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Palmer Station Again

February 7, 1976

We expected to arrive at Palmer Station late on February 6, but because fog obscured the intricate approaches to Arthur Harbor on Anvers Island, the Glacier was hove to until daylight. The next morning as she proceeded to anchorage I was flown to the station with all my baggage. To enable me to get pictures from the air the helicopter pilot circled over the station and the nearby islands.

From under the crumbling front of the massive Anvers Piedmont glacier that extends back from the shore upward for many miles to the foot of Mt. Francis^{ais}, small tongues of gray rock project into the sea. On one of these barren scraps of land the buildings of the research station, viewed from over a thousand feet, appeared as insignificant as ant hills in a cracked pavement. Next to the enormous ice sheet, even the security and permanence of the rock beneath the station seemed uncertain. It seemed as though the balance of forces could as easily tilt in favor of an advance of the ice sheet as of a retreat.

When I arrived at Palmer the Hero was in Ushuaia on Tierra del Fuego and was not expected back until the third week of February. The delay was fortunate since had she returned ten days earlier as originally scheduled I would have missed her first cruise of the season. As it turned out, I had time to visit the islands near the station.

At Palmer, I was assigned a room on the third floor of the main building that housed the laboratories, the common room, and the kitchen. Black clouds obscured the mountains of the

peninsula to the southeast for most of my first day, but from time to time they lifted to give brief views through a slot on the horizon of pink sunlit peaks.

The bad weather continued the following day, but on February 9 a break in the heavy overcast accompanied by moderating winds gave promise of brighter conditions. After the midday meal, Bill Fraser and I took a Zodiac to Bonaparte Point which is separated from the Palmer Station peninsula by a long narrow inlet. Fraser, a University of Minnesota student of Dr. Parmelee's, was making a study of the breeding behavior of the skua and the antarctic great black-backed gull. He had been observing the gull colony of Bonaparte Point since egg laying began in December and hoped on this day to round up all the unfledged, banded chicks for measuring and weighing. Bonaparte Point is a narrow neck of glacier-scoured, deeply gullied gray granite on which granite blocks, torn from their original attachments by past glaciation, lie scattered about. In crevices and hollows, tufts of grass and mosses have taken root over the years, fertilized by bird excrement and the decayed remains of organisms gathered from the sea by the gulls. A favorite food of the black-backed gulls is limpets; the flat conical shells of these mollusks, one to two inches across, filled the spaces between the fragmented rocks in places where the gulls had established feeding stations.

Shortly after we landed the clouds settled down again and it began to snow. The snow continued to fall throughout the

afternoon. I passed the time exploring the peninsula while Fraser pursued the agile and elusive gull chicks, some of which escaped by taking to the water. On a small enclosed rocky beach I came across a crab-eater seal whose lethargic response to my inquisitiveness was a striking contrast to the panicky young gulls.

During the days that followed, whenever the weather was good and the wind less than fifteen knots--the limit for the Zodiacs-- I went with Bill Fraser to the islands that surround Arthur Harbor. The most distant was Cormorant Island, three miles to the southeast, and the nearest Torgerson, a half mile from the station on the west of the harbor. Bill's work with skuas and gulls, and to a limited degree with giant petrels, entailed frequent follow-up visits. My presence at the station helped him because of the strict rule that no one may venture forth in a Zodiac alone. Whereas the other scientists would go along with Bill only when it served the interest of their research, I was always eager to see new places.

On stormy days, I would walk the few hundred yards to the foot of the glacier behind the station to observe the working of the forces that held sea, land, and ice in dubious equilibrium. The surging waves washed constantly over rounded gray blocks of granite slippery with algae and growled in the undermined wall of ice towering above. From the horizontal slots melted by the sea in the foot of the glacier, chunks of ice broke away producing a slushy brash which the waves beating against the rocks rapidly disintegrated. To imagine that the sea was gaining in its conflict

with the ice would not be taking account of the vast reserve within the Anvers Glacier ever pressing forward from the land behind, nor that on the rocky spit on which I stood the cliff of ice was firmly fixed. From the corner formed by the junction of the three elements of sea and ice and land, the glacier front curved away to a cove walled with ice on two sides. The cliff became ragged with fissures; slabs and small bergs were continually spalling off with explosive noises followed by a roaring splash.

