seldom found myself in such a situation as just at that period. The Expedition was not yet concluded; hopes and fears predominated alternately in our bosoms, for all possibilities were still quite open to us, and yet this two years' monotony had been broken by this new, personal life. While I write these lines my thoughts fly back across the sea to this island, so rich in scientific treasures, so rich in memories of important incidents. I have nothing but happy recollections of this last week here, and I never think of it but with feelings of gratitude towards the comrade whose presence there formed the last link in a chain of daring attempts to bring us help, and who had previously done so much to promote the success of the Expedition.

It was almost with a feeling of disquiet that we now looked forward to the all too early arrival of a vessel. Of course, at that time of the year we did not think it possible that we could be relieved by any other ship than the *Antarctic*, and its arrival would naturally, and under all circumstances, be most warmly welcomed; but, on the other hand, there still remained so much interesting work for us to do, that we earnestly hoped to enjoy several weeks of fine weather ere we were finally obliged to leave these shores.



Photo by

Interview between the dogs and an emperor penguin

[U. DODMAN

On the 3rd of November, I returned to Snow Hill and found that Duse's foot was better and that he had made all preparations for beginning his work. He intended making a sledge-journey to Lockyer Island the next day, in company with Ekelof and Jonassen, so that I came in good time to keep Bodman company and to assist him with the observations during the following days. On the 4th and 5th I remained at Snow Hill, therefore, and busied myself with work up on the glacier, but, after having the first watch on the 6th, I returned to Seymour Island after breakfast, taking with me a little load of specially chosen trifles to make our life out there still more agreeable. I had gone more than three-fourths of the way, when I saw two dark figures coming towards me and soon recognised Andersson and Sobral, who were hurrying home to Snow Hill. The former had burned his hand very badly and they had at once taken down the provisional tent and were now on their way to seek medical aid at the station.

This was a sorrowful interruption to the happy life we had led. It made us uneasy lest the hand should be permanently injured, and in any case, there was an end to Andersson's work for the time being. On reaching home, however, Bodman and I heard such an enticing account of the good time Andersson and Sobral had been having for the last few days—of how they had just found the first penguin-eggs, and had killed a young seal, whose meat and blubber had been put aside for keeping, whilst the blood had been collected for making blood-pancakes (it was when frying these that the accident had happened), that Bodman decided to take advantage of the opportunity, and determined to go to the island the next day with Åkerlund for the purpose of collecting a supply of penguin-eggs for the station.

It was unfortunate that the doctor happened to be away just then, but the sledge-party was expected back the next day and during the meanwhile we treated the injured hand as well as we could. Bodman and Åkerlund had started in the morning, Grunden undertaking the work in the kitchen. The day passed without anything being seen of the members

of the sledge-party, and I was obliged to bandage Andersson's hand again myself. About 11 p.m., just when the house was growing quiet, we heard the barking of the dogs, and in a little while the sledge came driving up on to the shore. They had had a glorious trip; Duse had done some cartographic work and had also ascended Lockyer Island, whose top lies 450 meters (1,470 feet) above sea-level

My diary for the 7th November closes with the following words. "The evening observations have for a long time



Photo by]

Outside the observatory in summer weather.

[G. BODMAN

been taken without the help of a lantern; to-day, for the first time, we ate supper without a light. But the evening is a magnificent one; the moon has risen behind Seymour Island and shines grandly, a full, gold-yellow disc, but low down near the horizon. Everything else we see around us presents nothing but a picture of winter, both the ice, which lies unbroken as far as one can see from here, and the pale blue, cloudless sky."

Little did I think then that these were the last words I should write in my diary while at the wintering-station.

CHAPTER XV.

A DAY OF WONDERS.

The 8th of November, 1903—Arrival of the Argentine relief vessel—We prepare to leave the wintering station—Larsen, K. A. Andersson and some companions arrive from Paulet Island.

THE 8th of November, 1903, began, as so many of the preceding days had done, with calm, fine weather, but still without any distinguishing features. We breakfasted, and I stayed at home during the morning, as no long expedition could be thought of until everybody was back again, but we expected Bodman during the course of the afternoon. So I was not at first very much surprised when someone came into the dining-room where I sat writing and said to me, "Come out and look; there are some people coming over the ice, but I can't make it out, for there seem to be four persons." We had no special reason for thinking that the couple we expected home from Seymour Island would return at such an early hour, but I supposed that it must be they, and that the remark about there being four persons must depend upon mistake.

Still, before many minutes had gone by we were all assembled outside the end of the house, where we had so many times before stood looking across the ice. Those of us who had a field-glass at hand took it with them. We could plainly see that there was something black moving along far away on the ice, but the details could not be seen with any distinctness. We look at each other; none are absent but those two at

Seymour Island ; we are here all seven of us—and it cannot be the dogs, for most of these are lying here and there on the hill, and, besides, they never go away by themselves. It is much more probable that it is some penguins marching across the ice. But that is impossible, for the one in front is undoubtedly a man, and the others are of the same size and appearance. All at once they come plainly into view : they are four—four men—who are approaching on the ice !

At a decisive moment, when the unexpected happens, our behaviour is often quite unlike what one could expect it to be. It is true that we were all seized with a superficial agitation ; we called to each other in encouraging tones such words as, “ You see I was right when I thought that the *Antarctic* would come,” and so on ; but, on the whole, a spectator would not have supposed that we had suddenly learned that we were now to be restored to life. One or two of us even remained at the station, but all the others rushed at full speed down to the ice in order to meet the new arrivals, without a thought of making any kind of preparation for their reception. As soon as we had come a long way out on the ice, we thought that *they* made but very slow progress, but imagined that the explanation of this lay in our own impatience. Now and then they disappeared from view behind a hummock, and we almost began to believe that the whole thing was a creation of our imagination. Now we see one of the number leave the rest of the party and hurry forward to meet us. Who can it be ? “ It’s certainly Larsen ! ” say we, and we all think we recognise his steady gait. “ No, it can’t be Larsen ; isn’t it Åkerlund ? ” says another. “ No, Åkerlund hasn’t a cap like that ; it must be Larsen, who wants to be the first to meet us.” “ Sha’n’t we give a cheer ? ” asks one. “ No, no, not yet ; let’s make sure,” was my answer. A moment later we can see quite plainly that it is Åkerlund who is coming towards us. We shall at least hear the solution of the riddle. We scarcely dare to question him, and it is he who speaks first.

“ There’s an Argentine ship out there, but they have heard nothing of the *Antarctic* ! ”

For the second time within a month we stand face to face with one of those moments when one's whole world of sense seems to resolve itself into a mist, in the presence of the intense feeling of the all-subverting, unexpected *new* which draws us into its vortex. We had been so convinced that at this time of the year no vessel but the *Antarctic* could come, that when we saw the party approaching, we did not for a moment doubt that it was our old companions coming towards us. Had we learned of the loss of the *Antarctic* in an ordinary way, the blow would have been a crushing one, and nothing more. But now the news, together with the knowledge that we were to be released in this unexpected way, and the thought of the enormous responsibility resting in the decision that would have to be made within the next few hours, seemed, for the moment, to deprive me of all power of motion. Sorrow was depicted on every countenance, for everyone saw how small was the hope of ever again seeing the comrades we had left on board the *Antarctic*.

But for the moment there was no time for brooding, and still less was it a suitable occasion to let sorrow or anxiety paralyse thought. We had to hurry on to meet the two officers who were coming to meet us in company with Bodman Sobral—the one who now had most reason to feel himself at home—was the first to say that all our efforts must at once be directed to the discovery of the fate of the *Antarctic*. The decision, however, had to be left to the commander of the relieving expedition.

Then came the moment when we exchanged greetings out on the ice—we who, during the course of many long months, had gradually come to consider this ice and these naked rocks as our home and our kingdom—and our two guests and rescuers, Commodore Julian Irizar, commander of the relief vessel, the *Uruguay*, and Lieutenant J. Jalour. I do not remember what we first said to each other, but ere many minutes had passed we learned how matters stood; how, when nothing was heard of the *Antarctic*, the Argentine Government had equipped one of their vessels entirely on our account, the said



Drawing by

Our first meeting with the Argentine naval officers

[E. LANGE.

vessel now lying off Seymour Island, and how measures had been taken in Sweden, too, for the despatch of a relief expedition (the whaler *Friithof* having been hired for the purpose) of which Captain Gylden, the commander of the *Antarctic* during the expedition in 1901 for the mensuration of latitudes, was to be the leader.

On board the *Uruguay* there were no letters or other direct communications to us. But all other news was of little weight when compared with that we had already heard. Bodman, who, of course, had already had the opportunity of questioning our rescuers, now hurried home to make preparations for their reception, while we others came on with our guests, who were rather fatigued with the long and, for them, unusual march.

We arrived at last at the station and felt proud of being able to welcome our guests at our table, which Åkerlund had spread with what to us seemed a veritable banquet. I do not know what our new friends thought of it, but the whole doubtlessly appeared somewhat shabby, dirty and smoky.

Captain Irizar begged us in the friendliest manner possible to accompany him on board the *Uruguay* as his guests, and to return to civilization. He asked what time we should require ere we were ready to start, and was glad to hear that, if necessary, two days would be sufficient. The second point for consideration was, of course, to discuss what measures could be taken to discover the fate of our missing comrades on board the *Antarctic*. Two possibilities offered themselves: the one, to return at once to the nearest telegraph-station and determine our course of action by the information we might receive there; the other, to commence our search for the missing vessel before we returned to the outer world. It was evident that Captain Irizar was most inclined to adopt the first alternative, but he gave me to understand that his line of action should be determined, as far as it was possible, by our opinion of the probability of being able to discover Captain Larsen and his companions.

There could be no thought of work, of course, as long as our

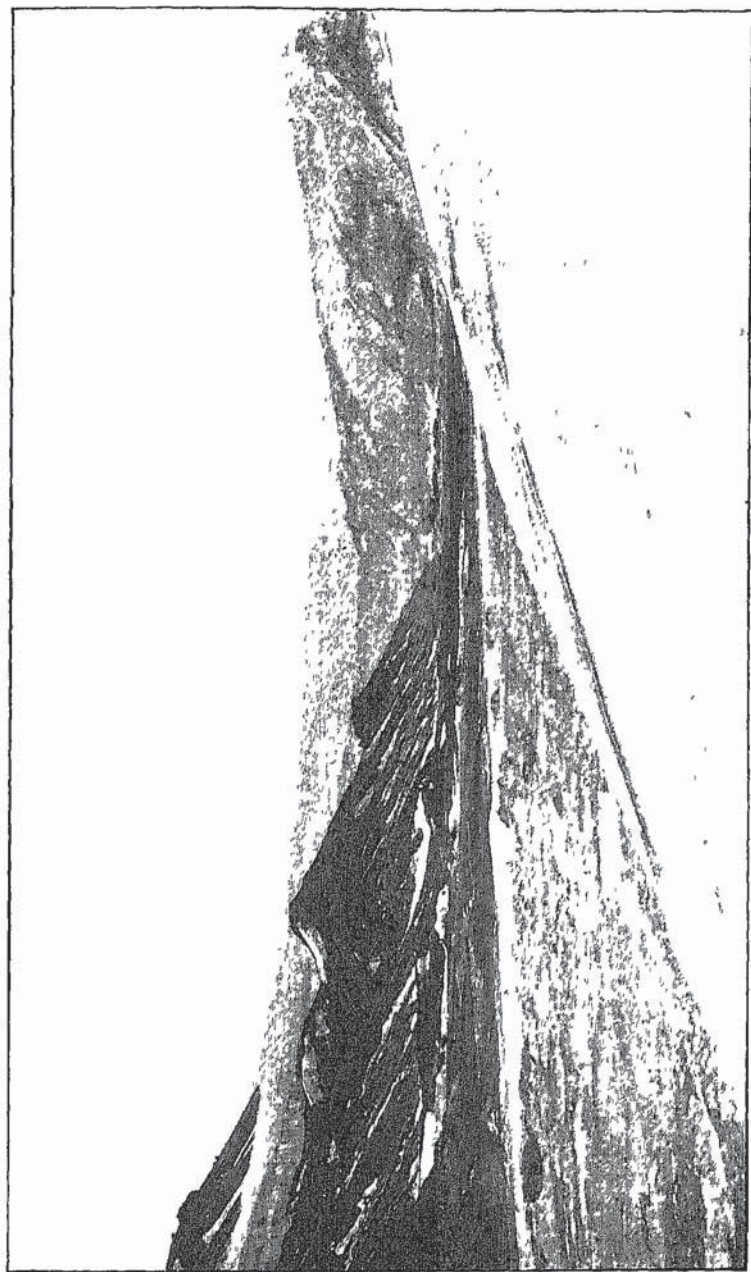


Photo by

The valley where we dwell, between the Snow Hill glacier and the snow free land
The magnetic observatory is visible in the middle

[G. BODMAN.]

guests were with us. The hours went all too quickly, but Captain Irizar was anxious to return on board as soon as possible, and to facilitate his return, I told Jonassen to harness the dogs to the sledge. Duse was anxious to make use of the last day we had in order to carry out some cartographical work on Seymour Island, and he left the station with Grunden in company with our guests, and, as he thought, for the last time.

We at once set about our many preparations for departure, the only objects we could think of taking being our collections, the most important instruments and the more valuable of our private effects. My first care was to write a report for the commander of the Swedish relief expedition, informing him, at the same time, of the little we knew concerning the latest plans of those on board the *Antarctic*. The tracts around which we imagined the search for the vessel should chiefly be made were the neighbourhood of Hope Bay, Paulet Island, and at the Danger Islands.

None of us intended going to bed that night. Each one was working silently at his own tasks, and I myself sat at my desk writing the first words of the report—"After serious consideration we have all determined to make use of this opportunity to return"—when we heard the dogs begin to bark and howl. At any other time we should have attributed this noise to a fight and have gone out to separate them, but now we were not in such a hurry; still, one of us went and cast a look through the opened door. When he returned, he said that there were people down on the ice—"Six or eight men, I think."

There had been a question of Captain Irizar's sending us some men from the *Uruguay* as soon as he returned on board, and we thought that it was probably they who were coming. But as it was only 10.30 p.m., it was, of course, quite impossible that Captain Irizar could have reached the vessel and sent the men, so that it was strange that the news of the approach of the party did not awaken more attention. We were so occupied with our work, too, that it was some time

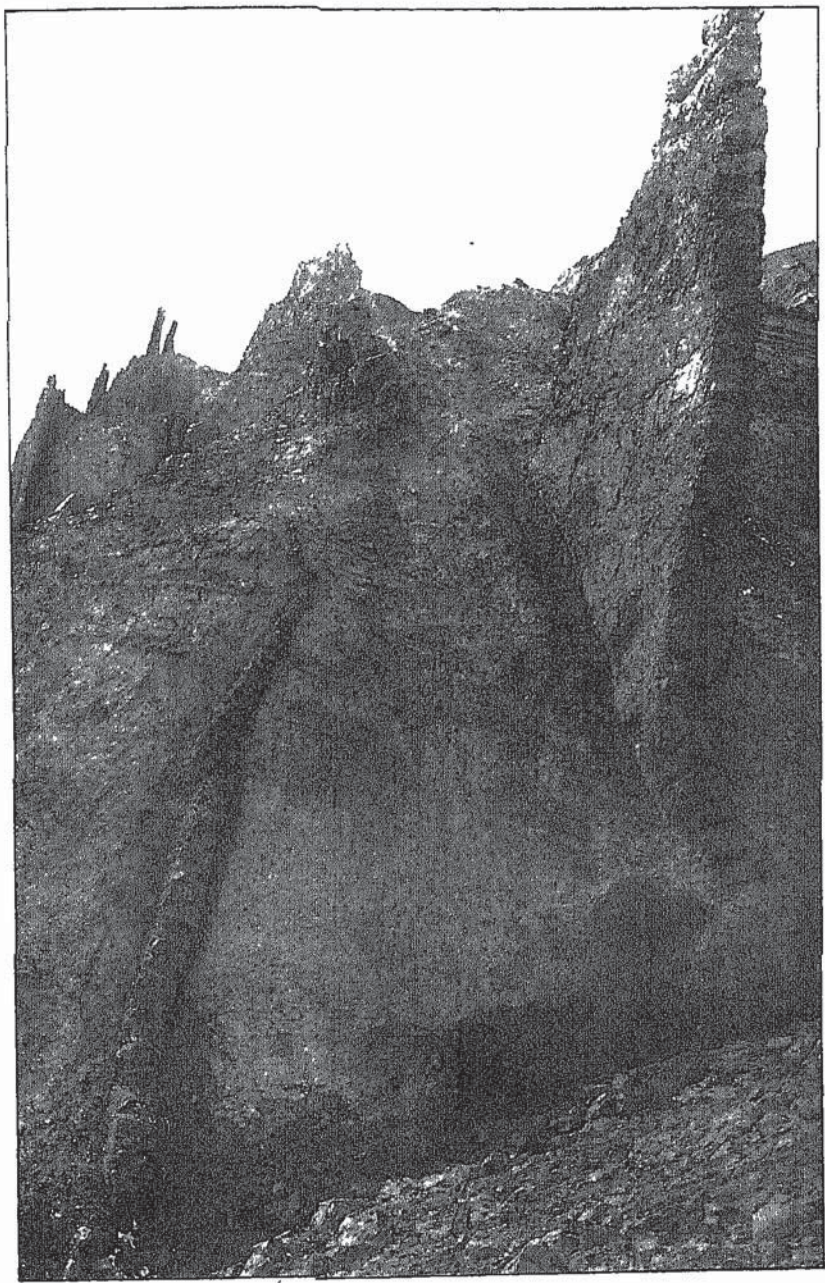


Photo by]

[NORDENSKJOLD.

Weather-worn, solitary basalt pillar near our wintering place.

ere any of us took the trouble to go to see who the people were, but at last Bodman went out to solve the riddle.

Midsummer was yet far distant, and although the night was clear and mild, still it was pretty dark. Out on the hill there was a group of men looking up at the flag which still waved above our house. Bodman approached them slowly, for he thought they were foreigners, and it would of course be difficult to find words with which to address them. Suddenly his eyes open wide with astonishment. Is it an optical delusion, produced by the anxieties of the day, or is reality once more about to surpass all that expectation and imagination combined could ever picture? The next few seconds will decide whether the days of miracles are past; he moves with hesitating steps to meet a figure that has left the group and is advancing to meet him.

The next moment, wild, ear-piercing cheers, mingled with shouts of "*Larsen!* LARSEN is here!" tear us away in an instant from the work we have in hand. As a matter of fact, we have experienced so much during the last few days that nothing can seem impossible to us; but still, I can scarcely believe my ears. There must be some mistake; it must be the day's unrest that has made one of us give a form of reality to his wishes. But I hurry out like the rest, and the next instant all doubts are vanished. There on the hill, in the half-gloom of the summer night, I am welcoming Larsen, K. A. Andersson and their four companions, who, after this "long divorce" of place and time, have arrived from their forced wintering on Paulet Island just in time to join us.

