Under the Sea to the North Pole

By Pierre Maël

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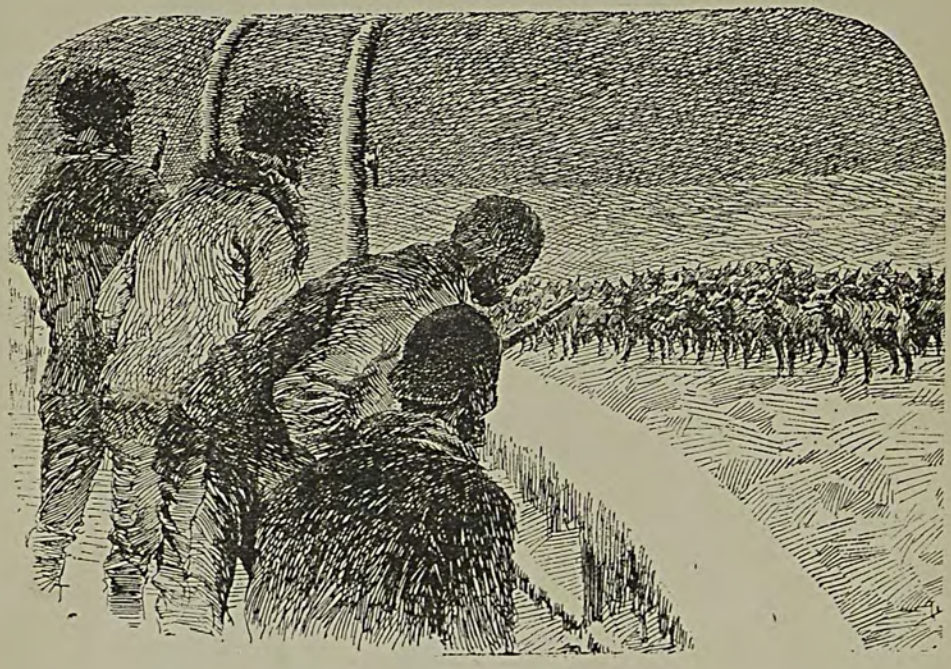

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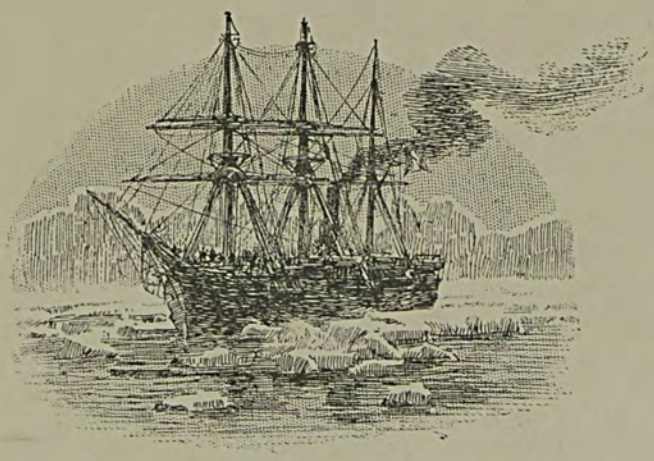
ILLUSTRATED



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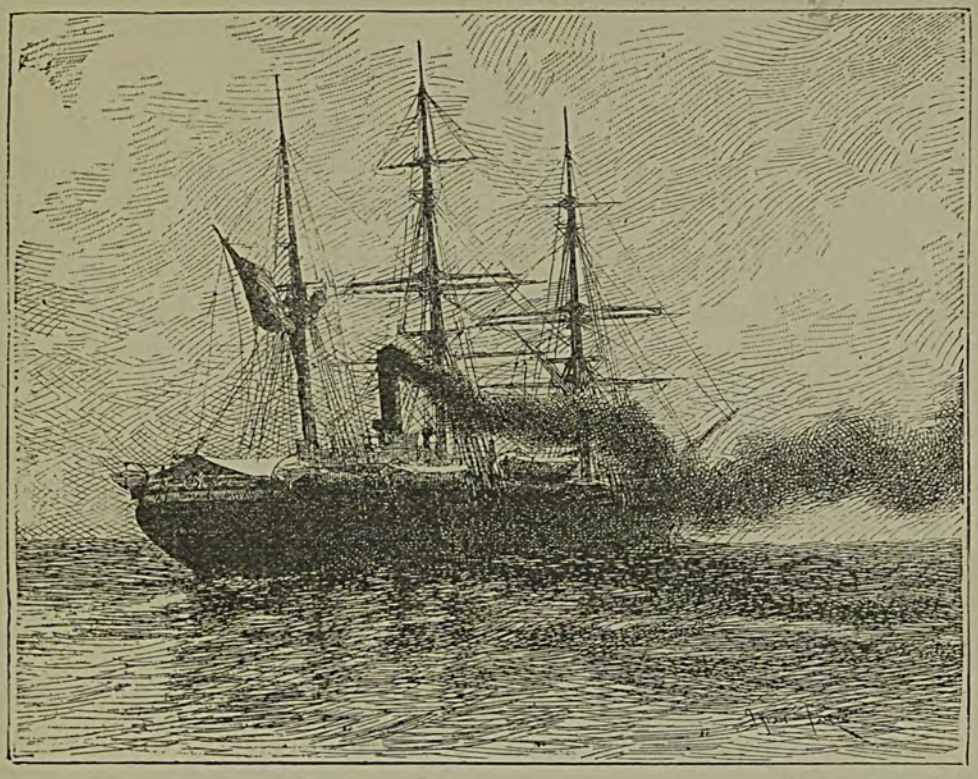


UNDER THE SEA TO THE NORTH POLE.

CHAPTER I.

TO THE NORTH.

EVERYWHERE the sea, east, west, north, or south; the sea, gloomy and grey, full of trouble and sorrow, under a sunless sky. And on this sea a ship, long and narrow, beneath a cloud of smoke which the singularly low breeze is rolling off to disperse in the ambient air.

Twelve days ago this ship left Cherbourg. She is not a ship of war, although two long steel guns are on her deck forward and aft. The French colours are at the peak, and her speed is that of a first-class ocean liner. And yet, notwithstanding her speed, she is only in 70° north latitude. There have been good reasons for the delay.

Spring is approaching. To gain time the travellers have started at the end of March. The voyage has to be conducted with the greatest care, for the ice has begun to break up. Several bergs were met with off Ekersund, where the steamer had to slow. When the sea was clear again she had coasted the high cliffs of Norway, the region of the fiords. Now the North Cape is only a few miles to the eastward. To-morrow, or the day after to-morrow, as soon as the warm current will permit, the ship will reach it, and on the 15th of May the Northern Ocean will be entirely clear.

On the after-deck two men are in conversation, comfortably seated in large folding-chairs and looking out over the stern.

One of these men is young. He looks about twenty-eight years of age. He is tall, broad-shouldered and well-built. His companion is white in hair and beard and seems to be over fifty. They are talking with a sustained interest due to the object and conditions of the voyage.

"Our *Star* has not stumbled since we started. She behaves like an old hand at sea. Let me congratulate you. She is a perfect model of a ship, and you have every reason to be proud of her, inasmuch as you are her father."

It was the younger man who had spoken.

The elder smiled at the compliment. He answered modestly,—

"Certainly, I am her father, her adopted father. But it was Lacrosse who found her in her baby clothes. How much do I not owe to him, and to you, my dear Hubert! For three years I have been robbing you without your suspecting it, and putting your combined knowledge and experience under contribution."

"Oh! my experience, uncle, is of very little importance. All the value that word may have I leave to Captain Lacrosse. As for me—"

"As for you," interrupted De Keralio, "are you not the inventor of the submarine boat of which we expect such wonders?"

Hubert smiled.

"Well, I admit I am worth something. But this something is at present merely experimental, and besides, the discovery is not mine entirely. Half the invention belongs to my brother Marc, and if the result justifies our hope, it is to him, above all, that the glory will belong."

De Keralio laughed.

"Ah! yes," he said. "The famous secret you must not reveal before its time."

"Precisely, my dear uncle; the secret which must not be divulged before a conclusive experiment."

"In that case the time has come to try it," said a girl's clear, fresh voice behind the men.

They both turned.

"Well, cousin," said Hubert with a respectful bow.

"My little Belle," said De Keralio. "Have you come to tell us breakfast is ready? I know not if it is the wind that has freshened and made us feel hungrier than usual, but I confess that my appetite seems rather in advance of its time."

The new-comer held out her hand to the young man, and presented her forehead for a paternal kiss.

"No, father," she replied, "your appetite is mistaken. It is not quite ten o'clock in the morning, and I have come to assist in the spectacle which is in preparation. Captain Lacrosse has just told me that in a minute or two we shall have a grand illumination of the ice."

And without any ceremony she drew a chair up to the two men and sat down.

She was a fine handsome girl of twenty, brown of hair and blue of eye, the type of the native Cymric and Iberian races, such as the Irish, the Gaels of Scotland, and those of the coast of Brittany. Her whole figure, lithe and well-built, told of strength rare among women, as the metallic glitter of her eyes under certain knittings of the brows betrayed unusual energy of character. Evidently she possessed the soul and frame of a true heroine, as free from boasting and display as from awkward timidity.

Belle—or to be more exact—Isabelle de Keralio, was the only daughter of a landowner and manufacturer, owning certain properties and establishments in Canada where his family had been settled for two centuries.

ISABELLE DE KERALIO.

Pierre de Keralio, a Breton by birth, had returned to the land of his fathers and taken up his abode on a magnificent estate in the environs of Roscoff. Isabelle had been but ten years old when she returned to her native land. She had grown up among the people of the country in the loving care of her father, who had become a widower soon after his daughter's birth. He had retained for her the assiduous and quasi-maternal care of Tina Le Floc'h who had nursed her ; and nothing could be more touching than the peasant's affection for her adopted child. At the same time, as he had no other children, the wealthy De Keralio had given a home to two young orphans, eighteen and twenty years old, his nephews, Hubert and Marc D'Ermont, the sons of his sister who had died at the same time as her husband, Robert D'Ermont, a captain in the French navy. Hubert had completed his preparatory studies at the Naval School. His uncle, so far from objecting, encouraged him in his liking for the glorious career upon which he had entered. Two years later the young man began his sea-faring life as a second-class cadet.

Now he was a full-blown lieutenant. Unlimited leave granted by the minister for the encouragement of the generous and patriotic attempt of De Keralio, had permitted him to share in the risk as well as in the glory to come of this expedition into those fatal regions from which so few explorers have returned.

Hubert's elder brother Marc, was of a delicate and sickly constitution, but of rare intelligence, and had

devoted himself to the study of physical science. At thirty he was one of the most distinguished scientists of the capital ; his name had on many occasions come to the front on account of his useful discoveries. He had been unable to accompany his brother and uncle in their expedition ; but for two years he and Hubert had been engaged in mysterious and difficult researches for increasing the voyage's chances of success by new means and methods due to the invincible power of science.

Isabelle de Keralio was a somewhat peculiar personage, whose character and education did not in many ways resemble those of an ordinary French girl. To her long sojourn in America she owed, perhaps by mere force of habit slowly acquired, that virile energy which contrasted so strongly with the gentleness, the languor even, and the timid graces of the women of old Europe. Accustomed to all bodily exercises and equipped with high intellectual culture, she would doubtless have frightened any other lover than Hubert.

But Hubert knew her well. He knew that her ways, differ as they might from those of young Frenchwomen, in no way detracted from her good qualities, that they only concealed from the unobservant eye the treasures of tenderness and charity in which her noble heart abounded. Besides, Isabelle put off this strange exterior in the intimacy of home. She recovered all the charms of her sex, and that with a rare power of fascination. An accomplished musician, whether she ran her fingers over the keyboard or used her admirable voice in all its

ringing fulness, she then manifested the inward harmony of which her beauty was but the external robe.

They had been engaged of their own accord, with her father's consent, and it had been arranged that the wedding should take place on the day Hubert won his epaulettes. He had won them in good time, when he was only twenty-seven ; but then a fresh delay had intervened to postpone the union which both so much desired.

Pierre de Keralio was not a sailor, but he had been sufficiently on the sea to have no fear of it. More than this, he had contracted a love for it, and at an age when most men retire from work he had conceived the idea of devoting a part of his immense fortune to the service of science. Patriotism had given to this noble thought a character of touching grandeur, and one day, he had said in a loud voice before an audience of friends invited to the betrothal of Hubert and Isabelle,—

"When my daughter is married, I will put into execution a grand scheme I have been thinking of for many years. I will go to the Pole. It shall not be said that Nares and Stephenson, and Aldrich, and Markham, that is to say Saxons, in 1876 ; that Greely, and Lockwood, and Brainard, Americans, that is to say other Saxons, in 1882 went beyond the 83rd parallel, without its also being said the French have beaten them."

There was an exclamation from Isabelle.

"When I am married ! Well ! Our friends may blame my agreeing with you, but it shall never be said that Isabelle de Keralio did not have her share in such glory. I know

Hubert's heart well enough to know that he will give me permission to follow my father to the top of the world."

Some of the friends applauded; the majority of them objected.

"My daughter!" said De Keralio, endeavouring to get in a word.

Isabelle would not allow him to finish. Throwing her arms around his neck with irresistible tenderness, she replied,—

"Hush, father! Not a word more! It is agreed. You have educated me in such a way that I am not a spoilt boy. I will go to the North Pole. And then you know, father, I shall not have disobeyed you, for you have just betrothed me to Hubert, and his authority over me now is as much as yours was. Now let us talk of the expedition."

Then De Keralio said to Hubert,—

"To you, my future son-in-law, I must appeal. Will you be good enough to teach this unreasonable young person a little reason?"

Hubert, being thus cornered, arose.

"My dear father," he replied, "for I can so call you, I will try and dissuade your daughter from a scheme so full of danger. I will endeavour to show her why such a resolve is so difficult of accomplishment for a woman. But if she refuses to yield to your opinion and to mine, and persists in a decision which, brave as it may be, ought to yield to more prudent considerations, I will ask you to let me share in the danger. Where Isabelle de Keralio goes,

there I, Hubert D'Ermont, her betrothed and future husband, ought to go."

De Keralio had no more to say.

As to the company, extravagant as the hypothesis might appear, they knew that those who had just spoken were quite capable of realizing it. And they contented themselves with wishing success to the future expedition.

It was thus that this idea of a campaign at the North Pole arose. But once it had been agreed upon, the plan had to be thought out.

At the outset De Keralio had obtained the necessary leave for Hubert. Then he had called in his old friend Bernard Lacrosse, an old officer of the French Navy, whose moderate fortune had compelled him to abandon the service of the State for the command of a transatlantic steamer. After five years of this new life Captain Lacrosse had taken part as a volunteer in a Russian expedition to the North Pole by way of Nova Zembla. When he was forty-two he had started for the Antarctic, as mate of a French ship. He had only just returned when a letter from Keralio claimed him in the name of friendship and science, and he hastened to comply with it.

In company with Keralio and Hubert he had chosen the crew of the *Polar Star*, such being the vessel's destined name.

They were all good fellows, these navigators to the Pole, for one knows to how great an extent gaiety and good

spirits are indispensable among those who go on such adventures. The three initiators of the campaign chose the staff with scrupulous discernment, beginning with the officers and the doctors ; and hardly any but cheery faces could be found on the muster roll.

The principal officers were as follows :—

Chief of the Expedition.—Pierre de Keralio, aged 50.

Captain of the Polar Star.—Bernard Lacrosse, naval lieutenant, aged 48.

Lieutenants.—Paul Hardy, aged 28 ; Louis Pol, aged 27, passed midshipmen resigned. Jean Remois, master mariner, formerly passed midshipman of reserve, aged 34.

Surgeons.—André Servan, aged 40 ; *Assistant*—Felix Le Sieur, aged 48.

Chief Engineer.—Albert Mohizan, aged 30.

Chemist and Naturalist.—Hermann Schnecker, aged 36.

To this list of officers we must add Lieutenant Hubert D'Ermont, engaged to Isabelle de Keralio, who held his place on board by virtue of unlimited leave from head-quarters.

All of them had been in the navy, and everyone represented a considerable amount of knowledge, experience and energy. The sailors were of similar character and capacity. By a sort of national egotism De Keralio had chosen only Bretons or Canadians, that is to say compatriots of both his countries.

Then they had proceeded to fit out the ship. The *Polar Star* had not yet been afloat. She was in a ship-

yard at Cherbourg, begun by a builder whom bankruptcy had prevented from launching her. She was a steamer of 800 tons, rigged as a barque. Bernard Lacrosse, who had visited all the French ports in the course of two months, had been fortunate enough to find her in her cradle. He had immediately bought her for De Keralio, and resumed work on her with a view to specially fitting her for her work in the icy seas.

The ship had two compound triple expansion engines of 500 horse power. She had three decks and was coated with teak wood, between which and the hull was a space of about nine inches filled with oakum and palm fibre. Keel, carlines, stem and sternpost were of steel covered with a sort of copper sheathing.

Copper had been employed with the intention of giving more elasticity to the hull. It was used in all the beams and joints in order that great pressures could be borne without breakage. A longitudinal bulkhead made her all the stronger. The thickness of the teak planking varied from nine inches amidships, to five forward and four aft. The entire hull was in water-tight compartments. Besides the fibre packing between the two skins, the sides of the ship and the walls of the compartments had been ornamented with thin layers of compressed felt, to prevent the loss of heat and the penetration of damp. To save the rudder from the pressure of the ice, long beams covered with copper had been rigged out, forming davits, by the aid of which it would be possible to unship it and hoist it on deck.

The curved prow ended in a ram of steel, ten feet in length. Forward were steam windlasses, and the Pinkey and Collins apparatus used by whalers to save them from having to go aloft to reef the sails in bad weather. Sheet iron elbow pipes above the waste valves allowed of the steam being turned on the neighbouring ice, within a radius of sixteen feet on each side of the hull.

The armament had been as carefully looked after. Besides the two 10-centimetre guns on deck, the *Polar Star* possessed two Hotchkiss revolving guns, four harpoon guns, two buoy guns. There were three whaleboats, five ice boats entirely sheathed with copper, the keels of which could be fitted with either runners or axles. And finally under a protecting tarpaulin aft, sheltered the mysterious submarine boat on which De Keralio had just been congratulating Hubert D'Ermont.

The conversation interrupted for a moment by Isabelle's arrival, became more animated than ever between the three.

"My dear cousin," said the girl, returning to what they were all thinking about. "I say that now is a favourable opportunity for putting your discovery to the proof."

The lieutenant gaily replied,—

"Is it only curiosity, Isabelle, which makes you speak like that, or am I to infer that you have a certain feeling of interest in what has been done by my brother and myself?"

Isabelle frowned, but the passing irritation almost im-

mediately gave place to her usual playfulness, as she replied with her sweetest smile,—

"Can you doubt for a moment, Hubert? Do you think me such a stranger to scientific matters? Of course my affection for the author, or rather for the authors, of an invention which, owing to the faith I have in them, I hold to be admirable, is not free from a certain amount of fear. But to be frank, I am prepared to confess that in all this, I am chiefly thinking of the practical results of our expedition, and that I am all the more attached to you because I know that you are the bearer of an invention which we can call the panacea for mis-reckonings in attempted discovery."

A vaguely sceptical smile rested for a moment on the girl's lips.

Hubert was not yet of an age when impatience is mastered in a moment. This smiling banter might have driven him into exceeding the limits he had imposed upon himself; but strong as was the temptation to give the girl the irrefutable proof of his merits, he remembered just in time that he had no right to do this before a day and hour fixed in advance.

But if he had no right to do this he could at least defend himself by means of favourable appearances. He rose from his chair and, holding out his hand to his cousin, said,—

"If it pleases you to come down to my cabin with my uncle, I can show you, if not the discovery at work, at least the instruments on which it is based."

Isabelle rose laughing.

"Ho! ho! Hubert, you seem to take matters more seriously than I intended. Let me tell you my doubts are only on the surface, and that I have the greatest confidence in your wisdom united to that of your dear Marc."

"Of course," said De Keralio with a laugh; "but you seem rather to belong to the school of St. Thomas Didymus, who believed nothing until he had seen it. Well, Hubert, as you proposed it, let us go and see."

The three moved towards the hatchway. As they were about to descend the iron ladder they were met by Captain Lacrosse.

"Hallo, Bernard," said De Keralio, "you will not be sorry to see with us the treasures of science stored in the cabin of my future son-in-law."

And passing his arm into Lacrosse's, he led him off behind the young people.

The *Polar Star* had been fitted up below like a pleasure yacht. The gangway, the saloon, the dining-room, the smoking-room were decorated in mahogany, along which ran a well-stuffed rail. The officers' cabins opened on the gangway; around the saloon were those of De Keralio and his daughter, and Captain Lacrosse and Hubert D'Ermont.

It was the last which the four visitors entered.

It was furnished with extreme simplicity, every corner being utilized with consummate art. The bed in one of the angles rested on a chest of drawers. The wash-basin was pivoted in a niche, so that it could be turned up and form a desk. In the opposite corner was a strong

steel safe, thick enough to defy any attempt to force it, a combination of ciphers further assuring its impenetrability.

Hubert pointed to seats for his companions.

"Uncle," he began, "although I am your guest, I am here at home, with your consent, be it understood. It is for me to do the honours of my apartment, and to my dear cousin I pay the first homage."

He took a bunch of keys from the desk, and handing it to the girl, said,—

"Will you place that key in the lock of this strong-box?"

At the same time, with singular quickness, he combined the figures that lay under the steel knobs on the door.

Isabelle had but to turn the key. The sharp click of six bolts withdrawn together, accompanied by the sound of a spring snapping, preceded the opening of the door, and the interior of the safe appeared arranged in symmetrical pigeon-holes.

"Behold the treasure!" said Hubert, with a gesture of comic declamation.

"Let us look at the contents!" remarked De Keralio.

Hubert bent over and withdrew from one of the pigeon-holes a few objects of simple form, which at first glance revealed nothing in particular.

These were cylinders of steel, whose weight was relatively heavy. They measured about a foot in diameter, and ended in a narrow neck fitted with a double screw stopper, as if they were gas reservoirs.

Bernard Lacrosse here put in a word.

"We do not want to be so very clever to see that those cylinders contain something. Are we allowed to ask what?"

Hubert placed his finger to his lips.

"Not before the time. Yes, you understand, these cylinders contain something. I can only tell you what that is when we are in such a position that no ill-will can hurt us. Know only that these cylinders contain the secret of our approaching victory; heat, force, light, movement. With them, thanks to them, we shall know no obstacles. These are the things which will take us to the Pole."

The hearers of this little speech remained open-mouthed for a moment before him.

"By Jove!" said Lacrosse, "if it is as you say, D'Ermont, that must be a secret well worth keeping."

Isabelle's face had become thoughtful.

"To what ill-will do you allude, Hubert?"

The young man would probably have replied had not the cabin door been suddenly burst open to give entrance to a magnificent Newfoundland dog, who went and put his intelligent head on Isabelle's knees.

"Good morning, Salvator!" said she, gaily, as she caressed the superb animal.

Hubert appeared vexed.

"We left the door open, then?" said he, quickly.

He put back the steel cylinder into the safe and hurriedly shut the door.

Through the cabin doorway came a whiff of tobacco

smoke. Hubert rushed into the saloon and saw a tall figure with red hair disappearing down the gangway.

"Mr. Schnecker was there," he said, with a frown, as he entered the cabin.

"Our chemist?" asked Isabelle.

"Yes, our chemist; and I don't particularly take to our chemist," added Hubert.

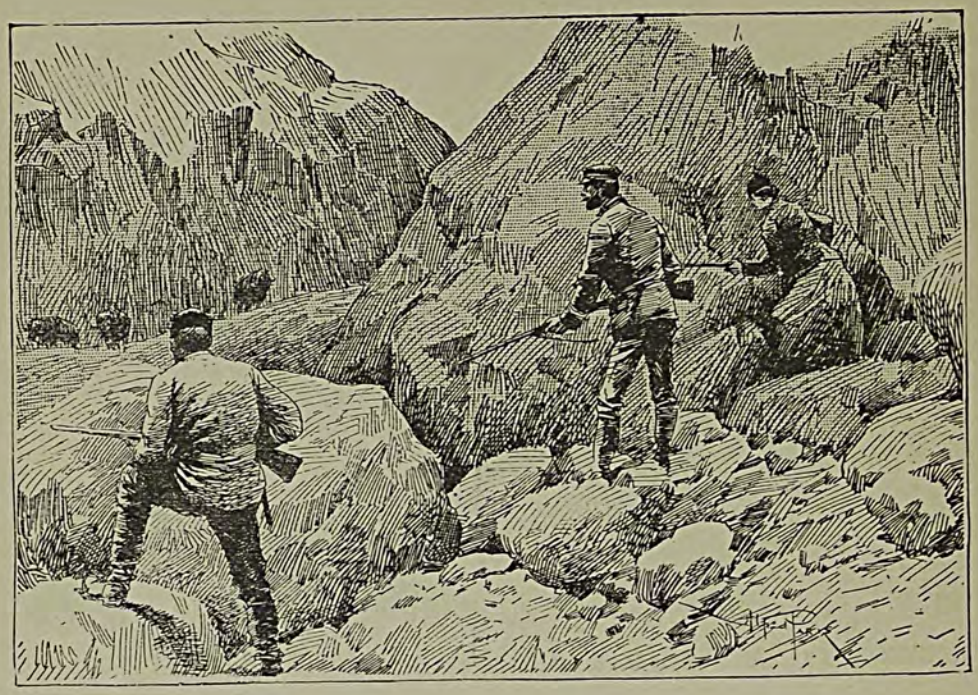
"Oh, Hubert, what makes you say that?"

"I say what I think," said the young officer. "Besides cousin, would you like to examine an impartial witness?"

Before she could reply, and while she was thinking in surprise, Hubert took the dog's head in his hand and looked into his eyes.

"Salvator, is your friend Mr. Schnecker?"

Salvator showed all his teeth, and a deep growl of anger rolled within his depths.



CHAPTER II.

FORT ESPERANCE.

On the 15th of May the *Polar Star* rounded the North Cape. Up to then the plan that had been agreed upon was to sail north-east. They wished, in fact, to follow in the route of the Tegetthoff expedition commanded in 1872-1874 by Payer and Weyprecht, who from Nova Zembla, situated in 76° north latitude, had reached an unknown coast they had called Franz Josef Land, and which they supposed extended from the eightieth to the eighty-third parallel.

This plan, besides enabling the travellers to be near the old continent, had also the merit of flattering the vanity of

those desirous of opening up an entirely new road. "It will be very unfortunate," thought De Keralio, "if we cannot manage to find a passage beyond longitude 30, between Spitzbergen and the fragmentary lands of Nova Zembla."

Captain Lacrosse had steadily objected to this plan, and the reasons he had invoked for combating it were weighty. Besides going at a venture, they were in a peculiarly conceited spirit, neglecting to avail themselves of the experience of their predecessors, notably the precise discoveries made in Grinnell Land in 1875 and 1876 by Nares, Markham, and Stephenson, and more recently in 1881 to 1884 by Greely, Lockwood, and their gallant and unfortunate companions.

Lacrosse reasoned with sound common sense. "At least," he said, "by going that road we shall have an open course up to the 83rd parallel. Smith Sound and Strait, Lady Franklin Bay, are nowadays well known as rendezvous for people who know what they are about."

He added, not without some appearance of truth,—

"It is to be feared that the breaking up of the ice will make the road very difficult in a region where there is little land, and it may carry us to the westward, in spite of all we can do. That will be so much lost time, as we should have to winter in the neighbourhood of Iceland, and thus exhaust a third of our provisions on the voyage alone."

His opinion was only too soon to be confirmed by facts.

On the 16th of May it could be seen that the field of ice was so little broken that it afforded no passage to the *Polar Star*. The numerous attempts that were made ended only in a loss of time, and notwithstanding all they could do, they had on the 25th of May drifted four degrees to the westward. The way that was blocked in the east seemed in curious irony to open out to the west.

De Keralio's obstinacy gave way before this demonstration of the facts themselves, and, yielding to the captain's advice, he was the first to decide in favour of a change of direction.

To the general satisfaction the north-easterly route was abandoned in favour of the one towards the opposite horizon, and the *Polar Star* steered for the southern end of Spitzbergen.

The sea gradually becoming clearer of ice, this point was reached on the 15th of June. On that date eighty days had elapsed since their departure from Cherbourg. They were in the 78th degree of north latitude. Five only remained for them to traverse to reach the extreme limit of human investigations. But all knew that a veritable campaign was about to begin, rich in struggle and effort. To travel three of these degrees in sledges, Nares, Markham, Stephenson, and then Greely, Lockwood, and Brainard had taken two mortal years.

They must hasten. The Arctic summer is very short, and when July was over the cold would begin again. Since passing the Polar circle they had no need of artificial light; the midnight sun had been their luminary.

For nearly a month the broken ice had only been met with in inconsiderable fragments. But the captain had only shaken his head and smiled at Isabelle's exclamation of astonishment.

