

Excerpt from

MOVABLE HORIZON

by

DANIELE DEL GIUDICE

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from pp. 3-13

You feel like shouting your story right away, you want to say, “At times you think you’ve made every possible mistake, past and future,” or “Every man carries a room inside him,” or “If I could understand why it ended up like this,” hovering over the edge, over a time zone, but if it’s true that every man has a room inside him, yours is a complete mess, old photographs piled up on the dresser, and you’d think “It’s impossible to remember everything,” you’d look for distraction because it’s the only way to escape pain, and meanwhile a box in the kitchen cabinet holds a penguin egg, pierced and drained of the white and yolk, brought back from the deepest South, the deepest and most extreme of all the Souths, a frigid Antarctica. Or maybe your number is about to be called, someone says, “You know, my number is about to come up, I feel it, I know it, everyone I knew has had their numbers called,” and each one, seeing the ball fall in the pocket, didn’t even wait for the croupier to call it out loud, but stood up and walked to the door, with his number written on his back, like an athlete at the end of a race, the kind who not only doesn’t come in first but finishes the race before it’s over. Well so, right away you want to shout out a clot of pain, or joy, that isn’t articulated in words that are orderly, but all jumbled together, that explode like a star explodes, and there is an astonished, glacial silence, and where is the composure then, where is your calmness, where is the control, where the serene melancholy of the inscrutable captain, somewhat distracted, rather silent, the one who pulls the strings, a man on a string who wanted to pull those strings himself?

There are three hundred and sixty strings, but twenty-four count more than the others, twelve to the right and twelve to the left, and I could begin from there, but to begin means determining a before and after, assigning an order, isolating from the flow, interrupting the simultaneity, abandoning contemporaneity, writing as if one sentence at a time existed, one image at a time, one thought or memory or story at a time, one and then one and then one, rather than all at once. You struggle to stay in this disorder, to adhere to it, but it isn’t easy and it’s not always possible, I do not always succeed. At this moment, at this very moment, I could be the man who checks the clocks during the night shift, an elderly gentleman shut away in the Greenwich observatory where he has spent most of the nights of his life, on a night like so many others, not a lighthouse keeper but a time keeper, because in here there is no lantern circling around, the only things turning are the gears of the clocks, twenty-four clocks in a row, each staggered by an hour, a rising hour to the east where the sun rises, a sinking hour to the west where the sun sinks. Each clock a time zone, each time zone a string, the stories filter down along the strings, filter down to you who in the meantime have already arrived down there to look at them from below.

By its nature, History is nothing but writing in a different form.

Amundsen-Scott Base, 90° 00′ S and 139° 16′ E, first week of austral summer, 2007.

In a haunted bluish-green glow, the light that constitutes evening here, small bands of Adélie penguins pass by at a swift pace. They are going in the opposite direction to the sea. They are traveling south in a desperate hurry, their swim flippers raised, their faces thrust forward, their feet here and there, maintaining balance with their tails, like tripods. Their busy, worried air, terribly comical to me, seems to say, "I'm late, I'm late, for a very important date", as in Alice's book, or more simply "We can't stop now, there's too much to do." I followed them with my eyes until they became wobbly dots on the white expanse, then for no apparent reason they made a wide curve, and without slowing their frenzied pace, they turned back. The first ones to arrive flopped down on their bellies, sliding like toboggans until coming to a stop. They closed their gray-blue eyes and fell asleep. Creation also includes these creatures, whose nature is astonishment, faith in an order of things that will never be altered, a perfectly logical reasoning being totally abstract, and a devouring curiosity: vulnerable therefore to the worst mishaps. It made sense for the good Lord to place them down here in Antarctica, because in our latitudes they would surely have assumed power in the name of the forces of Good and Hilarity, or they would have been exterminated. But I already knew before now that penguins were worried creatures.

I came with a marine biology mission that included Jeremy Miller, a Welshman from Cardiff who is interested in the Gentoo, the tallest penguins among those of small stature. Gentoo penguins evaluate each step before hopping from one rock to another. They study the next rock intently: whether it is smooth or rough, wet or dry, with or without moss, and once the landing site has been thoroughly considered they collect themselves in a final expression of "What will become of me!", open their flippers and make the leap, a few inches, landing slightly off balance, amazed to still be standing. Many years ago, on my first trip to Antarctica, I had come here with another mission that worked with the Adélie penguins, real acrobats by comparison: they sprang up out of the sea like jack-in-the-boxes, perfectly erect, and landed on the pack ice a few yards higher up. They did not always land, sometimes they would slam into the white shelf and still erect fall back into the water, emerging again without losing their composure, hitting the shelf, falling back in and springing up again, until they succeeded.