No pen can describe the boundless joy of this first moment. It was plain that both misfortune and suffering were hidden in the period, so long concealed in the mists of uncertainty, that lay between this hour and the departure of the *Antarctic* from Hope Bay. I learned at once that our dear old ship was no more in existence, but for the instant I could feel nothing but joy when I saw amongst us these men, on whom I had only a few minutes before been thinking with feelings of the greatest despondency, and when I recollected that now we could all



Adrian Vignani

The leader of the Argentine Relief Expedition

leave these tracts in company. However deeply I was touched by the communication that a young and able seaman of their number had died at his post, I could not but remember with infinite gratitude that all the others had preserved both life and health.

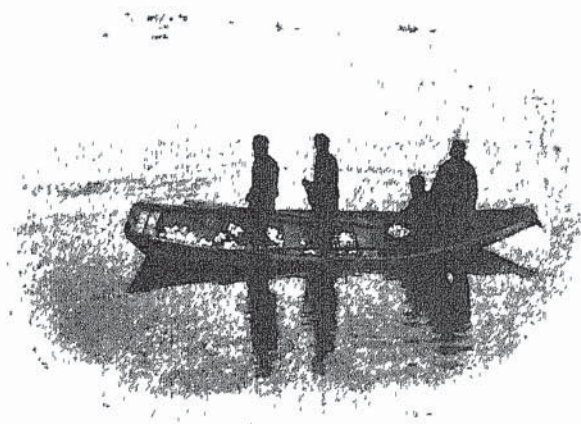
We conducted the newcomers in triumph to the building, where everything was at once produced that was calculated to gladden men who had spent a winter in misery, for these were guests who were certainly more able to enjoy what was set before them than were our friends of the morning.

Of what infinite importance was it not that the two parties had arrived in the order they did! Wenersgaard's death, the loss of the *Antarctic*, the sufferings of the party, the uncertain future—all this, coming before the arrival of the Argentine vessel, would have been a terrible blow, but everything was now swallowed up in the satisfaction felt in the rescue of the many.

Our joy was not unclouded, though I had hoped it would be so for the remainder of the wonderful day. But for me, at least, it was not. I did not dare to enquire for news from home, and, ere receiving the now eighteen months old correspondence they had brought, I had learned from Larsen—on the same hill where I had so often wandered amid winter-storms and summer sunshine, where I had experienced so many glad hopes and gloomy hours—that I should never more find the home I had left; that never more in life should I meet him, my father, to whom I had so often longed to relate the events of these years.

I lay down for a while in my berth, but without trying to sleep. In a short time I heard the sledge party return, and found that Duse, when he learned from Captain Irizar how necessary he considered it for us to hasten our departure, had relinquished his plan of doing a little cartographical work, and had returned in order to communicate the intelligence to us. I need not describe the joy with which he and his companion greeted our new-found comrades.

I rose at once and recommenced my interrupted labour. We should be ready by evening, for now there was no reason for delay, and with all the help we had at our disposal, the work of transport would, of course, be considerably lightened.



CHAPTER XVI.

FROM SNOW HILL TO PAULET ISLAND.

Packing up—Good-bye to Snow Hill—Back to the house once more—On board the *Uruguay*—Arrival at Paulet Island—The members of the expedition once more united.



OUT of their hiding-places came all our sacks and boxes, and packing-up was soon in full swing. Much of what we intended taking was already prepared, and had but to be carried down to the shore so that the first sledges could drive away at sunrise. The transport was long and difficult, the ice was

rather bad, and everything had to be taken nearly four miles to the eastern cape of the island. We had already been warned that there was not much room on board the relief vessel, and as on reaching Buenos Ayres we had still a long ocean-journey before us, we had no choice than to leave a great many things behind us, valuable either in themselves, or because of the memories with which they were associated.

Larsen went off to the *Uruguay* the first thing in the morning, and was received with glad astonishment, as one risen from

the dead The second in command, Lieutenant Hermelo, had previously come to me at the station in order to inform me that his chief had resolved to do his utmost to discover the missing party, and I was now able to inform him that the intended search would be limited to a call at Paulet Island.

We had had very fine weather during the last few days, but a strong wind now began to blow, and it was easy to see that our getting the things on board would meet with almost insuperable difficulties. Sledge after sledge was sent off packed with the heaviest loads that the dogs and men could



Photo by]

Our last hour of waiting on the shore

[G. THOMAN

draw. During the course of the day one after the other of those who have finished their work at the house stay down by the headland, awaiting a favourable opportunity to go on board the vessel Late in the afternoon we have at last sent down to the shore the most valuable part of our equipment, with our notes, photographs, and the more delicate instruments; everything stands ready and I go for a last turn through the rooms where we have experienced so much during the past years, and which now look so lonely and disordered. The door is barred as carefully as possible, and we hurry down to the goods. We cast one look back at the house

to which so many memories are attached, and then start off along the ice.

The load was very heavy, and the sledges sank constantly into the deep sludge, but on we went, and were soon at the place where the former burdens had been unloaded. Everything was still lying there. Our comrades who had arrived before sat there yet, and not even Lieutenant Hermelo had been able to come on board, although the night had come on. The *Uruguay* was steaming backwards and forwards a little way from the land; the sea ran high it is true, but still we expected a boat to put off for us. Hour after hour passed without our being able to see any sign that we had been observed, and at last we found that we had no other choice than to return to the station and once more seek shelter under its roof. We went back through a cold, biting snow-storm, and we all slept well that last night we spent under the roof of Snow Hill wintering-station.

We rose early the next morning. The weather was better than it had been the day before, but it was by no means calm. The *Uruguay* had her boat out, however, and very soon, with rapid sweeps of the oars, we were making for the relief vessel, floating there proudly on the waves. Her officers and crew had lined the sides of the ship; the Swedish flag waved at the top as we approached, and on stepping on to her deck we were greeted with a thundering cheer. It was a solemn moment, our Expedition, with all its cares and trials and all its rich harvest of work and discoveries, was now come to an end—we were henceforth merely guests and passengers.

Captain Irizar had declared his willingness to stop for a little while off Seymour Island, in order that a boat might fetch off the collection we had left there. The day was far advanced ere this work was completed and we could begin our northward journey in earnest. How strange it feels to be journeying in this way when we think of our wanderings on foot or with the sledge! How changed our condition within the short period of but two days! But in the joy we feel in the certainty of now being on our way home, and in the

knowledge that we are henceforth free from the cares which have so long burdened our minds, there mingles not a little melancholy. A phase of our lives has ended, never more to return. How many memories are there not attached to every rock the eye falls upon ! Never, never can I forget these two naked sandstone islands which have been our home for two long years !

I have yet one care remaining, and ere that is done I will



Photo by]

On the way out to the *Uruguay*.

[G. BODMAN.

not give way to slumber when night comes, but after a short rest I go on deck again before we reach Paulet Island. We come nearer and nearer ; with the glass we can already distinguish the huge signal the shipwrecked crew have erected in order to attract the attention of the expected rescue-expedition. Everything sleeps except the crowds of penguins sporting around us in the water ; they rush past as if to show us the way to the shore where our twelve comrades are dreaming of the rescue that, unknown to them, is now so near. We double the last cape, and before us lies the immense penguin

colony I visited twenty-two months before from the *Antarctic*. Someone points out to us a low, dark, scarcely visible mass of stones, which has so long formed all that our companions there could call by the name of home.

It is exactly four o'clock ; the sun's disc begins to show itself above the horizon, and clothes the scene with a glittering glory. The stillness is broken suddenly by the *Uruguay's* steam-whistle. Once ! Twice ! Three times it sounds ! The sounds come back in shrill echoes from the cliffs. Never in my life have I partaken in a more pathetic drama. Solemn is a word too weak to describe the scene. Everything is so different from those remarkable moments when I myself have been the one affected by the event. Here I am really nothing but a spectator, but my feelings are perhaps the deeper, that we all come as unexpected rescuers to men, in a position the gloom of which could hardly be surpassed.

Many seconds do not elapse after the signal has sounded, ere signs of life are noticed in the stone heap, from which one man after the other comes creeping out through the opening. One sees in fancy the looks of wonder with which they look at our vessel, uncertain as yet whether it be a dream or reality ; we see them gesticulating and speaking to each other vehemently, we see them come slowly down to the shore. Our boats are soon near the land. We are met by our comrades—sooty, dirty, emaciated, in tattered clothes, but with their countenances, on which suffering has impressed its melancholy seal, beaming with joy. We greet each other—after changing fates the members of the Expedition are once more united !

There was a little work to be done ere we could continue our journey. It was almost with reverence that we looked at the damp, black hut where all these men had spent their winter. We removed from it all articles of any value, both those which had been saved from the *Antarctic* and the scientific treasures which had been gathered during the residence of the party on the island. A large dépôt of provisions was also established here by the *Uruguay*, and it was

difficult to repress a feeling of regret when we thought what all the supply of preserved foods, sugar, bread, etc., would have meant to our comrades had they been there a few months earlier. It may be added that there was no small amount of provisions left behind here by our own Expedition, both in the form of preserved foods, ship's biscuits, petroleum and other articles.

We had yet another task to perform. One of our party had been busy the previous day on board the *Uruguay* making a

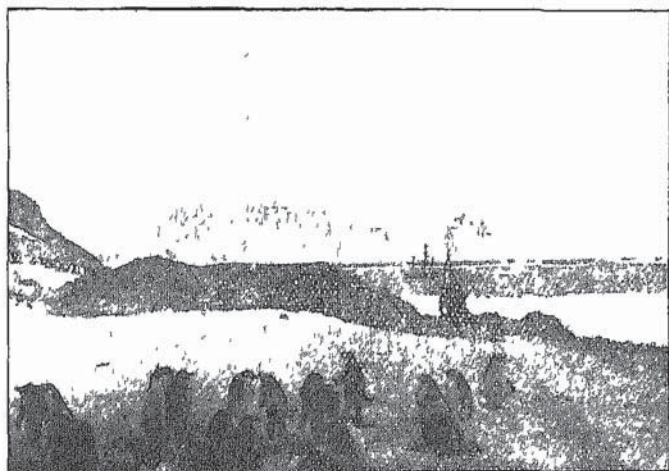


Photo by]

[G. BODMAN

The stone hut on Paulet Island, with the *Uruguay* off the island

wooden cross, with an inscription, which it was intended to place on the highest point of the immense cairn marking the spot where Wenneisgaard sleeps his last sleep. We stood in silence around the stone heap, deeply grateful to Him who had exempted *us* from remaining, far from our native land and all those dear to us, here upon this desolate shore, where the crowds of penguins would soon be the only watchers around our comrade's grave.

All our work was performed with energy, but the depôt was

large, and the distance to the landing-place pretty considerable. The hours pass, however, and we are at length ready to go on board. We carefully reckon all who go down into the boats, so that no one may be forgotten at the last minute. We once more board the relief vessel, which now turns her head towards the third wintering-place—Hope Bay.

And here we may let the participators in this wintering-party, themselves describe their remarkable adventures, from the moment when Andersson and his companions landed at Hope Bay, until the two days of re-union, the 8th and the 11th of November, 1903.



CHAPTER XVII

THE BEGINNING OF THE END *

The witchery of the Ice World—An attempt to pass outside Joinville Island—Caught in the ice—A nip—We spring a leak

It is strange that the ice can be so endless, so full of variety, so interesting, in spite of its unparalleled monotony. How great are not the sufferings it has caused us? And yet, for us it can never lose its charm. How heavy and grey it lies amid storm and mist, how dead, how gloomy! How it glitters, as with a thousand diamonds, in the full flood of sunlight, enlivened with its own animal world that drinks deep draughts of sunshine and liberty! What tinges of blue in a hundred shifting shades, when it catches the last dying rays of day; how entrancingly cold and silver-clear beneath the bewitching glimmer of the moon. Vain is every attempt to stand un-

* Chapters XVII. to XXIII, inclusive, are by C. J. Skottsberg.

moved in the presence of the majesty of the Ice-World. What is there, what can there be, more calculated to call forth overpowering emotions in the human breast?

* * * * *

On the 29th of December, 1902, J. G. Andersson, Captain (then Lieutenant) Duse, and the sailor Grunden had left us in order to attempt to reach Snow Hill across the inland-ice, and we had parted from them with a cheerful "We shall soon meet at the wintering-station!" At 11 p.m. we caught our last glimpse of them as they drew their sledge up the slope of the snow-covered land, at the edge of which began the inland-ice.

We steered from the land northwards in order to endeavour to round Joinville Island. On the whole, the ice-conditions were the same as on the occasion of our previous attempt, but with the difference that more open ice now extended so far eastward that we managed to come past Ætna Island, one of the Danger Islands. But the ice closed again immediately afterwards, so that we were soon obliged to lie-to.

On New Year's Eve we forced the ice for a distance towards the east, but in the evening we had to stop once more and make fast to a large floe.

Imprisoned again! In some way, an open space had been formed in the ice farther south, and as a heavy storm from the north was blowing, the natural result was that the ice commenced drifting southwards. This began on New Year's Day, but it was first on the 2nd of January that the drift attained its full force. It would not be easy to find an account of a more adventurous journey. The *Antarctic* was carried helplessly by the ice towards the south—now with her bows, now with her stern, now with her broadside first. Onwards we had to go, swiftly; amid a hundred lurking dangers; amidst islands and islets, icebergs and hidden reefs.

It seemed wonderful to us that the ship escaped. She tacked between icebergs, and through channels so narrow that we should never have dared to go there even with perfectly ice-free water.

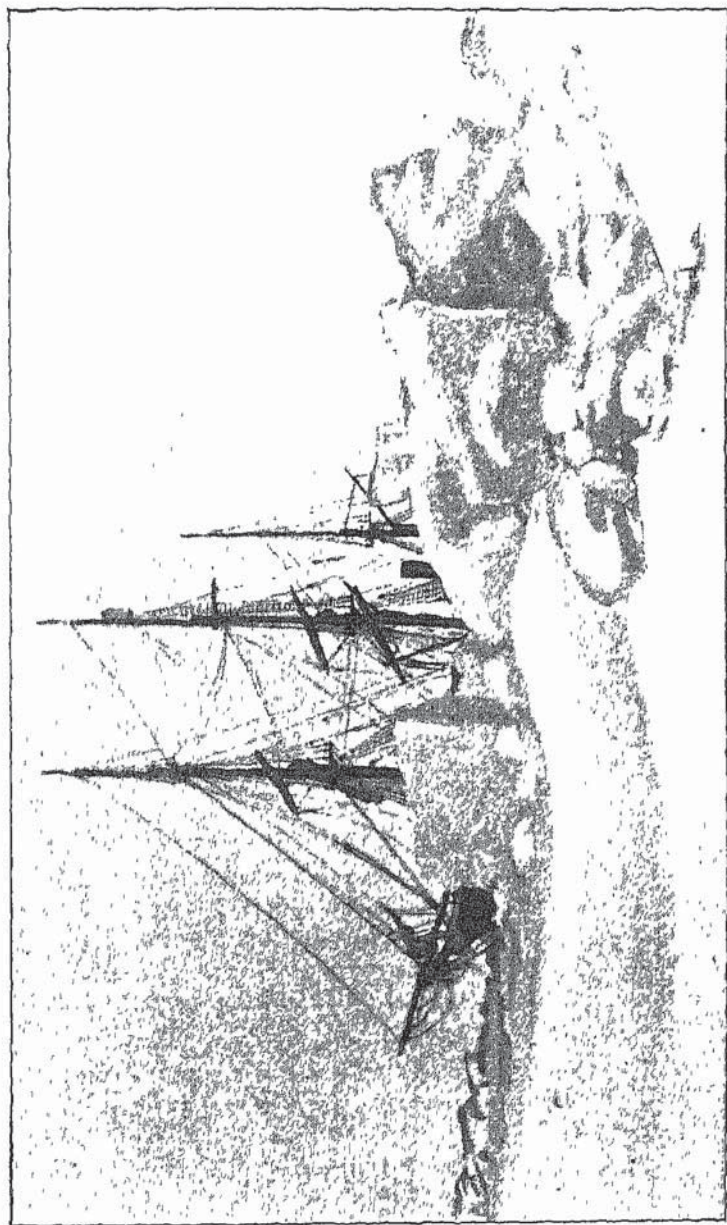


Photo by]

The *Antarctic* amongst pressure hummocks

[C. A. LAUSKY

Towards the evening of the 2nd, however, the drifting diminished so much, that we almost began to fear that the current would force us back on to the land, and by Larsen's advice we slept with our clothes on, ready to leave our berths at the first signal.

January 4th.—It was early in the morning that the ice began to open so that we could use our propeller. The sea in front grew clearer and clearer and we soon came into a lead. Larsen, sanguine as ever, thought that we could now make direct for the wintering-station, but it was not long ere he discovered that we were only in a large lead, and that further south the ice was as close as ever. We passed Paulet Island some distance off, its coasts being quite blocked with ice. As it was a long time since the vessel had sailed in open water, we resolved to use the opportunity and make a dredging, together with a sounding and observations of the temperature. The many peculiar animals we obtained brightened our humours somewhat—a very necessary operation, too, for by five in the afternoon ice was reported in all directions, stretching as far as the eye could reach. There was nothing else for us to do but to moor fast to a large piece of ice and wait again.

My diary shall speak for me :—

January 10th.—"When I woke I found we were in the midst of a heavy snow-storm. The wind sang gloomily through the rigging, and drove masses of snow violently before it. Our boat grew whiter with every minute that passed—masts, chimneys, and all, were covered with a rind of ice.