Sometimes on inclement days I would cross over to Bonaparte Point by means of a cable-way that bridged the inlet. A boatswain's chair suspended from a trolley rode the single cable. You shoved off from either side and ^{Sped away on a catenary course} ~~coasted down~~ to the low point of the cable and from there pulled yourself the rest of the way across with a line attached to the cable supports on either side of the inlet. To climb into the tippy seat with camera and tripod required considerable dexterity, especially as the trolley had a tendency to start off before you were prepared. Unless you made the trip empty-handed it was advisable to get help for the launching; otherwise you could find yourself suspended embarrassingly over the middle of the channel, unable to pull yourself back to shore because you had lost your hold on the line. A less hazardous bridge could quite easily have been constructed, but the scientists who used the contraption were proud of its simplicity and indifferent to suggestions for its improvement.

On other days when I was station-bound by even worse weather,

I would break the tedium of reading by visiting the laboratories. I was always welcomed by the field team of David Murrish who the year before had so kindly given me a tour of Litchfield Island and helped carry my camera. Murrish had not returned to Palmer this year and his investigations on the temperature regulatory mechanisms of penguins were being carried on ^{by} Everett Douglas and Russell Lockner. The techniques and procedures for the research that had to be performed entirely within the biological laboratory were so complicated and time-consuming that the investigators never left the station except to capture birds for their experiments. Although I saw Douglas and Lockner only during the evening and on those days when I could not go out, we became good friends.

The staff of the station consisted of the station manager, his brother the engineer in charge of the power plant and other machinery, a radio operator and technician, a paramedic trained in the Navy, the manager of the commissary who also supervised the meals and did most of the cooking, and his assistant messman. Living quarters were comfortable but simple. Everyone was expected to take care of his own room and to do a share of the work necessary to keep the station clean and orderly. Meal times were flexible within reasonable limits and anyone who missed a meal could forage in the refrigerator or cook something for himself. Russell Lockner, who enjoyed cooking, on several occasions prepared the evening meal; the climax of his efforts came when he produced crème brûlée for dessert.

The atmospheric conditions over Anvers Island, which went a long way towards confirming my convictions as to the malignity of inanimate nature, appeared to be locally generated, for frequently when the weather was bad at the station with snow flurries and lowering clouds, a light band around the horizon indicated surrounding sunshine. Often at these times the mountains of the peninsula and the ice cap to the southeast showed yellow in the sun through this slot under the clouds.

By noon if the stalled weather had dissipated or drifted north, Bill would suggest a trip to one of the islands and we would carry outboard motors, gasoline cans, life jackets, walkie talkies, and oars down to the dock where the Zodiacs were launched by means of a hand operated crane. Safety regulations required that life jackets always be worn on boat trips and that the equipment include a spare motor, oars, and a radio. Before departing we had to check the radio by calling the station operator to inform him of our destination and the approximate duration of our excursion. ~~We also had to write~~ ^{was written} this information on a blackboard in the common room. ~~We also~~ ^{was required} ~~had to~~ call the station ~~to inform the operator~~ ^{of our safe} arrival at our destination and to keep him informed of our plans.

On one of these afternoons Bill and I took a Zodiac to Litchfield Island where fur seals had been seen the day before by another research team. On the beach where landings were customarily made, several Weddell seals were basking on the shingle above the high tide mark. They paid little attention to us until

we walked right up to them. Then they began to show nervousness by squirming backwards. But lethargy soon overtook them again and they had to be goaded into raising their heads to stare at us out of watery, myopic eyes. On my first visit to Litchfield the year before, a herd of elephant seals in various stages of molt had occupied the left hand rocky abutment to the beach. The somnolence of these huge animals was less profound than that of the Weddells for when aroused they usually sought the security of the sea by means of a remarkably effective peristaltic type of locomotion. On this day no elephant seals were there. Above the gravel, however, among the gray lichenized rocks and mosses we spotted a bull fur seal. He was well camouflaged and had he not taken alarm we might have overlooked him.

