

whole iceberg was suffused with blue except for highlighted surfaces or surfaces white with a pinkish cast, where snow had lodged; and in all recesses, pockets, and grooves the color intensified to a della Robbia blue, a condensed distillation of ocean purple.

Neumayer Channel is a narrow passage separating Wiencke from Anvers islands and connecting Gerlache with Bismark Strait. The north entrance to the channel is its narrowest part with perpendicular cliffs of rock rising hundreds of feet from the sea and surmounted by glaciers that extend down the gullies and ravines in the walls, appearing as hanging rivers of ice. Neumayer Channel widens to the south, where it joins Bismark Strait, to provide a spectacular sight of the peaks of Wiencke Island. Ten miles beyond the end of Anvers Island, on the side facing Bismark Strait, is Palmer Station, located on a spit of rock with the front of Anvers glacier less than a half mile behind it. A group of islands a mile in front of the site of Palmer, along with a longer naked spit of rock from Anvers Island, form a sheltered cove called Arthur Harbor. In this harbor the Hero tied up to a stone and masonry pier built out in deep water in front of the station.

Everyone at the station turned out to welcome us and plans were made for the four days during which the Hero was to remain based at the station. On the following day the Hero took a party to Port Lockroy, a small island at the entrance to Neumayer Channel that had been a whalers' processing plant early in the century. Hundreds of chalky, white whale bones were scattered about, among which gentoo penguins brooded their chicks. Another excursion was to the Jubin Islands, a group of granite pinnacles

lying off the western promontory of Anvers Island, where the attraction is the bird population, most notably the colonies of blue-eyed shags (cormorants) and antarctic terns.

Several cruises in the Hero had been commissioned by the scientists to support their research. On January 18 the Hero left Palmer Station on a northbound cruise to Deception Island, the southernmost of the South Shetland group. Deception Island is a large, flooded volcanic crater, which can be entered through a narrow passage and constitutes an excellent all-weather harbor; early in the century a Norwegian whaling station had been established there. On the way to Deception Island we stopped at Couvreville Island, which is adjacent to the Antarctic Peninsula and noted for its mixed penguin colony and nesting petrels. The Hero anchored in Deception Island lagoon, and everyone went ashore to explore the ruins of the whaling station, which had been destroyed by a volcanic eruption and earthquake. The next day one of the ornithologists asked to be landed on the outer side of the island, where he had been told macaroni penguins had been seen--a rare occurrence this far south; I decided to go along. During the landing from a Zodiac in a choppy sea on a serrated, lava cliff, I was left hanging by my left hand in a back surge of the waves and dislocated my shoulder. Back on the Hero after a hot shower and a large slug of whiskey, I tried to explain the procedure for reducing a dislocated shoulder, but I forgot one of the steps so that the attempt was unsuccessful. In the meantime the

captain had radioed the British ship, Endurance, which was nearby, for help from the ship's doctor. He was flown over in one of the Endurance's helicopters and lowered onto the fantail of the Hero. He reduced the dislocation and gave me something to ease the pain. While arranging for my evacuation (not a simple matter in Antarctica), contact was made with the Russian base on King George Island, where there was X-ray equipment, and the Russians agreed to take care of me until the icebreaker, Glacier, picked me up on its return to Ushuaia. I was deposited with the Russians, who X-rayed my shoulder, put it in a cast and treated me extremely well until I was finally rescued by the Glacier on January 28. The cast was removed on the Glacier, and I flew home from Tierra del Fuego with my arm in a sling.

My second trip to Antarctica, which was promised me by the National Science Foundation so that I could produce a book, was scheduled to begin in November, 1975. On this trip I was being sent to the American Ross Island base on McMurdo Sound, from which I would visit the dry valleys, photograph the penguins and whales in the sound and fly to the South Pole. And because my first trip was cut short by injury (from which I had completely recovered), the National Science Foundation made arrangements for me to take passage on the U. S. Coast Guard icebreaker, Glacier, from McMurdo to Palmer Station on the peninsula-- circling the Antarctic continent a distance of 2400 miles. At Palmer I would be a passenger again on the Hero for its last cruises to the islands and bays that I had missed on the first trip.