"Patience! All this will change. Do not forget we are in the least encumbered part of the polar seas. We can only depend on getting a start from Greenland."

He told her true. It was in vain that from the southern extremity of Spitzbergen they tried to steer straight for the north. The pack or field of ice stopped the *Polar Star* on the second day. It was even impossible to keep to the westward along the 78th parallel owing to the drift ice.

The drift continued for three degrees. Then the field of ice under the action of a warm current opened again. Captain Lacrosse steered obliquely towards the north-west. On the 25th of June they had regained the 77th degree, and the coast of Greenland appeared, bordered by an icy barrier about thirty-five miles long.

Obliged to keep a careful look-out on her surroundings, the *Polar Star* steamed hardly eight knots an hour. As the ship went further to the north the ice became more frequent. Now they could follow it without interruption as a string of islands of unequal size. At present the blocks were all flat on the surface, being fragments of the ice field. But they were becoming more uneven, more hummocky, bristling with sharp points, striped with longitudinal cracks, with clear brilliant crevasses like the edges of broken glass. Behind them others appeared, higher,

larger, which took the strangest of forms. Some looked like distant sails on the horizon, and the flotilla increased in numbers as they approached the grand fiord of Franz Josef discovered by Payer during the voyage of the *Germania* and the *Hansa*.

At last on the 30th of June the *Polar Star* entered the fiord and cast anchor under the same 76th parallel they had already reached on the coast of Spitzbergen. The moment had come for putting into execution the second part of De Keralio's plan. This consisted in landing a party, and then returning as quickly as possible to the south for dogs and Eskimo drivers, indispensable for the coming sledge journeys.

The plan had suffered from such modifications that it might be said to be an entirely new one. Precious time had been lost in their attempt by way of the east. Instead of going north from Franz Josef Land, they were on the east coast of Greenland below Mount Petermann. It was proposed to take an oblique course from the 24th to the 55th degree of east longitude, so as to cross if possible Lockwood's route in 1882, at about 82° 44′ north latitude. It was a grand scheme, bristling with difficulty; but, as De Keralio said, was that an obstacle to stop a Frenchman?

Captain Lacrosse had forty-six days, from the 1st of July to the 15th of August, in which to reach the south of Greenland, double, if necessary, Cape Farewell, and return to Franz Josef fiord with the dogs required by the expedition.

Fortunately, this was the warmest period of the year. The *Polar Star* during her three months' voyage had experienced no storm. She was still abundantly provided with coal, and even after her return would have enough for a further dash towards the north if the sea opened before her adventurous commander.

Thanks to the measures taken a long time in advance, and minutely calculated, the landing of the chief explorers was accomplished in a day. The crystalline border of the fiord was only six miles wide, and such were still the solidity and thickness of the ice that there was no fear of its breaking up. These borders along the shore have remained unthawed for centuries, and their bases apparently rest on the rock itself, forming a ledge from six to nine feet thick above the level of the open water.

To assure himself of safety, Lacrosse began by taking soundings, and found twenty-five fathoms down a bottom of syenite and schistose rocks. It was evident that there was a gentle slope up to the land.

When the travellers landed they took with them certain numbered pieces of wood for the rapid construction of a hut in which they could take shelter. Here, again, frequent drill in piecing together and taking apart the beams and scantling, walls and partitions, of the wooden house, resulted in a truly wonderful economy of time. The exceptional mildness of the temperature—reaching nine degrees centigrade between noon and three in the afternoon, and dropping only to five between midnight and three in the morning—favoured the work. In six

hours, Fort Esperance, such was it named, was fit to receive the twelve persons who came ashore, that is to say, De Keralio, his daughter Isabelle, his nephew Hubert, the good Tina Le Floc'h, Isabelle's nurse and servant, Dr. Servan, the naturalist Schnecker, and six Breton sailors, Guerbraz, Helouin, Kermaidic, Carions, Le Maout and Riez.

It was to these twelve that the rest of the crew left the task of completing the two wings necessary for the ultimate reception of the thirty-three officers and men remaining on board the ship, and who would return from their run to Cape Farewell to shut themselves up with their companions for the long winter night.

The dog Salvator followed Isabelle ashore. He could not live away from his young and valorous mistress.

On the 1st of July in the morning, Captain Lacrosse, after a farewell banquet given on board the *Polar Star*, shook hands with those who had landed on the Green Land of the north, and gave the signal of departure, promising to return before the month of August.

There was a moment of indescribable sadness when the steamer began to move under the first impulse of her screws. Whatever might be the ardour of the intrepid explorers, they were unable to face this first separation without apprehension. Those who remained were to have their first experience of sojourning on a desolate land; those who went were to find a land almost as desolate, and enter into communication with a most rudimentary people.

But they were sure to come back again. And so the depression at this preliminary separation was soon overcome, and those who were left behind set to work to make the most of the time that remained before the coming of winter.

The first thing was to get the house into order. The house was quite a masterpiece of practical and hygienic arrangement. It measured as it stood, without the wings that were to flank it, forty feet along the chord of the semicircle in which it was built. The diameter of its wings would add six feet more at each extremity. It would thus be in a circular form, the second half overlapping the first, with an interior courtyard twenty feet across covered with a movable roof.

This curious edifice, which was not unlike a panorama, contained a number of rooms, or, more correctly speaking, compartments. One of these rooms, the best furnished, was reserved for Isabelle and her nurse. Besides the two dining-rooms of unequal size, one for the officers, the other for the crew, the house contained the kitchen, three bath-rooms, a physical and chemical laboratory, an astronomical and meteorological laboratory, an infirmary, a dispensary, and altogether ten public rooms and eight private apartments.

It had been designed by De Keralio, and the plans had taken a year to prepare and improve with the help of Doctor Servan.

It was consequently with very natural pride that De Keralio did the honours to his companions who had now

become his guests in this provisional habitation that in more favoured regions might have been a permanent one. And it was with considerable satisfaction that he explained its many advantages.

"Consider that our house is built of sections carefully numbered, and therefore as easily taken to pieces and carried away as they have been put together here. We have a double wall of planks, and the inner wall is covered with the waterproof sheeting which keeps in the warm air. The walls are ten inches apart and form an air chamber. Their inner surfaces are covered with paper, and for greater security we are going to cover the partitions with woollen curtains."

And omitting no detail, he showed his wondering visitors the columns of copper and steel sustaining the light wooden framework and the gentle give and take of the timbers so as to allow for the most violent winds by the play of the angles at the bolts; the storeroom towering over all, the roof with the skylights to make the most of the light of day, and at the same time minimize the inevitable currents of air from doors and windows, the felted floor supported by the beams of iron covered with wood.

A circular corridor, or rather a gallery, put all the rooms in communication and allowed of passing from one to the other without going outside.

As they were going through the house which had been built and furnished in less than forty-eight hours, the chemist Schnecker, who had been examining everything

with the greatest attention, suddenly exclaimed in surprise,—

"Ah! my dear sir, there is something which might have been thought of."

"What is that?" asked De Keralio.

"How about the fire-places? They are not only not designed to give enough heat, but where are you going to get the gas for them?"

Before De Keralio could reply, Hubert struck in.

"Sir," said he with a laugh, "please to remember that if we wish to produce gas in the ordinary sense of the word, that is to say, bicarburetted hydrogen, the thing would not be impossible, for there ought not to be any want of coal seams in the neighbourhood. Nares and Greely found them ready to hand at Port Discovery on the coast of Grinnell Land. But you may say it would be easier for us to burn the coal itself, and you will see that this reply has been foreseen, and that the fire-places are designed to serve more purposes than one."

And so saying, Hubert took hold of a sort of handle at the side of one of the fire-places, and turned the receptacle completely over; the sheet of shining copper at the bottom disappeared and gave place to a regular grate for coke or coals.

Schnecker opened his big eyes.

"That is a good fire-place, certainly; but all the same, I am surprised that the gas-burning arrangement is there, if there is to be no use for it."

"I did not say that," said Hubert.

"Then I do not understand. Where are your pipes and your gasometers, your condensers and your retorts? Where are you going to get the heat necessary for the distillation of the carburet?"

"Bah!" replied the young man, "we will find it. And allow me to be surprised in my turn that a chemist like you should require to use such cumbrous apparatus, which would be quite useless for travellers as we are."

"Useless!" exclaimed the Alsacian. "Would you have me believe that you can get heat without employing the usual methods of modern industry?"

D'Ermont put his hand on his questioner's arm.

"I do not try to make you believe it, but to show it you quite simply. There is gas and gas. I have only to get a source of heat ten times, twenty times, a hundred times superior to those of modern industry to realize the miracle you would deny."

The chemist shook his head.

"I do not deny it—I doubt it. That is another thing."

And as he said it, he frowned, and gave the lieutenant an evil look from the corner of his eye.

Isabelle noticed this look, but made no sign of the impression it had on her, contenting herself with keeping a more careful watch on this suspicious companion. At the same time, she remembered that on the *Polar Star*, Hubert had knitted his brows at Schnecker's name, and in some way communicated his dislike of the chemist to the faithful Salvator.

"Scientific rivalry," she said, "that is all it is between them."

And as Isabelle was the most trusting, the most generous of girls, she did not allow her thoughts to dwell longer on this second incident than she had on the first.

They were soon to recognize the advantages of the house so scientifically constructed by De Keralio and Doctor Servan. Owing to the absence of trees, the concluding period of the polar summer was, in these latitudes, remarkably warm. The temperature reached sixteen degrees centigrade, and proved almost insupportable to the travellers, who feared it might rise higher. These days of inaction were devoted to hunting and fishing, and in both Isabelle took her share. It was the only recreation possible, and it was desirable to add to the stock of provisions. The duration of their stay in these desolate lands could not be foreseen, and it was as well to lay in a large quantity of fresh victuals.

There was abundance of game, chiefly feathered game. Guerbraz, the best shot of the party, killed, during one morning, two dozen eider ducks. They knocked over in scores, or took in the nets, ptarmigan or polar partridges, black-throated divers, dovekies, a kind of pigeon or rather gull, with oily but succulent flesh.

During the morning of the fifth day after they had taken up their quarters at Fort Esperance, Guerbraz ran into the station out of breath, and answered in gasps to Hubert's eager questions,—

"Cattle! Two miles to the north."

Isabelle heard him.

"Cattle!" she exclaimed. "Musk oxen! I am after them!"

For some days now, the girl had been in her shooting dress. It became her wonderfully, and one could not wish more elegance and grace in a woman in a semi-masculine costume. She wore warm woollen knickerbockers gathered at the knees into leather gaiters, over which fell a short petticoat like that worn by vivandières. A vest with a broad belt clothed her from waist to neck, and on her charming head was a cap of sable, fitted with ear flaps and a neck piece. A carbine, a masterpiece of precision as of artistic ornamentation, hung from her right shoulder, while from her left hung her bag and cartridge-belt.

Thus equipped, Isabelle hurried out after Hubert and Guerbraz.

As they came out of the house, they met the chemist, Schnecker.

"Where are you running to, like that?" asked the Alsacian.

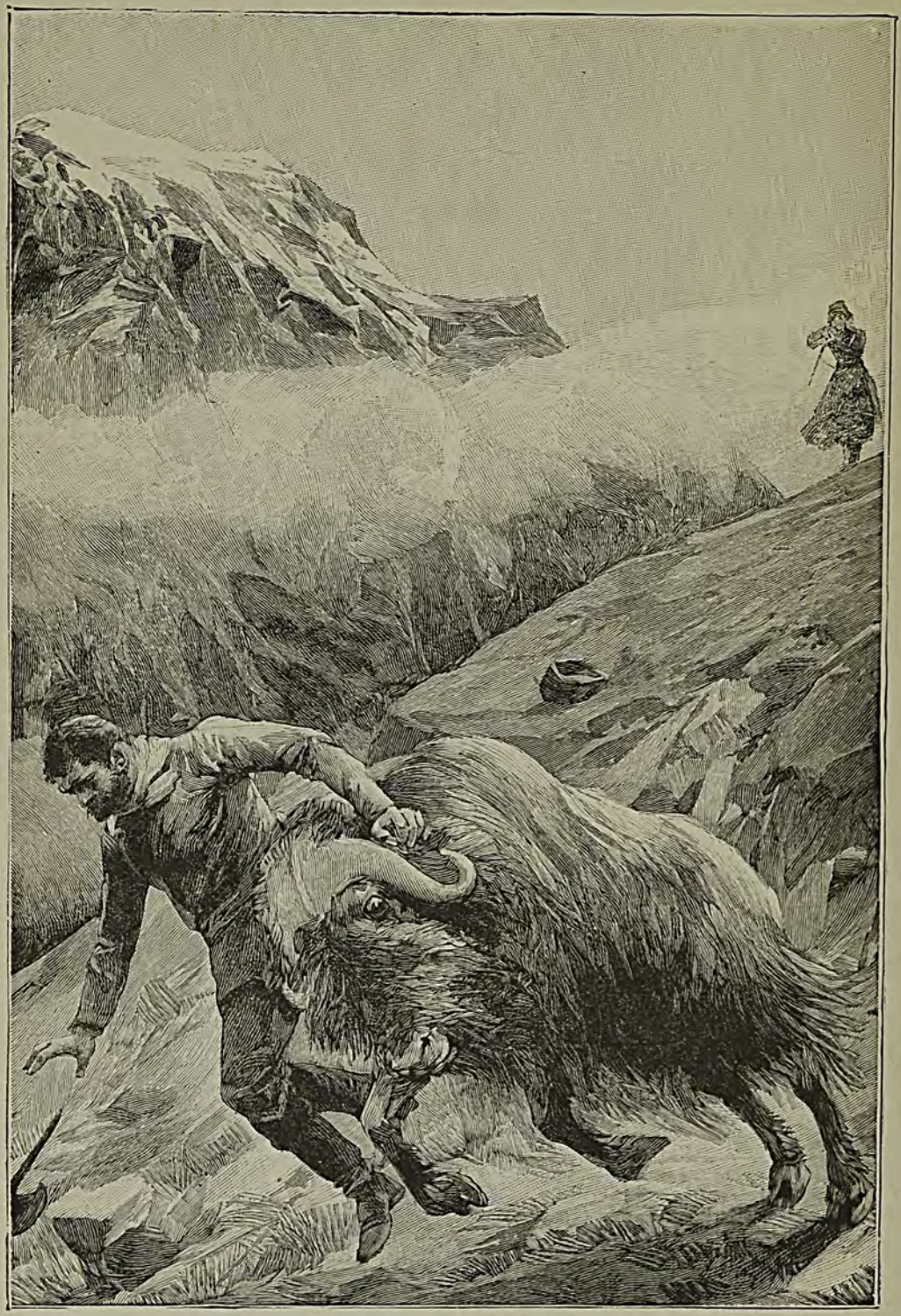
Hubert replied as laconically as Guerbraz,—

"Cattle! If you want to come, look sharp."

The scientist wanted no repetition of the advice. He also rushed into the house to get his gun.

But already Hubert, Isabelle, and Guerbraz were scaling the lower hills, and, hiding behind the heaps of rocks, were approaching the musk oxen as quickly as possible. They were not very numerous, and consisted of a bull, two cows, and two calves. The five beasts were placidly pasturing on the scanty herbage, and showed no alarm at the threatened attack on them.

Suddenly the two hunters and their companion arrived



THE FURIOUS BEAST MET HIM AS HE CAME DOWN THE SLOPE.

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within range, and three reports echoed simultaneously. One of the cows and one of the calves were seen to fall; the bull was also shot, but rose and made off, leaving a trail of blood behind him.

This did not suit Guerbraz, who had hit him in the haunch. Without thinking of the danger, the Breton rushed full speed after the ox and contrived to cut off his retreat.

Then the scene changed suddenly, and became extremely dramatic.

Guerbraz, an old fisherman of Iceland and Newfoundland, and an old Arctic voyager, was endowed with prodigious strength. Already he had taken from his belt a short-handled axe with which he intended to strike the animal on the neck a little lower than the formidable cap made by the large horns, when the bull, renouncing flight, made straight for his assailant, and returned towards him at his fastest.

Guerbraz, carried away by his own eagerness, and, unable to stop on the sloping ground, could not get out of the way. The furious beast met him as he came down the slope. Luckily the shock was not a direct one, but was only a touch on the shoulder, which sent him rolling on the rocky ground.

But the bull, after passing the sailor some thirty yards, pulled up and returned to stamp on him, or to butt him with his horns. Guerbraz, stunned by his fall, could not get out of the way.

Suddenly there was another report, and the *ovibos* fell dead at the sailor's feet.

Isabelle ran up, her gun smoking; Guerbraz seized her hand and kissed it piously.

"You have saved my life, mademoiselle," he exclaimed. "I must have my revenge. A life for a life."

Isabelle could hardly speak for want of breath. And besides, the incident was followed by another as a pendant.

There was a fifth report, and Hubert, who was just reaching his companions, felt the wind of a bullet at less than a foot from his face. Turning quickly, he discovered Schnecker about sixty yards behind. He it was who had just fired.

"You are a bad shot, sir!" exclaimed the lieutenant, in a tone in which anger and contemptuous irony were only too apparent.

CHAPTER III.

THE ANTE-CHAMBER OF THE POLE.

THE three chief witnesses of the drama were silent as to this last episode in a singularly exciting adventure. But Isabelle, who was much impressed by it, saw Hubert and Guerbraz exchange looks.

The two men had known each other for many years. Guerbraz, although older than Hubert, had been at sea under him when he was a midshipman. It was evident that their companion's clumsiness appeared suspicious. Schnecker had fired when there was no reason for it. The Breton's danger had been ended by Isabelle's carabine, and the two surviving beasts had time to disappear behind a low hill.

The naturalist, however, advanced, cap in hand, bowing very low, and with his most obsequious smile.

He sought to excuse himself.

"It seems I might have been the cause of a misfortune! Pardon me, pray. I am very short-sighted. I will not use a gun again."

"Then you will do well, sir!" said the young man, who was not of a very patient nature.

And turning his back on the chemist, he quickened his pace so as to return to the station in Isabelle's company.

Attracted by the reports of the guns, De Keralio was already on the way towards them, as were also Doctor Servan and the five other sailors.

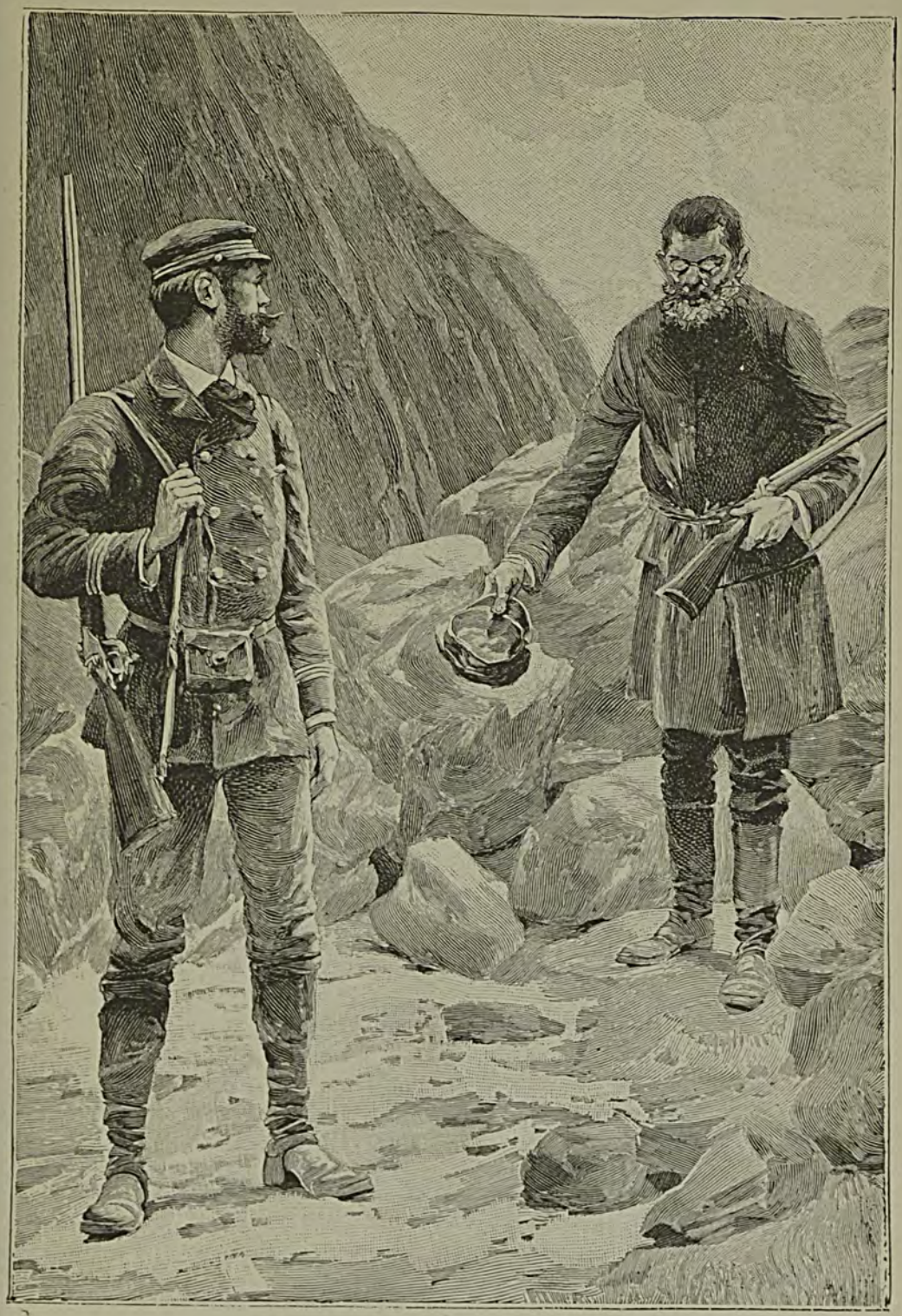
To these was given the task of skinning and cutting up the beasts, so as to leave no time for the flesh to contract the odour of musk which would have made them uneatable. This task was promptly accomplished, and four hundred kilos of fresh meat were taken into store.

On their return to Fort Esperance, Hubert immediately went to his future father-in-law, with the doctor and Guerbraz, in order that they might talk over together the serious occurrence which had just taken place.

The conference was an exciting one. De Keralio, who was very good-natured, could not believe in an act of malevolence. It appeared to him so unlikely.

"I know," he said, "that our companion is remarkably short-sighted."

"Bah!" said Hubert, "when a man is as short-sighted



"PARDON ME, PRAY. I AM VERY SHORT-SIGHTED."

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measure of intelligence is no guarantee of a good heart or a fine character."

"We must watch him all the same," said De Keralio.

"I will take care of that," said Guerbraz, quietly.

And thereupon they separated with an appointment for the study of the coasts and an examination of the maps.

To tell the truth these were most incomplete, and the expedition in its present quarters was really in face of the unknown. What they knew they only knew by supposition. The coast of Greenland is said to be very rugged above the 78th degree. The soundings taken at Spitzbergen have shown considerable depths, and it is evident that there is no land between the seventh degree of east longitude and the twentieth of west longitude.

The hypothesis of a vast sea, and therefore the more liable to the influence of warm currents and high tides, is a plausible one. From the top of the sea cliffs the explorers could see that the ocean was entirely free, and that their eyes lighted on no unknown land or any of those irregularities which in Kennedy Channel and Robeson Channel transform the western fiords into beds of glaciers destined to form icebergs. There was, therefore, every reason to suppose that a sea voyage would be possible in the coming spring.

The summer passed rapidly away, and the first signs of winter showed themselves more unmistakably. In the mornings and evenings there was formed on the surface of the water that sheet of thin friable ice which the Canadians call *frazi*. Besides, the night, the terrible polar

night, was approaching, and the midnight sun was sinking on the southern horizon. Towards the 15th of August, the glacial north wind had thickened the edging of the land to about three inches, and the never melting ledge of the shore had taken the characteristic blue tint of fresh stratifications.

The clothes required by this rapid lowering of the temperature were gradually assumed. To keep the men in full activity, Lieutenant D'Ermont gave them something to do in maintaining an open channel for the approaching return of the *Polar Star.* And during their leisure they constructed with all possible care the wings of the house, which by the 20th of August were ready for occupation.

Thence onwards all thoughts were concentrated on the return, and every day the anxious looks of the winterers were turned to the southern horizon.

The sea was covered with masses of ice of every conceivable size. It was evident that in the vast extent of the seas between Greenland and Spitzbergen, the formation of floes was a much slower process than in the bays and straits of North America.

Nevertheless with the continued descent of the thermometer, the imminence of the great congelation increased every hour. Coming down from the north they could see great bergs, regular mountains of ice with their escort of minor blocks and fragments of the icefield, which in freezing together would form the pack, properly so called. The mean temperature of the month of August was six degrees. It was still very agreeable for people who in the

temperate zone were accustomed to twelve and fifteen in the depth of winter.

Isabelle never for a moment lost her vivacity or enthusiasm. She was even anxious for winter to come, as it would introduce her to so many grand experiences, astronomical and meteorological. Besides, would it not in turn introduce the spring when the sledges would be out on their explorations, if it were not possible to get the *Polar Star* herself nearer the pole ?

De Keralio did not share this optimism with her. He bitterly regretted his surrender to his daughter's caprice, and feared for her when the cold should come. The first snow, the insidious penetration of death under its most mournful aspect, brought a gloom over his thoughts as the gloom spread over the firmament which the sun was to desert for so many interminable months.

But now that the deed was done, now that Isabelle could not retreat from her daring decision, the father concealed his alarm for fear of decreasing her good humour, and lessening the mental and physical energy she would need to overcome the terrible trials of winter.

Daily the men had more to do. In one of his excursions towards Mount Petermann, D'Ermont had discovered a considerable coal deposit which Nature had brought to the surface and offered ready to their hands. From it they set to work to bring in enough for two winters. The valuable mineral was deposited in a heap against the annexes of the galleries, over which a special shed was built with planks and tarpaulins.

The return of the *Polar Star* was awaited with increasing impatience. Every day that elapsed made the anxiety greater, for the Polar seas are full of strange caprices. Twice at least during three days the horizon had been veiled in deep mountains of mist, and it seemed as though the ship would find the way closed against her.

And it was with enthusiastic cheers that topman Kermaidic was welcomed on his descent from the look-out on the 22nd of August, about one o'clock in the afternoon. He had just sighted smoke. The wind was blowing from the south and clearing the vicinity of the coast. The icebergs were moving towards the east, in the direction of Spitzbergen. The ship could enter the fiord at the close of the day.

They were out in their calculations. Suddenly about five o'clock in the evening, just as the smoke of the *Polar Star* revealed her presence at less than three miles from the coast, the wind jumped round to the north-west and produced a rapid fall in the mercurial column. The thermometer, without any warning, went down to twenty degrees below zero.

The night had to be passed in cruel anxiety, and at ten o'clock next morning the ship was sighted two miles further to the south. The ice had increased eight inches in thickness during the night.

Fortunately the tide rose, driving back the floating blocks in such a way as to leave several channels for any ship wishing to enter the fiord. Aided by her ram and her coated hull, and the power of her engines, the *Polar*

Star could clear a passage through the fragments which every moment threatened to obstruct her. At two o'clock precisely the ship forced her way in from the sea and cast anchor in Franz Josef fiord, at the foot of cliffs a thousand feet high, which sheltered her as well as Fort Esperance.

The inhabitants of the station ran out with cheers of joy to welcome the arrivals, and it was with most touching enthusiasm that they greeted those whom for an instant they had despaired of seeing again. The people on the ship betrayed the liveliest gratification at finding themselves ashore under a shelter so comfortable, built and arranged with every care, and in conformity with the most minute requirements of hygiene. That evening there was a banquet, where toasts were given with enthusiasm for the success of the expedition.

The next morning, everyone was afoot at ten o'clock, and De Keralio for the first time entering on his duties as commander-in-chief, mustered his men so as to give them their orders.

Following the example of the English expedition of 1876, the officers resolved to distribute the men into detachments according to the work for which they were intended. Independently of their ordinary labours they were told off for certain general work, either in the interior of the fort or for the preparation of the exploring parties.

This assignment to stations was not the only business of the day. There was an inspection of the equipment and the weapons, and a medical inspection rendered

obligatory by the necessity of assigning to each his full share of the work.

This first muster roll showed that, irrespective of the officers, there were thirty sailors and workmen, consisting of twenty Bretons and ten Canadians. Every man received a short Winchester rifle, sighted up to six hundred yards, with a hundred and twenty cartridges, a revolver of the French pattern with ten packets of cartridges, a hunting knife, a short-handled axe with a brass guard for the edge, a case containing a four-bladed knife, scissors, needles and thread, comb and brush. The clothes consisted of three pairs of trousers of soft wool, three flannel shirts, two knitted waistcoats and frocks, a fur coat, a cape with a hood, an otter-skin cap with neck-flap and ear-flaps, two pairs of wool mittens and a pair of furred gloves, a pair of leather boots for the fine season in addition to two pairs of moccasins, cloth leggings, and waterproof gaiters. The woollen socks were kept in store. They would only be given out to the men on an order from the chief of their squad.