Penguins are everywhere, no need to look for them, Jeremy and I encounter them moving from one base to another as we walk along, each absorbed in his own concerns, the weather, the right direction to take. One morning we came across a teeming rookery and a few of these remote birds. We found two adults and a smaller one on the seashore. There were reciprocal curiosities and pleasantries until the two adults dived into the water and disappeared. Of all the expressions that penguins are capable of, desolation is irresistible, because it is a desolation beyond hope. The small creature, the chick left alone, began to scream as he walked along the shore, looking in every direction. Penguins see better in the water, where a second transparent eyelid drops down, a kind of natural contact lens that protects them from the briny water and corrects their hyperopia. I could see his parents very clearly, standing stiffly on the shore a hundred yards ahead, and I tried to point them out to him, but he stumbled along on the stones with that harried "I'm late, I'm late" look, not paying any attention to me, until he must have been convinced that his parents had gone off by sea leaving him there: only then did he turn to the water, discouraged and dismayed, and jump in. By that time I knew what it was about. The family scene I had witnessed was a pivotal moment of development, when the young

penguin is forced to procure, on his own at sea, the krill and plankton he feeds on, which up to a point is fed to him as a mush regurgitated from his parents' beaks. I realized that I was anthropomorphizing the penguins, which I had promised myself not to do, and I talked to Jeremy about it: best to stick to the many explanations of the behaviors of penguins of different species that biologists' expeditions observed and recorded. The trouble with the stories about penguins is that they are told from a single point of view, the human one. We superimpose that which is part of us on their inexhaustible imagination and curiosity, changing the meaning.

It may be that penguins, too, are inclined to penguinomorphize humans, and this certainly happened a few weeks later when, trekking on foot along with an international mission of ten biologists, we met a caravan of Emperor penguins, the largest species. Them, the penguins, single file, us, the humans, single file. Two communities similarly on the march, the penguins from the interior to the coast to obtain food, us from the coast to the interior to reach the colder regions inhabited by the Emperors. They, we, were experiencing the same solitude in an ocean of ice and snow, and the same worries. From a respectful distance, the leader of the Emperor penguins, a voluminous, prominent individual of their species, stretched his neck towards us in a deep bow and with his beak pressed against his chest made a long, gurgling speech. From that reverent position, having finished his speech, he stared into the eyes of Jacques, the mission's leader, to see if he had understood. Neither Jacques, the most experienced ethologist, nor any of us could understand that discourse. So the penguin repeated the lengthy gurgling once again, head bowed, not losing his patience. It was the other penguins behind him who were growing impatient, beginning to suspect that their spokesman had bungled things. Another of them came forward, pushing his predecessor aside. With the same bow, looking up the same way, he gave a new speech that would remain equally incomprehensible to us.

But the penguins' great passion was the dogs. If they discovered them at an Antarctic base, they would go there just to visit them, no longer bothering with the men. They bowed a lot and made long speeches, and the dogs jumped in barking and crouching over their front paws; then one would manage to break free from his chain and a massacre ensued. The penguins stared at their dead companions in utter astonishment, and with an expression that seemed to say "I don't care what happens to me" would have tried talking to the dogs again, were it not for the men who intervened to save them. What's more, these birds have their own particular idea of presence and absence, as I was able to ascertain one day with an inadvertent experiment. As one of them was returning from the water to his spot in the rookery I found myself on his trajectory; first he looked at me, astounded, then he tried to go past me as if I didn't exist. He pressed ahead, bumped into my legs, then backtracked. After a while he started slapping me with his swim flippers. I felt like laughing, but the blows were very swift and they hurt. Since I wasn't moving, he made a full circle around the rookery, and I in turn took a step and waited for him on the other side. When he arrived and saw me still there, his expression was one of total disbelief. His reasoning was unassailable: he had made a complete circle, therefore I should have vanished, I couldn't still be there. A full circle is sufficient to change things, otherwise what's the use of going around?

By observing them I have become convinced that the penguins' secret lies in their being at once impeccable and awkward. These creatures endowed with grace and self-

irony, virtues that we attribute to the most evolved species, are actually great unfinished specimens. They did not succeed in becoming fish, since water is not their definitive element; despite being birds, they no longer fly, and as bipeds they are slow and apprehensive. They remained stuck in this ambiguity in ancient times and since then have not changed. But in the ice fields, in the roaring wind, you end up losing your mind over the penguins. Especially in winter, in the perennial night-time, night by night and night by day, total darkness, that constant darkness that unhinges the mind, destroys sleep, no use looking at the clock, the time is always the same, darkness.

And on one of those nights that aren't nights at the Cape Crozier rookery, at sixty degrees below zero, in full polar darkness, five or six of us went to see the egg hatching of the Emperor penguins. Curiously, sitting on the eggs is the responsibility of the males, not the females. To get the eggs, you had to sidle up to the birds, who were trying to hold onto them, by slithering, feet joined together, over the ice. There was a blizzard and you could barely see a thing. Jeremy moved a penguin aside, reached out his hand, and felt something cold and oval. It was an egg, true, but made of ice. Perfectly shaped. The penguin had lost the egg, felt ashamed, and had made a fake one. Jeremy and the penguin looked at each other, the human shocked, the bird mortified, who knows whether because his poignant fiction had been exposed or because he knew that it too would be taken away from him.

