# Pemmican and penguin-breast, but no pie: Daily problems of Polar explorers during the Heroic Age of Antarctic exploration

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ABSTRACT: This paper attempts to trace the every day problems of polar exploration in the early XXth century: ice and dangers, hunger, scurvy and facing sick minds and despair.

Since the beginning of polar exploration food has been both a problem and a pleasure for the expeditionaries. Occasionally they had to suffer hunger and scurvy or their rations were not very tempting at all. On the other hand, especially in cold climates, meals became very important and had to make up for the lack of social life in the icy world of Antarctica.

Many parties, especially those that became marooned, depended on the food they could catch to survive. This of course was also the case for part of the party from the Swedish Antarctic Expedition, under command of Otto Nordenskjöld in their second winter on Snow Hill Island. Not only did they try to survive with dignity but also did they carry on with their daily scientific studies. We'll try to shed some light on their daily routine, how they celebrated on few occasions, how they took care of their bath-room and washing problems, as well as on their strategies to overcome mischief and despair.

## 1 INTRODUCTION

The sixth International Geographical Congress in London proposed in 1895 major new explorations in Antarctica after little activity for the previous 50 years. This launched an era of government-sponsored scientific expeditions and signaled the start of the Heroic Age of Antarctic Exploration, a period marked by much personal endurance and bravery. The most famous voyages were the Belgian expedition under the command of Adrien de Gerlache on board the *Belgica* (1898–1899), the Norwegian expedition under Carsten Borgrevink on board the *Southern Cross* (1899–1900), the German expedition on board the *Gauss*, commanded by Erich von Drygalski (1902–1903) as well as the voyage of French explorer Jean Charcot, who conducted two expeditions to the Antarctic on the *Français* and *Pourquois Pas?* Surveying over 2000 km of coastline and newly discovered territory in the Peninsula area. At the same time the Swedish Antarctic Expedition under command of Otto von Nordenskjöld made the first major sledge journeys in Antarctica over two winters. His ship, the "*Antarctic*" was crashed by ice and sunk, but the whole party was saved after surviving the winter. During two years of danger, hardship and suffering, the men of the expedition accumulated a mass of invaluable scientific data and only survived at all through a series of extraordinary coincidences that make the story of the expedition read like an incredible novel.[1]

In the meantime they had to face the same day to day problems other expeditionaries had to live up to all over the White unknown continent. Scurvy, hunger and sick minds were only some of the problems they had to deal with.

## 2 FOOD IN ANTARCTICA

Since the beginning of polar exploration food has been both a problem and a pleasure for the expeditionaries. Occasionally they had to suffer hunger and scurvy or their rations were not very tempting at all. On the other hand, especially in cold climates, meals became very important and had to make up for the lack of social life in the icy world of Antarctica.

The vast difficulties that confronted the early explorers were met with a mixture of bold determination and bland ignorance. The horrors of ocean voyaging – bad food, discomfort, disease – were for the most part known and expected. Scurvy, a frightful affliction, was regarded as a natural hazard of the sailor's life. It was a common killer of sailors and explorers until comparatively recently. It is caused by a deficiency in the diet of vitamin C, the lack of fresh fruit and vegetables making those at sea or in the polar regions particularly vulnerable. The symptoms include swollen muscles, spongy gums, impaired vision, exhaustion and hemorrhaging. In 1902, medical evidence suggested that scurvy was contracted from tainted food. It was not until 1912 that research began to provide evidence that a lack of vitamin C was the cause. Interestingly, most animals can synthesize the vitamin for themselves, the exception being guinea pigs, monkeys and humans.[2]

Square meals though, did not always provide the necessary amount of proteins, vitamins and other nutrients. Since Tudor times meals on board ship were dished up on square platters – hence the name – which seamen balanced on their laps. They had frames around the edge to prevent the food from falling off and were so shaped to enable them to be easily stored when not in use. Each sailor thus received his full ration, or square meal, for the day. But the platter was not always well filled. Francis Drakes men on their way South in 1578 suffered not only bad storms but also a severe lack of food. The situation was serious and the men had even taken to saving their rations of biscuits until nightfall so that they could not see the worms. The cheese was finished and for weeks the only hot meal – apart from lucky catches of fish – had been lentil soup.[3]