In the magazine were left twelve fowling-pieces, which could be lent out to the best sportsmen of the party when required.

Besides the wooden cots and mattresses there was a sleeping bag in buffalo skin for every two men ; in readiness for the autumn and spring excursions there were twenty of these, ten others being put into store.

The dogs, to the number of forty, were landed on the first day, and Ouen Carré, the Canadian whaler, was en-

trusted with their education, which was anything but a sinecure for him.

The following days were devoted to the final stowage of the provisions left on board the *Polar Star*. The rudder was unshipped and laid on the deck. The screws were even unshipped and the different sections of the shafts were well greased and wrapped in leather. The boats were all lashed firmly down. With similar precaution the lower masts of the ship were alone left standing, and she was covered from one end to the other by a triple awning, all her openings being closed with the exception of the hatchway giving access below.

It was unanimously agreed that if the house was in any way damaged, refuge would be taken on board the *Polar Star*.

Finally, to preserve the hull by every means from the eventual pressure of the ice, it was defended by a cradle of steel, the bands of which interlapped in a series of St. Andrew's crosses and interlaced with iron beams that were bedded in a frame of wood. Supported in this way, the ship could bear any pressure on her keel or flanks. The ends of the beams were hinged so as to yield a little ; the beams would receive the shock below, and in response to the shock they would lift the ship bodily out of the water and hold her suspended. This was an invention of Marc D'Ermont's which they were going to try for the first time.

The preparations being complete, nothing more could be done than to wait for the coming of the winter.

It was approaching quickly. The birds of passage which venture into these high latitudes in summer, could be seen returning south in long flocks. A few herds of wolves and arctic foxes appeared in the environs of Fort Esperance; and Isabelle had an opportunity of going in chase of these unwelcome visitors. But the hunters had their hunt for nothing. Neither wolves nor foxes would let them come near. They nevertheless killed a few dovekies, some ptarmigan, now become rare as the summer neared its end, and half a dozen eider ducks.

On the 28th of August the stoves had to be lighted. The thermometer went down suddenly to zero. Dr. Servan, cheery, good-natured and enterprising, accorded Isabelle the title of "Directress of the Fine Arts and Public Games," and inscribed his name under hers as organizing secretary. Thenceforth neither of them found work fail them, for in a polar expedition it is as important to keep the men in good spirits as in good physical health.

By their orders there had been brought all the needful materials for games which the English, that most practical of people, are never without, such as football, rackets, cricket, hockey, croquet, etc., etc. A space sixty yards across, chosen in a sheltered place, and swept and scraped with scrupulous attention, was the scene of these recreations. The carpenters of the crew surrounded it with a palisade of piles, and at every two yards were posts on which could be hooked electric lamps, Schnecker having offered to furnish all the light required during the stay at Fort Esperance.

This was not all. Under the able instruction of Ouen Carré and his assistant, Jim Clerikisen, an Eskimo from Frederikshat, the dogs were promptly put into training, and the sight of the dogs out on the ice proved an additional attraction on the daily list of games. Among the Greenland dogs were six of great beauty belonging to the species known as Newfoundland in general and Labrador in particular. The Labrador dog is lower on the legs than the true Newfoundland. He is also generally stronger, but assuredly much less gifted with docility and good manners. Theft is habitual to him, and he never knows respect for the property of others or sympathy for the misery of his neighbour.

The beautiful Salvator, who had come from France, only too openly showed his immense disdain for the tribe of draught dogs. With regard to his congeners the Labradors he affected that species of haughty superiority of intellectual ascendency which townspeople assume over country folks. But he was a good king, and none thought of disputing his right to the crown. His unmistakable distinction, his truly prodigious strength, guaranteed him the respect of the semi-savages with whom he occasionally condescended to converse in the language usually known among his kind. The rest of his time was devoted to the particular service of his masters or rather his mistress. He was Isabelle's assiduous companion, her escort in her occasionally venturesome explorations in the neighbourhood of the fort. Soon he became her guide, and his infallible instinct often warned her of danger, notably

on one occasion when she would have come face to face with a gigantic bear in turning near the camp.

If Salvator was Isabelle's four-footed bodyguard, she had a servant and friend no less devoted in Alain Guerbraz, the Breton sailor she had saved from the musk ox.

Guerbraz was one of those extraordinary men to whom God has given, to the astonishment of the human race, the prodigious strength which seems to have been the lot of the big pachyderms. The Breton was as powerful as a rhinoceros. He could juggle with half-hundredweights, break a bar of iron over the head of any animal whatsoever, and when his hands, which were veritable grappling-irons, were fixed on an object, you might cut them off but you certainly could not make them let go.

He had henceforth devoted to the defence of Isabelle de Keralio the life he owed to her brave and timely intervention. On her part she showed that she recognized this honest and genuine attachment, and on all occasions let it be seen that she trusted him. No better reward could this peaceful colossus have for his devotion than the knowledge that Isabelle felt safe when under his guard.

The approach of the long polar night began to make its influence felt. The Canadians alone seemed to take no notice of it, accustomed as they were to the cold of the north. The others beheld, with a sort of terror, the days drawing in and the darkness increasing in the lengthy dawns and twilights. What would become of the gaiety and enthusiasm of the crew when the veil of darkness had definitely dropped on the northern hemisphere?

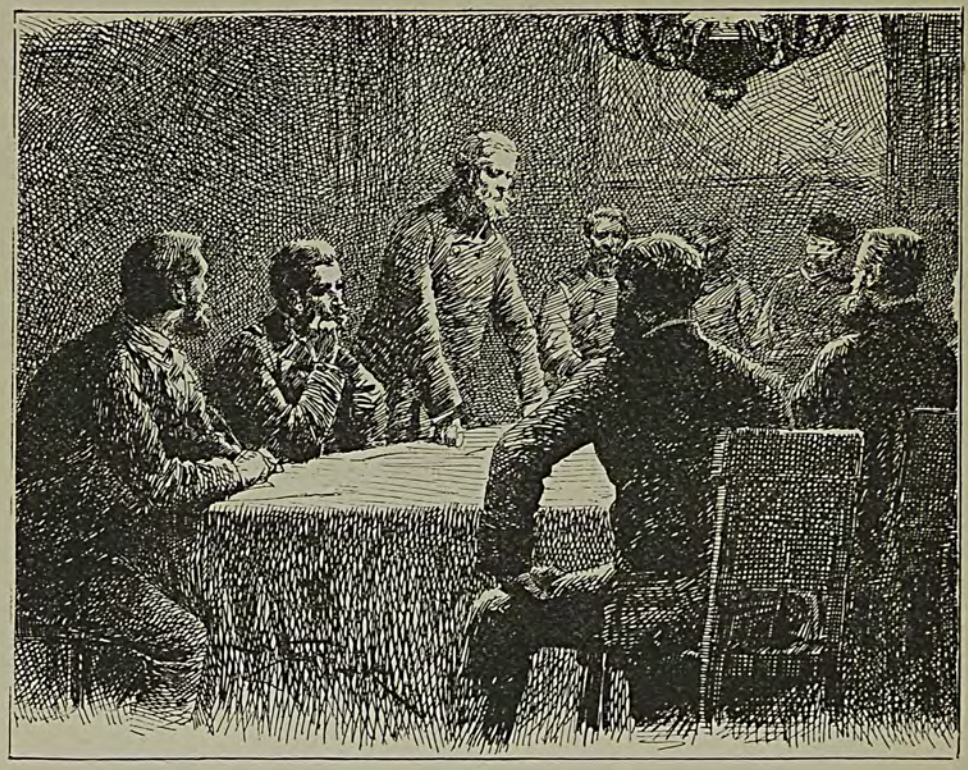
Nervous and impressionable, Isabelle de Keralio was all the more to be praised for her efforts to hide her true feelings. As the winter took possession of its realm, she was untiring in her efforts to keep up the courage and resolution of her companions. When at midnight on the 4th of September, the sun for the first time left the sky, she got up a party to celebrate that luminary's departure. Accompanied by Alain and Hubert, she climbed one of the peaks near Cape Ritter and remained with her eyes fixed on the south-west. Fortunately the temperature was supportable, the sky being wonderfully clear. The sun had reached the fringe of bare hills on the flanks of Mount Petermann, 10,000 feet high. For a moment it seemed to rest on the ice of Mount Payer, the giant's neighbour and inferior by nearly a third. Then he descended, his disk grew larger, he lost his brightness, and red as blood, he hung like a glory behind the mountain's peak. Larger and wider he grew until he slipped from sight, fallen to the other side of the earth.

This was the beginning of the night. From that day the light decreased with sinister rapidity. But the darkness came not too suddenly for a welcome. The last works had been finished round the house. A rampart of ice, or rather a wall of thick ice-blocks that the cold would bind closer, was raised two feet above the walls of wood. It was carried right up to the roof in order that the slight humidity from the gutters might help to cement it.

The space between the walls was filled up with saw-

dust and straw, and on this, in the future, all the cinders from the fires would be thrown.

The courage and good-will of the explorers were rendered all the more effective by their own experiences, the ideas that occurred to them, and the information derived from preceding expeditions. The time for preliminary investigations had come, and the travellers knew from the accounts of their predecessors how dangerous were these autumn campaigns. The first thing to do concerning them was to decide on the plan to be followed.



CHAPTER IV.

A TRAITOR.

ON the 5th of October De Keralio called together in council the officers of the expedition, and such of the sub-officers whose knowledge and experience might be valuable.

The gathering took place in the officers' dining-room. De Keralio took the chair and Lieutenant Hardy acted as secretary. In view of the importance of the communications which were about to be made and which affected the whole plan of the expedition, no person of importance was excluded. There was only one whose loyalty could

A new salvo of applause greeted this declaration.

"That is it! That is the very thing!" shouted the officers with enthusiasm.

"Consequently," continued De Keralio, "we must devote all our care to the preservation of our ship, for it will probably be the vehicle for our summer campaign. From the 1st of June to the 15th of August we can cover the distance, and solve the problem which so many others before us have nobly but vainly endeavoured to do. Once we are on the eighty-third parallel, seven degrees will not frighten us if, as Greely says, we shall find an open sea."

To this there was a warm assent, and for some minutes the conversation became general. But at last came a discordant voice in this concert of adhesions.

"I beg your pardon," said Schnecker, "if I do not quite share your confidence. Am I allowed to offer a few slight objections?"

"You can do so, Monsieur Schnecker," said Keralio, "and it will be for us to reply."

"Very well. The first question I ask is: What are you going to do with the house at Fort Esperance?"

"But," said Captain Lacrosse, "it seems to me that that question has been answered in advance. The house? It will come on board again as beams and planks. It will be stowed away in the hold as it was before. We will erect it again for our second wintering at Cape Washington."

"You have no doubts of anything, captain," grinned the chemist. "Where are you going to get the coal for your

boilers? For I fancy that the two thousand tons shipped in the *Polar Star* are to be used for the house in the first place and for the steamer in the second."

"Bah! Monsieur Schnecker, you should put your trust in Providence, which has taken care to furnish us with the needful fuel."

It was Lieutenant Remois who had spoken. He spoke in a jesting, confident way that made all around him share in his good humour.

"I understand," said the learned man. "You allude to the bed of coal on which we have already made a considerable inroad. But even if it were much more abundant, you could not take the mine with you. And, as to taking it on board, that is impossible, for the *Polar Star* could not stand such an addition to her load."

"The *Polar Star* will stand a good deal more than you think," exclaimed the captain, sharply. "And, besides, even supposing you were right, a thousand tons will suffice to take us to Cape Washington."

The chemist did not appear convinced.

"Oh! To Cape Washington, I admit. But afterwards? Lockwood's report makes no mention of coal deposits in the neighbourhood he reached."

This persistence in contradiction visibly annoyed the explorers. Hubert D'Ermont, whose patience was exhausted, literally exploded.

"Well, sir, if we do run short of coal, who told you we have no other combustible? See here, I wish to be outspoken with you and not to weary your curiosity or

that of our companions. We have fuel in reserve in quite sufficient quantity, although it is neither an encumbrance nor an extra load for the *Polar Star*. Even supposing that the way by the sea remains closed to our gallant ship, we can take this extraordinary combustible on our sledges, with the inestimable advantage of finding in it not only heat, but light and a power superior to that of steam itself."

As he said this everyone turned towards D'Ermont. A look of amazement appeared on every face. Some looked as though Hubert had gone mad, or else was endeavouring to mystify his questioner.

Hubert saw that such a feeling might give rise to a certain uneasiness of mind among his audience, if he did not at once give them some sort of explanation to prove that he had reasons for speaking as he did.

"Gentlemen," he continued, "I owe it to you and to myself, not to leave you under any mistake in this matter. What I mean is this. My brother, Marc D'Ermont, who is a chemist like Monsieur Schnecker, has had the good fortune to make a marvellous and unprecedented discovery. This discovery we are to be the first to put to practical use; and a preliminary trial which was recently made enables me to assure you in advance of our complete success. Let it be enough for you, for the moment, to know that my brother has succeeded in liquefying, and even solidifying, and consequently obtaining in a volume out of all proportion to its usual power, a primordial gas, a simple body up to the present supposed to be permanent."

The whole assembly were on their feet.

Hubert spoke with a sincerity, an energy, which carried conviction to all.

Once again it was only Schnecker who spoke.

"Ah! Quite so!" said he, ironically. "Whatever brotherly esteem I might be ready to render my brother, that would appear to be a little too strong. I should like to see that to believe in it."

A murmur of disapproval received this expression of incredulity.

"You shall see it, sir," said Hubert, "and that very soon."

And with that the debate and the incident concluded.

De Keralio took advantage of the silence which followed this really astounding revelation to continue,—

"Independently of the ordinary means, there are two others which depend on the admirable discovery of which you have just heard from Lieutenant D'Ermont. You know, gentlemen, how many methods have been suggested and talked about by men who knew what they were saying and who had often been engaged in polar exploration, and by mere crack-brained dreamers. Know, then, there is nothing too imaginative for the science of to-day to realize, providing that the idea has a rational foundation, and does not seek the quadrature of the circle.

"Among the means deemed practicable by men of experience, there are two which have secured our suffrages; if the ice-field cannot be penetrated it can always be gone over or under, over it by the aid of our aerostat, under it by means of a submarine boat. Both these means we are prepared to attempt. We have the balloon; we have the

submarine boat. We can then, as you see, strike boldly to the north. Unless there is a catastrophe which it is impossible at present to foresee, we will plant our feet in the very centre of the pole, and the colours of France will be triumphantly displayed where Fortune will have led us."

At these enthusiastic words the assembly rose excitedly. At the same moment Isabelle, accompanied by Tina Le Floc'h, entered the dining-room. The nurse carried a tray crowded with good things; on a table a little distance off, the tea things proved an immediate attraction.

Said Captain Lacrosse with a smile to Lieutenant Pol,—

"Let all the men come in. Monsieur De Keralio would like to give them the news himself."

The order was executed on the spot. The crew entered respectfully, and ranged themselves round the table.

De Keralio repeated what he had just said to the officers. He added in conclusion,—

"My friends, the hour has come to begin work in earnest. I remind you of your engagements only to let you understand what we owe to each other. Everything, safety as well as success, depends on our mutual understanding and united effort. Before we begin our preliminary reconnaissances it is natural that we should unite in a cheer for the love of our country. Hearts up, then, and vive la France!"

"Vive la France!" repeated every voice. And Schnecker, who felt he was watched, did as the others did, and shouted, "Vive la France!"

"We must finish the evening pleasantly," said Isabelle.

Everything had been provided for. The piano was there, landed the day before from the *Polar Star*. Isabelle sat down to it, and her active fingers ran up and down the keyboard. The officers set the example, and strove to excel each other in making merry up to an advanced hour of the night. The most eccentric dances were indulged in. Besides waltzes, polkas, and quadrilles, many out-of-the-way saltatory performances were introduced. The Canadians danced jigs more or less Scottish in character; the Bretons indulged in other eccentricities of a more or less uncivilized character.

Isabelle took part in the general merry-making, availing herself of the arm of Hubert D'Ermont, her betrothed. Lieutenant Pol and Doctor Servan were both musicians and quite expert on the piano, and took turns in relieving Mademoiselle De Keralio.

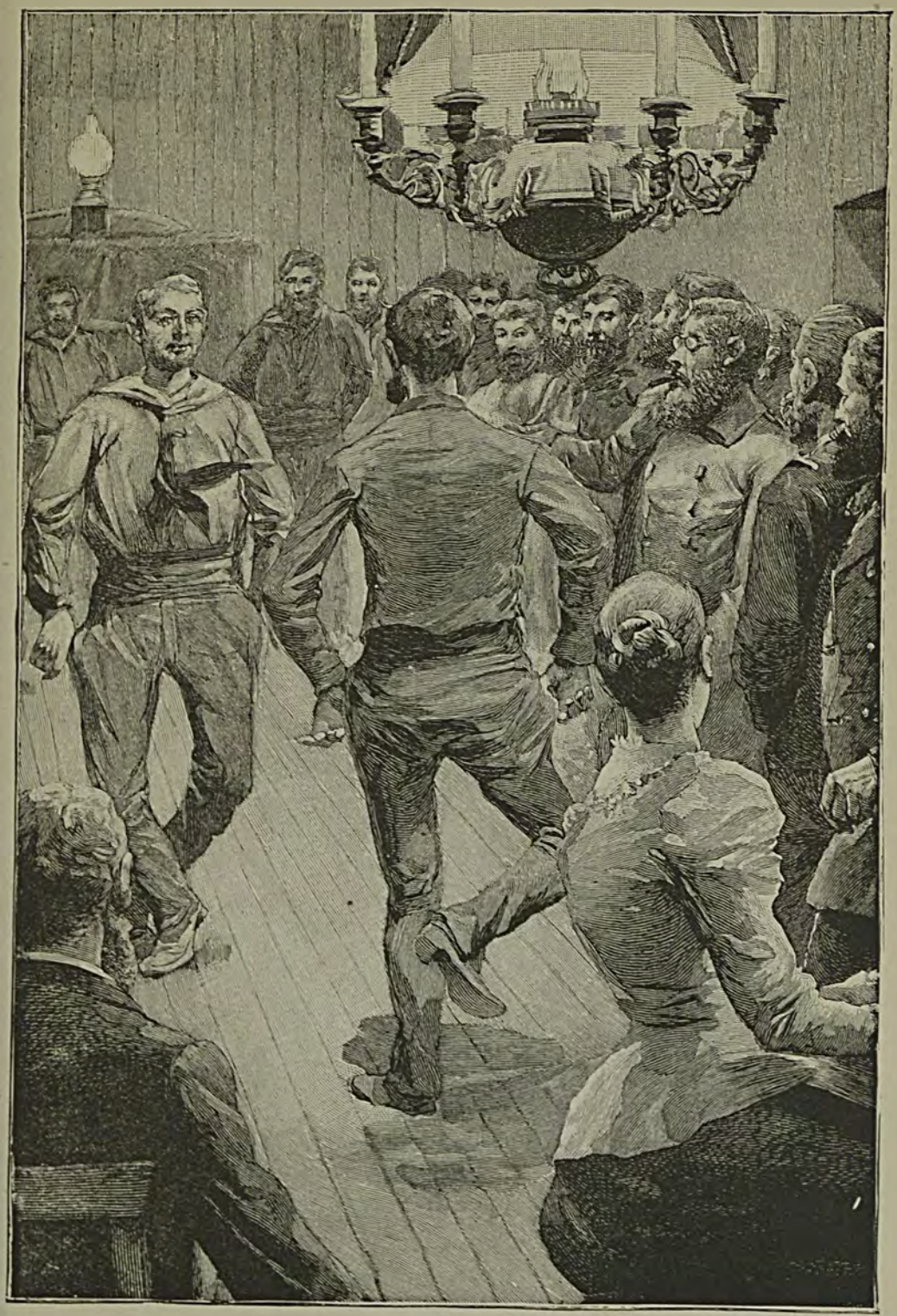
There were songs, comic and sentimental, according to the repertory of the singers. Some gave recitations either in verse or prose. To wind up with, Schnecker gave a magic lantern entertainment, for which he was heartily cheered.

At two o'clock in the morning as the day closed in all went to bed, peaceful in heart and joyful in mind.

Half an hour afterwards all in the encampment were asleep, and the cold, insidious and morose, brought the mercury down in the tube, the temperature outside falling to twenty below zero.

One only was not asleep; and he was Schnecker, the chemist.

He had obtained permission from the first to sleep in



THE CANADIANS DANCED JIGS.

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the laboratory, of which he had the entire charge. Although the atmosphere was growing colder and colder, he remained standing by the side of his bed, frowning, and with his hands clenched.

And from time to time a grunt escaped from his lips.

"Oh! This D'Ermont, curse him! How I hate him! Am I always to be his laughing-stock? In what a tone of haughty contempt he replied to my objections."

He stopped and took three turns in his room.

"But if he is right? If he told the truth? Is it really possible? And what is the permanent body his brother has been able to solidify? Yes, what? As far as I know only nitrogen is likely to be treated in that way. But what could he do with nitrogen? Nothing. We do not want to fertilize the lands of the pole, nor to provide these poorly combustible regions with oxygen. Besides, he spoke of a gas which was both combustible and a source of power. Can it be hydrogen?"

He started, and remained for a few seconds in deep thought. Resuming his walk, he gave his anger full course. Exclamations and fragmentary phrases came from his lips in jerks.

"Madmen! Idiots who believe it! The fable of Cailletet liquefying hydrogen! A story of a French invention! 240 atmospheres of pressure! And Pictet even solidifying it at 650 atmospheres! Think of it!"

He crossed his arms, and looking at the furnaces, crucibles and retorts in front of him, said,—

"If the thing had been possible, would not my German

fellow-countrymen have discovered it? Is it only these Celts that are capable of such things?"

But he could not convince himself; he could not believe it.

"Really, I know not why I mention these names of Germany and France? Do they mean anything in my eyes? Are they not on the contrary mere narrow credulities, degrading predilections, words realizing that most absurd of conceptions, patriotism! I have no country: I renounce them all. Mine disgraced me and condemned me to death for an action which those brachycephalous boobies full of beer called a crime against common humanity."

He stopped. The sound of a voice reached him from the room next door.

Unmindful of the cold, he took off his boots, blew out the light, and placed his ear at the keyhole. He was not mistaken. There was talking going on in the next room.

The room next to the laboratory was Isabelle's. It was the best sheltered. At this moment Isabelle, with her father and Doctor Servan, were listening to Hubert as he developed his theories.

And the traitor Schnecker, panting, with his heart full of bitterness, listened as in echo to his own words, to the lieutenant explaining to his select audience the secret on which the success of the expedition was to depend.

"Yes," said Hubert, "the things I showed you were cylinders of aluminium, enclosing steel tubes bored in the original ingot. These tubes all end in a tap closed by a screw permitting the sudden or gradual escape, as you please, of the liquefied hydrogen gas it contains."

"Hydrogen!" the three listeners could not help exclaiming, as they started in their chairs.

"Hydrogen!" repeated Schnecker to himself, as he clenched his fists.

"Yes," proudly said Hubert, "that is the discovery which will render immortal the name of my brother, Marc D'Ermont."

The German had recovered himself. He felt not the cold, all he felt was his anger. In the darkness which enveloped him his conscience was luminous enough with its hate and jealousy.

"Your brother's glory!" he murmured. "If you have told the truth, Hubert D'Ermont, if this admirable discovery has been really made, it will be known nowhere beyond the glacial desolate land where we are, and it will die unknown to the rest of mankind."

At this moment a short guttural bark was uttered from the other side of the door.

"Ah!" said Schnecker, in a low voice, "the dog is also there!"

There was silence in Isabelle's room; and then the German distinctly heard them say,—

"There is some one in the laboratory! Let us look!"

The chemist saw the danger of being caught in the darkness. Quickly he struck a match and lighted the candle, so that when Hubert appeared at the door, followed by his companions and Salvator, all looking exceedingly suspicious, they found Schnecker peacefully inspecting the interior of a retort.

"Confound it! Monsieur Schnecker," said the doctor, "you are going in for frost-bites of the first water!"

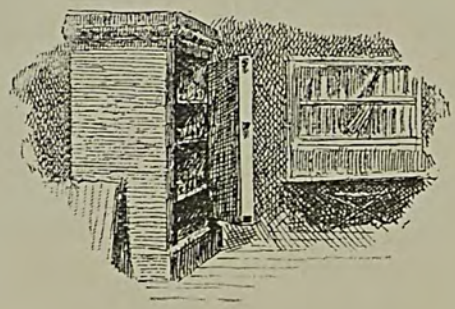
This remark recalled the chemist to a sense of his position.

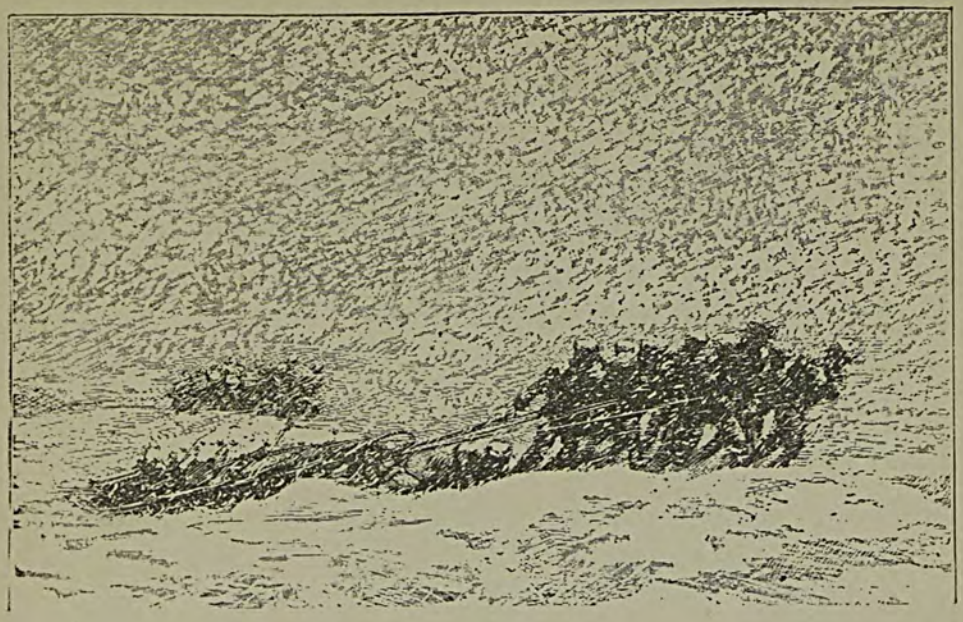
He shivered; and looking at his hands, he saw they were quite blue.

"How careless you are!" said Servan. "Quick, get into Mademoiselle de Keralio's room, or in two minutes you will lose your legs."

And he pushed him into the warm room, which the mere opening of the door had sent down ten degrees in temperature.

When Schnecker had gone, the others looked at each other with painful surprise. The unexpected meeting had certainly not removed their suspicions. Quite the contrary. The chemist, warmed and refreshed, could remember only one thing. He had seen in Isabelle's room the strong box he had seen in Hubert's cabin on the ship. They had forgotten to shut it, and through the half-open door he could distinguish a quantity of tubes stored away in its depths.





CHAPTER V.

WINTER QUARTERS.

THE cold had returned triumphantly to its empire in the polar night, which draped the sky in its veils of grief. Owing to the wise prevision which had been present at the construction and installation of Fort Esperance, the winterers had not as yet suffered much. Between the terrible temperature without and that of the stoves constantly burning within, there was a difference of from thirty to forty degrees.

By the advice of the two doctors there had been erected before each door a kind of halfway shed, to enable the men going out to become accustomed to the enormous difference between the two temperatures.

What remained of the day was not worthy of the name. It was a kind of vague twilight, occasionally edged with the brilliant hues of the extreme horizon. In preparation for the grand departure fixed for the 15th of April, the shortening days of autumn had been devoted to explorations in the neighbourhood, and bit by bit the travellers became acquainted with their domain. These expeditions were always accompanied by sledges drawn sometimes by dogs, sometimes by the men themselves. In either case the apprenticeship was a bitter one, and every day the pole more clearly showed with what bitterness of resistance it would defend its frontier against human curiosity.

The first sledge journeys were terrible. The men were not yet acclimatized to these frightful temperatures of 24, 28, 32 and 36 degrees below zero, which lasted from the 15th of October to the 1st of May. And yet the travellers had availed themselves of the experiences of their predecessors. In place of thick heavy materials, they had adopted for their clothes soft light woollen stuffs, which gave their limbs full play. A double pair of trousers, a knitted vest with a jacket of cotton flannel, a short overcoat of fur, a cap with the fur inside out, cloth boots with heavily nailed soles, woollen mittens over fur gloves, such was the men's costume.

Isabelle, it need scarcely be said, had adopted a somewhat similar costume, prepared some time before. As to the nurse, Tina Le Floc'h, she looked in her winter garb not unlike a wild beast, and her width of shoulders and heavy gait made the illusion all the greater at a distance.