It was then, on that day-night, that Jeremy, holding the ice egg in his hand, burst into tears, started screaming, and began to run, and the more he ran, the more clothes he stripped off, he tossed away his cap, threw off his thermal jacket, he even took off his boiled wool shirt and all the rest, sobbing and stumbling into the 'sastrugi', the wind-formed ice dunes. We chased after him, and found him on the ground, practically naked. I lifted his head, put my jacket on him, shouted at him over the wind, "Are you crazy, do you want to die?" and in the wind Jeremy replied, "So what, if I die here, not even God will notice." I tried to calm him down, while someone activated the radio and called for help. The helicopter came swiftly, we had signaled our location with incandescent flashlights.

In the days that followed Jeremy recovered rather quickly, one reason, in fact, being that he met an Italian physicist, Teresa Montaruli, a researcher working with the study group on neutrino-astronomy and the Nemo Project. Teresa gravitates between the University of Bari and that of Madison, Wisconsin, and told us about some new observational horizons. They are constructing enormous infrastructures to detect other messengers of the universe, neutrinos, neutral particles that are very elusive because they are only governed by the 'weak force', one of the four fundamental forces of matter; those particles, neutrinos, have zero electrical charge and zero or virtually zero mass, as opposed to photons which interact with matter electromagnetically. Neutrinos are not absorbed by matter, nor deflected by magnetic fields, which is why they transmit information about the sources that generated them. Apart from neutrinos emitted by the Sun and a handful from a supernova, neutrinos have never been observed from the cosmos. However, neutrinos have their own telescopes, 'neutrino telescopes', as the instruments that serve to detect them are called. I couldn't resist the rhyme: "Neutrinos and penguins!"

Teresa is kind, and the following evening, at supper in the base's mess hall, at the lowest point on the planet, surrounded by ice, she tried to translate it all for us not in

other terms, but rather in concepts, though it wasn't easy. She patiently explained to us that if the energy sources were to accelerate not only electrons but also protons, the production of neutrinos along with photons would be assured; and that neutrinos could also be produced thanks to the annihilation of dark matter that the gravitational force causes to accumulate at the center of the Sun or Earth, or at the center of the galaxy. Teresa's graceful hands motioned to neutrinos as if they were present there, as Jeremy listened and I listened too; the planetary bounds made me think of Robert Sheckley and the boundaries between genre and mainstream literature. This dark matter, Teresa went on, would be made up of new particles, 'weakly interacting massive particles' or WIMPs, envisaged by models developed to extend the theory that is used today to describe matter. And it would involve the unification of all forces: she recalled the 'supersymmetry' and extradimensional theories, which envision other dimensions beyond the temporal and the three spatial ones.

Sometimes collusion can occur between exact science and *phantasiai*, but the physicist must not abandon the strictness of his discipline. Teresa paused a moment, then continued: "To detect neutrinos, it is necessary to equip very large spaces with appropriate instruments, thus counteracting the low probability of interaction with matter that is typical of WIMPs. That's why it's impossible to place neutrino telescopes in tunnels under the mountains. The search for rare events requires a thick-layered filter. Thousands of feet beneath the sea or under polar ice."

"In the coming years, the European scientific community is expected to build a detector the size of one cubic kilometer, and soon a very tall prototype tower will be installed right in Italy, at Cape Passero, given the favorable sea water and marine features. We expect great things from the neutrino observatories in the Mediterranean, because unlike those of the South Pole they will have the opportunity to observe the center of our galaxy. Here in Antarctica they have started building the IceCube Neutrino Detector by plunging sensors into the ice, in vertical wells, with a cone-shaped drill that sprays hot water. The data collected will help us to understand cosmic rays; in the depths of the ice work is being done for galaxies and for supernovas. It's like looking at the stars in a well."

We are at the McMurdo base, named after the American lieutenant who mapped the area in 1841, but I prefer to call it by its other name, the Amundsen-Scott base, after the two explorers who were first to arrive here in the race to the geographic South Pole, which ended with a win for Amundsen and a tragic misfortune for Scott and his expedition. I can't reiterate Teresa's words exactly, of course, and at times there is no way to translate the vocabulary of physics, you don't always have the words to convey it. And to be honest, I got distracted as she spoke because I was thinking back to my first trip to Antarctica. A fair amount of time has passed but I remember it perfectly. That time I had not traveled there from New Zealand, which would have been simpler, but from Chile, from Santiago.