On November 12 I boarded a Military Air Command plane at California's Point Mugu Air Force Base for the sixteen-hour flight to Christchurch, New Zealand. The M.A.C. flight was a C 141 four-engine cargo plane that stopped in Honolulu, Pango Pango and American Samoa. A forward section behind the cockpit held 36 seats for passengers, facing the rear; the after three-quarters was filled with cargo. We lost a day in crossing the international date line and landed at 10:30 a.m. on November 14 at Christchurch International Airport. The first order of business for all travelers to Antarctica after clearing customs is to be fitted for the specially designed cold-weather clothing issued by the National Science Foundation's polar Program. I had made arrangements with the National Science Foundation beforehand to fly early to New Zealand so that I could have two weeks to see the South Island. Before starting on my New Zealand travels, I was advised to keep in touch with the polar Program office in case of changes in schedule.

I checked in at the Town Hall Motel in Christchurch. My room was much like a good American motel, though simpler and more tasteful. The rate included a continental breakfast, which the guest prepared for himself. The next morning I went with Frank Todd, who had come down on the same flight to arrange for the shipment of penguins to Sea World in San Diego, to the Hertz agency and rented a small Mazda sedan. At first Frank and I were a little nervous about driving in New Zealand, a country where one drives on the left. For the most part,

driving on the left is like performing a simple operation while looking in a mirror; the worst situations arise in heavy traffic at complicated intersections and traffic circles, where one's instinct is to turn right.

Frank wanted to see black swans, which are abundant along the coast southeast of Christchurch and in the lakes and marshes southwest of Banks Peninsula, a huge, dead volcano. We set out for Lake Ellesmere, a large salt bay, working our way around the western side through the villages of Lincoln and Leeston. We saw many black swans sedately cruising about in the sheltered bays and estuaries, as well as smaller numbers of white mute swans, Canada geese (imports from America), and gray and mallard ducks. Frank was disappointed that, although we searched through the marsh grasses, we did not find any swan nests.

That afternoon we drove through Christchurch and on to the estuary of the Avon River. The Avon, from which Christchurch derives its reputation as a garden city, winds through the town and is featured as a park with grassy banks and flowering trees-- a water fowl sanctuary.

On the second morning I picked Frank up at his hotel, and we drove to Banks Peninsula. The peninsula is a circular headland indented by many small fjords and bays. Cutting halfway across from the southeast, Akaroa Harbour, a long, deep bay formed by the erosion of one side of the ancient volcanic crater and flooding by the sea, is now a resort for sailing, swimming and water skiing. Green hills dotted with white houses

rise steeply, level on level, above the blue-streaked water for many hundreds of feet. These slopes have long since been denuded of trees to make grazing land for sheep, and now, except for scattered patches of forest, they are grass-covered to the top. But here and there a fiercely thorny shrub, a broom of the pea family, has taken over, in place of the native pines. Where it grew in abundance at that spring time of the year, its brilliant yellow flowers turned whole mountain sides bright yellow.

I wanted to see as much of New Zealand as I could in my few weeks, and because Frank Todd's penguin project kept him close to Christchurch, we separated after this second day together.

All of New Zealand's South Island is hilly or mountainous; the only flat land is found along the southeastern coast from Christchurch to Invercargill at the southern end. The highest mountains extend the length of the island, with only minor breaks, and are jammed against its northwestern shore. The middle part of this system, the Southern Alps, the highest of all, rising to altitudes of between 3000 and 4000 meters, are glacier-covered and snow-capped. From these peaks rivers flow southward between progressively lower ranges until they emerge on the outwash plains, the chief farming areas on the island. Many of the narrow valleys in the eastern slope contain long finger lakes, a few of which are artificial. The Cameron Mountains, the southernmost part of the principal mountain

range, are sliced by many steep valleys into which the sea penetrates from the west to produce an intricate complex of deep, narrow fjords. Except at its northern end--at Milford Sound--this long stretch of coast is inaccessible by road. The whole northwestern coast of South Island is rain forest, in which tree ferns grow with other species in jungle profusion.