De Keralio set the example of courage and resistance. On the 15th of October, accompanied by his friend Dr. Servan, and the sailors Guerbraz and Carré, he undertook, with an outfit of a dozen dogs, the exploration of the coast. Starting from the camp, that is from Cape Ritter, on the 76th parallel, the explorers passed Cape Bismarck, and boldly kept on towards the north. The coast continued almost straight up to the 79th degree; there it trended to the west, and the travellers noted with pleasure that this obliquity continued at a sufficient angle to enable them to reach by the land route Cape Washington, seen by Lockwood in 1882. It remained to be seen if the route by the sea would be equally practicable.

This first excursion, accomplished through snowstorms and in a mean temperature of 18 degrees below zero, ended at the 81st degree. A peak indistinctly seen in the north-west received the name of Mount Keralio at the same time as that of Cape Servan was given to the promontory beyond which the explorers did not go.

They had to return. They had accomplished 125 kilometres during the first four days. Then their strength began to fail, the route became more difficult, the cold more keen, and they could not cover more than 25 kilometres a day. The exploration lasted a little more than four weeks. The sleeping-bags of buffalo skin were the great resource of the poor pioneers. They returned weakened by fatigue, exhausted by cold. Luckily the welcome they received at the station soon put them on their feet. It was a curious thing that Guerbraz, the most

robust of the party, suffered the most ; his left ear was partially frozen.

In turn the different detachments went out, some towards the north, others towards the west. They were fortunate enough to secure a few kilos of fresh meat which advantageously varied the bill of fare. In fact pemmican and compressed bread had quickly fatigued both palates and stomachs.

The winter and the long night condemned the travellers to repose. They could not attempt to take with them the light indispensable for their road, and the hummocks and gullies were too full of danger for them to venture among them in the dark. The order of the day was therefore given in accordance with the reports of former winterers, and they remained by the fireside.

There was no want of work. There was quite enough to do to look after the safety of the house, which was constantly threatened by the storms from the south-east. The winter, notwithstanding its excessive cold, was troubled by the return of the warm currents, and the sight of the numerous gaps in the pack encouraged the travellers in supporting the presumption that the Greenland Sea is more open than that of Barentz or Lincoln. Manifestly some branch of the Gulf Stream penetrated these high latitudes, and rendered at any time possible the breaking up of the ice.

Packed in a wonderful way among the icebergs, the *Polar Star* was in no way injured by the pressure from the sea. Her iron cradle admirably fulfilled its functions,

and the articulations of the metal frame yielded whenever necessary. On the 15th of November, Captain Lacrosse, on climbing the bergs around the ship, found her keel three feet out of water, and literally suspended about two feet above the level of the ice-field. Soundings were immediately taken, and removed any fear he might have had of an eventual shipwreck. The adjacent ice was more than three yards thick, and the water maintained a temperature of one degree down to a depth of from 25 to 40 fathoms.

On the 25th of November the thermometer went down so low that the mercury was frozen, and recourse had to be made to thermometers and barometers of pure alcohol. During the days that followed, temperatures much more terrible were obtained, and on the 22nd of December, after a considerable rise in the thermometric columns (—22°) the cold reached a minimum rarely experienced by explorers, that is to say, 56 degrees below zero.

Such was its intensity that some of the men had serious attacks. Two fingers of the left hand had to be amputated from the Breton sailor, Le Clerc. Four others were on the sick-list with sudden internal derangements.

But the most alarming case was that of the nurse Tina Le Floc'h.

The Breton, accustomed to the mild humid climate of her country, could hardly stand the intense cold, particularly as the cold is not free from moisture in these extreme latitudes. The least omission or interruption in the work of the camp occasioned the most serious conse-

quences. If they neglected to scrape the floors, instantly sheets of verglas formed; if the heat of the stoves only went down a degree or two the vapour of respiration was immediately converted into fine snow which covered everything, and saturated it with carbonic acid; if a current of air insidiously penetrated, the temperature at once went down enough to cause congestions and pneumonia in those who were susceptible.

One morning, Hubert D'Ermont announced to the council of officers that he was going to make his first attempt to combat the enemy they could no longer endure. The experiment took place that very day. The stoves in the different rooms were cleared out of coals, and before the sailors recovered from their amazement and could ask why the fires were extinguished when the temperature outside was 48° below zero, the upper part of the grate came down displaying the reflector, from which spread forth the intense heat of four tongues of a ruddy feebly illuminatory flame. At the same time instead of the lamps in which the oil was nearly frozen, in place of the candles and experiments in electric lighting parsimoniously attempted by Schnecker, they saw in the burners that had been prepared for it large butterfly flames of bicarburet of hydrogen.

Lighting gas under the 76th parallel! That was something of a prodigy! Who had accomplished this prodigy?

There was one who could have explained it immediately; the German disguised as an Alsacian. He ground his

teeth when he saw that Hubert had not boastedly promised anything in vain.

The hydrogen of the tubes had produced this marvellous result, and when in the evening he was asked what had been the cost, he replied with a smile,—

"Oh! very small, hardly forty cubic decimetres."

Forty cubic decimetres! That represented a cubic centimetre of the same gas in a solid state. Marc D'Ermont's discovery was verified; the experiment had been made. With a few grains of this marvellous product they could brave all winters, and Hubert could have said with Archimedes—changing the formula slightly—"Give me a condenser and I will thaw the pole."

But the admirable results of the discovery did not end here. To utilize the forced leisure of winter quarters, Hubert had all the crew to assist him.

The day after the experiment quite a banquet took place in the crew's dining-room. The cooking was simply perfection. What could they not cook on a stove where a single flame four millimetres high sufficed to develop a heat of 1800 degrees, which had necessarily to be moderated by an ingenious scale of distances. As is well known, the combustion of hydrogen in the air gives an almost invariable temperature of 1789 degrees, or 189 degrees greater than that of molten iron.

In the course of the meal, while the men were laughing and asking if they were to wear their summer clothes, Doctor Servan remarked none the less gaily,—

"Well! well! do not talk too much. I have noticed a

few faces, and they have shown me that we ought to redouble our hygienic precautions. If we only had a few fresh herbs at our disposal!"

"That we can do!" replied Hubert; "if Monsieur Schnecker will only help me, we can build a greenhouse."

"A greenhouse?" said the German.

"Yes, and in that greenhouse we can raise early vegetables, carrots, salads, radishes, etc., everything green and refreshing."

The men looked at him in amazement. The chemist laughed mechanically. Nevertheless the enthusiasm of the company was communicative. There was no thought of objections, and an unanimous hurrah echoed from both ends of the table.

"Vegetables!" said Lieutenant Remois. "While you are about it, a little fruit would not come amiss!"

"Yes, fruit!" they exclaimed, their mouths watering at the alluring hope.

"Strawberries, for example!" said Isabelle.

"If it will not displease my dear cousin, we will have strawberries and vegetables in the spring. We have only to allow for the inevitable delay due to germination and growth."

And with these smiling promises the meal ended.

In the morning, under a temperature of 32 degrees, the men were afoot. With feverish activity they set themselves to work.

One of the transition sheds was promptly converted into a hothouse. A second partition of planks was added to

the first and the space between them, as with the walls of the house, was filled with cinders and fragments of coal. Two portable fireplaces were placed at the ends, connected by tubes. At the same time four electric lamps were fixed in the corners. Finally, at the foot of the partitions, in narrow bands, the soil was dug up as deeply as possible after watering it with boiling water.

"But," said Lieutenant Hardy, "that is all labour in vain! Is the cold going to pack itself off at the sight of the kettle?"

"Patience, my dear friend, patience!" replied Hubert. "The cold must be kept away for a day only. You ask Monsieur Schnecker."

In fact the German seemed to like the work. He smiled with a knowing air and nodded his head.

In the trench dug round the hot-house was buried a rod of iron with its ends fixed to the two stoves. In this way the ends had only to be made hot to insure the soil having a constant and humid temperature by the melting of the surrounding ice.

"Very well!" said the still incredulous Hardy, "but where are you to get your mould from? Or do you intend to grow your vegetables cooked at the roots?"

"Know, sir," said the German, "that all soil will bear vegetation to skilful cultivators. As to the vegetables being cooked, they will not be that until after the crop."

From time to time the workers stopped to contemplate what they had done. They stood astonished, unable to believe their eyes. What! A hot-house, vegetables, fruits,

in 76 north latitude in the depths of the polar night, and at a temperature of forty below freezing !

But neither Hubert nor Schnecker said anything. They had only done half the work ; the more important half remained to be done.

They had to find the mould and the fertilizer. They could not dream of attacking the neighbouring rocks now frozen six or eight yards thick. To make a border conformably to the new rules of this improvised gardening, Schnecker first strewed a bed of cinders. But to this bed of cinders they must add a second layer of fertilizer. Where was it to be found ?

As they were asking themselves this the chemist exclaimed,—

"Bah ! It is not so difficult when we know how. The *Polar Star* contains all we want."

And next day twelve men, under Guerbraz, were ordered to get out of the steamer's hold as much sand and straw as was necessary.

These were heaped up temporarily in the middle of the hothouse where Schnecker subjected them to the needful chemical treatment.

Beaten and broken and reduced to dust the straw was cooked for two hours in boiling water. To this vegetable mash was added all the organic waste that was handy, and it required all the patience of a chemist enamoured of his art to go through with an undertaking as nauseous as it was fatiguing.

When this was done Hubert congratulated the German.

"My dear Monsieur Schnecker," said he, "we have now only to nitrogenize a fertilizer which already appears to me rather rich. What do you think?"

"I think that a man who has solidified hydrogen ought to have in his baggage a few litres of liquid nitrogen. That is the infancy of the art, or I do not know what I am talking about."

"That is it," said the lieutenant. "There is the nitrogen required."

And so saying he presented the German with a cylinder about forty centimetres long and twenty in diameter.

This cylinder, furnished like the others with a screw, was placed on a stand and put in communication with a barrel of thick glass provided with a double tube. The interior of the barrel was filled with a liquid mixture of hydrogen and carbon which have a strong affinity for nitrogen. With infinite precautions the two men opened the screw tap and allowed the liquid to fall drop by drop into the mixture, where, as it resumed its gaseous elasticity, it was absorbed with equal rapidity. This work of preparation lasted about two hours, after which the chemical manure heap received its first fertilizing sprinkling.

"Now," said Schnecker, "all we have to do is to keep our borders well watered."

"I will do that," said Isabelle, gaily; "what salary do you offer?"

"That is right!" said D'Ermont. "You shall name your own price."

"Well, then, I ask only one favour, that of mingling a few flowers with your vegetables."

"Bravo!" exclaimed the company. "We only want a few humming birds to make us believe we are in the Antilles or on the banks of the Amazon."

The manure was spread in a thick layer on the borders, and then covered with about six inches of sand. This sand was in turn watered with the ammoniacal mixture and then with tepid water.

"Now," said Schnecker, quietly, "we can sow the seed."

They let the bed rest for a day under the double action of the subterranean heat and the electric light which was strongly displayed in the globes of rough glass. Early next morning they scattered the seed on which they based their hopes of a crop. There was a square of strawberries reserved beneath the more direct rays of the lamps; radishes, salad, carrots, parsley, occupied the other beds. Along the walls, Isabelle sowed a few annuals, nemophilas, nasturtiums, and major and minor convolvuluses.

"And now we must trust to God!" said De Keralio, religiously.

From this moment, in truth, it lay with God to aid the efforts of man. The unhoped-for employment of hydrogen for the warming of the house produced marvellous results. If they had not had before their eyes the sight of the terrible polar winter, they might have thought it was spring, so mild and pleasant was the interior temperature.

On the advice of the doctors, D'Ermont was not too liberal in the use of the beneficent gas. There were many reasons for this prudent economy. The first was the very natural fear of expending too great an amount of a substance which was intended for invaluable purposes; the second, that this combustion of hydrogen, although considerably tempered by the passage of the gas through carbon, rapidly exhausted the quantity of breathable air contained in the hermetically closed apartments. The medicine men had conceived a certain amount of anxiety relative to the general health of the colony. To the first objection, Hubert had replied that he had enough hydrogen to supply three winters. But to the second he made no reply, recognizing that this quite abnormal temperature could not but have some effect on the lungs. And so it was agreed that as soon as the cold became milder, the old warming by coal should be recommenced, and the precious gas should only be used for the nitrogenized products of the earth.

In this state of quietude the middle of January was reached, when the sun began to announce his return by vague white streaks on the southern horizon. This was the dawn manifesting itself with a discretion bordering on parsimony.

But on the other hand the explorers had the frequent pleasure of admiring the marvellous aurora borealis.

These strange electrical phenomena were so numerous as almost to fatigue the natural curiosity of the observers, and each time their appearance was indicative of con-

siderable atmospheric perturbation. Terrible storms shook the ice, and the house, in spite of its timbers and its iron beams, only owed its escape from destruction to its sheltered position between two bare rocks.

On two occasions the ship seemed to be in danger. The awful noise which came in from the sea caused a fear that the pack would break up, and that the steel cradle under the united influence of the cold and the pressure of the outer ice would go down before the floe bergs.

On the 20th of January, Lacrosse, incapable of mastering his anxiety any longer, went out in company with Lieutenant Remois and six men. A thick snow, fallen the day before, made the journey very laborious, by reason of the frequent falls into the gullies hidden by the perfidious carpet of whiteness. It took them more than an hour to get from the camp to the shore. But once there, they had the immense gratification of seeing the *Polar Star* still in her position swinging in her cradle. The ice had piled up around her to such a height as to form an impregnable rampart to every attack from outside.

The only change in affairs that could be noted was that the bowsprit had become frozen in among huge blocks of ice, so that the ship might be pushed backward against the frame. On the return of the party, a consultation was held, and it was decided to clear the bowsprit as soon as possible by means of a jet of steam. The steamer's boilers were all ready, and in two hours the desired result was obtained, and the bow of the *Polar Star* disengaged from the embrace which was putting her in peril.

With the spring the time returned for excursions and hunting expeditions. But springtime at the Pole, which also begins there on the 21st of March, is one of those problematic entities the name and reign of which last but a few days. All the more need, therefore, was there to make the most of it in pressing to the northward either in the *Polar Star* or on the sledges.

Nevertheless, the fatigue that sledging causes after a long confinement within doors weighed heavily on the inhabitants of Fort Esperance. A few signs of scurvy, such as spongy, bleeding gums, swellings at the joints, toothache and neuralgia, and rheumatic troubles, determined the doctors to prescribe certain physical exercises as indispensable for the men. And consequently as soon as the February dawns were sufficiently prolonged to permit of a run of an hour or two, the inhabitants of the fort ventured abroad, notwithstanding the terrible temperature.

Thanks, however, to the fur clothing, to the warm baths and rubbings, the limbs were kept in a state of sufficient suppleness to support the fatigues and dangers on ground irregular of itself and rendered still more irregular by the ice. Besides being better fitted out than their predecessors, the winterers of Cape Ritter had no fear, like the sailors of the *Alert* or the soldiers of Fort Conger, of finding their beds frozen as hard as planks by the rigour of the climate; the extraordinary means of warming which they possessed had rendered easy the arrangement of a drying stove and a laundry, which, under the immediate direction of Tina Le Floc'h, rendered the

Fort Esperance people the immense service of keeping them constantly supplied with clean linen and bed clothes.

We must not omit the recreations. What is superfluous in temperate zones becomes indispensable at the Pole, and that is the necessity of keeping everybody in good humour.

The initiative in these things was left to Isabelle. Concerts were organized of vocal and instrumental music, and so much interest was taken in these matters that the programme was always criticized with interest the night before. On each occasion the entertainment was preceded by a banquet, and the bill of fare would have done honour to a cook of the temperate zones. Thanks to the numerous provisions brought by the expedition, and the reserve provided by the hunters of the party, fresh meat and preserved meat could be served, so as to give an agreeable change.

When it would become possible to add a few vegetables, the Sunday's dinner would become quite a festival. Besides, the ingenious mind of the sailor Le Clerc, aided by the experience of Tina, succeeded in treating pemmican and biscuits in many a novel way. Fellow-workers at the stove, the two Bretons promptly raised their culinary art to heights quite unsuspected by the vulgar.

This was not all. Other secondary occupations interested the men.

Three of the Eskimo sledge train had augmented the canine population by twelve new arrivals. These pups

had to be educated in shelter from the extreme cold. In spite of all that could be done three of them died, but the other nine attained robust youth.

And one of the most affecting sights of this cloistered life was to see Isabelle twice a day distributing the food to these little dogs, which daily grew bigger, and which she allowed to sleep in a well sheltered corner of the hothouse, where the three mothers came to look after them.

CHAPTER VI.

AN ACCIDENT.

THERE were daily expeditions from the 1st of March onwards. The last days of winter were at hand, and the moment was approaching when the sun would remain for months above the horizon. Such conditions were most suitable for walks abroad, and afforded wonderfully fairy-like views over the desolate landscape.

The district round Cape Ritter was bordered by gently sloping hills. From their tops a view over the whole country could be obtained, and when the atmosphere was clear the sight was one of the most beautiful it was possible to meet with.

And consequently Isabelle took the greatest pleasure in these excursions. When she returned on one occasion, she remarked,—

"In truth, I shall end by finding the Pole a terrestrial paradise."

But, unfortunately, there remained the keen, boisterous north wind to contradict these laudatory observations.

De Keralio was untiring in his cautions to his daughter as to the need of extreme care.

"We are now in a most dangerous period of the year, and not a day passes without innumerable fissures in the ice being noticed. The differences of temperature would be sufficient to explain their appearance if we did not know that the eastern coast of Greenland is washed by a branch of the Gulf Stream, and subject to elevations of temperature unknown on the western side, in Robeson Channel and Smith Sound. We must keep a constant watch on the state of the ground, for fear of being dragged away by some fall of icebergs or movement of glaciers."

This sensible advice was generally received with a shake of the head.

Cautious as she was in other things, Isabelle allowed herself to be carried away by the seductions of the landscape. Her nature was rather adventurous and enthusiastic, and she paid little heed to the warnings of her father and his companions.

A terrible affair soon showed the truth of this.

It was not only from the state of the ice that danger was to be feared; there were other dangers almost as serious to be guarded against.

In the early part of March Riez, Carré, MacWright and Lieutenant Hardy, who were the recognized hunters of the expedition, discovered, not without surprise, that there were tracks of wolves and foxes at a short distance from the camp. One morning these tracks were found to be mingled with the deeper footsteps of heavier animals, and there were recognized, not without satisfaction, the forked marks of several large ruminants.

The news was welcomed at the fort.

It showed that there was game again in the neighbourhood, and that there would be a good deal of fresh venison. It also showed that the summer would be unusually early.

In fact, on the 10th of March, during a temperature of fifteen degrees below zero, which was the mean of the month, the hunters had the extraordinary good fortune to fall in with a herd of five musk oxen. Four of these were killed, and their flesh was at once transferred to the larder.

But on the twelfth Lieutenant Pol, going out about two o'clock in the morning, without weapons, found himself unexpectedly in front of a white bear of gigantic dimensions. The animal, like the rest of his kind, immediately turned and fled, and this enabled the officer to beat a judicious retreat.

He had not gone a kilometre towards the fort, when he saw the bear returning towards him at a trot, which would have soon brought him to close quarters if luckily some of the sailors had not noticed the animal and recognized the lieutenant's danger.

To run up with loud shouts and open fire on the bear was the work of a moment. The brute, finding he was foiled, again turned on his heels and disappeared, not without leaving a trail of blood behind him showing he had been hit.

To their great disappointment the hunters could not come up with him.

The flesh of the bear enjoys a well-merited reputation for flavour among the people of the North, and polar explorers esteem it above all others.

In the evening there was a good deal of talk about the adventure, and next day nothing else was spoken of between the acts of the stage play that was being performed. And so great was the excitement that the sailors improvised on the spot, and performed amid general applause, a spirited pantomime, reproducing with considerable fidelity the morning episode of the day before.

It was hoped that the plantigrade would reappear during the following days. He did not show himself. It was supposed, too readily apparently, that he had changed his haunt, having found the neighbourhood of Cape Ritter somewhat unpleasant.

The minds of all had to be made up to the loss. There were to be no bear paws and no bear steaks, such being the most esteemed parts of the animal. The two Eskimos, Hans and Petricksen, attached to the party, made up for these by plenty of fishing, in which seals and walruses figured for two-thirds, and the rest consisted of fish of the conger and salmon families.

By the twentieth of the month the incident had been forgotten, and Isabelle, who had been careful enough during these few days, lost all her fear and resumed her adventurous explorations on the shoal ice and glaciers of the fiord.

Faithful as a dog, and always accompanied by the brave Salvator, Guerbraz was in attendance during these excursions.

On this particular morning, which is famous in Paris for the flowering of the celebrated chestnut tree of the Hundred Days, Isabelle had ventured out on the glacier which looked down on the bed of the *Polar Star*.

The steamer was gradually becoming liberated, and already rested on the surface of the year's ice, which her keel was beginning to furrow. The walls, or to speak more accurately, the icy plating which had served her as impenetrable armour, was melting off her under the action of the abnormal temperature of the spring. Through the rifts in what had fallen, the steep grey rock appeared, which formed the rampart under which the ship lay in shelter from the storms that blew in from the sea.

It was in this direction that Isabelle went.

She had been thinking for some days of scaling the enormous blocks which surrounded the steamer. The steamer had listed over considerably, and her yard-arm sloping to starboard formed a convenient ladder up which Isabelle was helped by the herculean strength of Guerbraz.

The blocks were piled up in a kind of giant staircase, up which Isabelle went with the suppleness and activity of a deer. But instead of getting to the top as soon as possible,

she stopped to jump from shelf to shelf, heedless of the advice of Guerbraz, who was literally terrified at this reckless audacity.

Suddenly, as she turned to go straight up, she stopped and gave a scream of terror.

She was a hundred yards at least from her faithful companion. At her scream he hastened towards her, knowing that she must be in imminent danger. As he reached the highest of the blocks of this titanic staircase, he found the explanation. Less than ten yards away on the other side of a fissure less than a yard across, was a gigantic bear, doubtless the one which had chased the lieutenant and escaped. It was balancing itself in a regular movement, swinging its large body on one side as it swung its little head on the other. It was evidently hungry ; it shook its paws one after the other, and opened and shut its mouth from which it now and then hung its red tongue, like a dog wanting water.

"Come back, mademoiselle, come back!" shouted Guerbraz in despair.

Isabelle heard him and turned. She tried to retreat. The bear, seeing, doubtless, that his prey was escaping him, made a step forward, and venturing all his body across the fissure, placed his paws on the opposite side with a smack of the jaws and a low growl.

Guerbraz had snatched his revolver from his belt, and at the same time the good axe he was never without. Anticipating the bear's attack, he was already about to leap on the block of ice which supported Isabelle and her

terrible enemy, when there occurred a phenomenon unexpected, but which might have been foreseen.

At the pressure of the plantigrade's enormous paws, the fissure opened deep down. Probably it had existed for some time, as it opened so easily. Borne down by its own weight, the bear fell into the crevasse, while the heap of blocks shook as they broke away from the rest. Under the pressure, the icefloe around broke off, and a column of water rose in a wave and dashed up obliquely to the iceberg which, breaking away from everything, began to drift off, probably in a warm current, which swept along the ledge of the fiord.

It was now the turn of Guerbraz to be afraid. He also raised a shout.

What had happened was not without precedent, not only in the records of the past, but in the journal of this very expedition. Floebergs and entire fields of ice had been observed to break off from the glaciers of the coast and drift out to the warmer depths of the ocean, where they melted with extraordinary rapidity.

Isabelle was thus in a critical position, all alone on her moving island; although at this time of the year the block could not drift very far, the way not being open through the pack.

It did not drift more than a hundred yards. It had left the bare rock behind it, and in the place it had occupied was a gap of water which soon became covered with ice.

Guerbraz was in despair.

He raised his revolver and fired in the air to warn his companions who were out hunting.

As the huge floe grounded on the ice-field and made it groan beneath its weight, he saw Isabelle standing on a sort of shelf which overhung the level of the field by about a hundred feet.

Matters were becoming more and more critical.

To rescue her, Guerbraz slipped as quickly as he could down the slope he had climbed. He had to get round the ship and then the creek before he could reach her. He did not hesitate an instant, and notwithstanding the crevasses, he leapt from ridge to ridge over hummocks and mounds and finally reached the frozen surface of the fiord.

But there a new sight petrified him with horror.

The wind blew, although feebly, in shore. The bear, notwithstanding its bad fall, which had been considerably broken by the water, had got on the ice again, and was hurrying towards the peak or ledge on which was Isabelle.

Guerbraz shouted loudly to distract its attention.

The plantigrade hesitated a moment. Then with the same swinging of the body, it continued its advance towards the iceberg.

The sailor, mad with grief, shouted to Isabelle,—

"Try and get away down and come to me."

Placed as she was, she could not see the animal approaching her. But she knew that the Breton's shout meant imminent danger.

Running to the edge of the shelf, she tried to get down. Alas! the edge broke away vertically under her. The wall of ice had no breaks in it. It was as smooth as marble.

She waved her arms. The wind bore her voice towards him, and Guerbraz heard but the one word,—

"Cannot."

On the other side of the block the bear, now hidden from the sailor's view, began to scale the berg. Its laborious ascent can be imagined.

Never had poor Guerbraz suffered so cruelly.

A desperate resolve came to him. He rushed to the foot of the floeberg, and opening his arms, prepared to catch Isabelle as she slipped down.

It was a mad resolve, but justified in a great measure by the confidence he placed in his almost superhuman strength.

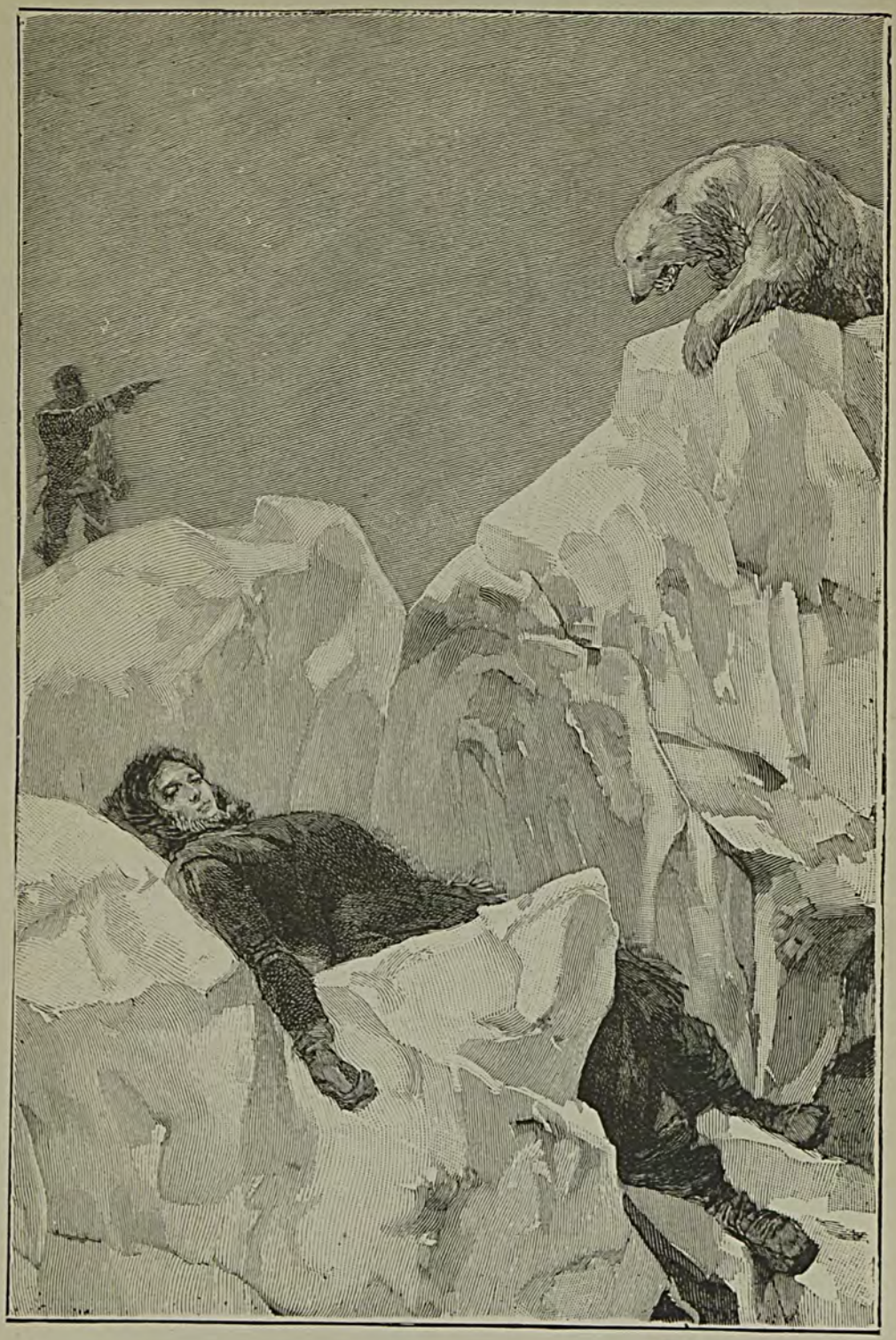
Isabelle shared in that confidence, for, approaching the edge, she measured with a glance the height of the fall. The sight frightened her evidently, for she stepped back to the ledge.