Captain James Cook's men had more luck. Only two hundred years later he was the first to circumnavigate with his men the Antarctic Continent and made the first crossing of the Antarctic Circle, did not only achieve geographical discoveries but the splendid conquest of that ancient menace of scurvy. Although the juice of citrus fruits had been used for medical purposes since about 1600 nobody knew about its importance in the daily diet of sailors. Cook insisted though in a decent diet of fresh meat and vegetables whenever possible, and when not he made do with such ingenious inventions as his "portable soup" (meat extract dried in slabs like a glue) and big portions of *Sauerkraut*, pickled cabbage.[4]

About a hundred years later, the seamen of the "*Discovery*" followed still Cook's advice. The wardroom's overhead beams were used to grow mustard and cress in flats placed under the skylights. Fresh fish and seals caught during the trip completed a healthy diet on the ship. Scott's crew did not complain much about the food on board. But dinner menus tended, perforce, to repetition. After a brush with scurvy, canned meats were used only one night a week, a scheme that also allowed the cook a night off. For five of the remaining nights, all hands ate fresh meat, either seal steak or penguin breast. Most eagerly anticipated

was Sunday's mutton dinner, when one of the precious frozen carcasses was retrieved from the rigging, thawed, and roasted.

One of the best examples of how to stock a polar-bound ship is surely the "*Erebus*" and "*Terror*" Expedition under the command of James Clark Ross (1839–1843). By any standards the enterprise was phenomenally well equipped, from its ice saws and portable forges to its stocks of provisions – sufficient for three years and including 2,618 pints of vegetable soup, 2,398 pounds of pickled cabbage and 10,782 pounds of carrots to keep scurvy at ban, not to mention a small flock of sheep – to its stores of winter clothing and to Ross's insistence that "every arrangement [be] made in the interior fitting of the vessels that could in any way contribute to the health and comfort of our people."[5]

The idea of taking life stock on board to have fresh provisions of meat had been shared by many other expeditions. Some commanders even tried to keep penguins on board for that purpose. Lieutnant Simonov and Demidov of the Bellingshausen expedition (1819–1820) were sent to one of the nearby floes to catch penguins. Thadeus Van Bellinghausen would later say: "*Our booty consisted of thirty penguins. I ordered a few to be sent to the mess and the remainder were kept on board and fed on pork .. this appeared to be injurious to them, as they sickened and died after three weeks. The crew skinned them and made caps of the skins, and used the fat for greasing their boots. The penguins … are good for food, especially, if kept for several days in vinegar*."[6]

The ship's surgeon on the Belgian Antarctic Expedition in 1898 would not agree with Bellingshausen. Dr. Frederick Cook remarked instead: "*If it is possible to imagine a piece of beef, odiferous cod fish and a canvas-backed duck roasted together in a pot, with blood and cod-liver oil for sauce, the illustration would be complete.*"[7] But after a brush of scurvy on board the *Belgica* he cleverly presented the problem to the baron De Gerlache, requesting the captain to regard the meat as medicinal and to eat it as an example to the others. "*Ignore the taste; swallow it down as a duty.*" De Gerlache unwillingly agreed and after a while his men no longer cursed the fishy, greasy seal meat or penguin, but ate it and called it Antarctic beefsteak.

The problem remaining was still, how to feed the men during *field work*, far away from the ship or a base station, and also how to maintain the dogs. Being concentrated and light with a slow deterioration rate, pemmican became the basic polar ration.