I boarded the big Jumbo at about nine o'clock in the evening, and around midnight I drifted off, the night and my sleep constantly interrupted, made unbearable by my position and the sensation of motion. When I woke up in the plane it was still dark and silent, I tried to wash up as best as I could; for the first time I noticed that my feet were swollen. Then the lights came on again, and some infants started whimpering softly. It's curious how well babies tolerate long air travel: apart from a desperate wail the

evening before, they had slept quietly all through the night. Through the windows a very delicate strip of blue appeared, barely distinguishable from the dark clouds, and at dawn the descent over Rio de Janeiro came into view. In the wide circling approach I recognized the bay and the city and Sugarloaf Mountain. Then a stop of about an hour without leaving the airport. Beyond the extensive window glass you could see the runways, the hills and the city in a long, narrow panorama, tinted by the distinct, contrasting colors of dawn and early morning. It was 6 am, Rio time.

I did not reset my watch yet, I didn't quite know what to do about the four hours difference, the position of the sun imposed its rhythm on the day and my watch imposed another.

from pp. 98-106

Austral Pacific, February-March 1898. De Gerlache Expedition.

“Rather than leading us to the George IV sea sailed by Weddell, chance has brought us to the Pacific, and we know of no better way of bringing the period of our exploration to a close but to push southwest. After successfully overcoming the rocky reefs that obstructed access to the Great Ocean through the Lemaire Channel, we continued to steer southward, skirting the coast as much as possible, given that it is protected by the wall of ‘pack ice,’ the enormous accumulation of sheet ice.

On February 13, at nine in the morning, we tried to make out the strip of Graham Land, but the ice was so solid that after a few miles in a southwesterly direction we had to go back out to sea. We sailed for about fifteen miles to the northwest, crossing a ring of low-lying islets surrounded by breakers and jutting rocks which, covered by a shield of ice, resembled the small islands situated in the southern part of the strait.

The next day, the 14th, we steered the bow in a southwesterly direction again. The sky was foggy but the breeze was favourable. We sailed along powered solely by the wind, from time to time performing hasty maneuvers to avoid icebergs. To port, on the landward side, a pronounced luminosity in the fog, an iceblink, revealed the existence of a very vast expanse of ice. We crossed several areas of drift ice, the ice floes that drift with the current, and on numerous occasions we were forced to steer farther and farther west to avoid the floating ice. We sailed into the waters of Biscoe Islands, shown on the Admiralty chart, but were unable to sight them; to be sure, the sky and atmosphere were rather impenetrable, and perhaps we had left them behind a few miles back, on one side or another of our course.

On February 15 we steered in a southwesterly direction, still using only the sails and wind-power. We encountered quite a few icebergs; numerous albatross with majestic wingspans flew in their wake, accompanied by elegant Cape pigeons. At noon we hoisted the flag to mark our passage of the Antarctic Polar Circle and celebrate our entry into the polar region as such. Closer to the ground, to the left, the fog became more and more dense, and long stretches of drift ice, oriented from southeast to northwest, broke away from the edge of the pack. At half past three in the afternoon, when the sky cleared, we observed several icebergs straight to port, and then the iceblink, revealing the proximity of a large ice mass. Shortly thereafter we distinguished the edge of the ice field

about two miles away. An hour later, a merciful, brief clearing enabled us to spot some high terrain to the east, its peaks merging into the opacity of the fog. It was Graham Land, from which we were separated by an ice field strewn with icebergs. Towards the west the sea was unrestricted, broken only here and there by floating mountains of ice.

On the 16th we continued our course by steam power, since the favorable northeastern breeze had diminished. At four o'clock in the morning, at about $67^{\circ} 40'$ south and $69^{\circ} 55'$ west, a position obtained by estimation, we sighted land to the southeast. It was undoubtedly Adelaide Island, glimpsed by John Biscoe in 1830. Around the ship we counted eighty-five icebergs. We steered south, 30° east, to get closer to land, but after traveling about twelve miles in that direction we came face to face with the edge of the ice pack that extends impenetrably to the coasts toward which we were headed.

After trying in vain to penetrate that formidable mass, or rather after giving it a few quick propeller thrusts, we found ourselves in the open sea, with the iceblink. A few moments more and another land mass came in sight to the south, 20° west. We aimed the bow in the direction of this new strip of land, but a further ice floe blocked us menacingly and forced us to steer further west. With a clear sky we could finally establish the ship's position by direct observation: $69^{\circ} 50'$ south latitude and $70^{\circ} 39'$ west longitude. Around four o'clock we stopped to take soundings: the floor depth of 135 meters indicated that we were undoubtedly on the undersea plateau of the Antarctic continent. Alexander Land, discovered by Thaddeus von Bellingshausen in 1819, appeared magnificent to our eyes, its mighty glaciers barely separated from a few darker peaks that stood out in a yellowish glow against the dark blue of the sky. But little by little the weather darkened, it rained, and the ship's deck was covered with sleet. The evening light was a vivid, intense red. Under that light, around midnight, the sea, the ice pack and the land took on the appearance of an immense fiery furnace.