The entire eastern watershed (two-thirds of the island) is a brown, treeless land of low mountains and rounded, grass-covered hills cut by numerous dry, stony water courses. In spring, thickets of golden flowering broom give color to an otherwise drab landscape. This land has become sheep range, the source of wool and meat--New Zealand's most important exports.

I took the northwest highway from Christchurch to Grey-mouth through the Southern Alps via Arthur's Pass. Rounded hills gave way to low, rocky mountains that rose higher and higher towards the west. Valleys narrowed to gravelly gorges bordered with yellow broom, and the craggy mountain tops showed a dusting of snow from a storm, which had passed across the island the night before, bringing rain to the lowlands. As the road wound ever higher, forests of conifers and evergreen beech covered the lower slopes, and permanently snow-capped peaks with glaciers appeared. Over Arthur's Pass the road descended precipitously. At Jacksons I took a secondary road to a sportsman's lodge on Lake Brunner, called Mitchell's. Along this road I saw my first tree ferns, which increased in number to become a dominant species on the lake shore. There

was only one other guest at Mitchell's, a portly and pompous Colonel Blimp type from the North Island. We shared a table for dinner and breakfast. Our conversation was all on trout fishing.

After breakfast I headed for the coast and the town of Greymouth on the Grey River. The road passed through many scenic reserves--forests of tree ferns, ribbon-leaved plants and tangles of vines. Near the coast I began to see a curious palm. Its smooth trunk ended in a bulbous swelling, from which the leaves rose in a crown resembling a feather duster. From a short distance the tree ferns with drooping fronds looked more like palms than the palms themselves.

From Greymouth I drove north on the coastal highway to Westport. The land, rising sheer from the sea or from narrow inaccessible beaches, resembles the Big Sur coast of California. The road has been carved into this steep, green bluff of bush, ferns and small trees. Turnouts and stopping places are few. At one place where I pulled off, the left wheels sank in the soft shoulder, and I was hopelessly stuck until a kind, young motorist with a tow rope rescued me.

The weather turned bad during the night so I decided not to visit Cape Foulwind and turned south again by way of the interior road through Reefton. I arrived in Hokitika, south of Greymouth, in time for a buffet lunch at the Westland Hotel. An Australian tour filled most of the dining room. I shared a table with a pleasant middle-aged Australian couple and chatted with them about New Zealand, Antarctica and Vermont,

where they had enjoyed a white Christmas with friends the year before.

The next day, November 20, I drove south to Franz Josef, a resort on the western slope of the Southern Alps under Mt. Cook; on the way I stopped at the rain forest reserve by Lake Mahinapoura. The forest, through which a well-kept, two-mile trail winds, is a jungle of tree ferns, large strange fig-like trees called "ratas" and other semi-tropical species. Here I first saw the Bellbird and Tui, whose clear, flute-like whistles --not at all bell-like--sounded in the dense foliage from first one side and then the other with ventriloqual ambiguity.

From Franz Josef one can visit the glacier for which the resort is named and the Fox Glacier, 25 kilometers south along the coast. These two glaciers extend down the western slope of the Mt. Cook complex of peaks farther than any others. They reach nearly to the rain forest only a few hundred feet above sea level. Two centuries ago they actually penetrated the rain forest but have been retreating since New Zealand was settled by Europeans. Forest vegetation is advancing over the old moraines left by the melting ice, covering and stabilizing the jumble of glacial till. I followed a seldom used track over the lateral moraine by Fox Glacier until I could see the high peaks projecting above the ice fields surrounding them. The only vegetation were lichens, the most striking of which was a red, granular variety that coated the glistening, schisty boulders.