The North American Indians are credited with developing this simple but very efficient meat product called pemmican. This early means of preserving meats was literally to embed them in fat.[8] This sometimes required melting the fat and mixing it thoroughly with lean meat. As much as fifty to sixty percent of the product could be fat. The value of embedding the meat in fat was probably in the exclusion of oxygen. The type of fat used was important in order to cut down the oxidative effects. Although not the same as the Indian product, high-fat meat preparations were also found in other parts of the world. The meat was first dried in the sun and then pounded and cut up before being mixed with melted fat. Pemmican save the lives of many explorers. It was an important food product because it was compact and high in energy. For long storage and easy carrying on a person's back or on a sledge, pemmican was tightly packed in sacks. Dried fruits were often added to improve the taste. Later on, when pemmican was made in England and packaged for use aboard ship by European explorers, other condiments, such as peas, were added.[9]

Pemmican proved to be attractive to polar explorers because it provided concentrations of both fat and protein, and could be chewed like a tough biscuit or turned into a stew, called "hoosh". Provided it kept dry, it would also keep for months on end. Explorers

attempted to make pemmican more palatable by adding oatmeal and raisins. Pemmican was nauseating to many, while other found its gritty consistency hard to take. The dogs had to accept it as well along with dried cod fish. There was even a canine version of pemmican containing fish meal and more fat. The dogs of the Swedish Antarctic Expedition must have loved their pemmican though. During their first spring in Antarctica the group attempted to reach the eastern part of Oscar II Coast by foot. Nordenskjöld, Sobral and a seaman called Ole Jonassen set off, the men towing one sledge and the dogs the other. When the going was good they covered 30 miles a day, but it rarely was. And the terrain became difficult and filled with crevasses too. Bad weather and bad luck continued to plague them. Jonassen injured his arm, their tent was ripped by a storm, and the dogs found the sack containing their pemmican. They ate it all, along with the sack, some harness, and the whip.[10]

Physical activity may increase daily energy requirements. Hard work such as manhauling or dog sledging in Antarctica, with its extreme climate and difficult terrain requires a considerable increase in nutritional energy. Cold-weather clothing and footwear, which may weigh over 10 kg without the addition of frozen sweat, further increases the amount of engergy used. Some estimates have suggested that approximately half the food eaten – when the temperature is around −40°C – is needed to keep the body at its normal temperature and to avoid hypothermia. An average sledging ration would include for one man, and one day, chocolate, pemmican, sugar, biscuits, butter and tea and cover 4,500 calories. The Swedish Expedition leader controlled the weight of his men regularly. After their sledge journey south, most of them had lost over 20 pounds of bodyweight.[11]

Many parties, especially those that became *marooned*, depended on the food they could catch to survive. Dried, smoked and boiled penguin became a main course for several expeditioners. They also did appreciate penguin eggs, whenever they could get them and seal blubber, not only for human consumption, but also for the dogs, for heating and lighting.

The end of the XIXth century brought one of the first major probes into Antarctica and the first wintering-over there. A naval officer, Lt. Adrien de Gerlache, mounted his own expedition, obtained money from many sources, bought a ship named the "*Belgica*", and got hold of the two veteran Arctic explorers, Roald Amundsen and Frederick Cook.[12] Leaving Antwerp the end of August 1897, the "*Belgica*" with a complement of nineteen, sailed initially for the east coat of South America and then into the area surrounding the Antarctic Peninsula. Lt. de Gerlache's intent was then to circle around to Cape Adare, and to be the first explorer to winter over in Antarctica. The ambition was there, but his planning was not equal to the ambition. The ship was provisioned with inadequate clothing and a mixture of many types of food which de Gerlache's crew, from different countries and cultures, had trouble eating. The ship became frozen in the ice and drifted for many months; it was not until March 1899 that the "*Belgica*" was seen again, sailing into Punta Arenas, Chile. Cook probably saved the expedition from a serious problem with scurvy. His preventative remedy for scurvy resulted from his Arctic experience and his believing that fresh meat was the answer. This led to his recommendation to supply the men with penguin and seal meat. By the end of May, near the height of the Antarctic winter, the need for fresh meat became alarming to Cook, who wrote: "*We ate little, however, and were thoroughly disgusted with canned foods. We had tried the meat of the penguins, but to the majority its flavour was still too fishy. We entered the long night somewhat underfed, not because there was a scarcity of food, but because of our unconquerable dislike for such as we had. It is possible to support life for seven or eight month upon a diet of canned food; but after this*