"During the forenoon the pressure on the sides of the vessel—which had begun yesterday—could scarcely be marked, but after dinner, just as we sat down to a hand at cards, the ship began to tremble like an aspen leaf, and a violent crash sent us all up on deck to see what the matter was. The pressure was tremendous; the vessel rose higher and higher, while the ice was crushed to powder along her sides. The ship's stern now stood four feet higher out of the water than usual, but this caused us no uneasiness, for if the vessel

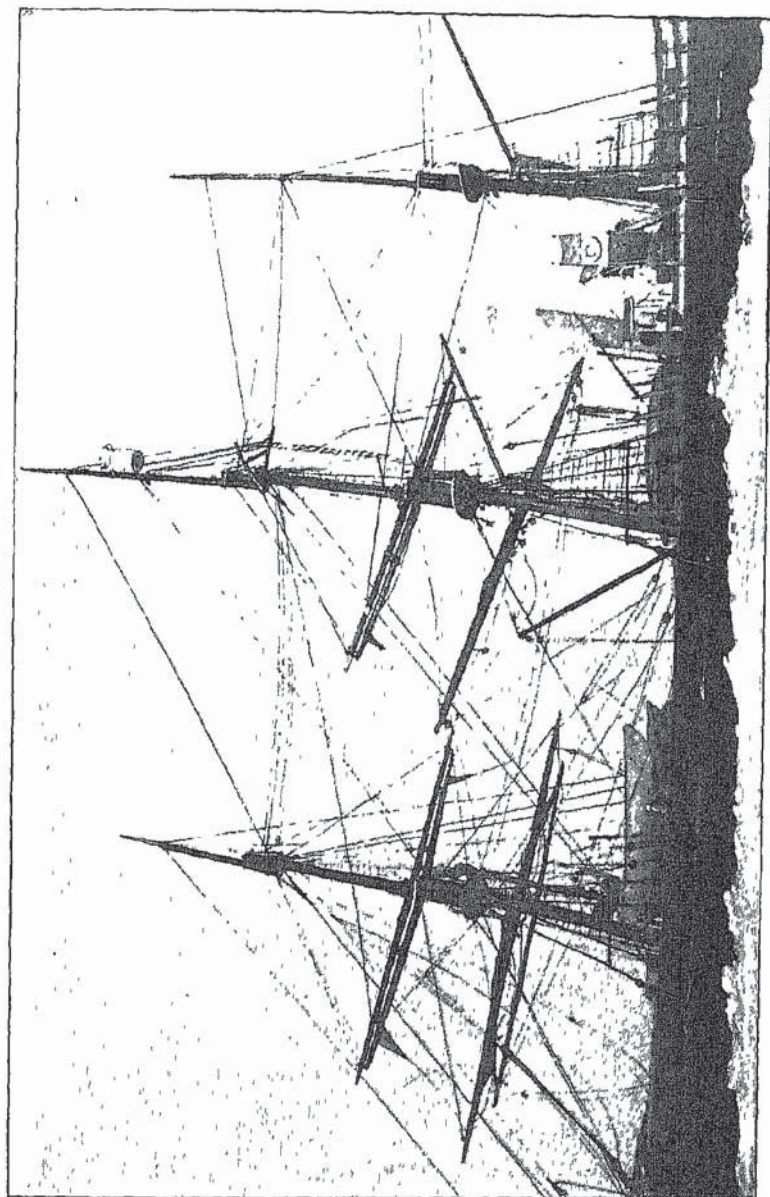


Photo 59]

After the combat with the ice.

[C. A. LARSEN.

would only rise to a sufficient height, *i.e.*, until the pressure no longer affected her, she would, of course, be quite safe.

"In the evening the first mate walked to and fro in the gun-room philosophising. 'Just think how lucky we've been the whole time! We've had extraordinary good-luck in every

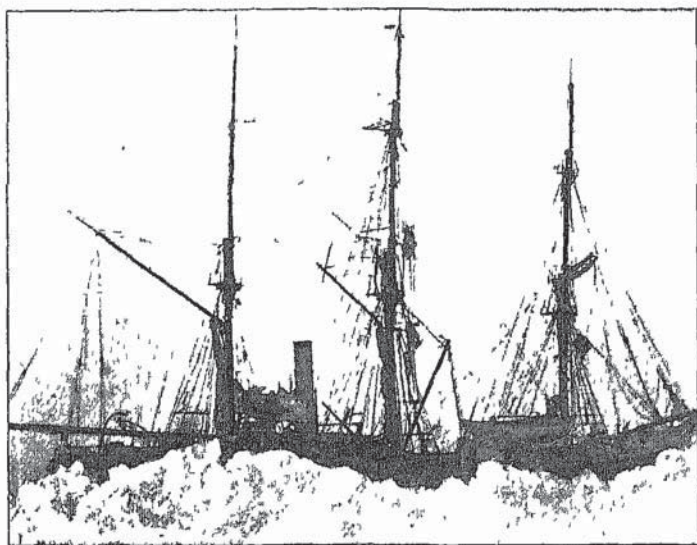


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[C. A. LARSEN

The last embrace.

difficulty! It would be strange if any misfortune should happen now!'

"A presentiment perhaps."

* * * * *

A crash, as though the vessel's sides are being riven asunder!—The one smashing noise after the other, and the boat leans over to starboard. With one bound I am out of my berth and up on deck. No one can be seen. I run aft and meet one of the sailors—"Is anything wrong?" I ask,—“I don't know yet, but——” “All hands on deck!” comes the cry of the first mate. I hurry down to my cabin to dress,

and put a few trifles into my pockets. In five minutes I am ready, and rush on deck again to help in the work there.

The men are running about in all directions, but there is no confusion, not a trace of fear or doubt, all are working systematically at high pressure, some in order to collect the most important necessities—provisions, clothes, etc., while others are bringing out the pumps and examining the stern of the vessel to see if anything can be done to stop the leak. “The pumps are keeping the water down as yet!” comes a cry.

For the first few hours we held ourselves in readiness to leave the vessel, but the pumps seemed to be able to keep the water at the same level, and by degrees we grew a little calmer. The cook and the steward went about their work as though nothing had happened, and at the usual time we assembled at breakfast down in the gun-room, where the events of the night were discussed.

CHAPTER XVIII.

TOWARDS DESTRUCTION.

Dangerous situation of the vessel—We keep H.M. King Oscar's birthday—A spurt towards the land—We prepare to leave the vessel—Death of the *Antarctic*

THE first night after the "nip" was calm, the position of the ship unchanged and the ice lay still. In the morning we began to take away the snow and ice around the rudder in order to see how matters were there, and after much trouble we came down to the level of the water. It was by no means a cheering sight we saw, with wide openings between the planks, and the rudder broken off. We could see that the propeller was still in its place, but in what condition it was, no one could tell. We stopped the holes as well as we could, but to little use, as the chief leak was not here.

The *Antarctic* lay with her stern lifted on to the sharp, projecting foot of a large piece of ice, to which position she had been forced by the pressure of another floe to port.

The rattling, everlastingly unchanged, noisy discontent of the pumps is heard hour after hour, day after day. It reminds us constantly of our position, calls us incessantly on deck to ask for the latest news or to look below to see how high the water stands. That rattle of the pumps will never leave my memory; the sound will ever remind me of the longest days of my life.

On the 16th of January, I was awakened by the vessel beginning to move. Some change must have taken place, so I dressed at once and hurried on deck. A fissure in the ice had suddenly opened in front of our bows and the *Antarctic*

had righted herself. The ice had drawn back from the vessel, forming even walls, seven feet high, on which one could plainly see impressions of the sides of the ship.

On the night before the 21st, hope wakened in our hearts again at the rise of a fresh breeze from the north-west. The entire mass of ice loosened from the land, and began to drift

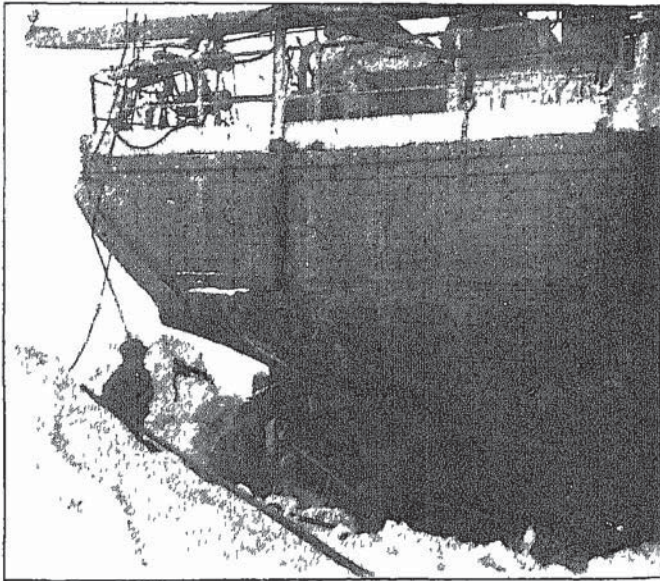


Photo by]

[G. A. LARSEN

At work on the injured stern.

towards the south-east, and, of course, carried the *Antarctic* with it. What would have been the result had we really come out into open water? But one, most probably, and that—destruction.

It is a festival on board—H.M. King Oscar's birthday. The Swedish flag is hoisted at the peak, the Norwegian at the mizzen, and at 8 a.m. we fire a salute of 21 guns. At dinner-time we all gather on deck and drink His Majesty's and

Crown Prince Gustaf's healths. We are in the sunniest of spirits, the wind is north-west and the leak better than ever, for the stein-pump alone is able to keep the water down. We go about and drink each other's health. "Skål, lads! We'll bring the old boat home to Stockholm yet!"

On the 22nd of January, the fresh breeze and the drifting still continued. The ice began to open a little, and now we could clearly see the ice-foot to starboard and how the vessel's stern rested on it. It caused us much uneasiness that we could not get the vessel loose from this ice-foot; for should the ice begin to disperse, we should be unable to take advantage of the opportunity thus offered to us.

February 3rd was a noteworthy day. During the course of the forenoon everything was as usual, with the ice as fast as ever, although the whole field drifted somewhat. We were now almost halfway between Paulet and Cockburn Islands. Towards evening an unpleasant piece of ice we had under our bows pressed strongly onwards and made the *Antarctic* heel over a little to port. But that was too much for our old piece of ice; the foot broke, the piece of ice rose in the air and we were afloat! But the blow has been too heavy, the leak grows worse and worse; the deck-pumps rattle in quick time; the steam-pump works with all its power, as usual, and we have to help with a hand pump. All this has some effect. We find pumping quite a relaxation, and take turns at the work incessantly.

The nearest land now is Cockburn Island, from which, on the 6th of February, we are but 14 minutes (16 miles) distant. A few of us are persuaded that they are looking out for the vessel at the wintering station, and that they must have observed us.

February 12th —We have now examined the stern of the vessel and have learned the full extent of our misfortunes. One-third of the vessel's keel has disappeared, taking with it here and there a plank. A hole has been made that no human skill here can close. The wishes of even the most

sanguine amongst us are now confined to "If only we can beach her somewhere!"

In the evening the ice begins to grow uneasier than ever. The open water to the N.W. and W. grows in extent; we feel that the decisive moment is approaching. At 2 o'clock at night we had drifted into a large lead and cast loose. The moment when the sails were hoisted appeared to me quite a solemn one. The *Antarctic* floated freely once more! It

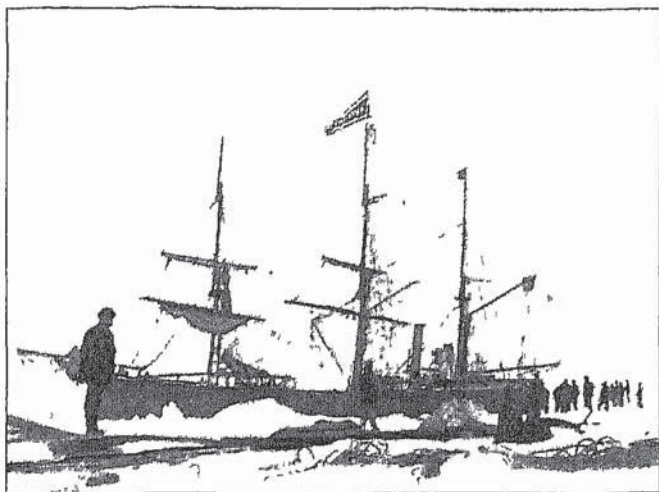


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A last farewell

[C. A. LARSEN

seemed as if she had become endowed with life; as if she felt what was at stake; as if she meant to use her utmost powers to reach the saving land. We thought we had never seen her cleave the waves so swiftly. We come in the midst of a group of stranded icebergs; an eddying current sweeps along just here, and all our efforts are in vain; she will not answer her helm. "Stand by!" The propeller begins to spin round. I go up on to the bridge. Larsen is there. One can see suspense painted in his features—do *you* know how it

feels for a skipper to lose his craft? The ice begins to close in. The ship goes full speed ahead; we must try to come as near as we can to Paulet Island

"When we have to stop, do you think you can keep her?" I ask Larsen "That depends; it's impossible to say; I hardly think so," is the answer I receive I hardly think it possible myself

Now we are at the end of the open water. The water is already beginning to rise; the men run here and there, and peep down through the main hatchway. "Now it's rising! Pump hard, boys!" We work with all our might, now and then casting a look down into the hold—No! the water is still rising! Six pumps are going; everyone is doing his utmost, floods of water are rushing out through hose and pipes; the winch works at a tremendous speed and deafens us with its noise; all arms are at work—No! it's all in vain! Slowly but surely rises the water. The keelson disappears for ever. "All stand by! She's going to sink!"

The word is said—"She's going to sink!" There is no time for despondent thoughts. Quick to work, for there is much to do! The provisions are handed up to the deck, and from thence down to a large piece of ice to which the ship has been moored with stout cables. Heaps of sacks and barrels, tins and boxes, soon lie in a confused heap on the ice. Mattresses, planks and spars, tools, sails, etc., all lie together. The ship cats are carried down in a state of terror. All the disorder of the last month has disagreed sadly with the poor creatures; they are quite frightened out of their wits. We are waiting for the rats to make their appearance, but not one can be seen, although there must be hundreds of them

By eight o'clock everything is ready. All of us are gathered in the gun-room—for the last time! Proudly has she lived, proudly shall she die. A health to the *Antarctic*, and thanks for what has been! We go up on deck again, one by one. A last look back at the low room where so many plans have been discussed, so many scientific questions debated, so many amusing stories related, so much happy laughter heard.

Good-bye to it for ever ! I dare not even look back at the cupboard where all my plants lie.

I have one bundle of plants under my arm. It is, even if I must say it myself, a little work of art in its way, with each specimen laid in an envelope, and these arranged in a packet so that they take the least possible room. Consequently, the herbarium which I have brought home with me is not such a small one as might be supposed. The envelopes

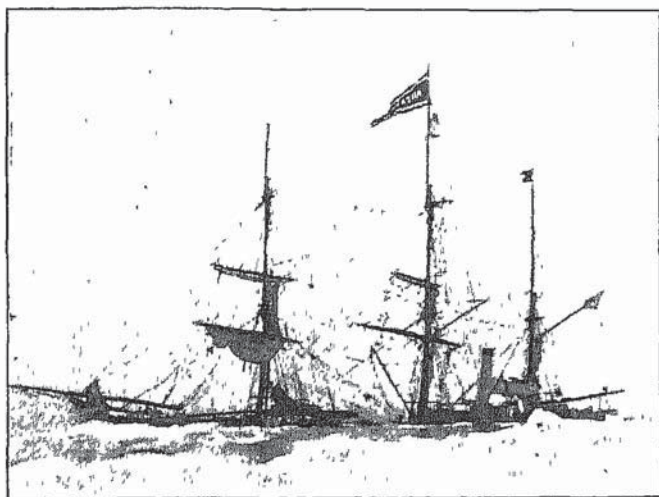


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The end approaching

[C. A. LARSEN.

are many hundreds in number, and if they could speak, they would most certainly have an interesting story to tell. In order to keep the packet dry I have adopted the following plan. A large piece of oil-cloth covered the gun-room table. Some time after the ship was nipped I said to Larsen, "I fancy that I may as well take this oil-cloth and wrap it round my plants, for you needn't try to make me believe that this boat will hold out any longer." "No, no!" said Larsen, "I intend going home now. Do you think I've time to stay down here during the winter?"

But on the morning we were to leave the vessel, I said to the captain, "Well, I think I can take the cover!" And this time—unfortunately—my wish met with no opposition.

The water is now up between decks and perhaps she will sink rapidly, so that it becomes advisable to go down on to the ice. The Swedish flag is hoisted at the gaff, and pennants flutter at the main and mizzen-tops.

And so we leave her. The cry is heard, "Cut the ropes!"

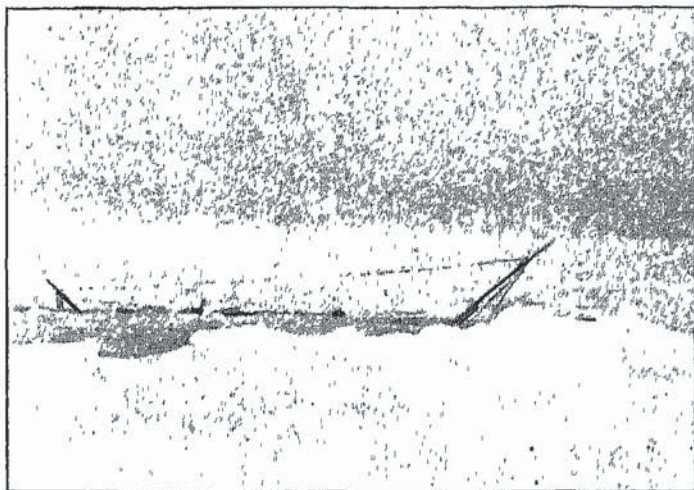


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'The end'

[O. A. LARSEN

—a few blows of an axe, and she softly glides a little distance out. In order to get her a little farther off, we all catch hold of a rope and haul her past that part of the ice where our effects lie. We drag her to her grave, in the literal sense of the term. We have heard that when the water rushes into a vessel, such a whirlpool arises as makes it exceedingly dangerous for boats that happen to be in the neighbourhood of the ship, and we thought that the piece of ice we were on might possibly split.