From February 17th to the 28th, we sailed under both wind and steam power, continuing our exploration of the edge of the ice pack and making our way into every possible breach. The seracs of glacial ice that form the pack, covered with snow, were pure white, but when jabbed by the bow wheel the exposed ice turned a vivid greenish yellow ochre due to the profuse abundance of diatoms. Lying quietly above the ice masses were sea leopards and a few Ross seals.

On several occasions, particularly on the 18th, 20th and 22nd, we were stuck for a few hours, unable to go back out to sea. It then became necessary to retreat northward to regain the open sea through the more dislodged ice, revealed by the dark patches of "water sky" drawn under the clouds; meanwhile to the south the luminous iceblinks proliferated non-stop.

On February 21, at eight o'clock in the afternoon, we sighted no less than 320 icebergs scattered along the entire circumference of the horizon. On the edge of the pack, the seracs, their glacial pinnacles elevated by refraction, resembled the buildings of a city built on the shore of the sea. The illusion was even more complete as the waning sun reverberated and converged atop a tall spire that seemed like an immense lighthouse jutting out over the waters.

On February 24, at $69^{\circ} 30'$ south latitude and $82^{\circ} 24'$ west longitude, we obtained a sounding of 510 meters. The following day a second sounding, thrown at $69^{\circ} 17'$ south latitude and $82^{\circ} 24'$ west longitude, revealed a depth of about 2,700 meters. From that

sounding we knew that we had left the continental plateau of Alexander Land. It was the most costly depth probe of all of them, before and after: we lost 2,500 meters of lead line, a Brooke sounding instrument, a Sigsbee water sampler bottle and two reversing thermometers, a real disaster.

On the 27th, at noon, at 69° 24' south latitude and 84° 39' west longitude, another sounding registered the bottom at 2,600 meters. Since the weather had again improved and the sea was open to the south, we took advantage of these two circumstances to gain a few minutes in latitude. At five o'clock in the afternoon, at 69° 41' south latitude and 84° 42' west longitude, we obtained a depth reading of 1,730 meters; shortly afterwards the breeze picked up and freshened from the east-northeast. Around eight o'clock we spotted ice lying to the south and as a result we continued our course towards the southwest with very little sail. During the nighttime hours the sky darkened due to dense fog and the sea rose; the edge of the ice sheet showed some crevasses.

The following day, February 28, a memorable date in the history of our expedition, a rare if not unique opportunity presented itself: that of penetrating the ice pack and perhaps crossing it. Although the season was well advanced, and although in our past attempts to penetrate the pack we had already observed the formation of the young ice that heralds the approach of winter, the chance to venture towards the extreme south appeared favorable.

In brief, this period seemed the most propitious for navigating across the southern ice shelf. At the time of his second Antarctic expedition, between 1841 and 1842, Captain James Clark Ross, who had approached the northern edge of the pack on December 18, was only able to reach the opposite edge by the following February 2, that is, after 46 days of titanic efforts, whereas it took us just one day to cross it in the opposite direction. During the summer of 1894, the Norwegian whaler *Antarctic* required 38 days to cross that same ice pack from north to south, while we were able to return along the same route after only a handful of days.

We were at the locations where Von Bellingshausen marked an impenetrable wall of ice on his map, but instead of that frightening barricade we observed an ice mass with a lacerated edge, scored by numerous wide crevasses, perfectly navigable. It was possible that this ice pack did not extend as far as the Antarctic continent, and to the south gave way to a vast open sea with ice floes similar to the one Ross navigated with such good fortune. And by penetrating it we would most likely be able to plough hitherto unexplored waters.

My initial plans were undoubtedly different, but when it comes to polar navigation one must act according to circumstances and be able to seize the opportunities. As I saw it, we had to take our chances, whether we crossed the ice sheet or stopped where we were, whether we tried to retreat to avoid wintering there or allowed ourselves to get stuck in the pack. My scientists were of an opinion diametrically opposed to mine, not because they feared danger but because, having already gathered a profusion of scientific questions, they wanted to ensure the survival of their valuable collections before venturing into new dangers. Their considerations were praiseworthy, and also very wise; but the ice pack was there, open before the prow of our ship, and I, being a seaman first and foremost, could not resist the temptation to penetrate it entirely. I approached Lecointe, who was on watch duty on the bridge, and after pondering and considering with him all the eventualities, good and bad, that might arise, I had the joy of finding him of

my own opinion. Welcoming his support with a vigorous handshake, I steered the bow towards the south.