*period there is something in the human system which makes it refuse to utilize the elements of nutrition contained in tins. Against such food, even for a short period, the stomach protests; confined to it for a long period, it simply refuses to exercise its functions ... We had laboratory mixtures in neat cans, combined in such a manner as to make them look tempting – hashes under various catchy names, sausages stuffs in deceptive forms, meat and fishballs said to contain cream, mysterious soups, and all the latest inventions in condensed foods. But they one and all proved failures, as a steady diet. The stomach demands things with a natural fiber, or some tough, gritty substance. At this time, as a relief, we would have taken kindly to something containing pebbles or sand. How we longed to use our teeth.*"[13]

And a little later Cook remarked: "*We eat a little penguin with a show of pleasure, but most of us are quite tired of its marine flavour and fish-oil smoothness. If we had sufficient ham it would afford immense gastric delight. There is much indigestion now – fermentation, gastric inertia, intestinal and gastric pain, imperfect hepatic action, and a general suppression of all the digestive secretions.*"[14]

The Swedish Antarctic Expedition can also be considered as a marooned one. Nordenskjöld's party consisted of seven other scientists, and their ship, a stoutly built sealer was crewed by 16 officers and crew under the command of an experienced Antarctic explorer, captain Carl Anton Larsen. An eighth member, a young geographer-geologist-anthropologist named Dr. Johann Gunnar Andersson, was to join the ship at the Malvinas (Falklands) Islands as the expedition leader after Nordenskjöld and his wintering party had been dropped in the Weddell Sea. The plan then was for the *Antarctic* to spend the rest of the summer of 1902 employed in scientific work before returning the following summer to pick up Nordenskjöld. It was a promising plan, but one, which went disastrously wrong. In the beginning everything was fine though. The ship left from Buenos Aires for the South Shetland Islands on December, arriving there on January 11th. Nordenskjöld landed briefly on one of the islands before going on to explore Orleans Strait. Contrary to what had been supposed, they soon saw that Louis Phillipe Land was connected to Danco Land and that the Orleans Strait ran into the Gerlache Strait, discoveries that Nordenskjöld later described as being the most important geographical finds of the whole expedition. He wanted to go further, but time was short, so the ship retracted its course until the sound between Louis Phillipe land and Joinville Island was entered. Although it had been discovered by the French explorer Dumont d´Urville, no ship had ever sailed through, so it was named after the "*Antarctic*". Once through the sound, the party landed at Paulet Island, then crossed the Erebus and Terror Gulf and made a depot on Seymour Island. The ship then continued southwest towards the unknown eastern part of Oscar II Coast, but on reaching latitude 66° 10′ S a great barrier of ice was seen ahead through which there was no path. Nordenskjöld followed the line of the pack-ice eastwards in the hope of finding an opening to the Weddell Sea and finally decided to put up his winter camp on Snow Hill Island to the southwest of Seymour Island. With five others he was put ashore with all their stores and equipment, including several sledge dogs. The wintering party's first task was to erect a magnetic observatory which would provide shelter until the prefabricated hut they were to live in could be built. A series of severe storms gave them a taste of what was to come. Young Lieutenant Sobral wrote in his diary: "One of the storms even blew from 15th to 24th of July without remission, the thermometer registering −30°C throughout."[15] But the spirits in the hut were high and everybody kept up with the daily duties. During the first winter, there was also plenty of food available. The day would begin at 9:30 AM with