Fur seals belong to a different family within the order pinnipedia from all the other seals found in Antarctica. Like the sealions, with whom they have close affinities, they have external ears (hence the term eared seals) and hind limbs which can be folded forward under them and used for locomotion on land. Neither of these characteristics is shared by the true seals, which have developed further in the course of evolution from their terrestrial ancestors than have the fur seals. By virtue of the structure of their hind limbs and large fore limbs the posture of the fur seals is ~~is~~ more erect than that of the true seals, and they are more agile on land. This difference was quickly evident to us when we tried to photograph the bull fur seal close up; he scrambled over the rocks with great ease and we had a lively time getting pictures.

Fur seals are far less tolerant of man than are the true seals, and for good reason.

From the top of the beach the land leveled off to make a narrow valley between a craggy hill to the left and a rocky headland on the right. The valley floor sloped gradually down from the highest point above the beach for about a quarter of a mile to a shallow cove enclosed by bare rocky hills. Its muddy surface was a place where elephant seals liked to wallow. On the day of our visit only their wide grooved tracks showed that they had recently been there. The tide was out so we could walk all the way across the head of the cove to its far shore where the mud bottom gave way to a pavement of small, surf-polished boulders. A compacted snow bank covered the shore on one side of the valley's extension; its edge undermined by the sea at high tide was tinted red by a growth of algae. Stranded by the retreating tide, icy chunks of snow lay in the mud below the bank from which they had fallen. On the far side of the cove beyond the polished boulders we came upon the elephant seals huddled together, their sluffing coats all tatters. They responded to our importunities by threateningly rearing and gaping.

Since Palmer Station is north of the Antarctic Circle, the sun sets every night in summer for a few hours; at midsummer it drops below the horizon at midnight for only about an hour of twilight. During my stay in February the nights were getting longer and had short periods of complete darkness. At this high

latitude the sun approached the horizon at a very low angle so that its course was almost parallel to the horizon. Sunset displays and twilight were both greatly prolonged. When the sky was streaked with high thin clouds some of the most spectacular sunsets occurred, with colors developing slowly from pale yellow and pink to deep orange and russet against a light blue background shading down to apple green. The effect might last for an hour as the light faded and the fiery display slowly darkened and was diffused with the purples of the night sky. Equally dramatic were the colors produced on Anvers Glacier, on the opposite side of Arthur Harbor from the station, by the setting sun just before it disappeared below the horizon. Where its rays lit the ice cliffs directly, they turned sulphur yellow burnishing the sea below them in paths of gold. Cakes of ice floating in the harbor, miniatures of the parent ice sheet, picked up the same color on sides facing the sun. Where the sun illuminated the ice surface at glancing angles, the colors were pinkish mauve, lilac, and lavender. The shadows were a darker purple and blue.

intermittently
 Humble Island lies north of Litchfield and is about as far from Palmer Station. It is noted for an Adélie rookery, a colony of giant petrels, the ubiquitous skuas found wherever there are other birds to prey upon, a herd of elephant seals, and a fresh water pond fed by melting snow. The pond is really a stercoraceous mud hole ⁺intermittently occupied by elephant seals. The giant petrels, more correctly called southern giant fulmars, successfully hold their own against predation by the skuas. On the day of my

visit with Bill Fraser the petrels were guarding fat downy chicks and were hard to displace for Fraser to weigh and band their young. Handling the adults was hazardous because they can regurgitate and project with considerable force and accuracy an oily liquid of persistent pungence. Whether this action is defensive or an involuntary physiological response is moot. At one nest both adults were in attendance; the female presumably guarding the chick, her mate standing close by. Whenever I approached too closely or made a sudden move the male would spread his wings in what seemed a protective gesture while the female jabbed in my direction. I refrained from provoking a greater reaction.

The skuas were the most aggressive I had encountered. The adult birds launched a fierce diving attack, not hesitating to strike me. For protection I held my tripod high above my head. The unfledged gray chicks wandering among the gray rocks were so well camouflaged that I had come upon them quite by accident. The attacks, accompanied by chattering cries, continued tirelessly while I remained within fifty feet of the young birds, and since several pairs of skuas had chicks in the same general region, no matter where I turned I was under attack. Wearying of this unrelenting divebombing, which I could not always anticipate and which might come from any direction, I left for another part of the island.