At nine o'clock on the morning of February 28, 1898, we hurled ourselves headlong into the eternal ice of the Pole. Towards the south the openings followed in succession, sometimes several miles long. They were separated from one another by immense slabs of ice through which the *Belgica* opened its passage. But the wind's vigorous thrust was not always sufficient, and for that reason, we frequently had to use the driving power of steam to ram through the obstacles of ice; the prow of the ship would rise and shatter the ice with its massive weight. The breeze, already quite brisk, continued to strengthen, and by 6 o'clock blew in a storm. The *Belgica* sailed swiftly and easily through the labyrinth of crevasses, despite the reduced sail; each time we reached the end of an opening we had to stop suddenly to avoid colliding with the ice mass with excessive force. At noon we were at 70° 28' south latitude, so we were not far from the 71st austral parallel.

It was snowing, the anemometer registered a wind speed of 100 kilometers per hour. The night was so dense, we couldn't see a thing. Navigating in the growing darkness, through blocks of ice battered and rammed by our bow, with a din so deafening as to outdo the roar of the storm, assumed a fantastically spectral character. It felt as though we were entering a different world, where terrible gods were subjecting us to supernatural trials as they had the heroes of the Scandinavian sagas. And was it not a new world, in fact, that we were entering that day, not to free some sleeping Valkyrie but to extract from the white Antarctic some of its jealously guarded mystery?

By 10 o'clock the darkness was complete. We steered the ship into a spacious lagoon where we lay to until the first morning light. The breeze fell quickly and when we resumed our course towards the south, at 4 in the morning on March 1, it was perfectly calm. The ice pack remained broken and fragmented, and the lagoons followed in succession like ramifications of lakes. In the afternoon, after having struggled for two consecutive hours to force a passage through an enormous agglomeration of slabs, we were able to sail through a vast expanse of open water which, from the crow's nest that morning, we had spotted in the distance, stretching towards the south. But by five o'clock the ice barred our way. Stretching before our ship was the eternal pack, threatening and unassailable.

At noon on March 2 we were at 71° 31' south latitude and 85° 16' west longitude. From there on we navigated from lagoon to lagoon, only a couple of miles south until we drifted towards the Pole with the entire ice floe. The slabs of ice that encircled us soon formed such a solid pack that it prevented us from any attempted course.

On March 3 several small channels were drawn in the boundless expanse, and we entered them without fail, but it was not long before we realized that the resulting outcome was not very rewarding. We were at 71° 81' south latitude, five miles farther north than yesterday, still subject to a shifting drift. On one of the ice slabs were thirty or forty penguins on the verge of molting. In the afternoon hours, after a slight opening to the north occurred, we were able to cover eight or ten miles in that direction without much difficulty. From the crow's nest I counted 127 icebergs all clustered around the ship; one of them, huge and tabular, which in the morning had been about a couple of miles east of us, had now come appreciably closer.

Since wintering had become inevitable, we promptly set about making the prison in which we would live for a period of eight or nine months as comfortable as possible. We surrounded the ship with a wall of snow to the top of the bulwarks so that the loss of internal heat might be less liable. We installed the water distillation machine. We set up racks for snowshoes and other items essential for excursions on the ice. In the officers' wardroom and next to the engine room, we organized a larder in which we placed tins of preserves and foodstuffs in zinc crates, as well as items that the cold would not be able to alter, such as rice, sugar and pasta products. The corvette, which had been cleared out, was converted into a workroom for the crew and equipped for cooking. Putting things in order, we found a note in one of the chests containing the glassware of the scientific laboratories; on it was written "Good luck and good health to the explorers." It was dated July 7, 1897 and signed "Packer L. Laumont, via Pierreux." Good wishes that appeared just at the moment when needed.

On March 26, we let the boiler fires go out that until then had been burning. A rough survey of the remaining fuel told us that we still had seventy tons of coal and almost forty tons of anthracite in the caissons. We lowered the sails, except for the foremast, brigantine and topsail, so as not to find ourselves completely unprepared in the event – unlikely to be truthful – of a sudden break in the ice. We arranged a table atop the large deck in the stern that provides access to the engine room; on this platform we set up a small stove which, for better or worse, will heat our cabins arranged around it. In front of the door to the workrooms, we affix a compass covered with cardboard and pitch.

These efforts to make preparations and accommodations occupied the crew for the entire month of April. During that period, the Staff officers made plans to ensure the rotation of scientific observations.

For the moment, we were no longer seafarers, but inmates of a small penal colony, sentenced to temporary confinement. On board the *Belgica* we have our cells and common rooms. To get our exercise, we have the floe, the snow-covered ice sheet whipped by the wind. And we not permitted to go farther than a few kilometers so as not to lose sight of the ship's masts. Little by little our terribly monotonous existence was being structured.