But at the same instant there appeared the head of the bear, with its bloodshot eyes and red throat. The girl, overcome by her feelings, tottered and fell in a faint.

Guerbraz took the best aim at the brute that he could, and the bullet entered the bear's left eye.

The monster, made more furious by the wound, gave a hoarse growl, and hurried towards his inanimate prey. Isabelle was lost.

But then for the second time occurred the phenomenon which had just detached the floeberg from the coast. The peak shook, cracked, and, splitting all along its length, divided into two huge masses. The bear was



GUERBRAZ TOOK THE BEST AIM AT THE BRUTE THAT HE COULD.

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thrown back, while Isabelle slipped gently down and disappeared over the crevasse which had just opened.

This was not the same kind of death for her, but death it was, none the less.

Without another thought for the bear, which had fled, seized with terror at this second misadventure, Guerbraz leaped towards the crack, at the risk of being swallowed up himself.

He could see Isabelle had fainted, suspended between heaven and earth, hooked up by the thick cloak she was wearing. If the ice moved again, she would be hurled into the horrible fissure, and one of the blocks around would be her tombstone. All seemed lost, and without some providential intervention Isabelle De Keralio was doomed.

But just then, on the rugged bergs, some of the hunters appeared. Attracted by the two shots fired by Guerbraz, they had come up to see the bear's flight and Isabelle's fall. Ten men leapt on the floe and set about saving her.

Alas! All their efforts would have been in vain had it not been for Salvator.

The good dog did not hesitate.

In a few prodigious leaps he had reached the crevasse, and with wonderful dexterity had gripped the cloak in his teeth and carefully drawn it over the outer slope of the chasm, where Guerbraz and his companions could catch Isabelle in their arms.

In a minute or two a sort of stretcher was formed with guns and hunting spears, on which to carry the inanimate girl.

At the fort the consternation was great, but Dr. Servan and his colleague promptly reassured the colony.

Isabelle was condemned to a week's rest. Had she not to recover all her strength before her departure for the North ?

The return of the sun not only marked the end of the cold, but the end of the imprisonment. From the depth of every heart rose a hymn of gratitude and blessing towards the Creator.

The moment had come to enter resolutely on the campaign, and advance without a pause towards its last stage. Once the 85th parallel was reached, they could hope for final triumph, if the land continued beyond the horizons that were seen by their heroic predecessors.

Many there were, all perhaps, who regretted leaving Fort Esperance. They had been so happy there. What would they find in this unknown towards which they were about to start ? Could all the wonders realized here be reproduced further to the north, if the camp were established on the same bases and with the same foresight as it had been at Cape Ritter ? But the very hypothesis of a journey direct to the Pole rendered this eventuality quite problematic. It was to be a life under tents added to a life on board ship, if the rigours of the Pole allowed.

But the time taken in preparations was spent by the explorers in further preliminary excursions. D'Ermont and Pol were the first to try the Polar route. Their observations confirmed those already made by De Keralio and Doctor Servan. The coast of Greenland trended off at Cape Bismarck, and unless there was a long peninsula, of

which there was no evidence, it no longer deserved its name of east coast, inasmuch as it ran towards the north-east.

After the 20th of March the ship was prepared for the reception of the explorers, who began to take up their quarters on board. In order that they might not be inconvenienced by the change, Hubert, with Schnecker's assistance, set up the hydrogen apparatus, and such was the effect of the radiation of the heat on the ice, that the cradle, gradually relieved of the lateral pressure, let the ship down. Jets of steam were then turned on, with a view of assisting in breaking the ice up, and on the 1st of April the steamer's keel sank through the thin coating and resumed contact with the water.

Then the wooden house was taken down and its materials brought on board. This was not the lightest task nor the easiest. The cold was still very great, and in the course of the work several of the men who had hitherto escaped were seriously afflicted, owing to their neglect of the precautions that were daily advised. One or two amputations of frost-bitten fingers had to be undertaken, and the infirmary of the *Polar Star* received six patients, more or less gravely injured, before the time came for the vessel to leave the sheltering fiord for the open sea. Nevertheless the enthusiasm of the crew continued unabated. The sun had called to new life the gaiety which had not seriously suffered during the long darkness of the winter months. But what contributed more than all to revive the enthusiasm was the appearance of the crop about the 10th of April.

The greenhouse had been left untouched. Who knew if they would not again have to seek the shelter of Cape Ritter? It had consequently been converted into a store, and in it had been deposited all the reserves of fresh meat that had not been used up, and which were due to the guns of the most skilful hunters of the colony.

The greenhouse had yielded astonishing results. Under the four electric suns of the lamps, and owing to the constant heat, the nitrogenized sand of the borders had produced as much as the rich mould of the temperate zones. There had been yielded from eighty to a hundred carrots, thirty boxes of radishes, which the sailors declared were of excellent flavour, a dozen boxes of landcress, and more than a hundred and forty heads of lettuces.

The fruit was not so abundant. There were not quite two salad bowls of strawberries, but their want of colour was the cause of some disappointment, although with the addition of sugar they were declared to be miraculous. Isabelle was able to gather a nosegay for herself besides enough flowers to give as buttonholes for all the crew, and it was with this new-fashioned decoration that the whole party, in health and out of it, took part in the farewell banquet given on board the steamer. Long and uproarious cheers greeted the heroine who was at one and the same time the beneficent fairy and the sister of charity of the expedition. And after that the party broke up, not without profound emotion.

Captain Lacrosse was again in charge of the crew he deemed necessary for the working of the ship. He also took on board the sick and wounded, and their presence

decided Isabelle to remain with them in company with her faithful nurse. Doctor Servan with some regret gave up his place in the land column to Le Sieur.

It was agreed, however, that this column should keep to the coast, parallel to the course of the ship, so as to remain in communication with her as much as possible.

On the 20th of April, after a strong breeze from the south, the sky seemed clear of cloud, and the sun, already high on the horizon, raised the temperature to two degrees. This difference in the height of the thermometer was announced by long crackings from the open sea ; and on the 21st De Keralio and Lacrosse, ascending one of the neighbouring hills, saw a wide channel of open water extending to within 600 yards of the shore.

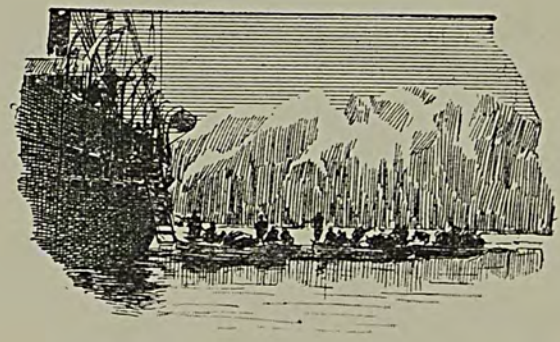
On the 26th the floe on which lay the *Polar Star* split along its entire length, and all that remained of the scaffolding had to be hurriedly taken on board. Gradually the floe broke away, block after block, and drifted out to sea. So rapid was this drifting that the men of the land expedition had no time to disembark, and had to stay on board until the steamer could get quite clear and put them ashore at Cape Bismarck. This was effected on the 30th, the *Polar Star* not being able to extricate herself until she had drifted half a degree towards the south.

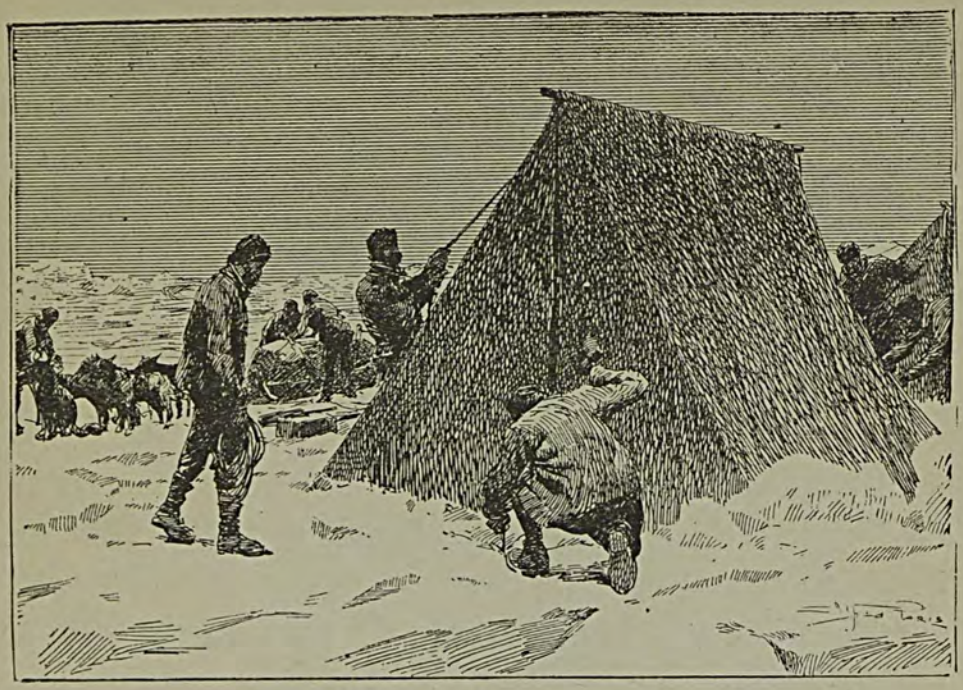
On the 1st of May the final landing took place, the exploring column consisting of De Keralio, D'Ermont, Hardy, Doctor Le Sieur, and the sailors Carré, Leclerc, Julliat, Binel and MacWright. In charge of the men, as first boatswain, was Guerbraz.

To compel the party to keep in constant communica-

tion with the ship, only three days' provisions were taken. This was the best way of controlling the victualling, and it also meant the minimizing of the baggage. The march under such circumstances would be all the easier. Unless a catastrophe came which it was impossible to foresee, they should reach Cape Washington in a month, for it was only 350 kilometres away.

The fine season was of immense assistance to the explorers. There had been some fear lest the *Polar Star* could not go northwards. But on this point the witnesses were contradictory. Nares and Markham, who were stopped on the 12th May at 83° 20′ 26″, had nothing before them but the unbroken pack of the palæocrystic sea. Lockwood and Brainard, who reached 83° 23′ 6″, had to retreat on account of the dislocation of the ice and the presence of numerous channels in the pack. Which was right, the English or the American view? They were soon to find out for themselves.





CHAPTER VII.

CAPE WASHINGTON.

THE first stage appeared to show that the English were right.

The column had not gone ten miles to the northward before it had to stop. The steamer was lost sight of.

It was manifest that the *Polar Star* was engaged in a bitter struggle with the ice, and would have to force her way foot by foot. As far as the travellers' view could reach, the sea was covered with ice. It was a gloomy plain, varied in places with low humps and chains of hummocks. There was nothing moving on it, and this silent immobility gave it a most desolate appearance.

The column halted and pitched its tent. They were to bivouac until the arrival of the ship. If it did not come, that would be proof certain that they would have to renounce the hope of the voyage by sea.

All through the night they waited with eager hearts. No one had cared to anticipate this discouraging eventuality. And no one resigned himself to it; and when they thrust themselves into their sleeping bags, notwithstanding the mildness of the temperature, regret at having left their comfortable house was added to the irritation caused by hope deceived.

"My friends," said De Keralio, "to put an end to this painful anxiety, the best thing we can do is to adjourn our conjectures until to-morrow, and to go to sleep."

They did not sleep very long. Towards midnight the wind rose, a wind from the south which gave the key-note to the clamours of the pack. The short hours of the morning were full of these lugubrious rumours, and the travellers, unaccustomed during the winter to sleep in the open air, were a long time getting used to them; and it was with unmixed joy that they saw the day reappear.

Terrible crackings were still echoing to the roaring of the wind, and several times the ears of those who could not sleep had recognized the hard, sharp beat of the waves on the coast ice; and hope returned to them, for the noise was of good augury and foretold the breaking up of the ice field.

And yet those who heard it first dare not confide their hopes to others. Knowing how cruel a disillusion would

be to themselves, they preferred to spare their sleeping companions.

But when dawn came there could be no doubt of it. It was the sea, the green salt sea they had under their eyes. Of the immense ice field of the night before there was nothing but a few gigantic fragments here and there, drifting to the east in a current visible to the naked eye.

At the same time a peculiarly shaped cloud was noticed on the southern horizon.

There could be little doubt but that this cloud was the smoke of the steamer. The *Polar Star* had overcome the obstacle, and was now coming full speed in search of the explorers.

A long hurrah saluted this apparition. Henceforth they were at ease. Lockwood was right. The palæocrystic ocean did not permanently exist. The sea was open in front of the navigators who, however, knew how careful they would have to be, for those sudden clearances are quite as quickly succeeded by the return of considerable packs. Fortunately the wind varied but little, leaving the south for the south-east only, and then returning to the south. At six o'clock in the morning the *Polar Star*, after exchanging signals with the land party, went on in advance of them towards the north. They would only see her again on the 78th parallel, which was the farthest they could go without revictualling.

On reaching this point in a temperature of fourteen degrees, the first squad went aboard the ship. This was on the 8th of May

But thereupon the ship experienced another misfortune. The wind suddenly jumped round to the north-west, and in less than two hours, ice overspread the sea. At the same time the thermometer went down to twenty-eight degrees below zero, a really severe temperature in a season which many times already had seen the mercury at zero and even at two degrees above it.

The ship must evidently seek a refuge in some indentation in the coast. Two days were passed amid intense anxiety, for notwithstanding the lowering of the temperature, which did not stop until it stood at thirty-four degrees, a tempest sprang up, dashing the blocks against each other and against the ship.

In this truly critical situation, Captain Lacrosse suggested an essentially practical expedient. The guns of the *Polar Star* were loaded with dynamite shells, and fire was opened on the coast ice, with the same care and vigour as if on an army of human besiegers. At the same time, as there was no want of water, a jet of steam was kept playing on the floes. After thirty-eight hours of this battle of the giants, the crew, exhausted by their efforts, could enjoy a little rest, which they had well deserved.

On the 5th the march was resumed, and the steamer took advantage of a long strip of water which had opened along the coast. Going full steam ahead, they left the land expedition behind, and at a speed of fourteen knots ran the 150 kilometres which still separated them from the 80th degree.

There she dropped anchor. The weather was terrible.

The snow storms continued without interruption, and the cold had returned and made the working of the ship most painful.

For the first time Isabelle rather regretted her resolve. Not that she feared for herself, although her sufferings at these times were beyond the strength of ordinary women. But the brave girl sympathized with her companions in their misery, and among them was one whose troubles appeared especially great. The nurse, Tina Le Floc'h, had not recovered from the bronchitis contracted at the beginning of the expedition, and she was now coughing in a most alarming way.

When he heard this cough, Doctor Servan became gloomy and frowned ; he had done all he could for his patient, and he knew there was but one way of restoring the poor Breton to health, which was to send her back to her native land.

But unluckily they were then too far from France to hope for a sufficiently prompt return. Certainly there was not a member of the expedition who would not have sacrificed all its results to prolong the days of the good nurse. Alas ! The sacrifice would have been entirely lost. Even if they were to start for the south at once, it would take three or four months for them to return to France, and that under the most favourable conditions. And in the present state of the ocean it was to be presumed that with the ice open from the north, the ship would be shut in to the south.

There was only one resource, and that was to clear

out as soon as possible from the dangerous embrace of the tempest, and land on some part of the coast where it would become possible to form a summer station in which to prepare for the approaching winter.

On the 10th of May, the thermometer still stood at twenty-four degrees. The snow having ceased for a little, the sky became visible. From the topmast cross-trees a good view of the surrounding landscape was obtained. It was a scene of appalling desolation.

Whither did this land of Greenland extend ?

The shore was now running to the north-east. A peninsula of immense cliffs over two thousand feet high rose in an impregnable wall, and these walls of mica, schist and syenite showed not a single break, not a single port in which a ship could shelter.

At this picture a sort of religious terror was produced among the crew. A few of them were discouraged, and gave expression to this discouragement. One of them gave the coast a name, which happened to catch the fancy of the forecastle and furnish some amusement :

"The barrier of the infernal !"

And never was comparison more apt. That long uninterrupted line was evil to gaze upon, and the *Polar Star* looked but a miserable straw at the foot of that mighty palisade. At the same time the strip of open water moved further out along the shore, leaving a ledge of ice three good miles in width.

The impression of weariness and superstitious fear re-

appeared on the 12th. The ship had been at her station at the foot of the cliff beyond the time agreed with the land party, and news of them should have arrived a day before. From the ship it was impossible to explore the elevated coast. But what was not possible to sailors on board ship might be so to travellers on foot. There was nothing to prevent them from communicating by means of firearms, and signalling their arrival in these desolate regions.

The anxiety became acute on the 13th. The land party had not reappeared, and on board everyone was in fear for them. They must have exhausted their provisions, and there was no means of taking help to them.

What could be done?

The officers held a consultation, and the boatswains were allowed to join in. Such was the general anxiety that the second boatswain, Riez, proposed that the ship should go back, and none but Lacrosse and D'Ermont could say a word against it. And this desire to retreat was encouraged by the report of the look-out, that enormous ice floes were in sight.

Captain Lacrosse, bitter at heart, was about to give the necessary orders for this movement to the rear, when Isabelle entered the saloon.

It had come to be the custom to speak openly before her, and to conceal nothing of the decisions that had been arrived at. In a few embarrassed words Lacrosse told her of the determination to which they had just been led.

He could not help showing that he was not of the opinion of the majority.

"As for me," he said, "I have always thought that the man who advances has far more chances than the man who retreats, and that to say nothing of courage, our very interest counsels us to remain here and not to go back."

Isabelle waited only for this. She exploded.

"What!" she exclaimed. "Are we to be stopped by this? What! Because we are in face of a disquieting probability, are we to give up without a fight a position we have won, a victory which everything promises us? Do you not see that to retreat is to irretrievably ruin the expedition? We must do one of two things. Either we return direct to France; or we return to Cape Ritter. In that case what do we gain? A retreat of four degrees cannot improve our position. We are at the gate of the fine season, and less than one hundred and sixty miles from the point which Lockwood and Brainard, in want of provisions, reached on foot. We have provisions in abundance, and more, we have means which none before us possessed, and we have verified their efficiency. Are we to give up the game? Are we to declare ourselves beaten at the first obstacle? Can you not see that this cliff must be nearing its end, and that by the very nature of the soil this rocky coast must give place to low lands much cut into? Is it for me to remind you that schistose rocks are but accidents of the ground, intermittent upheavals of the terrestrial crust? To-morrow, after to-morrow, or later, the sun will raise the temperature and the sea will be open; the floe that has just

been reported can but be a last patch of the pack we have just traversed."

She spoke with emotion, with communicative conviction. The company hesitated. A final argument overcame all resistance. She continued,—

"And our friends, our brothers on the land, are we to abandon them? Why search for them towards the south, when they are much more likely to have gone towards the north?"

She was right. There was every likelihood that the explorers, finding it difficult to keep to the cliffs, had cut across the peninsula. To retreat was to leave them without provisions on this inhospitable shore.

"Come, gentlemen," concluded Isabelle, supplicatively, holding out her hands, "one more effort, one only; everything tells me that we shall soon reach the end of this rocky wall, for some more favourable cape that the mist now hides from us; and that under the 81st parallel. Come! Cheer up for our own glory and for that of France!"

The men rose as if they were electrified. One shout gave they all,—

"Forward! for the honour of France."

And Captain Lacrosse, going on deck, gave orders for more steam.

Isabelle was right, and once again the adage that "Fortune favours the bold" was justified. The pack that had been sighted seemed to clear away from the *Polar Star*, and the sun emerging from the mist showed a blue sea on which there was but a floeberg here and there.

Ten miles to the north-west they could perceive the extremity of the cliff ending in a low narrow cape. The steamer was hurried along to it at fifteen knots. When she reached the end of the promontory the radiant ocean extended out of sight to the north, while the Greenland coast ran away to the north-west.

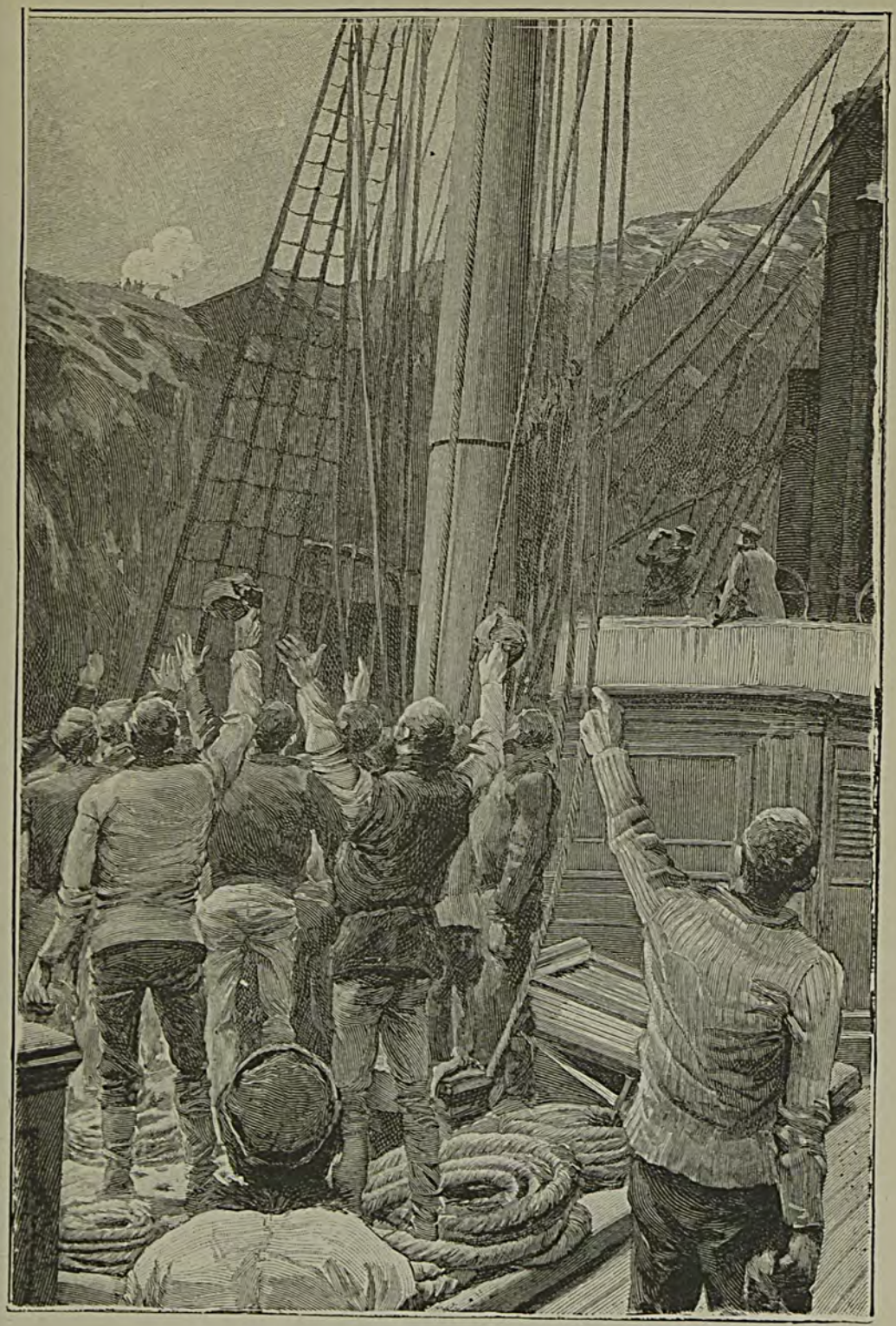
Suddenly, in the silence of admiration which followed this discovery, there was a report. The eyes of all turned towards the coast. A puff of white cloud rose on the crest of the lowest cliffs. The explorers were there.

On the deck of the *Polar Star* excited cheers responded to the shot, and the ship, nearing the shore, cast anchor beyond the point so gloriously doubled.

"This cape," said Captain Lacrosse, "can only bear one name, that of the heroic woman who inspired us with courage. We will call it henceforward, Cape Isabelle."

Again there was a triple round of clapping. Then two boats left the ship and reached the sandy shore of a lovely bay. Half-an-hour later the whole of Lieutenant Hardy's men were on board; and a third detachment took their places.

The voyage was then resumed on a favouring sea. Twice again did the *Polar Star* put in for the purpose of relieving the detachments. At last, on the 28th of May, four weeks after the departure from Cape Ritter, the steamer dropped anchor at the most northerly point of Greenland in 83° 54′ 12″. There the coast ran off to the south-west. On the horizon was a bay, which they recognized at once as the eastern arm of Conger Inlet in Hunt



EXCITED CHEERS RESPONDED TO THE SHOT.

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Fiord. Lockwood Island was in the centre, and at the end of the wonderful panorama were the black rocks of Cape Alexander Ramsay.

They had reached the promontory which the two heroes of the Greely expedition had named, without being able to reach it, after a name dear to all American hearts. This was Cape Washington. Up to the present all competitors had been distanced. France had gone farther than all.

The delight of the crew was boundless; it almost reached delirium. They shouted, they wept, they kissed each other. Some of the sailors began stamping their feet, walking on their hands, and dancing most fantastically. Now they believed themselves sure of final success. They had but 6° 4′ or 606 kilometres, and they would reach the Pole itself.

The sky continued propitious. This coast which Lockwood and Brainard had found bordered with ice in 1882, but which they had seen the ice break away from the following year, was now free from its frigid girdle.

The first work to be done was to complete the map. It took six long days, but this was permissible to explorers who had been over the whole of the ground. Although the heat was not as great as usual, the year promised to be exceptionally mild, and the thermometer quickly rose to really extraordinary levels. The temperature, which at first did not exceed nine degrees, stood on the 8th of June at sixteen and on the 10th at eighteen; so that there were complaints of the heat of the sun.

But this abnormal rise was of great service to the travellers. In the first place it allowed of excursions into the interior and along the coast. They were thus enabled to discover that the arm of the sea called Hunt Fiord by Lockwood, was a regular gulf between Cape Washington and Cape Kane, from the latter of which began a series of cliffs forming the coast of Conger Channel, which in turn communicates with Weyprecht Fiord, to the south-east of Lockwood Island. Beyond this island they could see no further than the extreme point of Cape Ramsay, but they recognized with scrupulous care all the discoveries of their predecessors. Hazen Land, terminated by Capes Neumayer and Hoffmeyer and bounded by Wild and Long fiords. The vegetation on these different table-lands appeared strangely abundant for such latitudes. The presence of bears and musk oxen led to profitable hunting expeditions, to say nothing of lucky shots at eider ducks, ptarmigan, dovekies and lagopedes. Finally, on the 12th of June, with the sea open to the north, it was decided to land, and build the house in preparation for the second wintering.

The site was carefully chosen from the shelter of the northerly winds, under a barrier of lofty hills. It was found by observation that Cape Washington is situated in 83° 35′ 6″ north latitude, and 41° 12′ west longitude. There remained consequently 1° 24′ 54″ or 141 kilometres 484 metres to traverse before they reached the 85th parallel.

What would they find under that parallel? Would it

be a new land—an island dependent on Greenland, but nearer the Pole? Or would it be a vast glaciated continent extending to the Pole itself, and perhaps beyond it to almost the north of Siberia, here and there jutting out a peninsula, of which Franz Josef Land, discovered by Payer in 1871, was a promontory?

As far as they could see to the north the water was open. Captain Lacrosse took advantage of it to go out as far as possible from the station being built, to fix the positions of the line of coast he had sailed along to Cape Washington.

The shortness of the summer, which does not last more than two months at the Pole, compelled the leaders of the expedition to make the best possible use of the exceptional position in which they found themselves; and De Keralio called a meeting of them for the purposes of consultation.

There was an almost unanimous opinion in favour of an immediate reconnaissance to the northward. In consequence of this everybody went on board ship again, and a start was made out to the open sea.

At the end of the first twenty miles several gigantic floes were met with, drifted probably from some fiord transformed into a glacier. All these fields of ice, these icebergs, apparently, moved towards the east and south-east, proving the presence of a very warm current in the inviolate Greenland seas.

Ten miles further on the ship had some difficulty in finding a way through the innumerable fragments of the

old palæocrystic field. The voyage was becoming embarrassing, although it was favoured with constant warmth which was breaking up the pack they were evidently approaching. They had passed the 84th parallel, and it was hoped they would be among the floating blocks at daybreak.

But on the morning of the 18th of June the look-out cried "Land-ho!" and about ten miles to the north they could distinguish a continuous chain of not very lofty mountains, hemmed in by a border of ice.

The *Polar Star*, changing her course, began to coast along the obstacle, trying to find an opening leading westward. The belt of ice did not seem to diminish or to break up. The evidence was unmistakable. The sea was closed against the explorers.

They fixed the position of the coast, while the ship tried in vain to anchor in 200 fathoms or more. They were evidently near a very steep shore, and the ship's position was dangerous.