The most interesting place on Humble Island was the Adélie penguin rookery. Most of the chicks were shedding. Gray baby

down was sluffing off in patches giving them a very moth-eaten appearance. Tufts of down clung to the developing juvenile plumage pushing through from beneath, and some young penguins newly clad in flawless black and white feathers carried capes of fluff which made them look hunchbacked and elderly; and there was one particularly amusing young bird freshly gotten out in his new finery who still bore on the top of his head a patch of down like a jaunty Tam O'Shanter. The rookery was almost completely deserted by the adults who were away foraging for themselves and their hungry offspring. It was a community of juveniles that were gathered in dense throngs effectively eliminating all territorial boundaries between families. The question therefore arose: did the returning parents recognize their own young, or did they simply feed those that importuned most mercilessly? Evidence supported both possibilities. An adult back from the sea was immediately approached by several young birds of which some might have been her own. They pecked at her throat and bill to provoke the feeding response. However, the reaction of the old bird was usually retaliatory jabbing and evasion. As she fled she was pursued by one or two chicks; this seemed to stimulate her to even more rapid flight, and a race was on. A common sight was an Adélie, closely followed by two full grown downy youngsters, running through the rookery and dodging about in an apparent attempt to shake them off. Unexpectedly, in what appeared an act of desperate resignation, she would turn around and feed by regurgitation one of her pursuers, and immediately dash off again.

The pursuit would continue until both young birds had been satisfied. Was it possible that, by this strategy, parents were able to separate their own young from the crowd and thus assure that they were not feeding impostors?

During the summer months quite a few vessels of various national registries call at the Palmer Station. They come on missions of science and exploration, adventure and tourism. The scientific ships are mostly from those nations ^{excepting Russia} which have established bases and research facilities on the Antarctic Peninsula, England, Chile, and Argentina. These are the three countries that claim territorial sovereignty on the Peninsula--claims which overlap but have been suspended for the duration of the Antarctic Treaty. The most famous of these ships are the Royal British Research Vessel Bransfield, the Endurance, Cousteau's Calypso, and the Lindblad Explorer, but many less renowned vessels appear from countries all over the world manned by people seeking high adventure--the yacht Gedania, a two masted schooner from Gdansk, Poland, a thirty foot Belgian sloop sailed by a young couple who planned to over-winter in South Georgia, and the sloop Icebird from Australia famed for the single handed circumnavigation of Antarctica by her owner David Lewis who survived incredible calamities during the voyage. The station extends all social amenities to those who come and, in case of dire need, provides supplies and fuel, for it is the goodwill policy of the National Science Foundation that all visitors shall be given every reasonable assistance. Very occasionally ships take advantage of this open

policy by requesting supplies which they do not critically need and they then must be denied for Palmer Station is no supply depot and its surpluses for emergencies are limited. But visitors were always welcomed and shown around, and not infrequently invited to dine. These visits invariably interrupted research but the grumbling by the scientists was always in good humor.

Late in the evening of February 12 the Lindblad Explorer steamed into Arthur Harbor under an orange sunset sky. The next morning was declared open house for the passengers and members of the crew. A few laboratories, however, were kept closed to visitors because of crucial experiments in progress. In return for the station's hospitality, the residents of the station were invited on board the Explorer for cocktails and lunch. I was one of those who accepted and enjoyed a pleasant two hours with members of the tour staff and the captain. At two o'clock I returned to shore and shortly thereafter the Lindblad Explorer weighed anchor and departed.

The next morning was another beautiful day and it seemed sure that the trip Bill Fraser and I had planned to Cormorant Island would be possible. At breakfast it was announced that Italian mountaineers had arrived in a chartered Norwegian oilrig tender and that they would be entertained at the station under the N.S.F. public relations policy and that other activities should be subordinated to that purpose. There was a good deal of groaning about lost time, but no one otherwise protested the inconvenience. The Italians were chiefly concerned to have a large quantity of

mail stamped with the station cachet and posted in Tierra del Fuego by the Hero. For the U.S. postage, which they didn't know would be required, they had to surrender, reluctantly, most of their small supply of dollars. They stayed only a few hours, and left before lunch.