We stand in a long row on the edge of the ice and cannot

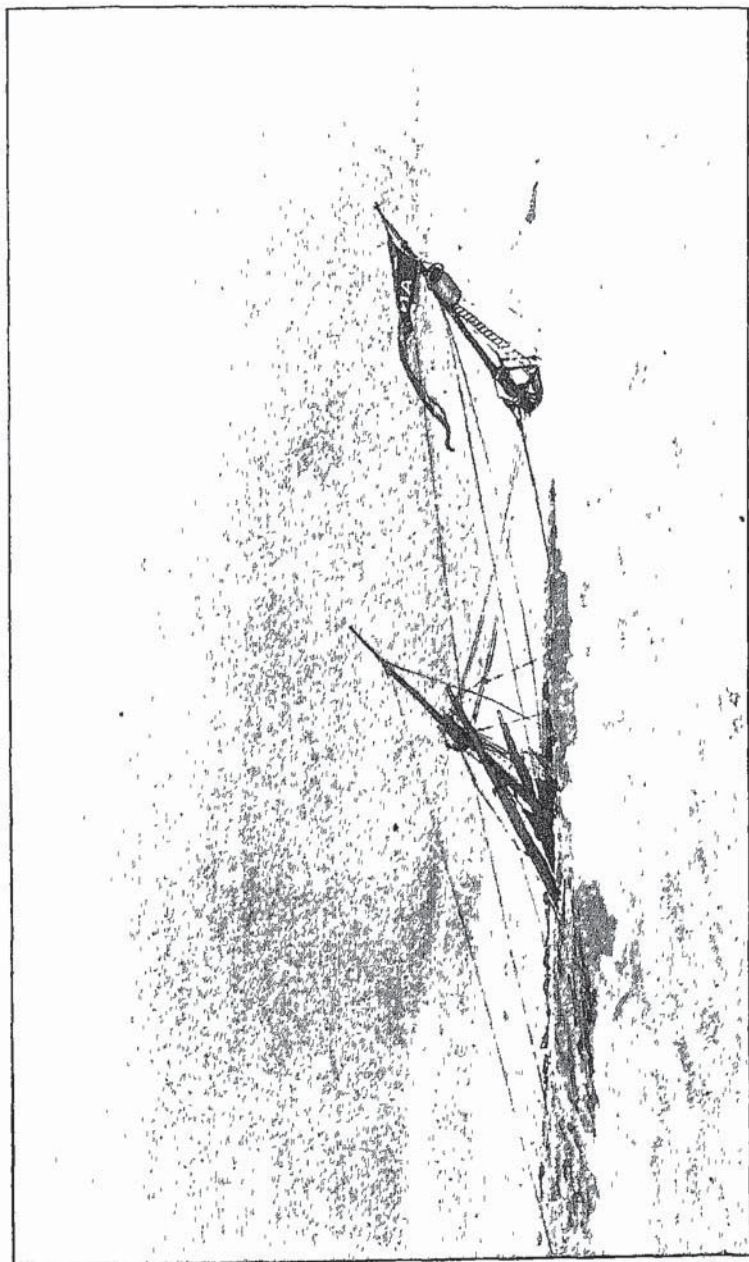


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The loss of the *Antarctic*
Soon, nothing but the tops of the masts are visible above the surface

[O. A. LARSEN

take our eyes off her. She has neared us again, so that she is not thirty yards away. The engines are still moving; the fires are out, it is true, but there is a little steam left. The pumps are still going, but the sound grows fainter and fainter—she is breathing her last. She sinks slowly deeper and deeper; for a moment we think she is going to the bottom bows first, but she soon recovers her balance. Now the name disappears from sight. Now the water is up to the rail, and, with a rattle, the sea and bits of ice rush in over her deck. That sound I can never forget, however long I may live.—

Now the blue and yellow colours are drawn down into the deep. The mizzen-mast strikes against the edge of our floe and is snapped off; the main-mast strikes and breaks, the crow's nest rattles against the ice-edge, and the streamer, with the name *Antarctic*, disappears in the waves. The bowsprit— —the last mast-top— —

She is gone!

CHAPTER XIX.

OVER THE DRIFTING ICE.

The men banish sorrow—We drag the boats across the ice—We drift near to Paulet Island—and away again—We determine to row to the land—Once more on solid earth !

OUR home is no more. What have we not lost ! The scientific collections—how shall we ever be able to replace them ? The fruits of so much industry ; our joy, our pride—all are lost. It is true, that it was only the results of the work of the last few months that have vanished, but they were the most important of all, for they were our Antarctic collections. I grieved for them all, I grieve for them now, and shall do so until I have replaced those lost specimens by new ones.

We are alone, hundreds of miles from any inhabited country ; alone on a drifting floe ; ignorant whether the morrow will find us alive, or whether we shall all lie at the bottom of the sea. It must be acknowledged that our situation is a most serious one, and can scarcely be even imagined by one who has never experienced any similar danger.

The most we can hope for is to reach land. There is only one place which lies within reasonable distance, and that is Paulet Island—a land of naught else but precipices or glacier terminations—an island where there is but little probability that we can manage to exist.

And should we reach the land—what then ? We have before us the prospect of a winter in these latitudes, and we, almost entirely destitute of ways and means to brave such a season,

weighed down by the heavy remembrance of the past, and with but a desperate hope of relief to encourage us!

But can I believe my ears! From inside the tent, which has been roughly put together by means of a few spars and two topsails, and another sail for the floor, I hear the sound of merry voices, the one burst of laughter succeeds the other, and the whole is accompanied by the tones of a concertina.

The suspense is over. Everybody knows what we have to expect. We know that we no longer have a ship, that we shall not see Sweden this year. It seems a relief to know that the terrifying uncertainty which disturbed our sleep at night and our work by day has at length been changed into certainty, a fearful certainty, it is true—but the first night on the ice is spent in a slumber calmer and deeper than any we have had during the past month.

We feel certain of destruction or—of safety. But no! We feel sure of reaching land; of building a house there; of overcoming all difficulties. Our goal is Paulet Island, whose precipitous summit is clearly defined against the whiteness of the Dundee glacier. And rescue? At this very moment we assure each other that a Swedish Expedition will come to search for us. No one has a doubt in the matter. Ought we not, then, hold together? Courage, boys! The dawn will come! It's not all over yet!

* * * * *

When the catastrophe occurred we were about twenty-five English miles distant from Paulet Island. Land can be seen around the horizon, but otherwise there is nothing but ice wherever we turn our gaze. Still, the reader must not imagine that it is ice which is smooth as a floor. That would be all too convenient. It is pressure-ice everywhere, and of a dreadful kind, too.

February 13th.—"Our piece of ice is pretty large and looks durable enough for a mass of pressure-ice; it has evidently drifted considerably during the night, for we are nearer to Paulet Island.

"We have put beech-wood runners under the pram in order

to be able to use it as a sledge. It is quite impossible to draw anything in the whale-boats. I have never seen such clumsy monsters of boats. But they have one good quality—an immense sustaining power.”

February 14th —“The weather has become more endurable, and we began our march to-day. The pram is filled with all manner of goods and then ten men, or so, take hold of the line and off we start. Where the ice is level it goes excellently, but one! two! three! and we are in front of a pressure

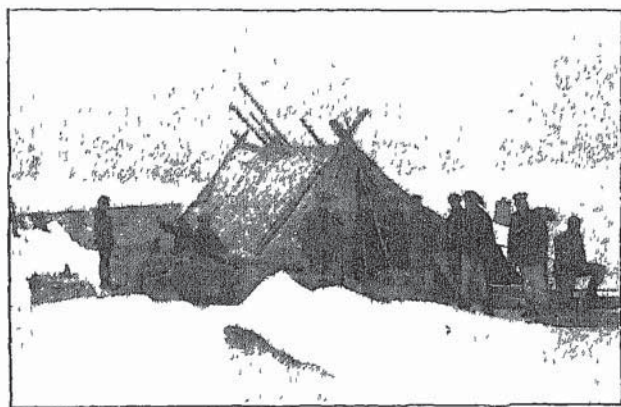


Photo by]

Our first camping-place on the ice.

[O. A. LARSEN

hummock. Out come the axes; the worst parts are hewn smooth, we give a pull altogether, and the big sledge bumps down the slope at express speed. We go forwards and backwards, without stopping, the whole day long. Once or twice we get a cup of coffee and some bread and meat. The work goes on with laugh and joke, and at eve we camp again. The drift still takes us onwards to Paulet Island, from which we calculate that we are not more than eleven or twelve miles distant.”

February 15th.—“We are living just at present on a veritable dancing-floor! Here, if anywhere, the name of

White Sea would be a suitable one. To-day we have only managed to cross our floe and that was work enough, for it is a large one. Our course *must* be N W., but it really seems as though the ice wished to sail past the island, round about which there is a row of ice mountains which will probably occasion us some difficulty. But if only we succeed in coming past them we shall feel as if we had jumped over a fence and left the bull on the other side, for they all lie aground."

February 17th.—"A little lead, or lane of open water, has formed quite close to our floe, we rowed across with all our things and encamped near some icebergs. We cannot be more than seven miles from the land.

"The moving was a cold and wet business for we had no fewer than 11 boatloads of goods to ferry across."

February 19th.—"During my watch (12 midnight—1 a.m.) there was a south wind blowing that made my nose tingle. We had the same weather the whole of the day afterwards. The tent and some other things have been moved nearer to Paulet Island, but it's an awful hauling and tugging."

February 22nd.—" 'Turn out! All men turn out!'—What's the matter? Oh, the ice has begun to move, and a lead has been formed close up to our piece of ice. We 'look alive,' and the boats are soon out. We ferry several boat-loads over, when the lead unexpectedly begins to narrow. A boat is about to cross with a load; we unload it, and pull it up in a trice and just in the nick of time, for the next instant the sides of the lead come together with a crash and press against each other so that large walls are cast up. A moment later the ice seems to be calm again; but I have never seen such a collection of hummocks. The worst of them are cleared away with axes and picks, and off we go again.

"We are turning back to fetch a new load, when a fissure, that was quite a small one a little while ago, widens out, and in a couple of minutes the whole mass of ice that had lain so closely packed is resolved into a number of hummocks and drifting pieces of ice. The fragments go spinning here and there,

sometimes colliding and falling to pieces. We see a number of our people on one piece, others of them are standing with some goods on the old piece of ice and we sit here in the pram and sail about, while on a couple of hummocks can be seen men who were lately busied in carrying over sacks of bread, planks, or a bag of clothes, but who are now floating away in different directions. At last the ice grows a little calmer, and by degrees we come together and refresh ourselves with a cup of coffee, but a number of our things—and important ones too—have floated away.”

February 23rd —“It is calm to-day and the weather far from hopeless, but—there is such a thick mist that we can scarcely see more than a few yards ahead. Our piece of ice is still drifting along at a good rate. At any minute an iceberg can make its appearance, give our little floe a knock and so—good-bye to us! During the night one did sail past, and it took a corner off our piece of ice.

“We now learn what things were lost yesterday when the ice broke loose. The mattresses are gone, all our planks but two; our three pairs of skis, a canoe packed full of woollen clothing and almost the whole of our supply of salt.

“The mist continued all day and the next night. It was not before the following forenoon that it decreased somewhat, so that we could see we had come much nearer to Paulet Island. We look about us for our lost goods in vain, but the drift towards the land inspires us with fresh courage. Fortunately, our piece of ice seems to be moving direct towards the island; some of us are sanguine enough to hope that we shall even be able to walk ashore. We had the land to the west-north-west. By evening we are so near that a sailor says he can see the stones on the beach, but this merely bears witness to more than ordinary powers of vision.”

February 25th.—“A nice sight it was in the morning! Paulet Island lies north-by-east, far down on the horizon. The currents have carried us from the land towards the south-south-west, and the whole of the forenoon saw us drifting farther and farther away. Then there came a change, and

slowly and carefully, so to say, we began to approach Dundee Island. During the course of the day a large lead opened nearer the land, and we were not long in taking advantage of it. All the boats were at once loaded, and off we rowed to an immense piece of ice that we had destined for our night quarters. Our whole equipment had now grown so small that it did not take more than two journeys of the boats to get it across."

February 28th — "After rowing a good way yesterday there came on a mist during the night, and as in spite of all our endeavours we could not manage to form any idea of the ice-conditions, it was not easy to recommence transportation before the weather cleared up a little. At 7.30 a.m. things grew lively, for the mist had disappeared, and there we had Paulet and Dundee Islands, not quite so near as they had been a couple of days ago, but still within reach. The ice had opened very well, and we looked confidently towards the end of the day. Should we not come direct to the shore, a thing we scarcely dared hope for, there would, at least, be no great distance left.

"We all feel that now is the tug of war! We do not even wait to drink a cup of coffee. No one will pause; we load and load, until at last the boats lie so deep that the least unwary movement would fill them with water. Should we ship any water while we are out in the lead we are lost, for it will be impossible for one boat to help another. All that cannot be taken on this journey is piled into a great heap, with a Swedish flag on a bamboo-rod beside it, to serve as a mark.

"We are ready to start. We glide slowly out into the lead; it is 8.40 a.m. At a distance it looks as though we should not be able to go any great way. We row and row; there is a strong current against us, but forward we *must* go; forward. The current is useful, too, for it carries the ice off the land; lane after lane opens before us; the dark cliffs of Paulet Island come nearer and nearer. 'Now I can see a bird standing on a heap of stones,' says one. And we can mark a faint smell of guano.

“ We glide slowly in upon the open shore-water , it is still, and the island pictures all its fantastic battlements and towers in the cold waters . The shore appears perpendicular, but we know from our former visit that there is an excellent landing-place on the other side . We turn a corner, and there we have the well-known hills. The penguins shriek confusedly , it looks as though they did not approve of the invaders who seem as if they actually mean to make their home here

“ Who can describe the feelings with which we heard the boats touch the shore ? What joy, what happiness there was in once more treading firm earth, after sixteen days’ incessant strife with the forces of Nature ! Does not this success bear encouragement enough with it to make us fall to work with renewed vigour, and to make us determined, in spite of every difficulty, to persevere to the very end ? ”

CHAPTER XX.

HOUSE AND HOME, FOOD AND CLOTHES.

Our last "civilised" meal—Paulet Island—We determine to build a house—Our food supplies—Our clothes—Winter makes its appearance.

WE were rather tired when we landed, for we had rowed uninterruptedly for $6\frac{1}{2}$ hours, and without having eaten or drunk anything since the preceding evening. And we got no rest yet awhile, for we were obliged to move all our things farther up on to the land, as it was now low water. After an hour or two the cooks had managed to prepare a little dinner for us. It was a memorable meal, not because of the dishes—for we had only tinned meat, coffee, butter and ship's biscuits—but because it was the last time that we ate other meat than that procured by our "hunting parties", it was the last time we had sugar with our coffee, and the last time we had as much butter and biscuits as we wished. It was with a certain solemnity that the sugar was dropped into the cup—I believe I took twice as many pieces as usual, although I prefer the smaller quantity.

The shore on to which we had drawn up our boats was not very broad, it was succeeded by a slope whither we transported our things. This slope was free from penguins, and lying between rather steep hills, offered more protection from the wind than did the other habitable part of our island. After helping to erect the tent and to cover the floor with flat stones, I had time to make a little exploring expedition, of which the following report may be interesting.

Paulet Island lies in about $63^{\circ} 35'$ S. lat (corresponding pretty nearly to the position of the Faroe Islands in the northern hemisphere) and long. $55^{\circ} 50'$ W. It is almost circular in form, being about three miles in circumference. The island consists entirely of recent volcanic rocks, basalt, and such like, and has the appearance of a very typical crater-island, the middle of which is occupied by a little circular lake, towards which the sides of the hill fall very steeply. The highest point of the island lies 385 metres (1,250 feet) above the sea. The hill slopes are very steep, and it is only in a few places that the top can be reached.

The place was rather silent and deserted when we arrived, for, unfortunately, the greater number of the penguins had already left the island. Those who were left were old birds who were moulting; they sat there peaceably and quietly enough, although they were evidently irritated by our arrival. Nearly all of them belonged to the black and white Adèle penguins (*Pygoscelis Adeliae*).

We look around in vain for seals. There ought to be some, and if they do not soon put in an appearance—! Raw penguin-meat is not very enticing.

Fancy being able to go to sleep, confident of waking in the same latitude and longitude where one dropped off. Our life seems quite full of enjoyment, though the stones are not soft to lie on.

March 1st.—Now begins our Esquimaux life. We mark it at dinner-time, the meal consisting of penguin-soup, which is very good, being made from freshly-killed birds. Then we go out to look for seal, and find no less than eight, all of which are killed, the skins and the best part of the meat being brought home to the tent amidst rejoicing. To-day is Sunday, and, therefore, we have done no other work than the killing of these seals, but there is much to be thought of. It is evident that we shall not be able to make shift with our weak tent. It has stood one storm, it is true, but who can say how it will fare on the next occasion? And besides; it cannot, of course, keep out the cold in the least, and it would

be impossible for us to dwell a whole winter as we are now doing

So we must build a house. The first thing is to choose a site. The little plain near the shore, to the east of the tent, is level and enticing enough, but the winds blow more unhindered there, and it would be troublesome to take our building materials to the place. The slope on which we dwell is not quite level anywhere, but it is somewhat protected from the wind, and one of the hills close by is covered with the finest flat basalt-stones of an even thickness, which look as if they would make excellent building material. We determine to erect the hut at the foot of this little hill, and begin by taking some large, irregularly rounded blocks of basalt and rolling them down to the spot where the foundations are to be laid. Some of the men stand there ready to receive them, and place them in their proper positions, in double rows, with small stones, and old and now inodorous guano to fill the spaces between. Almost before we are aware of the fact the foundations are ready, and we stop to cast a look of hopeful pride at our masterpiece. The style is quite new and might be called Paulet Island architecture. It is probably unrepresented elsewhere—and I hope that none of my readers will ever find themselves forced to adopt it.

The best stones near the hut are soon taken, and we are obliged to go some distance off and climb the hill in order to look for suitable material. It is hard work carrying slabs of stone on one's back, hour after hour. Building is much pleasanter—putting the blocks together as closely as possible and slipping in small pieces here and there, and filling in with earth. Naturally we built double walls everywhere, and we do not make rapid progress with the work, as we have to provide shelter for twenty men, and the walls must be built close, in order to exclude storm and snow. One grows both tired and thirsty—has to stop to take breath every now and then—must take a drink of water from the bucket. The water comes from the crater-lake. It is a little too greenish-yellow in colour, and has an unpleasant taste—for thousands of pen-



Photo 691

The winter dwelling on Paulet Island when the expedition left

[E. DODMAN

guins have dwelt upon the steep slopes—but we do not attach importance to trifles, and when used for the soup the water does not taste so bad.

The house grew day by day. The door-way leading out into the future kitchen was made ready after we had found a couple of slabs large enough to go quite across the top. On the opposite side we left place for two small windows. We had been hoping to escape snow until we had the roof ready, but we were not so fortunate, and a great deal of snow fastened in all the corners of our new building

Our health is not quite as it should be. Our stomachs rebel against the constant meat diet. But we have nothing else, for no one can still his hunger with ship's biscuits and the coffee-cup. Most of us soon grow accustomed to the new diet, however, and scarcely anyone was as bad as I was for a period of several weeks.