I had expected that wild flowers would be abundant, but there were few kinds to be seen and then only along the roadside, with scarcely any in the fields and pastures. A yellow, buttercup-like flower grew in the ditches and a white flower resembling yarrow on the highway embankments. The road cuts, however, were draped with ferns and mosses, and even fresh cuts were soon covered by a green, fur-like mantle. The paucity of flowering herbaceous plants may be due to the island's geographical isolation from the mainstream of angiosperm evolution.

My next stop for the night was at Haast, where the road crosses the Haast River and turns inland, following the river before climbing over the Southern Alps at Haas Pass. The forest on the western slope along the river was darker, more compact, and more tropical, with bigger trees than any I had seen so far. The ratas, a variety of gigantic epiphyte that takes root on host trees and eventually smothers them, was more plentiful. The average annual rainfall on this part of the coast exceeds 300 inches.

After Haas Pass the terrain changed rapidly and strikingly to barren Hills of bush and austere, brown grass--lean and stony. The road followed the shores of Lakes Wanaka and Hawea, bodies of water filling troughs in a dead landscape, on which they had no detectable influence, encouraging no growth of hydrophilic plants on the sterile strand.

I checked in at the Wanaka Hotel, a comfortable inn that caters to a well-to-do clientele rather than tourist groups.

In the afternoon I drove to the end of the road that leads to Mt. Aspiring National Park at the southern end of the Southern Alps. The road follows the Matukituki River, which flows from glaciers on Mt. Aspiring. Its bed is a wide, gravel water course, through which the braided stream meanders. I was told there was gold in the river; along the road were notices of mining claims and no-trespassing signs.

On the 24th I left Wanaka for Te Anau, a resort town on a lake tucked into the forested eastern watershed of the Fjordland mountains. The first part of the way was up the Cardrona River valley to the top of the Crown Range and then down a steep series of switchbacks to Queenstown. The treeless hills rose in monotonous sequence to the summit of the pass. There the predominant vegetation was New Zealand tussock grass, which grows in discrete clumps three to four feet tall and of equal diameter. This tawny, desiccated grass was all last year's growth; the new shoots had not yet appeared.

That night I checked in by telephone with the New Zealand representative of the Polar Program in Christchurch and learned that the next flight to McMurdo had been advanced to the 5th of December. I had eight days left for sightseeing.

The only road to the west coast fjords starts at Te Anau and ends at Milford Sound, where there is a summer hotel. The road climbs over the mountain spine of South Island through forests of gnarled and twisted evergreen beeches, like the beeches I had seen in Tierra del Fuego the year before. The miniature bronzed leaves were just beginning to unfold, while last year's crop, a dusky green, were still attached and alive;

the leaves stay on for several years before they fall.

At its highest elevation, among alpine meadows above treeline, the road enters a one-way tunnel under the divide.

It emerges onto a brush-covered talus, down which it snakes into a forest of podocarpus and ferns and on for several miles to the head of Milford Sound. From the shores of the sound, the confining mountains, dense with an extravagant proliferation of greenery that smoothes all contours, ascend perpendicularly from the water's edge for more than a thousand feet, reinforcing the visual impression of the delimitation of the fjord.

After this second excursion to the western rain forest, I returned to Wanaka and the arid central hills, where the precipitation is less than 40 inches a year. I took a side road from Glendhu Bay in Lake Wanaka and crossed the Motatapu River at a deep chasm. There I walked downstream through the willow thickets for two miles. Using a bird guide, I identified Silver eyes, Ciril buntings, Redpolls, Yellowhammers, Song thrushes and Blackbirds, the last a close relative of the American robin; with the exception of the Silver eyes, all are European species. On the coast near Christchurch two other abundant, introduced species are the White-backed and Black-backed magpie. The propensity of emigrants for bringing with them to their adopted country the most adaptable and aggressive species of their homeland wildlife is unfortunate for the indigenous species. This is especially true where the native birds have evolved intimate, specialized adjustments to restricted island habitats and are at a disadvantage in

competition with the more generalized continental species, which are the inevitable choices for introduction. The fact that no introduced species is protected in New Zealand, shows that the government is aware of this phenomenon.