*fruckost*, which would consist in a hearty breakfast with fish and potatoes, as well as porridge and a strong coffee. At 10:00 AM the smokers were allowed to light their pipes and only two and a half hours later, at 2:30 PM *middag* was served. This lunch would consist in a two course meal during this first winter, and these could include sheep tongue in vinegar, smoked sheep, tinned peas or corn and soup. At 5:00 PM it was time to get together around the little table in the hall to drink yet another cup of coffee, and whenever cook Akerlundh fell like baking, there would be cake and cookies to go with it. The last meal was *kväll* at 9:00 pm. This one-course dinner would end the day, followed by a cup of tea or hot cocoa. During this first long Antarctic night, the group would heat their hut with coal and there was plenty to keep the iron stove going at day and night. During their first winter then men would take regularly a bath. "*Each fortnight we would take a bath. There was only one bathtub, so that we would take turns. First of course we had to heat water. Therefore we gathered snow in huge tins, which was melted and heated on the stove in the kitchen. Humidity grew of course inside our little hut and condensed under the roof. But it was that cold outside, that the condensed water froze immediately under the ceiling, forming a thick layer of ice on walls, floor and ceiling. A little later, when it was time to go to bed, our body heat would thaw the ice again and the water would drip on those of us, sleeping in the upper bunks.*"[16] But things would change dramatically later. November passed without a sign of a break in the ice. Early December Nordenskjöld undertook a sledge journey to Seymour Island and made some spectacular fossil finds, but the excitement could not dull the growing uneasiness all felt about the condition of the ice and the whereabouts of their ship. Every day in January and early February the ship was expected, and the weeks passed in increasing tenseness. The men started to fight about how to handle the dogs. And there was much to talk about, as the different dog teams would kill each others pups and had to be led with a strong hand. But under this stressful situation it seemed unbearable to the men to hit the dogs or to hear one of their colleagues yelling at them fiercely.

On 18th of February a storm came in from the south–south-west, bringing with it a mass of snow. The temperature dropped to −10°C and by the next evening the sea was completely frozen over. Any hope of being rescued was crushed and with heavy hearts the men prepared themselves for another long, grueling winter imprisoned in cramped, damp, bitterly cold surroundings. Heavyhearted the group had to sacrifice some of the dogs, as they were running out of pemmican and everything. They even had a shortage of candles and sugar became as rare as gold. The hut would be heated now with seal blubber. They cut the seal blubber including the fur and than gathered the oil after the burning process for yet another time. There were no more fish for breakfast or coffee. Instead the group had to go hunting for seals and penguins. The only bird they did not eat was the snow petrel. A strange superstition kept them from shooting this lovely bird. All the others they would shoot down with a Mauser. Even Giant Petrels were consumed. "Life is sad if the soul is worrying and thinking too much", wrote young Jose María Sobral in his diary.[17] This second winter nobody would even get out of their bunks for meal-times. The mess room was too cold at times to sit down and eat. They lay in their beds and the alarm clock would wake them up for their shifts or for yet another desperate dinner. Blood mixed with flour and then fried in seal blubber, was one of their favourite dishes at Snow Hill. Sobral called them "*bocadillos de sangre de foca*".

Food occupied their thoughts at all times. Thoughts about food would even haunt them in their dreams.

Sigmund Freud would write about these and other *dreams* the group at Snow Hill Island had: "…, it seems that dreams of an infantile type reappear with especial frequency in adults who are transferred into the midst of unfamiliar conditions". Thus Otto Nordenskjöld, in his book, *Antarctica* [19] (vol. i, p.336), writes as follows about the crew who spent the winter with him: '*Very characteristic of the trend of our inmost thoughts were our dreams, which were never more vivid and more numerous. Even those of our comrades with whom dreaming was formerly exceptional had long stories to tell in the morning, when we exchanged our experiences in the world of fantasy. They all had reference to that outside world which was now so far removed from us, but they often fitted into our immediate circumstances. An especially characteristic dream was that in which one of our comrades believed himself back at school, where the task was assigned to him of skinning miniature seals, which were manufactured especially for purposes of instruction. Eating and drinking constituted the pivot around which most of our dreams revolved. One of us, who was especially fond of going to big dinner-parties, was delighted if he could report in the morning "that he had had a three-course dinner*". Another dreamed of tobacco, whole mountains of tobacco; yet another dreamed of a ship approaching on the open sea under full sail. Still another dream deserves to be mentioned: "*The postman brought the post and gave a long explanation of why it was so long delayed; he had delivered it at the wrong address, and only with great trouble was he able to get it back. To be sure, we were often occupied in our sleep with still more impossible things, but the lack of fantasy in almost all the dreams which I myself dreamed, or heard others relate, was quite striking. It would certainly have been of great psychological interest if all these dreams could have been recorded. But one can readily understand how we longed for sleep. That alone could afford us everything that we all most ardently desired.*"[18]