The 6th and the 7th were very unpleasant days, but during the afternoon of the latter day we finished most of the work necessary inside of the house, and commenced the erection of the framework of the roof, consisting of two narrow tables in the middle, and, on each side of these, two roof-couples of tent-poles. The roof-tree consisted of two boat-hooks fastened together. The sails were laid over the ridge and built into the wall; the windows were stuffed up, a tarpaulin was hung before the door, and we moved in during the course of the evening. There was a considerable quantity of snow on the floor and in all the cracks of the walls, but now there was no help for it

It already begins to be winter. The snow whirls about in shifting gusts, and snowdrifts accumulate inside the hut, for the entrance cannot be kept tightly closed, as there are twenty of us, and we must be able to go in and out freely. The thermometer outside the house shows about fourteen or eighteen degrees of frost the whole of the twenty-four hours. It is rather cold indoors, but we hope to improve matters as soon as we get the kitchen built outside the entrance, and have the roof-cloth covered with seal skins. We calculate

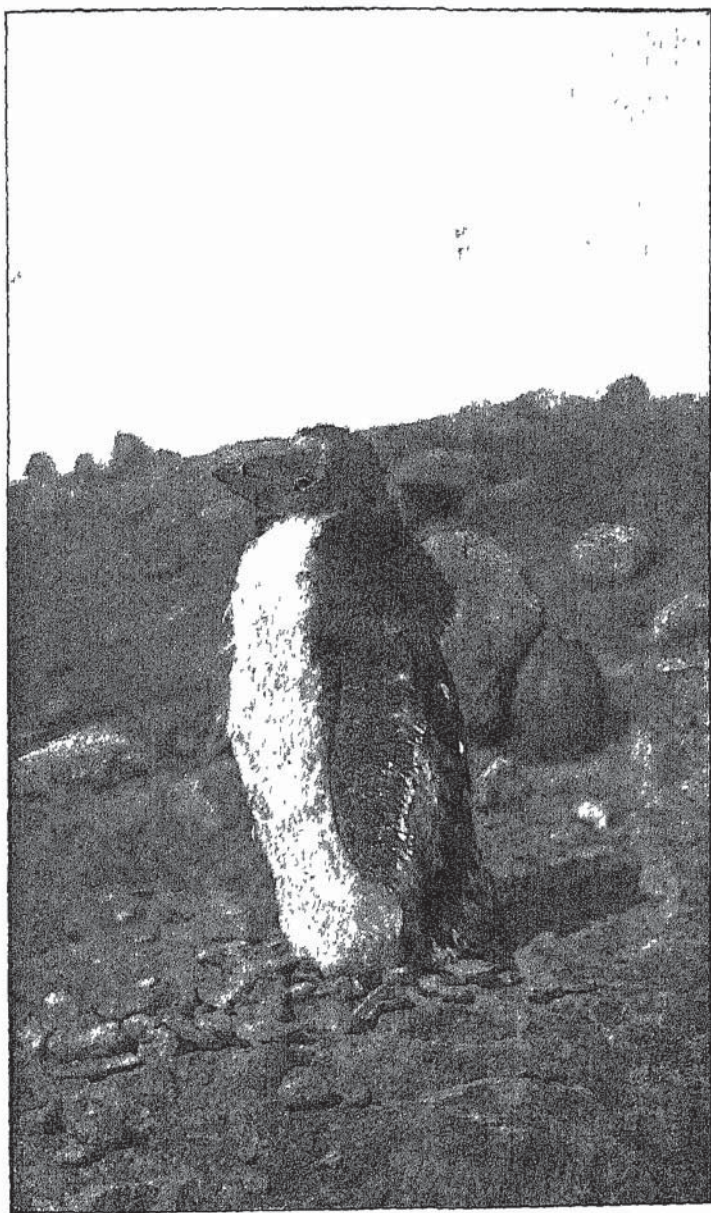


Photo by

An Adelia penguin moulting

[E. EKSLOP]

that we need about thirty of these skins ; some lie ready on the hill, but are frozen stiff. As soon as they thaw we intend sewing them fast to the canvas. And, in addition, when the windows and the doors are in their places, I imagine we need not freeze to death.

As an addition to our fare we have now commenced to eat blubber, boiled in the soup. We cannot afford to take much but a little is always of some use. For my own part I believe we can thank the blubber for the good health we enjoyed during the time we wintered here, for I fancy the fat serves in some degree to make up for the vegetable food-stuffs of which we had such a small supply. At the beginning we swallowed the bits of blubber without daring to taste them, but at last one actually enjoyed masticating the fat, especially when it was quite fresh.

The bad weather continued, but it did not prevent us from building our kitchen, for the cook had really a miserable existence, and the snow came whirling in upon those of us who lay nearest the door, so that the satisfaction was general, therefore, when after a couple of days we had the kitchen ready. The building had only three single walls of equal height, covered with a roof made of a tarpaulin, canvas and some seal skins.

The total length of the house was about 34 feet, of which 24 were taken up by the dwelling-room. Its breadth was 22 feet or so, that of the kitchen being 12 feet, or a little more. The front and back walls were $3\frac{1}{2}$ feet and 4 feet high respectively, as the floor sloped towards the shore ; the side walls were 8 feet high. Tall as I am, I could walk erect along the middle line of the house, and no greater height than this was required, I fancy. The doors were low, and one was obliged to stoop on entering. The area of the floor in the living room was 20 feet by 18, and was almost entirely taken up by the sleeping-bags. Low stone-beds, seven feet broad, were built along the two sides of the room, and here the bags lay in two rows, ten in each. Between the beds was a passage, four feet wide, which constituted the only



Photo by]

The penguin colony at Penguin Island (January, 1902)

[NORDENSKJÖLD

common space in the room. We had not many domestic utensils. In the window recesses stood a couple of Primus petroleum-stoves, a pair of scales for bread hung on the wall—it had been constructed by Larsen out of the sides of a cocoa-tin; under them stood a sack, or a barrel, containing bread. Each one had his plate, knife, fork, spoon and cup. In the kitchen we kept all the provisions, with the exception of five barrels of ship's biscuits, which lay snowed-up lower down the hill, and the food supplies obtained on the island itself, these being buried in the snow below the hut.

The list of provisions brought to Paulet Island included, amongst other things, 600 kilogrammes* ship's biscuits; 25 kg. sugar, 30 kg. coffee; 14 kg. tea, 70 kg. pease; 165 tins of preserved meat and fish (the greater part of the tinned meat was left behind us on the island when we were rescued), 16 tins condensed milk; 100 kg. margarine (Zenith's and Pellerin's); 600 portions preserved vegetables; 240 litres† petroleum (140 litres of which still remained at the end of our stay here); and 300 candles and a supply of matches.

The supply may seem considerable to anyone who does not reflect how many there were of us. But it formed a small fraction of all that we consumed; in fact, we should have soon have been starved to death had we not been able to supplement these stores very considerably. While the house was building we killed a seal now and then, but seal-meat was unpopular at the time, the majority of the men thinking that the penguin-soup tasted much better. We had determined, from the very beginning, to collect a supply of penguins for the winter, and we calculated that we should require at least 3,000 or 4,000 of the birds.

The penguin-colony was growing smaller and smaller every day; an increasing number of the birds had already acquired their new feathers, after which they made no delay in taking their departure, but several thousands of the penguins were still left on the 11th of March, when we at last had an

* 1 kilogramme = $2\frac{1}{2}$ lbs. avd. † 1 litre = $1\frac{3}{4}$ pints



Photo by]

C SKOTTSBERG.
The winter dress as used on Paulet Island.

[S. DUSE

opportunity of beginning the work of massacre. But this was no easy task. It went well enough for the first few days, but it did not take long before the birds saw what our intentions were, and fled long ere we could come within reach. Still, it was very strange that they should have become shy so suddenly. We could not afford to throw away powder on them, but did the work with sticks. As I have said, it became at last almost impossible to catch any birds. Where the ground was free from snow we contrived to obtain some spoils of the chase, but where the snow lay we sank into it, while the penguins simply ran away from us, throwing themselves on their bellies and kicking themselves forward at a most astonishing rate. When the last of the birds had left the island we had killed about 1,100 of them.

A few words may be said about our clothes. Each of us had a couple of changes of underwear. Our clothes were, as a rule, of homespun; some of us had an extra coat or pair of trousers, although these were not made for winter use. Still, I think no one suffered from the cold on account of a scarcity of wearing-apparel.

We were worse off for shoes, our ordinary shoes and boots being anything but sufficiently warm, and complaints about cold feet were made every day, while nothing was said of any other part of the body suffering from the severity of the climate.

Winter had now made its appearance; some entries from my diary will show that it at once assumed despotic power.

March 14th.—"Bad weather, with a snow-storm from the west-south-west. All outdoor work interrupted." *March 15th.*—"Fresh south wind with snow-storm, and twenty-two degrees of frost the whole day. But K. Andersson and I took a walk, for one grows stupid lying in the bags all day."

March 18th.—"Weather bad, and a snow-storm from the south-west in the evening, but I had my forenoon walk."

March 19th.—"It began to blow hard at 11 last night, with increasing violence. The roof is not ready yet, and the gusts of wind attacked the frail structure with terrible power,

causing the sails to thresh against the roof-poles. Strangely enough, the covering held. But when we looked out in the morning the kitchen roof had disappeared. It had fluttered away for a couple of hundred yards, and had nearly continued its journey far away over the ice. The whole island has quite another look after the storm: immense masses of snow have fallen, in which we are obliged to wade up to the knees."

CHAPTER XXI.

WINTER—LIFE ON PAULET ISLAND.

Winter—Looking forward to Easter eve—How we spend a fine winter's day—Outdoor occupations ; dinner ; evening , going to bed—Our dreams

THE days creep along at a snail's pace, the weather keeping us, as a rule, indoors. Scarcely a bird can be heard about the precipices ; the little *Chionis* (Wattled Sheathbill) alone, comes hopping around our cottage, but goodness knows that it is not much he has thrown to him by the Paulet Island savages.

It is winter all around us. The ice lies fast between here and Dundee Island, so that the snow can now whirl direct to our hut from the glaciers of the latter place. But the cold has given us one advantage : it has extended the area available for walks, and we are no longer confined to a narrow strip of coast. Our new domain of ice is not so monotonous as the reader might believe. There we have chains of hills with intervening valleys, ridges and peaks, cliffs and precipices. There are fissures, and holes where the seal blows—his movements watched every day by vigilant eyes.

Unfortunately we were not aware of the wind conditions here, otherwise we should have placed the door in another part of the building. As it is, the entrance is continually blocked with snow, and every day we have endless trouble in making our way in and out.

The time goes a little slowly. But there is one thing in the world which is able, in a way, to make the days pass quickly, and that is, the looking forward to something agree-

able. And we go here longing, longing for Easter, and our longing grows the greater the nearer we approach the great event—rice porridge! What a trifle, is it not? But what do you think penguin-soup is, when compared with the mere thought of rice-porridge?

Easter Eve, the great day, is come. There is great joy amongst us, for we have taken a seal. The work of flaying it is soon completed, and we creep into our bags and wait devoutly for the long-expected meal. The conversation turns wholly upon rice-porridge.

Amid laughter and jest each one takes out his table service; we even wipe our plates clean. I use a coal-black handkerchief, which shines with fat and soot. The door opens; the conversation dies away; there is a touch of reverence in the silence.

It is no every-day dish we are promised. Quite a number of *Chionis* have been sacrificed, and we have indulged in the luxury of frying them in margarine. There is absolutely no end to the praises lavished on this prodigally prepared dish. But suddenly there comes a new silence over us, the kitchen door is thrown open for the second time and the cook enters heavily, toiling along with the big, heavy porridge-pot. A most delicious aroma spreads about in the hut, the steam fills the low room, and the plates are handed round. We sit and long for our turn to come.

Never in our lives have we eaten anything so good. But as it would be prodigality to take the whole at one meal, I put my plate on the shelf behind me, leaving a little bit for the morrow.

* * * * *

How we spent our every-day life during the following winter months can be realised by taking the description of one day—any one day. We may assume that the weather is calm, cold and clear, a condition of things which, unfortunately, did not often exist.

It is about 7.30 a.m. My watch has been out of order for a long time past, and so I poke my friend, K. A. Andersson

—who lies on my left—in the side, and ask him what the time is. The ceiling is glitteringly white, for it is clothed with a very respectable layer of rime. This rime has dropped on to our bags during the night, so that they, too, lie white and beautiful in the day-dawn. The walls are also covered with frost, and all the cracks are filled with ice, which grows thicker after each touch of mild weather. Of course we have to keep our bags well closed over the head, in order to retain the warmth; one breathes through the blanket and the canvas, and, on awakening, there lies a vault of ice above the face.

At length, it is eight o'clock, and if the weather permit, Andersson or I go out to note the height of the thermometer. This *can* be a pleasure, but—after a snow-storm! Then the passage through the snow-drift to the door is filled with hard-packed snow and on looking outside one sees a smooth, white wall. If there happens to be a shovel inside, we make a hole and creep out, but sometimes there is nothing else one can do but go into the snow-drift head first, and wriggle out into the open. On coming in again, one hears hollow-sounding, questioning voices from the depths of the bags, for everyone is curious to know how the thermometer stands.

Oh, I have gone to bed at half-past seven the evening before, and have slept almost twelve hours, and am awakened by a rattling noise. It is the “waterman” knocking the ice out of the pail before he goes to fetch fresh water from the crater-lake.

Out of the way for the cook; here comes the coffee! Cups are held out, and the boiling hot drink is soon swallowed and warms the whole of one's frozen frame. We drink coffee and tea on alternate days, with cocoa on Sundays. This sounds fine, but one has either to keep a very careful count of the days, or else have a most delicate sense of taste, if one is to be able to distinguish between the various decoctions. The tea was undoubtedly the worst of them all.

We can suppose that the weather is fine, and so order the day accordingly. We make preparations for going out, and begin to dress ourselves. The boots always occasion the



[SKOTTSBURG

Drawing by

Pauler-hut in its winter-dress

greatest difficulty, for they are as hard as sheet-iron. The coat has, of course, become wet on some occasion or another, and may now be best compared to a mail-shirt. But, at length, off we go to our various employments. Some take their fishing-lines and go down to the ice to stand and stamp by a hole for a couple of hours, cheered by faint visions of a fish-breakfast. My boots, which are thin, being intended to be filled with shoe-hay, do not permit of my standing still so long when it is cold, so I go about, pick up the fish, when any are caught, and take them home to be cleaned.

It may be that I go on the look-out for a seal. We go far over the ice, but, unfortunately, it is seldom that our efforts are crowned with success.

But in the end it grows wearisome, this going out and clambering about. The sleeping-bag is no very enticing bed, but we have no other place of refuge. So we go indoors and take off our out-door clothes, and each one withdraws to his lair. Then begins a new period of waiting. A couple of hours elapse ere the food comes, consisting, it is true, of penguin-soup alone, but it gives occasion for a salutary interruption. It is no very agreeable odour that steams from the kettle when it is brought in, and when the fare comes on to the plates it does not look pleasanter than it smells, for it consists of a brownish-yellow, thin soup, with some thick penguin-bones lying in it, and pieces of seal-blubber floating about. But we finish it all. And when one has swallowed the two platefuls we get, there are many who cast a look of regret towards the empty kettle as it is carried out.

Still, our dinners are not always such plain ones. Saturday is the best day in the week, for the man who does not eat his fill then has only himself to blame. Dinner that day consists of an endless number of seal-steaks, and a plate of what is alleged to be fruit-syrup soup. I shudder when I think of the portions we received: seven or eight enormous, black steaks, swimming in fried train-oil, and garnished with bits of blubber. There was not much taste to the soup, and great faith was necessary that water might be changed to syrup.

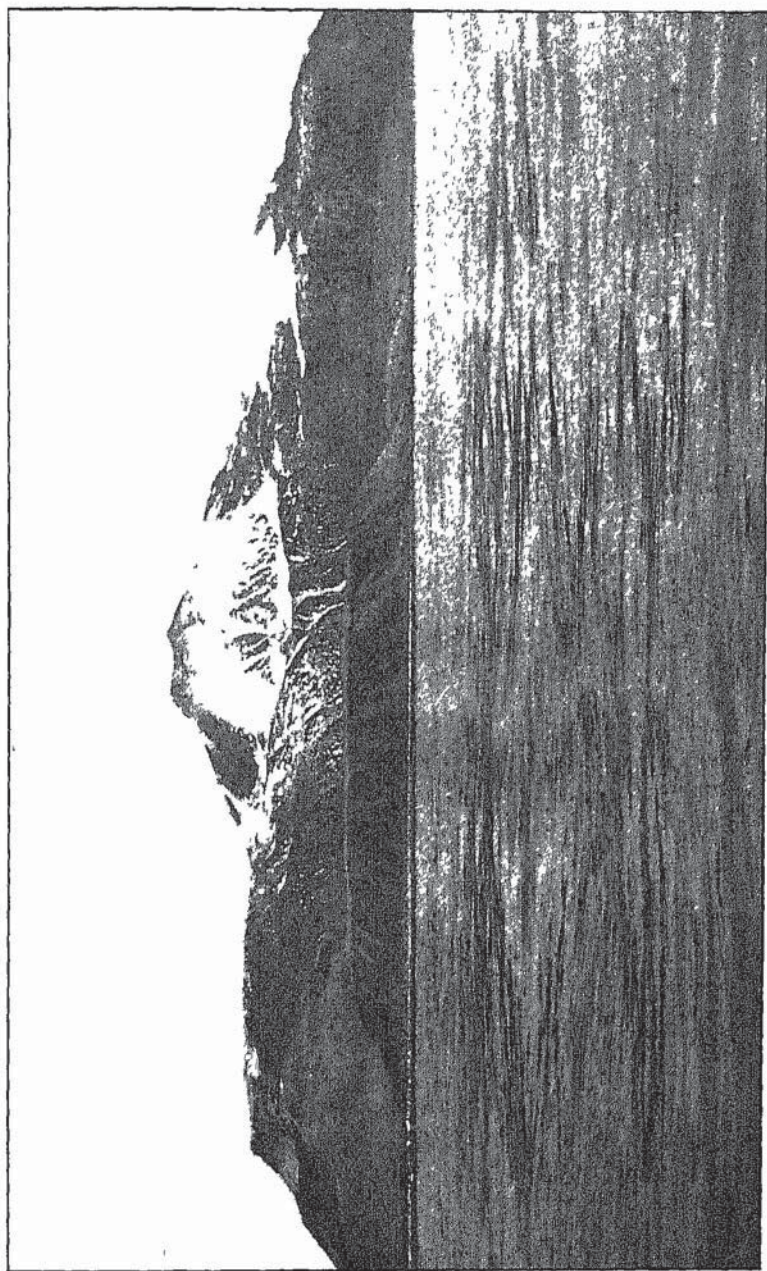


Photo by]

Paulet Island

[C A LARSEN

But fortunately we were all of us believers, and we lavished unending praise on the decoction.

It is not more than six o'clock. How long the evenings are! If only we had enough tobacco, for now we think it much if we get a single whiff of a pipe! Old Haslum, the second mate, will always be present in my recollections; I can still see him comfortably sending out clouds of smoke which smell bad enough to make one's hair stand on end, for he used dried tea-leaves mixed with snuff. And Martin, who used to beg, in advance, for pipes that might eventually be broken, and who, when he received the treasure, would chew the bowl. It is a thankless task, the endeavour to keep a sailor and pig-tail tobacco apart!

And so we lie staring up at the roof where the rime-frost is gradually increasing, for it is growing colder and colder outside. Yet no one gives way to despondency—not at all; but each one does what he can to be cheerful and chatty, subjects of conversation never come to an end in Paulet Cottage, and Johansson never ceases troling some tune. It is an advantage to be able to be in good humour at any time, even if deep down in our hearts we consider the situation desperate. A hang-gallows wit it is that flourishes in our midst.