De Keralio again consulted his officers.

"Gentlemen," said he, "up to the present we have every right to be satisfied with the result of our efforts. No man has gone as far as we have gone towards the Pole, for we are now in 84° 35′ north latitude. Had it not been for the regrettable barrier the pack opposes to us we should have gone on to the 85th parallel. But what a ship cannot do I intend to accomplish over land. Barely twenty kilometres separate us from the island in view. I will take command of a few men and endeavour to reach it. We will take

provisions enough for a long journey, and, with God's help, we will reach this unknown spot of the globe which for so many years has been the object of so many heroic attempts."

There were a few who endeavoured to dissuade the old man. He refuted all their objections. His age did not hinder his attempting such an enterprise. He had not come there only for the purpose of going back, and he considered he was justified in calling on his companions whom he had brought here at his own expense, in order that, without egotism, he could claim the merit of the discovery.

"I am persuaded," he exclaimed, in an outburst of enthusiasm, "that beyond that unexpected barrier we shall find the open sea."

In face of this energetic will backed up by unshakable conviction, De Keralio's companions gave in; and all that could be done was to carry out the intention.

On the 21st of June, in the morning, the largest sledge was landed on the ice, and arranged for the reception of one of the boats in the event of there being any strips of water to cross. As De Keralio was about to try a decisive experiment, it was decided that it would be better not to leave the balloon behind. A second sledge and then a third sledge were put on the ice, and received the sections of the balloon and the submarine boat.

Up to that moment the most impenetrable secrecy had been kept with regard to these two means which were to be employed together or separately. The explorers had

great hopes of them—of the balloon in particular, considering that aerostation was still the safest resource in face of the obstacles offered by the pack ice. In this opinion De Keralio joined.

It was necessary that the party should be numerous to cope with the difficulties of sledging, and to work the apparatus they were taking with them. The *Polar Star* was thus left with only her own crew. Isabelle remained on board with the invalids, as also did Tina Le Floc'h, who helped as well as she could with the little strength that remained to her. Captain Lacrosse kept with him Lieutenants Pol and Hardy, and Doctor Le Sieur. No consideration this time could prevent Servan accompanying his friend Keralio on an expedition of which all recognized the importance. It was the same with Hubert, whose presence among the explorers appeared indispensable for working the contrivances they were taking with them.

They did not even wait for the morrow to set out. They were not sure of the stability of the pack, and it was as well to let the *Polar Star* get away into safety as soon as possible.

The steamer was to try east or west for a way through to the land in sight, and to keep up communication with the explorers. If she could do this all would be well. In case she could not she was to endeavour to find some point on the coast, and there land provisions for the explorers on their return, and build cairns to protect these stores. Finally, it was agreed that if the land in sight

were an island, the explorers would return within three weeks.

These understandings having been arrived at, the column departed over the ice-field, while the steamer headed off to the eastward.

She was only just in time to get away from the belt of ice.

On the night of the 22nd of June, a frightful storm broke out over this part of the sea. By the violence of the waves, by their truly prodigious height, the sailors inferred that the water was of considerable depth. For two days the steamer struggled against a foaming expanse, on which gigantic icebergs were leaping as if they were monsters intent on destruction. There were sudden falls in the temperature which took down the thermometer from eight to four degrees, and brought on snowstorms which were quite unexpected at this season of the year. Finally, on the 24th, the *Polar Star* was in calm waters, almost entirely clear of the dangerous fragments. She had gone up six or seven miles to the north, and was in 0° 0′ 3″ east longitude, halfway to Spitzbergen.

There was no use in going further east. There was no land on the horizon, but here and there were a few floes gliding heavily on the gently heaving waves. The steamer therefore headed boldly towards the north, and reached the 85th parallel.

It was with shouts and cheers that they saluted the crossing of this latitude, the highest reached up to then Captain Lacrosse called the crew together and pronounced a short allocution in the presence of Isabelle De Keralio

who received a warm ovation. The weather was superb; the thermometer stood at six degrees. Not a cloud stained the azure of the sky or threw a shadow on the cerulean robe of the ocean. Had it not been for the presence of a few wandering floes, they might have thought they were in the temperate zone. And finally, as an additional pleasure to all, the four invalids were able to come on deck and share in the general rejoicing.

As a record of their crossing, the sailors threw over into the sea a barrel, in which they had carefully enclosed the following declaration written on parchment:—

"To-day, Saturday, June, the ship *Polar Star*, De Keralio, owner, Bernard Lacrosse, captain, Lieutenants Hardy, Pol, and Remois, Doctors Servan and Le Sieur Schnecker, chemist, with Isabelle De Keralio, passenger, Corentine Le Floc'h, her nurse, and twenty of the ship's company, of whom six are ill, but not seriously, after having landed in eighty-four degrees north latitude, and forty-one degrees west longitude, De Keralio, chief of the expedition, H. D'Ermont, Lieutenant, Doctor Servan, Chemist Schnecker, Lieutenant Remois, twenty of the crew under Guerbraz, first boatswain, and thirty dogs, all on an exploring party, crossed the 85th parallel at eleven hours forty-four minutes a.m. Sky clear; sun superb; temperature seven degrees; no land in sight. Vive la France!"

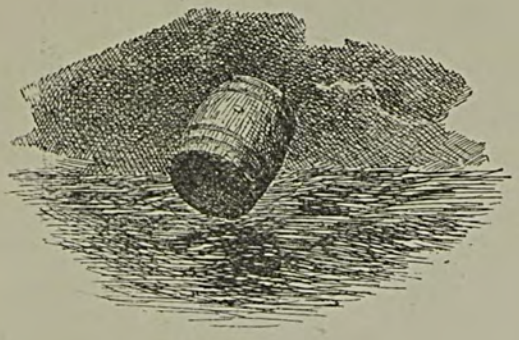
And then followed the signatures of all present.

The cask was taken to the stern where the gun had been

loaded. Isabelle was invited to fire it, and she did so; and as the cask fell into the sea, the gun bellowed forth in its voice of bronze, as excited hurrahs greeted the explosion.

There was a banquet at which all sat down, and numerous toasts were drunk to the success of the expedition.

As there were only four days before the 1st July, and no confidence could be placed in the stability of the calm, Lacrosse decided to steer for the westward, so as to pick up the exploring column before the date fixed for the meeting.



CHAPTER VIII.

ADIEU OR AU REVOIR.

On the 28th the *Polar Star* was in sight of the island reported a week before. Next day she cast anchor in a creek admirably sheltered and of easy access owing to the shelving shore.

A landing took place immediately, and a detachment composed of Isabelle, Captain Lacrosse and eight men, started to explore the interior.

Isabelle greatly enjoyed this change from the monotony of the life on board ship.

Since the departure of the column, she had been in-

creasingly subject to low spirits. Unable as she was to explain it, gloomy presentiments haunted her mind. Greatly did she grieve in bidding farewell to the expedition, and receiving her father's kiss. That kiss had left behind it a print of mourning. A thousand torturing thoughts troubled her every moment, and the most terrible fancies rose before her eyes. The desolation around was not calculated to drive away these forebodings, notwithstanding the presence of the sun, which shone unceasingly above the horizon. When the solstice had passed, it seemed to her as if they were falling back into winter and its eternal night, so gloomy was she in her mind.

She had tried her best to struggle against these unwelcome feelings. The piano which had resumed its place in the saloon was her first consoler. She devoted herself to music as much for her own consolation as for that of her companions, who were gradually succumbing to the melancholy of these fatal zones.

Isabelle was a brave girl, and much as she might feel the effects of this depressing stay in the north, she had no wish that what she might suffer should lead to or increase the discouragement of those around her. Among them was one who was particularly dear to her, her nurse Tina Le Floc'h, whose feeble health was now giving rise to the greatest uneasiness.

But music soon became powerless. She felt it to be even a weariness, and she only put her fingers to the keyboard to amuse her travelling companions.

Then she tried still more futile occupations. Reading gave her only half a respite. She wanted action to enable her to overcome her lassitude and anxiety due to the long idleness of the sea voyage.

It was with enthusiasm, then, that she received the proposition to land.

Guerbraz was no longer with her, but she had Salvator.

It was in Salvator's company on the 30th of June, after it had been found that the land was an island or rather a sort of ridge about fifty kilometres long and three or four wide, that she went ashore and took her way up the chain of mountains, which traversed it throughout its length.

She wished to be alone. The constraint she had so long imposed on herself, or rather since her separation from the land party, had overtaxed her nerves. Seated on a bare peak nearly eight hundred metres above the sea, from which she could look upon both shores of the island, she could not restrain her tears. They streamed down her cheeks, overflowing from her sorrowful heart, and mingling with the reproaches and the vague remorse that her conscience awoke in its most secret remembrances.

For among her gloomy apprehensions, the poor child accused herself of being the involuntary cause, not only of her own trials, but of the dangers now being encountered by her father, her betrothed, her old friend Doctor Servan, the faithful Guerbraz, and the other brave men who for the moment were linked with her destiny. If she had devoted herself to strenuously resisting her father's plans instead of encouraging them by her foolish proposal to

share in the adventure, she might perhaps have dissuaded him. Science might perhaps have lost something by the renunciation ; but how much rest and happiness she would have gained for those who were so dear to her!

She wept silently, but when she sobbed, Salvator understood that his mistress was in sorrow, and gently laid his fine intelligent head on her knees, and by little plaintive cries testified to the wealth of pity that filled his heart.

The girl saw the dog's look, and forgetting herself for a moment, said to him,—

"We will go and look for them together, won't we, good dog?"

Salvator could not answer yes. But he joyfully wagged his tail and gave a short bark to show his affection for her. Isabelle put her arms round him and kissed his forehead. Her grief was forgotten.

The island, which the explorers called Courbet Island, having been thoroughly examined, the *Polar Star* quitted the harbour which Lacrosse had called Long Creek, and went off to the west in search of the column.

The water continued very deep. However, on the 8th July, the look-outs reported a state of affairs which gave rise to much anxiety. The steamer was in the centre of a belt of about ten miles in diameter, consisting entirely of lofty palæocrystic ice. The sea in this peculiar lake was of marvellous limpidity, and its surface showed no sign of freezing.

The secret of this strange phenomenon was soon discovered. The soundings showed that the depth varied

from twenty to thirty fathoms. The bottom had thus risen considerably, and they were on the summit of a sort of submarine mountain.

It was one of these shallows which rose like an insurmountable barrier in the way of these huge icebergs, throwing them off right and left, and probably reserving the centre for the formation of the annual ice.

Captain Lacrosse's perplexity could not but increase.

What was to be done? Every day the men in the tops had reported new masses of palæocrystic ice. He must avoid being caught by their formidable invasion; their embrace would not only be dangerous for the ship, but their drift might take him hundreds of miles out of his course.

Besides, the three weeks of waiting had elapsed, and he had not found the land party. Was he to abandon them in these inhospitable regions and make sure of the safety of the survivors, by getting back as soon as he could to Cape Washington? This was the problem which puzzled the conscience and generosity of the captain and his officers.

This was not all. The men who were brave and resigned enough in face of their own difficulties, trembled at the thought of the dangers to the two women, their companions. At the same time they dared not appeal to Isabelle, as they had the best of motives in sparing her filial feelings.

"Come," said Captain Lacrosse, addressing his officers. "We should be rascals to abandon the game without trying

everything to meet with our companions. Let us remain here as long as the fine weather lasts, and then we can think about a final decision."

During the next fortnight they ploughed the sea east and west, passing and repassing before Courbet Island without abandoning this terrible eighty-fifth parallel which was the limit of their voyage, and the barrier imposed on their energies.

And every night was colder than the last. Scarcely a month had gone by since the summer solstice, and already winter was announcing its return in the usual dreary way. Sunny days were becoming rarer, while those in which mists veiled the sky were becoming greyer and more miserable. The *Polar Star* found the floes growing thicker, and experienced increasing difficulty in breaking through the thin coat of frost which like a transparent pellicle wrinkled the face of the ocean. The pieces of ice began to join together, adhering at their edges and coagulating with the cement of the young ice. If two more weeks went by like this, it was certain that the steamer would be seized in some terrible nip in the icefield.

Such were the anxieties and perplexities, when in the morning of the 22nd of July, a month exactly from the landing of the column, Lieutenant Hardy when on the bridge distinctly heard the report of a gun from the island, and apparently from Long Creek itself.

A gun was immediately fired in reply. Captain Lacrosse came on deck at the noise, and, mounting the bridge, gave orders to get up full steam. When the thick

fog cleared off it was found they were about a mile from the shore. Half an hour later the ship was in the narrow harbour she had entered a fortnight before. There was joy in every heart; and a feeling analogous to that of a father's happiness in finding a son he believed to be dead, was shared by all.

This joy was soon to be changed into apprehension.

As the *Polar Star* approached the island those on board could see a group of men assembled on the bank and greeting them with shouts and gestures. As soon as the boats landed the men threw themselves into each other's arms, mutually asking what had happened to both the land and sea expeditions.

The land party were almost exhausted, and were without provisions and without strength, having lived for ten days on scanty and unhealthy food. Lacrosse at once attended to their wants, and after a hearty meal the poor fellows related the lamentable story of the numberless tortures to which they had had to submit in their long sustained struggle.

Among those whom the steamer had relieved were Hubert D'Ermont, Schnecker, the chemist, and Guerbraz. The doctor ordered them twenty-four hours' absolute rest.

Then Isabelle, overwhelmed with anxiety, came in tears to beg Hubert to tell her what had happened since the day of their separation. It was an affecting story.

At the departure the column, animated by immense hope, had rapidly surmounted, but not without some trouble, the first difficulties of sledging. The ice was firm and led right up to the shore of the island although covered with hum-

mocks and bristling with sharp edges driven up on the field by the force of the tide and the currents.

Great had been their disappointment in finding how little the island stretched to the north.

But they had been soon consoled by the thought that the pack was still firm enough for them to travel over to the land they could see about twenty miles ahead. And so after a day's rest, the column had resumed its adventurous course over the icefield.

On the 25th of June they had reached this land, the object of all their hopes and desires. It was certainly more extensive than Courbet Island, but in width it only reached from 86° to 86° 23′, and in length it was about 38 kilometres.

Beyond lay the pack again, but besides the doubtful signs of land, such as giant swellings and patches of spotless blue, they could recognize rocky islets rising above the palæocrystic ocean and supporting the formidable floe, which announced its approaching dissolution by continual crackings that every day grew louder.

Pools were formed, gaps of water opened every moment under the feet of the explorers. The time came when they found it necessary to retreat, owing to its being uncertain whether they could return by the same road. It is true they possessed three boats, one of which was infinitely more valuable than the others, and destined for many uses; this was the submarine one constructed of sheet aluminum, a metal so light that De Keralio's companions refused to believe that it could also be used as the car of the balloon.

And so it was decided not to defer the balloon experiment any longer. As a platform an island, or rather a flat rock, was chosen, emerging some sixty yards above the sea, and from six hundred to eight hundred yards across.

It was assuredly an exciting scene when this attempt took place under circumstances more extraordinary than ever aeronaut had experienced before.

It had been decided that the first experiment should be from a captive balloon.

The explorers took a final look at the figures, and, as they had not to take into account either the weight of provisions nor of weapons, which were not required for this first attempt, they found the account as follows :—

	Kilos.
3 men averaging 80 kilos each	240
Scientific instruments	30
Car (the aluminum hull of the submarine boat) . . .	1950
Total . . .	2220

This amount was less by 580 kilos than that carried by the balloon constructed by Henri Giffard in 1852; and there was no reason to suppose that the attempt would not realize the hopes that had been formed of it.

The balloon itself was formed of a double skin of silk, with the seams varnished with gutta percha. It was in the shape of a cigar, as adopted by all scientific aeronauts and especially by Captains Renard and Krebs. It measured twelve yards in its central diameter, and it was forty-four yards in length. The net which covered it was fastened on to a single horizontal rope, which held the car.

This car was eight yards long and three wide, and of the same shape as the aerostat.

In order that the experiment might not be wasted, it was decided that when the filling had taken place, the car should be gradually loaded with the things necessary for a journey, in case it was deemed propitious to let go the rope.

The operation began at seven o'clock in the morning. It was impossible, after the revelations previously made, to keep secret the calculations concerning Marc D'Ermont's wonderful discovery. Besides, there was no reason for keeping them from Schnecker now that he had shown such goodwill in winter quarters. They could hardly expect him to do any harm unless he returned to Europe before his companions, and the German knew too well that his fate was now bound up with that of the expedition.

Hubert D'Ermont therefore made no objection to revealing whatever secret remained.

The tubes filled with solidified hydrogen required for the balloon represented an amount of about 2500 cubic metres of gas.

There was only one man there capable of assisting Hubert in the delicate and dangerous enterprise of filling. This was Schnecker. More accustomed than the lieutenant to laboratory practice, he set to work, with the help of two sailors placed under his orders, to fit up the discharging tubes required for the expansion of the precious gas. It took him no less than three hours to make these

tubes in lead, the rapidity of the expansion of hydrogen and the tenuity of the gas not admitting of the use of simple india-rubber tubing.

By noon all was ready. The aerostat was as full as an egg, and floated majestically, retained by the enormous rope which was going to keep it captive about half a mile from the ground.

But there a double deception awaited them.

At first the mist which covered the horizon prevented them from seeing anything rising above it. Everywhere, as far as they could see, the palæocrystic or permanent ice, so called by Nares and Markham, covered the ocean, although towards the north the pack seemed to be in movement.

A second disagreeable surprise was the discovery that the aerostat, when it had reached four hundred yards, would rise no higher. In vain they removed the supplementary weight, in vain they reduced the weight of the car by taking out everything possible, in vain only one man went up in it.

They tried several ascents at different hours of the day and night; the result remained the same. They tried to discover the reason of this embarrassing circumstance. As they could not ascribe it to the rarefaction of the air, they had to admit that it must be due to magnetic perturbations, up to then unknown, occurring in the higher zones of the atmosphere, and affecting the gravity of the constituent gases. This would also explain the trouble there was in breathing and the troubled circulation, the signs

of cyanosis which were more pronounced after each attempt, and the violent palpitation which proved that the air at that height would become unbreathable.

The aerostat was sent up by itself, and again it did not rise above the same limit. The members of the column were seized with great discouragement, as it was evident that, in spite of all the scientific theories, aerostation would never be of use in the exploration of the Pole. At last, when nearly worn out, D'Ermont and Schnecker hastily constructed a car of planks weighing about 400 kilos, and, getting in, had the balloon set free. The spectators of this last scene felt sad enough at heart, but their anguish was not of long duration.

Before the southerly wind the balloon drifted swiftly to the northward, always at the same altitude. For three hours they could follow it above the horizon, and then they lost sight of it.

But what was their astonishment when it reappeared next day at about the same time and with the gas half out, and sank on to a gigantic floe not two kilometres away. A boat put off and rescued the aeronauts. Schnecker had fainted and was half asphyxiated; D'Ermont, thoroughly exhausted, remained for some hours in a state of prostration before he could give his companions the account of the voyage he repeated to Isabelle.

The balloon had gone due north. The travellers estimated that the distance they went was about two hundred kilometres. Then the wind gradually shifted and bore them away to the westward. But strange to say

they did not seem to cross the parallel they had reached, which they stated to be 88 degrees, though the thick mist that surrounded them prevented them from verifying their suspicions.

Fortunately the sun came out just in time to clear away the fog and afford them the means of reconnoitring. They gazed on a spectacle, grand, unique, almost fantastic. The sea was below them, an open blue sea, the breaking waves of which they had heard in the semi-darkness of the mist. It extended out of sight to the south, east, and west, but on the north its waves broke against an impenetrable barrier of ice.

All was explained. Powerful magnetic currents, due probably to the earth's rotation, rendered the higher zones of the atmosphere inaccessible. The direction of the icy breezes towards the equator, as recognized by men of science, is but the bending back at the glacial belt of the same breezes from the equator. There is every reason to suppose that at this impassable wall the atmosphere is greatly lowered, and the thickness diminished by the centrifugal force.

Schnecker, noticing how near the car was to the waves, began to be afraid of a fall.

"We are lost!" he exclaimed.

Hubert was not at all easy.

"There is a chance," he murmured, "that we may not get out of this zone of rotation. There is nothing to show that we are not circling round the 88th parallel northward of America, Kamtschatka, Siberia, Russia and Sweden."

THE AEROSTAT DROPPED LITERALLY TO THE LIQUID SURFACE.

Page 125.

The fear was well founded. It was evident that the balloon, carried round in a movement tangential to the circumference of the enormous glacier, would turn with the earth around the ideal axis which ends at the Pole unless some magnetic current broke in to interrupt the rotation.

And that was what happened.

Suddenly there was a shock, the aerostat dropped literally to the liquid surface, and the aeronauts had to cling to the ropes of the car to prevent themselves from being hurled into the waves. For three or four minutes the balloon sped along at a terrific rate, driven from the wall of ice by some invisible force. And just as suddenly it rose again, attained the same altitude as before, and floated off towards its point of departure.

At the same time the atmosphere became saturated with peculiarly alarming vapours, as if some latent conflagration had disengaged a prodigious quantity of carbonic acid. Schnecker was the first to show symptoms of asphyxia. D' Ermont, perceiving at a distance the camp of the expedition, opened the valve and then exhausted fell back into the car.

There the young officer's narrative ended.

After this discouraging adventure the majority advised a retreat. "The Pole is inaccessible," said the pessimists.

De Keralio protested with all his energy against this want of resolution.

"Gentlemen!" he exclaimed, "never was there a better chance for us. Messrs. D'Ermont and Schnecker have just

told us the result of their voyage. It seems proved that the ice cap of the Pole cannot be passed in a balloon. But have we no other means ? This submarine boat we have been using as a car can now be put to its proper uses. It can become a submarine boat, and if we cannot get over the ice cap we can go under it."

A long shudder ran through the party, but except Hubert and two sailors no one showed sufficient resolution to dare such a terrible risk.

The matter was put to the vote. Sixteen against four decided to return to Courbet Island.

De Keralio said not another word, but it was easy to see that he had not so easily given in to what he considered a weakness.

But nothing betrayed the extraordinary resolve he had taken.

They had reached the last days of June ; the sea became clearer and clearer and the explorers had the satisfaction of betaking themselves oftener and oftener to the boats. During the night before the morning fixed for the departure, a storm of snow and rain kept everyone under the tents. When they went out they saw with astonishment that the submarine boat and the reserve of hydrogen tubes had disappeared. At the same time De Keralio and the sailors Riez and Le Clerc, who had voted with him in favour of further advance, failed to answer to their names. In the tent they occupied was found the following letter written hurriedly in pencil :—

" Do not be uneasy with regard to us. I have taken

away Le Clerc and Riez in the submarine boat. I shall only try what is humanly possible.—DE KERALIO."

There could be no thought of pursuit. They were free to do as they pleased, and De Keralio was the acknowledged head of the expedition. A meeting was, however, held, and it was resolved that nothing could be done without first consulting Captain Lacrosse.

And so the retreat was continued until Courbet Island was reached.

Such was the story Hubert told Isabelle.

She was in great distress and did not say a word. She went away, burst into tears in her cabin, and remained there several hours. When she reappeared before her cousin and the captain, who were already discussing what to do, her face was calm, her attitude resolved.

"What have you decided, gentlemen?" she asked. Lacrosse bowed and replied gently,—

"Nothing as yet. We waited to hear what you said."

Isabelle sat down before the two men, and in a clear voice said,—

"You do not imagine that I am going to abandon my father?"

The captain with a shade of reproach in his tone remarked,—

"No one here has an intention of abandoning him."

Isabelle held out her two hands to the two men.

"I never feared that, captain," she said, "and my words had not that signification, I assure you. I intended to say that every law, human and divine, lays on you the duty

to take back the crew under your charge, while I remain here until I find my father."

"It was because we foresaw this proof of filial feeling, that Hubert and I have decided to help you at all hazards, and we have thought of a plan which may satisfy the exigencies of your own heart as well as the interest of all."

"Ah!" said Isabelle. "And what, pray, may be this solution?"

"This. As captain of the *Polar Star*, I am responsible for all the lives under my command. I propose to return to Cape Washington with the majority of the party. The wooden house is ready for them to pass the winter there as comfortably as we passed the last at Cape Ritter. The state of the sea allows not only of this return, but of a further advance to the northward. We can build with the materials we can bring on board a second wintering-house either here, or on the lands of the 86th parallel, which our companions have reached; and whether you remain at Cape Washington or prefer to remain here, Lieutenant D'Ermont and I, either in the *Polar Star* or her boats, will, up to the last hour of September, continue to explore the channels of the palæocrystic sea. If the sea is closed we can try the land, or rather the ice. It is impossible, in the two months that remain, for us to miss finding your father."

Isabelle arose. Tears were in her eyes as she clasped the hands of her two brave companions.

"Come!" said she. "It is wisdom that speaks in you captain. Do not hesitate; do not lose a second. Take

back to Cape Washington all that is indispensable, and then return to form our second camp. Is it necessary for me to say that I will follow you throughout ?"

Bernard Lacrosse did not add a word to this declaration.

Mounting to the deck, he gave his orders according to the plan agreed upon.

The *Polar Star* was off to the south. Never before had an expedition obtained such results. In less than two months of summer, the French had surveyed the north-east coast of Greenland, had discovered an island under the 85th parallel, and found land under the 86th.

Yet more; two of them in an adventurous voyage through the air had reached the 88th degree, and discovered the existence of a huge polar ice cap, up to then an unverified hypothesis.

They were now entering into winter quarters, but a handful of them were about to continue their investigations. This time they were not acting solely in the interests of science. They were led by the lively affection inspired in them by the generous and imprudent man who had organized the campaign, and whose only fault had been that he would not retreat from the threshold of the last door. De Keralio must be saved from the consequences of his intrepidity, a horrible death from cold and hunger.

The season continued fine and wonderfully favourable; and the *Polar Star* took but three days to run the thirty-six leagues between Courbet Island and Cape Washington.

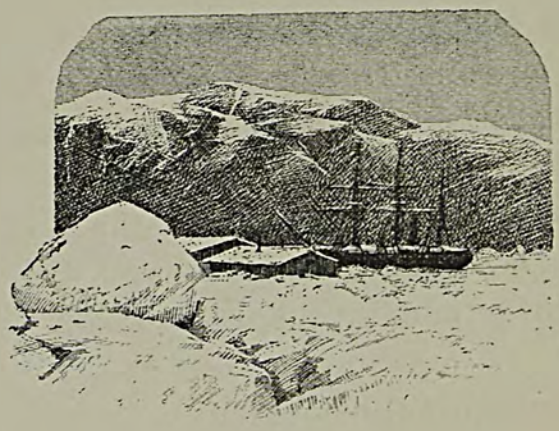
In seven days she was back at Courbet Island, bringing the needful material for a second house, and eight men who had agreed to remain on some spot yet to be determined. Captain Lacrosse kept but ten men with him. Twelve others remained at Cape Washington under Lieutenant Remois.

On the 5th of August, when Isabelle, whom Tina Le Floc'h would not leave, set foot for the second time on the island, Hubert said with emotion,—

"It is only to-day that we really begin our campaign."

Next day, when the *Polar Star* attempted to leave Long Creek, the channel was closed by the ice.

Nature herself had fixed the winter quarters of the explorers.



CHAPTER IX.

A STRONG WOMAN.

THE real campaign was beginning, as Hubert had said.

To begin with, an inventory was made of the stores in hand.

As a means of security the *Polar Star* was warped into a gap in the cliffs, which served as a better shelter than she had at Fort Esperance. She was surrounded by the steel cradle which had already done such good service. As in the preceding winter, the upper masts and spars

were all stowed away, and the deck was covered with a canvas roof to keep off the snow and the wet. The house was not so well placed as that at Cape Ritter, but in order that it might be in constant communication with the steamer, a corridor of planks was built connecting the two. It was arranged that should the cold become very intense, the crew would resume possession of the cabins, which it was not intended to abandon altogether.

Provisions were still abundant after due allowance had been made for the goods that had been damaged. There were hopes that the store of fresh meat could be increased; and an understanding was come to with those who remained at Cape Washington, that early in October they would send on provisions to the camp at Courbet Island, if, as seemed probable, game were more abundant on the continent.

With regard to stores, and among the stores were included the valuable resources due to Marc D'Ermont's discovery, as well as the arms and powder and explosives, on this head there was no anxiety. The quantity of liquid hydrogen shipped on the *Polar Star* was twenty cubic metres, represented by 8000 tubes, forming a considerable portion of the cargo. In Hubert's strong box there had been about a hundred for experimental purposes. In filling the balloon about 2500 cubic metres of the precious gas had been used, exhausting 400 tubes, containing a thousand litres of the liquefied gas. De Keralio had taken with him 600 tubes, considerably more than enough to work the submarine boat; and the remaining 6500 tubes

had been divided between the two camps, giving 3250 tubes, or over eight cubic metres for each.

The laboratory was prepared for the production of oxygen, by means of the decomposition of water, and also of nitrogen, in case they decided to repeat the conclusive experiment of the past winter.