For my last days before leaving for Antarctica, I decided to visit the Mt. Cook Range, the climax of the Southern Alps. Mt. Cook is accessible from the south by a road which skirts the shore of Lake Pukaki and the delta of the Tasman River, which empties into its northern extremity. The Tasman River is the outflow from the Tasman and Murchison Glaciers, the largest in New Zealand. In the course of centuries the retreating glaciers and the melt-water streams flowing from them have filled a good third of Lake Pukaki basin with glacial till, creating an outwash plain confined to a space which was once ice-filled. In recent times the glaciers have been melting rapidly, leaving behind undermined and unstable ridges of morainic rubble still supported on decaying ice. At the end of this valley the serrated peaks of the Southern Alps stand blue and glittering, sheathed in new fallen snow.

These high-country glacial streams are the haunts of the Banded Dotterel, a native plover, one of whose nests I found on a gravel bank. It contained one large, dark-green egg splotched with black. An endemic water fowl of striking plumage that also frequents these mountain streams is the Paradise Duck. The female is white-headed, dark brown on the back with rusty-brown undersides; the male is predominantly black but with

brown-tipped primaries like the female. They both have iridescent white patches on the wings. To me the Paradise Duck in New Zealand was the counterpart of the Harlequin duck of the northern hemisphere, which is at home in the glacial torrents of Iceland.

I returned to Christchurch on the 3rd of December. The flight to McMurdo was set for the early morning of the 5th. At 6:00 a.m. I took a taxi to the airport, where I re-sorted my baggage and put on the special antarctic clothes that had been issued to me. The New Zealand Air Force C130 took off for McMurdo at 8:45. Flying time to McMurdo was expected to be seven or eight hours. Such great bulky four-engine propeller cargo planes appear quite unflyable when squatting on the runway. The view from inside is, if anything, less reassuring. As in the C141s, the passenger section is in the forward end of the cargo compartment. Passengers sit facing inward on webbed seats, attached to the side of the fuselage as a continuous band of webbing.

After three hours of flying above unbroken overcast, we left the clouds behind and could look down on a sea covered with ice pack. The plane was now south of the Antarctic Convergence, where the cold, antarctic water moving north sinks below the warm water of the South Pacific. After a while land appeared below. The plane had crossed the Antarctic coast west of Cape Adaire and was flying above the Transantarctic Mountains, a landscape of triangular, black mountain peaks projecting through the vast white plain of the antarctic ice cap. Eventually the Ross Sea appeared in the distance on the left. Open water was

visible as the plane approached McMurdo Sound; then it passed over a white surface with a network of black lines--cracks in the ice covering the sound. We descended rapidly, and then with a slight bump, we touched down; the engines raced as the props were reversed, and we came to a stop. We had landed on the ice runway on McMurdo Sound, a runway used by wheeled planes from September to December.

I was greeted and shown to my quarters in the "Hotel", the dormitory for the scientists. My roommate was Tom Kellogg, a geologist from the University of Maine and an associate of George Denton, who was a professor of glacial geology at the same university; I was to see a great deal of them during the next six weeks. McMurdo Station is located on the western side of Hut Point Peninsula, just north of Cape Armitage, the southernmost extremity of Ross Island. It is a messy complex of some hundred buildings, storage yards, muddy streets, power lines and all kinds of military and civilian machines. McMurdo is the largest community on the continent, with a summer population of about 800 administration, transportation, maintenance and communication personnel, along with the scientists for whom they are all employed.