But the men at Snow Hill Island were not the only ones to dream about food and simple joys of life. Two more groups were struggling to survive the winter of 1903. It turned out that a trio had been landed by the "*Antarctic*" the previous year at Hope Bay at the tip of the Palmer Peninsula. Ice conditions had prevented the ship from rounding the peninsula to reach the winter quarters on Snow Hill Island. Consequently, Andersson, Duse and Grunden were set ashore to sledge to the island, an air distance of seventy-five miles. The "*Antarctic*" was to try and reach the winter quarters by another route and then return for the three. They set forth with a small stock of trail stations, soon finding that there was no safe route across the sea ice. They trudged back to Hope Bay but the "*Antarctic*" never returned for them. As the days became shorter the terrible truth became apparent. They would have to winter on that barren shore despite their lack of provisions or shelter. But these men were not easily disheartened. They built walls of stone and roofed them with their tent cloth. Shoes, clothes, and fishing lines were fashioned from seals and penguins which they killed by the hundreds before the summer was over. Hooks were made from belt buckles and fish caught for food. Despite their hardships they collected fossils nearby from Mount Flora – so called because of its abundant remains of Antarctica's former verdancy. When spring came, they started out again, coated with greasy soot from the blubber fire that had kept them alive. This time they found a solid route across the ice. The group headed for the winter quarters on Snow Hill Island, certain that some disaster had befallen the "*Antarctic*" and wondering what would be their own fate.

Their fears proved justified. After leaving the three men at Hope Bay on December 29th the ship had tried to sail outside the islands off the tip of the peninsula and outflank the ice fields that had blocked the earlier attempt to reach the winter station. Within a few days the

ship was enmeshed in drifting ice which carried her south until she became thoroughly beset. Worse still, a south wind began to drive the ice fields against nearby islands, creating terrible pressure in the pack. The next evening, just as the crew of Swedes and Norwegians sat down for a game of cards, the "*Antarctic*" suddenly began to shake "like an aspen leaf and a powerful crash sent us rushing on deck", said botanist Skottsberg. They could feel the ship rise and ice pressed against the rounded hull. The ship keeled sharply over to starboard, and water began pouring into the engine room. All available pumps were put to work and for two weeks they held their own. In fact, on January 21st they were able to celebrate the birthday of Oscar, King of Sweden and Norway by firing a twenty-one gun salute across the ice floes as all hands assembled on deck to drink a toast to their king. Soon, however, the ice was squeezing them again and they set to work binding the ship together with chains under the keel and around bow and stern until she was tied up like a parcel. Nevertheless, when the ice loosened enough so that the ship was waterborne it became evident that even with men on the hand pumps the water in the hold was gaining on them. The best they could do was get as near as possible to Paulet Island. Five weeks after they had become beset, they moved onto the ice floes. The rising water had extinguished the fire in the boilers, but there was still enough steam pressure to keep the pumps going. The men sat in silence, listening to the pump of the ship get slower and slower as the pressure fell, until at last all was silent. The "*Antarctic*" slowly slipped below the pack. The vanished hull keeled over so that the tips of the mast, still in view, swung against the floes and splintered with a terrible sound, then were drawn with the ship. The twenty men left on the ice had salvaged eleven boatloads of provisions, plus the ship boats. They were twenty-five miles from Paulet Island, and, riding the drifting pack, were driven close enough so that they could launch their boats and after sixteen days on the ice flows they were able to reach land.