But, as Isabelle remarked, what were to be the preparations for the members of the expedition who were going in search of the boat party?

The winter did not delay in announcing its return. Already the days were drawing in with alarming rapidity. It was advisable, therefore, to be prompt if it was desired to take advantage of the last of the mild weather, for every day the thermometer went lower, and on the 6th of August there were eight degrees of cold.

Isabelle betrayed a feverish impatience that was easily intelligible. But as soon as the start had been fixed for the 7th she resumed her usual tranquility, and, by her energy and a sort of fictitious gaiety, gave to the preparations a methodical regularity which encouraged not only good order but a good healthy feeling among the members of the party.

The departure was promising. In the morning, three sledges, two of them carrying boats, had the dogs harnessed to them. The day was superb, and the recent frosts had again united the outer floes so that they could venture on them with almost perfect safety. The party, consisting of six men, among whom were Hubert and Guerbraz, and Isabelle, in her travelling dress, went off to the pack

in comparatively high spirits. A radiant sun shone in the sky, and they expected to traverse without difficulty the twenty miles which separated them from the islands to the north.

Alas! That hope had soon to be given up. They had gone but three miles when an accident occurred. The ice, under the powerful action of the tide, was not yet completely joined together. It broke under the weight of one of the sledges, and Guerbraz was almost swallowed up in the crack. His strength and activity fortunately saved him, and not a single object was lost.

But a kilometre further on a similar accident occurred, with the additional misfortune that the harness of two of the dogs was broken, and one of the animals slipped under the ice. At the same time sounds of bad augury proclaimed an almost complete breaking up of the ice-field. A retreat had to be made through incredible perils, and it took six hours to go back the seven kilometres already accomplished.

Throughout the journey Isabelle had displayed admirable intrepidity. The compulsory retreat disheartened her a little, and she shed a few tears, but without complaining of the decision, which the most elementary prudence imposed on Hubert who was in command.

They had to wait three days more. But on the 10th of August, after a night in which the mercury went down to seventeen degrees, they considered the pack sufficiently strong to again venture out upon it.

This time the attempt was crowned with success.

It was now four weeks since De Keralio and his companions had gone away with the submarine boat. They could not expect to get on their track before reaching the islands to the north. The party advanced resolutely, and reached them a little before the day closed in. They had undergone great fatigues, but had been rewarded by the discovery of a cairn of stones already covered with a mantle of snow. Inside they found a paper to this effect: "Arrived here in good health. We are following the forty-first degree of longitude west, until we reach the wall of ice or the open sea."

But at this time of year there could be no question about an open sea. To north, east, and west extended an immense plain of ice. The explorers had only to strike out over this plain and follow the forty-first meridian to rejoin the three hardy pioneers.

This they did.

The 11th was devoted to a rest under the tents. On the 12th the thermometer went down twice to twenty-two and twenty-eight degrees. The period of intense cold was coming on, and they had not, as at Fort Esperance, the shelter of a well-warmed house. Fortunately, such a temperature was quite abnormal. During the afternoon of the 12th the sun reappeared, and the mercury rose to six degrees.

Isabelle herself gave the signal for departure.

Hubert went up to her, and in a most affectionate tone asked her if he might be allowed to give her some advice.

"Tell me," said Isabelle, somewhat feverishly.

"Listen," said Hubert. "Your presence with us is no longer indispensable. You have displayed invincible courage by coming thus far. I ask you, for your own sake and for ours, not to continue the experiment. Now that we know the course taken by those we are in search of, you are reassured. Leave us to do the rest of the journey by ourselves."

"And what am I to do?" she asked.

"Return to the camp. Our brave friend Guerbraz will accompany you."

Isabelle proudly raised her head, and, laying her gloved hand on the lieutenant's shoulder, said,—

"In your turn, Hubert, listen to me. You are to be my husband, and when the day comes you will have the right to make me obey you. And, loving you, I will obey you. But now, knowing as I do, that what you say is out of anxiety for me, I claim my right to do as I please. I shall not be happy until I have found my father, and, as we are going to be united later on, you must allow me now to share in your joys as well as in your sufferings and your work."

"But if these sufferings, if this work, exceed a woman's strength?"

"There are no sufferings which a woman cannot bear when consoling those she loves. Are you going to refuse me this task, or do you not think me capable of it?"

"You know very well that is not so," said Hubert, impetuously.

"Then what is your reason for sending me back?"

"But if there are fatigues, if there are tortures, if there is death?"

"We will die together, Hubert."

The young officer saw that all his arguments were useless. The heroic girl's resolve was unshakable. Her filial love would be her guide and her support. All that Hubert could do was to bow before the will so decisively expressed.

And so they resumed their journey across the new ice and the channels of open water.

The journey became more and more toilsome, and the days decreased as the cold increased.

Isabelle struggled on with heroic courage. At every halt under the tent, she made Hubert tell her about the journey of the balloon towards the Pole.

"And so," she would say, "it was really a wall of ice that stopped you?"

And she would add,—

"Do forgive me for troubling you so. You know how much I benefit by your story; it gives me strength every time I hear it."

Then they discussed the different hypotheses which occurred to their minds. What was there beyond this impassable barrier? Was it the belt of a virgin land in the centre of the diurnal movement? Was it, on the contrary, the boundary of a vast interior basin, containing an open sea unknown, and destined to be always unknown to man?

And then they would ask what had happened to De

Keralio and his two companions. Two or three times they were led to form hopes that were almost immediately destroyed.

With the changing light the landscape assumed the most fantastic aspects. They were the sport of the strangest illusions. Sometimes a chain of mountains appeared on the horizon; sometimes they gazed upon lovely valley covered with verdure inconceivable under such latitudes; in fact, the mirage of the polar regions is even more deceptive than that of the Sahara. But notwithstanding these fascinating aerial phenomena, the lowness of the temperature was quite enough to remind the travellers of the reality of their position.

As the winter approached the field of ice was broken by fewer gaps of water that required the boats for crossing them. Stretches of from five to six miles could be accomplished on dry feet without interruption. The dogs were very tame, and received their food with great regularity. But it was evident that the Greenland breed was very close to the primitive if not the savage state, for it would not have taken much to arouse in them the carnivorous instinct. They had consequently to be watched closely, and kept out of range of anything that might excite their desires or tempt them to conflict.

One of the most interesting episodes of this forward march occurred one morning before the explorers had left their sleeping bags, owing to the bitter wind then blowing. Salvator, who enjoyed all sorts of immunities, and was for that very reason hated by his congeners, had already

shaken off sleep, and, notwithstanding the twenty-eight degrees below zero of the thermometer, went out to prowl round the camp.

A quite involuntary negligence of the Eskimo, Clerikisen, who was in charge of the team, had left insufficiently fastened the one strap which kept them together. Urged by hunger which was never absent from their stomachs, the dogs had so tugged at it and shaken it, that they managed to get away.

When they were free, they doubtless indulged in a few atavistic gambols, and then, taking advantage of the explorers being asleep, had rushed away madly from the camp with probably no intention of returning. But after a distant and profitless exploration of a barren plain they returned for their food, and singly and in groups entered the camp again. So that in the morning there was not one missing.

Is there a canine language? One would think so, for almost simultaneously, they rushed with one accord on the sledge which up to then they had drawn, and which they now arrogated to themselves the right to rob. And of course the sledge selected was the one containing the provisions.

A big dog with yellow coat, the king of the troop, strong and valiant, gave the signal. He jumped on the bales of provisions, more especially on the case containing the fresh meat, and with one snap of his jaws, tore away the canvas which covered it, thrust his muzzle into it and drew out quite half a pound of meat.

The example was too encouraging not to be followed. In a moment the whole band were at similar work.

And with surprising sagacity, so as not to attract the attention of the sleepers, the dogs maintained profound silence. Not a sound rose from the group of assailants.

And then occurred a truly epic scene. The moment arrived when Salvator came forth to risk the freshness of the morning. It did not take him long to see the depredations that had begun, and without losing a second he precipitated himself on the entire pack, knocked over the two foremost, and leaping on the sledge drove off the aggressors.

This was quite an unexpected intervention. At first the Greenlanders retreated, being unaware probably of the strength of the enemy who had so suddenly appeared. But why had this dog of luxury, this aristocrat, forgotten the solidarity which had for so long existed among his equals and set himself against the populace? Old embers of the secular hatred between the rich and the poor soon broke into flame again in the veins of these pariahs of the ice-field, condemned to the servitude of the strap. With deep growlings they looked at this descendant of the old Labradors, denationalized by the long sojourn of his race in old Europe. And the whole insurgent democracy declared war against this paladin, who to serve his master fought his elder brethren.

And Salvator, upright on the sledge, in the attitude of a hero, reminded one of those knights of history, who, single handed, fought the Saracens.

"SALVATOR . . . IN THE ATTITUDE OF A HERO."

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As proud as Roland in refusing to sound the horn, the Newfoundlander continued silent. His enemies, sure of victory from their numbers alone, did not wish by awaking the tents to endanger their victory.

At first they formed round Salvator a menacing ring of pointed jaws and upturned muzzles. This was the period of invectives as in the combats of Homer.

Then suddenly one of the Greenlanders plucked up courage and leaped on the sledge. Salvator's powerful jaws gripped him by the throat and threw him back.

A second leaped; then a third. They were received in the same manner.

Then four at a time rushed on the brave defender.

A mere waste of effort! The Newfoundlander, with terrific strength, knocked the first under his paws, snapped off the ear of the second, put out the eye of the third, and ripped the fourth half open.

That did for seven out of twenty.

This was too much. Away with prudence and control! A deep long bark rang out like a signal of attack, and the whole troop sprang to the assault.

The fight became furious, merciless. Salvator was sublime. Bleeding, torn, covered with wounds in twenty places on his handsome body, he none the less victoriously resisted the exasperated mob. Without a thought that his fidelity and his exploits were endangering his master's interests, he strangled two of his adversaries.

But he would infallibly have succumbed to numbers the tumult of the fight had not aroused the sleepers

Hubert and Clerikisen, the first to awake, rushed out with long whips, and slashing right and left soon brought the assailants to reason.

Salvator himself, excited by the ardour of the battle, only gave way when loudly scolded by the lieutenant.

When the losses were totalled up it was clear that the brave dog's fidelity had been more disastrous than useful. Besides the two he had killed, he had rendered four more quite useless for work for many a long day.

However, Salvator received nothing but congratulations. He was even treated to double rations on this and the following day. Henceforth he was looked upon as a devoted auxiliary in whom implicit confidence could be placed.

Two days had to be spent on the scene of the fight before the dogs were again fit for their work.

The cold was not so great now, but the sky was covered with clouds announcing that storms were near. At the same time, threatening sounds were heard, proving that the icy crust was in movement. And it was apparent that the need was urgent of as long a run as possible, while the explorers could be sure of the ground which the carpet of snow would soon conceal.

The advance was resumed. It was more and more evident that the 41st meridian led out to the open polar sea. From the 12th to the 15th of August only three strips of water were met with, and these were only a few yards across. But each time the boats had to be used and this hindered progress considerably.

Isabelle, always courageous, gave no sign of her personal sufferings.

She replied only with smiles to Hubert's uneasy looks. To all his questions she invariably replied, "I am very well; do not be anxious about me."

On the 16th the snow began to fall, and in a few hours the ground disappeared under a bed several feet thick, which made sledging terribly hard work. Hardly three leagues were accomplished that day.

On the 17th the storm was so violent that the explorers were confined to their tents. Hubert and Guerbraz, indefatigable as usual, raised the tents using the sledges to fasten them to. In an hour there was a rampart of snow around them six feet thick. Sheltered in this grotto the explorers were not much affected by the temperature which followed, and which was thirty-eight degrees below zero. They remained under cover, a prey to the terrible anxiety caused by the cracking of the ice and the constant shocks to which the pack was subject.

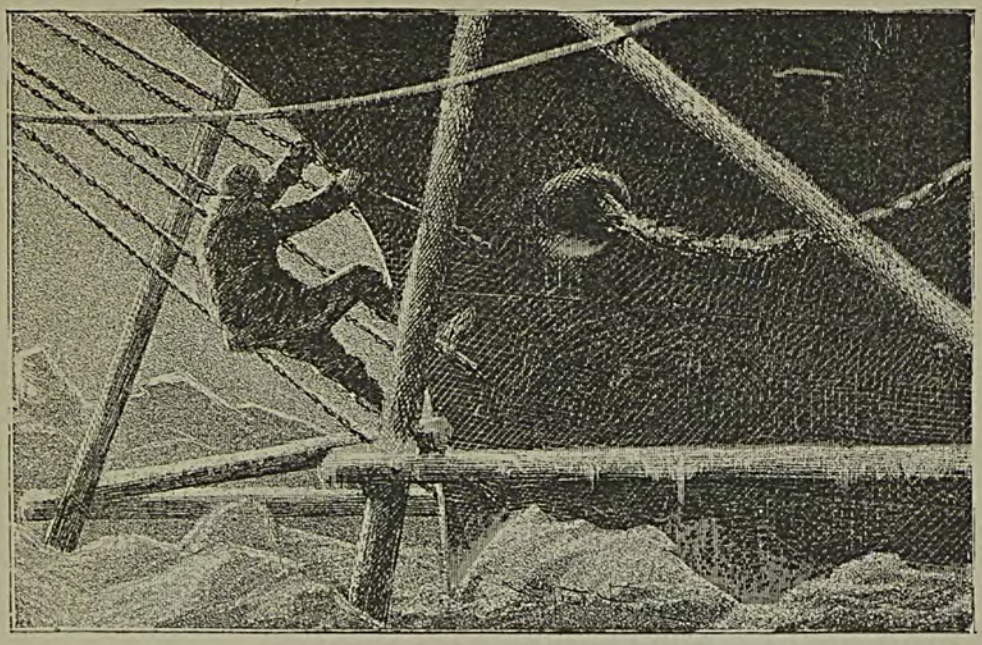
In the morning of the 19th the storm ended, and Isabelle, the first to go out of the tent, gave a shout which brought out her companions.

The sun was shining in the sky; at less than half a mile from the tents the sea of an almost black blue was rolling in huge waves. Everything was explained; the explorers had heard during the night the uproar of the ice breaking up.

Hubert looked at the barometer and then proceeded to take an observation and find their latitude and longitude

They were adrift forty minutes westward, on a floe less than a mile in diameter.

They fell on their knees in prayer to God; they were in His hand, at the mercy of events. Where were they to come ashore?



CHAPTER X.

FOILED.

AMONG the men left at Courbet Island with Captain Lacrosse treason had broken out.

For some time it had been foreseen or rather suspected, and when he left the ship, Hubert D'Ermont had not failed to advise the captain of the *Polar Star* to keep a careful watch.

"I do not know why," he had said, "but I feel a stronger aversion than ever to the chemist Schnecker. I cannot understand what motives the man may have for his hatred, but I feel sure they still exist. Without going so far as to

accuse him, yet after my cruise in the balloon I still entertain an inexplicable antipathy to him."

It was not necessary to put the captain on his guard against the evil intentions of the German. A providential chance had shown his suspicions to be well founded, and he made up his mind to bring the matter to a crisis.

The night before Isabelle and Hubert went away, the chemist had offered to accompany them in their search for De Keralio and his two companions. Lacrosse had refused, and given a very plausible reason for doing so.

"Monsieur Schnecker," he said, "your presence on board is indispensable. You alone are capable of replacing Lieutenant D' Ermont among us, and your engagement as chemist makes it my duty to require you to remain here."

This was the courteous way in which the captain politely veiled his orders.

Two days before, in fact, Bernard Lacrosse when on a tour of inspection, had seen the laboratory door half open. Moved by a simple feeling of curiosity, he had entered. Among the apparatus with which it was fitted, he had found a sheet of parchment folded in four, and had casually opened it without any feeling of indiscretion.

This parchment was no less than the diploma of Master of Science granted by a German University to Hermann Schnecker, native of Königsberg, whose signature to it left no doubt as to his identity.

This discovery had made a most unpleasant impression on Captain Lacrosse.

The man who had been recommended to De Keralio by

many notabilities in France, who was enrolled among the members of the expedition as an Alsacian, had usurped the title. He was a German, and, what was worse, a Prussian.

Lacrosse resolved to clear up the mystery.

The opportunity soon came.

The *Polar Star* had begun the preparations for the winter. In the early days of August the captain had instituted the ordinary winter routine. The small number of men under his command had made him postpone for a time the erection of the house of planks brought from Cape Washington. The men were to be housed in the ship, and this had the additional advantage of economizing in heating and lighting, besides allowing of the turns of duty being less onerous.

It was decided that there should be reliefs every two hours during the depth of the cold weather.

One night the Canadian sailor, Gaudoux, when on guard, was terrified by a strange apparition.

The sky was peculiarly limpid and the darkness could not last more than two hours. But as soon as the sun had disappeared below the horizon, the moon, already high, shed its rays through an icy mist which stood about sixty yards above the level of the ground. This mist was of itself invisible, although each of the molecules of icy air of which it was composed, was converted into a miniature lens of great magnifying power.

Gaudoux, who was standing in the stern, was casting about him a look which he would have preferred to have ended in a restorative sleep. A look-out was not of much

importance, for besides there being nothing unusual to fear, the *Polar Star* was sheltered by the cliffs of Long Creek, and in no danger from the ice outside, which was still fragmentary and not very thick. But the captain had continued these night watches with the intention of habituating the crew to the trying experiences of the winter that was coming.

What, then, was the sailor's surprise to see before him the figure of a giant of alarming proportions.

Fear seized on Gaudoux, and paralyzed him for a moment.

The being he saw was manifestly supernatural, for it was at least twenty feet high. The moon brought it out clearly on the background of mist which enveloped it in fleecy transparency.

The sailor gave a shout of alarm, to which Lieutenant Hardy hastened to respond.

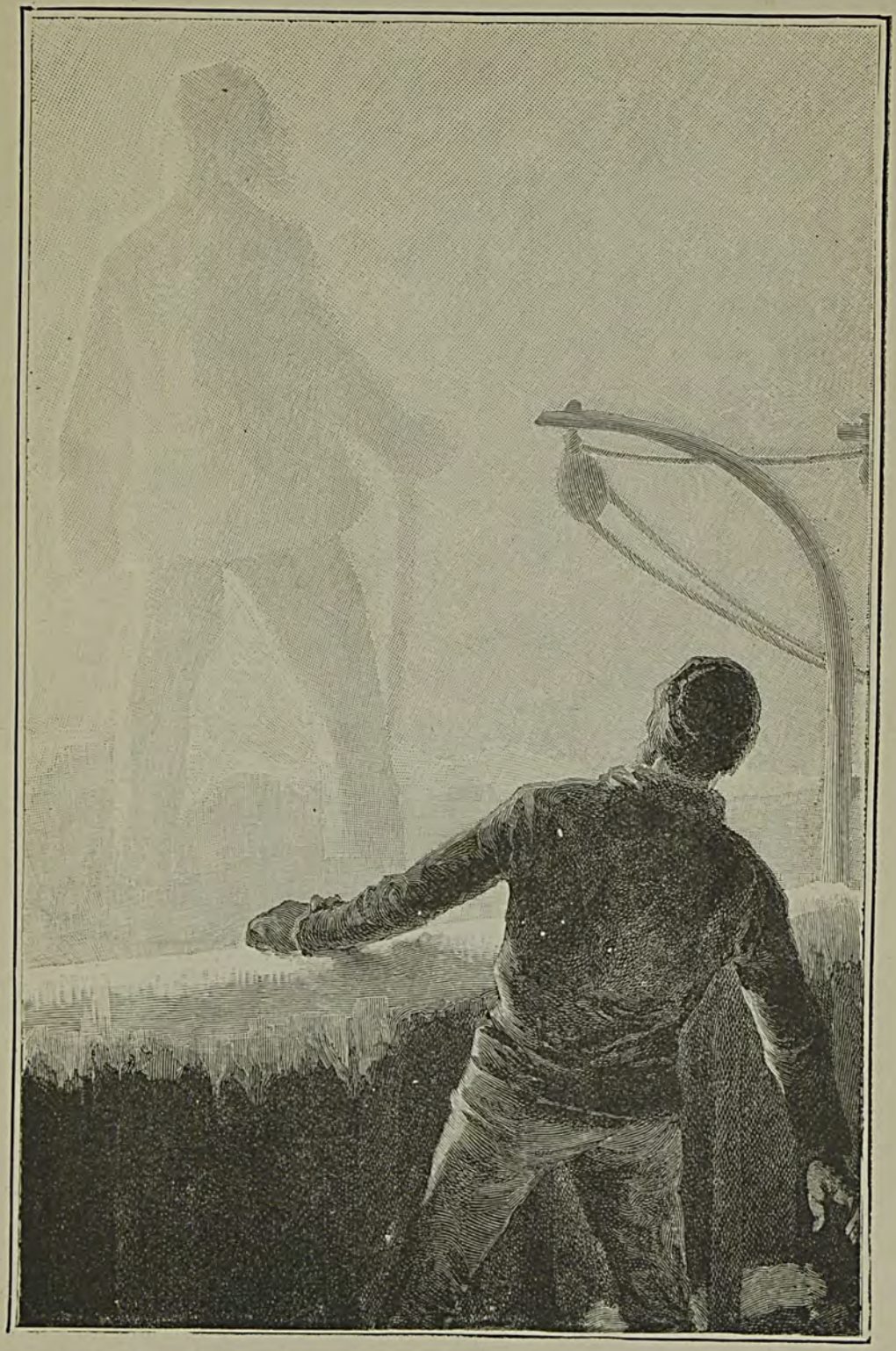
A single glance showed him that the fantastic apparition was only the effect of refraction through the fog.

But at the same time, and for quite other motives, the lieutenant was uneasy.

Who was the man who was moving about at this hour?

He seized his speaking-trumpet, and hailed the mysterious phantom. Instead of replying, the phantom seemed to endeavour to get out of sight as soon as possible, and rapidly vanished in the veil of vapour.

Puzzled at this, the lieutenant armed himself with a revolver and a sword, and, followed by two sailors, he



FEAR SEIZED ON GAUDOUX, AND PARALYZED HIM FOR A MOMENT.

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slipped noiselessly down the rope ladder which put the ship in communication with the ice-field.

And the three immediately gave chase to the mysterious fugitive, who, leaving the pursuers to a profitless search, hid among the hummocks, and, creeping on hands and knees, regained the steamer and made his way on board over the bow, where he noiselessly opened one of the portholes, and, hurriedly passing along, gained the officers' quarters.

Meanwhile, Hardy and his companions were vainly trying to find him. The report of what had happened had spread among the men, and everyone was on deck impatiently awaiting the lieutenant's return. Captain Lacrosse did not attach much importance to the matter. He had said with a laugh,—

"Bah! There are Le Sieur and Schnecker and a man still away making observations to the north of the creek. It is one or the other of them we have seen, and the distance being probably great, our hail has not been heard."

What appeared to confirm this opinion was the renewal of the phenomenon on the return of Hardy and the two sailors. This time there was not one giant, but three.

Lacrosse hailed them through the speaking trumpet.

"Is that you, Hardy?" he asked.

"Yes," replied the lieutenant's voice, clearly and distinctly.

When they arrived on board, without having found anything, it had to be admitted that if the spectre had vanished, it must at least have heard the call, for at a

distance which was estimated to be greater, the lieutenant and the men had heard Captain Lacrosse distinctly.

Lacrosse was uneasy about it, but allowed no sign of his uneasiness to appear. At the same time, suspecting that the affair might be a practical joke, and hoping to find out who had been guilty of it, he quadrupled the look-outs on deck, notwithstanding the lowering of the temperature, which had now reached twenty-eight below zero. And then he retired to his cabin to take a little rest.

He had not been there more than a quarter of an hour before his attention was attracted by a peculiar noise.

It was a sort of whistling, or rather a continuous rustling, very gentle, like the sound of gas or vapour escaping.

Lacrosse, who was stretched full length on his bed, jumped up and listened.

The noise did not come from outside. It seemed to come from all parts of the ship, from the wood-work, from the bulkheads, from the deck, from the sides even. Justly alarmed this time, the captain left his cabin and ran to the engine-room, where the gasometer had been placed with its expansion chamber. Perhaps one of the stokers had been using a boiler for laundry purposes ?

He was soon reassured with regard to this. There was no steam in the boilers, and the fires which were lighted for a couple of hours each day for keeping the frost out of the pipes were dead out. The ship was being warmed in the ordinary way by means of coal, the chemist having agreed with the officers that it would

be prudent to reserve the hydrogen until the winter set in with full severity.

Whence, then, came this strange, disquieting noise?

Without betraying his apprehensions, which were strengthened by the preceding incidents of the evening, the captain called Hardy, and said to him, laconically,—

"Listen!"

The lieutenant listened, and noticed the strange rustling.

"Where does that noise come from?" he asked.

The two officers went back along the way they had come. A circumstance, insignificant in itself, put them on the track of the truth.

Lieutenant Hardy stumbled, having caught his foot in the carpet which covered the floor. He took a lamp to see what had caused him to stumble.

It was at once noticed that the carpet had been turned back. Beneath it was a small hatch giving access to the hold. This hatch, although in its place, was not shut quite down.

It was evident that some one had opened it. Perhaps some one had gone down into the hold, and was there now? A suspicion crossed the captain's mind.

"Hardy," said he, "will you call a couple of men? We will send them down."

Did the lieutenant suspect his chief's intentions? Anyhow, he went at once and got two men, ordering them to go down through the hatchway.

The men went silently down the narrow opening, and without any noise proceeded to clamber along in the dark

among the packages of all kinds, on their way to the centre of the ship under the main hatchway.

The noise which had awakened the captain's suspicions, grew louder.

It was a continuous whistling, as to the nature of which there could be no mistake.

"That is gas escaping," said Gaudoux in his companion's ear.

His companion seized his arm, and in a whisper, asked,—

"Did you hear that?"

Did he hear it? Never had he heard anything more clearly.

"Yes!" said he, "some one is moving the metal tubes."

Again the noise was heard. Some one or something was further forward among the steel tubes. There could be no doubt about it.

Gaudoux put his hand in his pocket for some matches. His companion instantly stopped him.

"Do you want to blow us up?" he whispered.

Gaudoux understood. A tightness of the throat and an increasing cold also warned him. The hold, notwithstanding its openings, was rapidly becoming saturated with the deleterious gas.

Without another word the two men put their handkerchiefs over their mouths, and feeling their way over the bales and packages, went further on. Their eyes, accustomed to the darkness, perceived a figure which was endeavouring to hide away from them. This time they were sure in their own minds of having to do with a man and

not a spirit, and they hurried after the mysterious and dangerous investigator.

While Gaudoux, comprehending the danger of the position, made for the tube from which the gas was escaping and shut it off by means of the screw, and so stopped the noise, his companion went resolutely after the mysterious visitor.

But just as he was stretching out his arms to catch him, the man slipped away and ran back along the road by which the sailors had come. The sailors gave chase, knowing that Captain Lacrosse and Lieutenant Hardy were waiting at the hatchway, and would let no one pass without a little explanation.

And that was what happened.

Hearing the noise of the pursuit below, the officers by tacit accord let the hatch down as they had found it, and stepped aside so as to let the fugitive come out of the hold like a jack-in-the-box.

They had not long to wait.

Two hands appeared on the edge; then a head emerged; finally a man came out, his clothes soiled with dust, with stains of tar and fragments of cobwebs, and his face blue with incipient asphyxia. Before he could reach the door Hardy and Lacrosse had seized him and rendered him incapable of resistance.

The captain of the *Polar Star* did not say a word. He had expected what had happened. But Lieutenant Hardy, who had not the same grounds of suspicion, could not help exclaiming,—

"What! Is it you, Monsieur Schnecker? What were you doing down there?"

The chemist was visibly abashed. The lieutenant's remark restored his presence of mind. Hardy seemed so astonished that he hoped he might escape.

He tried to joke it off, and bursting into a laugh, he said,—

"By Jove! gentlemen; you can boast of having thoroughly frightened me!"

"Why frightened?" said Hardy, more and more puzzled.

Captain Lacrosse suddenly broke in,—

"What were you doing in the hold at this time of night?"

The chemist had time to prepare his defence. He tried to brazen it out.

"Captain," he replied, "I went down to shut off the screws of one or two tubes of hydrogen from which I heard the gas escaping a few moments ago."

The excuse was plausible. The chemist's proceedings admitted of a very natural explanation. He had heard the noise made by the hydrogen before it had been noticed by Lacrosse, and had at once thought of saving the crew from perhaps the terrible death menaced by an explosion. If that was the case, he was deserving of praise and not of remonstrance.

Captain Lacrosse was embarrassed for a moment. What could he do with this careful man whom he had unjustly suspected?

But at this very moment Gaudoux and his comrade came up the hatchway.

At the sight of them the German changed colour and his face contracted.

This curious effect on the chemist's features was noticed by all; and Hardy and the men, who had no suspicion of the real state of affairs, looked at him in wonderment, and gazed first at him and then at the captain.

Lacrosse, resuming the offensive, began to interrogate the men.