The next morning I went to see Chris Shepard, the chief administrator for the National Science Foundation. He asked me to give him a list of all the places I wanted to see and photograph. Because it was all new to me, I had to ask advice from those who knew the area, and George Denton was the first I approached. He was very helpful, directing me to especially interesting examples of geological phenomena in the dry valley

on the west side of McMurdo Sound. Transportation at McMurdo was provided by helicopters, and each N.S.F. grantee who needed transportation was given a limit of flying time, which could be effectively increased by sharing flights with other groups. There were always individuals who wanted to fly with me, and I was often able to join the flights of others. This arrangement was especially advantageous with George Denton and his co-workers.

In addition to the penguin and marine mammal life of the sea-ice, the dry valleys on the west side of McMurdo Sound were of great interest. They are called "dry" because they are barren valleys from which the ice sheet has retreated, leaving behind morain gravel and bare rock. They cut across the Transantarctic Mountains, separated by mountain ranges from which glaciers extend down towards the valley floors, creating an awesome primordial landscape. The ordinary names of the valleys--Taylor, Wright and Victoria--suitable perhaps to their desolate character, contrast with the more romantic names for the mountains that divide them: Kukri Hill, Asgard and Olympus. Isolated examples of some extraordinary and beautiful geological phenomena occur down in the valleys. Don Juan Pond is a body of water that never freezes, because it is a saturated solution of magnesium chloride, and in it stand grotesquely eroded monoliths deposited by the retreating ice cap. On Bull Pass between Victoria and Wright Valley scattered granite boulders--some of enormous size--have been shaped by a process of cavernous erosion called "tafoni," in which the crystals of the rock are chipped off by

repeated freezing and thawing to create shell-like structures reminiscent of modern sculpture. At the upper end of Wright Valley a maze of deeply cut canyons, appropriately called "The Labyrinth," was probably produced during a pluvial period in the history of the continent. And out beyond the limits of the dry valleys, Monastery Nunatak, a solitary outpost of the Transantarctic Mountains named for its architectural semblance, is being slowly ablated by the ice of the polar plateau, that scrapes from its crumbling sides the rocks that become a medial moraine as the glacier reunites after passing by. Wide where it abuts the base of the nunatak, the moraine narrows in a graceful curve out on the ice sheet, until it becomes a mere thread of stones and gravel.

It had been arranged for me to go along on a scheduled supply flight to the South Pole station. The plane, a Hercules LC 130 equipped with skis, took off from Williams Field on the Ross Ice Shelf early in the morning on December 29 for the three-hour flight. The flight crosses the Ross Ice Shelf, the Transantarctic Mountains and the Antarctic Polar plateau. I was invited to ride in the cockpit so that I could photograph during the flight. The windows had been specially cleaned for me. Before crossing the mountains we flew parallel to them for many miles, affording an excellent view of hanging glaciers and nunataks beyond the peaks. Everywhere ice spilled over and through the mountains, in small streams and in torrents miles wide, contributing enormous quantities of ice to the Ross Ice Shelf. As the plane approached the South Pole station, I saw a small, low-profile geodesic dome with the thin spike of

a radio mast almost indistinguishable on the vast, white polar plain stretching away to the horizon.

I was warmly welcomed by the premedic, who showed me around the station, which was much larger than my impression of it from the air. He also took me on a tour of the first station, that had been abandoned and was slowly being engulfed by the ice; on a kitchen table were unwashed dishes and partly consumed food, suggesting that it had been evacuated in haste.

On the return flight to McMurdo, as a special concession to me, the pilot flew down the Beardmore Glacier--Scott's route to the Pole--at 200 feet above the surface. At this altitude the crevassed structure of the glacier was visible in such great detail that it seemed incredible that the first polar explorers could have dragged their sledges over the two-hundred-mile length of the glacier. Near the end of the Beardmore we passed a huge snow-free monolith that looked like Gibraltar and is called "The Rock" by the pilots who fly the route to the Pole.