In the afternoon, Bill and I went by Zodiac to Cormorant Island, three miles to the southeast. On the way we encountered much floating ice through which we were able to weave, ~~without much impeding our progress.~~ Near our landing place a small ice cake no more than twenty feet across was loaded with at least sixteen crab-eater seals. Several other seals in the water around the cake were constantly shooting up onto it while those on board were slipping off. Fraser went off into the island's interior in search of his banded skuas while I investigated the Adélie colony where I had photographed the year before. As on Humble Island, the birds were mostly molting juveniles huddled into one rather small area with only a few adults among them. A nearby promontory, which not long before had been the center of activity of a population of Adélies, was now ^{without} ~~bare of~~ birds. Pearly gray, smooth rounded stones stood in a deposit of mud, molted feathers, and the refuse of ^{the} ~~a~~ once thriving colony. The stones had been coated with a natural gesso composed of bird lime and other organic substances polished by the rubbing of countless Adélie bodies.

Cormorant Island lies about half a mile from the south shore of Anvers Island. The Anvers Glacier facing Cormorant terminates in an unstable cliff fifty or more feet high. ^{Continuously} ~~Constantly~~ adjusting

to the seaward movement of the ice sheet, the glacier kept up a constant cracking and growling all afternoon. At intervals explosive reports preceded a thundering rumble as blocks of ice broke free and crashed into the sea followed by an avalanche of ice and snow. Here the spawning of icebergs was taking place.

On a terraced cliff rising above the cove where we landed, hundreds of blue-eyed shags, or cormorants, were nesting. Most of the young birds were already acquiring juvenile plumage although a few already had well developed flight feathers and some still quite small birds were in the downy stage. At every nest, except at those with the most advanced young, an adult shag was on guard. From time to time a bird would fly in from the sea, coming in low across the water and swooping up the face of the cliff to alight beside the nest where its mate was standing. The ceremony of recognition and place changing at the nest involved posturing and nodding accompanied by guttural sounds. After this ritual, the mate being relieved turned towards the sea and glided down and away. After a few minutes during which the newcomer established a place on the edge of the nest, its charges, which were excitedly begging for food, were fed by regurgitation, a process in which the young bird inserts its bill into the throat of the adult. The feeding was usually repeated several times, each young bird taking its turn. Blue-eyed cormorants do not appear to be unduly disturbed by people near their nests provided the people do not move about. Sudden motions, however, do provoke protective responses. I first noticed this reaction when after having

crouched beside a nest for some time I stood up quickly. The parent shag facing me from the opposite side of the nest immediately spread its wings to cover the young. After a few seconds it resumed its former position with wings folded, but every time I made a sudden move it repeated the reaction.

The white chicken-like sheathbill, the only antarctic bird without webbed feet, is a commensal in cormorant colonies, where it scavenges decayed and regurgitated fish, the contents of broken eggs, and dead young shags. It is often seen pecking at the refuse around cormorant nests where the larger birds ignored its activities. Sheathbills raise their young in close association with the cormorants on which they so largely depend for a livelihood. They lay their eggs in a hollow or under an overhanging rock which protects against accidental destruction by the cormorants and a safe retreat for the precocial young. A family of sheathbills occupied a cavity in the cliff near the shags I photographed on Cormorant Island. The two young birds were nearly full grown and would soon be fledged. Every time the adult sheathbill returned to the nest site with a scavenged morsel the young ones would emerge to be fed and sometimes would leave the security of the cavity and run several yards to meet the parent bird. Sheathbills' dependence on shags is seasonal, and when the shags depart for the winter they find other sources of food in the marine life of the tidal littoral. Recently, the garbage dumps of the year around research establishments have become a bonanza for some sheathbills in winter. At Palmer Station, I was told, sheathbills are the

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commonest birds in winter when they are always present in considerable numbers foraging in the dump like domestic chickens.

On the way home from Cormorant Island we stopped at Hermit Island where Bill had been working with a colony of black-backed gulls. We landed on a stony beach in a quiet cove. Above the beach a permanent bank of ice and snow green with algae filled a little valley for a quarter of a mile into the interior. Three seals, one Weddell and two crab-eaters, were stretched out on the snow near the beach. The crab-eaters were indifferent to my presence but the Weddell moved away as I approached. Its hide, stained green by algae, looked very unnatural. Near the seals three Adélie penguins were alternately preening and eating snow by burrowing headfirst into it. The black-backed gulls had colonized a cliff above one side of the valley. Here they were able to maintain their own by force of numbers against the skuas that had taken possession of most of the island; ^{and that} The gulls attacked us with unabated ferocity as soon as we went inland from the shore.