The story of Captain Larsen and the stranded men from the "*Antarctic*" is another story of incredible courage. They had existed in a makeshift hut on Paulet Island throughout the long winter months of 1903. The marooned men spent their first full day ashore on Paulet Island on March 1st, hunting penguins and seals to supplement their food supplies for the coming winter. By the end, 1100 penguins had been killed. Work was also started on a stone hut which was not a job for the weak at heart. Stones had to be gathered and carried long distances to the site where the double-walled structure was built. When it was finished, it measured 34 feet by 22 feet with most of it taken up by the living quarters; twelve feet was used for the kitchen. Two stone beds were built along the walls of the living area, each measuring seven feet wide and accommodating 10 men each. By mid March, storms were quite violent and soon one of them blew the kitchen roof off. The winter days dragged on as the cycle continued: sleeping, cooking penguin (and occasional seal or fish), hunting and evenings spent talking or reading out loud from one of the few books that survived the sinking of the "*Antarctic*". From time to time they would have a sing-along but the men acutely feared what their final outcome would be. Skottsberg wrote, "*Many hundred dreams have been dreamed in our island but I do not know if they helped to brighten our existence. They grouped themselves around two objects–food and rescue. Why, we could dream through a whole dinner, from the soup to the dessert, and waken to be cruelly disappointed. How many times did one not see the relief vessel in our visions–sometimes as a large ship, sometimes as nothing but a little sloop? And we knew the persons on board; they spoke about our journey; took us in their arms; patted us on the back…*". But the reality of the situation was far different as food supplies dwindled away. On June 7th, Ole

Wennersgaard died. They buried him in a snowdrift until they could properly bury him in the spring.

As soon as conditions permitted, captain Larsen set forth with several men in an open boat to locate the other members of the expedition. They reached Hope Bay, thirty-seven miles to the northwest, and found that the three men whom they had left behind had set out for Snow Hill Island, leaving a note and a crate of fossils. Larsen continued on to Snow Hill, covering the last part of the distance on foot. And by a lucky chance, Larsen arrived the same day at Snow Hill as the Argentinean rescue party on board the "*Uruguay*". "*No pen*", wrote Nordenskjöld, "*can describe the boundless joy of this first moment…. I learned at once that our dear old ship was no more in existence, but for the instant I could feel nothing but joy when I saw amongst us these men, on whom I had only a few minutes before been thinking with feelings of the greatest despondency.*"[19]

## REFERENCES


1. Sobral, J.M.: *Dos Años entre los Hielos, 1901–1903*. Tragant, Buenos Aires, 1904.
2. Feeny, R.E.: Polar Journeys. The Role of Food and Nutrition in Early Exploration, *University of Alaska Press*, Fairbanks (1997), pp.9–10.
3. Schillat, M.: Francis Drake and his dreaded Passage" In: *First Antarctic Reader*. Fuegia, Ushuaia, 2001, p.50.
4. Beaglehole, J.C.: *The Life of Captain James Cook*. Stanford University Press, 1974, p.135.
5. Ross, J.C.: *A Voyage of Discovery and Research in the Southern Antarctic Regions during the years 1839–43* (I). Sampson, London, 1884, p.21.
6. *Reader's Digest*: Antarctica, Australia, Surrey Hills, 1990, p.83.
7. Poolnacht, J.V., de Gerlache, A.: *de Belgica-expeditie*. Iannoo, Belgium, 1993, pp.107–110.
8. V. Fisher, Pemmican, Garden City, New York, Doubleday and Co., 1956; E.F. Binker, O.E. Kolari, "Pemmican" in: *Maricopa Trails 1*, Vol. 1, 1977, p.1–10.
9. Feeny, R.E., op.cit., p.20.
10. Sobral, J.M., op.cit., p.202–203.
11. *Ibid.*, p.209.
12. Cook, F.A.: *Through the First Antarctic Night*. p.302.
13. *Ibid.*, 306.
14. *Ibid.*, 308.
15. Sobral, J.M., op.cit., p.116.
16. *Ibid*, p.129.130
17. *Ibid*. p.140.
18. Freud, S.: *The Interpretation of Dreams* (3rd Edition), translated by A. Brill, New York, 1911.
19. Nordenskjöld, O.: *Antarctica. Two Years amongst the ice of the South Pole*, Archon Books, 1905.