A moment's reading livens one up considerably. But we have to be saving of that, too, although it is often hard to close the book. And so we lie and think a little while longer, and by-and-by it is time for bed. The process of undressing is not an arduous task; that of arranging the bed is much more tedious. The pillow is a mosaic composed of various articles of dress; the canvas-bag shows a tendency to slip down; the blankets are twisted. At last everything is in order; we creep inside, draw the blankets and canvas over our heads and wish for nothing else but to be able to sleep. We have first to take up a position which is not too inconvenient, a thing easier said than done; the mattress consisting of stones—and knobbly and sharp ones into the bargain—covered by nothing but thin rags. Many a time when

I have lain me down have I thought of Hamlet's words :
 " — to sleep. No more , and by a sleep to say we end the
 heart-ache and the thousand natural shocks that flesh is heir
 to. . . . To sleep—perchance to dream ! "

Many hundred dreams have been dreamed in our island,
 but I do not know if they helped to brighten our existence.
 They grouped themselves around two objects—food and
 rescue Why, we could dream through a whole dinner,
 from the soup to the dessert, and waken to be cruelly disap-
 pointed How many times did one not see the relief vessel
 in our visions—sometimes as a large ship, sometimes as
 nothing but a little sloop ? And we knew the persons on
 board ; they spoke about our journey ; took us in their arms ;
 patted us on the back.

A train-oil lamp winks faintly through the smoky darkness
 Nothing can be heard but the breathing of the sleepers — —

CHAPTER XXII.

WENNERSGAARD'S DEATH. MIDWINTER.

The unpleasantness of an Antarctic winter—Wennerggaard's illness and death—The winter increases in severity—Approach of spring—We determine to send a boat party to Snow Hill Island.

THE Antarctic winter weather is not enticing. It is true that the cold in these latitudes is nothing nearly so great as it is within the northern hemisphere, but here, on the other hand, the wind becomes a much more important factor. And the changes in the weather come with extraordinary rapidity; in a couple of hours the temperature can rise from -20° C. (-4° F.) to freezing-point, and two hours later we have once more 20° (36°) of cold. But we rejoiced at the thunder of the wind which is doing good work out at sea, by driving the ice eastwards and away from us. We must have ice-free water in the spring when the relief-boat comes.

In mild weather it was nice and warm indoors; that is, the temperature was about $+3^{\circ}$ or 4° C. (37° to 39° F.), but the change was attended by several inconveniences, a dreadful smell arising from the kitchen-midden to which the passage between the rows of beds had been gradually transformed. And the rotting penguin-skins were still worse! In order to make their beds softer, several of our party had placed penguin-skins under the sleeping-bags, and if anyone happened to move the bundle, a terrible odour at once filled the room. When one came out of the fresh air into the hut it was at first almost impossible to breathe, so bad was the atmosphere. It seems very strange now, that we

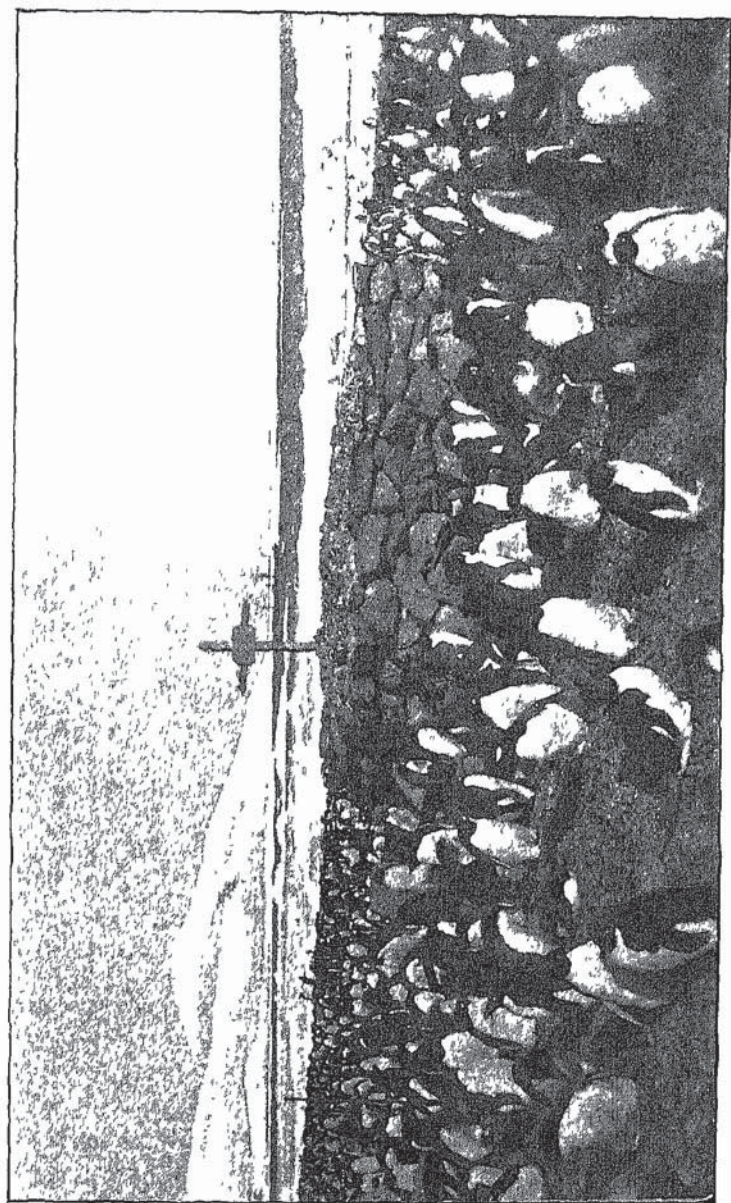


Photo by]

Wennergaa'd's grave
In the background, Dundee Island and the *Urra*, 1927

[3. BODMAN

enjoyed such good health as we did the whole time we were on the island, although it can easily be understood that the digestion of several of us was somewhat affected by our larc.

But we were not wholly preserved from sickness and death as we had hoped we should be. Wennergard had been a long time poorly, had violent attacks of coughing as soon as he went into the open air, and, as we thought at the time, showed other signs of consumption.

But what were his bodily sufferings compared with the mental anguish he must have felt! To sit there amid dirt and wretchedness and hear his comrades speak of rescue, of home, of friends, and to know within himself that he was doomed to rest here for ever, doomed never to see his native land again.

Sometimes it happened that he cheered up somewhat, recovered his good spirits, and chatted with his companions. On the 17th of May, for example, the national day of Norway, when merriment and a festive feeling prevailed in the hut, Wennergard, too, felt better for the while, but a few days later he was worse again. It was touching to see him writing a few words of farewell to his parents and his brothers and sisters. He would sit night after night, moaning softly and slowly, for he seldom had any rest, and if one happened to look up during the course of the night, one met the terrified gaze of his large sorrowful eyes. We seldom heard him complain; he only moaned softly.

On the morning of the 7th of June, he had said good-night to his attendant, Martin, with a "Now I shall sleep well." And he fell asleep in a sitting posture, the only one possible for him. Then his neighbour suddenly felt how Wennergard sank softly down upon his shoulder—a few rattling breaths, and life had fled.

It was dim and silent in the hut; cold, clear and silent in the open air. Death, the one guest who could reach us, had laid his hand heavily upon the circle of comrades who had so long striven together for life.

Slowly went the procession out through the low door.

Sewn up in his sleeping-bag, the only coffin we could give him, he was carried out to one of the boats. A couple of days later we buried his body in an immense snow-drift; not until the spring came could we build him a lasting resting-place. Slowly we wander home and assemble in the hut, where everything speaks of death and corruption; we assemble there—*nineteen* of us.*

* * * * * *

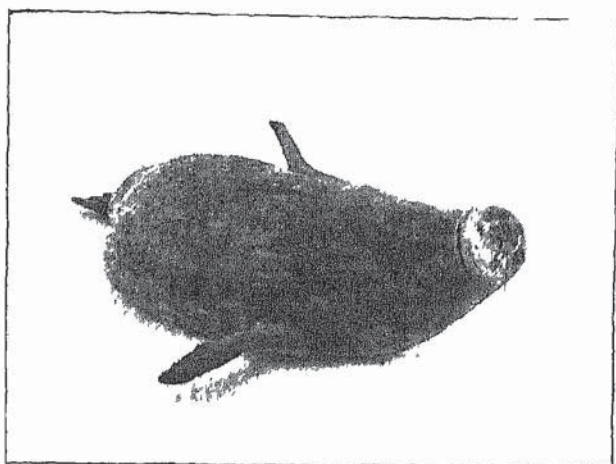
Severer and severer seemed to grow the cold, paralysing all desire for work. We could lie in the dusky light day after day while the storm raged outside; hungry and cold were we, and the time passed with inexpressible slowness. "Midwinter Eve" (June 23rd), came with its rice-porridge and with magnificent weather; the mere thought that the sun would now return to us called forth a festive feeling in our circle. On Midsummer Day the thermometer was up to -0.5° C. (31.1° F.). It was impossible to stay indoors, for the state of the air there was terrible, but what a pleasure it was to be able to wander about hour after hour with unfrozen boots on, and without getting the feet cold. The cat ran about as if she was mad, and evidently enjoyed life to the utmost. Oh, you do not know what it is not to be obliged to suffer from constant cold!

Thus passed week after week amidst joy and sorrow, with long days and still longer nights, all our interest concentrated in the struggle for existence. The time went; July and August with their cold and depression disappeared; the sun rose higher and higher in the heavens. Nature awakened more and more to life; September and October came with spring storms, but came, too, with seals and penguins.

Heaven alone knows how the time went, and how we managed to reach the day when the boat which was to carry Larsen, K. A. Andersson and their companions, to the

* A later and more detailed examination of the symptoms showed that Wenerssgaard probably died of heart disease.

wintering-station at Snow Hill, at last glided gently off from the ice. Long were the looks we sent after them. Should they be lost amid the floes, who was to know that there was a little hut on Paulet Island, where a dozen human beings dwelt and wondered how help should ever reach them ?



Weddell seal on the ice.

CHAPTER XXIII *

BOAT-EXPEDITION FROM PAULET ISLAND TO HOPE BAY AND SNOW HILL ISLAND.

We leave Paulet Island—A storm compels us to take shelter on the ice—We come to the dépôt place at Mount Bransfield—A twenty two hours' row—We march over the ice to the wintering station—Our reception—Good news for us and for our comrades on Paulet Island—We leave Snow Hill



WE had long determined on endeavouring to put ourselves into communication with the other members of the Expedition as soon as the ice-conditions permitted of our doing so, and with this purpose in view we had occasionally ascended the hills of our island, in order to ascertain the effect of the storms and the ocean currents on the ice, and to keep a look-out for open water which would permit of a boat journey being made.

* By Captain C. A. Larsen.

Our patience was tried for a long time, however, for it was not before the end of October that we ventured upon the expedition. On the 30th of October we determined that, if the weather kept fine, we should start as early as possible the following morning. In addition to Reinholdz, the third mate, I was to be accompanied by Mr. K. A. Andersson, Karlsen, the second engineer, Olsen, the boat-swain, and A. Andersson, the cook. Our equipment consisted of one ship's biscuit per man for twenty days, half a pound of butter per man for fifteen days, a few tins of preserved meat, a cistern of petroleum, some necessary implements and some fishing-gear.

When the inhabitants of Paulet Island assembled for the last time on the evening before our departure, and were led, by speaking of the coming journey, to discuss the fate of J. G. Andersson, Duse and Grunden, and to wonder if we should succeed in reaching the wintering-station, we could not then suspect the remarkable events which, within the space of a couple of weeks, were to so happily change the fortunes of us all, and make every fear for the future needless.

At 5 a.m. on October 31st we were ready to start, but just as we put off, there came a slight easterly breeze with snow, which grew so dense that we could see only a few boat-lengths ahead. But we rowed in a south-easterly direction the best we could, and about 9 a.m. we rounded the point, afterwards keeping a more westerly course. The wind beginning to freshen, we set the sail and went at a smacking pace between the ice. The air was fresh and cold, and after a couple of hours we fell in with close ice, which compelled us to lower the sail and take to the oars again, until we caught sight of Rosamel Island. We pulled in as close as we could to the land, in order to find shelter from the wind, which had freshened and was now accompanied by a high sea. We pulled the boat up on to a piece of ice, not a very large one it is true, but we had no other choice. It was now five in the afternoon, so we made a little coffee and warmed up some seal-meat, the meal putting fresh life into us. As there



C. A. Larsen.

was no place where we could rest, and the wind and the cold increasing, we were in for an adventure which appeared by no means promising, and matters grew very bad when the high sea began to break away our little piece of ice, bit by bit, from beneath our feet. There was nothing else for us to do in the midst of the cold and the darkness but to exercise all our strength, and pull the boat up on to an elevation on that part of the ice which was left. Here we were in comparative safety, one man keeping watch while the others crept into their sleeping-bags and endeavoured to rest. We suffered more from the cold than was comfortable, but on such journeys as these one is obliged to take life as it comes.

The storm and the high sea increased during the night, so that our little piece of ice stood right up in the air and we began to glide down towards the edge, where our destruction would have been certain, for in such a sea the boat would have been crushed between the ice like an egg-shell. So we drew the boat still further in across the drift ice, until by midday on the 1st of November we discovered a suitable place to camp on. To obtain a little shelter we put the boat broadside to the wind, which had now fallen a little, and gone over to the south-west. During the course of the afternoon more ice set in from the south and laid alongside of the ice-edge, so that we felt more secure than we had done upon the former piece of ice. The weather had cleared, too, and in the evening when we got into our sleeping-bags it was pretty calm, although cold. The boatswain had the first watch, and at 10 p.m. he awakened us with the news that the ice had begun to disperse. Everybody was on his feet in an instant, ready for departure; the boat was put out, and we found the ice so open that we could manage to row. There was a beautiful moonshine; the wind was northerly but cold, and when we succeeded in getting out of the drift ice, which had carried us about five miles to the southwards, we were surprised to meet with newly-formed ice of from one-half to two inches in thickness, frozen, in parts, in double layers. It was a difficult task to make any progress here, but perseverance and patience

overcome a great deal in this world, and such was the case now, although we did not succeed in reaching the depôt at Mount Bransfield this day.

Monday, the 2nd of November, came with a faint northeily breeze and a clear sky northwards. We strove and we rowed with all our might, but made slow work of it, sometimes advancing only foot by foot, for the ice was so hard that one was obliged to strike it several blows with the oar in order to get through. I lay forward and cleared a path for the bows of the boat—a trying work, for my nose began to bleed and I fainted. Luckily the attack soon passed. On coming to the most northerly of the two islands (Irizar Island) on the west side of the sound, about five miles from the depôt, we found that it was useless to continue with our efforts, for the new ice grew more and more difficult to penetrate, and the sound, as far as the eye could reach, was filled with pack-ice and newly-frozen ice. We determined, therefore, to stay at some suitable place on the island, a thing easier said than done, for ice was in rapid movement on account of the tide, and the water along the shore was very shallow, with large stones and rocks everywhere. After much trouble we at last found a landing-place a long way up in the channel between the islands. The ice lay smooth, and formed an excellent road up to the land, where the first thing we did was to put on the coffee-kettle and strengthen ourselves with a cup of coffee and some ship's biscuits. The boat was drawn up and we went to rest, a very necessary proceeding after ten hours' incessant work on an empty stomach, for with hard work and no food the whole body feels worse than if one has been beaten to a mummy.

The whole sound between the islands was full of rocks, and would probably have been difficult to pass with a vessel. Farthest in, in the narrowest part, the ice still lay evenly spread across the sound. There was now almost a calm, with the most brilliant sunshine.

Those left behind on Paulet Island must have most certainly been anxious on our account when the heavy south-

easterly storms arose. They feared the worst no doubt, especially as their own situation depended, in a great measure, on the result of this attempt to put ourselves into communication with the rest of our comrades, so that the relief vessel we expected could be informed that a part of the Expedition was to be found on Paulet Island.

When I looked out at 2 a.m. on November 3rd, there was a north-westerly wind blowing, with light clouds in the sky. After the men had been roused, and we had drunk our morning coffee, the boat was pushed off, and we once more proceeded on our way. We now had the current with us, so that the boat went at a brisk rate, the ice hindering us but little. The appearance of the atmosphere had, however, begun to change; well-known small, white, sharp-edged clouds filling the sky. I saw that we should soon have a strong breeze, but we rowed on in order to reach the *dépôt* during the course of the day. After coming over to the land to the west, we were obliged to go on shore near a hill, inhabited by penguins, directly north of the channel, for the wind had so increased in strength that we were unable to proceed. The tide was at ebb, and the shore such that it was difficult for six men to carry up the heavy boat, although they eventually succeeded in doing so after a great exertion of strength. We were astonished to find that the penguins had eggs at this early part of the summer, and that in great quantities. The eggs were excellent, both boiled and when fried with blubber, and after satisfying our own wants we collected a supply to take with us to the wintering-station. We had also the good fortune to meet with a couple of seals, of which we killed the female to provide ourselves with meat and blubber. I went up the fell a couple of times to look for fossils, though without success, but various mosses and lichens were gathered for Skottsberg.

The storm increased in violence, so that it threatened to cast both the boat and us into the sea. We were, therefore, obliged to hang large stones on to the edge of the boat, especially to windward, in order to keep our craft on land, and then

we took refuge in the sleeping-bags. But it was neither easy nor agreeable to sleep amidst music which was a mingling of the shriek of the penguins, the howling of the storm, and the thunder of the sea, whose waves were not more than forty feet distant from our camping-place.

But in spite of the tempest we awakened on the 4th of November refreshed and in good spirits, and spent the time in making coffee and eating penguin eggs, while we waited for the storm to cease. Towards evening the wind subsided somewhat, and went over more to the west, so that at about seven o'clock we determined to make a start. The whole way along the edge of the glacier the water is very shallow, so that at low tide the shore lies quite dry, with a number of rocks, large and small. By 10.30 p.m. we were in the bay at the dépôt-place, but it was impossible to land on account of the state of the tide. There was no shore here, but only a high ice-edge, so that we were obliged to wait for high-water. However, we made fast the boat at last and left two men in it to keep watch, whilst we others went on shore to investigate the state of things at the dépôt, etc. We found a small stone-hut and a pole with a board attached to it, in which it was stated that J. G. Andersson, Duse and Grunden had spent the winter there from the 11th of March to the 28th of September, 1903. Over the board was a flask containing documents and a sketch-map of their route. On their first journey they had been obliged to return in consequence of insuperable difficulties, and now they had left this spot in order once more to attempt to reach Snow Hill.

We took a part of the old tarpaulin, which we needed in order to form a shelter inside the boat, but the rest of it we laid once more over the splendid collections left on the spot. We also took one of the poles which they had used as a support for the roof of their hut. We intended using this as a mast, and although it was not so good a piece of timber as one could wish, it would doubtlessly last a part of the way.