The icebreakers Glacier and Burton Island arrived in January to clear a route through the ice in McMurdo Sound for the supply ship and tanker expected that month. On January 15, after that task was completed, I joined the Glacier for her cruise to the Weddell Sea by way of Palmer Station. The 2400-mile course to Palmer around the Antarctic continent passed through the Ross, Amundsen and Bellingshausen Seas. These seas were filled with ice pack and brash ice in all stages of consolidation, through which the Glacier forced a passage. And icebergs, both tabular and peaked, were constantly in sight. When the going became

difficult, the ship's helicopters were dispatched to reconnoiter for a way out, and I went along to photograph. No land had been seen since the last view of Mt. Erebus on Ross Island until the islands of the Antarctic Peninsula were sighted on February 6. I was flown to Palmer Station and lived there for two weeks, while awaiting the return of the Hero from Ushuaia. Meanwhile, with Bill Fraser, in whose company excursions in a Zodiac rubber boat were permissible, I went to many of the outlying islands that I had not been able to visit on the first trip. Bill Fraser was studying antarctic avian ecology, with special emphasis on the Great Black-backed Gull, and with him I learned a great deal about the bird life of the peninsula.

When the Hero returned on the 21st of February, I moved on board for the remainder of my stay in Antarctica. Three cruises were made during the next three weeks. Most profitable for me was the third cruise south of the Antarctic Circle, on which we navigated the narrow Lemaire Channel to the Argentine Islands and on to Grandidier Channel, Adelaide Island and Marguerite Bay. The other cruises were all to the north, one to dredge in Schollaert Channel between Anvers and Brabant Islands, returning by way of the Melchior, a group of small, jagged islands. A narrow, navigable passage divides them, and into this the Hero sailed, in a foreboding atmosphere of shifting storm clouds that concealed the upper reaches of the islands, reinforced by ominous spires of black rock projecting from the water and precariously balanced and fissured cliffs of ice threatening imminent collapse. Without slackening,

the ship rushed on into the gloom; her precipitous daring inspired confidence that she could successfully evade an unseen Scylla or Charybdis. During the passage the threatening atmosphere was relieved temporarily by a break in the clouds through which a shaft of light illuminated a high ice field. The ice glistened in the sun; an eye winked open to peer at the bold intruder. Unilluminated, the islands kept their enigmatic presence or malign intent, and the Hero sailed on.

The other northern cruise was to Deception Island, where I was able to explore the inner wall of the crater opposite the abandoned whaling station. My companion did not like the looks of the slope of lava scree, so I climbed it alone and discovered an unfrozen, blue lake in a hidden subsidiary crater. I decided to return by another talus across a ravine, which proved more treacherous than it first appeared. Many of the rocks resting on ice gave way at the slightest pressure as I crawled down on hands and feet, expecting at any minute to see my camera case go tumbling down the slope in an avalanche of rocks. I had several close calls but eventually got back to the lagoon without mishap.

The southern cruise marked the end of the austral summer season. The Hero was scheduled to depart for Ushuaia on March 9 and not to return for seven months. The party that evolved spontaneously in the evening after dinner at the station was a farewell to us by those few staying behind, who would face seven months of winter; it seemed a little sad and tinged with envy to those of us leaving Antarctica, who found the happy anticipation of a return to civilization tempered

by nostalgia.

On the way north to a last social rendezvous off Livingston Island with the British research ship, Bransfield, we passed a grounded iceberg. Its smooth, rounded contours showed that it had recently overturned. But the most remarkable feature of the iceberg was its translucent, green color--like a huge piece of jade--a color due to a prolific growth of phytoplankton or algae. The crossing of the fearful Drake Passage was uneventful. We anchored off Picton Island in the Beagel Channel to await the pilot, who arrived the next morning in a fishing boat and took command of the Hero.

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