A third island on which we landed, unofficially called Shortcut, is also a breeding place for skuas. I saw no other birds on Shortcut; these aggressive birds are able to preempt smaller islands for their exclusive use. Another species would have great difficulty establishing itself in the usual way birds colonize new territories, beginning with a few pairs. They would not be able to withstand the overwhelming predatory pressure of the skuas. However, a colony established on virgin territory can

usually through sheer force of numbers survive attrition by the subsequent advent of predatory birds.

A unique feature of Shortcut is a bed of moss and lichens that fills a wide trough down the middle of the island between rock ridges. The bed is very thick and is divided by a maze of channels that cut through to a gravel substratum covered by a thin layer of black organic matter. The lichens associated with the moss form a white growth on the borders of the channels and on clumps of dead moss. The age of the moss must be considerable--its growth is extremely slow, retarded as it is by the blankets of snow, patches of which were still present on this February day, that cover it for many months of the year.

Ever since my arrival at Palmer Station, a large iceberg had been grounded in Kristi Cove, Fraser's name for the next bay south of Bonaparte Peninsula. ~~The iceberg was~~ ^{by those at the station,} ~~Those at the station watched~~ with interest, because as it melted and became lighter ~~the iceberg~~ ^{it} would eventually float free and might drift into Arthur Harbor to become a navigational obstacle, which eventually did happen. Before we left Shortcut the wind stiffened, raising whitecaps. We took off in our Zodiac but, to avoid a soaking, ran inside the protection of a small island off the entrance to Kristi Cove. This brought us close to the stranded iceberg, which on our way to Cormorant Island we had seen was an arch, a feature not visible from the station. We decided to have a closer look, and ran in around it. Because of the massive size of the iceberg the hole seemed small from a distance but on closer view we saw that a large motor boat could easily pass

through. We were tempted to try it, but, on considering icebergs' unpredictable habit of turning over, decided against it. We did however go close enough to view the arch in its triumphal magnificence and see through it, framed in the arc of ice, Anvers Glacier blue in shadow and Mt. Francis gleaming in the late sun.

Bad weather again enveloped Palmer Station in low clouds that brought intermittent rain and snow with strong winds. For two days we could not go on excursions to other islands. Tantalizingly, the sun shone golden under the overcast on the southern mountains of the peninsula. On the third day we went once more to Litchfield Island but before we started back to the station in the Zodiac the clouds shut in again and it began to snow. Three more days of rain and snow followed with strong northwest winds which gradually subsided on the third day, bringing fog.

At 10:30 in the morning of February 21st, the Hero steamed into Arthur Harbor and tied up to the wharf. I was down on the dock with everyone else to greet her. ^{When} ~~he~~ Captain ^{saw me he called out} ~~Lennie called to me~~ ^{in his} typically sardonic manner, "Hello, old man."

That afternoon, since conditions had improved slightly, Fraser and I took a Zodiac over for one last visit to Cormorant Island where we spent most of the time with the cormorants. The wind rose while we were preoccupied with the birds. When we saw white-caps increasing we started for home heading into a twenty-four knot breeze. The ebb tide against the wind had put up a sharp chop on which the Zodiac pounded hard making the return journey wet and uncomfortable. As we rounded Bonaparte Point to enter

Lennie

the quieter waters of Arthur Harbor, surf was breaking heavily against the rocks throwing spray high over the point. We were

start new page glad to be back.

February 22, 1976

Cruises on the Hero
The next morning I joined the Hero as she took Everett

Douglas and Russell Lockner to the Joubin Islands to capture chinstrap penguins. I had planned to go ashore but changed my mind when heavy wet snow began to fall. Later, they told me they had discovered a large herd of fur seals and I regretted my decision, especially since I had seen from the deck several fur seal bulls on another island and wished that I could land. That the weather did not improve was some solace for my misjudgment. The Hero returned to base for lunch and when she went out again in the afternoon to dredge I stayed on shore. The iceberg stranded in Kristi Cove had floated free and was carried into Arthur Harbor by the tide. It was considerably smaller now, having turned over and partly broken apart, but was still a formidable mass of ice. During the evening the rising tide carried the iceberg inshore, uncomfortably close to the Hero tied up ^{to} the pier. Captain Lenie decided for the safety of the ship to cast off and anchor for the night out in the harbor. After supper I gave up my room in the station and moved on board with all my baggage. The Hero was to sail at 4:00 a.m. on a dredging expedition to Brabant, the island next north of Anvers.