The next day we collected eggs and made the mast ready, but we could not think of departure, on account of the in-

creasing storm, which continued the whole night and did not begin to abate before four o'clock, or so, on Friday morning. We then made everything clear for starting, but scarcely were we ready to put the boat in the water, than the storm again began to increase, the bad weather preventing us from making a start that day too.

Early on Saturday morning, the 7th of November, the weather was at length calm and fine. We broke up at 4 a.m., and then rowed the whole day in the direction of Sidney Herbert Bay. Only here and there did we meet with scattered ice. The fine weather continued the whole of the next night, and we were making rapid progress towards our goal when, just as we passed Cape Gage and came into Admiralty Sound we met with a hinder which could not be forced by the boat. We found the ice extending in a straight line right over the bay towards Cockburn Island and Cape Seymour, and inwards across the whole of the sound. So at 2 a.m. we drew the boat up on to the ice and retired to rest, of which we were in great need, having sat at the oars ever since early the preceding morning. We did not turn out before 11 a.m., when we took our meal of coffee and fish-balls, for we were obliged to "stand" something good, as we were so near our destination. About twelve or fifteen miles now separated us from the wintering-station, towards which all six of us started at 3 in the afternoon. It was a toilsome and troublesome march, for the snow was so loose that every now and then we sank into it up to the knee. But by 10 in the evening we had reached the shore below the station, and were received first by Bodman, who shouted jubilantly, "Larsen! Larsen!" and began to cheer, so that everybody came hurrying out of the house. The reader can easily picture our mutual gladness, but we were quite astounded when all the others—everybody speaking at the same time—told us breathlessly that an Argentine vessel lay off the island, and that we should all be home for Christmas. Overpowered with joy on hearing this unexpected information, we thought how glad our comrades on Paulet Island would

be when we came with the Argentine vessel to bring them off.

It need not be said that numberless questions were heard on all sides, and that the news exchanged amidst the general joy by the reunited parties of the Expedition, which had so long been separated from each other, was both various and remarkable.

Early the following morning, the 9th of November, began the transport of the things from the wintering-station down to the Argentine ship. The dog-sledges were loaded, and off they went across the ice as fast as a man could run, with nine dogs for two sledges. It was a real pleasure to see that the animals could draw such heavy burdens. Dr. J. G. Andersson and I went on board with the first boat-load, and I met with the heartiest reception imaginable on the part of Captain Irizar and all his officers. No introduction was needed, Captain Irizar at once guessing that I must be Larsen and embracing me. It was really affecting to be thus greeted by the representatives of a foreign nation.

It was quite another sort of journey we made the next day when we directed our course back to Paulet Island. But it has already been described by Dr. Nordenskjöld, and, therefore, I am not under the necessity of saying anything about it.

CHAPTER XXIV.*

“HAIL ! HAIL ! THOU NORTHERN LAND !”

Springtime—The penguins return—Egg gathering—We eat our fill—We discuss the prospect of the arrival of a relief vessel—“The boat—hurrah !”—Farewell to Paulet Island

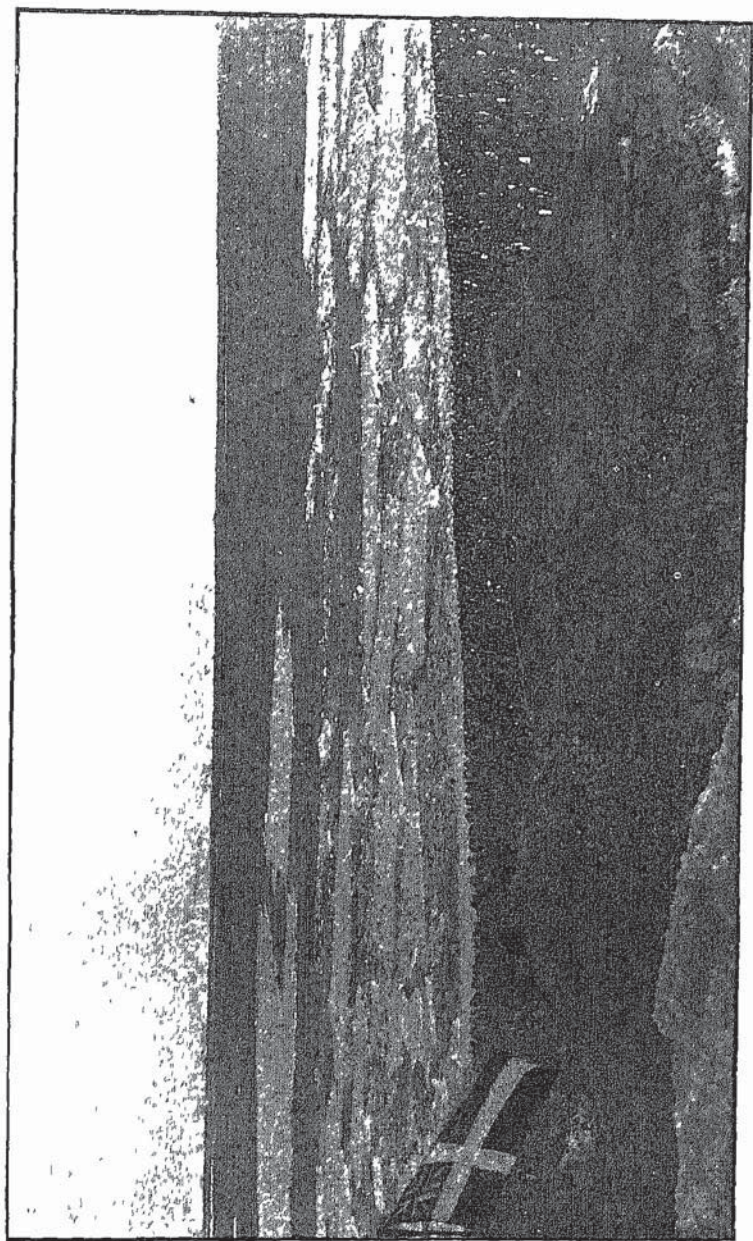


IT is spring. The sun quite burns one ; it is really warm and refreshing ; the snow begins to melt on the slopes and runs in streams down on to the plain where the penguins sit in close-packed multitudes. A never-ending din arises from these tens of thousands of creatures, a din outvoiced now and again by the discordant shrieks of some fighting birds. We go lounging about the whole day

long, sated and happy ; the time of sorrow is past and gone, and that of hope is come ; yet a little time and we know that a sail will appear on the horizon, and then——

But we quite expect that we have a couple of months of waiting still before us. We are as yet only at the beginning of November, and we shall be here till Christmas or the New Year, or perhaps even longer. But what does that matter ? There are plenty of seals, and the penguins will not come to

*This Chapter is by C. J. Skottsberg



[G. BODMAN]

Winter hut on Paulet Island, surrounded by penguins

Photo by]

an end in a hurry, and then, we shall have the egg-time here soon I suppose—we have spoken about it several times.

It is the 6th of November, and early in the morning I hear cries of exultation around me, and peep out from amidst my rag-bed, and there stands Duus* in the middle of the passage with his hat full of eggs; large, white, round penguin-eggs! How we shout and laugh all together; we possess a poultry-yard worth having! But we must not care for the needs of the day alone; in a week or two there will be no more fresh eggs, and it is a matter of great importance for us to have a supply for the next few months; out here the eggs keep fresh for a long time without any special treatment.

Armed with buckets, off we go on our expedition. No strife, no palm! We have to submit to blows and pecks; the penguin is small, but he is a jolly good fighter, and our legs are sore when the day's work is ended.

Oh, how we revel! Fried eggs, boiled eggs, raw eggs, eggs in soup, in coffee, in tea: I am a temperate man and never ate more than a score in one day, but I know of a sailor who ate three dozen in the same time.

It is the 10th of November. We lie indolently in our sleeping-bags, contented with the day's work; our store of eggs now amounts to a total of 6,000. It is so very agreeable to always feel satisfied after meals; how many of my readers know what it means to lie in cold, and darkness, and hunger, week after week? But believe me when I say that a man learns to appreciate the day when he can eat his fill without being obliged to think of economising.

Our conversation that evening, as on so many other evenings, turned on the rescue—we speak of it now in the definite form. And suddenly one of us has a curious idea, and asks the rest, "What should you do if a boat came and began to whistle here in the sound, without anyone being prepared for it?" What a question! We should probably go mad with joy, though we have had time to prepare ourselves for the arrival of the ship. But who could think at the moment that we should be put to that test the very same night?

* One of the seamen



Drawing by

Douc

The first eggs.

[E] LANGE

I did not sleep at all quietly after going to bed, but crawled out of my bag just before 4 a.m. and crept softly outside. A deathly silence reigned ; the sea was as smooth as a mirror. My gaze was directed as usual to the horizon, but there was nothing to be seen there—nothing. And why should there be anything ? I went indoors with a sigh, shut the door behind me, crept into the bag again and made up my mind to sleep.

But what in all the world—! A discordant sound breaks the stillness of the night ; a well-known sound, but one inconceivable just here. No ; I must have been dreaming.—The sound is repeated—it must be so—it can be nothing else—*the boat is here !* I am out of the bag. I thump at the sleepers beside me : “ Can’t you hear it is the boat—*the boat*—THE BOAT ! ”—“ A BOAT ! HURRAH ! ” Arms wave wildly in the air ; the shouts are so deafening that the penguins awake and join in the cries, the cat, quite out of her wits, runs round and round the walls of the room ; everybody tries to be the first out of doors, and in a minute we are all out on the hill-side, half-dressed and grisly to behold. Hurrah ! There she is, we dare scarcely believe our eyes, but it must be true, we shall see home again, we shall be home for Christmas ! There is an oar, carrying the yellow and the blue of Sweden, stuck in to a snow-drift near the corner of the hut ; here we have a piece of Scandinavia that will soon be reunited to the mother country !

It is an iron boat down here amid the ice—a new wonder. An Argentine man-of-war—it is almost incomprehensible ! Breathless with expectation we stand on the ice-wall by the shore, I cannot take the glass from my eye—the first boat is approaching. More and more clearly can I distinguish my comrades—there is Gunnar Andersson, there Karl Andreas Andersson, and, actually, it’s Duse himself standing in the bows ! They leap ashore ; there is no end to our exultation, questions and answers fill the air. Here comes Karl Andreas and gives me a glass of “ zoological ” spirit ; Bodman has some bits of sugar for me ; Duse, a piece of chocolate and a cigarette ! It is my first banquet after the rescue.

The hut is soon filled with provisions for a depôt ; the door is barred ; I have passed over its threshold for the last time.

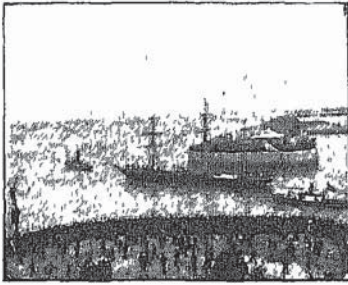
I am in a ship that moves—I can scarcely comprehend it. Slowly we glide away, away from the island, whose dark peak looms above us as threateningly as before. But I cannot take my eyes away from it. I can hardly grieve that our prison-doors have been opened, and yet, it is with a sense of sadness and of regret that I see Paulet Island disappear behind the dazzling inland-ice—disappear maybe for ever.

Has it not been my home ?

CHAPTER XXV.*

THE JOURNEY HOME ON BOARD THE URUGUAY.

Visit to Hope Bay—The Argentine Relief Expedition—Arrival at Staten Island and at Santa Cruz—Once more on the Rio de la Plata.



HERE we finally quitted the Antarctic regions there was still one work of interest to be attended to. J. Gunnar Andersson had stored up at Hope Bay a magnificent collection of plant fossils and other geological specimens, the fruits of long and arduous labour. We turned into the

sound just after passing the islands which I have named, after our rescuers, the Argentine (Irizar and Uruguay) Islands, and stopped at last off the bay. The weather appeared very threatening, so that only J. G. Andersson and myself went ashore. There stood the ruined hut which, now that the roof and the inner tent wall had been removed, appeared little more than an ordinary stone-heap, but even in its present condition it bore witness for the future of what human beings had done in this place. Round about swarmed the members of the large colony of penguins, glad, no doubt, at once more being undisputed rulers of their ice-covered world.

* The last two Chapters are by Dr. Nordenskjöld.

Night was falling when we again trod the deck of the *Uruguay*. The work is at length ended—the two years' work in the world of ice, and the eighty-six hours of almost incessant labour which formed so remarkable a conclusion to that period. We were now able to repose in quiet for a while, until the arrival of the moment when our lives should once more mingle with the pulsating stream of civilised existence.

At this point my account of the Expedition could very well be concluded. But as a frame for the picture which I and my comrades have endeavoured to paint in the preceding pages, our impressions from the period of transition which now followed—if one may so term a time so unlike that which had gone before, that it would be difficult to find any points of comparison between them—may be of interest to the reader.

It was quite natural that we had a most lively wish to learn everything possible about the Expedition which had made its appearance as our rescuers. Independent of the steps taken in Sweden for our relief, the celebrated Argentine scientist, Dr F. P. Moreno, proposed a plan for a relief expedition which should be sent out by the Government of his country, and, thanks to the energetic measures taken by the Minister of the Navy of the Argentine, Commodore Onofre Betheder, the plan became a reality. The intention at first was to purchase an Arctic whaler in Norway or in Scotland, but as no suitable vessel could be obtained in either country at that season of the year, it was determined to employ the *Uruguay*, a cannon-boat of an old type, after making the alterations necessary for the voyage. It is evident that such an iron ship could never be turned into a good Polar sea vessel, but nothing was neglected that could be brought about by the help of money, and, as a matter of fact, very little was left of the original vessel.

Captain Julian Irizar, then the Argentine naval attaché in England, was recalled in order to become the leader of the Expedition. Before returning home, Captain Irizar paid a visit to Sweden and Norway, in order to confer with members

of former Arctic Expeditions resident in those countries. The second in command was Lieutenant Hermelo ; the other officers being Lieutenants Jalour and Fliess, with Lieutenant Chandler Bannan as the representative of Chili. Dr. Gariochategui was the medical officer, and J. Bertodano and G. Carminatti were the engineers.

According to an agreement which had been made, the Swedish and the Argentine Relief Expedition were to co-operate, and for that purpose the latter party was to await in Ushuaia the arrival of the one from Europe, but not until a later date than the 1st of November. But the Swedish vessel, the *Frithjof*, was delayed on the way over, and Captain Irizar considered that he was not justified in delaying the departure of his vessel after the day fixed.

It would have been strange, of course, had Irizar and his companions not rejoiced at the success which had attended their enterprise, but, even under such circumstances, mention should be made of the splendid way in which we were received on the *Uruguay*, nothing being omitted which could serve to make our stay on board as agreeable as possible ; and it is with feelings of the liveliest gratitude that I testify to never having experienced greater personal amiability and complaisance.

An important question which had to be decided at once was that of the course the vessel should now take. And as we, as well as Captain Irizar, had the greatest wish to reach a telegraph station as soon as possible, instead of being obliged to have recourse to the uncertain communications via Ushuaia, it was determined that after a visit to the Argentine magnetic observatory on New Year Island, our next port of call should be the easily accessible harbour of Santa Cruz.

We had passed the South Shetlands, and so had left the Antarctic world behind us in good earnest, but the stormy weather with which we had made acquaintance in those regions still pursued us.

The passage, in consequence, became one of such duration, that it was not before the 18th of November that we reached

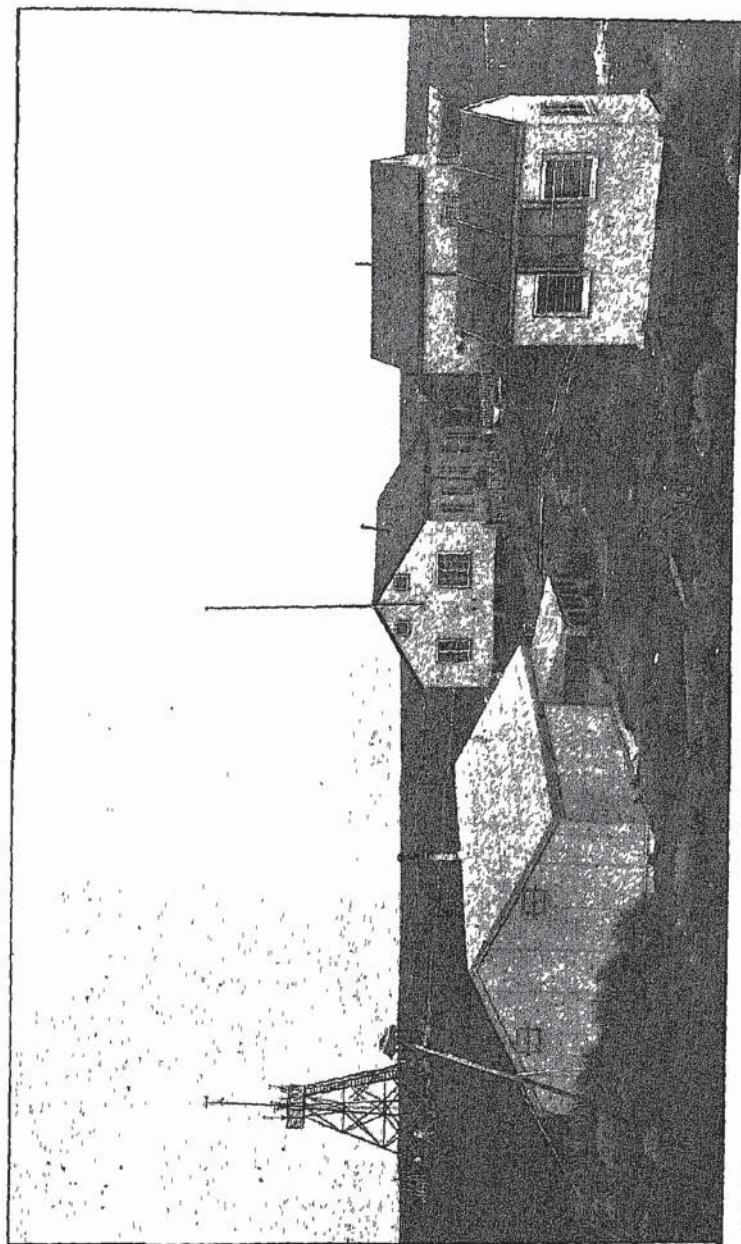


Photo by]

The Argentine observatory on New Year Island

[G. BODMAN]

Staaten Island. Bodman and Sobral landed on New Year Island, whilst the rest of us went on with the vessel to the principal island, where we intended to anchor in Cook Harbour, and afterwards return to bring off the two who had gone on shore. The boat soon put off again, as many of us as possible hastening to seize the opportunity of once more setting foot on solid earth.