The matter of diet was of the utmost importance. We had no lack of provisions, since those we had with us could be stored. We had everything possible and as much variety as possible given the restricted volume. Both the officers' mess and the crew's cantina served the same food; there was generally a lack of fresh fish because the ice pack was too thick and too deep. For example, a filleted imperial penguin had to satisfy the entire crew. The meat of birds and that of amphibians have a certain similarity in taste and appearance; both are dark and tough, very fatty and therefore oily. Then too, that of the amphibian, contrary to popular belief, doesn't taste at all like fish although penguins and seals feed only on tiny crustaceans.

Our common future is now tangibly linked to the existence of our precious ship; our joys and sufferings spring from a single cause. Unity, brotherhood, and equality in work are essential to us. The national dictum of the Nation, written in gold letters on the most conspicuous place on the deck, is there to remind us of our duty."

from pp. 110-111

I was beginning to form a general idea of the bases, or better yet of a 'base' per se. Unlike in other places, the most sophisticated research operation and the elementary functions of 'home' were joined together in a single facility. The base, in Antarctica, was everything, lodging, laboratory, shelter from the elements, a geographical reference point for those who, like me, moved from place to place, a name with which to associate an idea of place, and an idea of warmth and 'eating,' separated from the outside world by that small thermal decompression room where I removed my ice-encrusted boots when I arrived and left the most sizeable, heaviest pieces of equipment. The base was an outpost of the nation to which it belonged and a symbol of its presence, a modest occupation of the territory granted by the Antarctic Treaty of 1959, but an occupation nevertheless. Since it combined all these aspects within it, it retained something of the ship on which the first explorers had arrived and in which they'd lived; because of all the antennas, given its technological and scientific role, and because it often rested on pilings for insulation reasons, it even had something of a spaceship about it, although inside, in the more domestic spaces, you found the chinoiserie of the Chinese with its black lacquered cabinets and mats, or the Russianesque furnishings of the Russians, in their quarters where water ran down the fake bricks of adhesive wallpaper, water flowing everywhere like in a Tarkovsky film, a poignant memory of home. The bases also moved, given that everything here is movable: the ones on the glaciers slid with their glacier at the speed of a few kilometers per year. And sometimes they were lost, like the Soviet Druzhnaya I base, which vanished even before it was occupied; no one knew what had happened to it until a satellite photographed some buildings on a tabular iceberg, a hundred kilometers long, adrift in the Weddell Sea.

from pp. 114-119

Austral ice pack, May-June 1898. De Gerlache Expedition.

"In May Frederick Cook, the doctor, began his physiological examinations of the Staff officers and then of the crew members; he measured the body temperature and pulse, and each man was weighed. Meanwhile, the thawing was becoming so abrupt that it was necessary to clear the deck. Suffice it to say that the layer of ice and hoarfrost that covered the equipment and rigging, and which had reached a diameter of no less than twenty centimeters, was breaking off in huge chunks, and when one of those blocks fell above deck, it produced such a tremendous crash that each time we were awakened with a start, in constant worry. New crevasses opened here and there, one right under the bow wheel.

The temperature remained in close correlation to the direction of the wind. Southerly winds bring intense cold, while those from the north, that is, offshore, bring a temperature rise of up to zero degrees and sometimes even a tenth above. These northerly winds, in the month of May, afford us an average temperature of minus six and a half degrees, that is five degrees and three more than that observed in April. Also in May we reached the extreme points of our southward drift: on May 16, 71° 35' south latitude and 89° 10' west longitude; and on May 30, an austral latitude of 71° 36'.

Meanwhile, little by little, the previously open ice pack closed back up. The field of ice surrounding the ship was increasingly covered with 'hummocks', knolls of ice generated by friction from the intense pressures, and towards mid-month the sun, very pale, appeared only for a few moments at noon. Thus, slowly, the polar night descended upon us.

By noon the darkness began to be total. First around nine and then around ten, at the solstice, daybreak occurred, and its wan light had a slightly varying intensity; one would have said that such a pale dawning could not generate day. For a period of four hours around midnight, in the diffuse light that filled the atmosphere, we could not make out the countless irregularities of the ice sheet, which appeared to us as a vast, unbroken and slightly yellowish expanse. In the excursions that we were obliged to make to tend to our hygienic needs, we often stumbled over hummocks that had no shadow to indicate them. For the same reason we were unable to form an exact idea of the distance and size of an object. I remember that one day I thought I saw a very large crate about a hundred meters from the ship. I racked my brain, unable to explain why that crate had been dragged there, if for no other reason than the wood that at that time and in that place was a precious commodity, not to be wasted like that. Spurred by intense curiosity, I went towards the object and my snowshoes immediately bumped into it: the assumed crate turned out to be a sheet of newspaper that had flown away from the ship who knows when.