I awoke shortly after six, dressed and went on deck. The Hero was passing through Neumayer Channel which was quite a different place from my memory of it in brilliant evening sun. Low clouds

and fog shrouded the mountains on either side. In places the lower slopes showed through the murky atmosphere and only exceptionally did the summits appear. The channel was almost ice free. Under the heavy overcast the pastel colors, which had so impressed me when I first saw these antarctic mountains the year before, were not on display. That idyllic aspect was nowhere evident; the channel was now somber and forbidding. We emerged into Gerlache Strait, the principal waterway separating the peninsular mainland from the group of islands of which Anvers is the largest. Conditions here did not immediately improve because we were still within the influence of the weather of the Anvers Island mountains. We passed close by several icebergs in which wave-carved grottos of the most intense pure blue reminded me of my introduction to Antarctica. Midway along Gerlache Strait the Hero turned into Schollaert Channel between Anvers and Brabant islands and followed the west shore of Brabant to a bay under Mt. Parry. Here the bottom dredge was lowered and dragged for half an hour. The purpose of the expedition was to obtain information on the diurnal habits of certain antarctic fishes. The trawls were to be repeated every six hours for a twenty-four hour period. Between trawls, the ship was anchored in an ice-walled cove, the terminus of several glaciers which originated near the summits of mile-high mountains. These ice rivers tumbled over rocky shoulders and swept through lower mountain valleys to reach the sea where they came to an abrupt halt as though poised before the inevitable leap to destruction. Swirling vapors that had concealed the

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mountain tops lifted at sunset to give a fleeting glimpse of rosy peaks before closing down for night and snow.

The ship was lighted for the midnight trawl. The flood lights on the snow attracted dozens of Wilson's petrels. They settled on deck, entered the bridge through the open door, flew into the fo'c'sle, and fell into open empty crates. All but one flew away when daylight came. The one was resting on netting in the forward storage room. I picked it up and held it, at first firmly, so that it could not escape. It fluttered vainly and weakly, uttering faints peeps, and then settled down. I carried it out on deck and it rested motionless on my palm while I stroked its head and back. Its wide webbed feet spread across my fingers untrembling. The bird was alert and unafraid as it turned its small head to look about. On the delicate black bill, hooked at the tip, tubular nostrils extended half the length of the upper mandible--a characteristic of all tube-nosed swimmers. I extended one long swallow-like wing and the bird did not protest. Then, without warning, the petrel raised both wings and fluttered away over the deck and out onto the sea.

While the trawling continued, antarctic terns circled the Hero in groups from time to time. Where they came from is not possible to say; the shore of Brabant Island, almost totally covered with snow and ice, appeared to offer no suitable nesting sites. The young serrate mountains were protected by encasements of ice against erosion which in warmer climates would reduce them to gentler contours.

By the second morning the clouds had cleared away and in the afternoon the Hero returned to Palmer. Neumayer Channel was transformed in the hard sharp sunlight and crystal air from the gloom of the passage out; now all was sparkling and bright.

The next cruise for the Hero was to the region around Deception Island where more bottom dredging was to be conducted to collect specimens for research in invertebrate physiology. She set out again in fine weather the day after her return from Brabant Island on the same course through Neumayer Channel. Beneath broken chunks of ice, uniformly distributed since the night before over the now glassy calm water of the passage, were mirrored the slopes of snow and rock and scree. In Gerlache Strait many small icebergs littered the surface and in and out among them flitted hundreds of Wilson's petrels feeding on plankton. The calm clear atmosphere had created a blue world such as I had not seen before in Antarctica. The light from the azure sky, the darker blue sea, blue shadows both light and dark set off by white snow and small areas of black rock was all-enveloping. But even those areas that by contrast with what surrounded them appeared less blue, I perceived on closer examination as predominantly blue. Apparently large amounts of all colors other than blue had been filtered out ^{or scattered} by the water vapor in the atmosphere, and by the ice and snow on the land. It was like being submerged in a tenuous sea, more ethereal and transparent and therefore less oppressively blue than the true submarine world.