I shall never forget the impression given me by the ice and the loneliness of the Antarctic world, when I formed its acquaintance four days after our departure from the same place where we now found ourselves. The same impression was now made on me again, but in a reverse order. Cook Harbour itself is a very grand piece of water, bounded by precipitous, wood-clad mountain sides and lofty, boldly-formed peaks, where in some places patches of snow could be still observed. I will not now quote all the former visitors who have described the scenery here as terrible in its desolate wildness, as these accounts are evidently very much exaggerated. But apart from this, one could scarcely find a more striking example of the saying that everything depends upon comparison, than the impression now made upon me by this scenery.

The day was rainy and we still wore the same thick clothes we had had on when crossing Drake Strait. We landed on a little strip of shore, covered with variegated rubble-stones and washed by small waves, but, however different this appeared to what usually met the eye in South Polar tracts, I forgot everything in the inexpressible pleasure of once more beholding the green grass. And what is that peeping out between the stones yonder? A flower, little and unimportant, and yet what a flood of feelings does it not call forth! I go further inland, first under the closely arching bushes of beech, and then down into a little valley where the trees are higher. What overpowering magnificence and verdure and richness these trees have, even if they be compared with other growths than the almost invisible lichens which for us have long been the representatives of the world of plants! And when I see

some barbaric trees overstrewn with their red bell-like flowers, I feel myself suddenly transported to a veritable paradise. Insects are flying about in the air, amongst them some large yellow moths, while crowds of small birds are twittering in the bushes around me. I am scarcely able to proceed; the sun does not burn with that roasting heat which one occasionally experiences in the snow-covered south, but with a moist, suffocating warmth which one would not even dream of as existing in Antarctic regions. It feels as when one is in

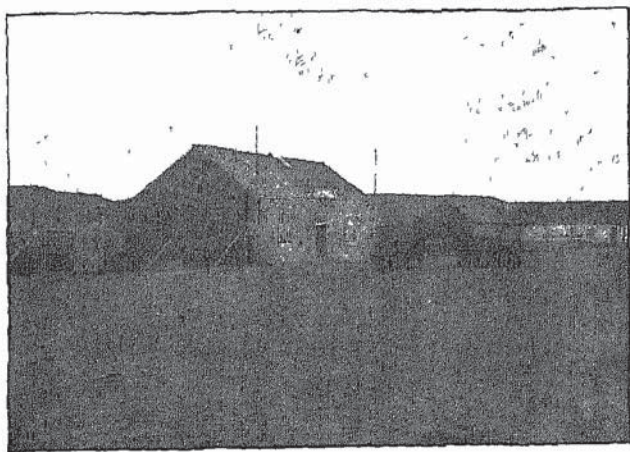


Photo by]

In Santa Cruz

[G. BODMAN.

a hot-house, but the wood around me is no hot-house vegetation; it is rich, true nature, and if I have to compare the feelings I experienced at the moment with anything else, it must be with the sensation that came over me when I first viewed the glory of tropical forests.

But one soon grows accustomed to things, especially when it concerns a landscape which, in a certain degree, can be compared with that which constituted our ordinary surroundings ere we began this journey. Very soon we begin climbing amongst the rocks in spite of the warmth, and on coming

to a small patch of snow, welcome on account of its coolness, it is difficult for me to remember that, but a week ago, ice and snow were the undisputed rulers of all our world.

After calling early on the 20th for the two comrades we had left at New Year Island, we again steamed northwards, and on the afternoon of the 22nd began to ascend the Santa Cruz river. We are once more about to take one of those giant steps which shall transform us—the first settlers in West Antarctica—to ordinary representatives of western civilization. We see a large river—itsself a novelty to us—and on its bank human dwellings, a whole group of houses, an Argentine *estancia*. A flock of sheep is moving over the grassy slopes, and yonder comes a rider. How strange it all appears to us! By-and-by, a row of houses gradually appears on the horizon; we look intently through our glasses at the first town we are to visit. And over there—all glasses are quickly brought into use—we see, for the first time for two years, a representative of womankind.

But it is nothing of all this which has brought us here. The moment has now arrived when we shall announce to the world what we have done, and inform our nearest and dearest that we are at last on our homeward way. I had written an account of the fate of the Expedition, in as detailed a form as circumstances permitted, which was intended to be forwarded telegraphically to H.M. the King of Sweden; telegrams were to be sent to the President and the Naval Minister of the Argentine Republic, and nearly all of us had written short telegraphic greetings to our friends in the North. I at once went on shore with one of the ship's officers. We were met on the bank by a whole crowd of people, wondering, questioning, and loudly rejoicing when they learned of the success which had attended the Relief Expedition sent out by their country. We hastened to the telegraph-station, where it took several hours to read and sort all the telegrams, but before we left the place the first news was already being spread over the world, conveying the intelligence, both of our wonderful adventures, and of the geographical and scientific exploration

of the northern and eastern coasts of West Antarctica down to the Polar Circle.

We rapidly pursued our journey northwards from Santa Cruz amid increasing warmth and improving weather. All our cares were devoted to letter writing, every place on board where an inkpot could find standing room being constantly occupied. On the morning of the 30th of November we once more steamed up the mighty, yellow mass of water called the Rio de la Plata, and in a suffocating, tropical heat that felt equally oppressive however thin the clothing we assumed, the *Uruguay* cast anchor in a hidden bay, where a part of the work necessary for our reception in Buenos Ayres—such as painting and cleaning—could be executed without fear of disturbance from heavy seas.

CHAPTER XXVI.

FROM BUENOS AYRES TO SWEDEN

Our reception in Buenos Ayres—Our journey across the Atlantic on board the *Tijua*
—Home!



THE South Polar Expedition was concluded. We lay waiting for what was to follow, amid tropical heat, in a region where millions of men moved and lived, near the greatest centre of population in the southern hemisphere. For us it was a moment of great excitement.

The reader must remember that the latest news we had received from our native country was now nearly one year and a half old, and what might not have happened during that long interval of time? And, moreover, what could we expect that the world would say of us and of our enterprise? We knew that we had obtained results, better, perhaps, than those we had dared to hope for when we began the voyage, and our consciences told us that we had done our duty as far as the circumstances would allow us. But we had encountered exceptional difficulties and even actual misfortunes, and that one little word "*reverse*" has so often caused the world to forget results, and to judge unmildly of those who have not succeeded in everything

We lay in the little bay, busily occupied with our work, when, towards midday, we caught sight on the horizon of two pillars of smoke rapidly approaching us, and a practised eye was soon able to distinguish two Argentine naval vessels, which were usually employed in hydrographical work on the La Plata. They steer directly towards us, swing off sharply to one side and steam round the *Uruguay*, while their bands play and they dip their colours in salute. Boats put off, and in a short time there is a whole crowd of naval officers of all ranks gathered on our deck. Storms of congratulations were heard on every side, and, what was most welcome, we received the most important part of our post, the telegrams, from my mother, news that all stood well, from His Majesty the King, a recognition in gracious terms of all that we had done, congratulations from personal friends and from friends of the Expedition. Even though the greater number of us remained without news, there were, on the other hand, none who received sorrowful intelligence on this occasion. Not before these telegrams were read could we receive with glad hearts the overflowing goodwill we experienced on all sides.

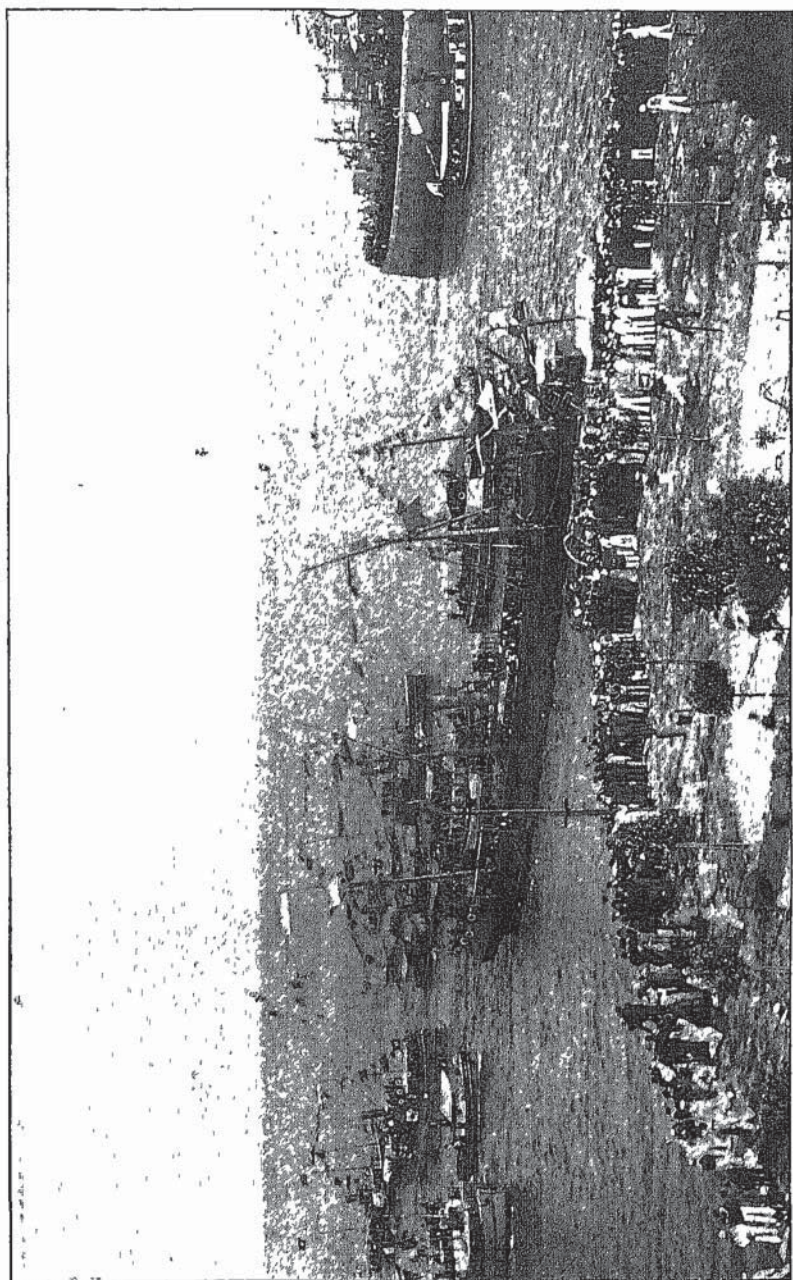
What a difference between this scene and the silent, peaceful life on Snow Hill! We were, of course, constantly torn away from any work we happened to be at, in order to answer all manner of questions put by newspaper representatives. We were already besieged by supplicants who desired to have our signatures on illustrated post-cards—this expression of interest afterwards attaining such dimensions that the whole of the time we remained in Buenos Ayres would not have sufficed to satisfy everybody's wishes. The delay in our landing had one undeniable advantage, viz : that we gained time to obtain the most necessary articles of clothing, readily supported in our endeavours by the tailors and clothing affairs of the city, who now commenced an almost too brilliant business with the members of our party.

On the morning of the 2nd of December we break off all communication with the shore. By 2 p.m. everything is in motion around us, and steamers dressed in bunting are seen

everywhere. At 2 30 the *Uruguay* lifts anchor and moves slowly toward the land. As we glide onward, we pass the one steamer after the other, large and small; all festively clad and packed full of passengers, who greet us with *vivas* and waving of handkerchiefs, while bands play and the steamers keep up an incessant concert with their steam-whistles. It is impossible to conceive the noise and rejoicing; the procession soon numbers more than forty steamers, moving partly in line with us, and partly in our wake.

We approach the shore and swing into the narrow opening to the docks. Everywhere, as far as the eye can see, the banks are lined by innumerable crowds of people; every building and plantation, all the quays and the ocean-steamers lying near them are decorated with flags and are full of people. At the far end of the dock we have entered rises a lofty tribune, at the foot of which the *Uruguay* lays to. All that is brilliant in the capital has gathered here to receive us. The chairman of the reception committee bids us both welcome—the Swedish Expedition, whose long absence has caused such uneasiness and which has now returned after the completion of its labours, and the Argentine, which so brilliantly carried out its mission of rescue. The Minister for the Navy speaks in the name of the Fleet, and hands to Irizar his commission as *capitain de fragata*.

It was now time to get into the carriages which are to carry us through the streets to the Naval Club at the *calle Florida*, where a reception is to be held, but it was scarcely possible for us to make our way through the crowd to the equipages. It is difficult to give any idea of the scene that now followed; it was possible only in a metropolis and in one with a southern, lively population. I have no idea how many people were about, but probably there were several hundred thousand. It was generally said that such a scene had never occurred in Buenos Ayres before. The carriages made their way slowly and with difficulty between the crowds who greet us incessantly with thousand-voiced *vivas*. Everywhere we had to receive flowers; poor artizan families had supplied themselves from



The *Uruguay* entering the harbour at Buenos Ayres.

the public parks, while most valuable bouquets were thrown to us from other quarters. They were all equally dear to us, and so much the more that they were the first flowers we had seen for years. Our carriages were filled with them ; the streets were carpeted with blossoms and leaves thrown to us from window and balcony, but which failed to reach our hands, who but a few weeks ago were dwelling lonely or shipwrecked amidst the eternal ice.

I am quite aware that the greatest part of this popular greeting was meant for the Expedition sent out by their own land. I was heartily glad of the fact, for the *Uruguay's* officers and men were certainly well deserving of it. Boldly, courageously had they gone forth on their task, in a vessel that was by no means well-suited for the purpose, and we, on our side, had the greatest reason for being thankful to them.

But the general rejoicing also showed that Polar Exploration has become popular there in a way which is unusual in all but a few of the countries of Europe and North America. If it be true what has often been said, that interest in what are, in the first place, undertakings of ideal worth, is a measure of the culture of a people, then that day's celebration was most certainly a proof of the high standpoint of the Argentine nation ; and no one who saw this reception, and who also remembers all the earlier proofs of goodwill shown by that country to, and experienced by, our Expedition, can ever doubt that in a near future we may expect to witness the commencement there of independent enterprises whose aim will be the furtherance of Polar Exploration. And for the knowledge that our Expedition with the *Antarctic* has contributed to the awakening of this interest, I would willingly offer far more than what the loss of our vessel meant and means for us.

The intention had been to arrange a grand procession past the Naval Club in honour of the Expedition, but it proved to be impossible. The crowd became altogether too immense, and we were glad to be able to reach the place ourselves.

The following days were for us one long unbroken chain of festivities ; invitations of all kinds, visits and ceremonial

calls occupied our time so completely, that I had no opportunity of doing even the most necessary work. Still less could there be any thought of finding time to see the city and its environs, although a more favourable occasion for doing so could scarcely be imagined.

We determined to leave Buenos Ayres on the 10th of December by the *Tijuca*. On the previous evening, the Argentine Geographical Society had arranged a solemn reception for us in the largest theatre of the city, and in the presence of more than 3,000 persons, amongst whom were assembled all that was representative and brilliant in the capital, I there gave a lecture on our Expedition, whilst Lieutenant Jalour and Mr. Skottsberg gave a short account, the former, of the *Uruguay's* journey, and the latter of the loss of the *Antarctic*

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A few words will suffice to speak of the remaining period that the members of the Expedition spent together. The journey over by the German steamer, the *Tijuca*, was the pleasantest imaginable, and though we were after all once more obliged to spend a Christmas and a New Year far from our homes, it could not have been in the midst of more agreeable circles. In Madeira we were met by the representative of a French newspaper, and at Vigo by a Swedish journalist, both of whom had come out in order to have an opportunity of learning about our adventures and the results of our explorations. At Boulogne, where we stayed for half an hour in the middle of the night, we were received by a deputation, headed by the Mayor and the president of the Chamber of Commerce there, who presented us with a magnificent epergne of flowers in the French colours. On the 6th of January we arrived at Hamburg, and while on the Elbe we were welcomed by the directors of the steam-boat company, by representatives of the Scandinavian colony in the place and of scientific circles, etc.

At eight in the evening we continued our journey north-

wards. The following day was spent in Copenhagen in agreeable intercourse with geographers and Arctic travellers. Towards evening we went on board the steamer which was to take us to Sweden. I walked alone on deck when the lights from my native coast began to glimmer through the night, here in solitude I sent up a prayer of humble thankfulness that I and so many of my companions had been permitted to live to see this moment. A few moments more and we lay to by the quay at Malmo.

There were great crowds of people in motion; we were welcomed with flowers, and then taken in carriages the short distance to the railway station. On entering the portal I stood still, overwhelmed with surprise. The large hall was filled by an enormous choir, which, on our entrance, sang: "I know a land, far in the north that lies." The tears rushed into my eyes, this, then, was my country's greeting, and a dearer one I could never have had; these first minutes on Swedish earth were of import mighty enough to wipe out for ever the memory of years of difficulties.

* * * * *

And thus the hour for parting was at hand; but, happily, arrangements had been made for us to perform the journey to Stockholm in company, and there separate. I had, in truth, many reasons for desiring to thank my comrades in this hour of farewell. More powerful support than I received from my two nearest men, the leaders of the wintering-stations at Hope Bay and Paulet Island, Dr. J. G. Andersson and Captain Larsen, no leader of an expedition can ever have had. A more competent and a more industrious scientific staff than the men who were my companions, cannot well be found, and in times of the greatest difficulty, as well as in hours of success, the officers and crew of the *Antarctic* had followed us without complaint, ever willing to undertake the severest labour and to make the greatest sacrifices, in order that they might not swerve from the traditions of the earlier Polar Expeditions which have left the brother lands whose name, is Scandinavia.



The officers and crew of the *Antarctic* on their return to Sweden.
[Photo taken for the Swedish weekly paper, "Hvar 8 Dag"]

It is an eventful story we have told in the pages of which this is the last. Between the day of our departure from Sweden in the *Antarctic*, and the January evening when we once more trod the soil of our native land, lie, for us, two years of perpetual winter spent in South Polar regions.

The demand of science, that no part of the globe shall remain untouched by the hand of investigation, was the force that drew our little band to the land of the farthest south. The strife has been a severe one; more than once success has seemed to fly us, and we have suffered losses that none of us can ever forget. But in spite of everything, we reached our goal, we have brought back the results of the first comprehensive researches within half a continent, and have made more unexpected discoveries than we could ever have dared to hope for.

For a single fleeting moment we have been permitted to lift the veil that hides the land of greatest mystery the earth now owns. For us, the time seems to have been long and our journeyings wide—but how short, how little, were they amidst the great whole. A brief moment—a slight track amidst the snow—and the eternal world of ice lies there as lonely as before. Once more the penguins live their quiet lives, and the storms drive on in paths unmarked by human eye.

But ever thus it shall not be. Again, and once again, new bands will journey thither to follow in our footsteps, pass beyond our bounds. But by us, the first workers in those regions, the years will never be forgotten that we spent together there, nor the wondrous way in which our changeful and divergent fates were linked at last together.

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