In the moonlight, the immense plain stretched out towards infinity. The Southern Cross spread its arms of softly glittering light in the sky, and here and there the strange forms of icebergs rose, their tops sparkling with sudden brilliance. In all that whiteness, the pack ice appeared as an immense dark spot. Held fast by ropes stiffened by frost and encased in ice, the only sign of life the *Belgica* revealed was a wisp of smoke that rose lightly above the deck, fore and aft; for the rest she looked like a ghost ship. The scene was that of a beauty that is at once stately and funereal. Our Astro illuminated the ruins of a splendid and defunct world.

Unexpectedly Danco displayed disturbing symptoms. If truth be told that we had always thought his health fragile and his cheek weak despite his tall stature and exuberant gaiety; but we hoped that the cold, invigorating air of the polar regions would have a beneficial effect on him and perhaps make him stronger. He must have succumbed to another illness, by which we had not considered him threatened. From the first days of polar night he had suffered from heart issues, as we all had, for that matter. He no longer went out for his daily walk; after a few steps, unable to breathe, he was obliged to stop and return to the ship, and those attacks occurred at shorter and shorter intervals. The poor young man kept intact the appearance of excellent health, and continued his magnetic observations as long as his physical condition allowed him to do so; but as of May 20 he had to give up all activity. On the same day Dr. Cook came to see me and announced the inevitable bad news. Soon the seriousness of Danco's condition, which hour by hour grew worse, became clear to all of us, but for some miraculous reason the young man did not notice anything and attributed his illness to a temporary disturbance, maintaining his usual cheerfulness and placing all his hopes in the return of the sun. Instead he rapidly deteriorated. His labored breathing was audible in the wardroom, and minute by minute informed us of his agony.

From the very first days, we had given him the banquette in the officers' quarters, the only place on the ship that was suitable for him, since he could not breathe at all in the narrow bunks of our cabins, which were constricted and had low ceilings. There, among us, he lived out his last days, present at the meals that gathered us around the small table, offering comments on the games of whist played every evening to distract him, and enjoying the little jokes we made to conceal our anguish. The poor boy constantly kept the hope of recovery alive: he continued making plans for the day when the sun's light would be restored to him, thereby displaying the decency of his beautiful soul.

On June 5, just three weeks from the day Dr. Cook had pronounced his verdict, the doctor came to see me again and in a voice cracked with emotion said, "Captain, this is it." On that day none of us laughed, no words were spoken aloud, we tried to make the sound of our footsteps softer as we waited; the silence on board became complete. And while our distant homeland was experiencing the gentle season of long, luminous days, here, in the frozen, ominous night, on this Antarctic ice pack that is the desolation of desolations, here a drama was unfolding that was as simple as it was profound: the death of one of the members of our little family, isolated and lost at the edge of the world. Danco, prostrate, no longer spoke, every word was a painful effort, but he still smiled; he smiled that sweet smile of his to everyone who one by one came to enquire how he was.

Polar anemia had not spared any of us; it threatened us all, sailors and officers alike. I knew that everyone was being courageous and impassive in the face of death, not unlike poor Danco; but if we were to die, who would bring the fruits of what we had accomplished back to Belgium? The thought that sacrificing our lives had been futile made me tremendously sad.

On June 7, the day chosen for the funeral, the weather was bad. The harsh, arctic wind made it very difficult to bore a hole in the ice where our friend was to vanish forever. Like the rigging, the halyards were frozen stiff and could not easily be maneuvered, but wanting our country to be represented in some way at the funeral, I had the national colors hoisted halfway up the upper shroud. Around eleven in the morning, when night gave way to the watery, diffuse light which passed for day, four men applied themselves to the sledge carrying the body of our mate and tipped it into the hole where it would sink.

The cause of our poor state of health was not only the prolonged darkness, which produced deplorable effects on the circulation, not just the isolation, the cold, or worse than the cold the constant dampness; it was also the persistent, exclusive consumption of tinned food and this use, indeed this abuse, had brought about an extremely detrimental intestinal atonia in each of us. Towards the end of the winter we managed to catch a few penguins and some seals, and the fresh meat settled our exhausted stomachs. On the doctor's prescription, those who were ill ate it regularly three times a day on a daily basis, gradually overcoming their repugnance for the meat that was so oily it literally had to be calcinated to remove the excess fat.

Our existence proceeded monotonously and almost robotically. Each day, during the brief hours of twilight, we would leave the ship and trek around the perimeter of our frozen prison in snowshoes, but only if the weather permitted, if the storms and blizzards gave us a respite. The usual destination of these peregrinations was an iceberg, a prisoner like us, more or less two miles away from the ship.

With the return of the sun, our situation improved a great deal, but long months still had to pass before we could find a way out. Experience had taught us that we should trust neither the sun nor the thaw, both of which were insufficient factors to open the ice pack even in mid-summer. We had gotten ourselves stuck in the deadly ice at a time when a storm had dislodged it, and it would take another such storm to get us out of it. We are tired of waiting, though.”