With a gesture merely, he requested Gaudoux to speak, while in a severe voice he formulated the question,—

"What was there unusual you noticed in the hold?"

The reply of the two sailors was identical.

They had heard the noise and seen a man moving about. Gaudoux had turned off the gas while his companion had given chase to the unknown. This unknown was the chemist, Schnecker.

But all the same, they both appeared confused at the consequences.

It was evident that they had no suspicion of this personage; it never having occurred to them that he could be a traitor.

Captain Lacrosse saw the difficulty of his position. The moral proofs he possessed were merely presumptions; material proofs he had none.

Then, more than ever, recurred to his mind Hubert's warnings. And, fancying he could read on the German's features the signs of a heroic triumph, he sent the men away.

"Gaudoux," he said, "you will remain within call."

Stopping with a gesture the lieutenant, who was also going, he said,—

"Remain, Hardy ; I want you !"

His tone was so serious, that for the third time the chemist looked troubled.

The captain pointed to a chair and ordered him to sit down.

Bernard Lacrosse had no two ways about him. He began,—

"Monsieur Schnecker, you may think yourself lucky I did not shoot you dead on the spot. Perhaps, however, you will understand that the event is only postponed."

He said this, his look clear and cold as a blade of steel, looking straight into the eyes of the chemist, who had become livid.

Lieutenant Hardy was startled. A dialogue begun in this way boded no good. However, he was in no hurry to condemn his captain.

Bernard Lacrosse continued,—

"Your statement contains a manifest contradiction. You first tell us you went down into the hold to shut the tubes, from which the gas was escaping, and from what my men have said, it follows that the tubes were still open, for they shut one of them. And then you fled at their approach. That proves the contrary of your assertion. To be quite candid with you, I will tell you that I have been watching you for some time, and that I have my reasons for acting in this way. On your reply depends the opinion I shall henceforth have of you."

The rascal again recovered from the surprise of this declaration.

Crossing his arms he looked boldly at the captain, and replied,—

"You are master on board here, sir. Ask what you please."

Lacrosse turned to the lieutenant,—

"Hardy, you are the only witness of this scene. But you are a man of honour, and a good Frenchman! Your evidence is enough for me. Will you act as registrar for a moment?"

The captain could not have made a better choice. Hardy was a model of honour and loyalty.

He took a pen and his note-book, and wrote down the interrogatory that follows.

"Monsieur Schnecker," began Lacrosse, "you are entered on our roll as chemist, appointed to the expedition. Will you favour us with your names and qualifications?"

"What can that signify?" grinned the chemist. "My name is Hermann Schnecker. I was born at Mulhouse, and I graduated in the University of Paris."

"You have your diplomas with you, of course?"

"No. I left them in Paris. It was not necessary for me to bring them with me. Besides, the services I have rendered the expedition are the best guarantees of my ability."

Lacrosse could not restrain a little humour.

"I have no suspicion as to your ability," said he. "If I

ask for the production of your diplomas, it is for quite another motive. Yes, or no, can you show them?"

"No; I repeat that I have left them at home, in Paris!"

"In that case, you will not take it amiss if, until fresh orders, I address you as Hermann Schnecker, a German subject, born at Königsberg, and holding a diploma from the University of Dresden."

The blow was well delivered. The chemist rose very pale. He endeavoured to protest.

"And the proof I have here," said the captain, placing under Lieutenant Hardy's eyes the document he had found in the laboratory.

"Sir," said Schnecker, "that is an abuse of power absolutely iniquitous!"

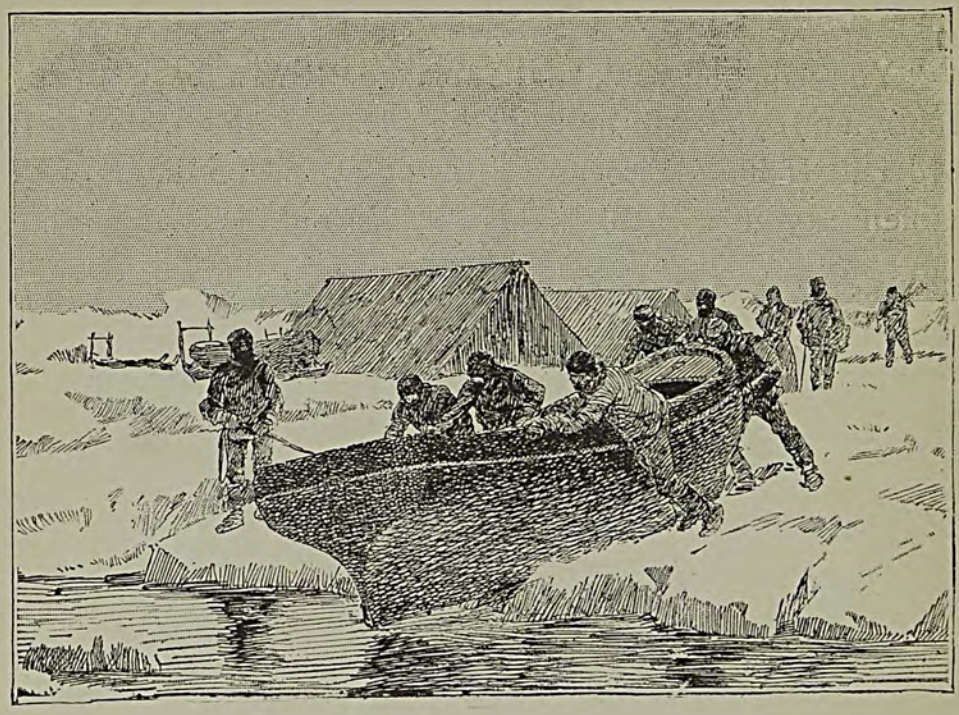
Lacrosse replied very coolly,—

"You have just acknowledged that I am master on board here. Consequently, although I am ignorant of the motives which have possessed you, I charge you with having made an attempt against the safety of the crew and the success of the expedition, by endeavouring to deprive us of our store of liquid hydrogen. I do not care to sentence you before the return of Monsieur De Keralio, who is the head of our expedition. But until then, you will keep to your room under guard, and you will only leave it on my permission, or on that of the officers of the *Polar Star*."

And taking no notice of the traitor's reproaches, the captain called out, and a moment afterwards gave Gaudoux a loaded revolver.

"You will," he said, "take this gentleman back to his room, and you will not let him leave it again without orders. If he makes any attempt at insubordination or violence, you will blow his brains out! That is all. Go!"

The German went out with his teeth and his fists closed, giving the impassible Breton a look of furious anger and implacable hatred.



CHAPTER XI.

IMMURED.

THE drifting floe had frozen in, and again Isabelle and her companions resumed their toilsome way in pursuit of the travellers who returned not.

The cold grew more intense every day. The plain with its enormous hummocks stretched silent and desolate before the little troop. They began to suffer cruelly, and discouragement seized on them. In their effort not to betray their sufferings they were silent, and their silence was more eloquent than complaints.

Ten times already, since their departure from the ship,

they had experienced the violence of the storm. The route grew longer in its dismal monotony; the sky, now all grey, looked like a shroud hanging over the earth.

There was nothing to show their nearness to that wall of ice which Hubert and Schnecker had not been able to pass in the balloon. Had it then changed its place, had it melted, or had the two men been the sport of an hallucination, the victims of glacial vertigo?

This question haunted Isabelle's mind. In spite of the superhuman energy which supported her, she could not help gloomily despairing. They were near the end of August, and were no further advanced than at the beginning.

Suddenly, on the 26th, their doubts were solved as in a flash of lightning.

They had just found their latitude 87° 44′. The sky, gloomy as it was with the thick mist, appeared clearer and higher than usual. The wind, very strong during the night, had fallen altogether. An unusual, inexplicable calm reigned in the atmosphere. At the same time, by one of those strange caprices to which they were accustomed, the mercury rose in the thermometer, and stood at only 12 degrees below zero.

Suddenly, without any warning of such a change, the curtain of mist was torn apart from top to bottom. The sun, veiled for a week since, showed itself shining brightly, and its dazzling rays made the surface of the pack look like a sea of molten gold. The blue ice glittered like the diamond, and all over the icy plain rippled a stream of incomparable colours.

Isabelle could not restrain a cry of admiration. She joined her hands.

"How beautiful! How beautiful!" she repeated many times.

Her eyes, dazzled for a moment, could appreciate all the wonder of the spectacle. Now at last the explorers could measure the extent of the field that bore them. In less than a mile the field ended cut off short, and beyond was a surface of dark blue dappled with gold, making as it were an edging against which the white of the pack shone out with increased brightness.

"The sea!" exclaimed Isabelle. "The open sea, entirely free!"

At the cry Hubert ran up, followed by all the other members of the expedition.

It was indeed the sea.

But Hubert immediately exclaimed, "Yes, the sea! And beyond the sea the girdle of ice!"

And he pointed with his hand to the northern horizon.

Another white line was there, confused at first with the pale sky, but now reflecting the rays of the sun with such intensity that the eye could not support the brightness thereof.

The travellers were again relieved from doubt. D'Ermont and Schnecker had not been mistaken. They had not been the sport of an hallucination. They had seen, with their own eyes, this palæocrystic wall, this virgin rampart girt about the pole, as a defence against the attempts of

audacious mortals. There it stood, to justify those who had claimed to be the first to see it.

At the sight of it, the courage of all returned to them. Leaving their sledges and the camp, the little troop ran towards this mysterious ocean, which in the brilliant sunlight seemed to be the effect of a mirage.

They soon reached it and plunged their hands into the salt water. And to them it was a luxury to feel the contact of this limpid liquid on their skins, hardened as they were by the biting blast of the north wind.

Alas! The joy was but momentary: anxiety immediately returned to them.

They had not found De Keralio as yet, how could they hope to find him now? Were they not at the very limits of the globe?

A gloomy sorrow fell on them and held them a prey.

Once again it was Isabelle who was the first to recover.

She addressed her companions.

"Gentlemen," said she, "it seems to me that my father and his two companions have realized their plan and triumphantly crowned their attempt."

Hubert looked at her in some surprise.

"What makes you say so?" he asked.

"Oh! it is very simple," she replied. "We are on the edge of the open sea; and we have before us the wall of ice that you and Monsieur Schnecker could not cross in the balloon. Now, my father had brought the submarine boat with him, had he not?"

"Yes, quite right as far as you go, but I do not see what that has to do with it."

"But is it not manifest that the expedition has succeeded?" concluded Isabelle. "For if it were not so, we should have found the boat."

"That is true," said the sailors.

At the same time, Hubert kept to himself a painful reflection that had just occurred to him,—

"It proves that the travellers went down beneath the waves, in their endeavour to pass the belt of permanent ice. But there is nothing to show that they will ever come back."

With an effort he drove these painful thoughts away, and even proposed with some gaiety that after what Isabelle had said, they should pitch their tents on the spot they had reached, and remain there as long as possible to wait for the return of the travellers.

In the interval they could visit the surroundings and study the configuration of these strange places.

The plan was adopted, and the programme followed to the letter.

The 27th was as fine a day as the preceding one, but the thermometer fell to 20 degrees below zero. The first care of the explorers was to run to the edge of the ice to verify the state of the sea. The waves were moving freely; not the least frost stained their surface. D'Ermont's astonishment was great when he found that the thermometer, sunk to fifteen feet, rose to 4 degrees, the normal temperature of water.

This polar sea was therefore not subject to the intense cold which reigned in its environs.

More than ever there rose in the minds of all a desire to cross the barrier of ice, and penetrate the mysterious pole hidden behind the formidable wall of icebergs.

They resumed their walk, but this time along the edge of the palæocrystic ocean. Everywhere they found the same clean breakage, cut and polished but nowhere rounded off by the action of the waves. Here and there the pack, from twelve to eighteen yards thick, was cut into by ridges, cracks and creeks generally narrow, which they could jump over. But it was evident that under the action of a storm from the south it would break up into huge masses, leaving wide channels between them through which a large ship could find a passage.

Nares, then, was right from his point of view, Lockwood from his, the first in affirming, on the authority of his lieutenant, Markham, that the open polar sea was a myth, the other in his voyage in 1883 in declaring that the waves beat freely on the northern shores of Greenland.

Accepting the general opinion, Hubert concluded that the action of the cold, variable with the years and seasons, would be apparent over even the smallest areas of the ocean, and that the free zone owed its immunity from its influence to some very warm current passing under the Pole itself.

He hesitated no longer. Giving orders to launch one of the boats, he embarked in it with Lieutenant Pol. They set sail, and ran before the south-west breeze.

It was ten o'clock in the morning when they started; it was eleven in the evening when they returned, and the sun was just touching the horizon. They had sailed sixteen miles before reaching the foot of the ice wall.

There their curiosity was awakened by the strange character of the cliffs, which seemed to be fixed in granite sockets rather than immersed in the ocean. The cause of this was soon evident.

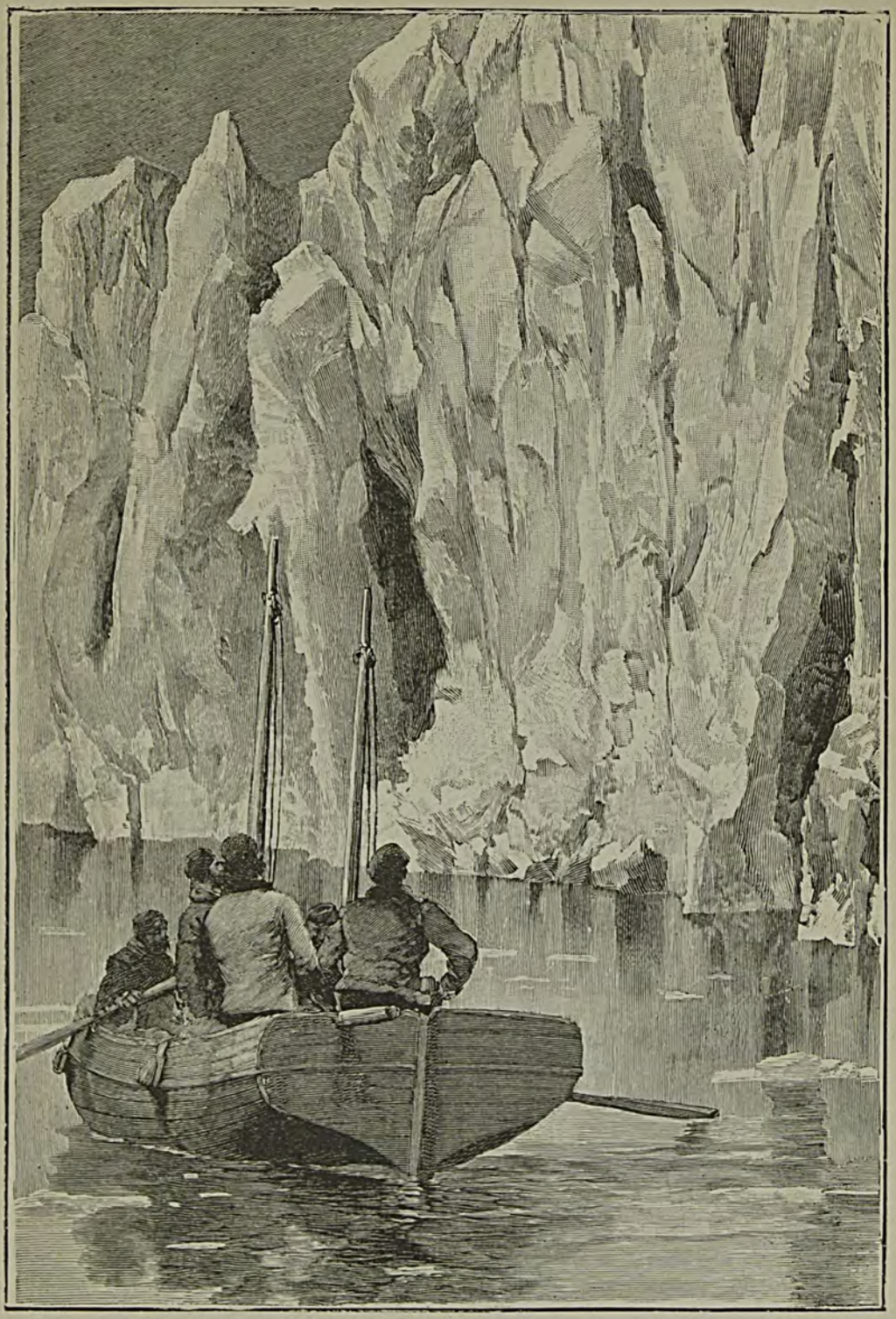
The huge palæocrystic wall was in no place in contact with the water. It rested on a sort of prodigious ledge, which rose from the depths of the abyss. Lieutenant Pol sounded the depth, and found no bottom at 225 fathoms.

All was now explained. The mass of ocean which separated the Pole from the neighbouring lands like Courbet Island and Cape Washington rolled in mighty waves of water warmed by a subterranean current or the presence of some hidden furnace. The cold had no influence on it at these depths, and it was only on the surface that it was subject to oscillations of temperature.

D'Ermont and Pol concluded that the Pole itself was a large island entirely covered with ice. To reach it was apparentlyimpossible, for the barrier of monstrous blocks offered no fissure permitting a passage, nor were there any means of scaling it.

When they returned they found the camp in a state of excitement.

An event of the greatest gravity had occurred: Isabelle had disappeared.



THEIR CURIOSITY WAS AWAKENED.

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Guerbraz, in deep trouble, rapidly informed Hubert of what had happened.

After the boat had gone they had started out exploring to the east, and had reached without difficulty a part of the floe where the hummocks were as numerous as ant-hills. Some of these hillocks were of extraordinary height, attaining some of them twenty, some of them forty, yards in elevation.

They had been up several of these, and the weary explorers were about to return to the camp, when Guerbraz discovered a bottle on the field entirely free from the coating of ice it ought to have had. The mark where it had fallen was still fresh.

This bottle contained a paper, which Isabelle hastened to read.

And as soon as she had cast her eyes on the document she was seized with feverish agitation.

"I will not go back to the camp," she said, "until I have found my father! My good Guerbraz, give this paper to Lieutenant D'Ermont when he returns, telling him that my father is here, ought to be here, in some place, perhaps still alone, and that I shall have no rest until I have found him."

And in spite of all they could say or do, she ran off among the hummocks, aided by her snowshoes, which she wore on these long excursions; and suddenly behind one of the hummocks she disappeared.

"And you did not search for her?" exclaimed Hubert, mad with sorrow.

"Pardon, captain; we could do no more. We have just come back for provisions, and are then off to find her. Are you coming with us?"

D'Ermont had stopped. Under the oblique rays of the sun he read the document that had been found.

It was a sort of letter from De Keralio himself. This is what it contained :—

"16*th August*.—I throw this paper, without hope and without resources, into the open sea, which will not be open much longer. The ice is coming up from south to north, and we are now on a floe drifting to the east. All our instruments remain in the boat. We have neither tent nor sleeping-bags. A sudden shock has separated us from our boat and our return to the Pole. The two voyages there and back have been satisfactorily accomplished. The Pole is an island surrounded by reefs which support the wall of ice. We journeyed under water at a depth of about 600 ft. If the sea freezes we will try to recover our boat. Latitude 87° 48′ 20″ longitude 43° 16′ west. That is our last observation. It is winter, and the accident occurred at 6h. 15min. in the morning. We have ten pounds of preserved bread and 800 grammes of pemmican. If the crew of the *Polar Star* find this bottle let them look for us to the east."

The lieutenant shuddered as he finished the letter.

"Forward!" he cried; "and may God help us! There is not a minute to lose."

Everyone was on the move to the north-east. An idea suddenly occurred to Hubert. He asked Guerbraz,—

"And the dog? What have you done with the dog? Did he follow his mistress?"

Guerbraz hesitated. Then he replied,—

"That is probable, for since she left us we have not seen him."

D'Ermont heaved a sigh of consolation and raised his eyes to the sky.

"God be praised! That is one more chance for Isabelle. Let us hope we shall arrive in time for the others."

Willing as they were, in spite of their using snowshoes, those large soles of skin stretched on wooden frames, and which assist progress considerably, the men were exhausted. Three of them fell, and only got up to fall again a few steps further on. The cold was becoming terrible. At midnight the thermometer registered thirty-four degrees below zero.

Hubert had the tents pitched. As the sky was clear and there was no sign of a snowstorm, he ordered a meal to be at once prepared. To facilitate the cooking and to warm the poor wretches caught by the cold, which increased every hour, he started the hydrogen stove in the largest of the two tents.

For himself he had no mercy. The thought of the disappearance of his betrothed almost drove him mad. He took a few mouthfuls of hot soup, and rushed on ahead, leaving the men under the command of Lieutenant Pol.

Dr. Servan and Guerbraz followed on his track, and soon came up with him.

Hubert was wringing his hands.

"Have you seen the barometer?" said he to his two

companions. "We are certainly going to have a terrible storm. And this unhappy girl who is out in this weather, who has foreseen nothing and feared nothing! Shall we ever find her alive?"

They ran at their utmost speed along the hummocky pack, falling heavily, plunging into deep gullies of snow. Where, then, had Isabelle disappeared?

The sky clouded over rapidly. The storm was coming up at a gallop.

The three men shouted together, and making speaking-trumpets of their hands, called Isabelle in despair.

Nothing replied over all that gloomy waste. There was not even an echo.

Suddenly Guerbraz had a happy thought. "Call the dog!" he said.

Without waiting for the consent of his companions, he shouted with all his might,—

"Salvator! Salvator! Salvator!"

The three men stood silent and listened. They seemed to hear a distant cry.

They were not mistaken. Between two gusts that swept across the ice they heard a plaintive bark.

It was a bark of bad augury, a lament, one of those sounds which make the bravest shudder.

"Oh! Heaven!" wept D'Ermont. "She is dead!"

"Courage, captain," said the energetic Guerbraz, "and forward!"

For the second time the dog's sorrowful bark traversed the air.

"Salvator would not whine like that," said Hubert, "if Isabelle were alive."

"We must never despair," said the, doctor, hurrying on.

And Guerbraz, as if to encourage himself, gave a loud shout of—

"All right, Salvator, all right. We are coming."

But the gusts from the south-west bore away their shouts. Thick flakes began to fall, and the snow gathered in drifts under their feet. Luckily the terrible cold, which was now forty-two degrees below zero, froze it hard immediately it fell. They did not run over it; they flew.

At last it seemed as though the barking were coming nearer them. Yes, they were approaching it. The brave dog had scented them, and instead of the lugubrious call they had heard at first, he was now baying with his full strength.

Guerbraz was the first to see him.

He was crouching before an enormous hummock at least thirty feet high. This mountain of ice was made up of two or three separate hillocks joined together by fresh snow. Every moment this new kind of mortar grew thicker and thicker, in spite of the desperate efforts of the dog to clear it away with his paws. In front of him were the traces of a passage recently practicable, and now being rapidly blocked in.

With the butts of their guns the three men soon cleared out the hole.

And as if he had been waiting for this, the dog rushed at the thin crust which still obstructed the passage, broke

it away at the shock, and dashed through, barking furiously.

Hubert lay on the snow at the level of the hole and shouted,—

"Isabelle! Are you there? For the love of God, answer!"

A voice, which appeared to be very weak, replied, as if coming out from the earth,—

"Yes, Hubert, I am here. I am not alone. My father——"

The rest of the phrase was lost. Besides, it was not necessary.

Immediately the three men set to work. The herculean shoulder of Guerbraz shook the walls of this tomb of ice under which they supposed their friends were buried alive. Hubert making a fuse with a handful of powder, used it as a petard to shatter the blocks which the cold had frozen together.

After twenty minutes of almost superhuman effort, a last explosion, the fifth at least, shook the wall of ice and opened up a sort of subterranean corridor.

The three men uttered the same cry. What they had taken for the top of a hummock was nothing but the stern of the submarine boat, of which the rest of the hull was plunged deep down into the snow. The hood of the companion gave it the aspect of one of those huts of which tracesare still found in the northern regions of Greenland and Grinnell Land. But here there could be no doubt what it was. The Eskimos are savages of too much sense to build

a dwelling on so unstable a ground as the frozen surface of the ocean.

Hubert jumped over the shaking masses of ice that rose above the buried boat, and was the first to penetrate into the interior.

A heartrending spectacle awaited him.

Isabelle, as pale as at death's door, was kneeling over a man, whose appearance was that of a corpse. From time to time she was moistening the blue lips of the moribund leader of the expedition.

"Hubert," said she, quickly, "here is my father. He is still alive. His two companions are dead. You will find their bodies near the engine. They have been killed by the cold. They had no more fuel and their provisions were frozen."

Dr. Servan bent over De Keralio.

"Hubert," said he, "it is urgent for one of us to go and bring help. We cannot leave Isabelle and her father here, and this temperature is absolutely insupportable."

D'Ermont hesitated. He objected that his presence might be useful on the spot.

Again Guerbraz, by a flash of genius, solved the difficulty.

"There is the dog!" he said.

They all understood.

Taking out his note-book, Hubert wrote the following appeal to Lieutenant Pol :—

"Send three men with provisions and one of the tubes of hydrogen. Follow the dog. He will show you the way."

He tore out the leaf and tied it to the dog's collar.

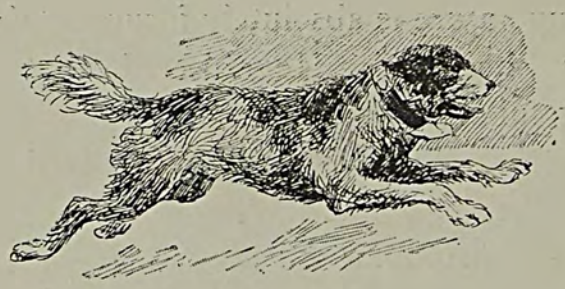
All that had to be done was to send Salvator to the camp.

How were they to make the gallant creature understand what was required of him?

Isabelle undertook the task. She trusted, and with reason, to Salvator's marvellous intelligence, which was far greater than that of most of his kind. Coming out from the boat, she mounted the seeming hummock, caressed the brave Newfoundlander, and showed him the south-west horizon under the white lines of snowflakes that still were falling.

"Go, good dog!" she said.

Salvator barked joyously, gave his mistress a proud and gentle glance, and was off like an arrow.



CHAPTER XII.

UNDER THE WAVES.

IT was with great difficulty that De Keralio was recalled to life. But his robust constitution, Dr. Servan's science, and Isabelle's assiduous care, were stronger than the malady. Nourishment was given him in definite doses, for nothing is more dangerous than indigestion after long inanition.

The funeral of the two poor sailors had already taken place. Nothing had been more mournful than this burial. The day was grey and dismal; the cold was terrible. Far

from their country, far from their people, far from their friends, the two unfortunate Bretons—for they were from Brittany—found but one grave.

The last duty was performed in the only suitable way for the place and the circumstances. The herculean arm of Guerbraz dug a grave in the ice of the pack nearly four feet deep. As he dug it the brave sailor wept, and his tears froze in heavy pearls on his cheeks and beard ; and some formed little crystals on the handle of the pickaxe he wielded.

These two men were the first of the expedition to die. There was deep mourning among the little troop, and a sort of discouragement pervaded them.

At length De Keralio was strong enough to speak, and could relate his sorrowful odyssey.

But before that he had heard from Isabelle the story of her flight, so happily inspired, and how, guided by filial love, she had been able to discover her father in the hummock.

Isabelle was brief in what she said.

As soon as she had read the letter contained in the bottle, and which had been so luckily found on the ice, she had run away to the north-east, prompted by her overflowing affection, and urged by a secret presentiment. She had outrun her companions, and resolutely attained that part of the ice-field where the hillocks and upheavals indicated that it had been most disturbed by the storm. There it was and nowhere else that instinct told her she would find the castaways.

She was not deceived. With an extraordinary power of observation, with a sureness of judgment, in which the sagacity of a woman was aided by all the resources of so long an experience, she had soon learnt to distinguish the hummocks from each other, and by the diversity of their appearance to recognize those in which the mass revealed the deepest cavities.

In this way she found herself in front of the hillock which covered the submarine boat. Already Salvator had rejoined her, and was following her in huge leaps.

Suddenly, when the dog reached the foot of the hummock, he gave a low growl, soon succeeded by a long clamour which made her shudder. Fatigued by her journey, and having taken no nourishment for twelve hours, she was nervous and impressionable to excess.

But to this feeling of superstitious terror there instantly succeeded a revival of energy.

"Good dog!" she said, caressing Salvator. "Find them; find them!"

The dog leapt about, barking furiously against the walls of the hummock; he ran round it with increasing signs of irritation against the obstacle.

Finally he stopped at one of the angles and began to scratch furiously.

As impatient as the dog, and understanding that something unusual was taking place behind the icy rampart, and confirmed in her suspicions that a cavity existed inside the hummock, she had tried to climb up it, and succeeded in doing so.

Then occurred what might have been a catastrophe, but which turned out to be the salvation of De Keralio.

The ice was thin and gave under Isabelle's weight. She fell down a sort of tube of ice, the lower level of which touched the hood of the companion which had been left open on the submarine boat.

There she found her father, unconscious, and, further away, the corpses of the two sailors.

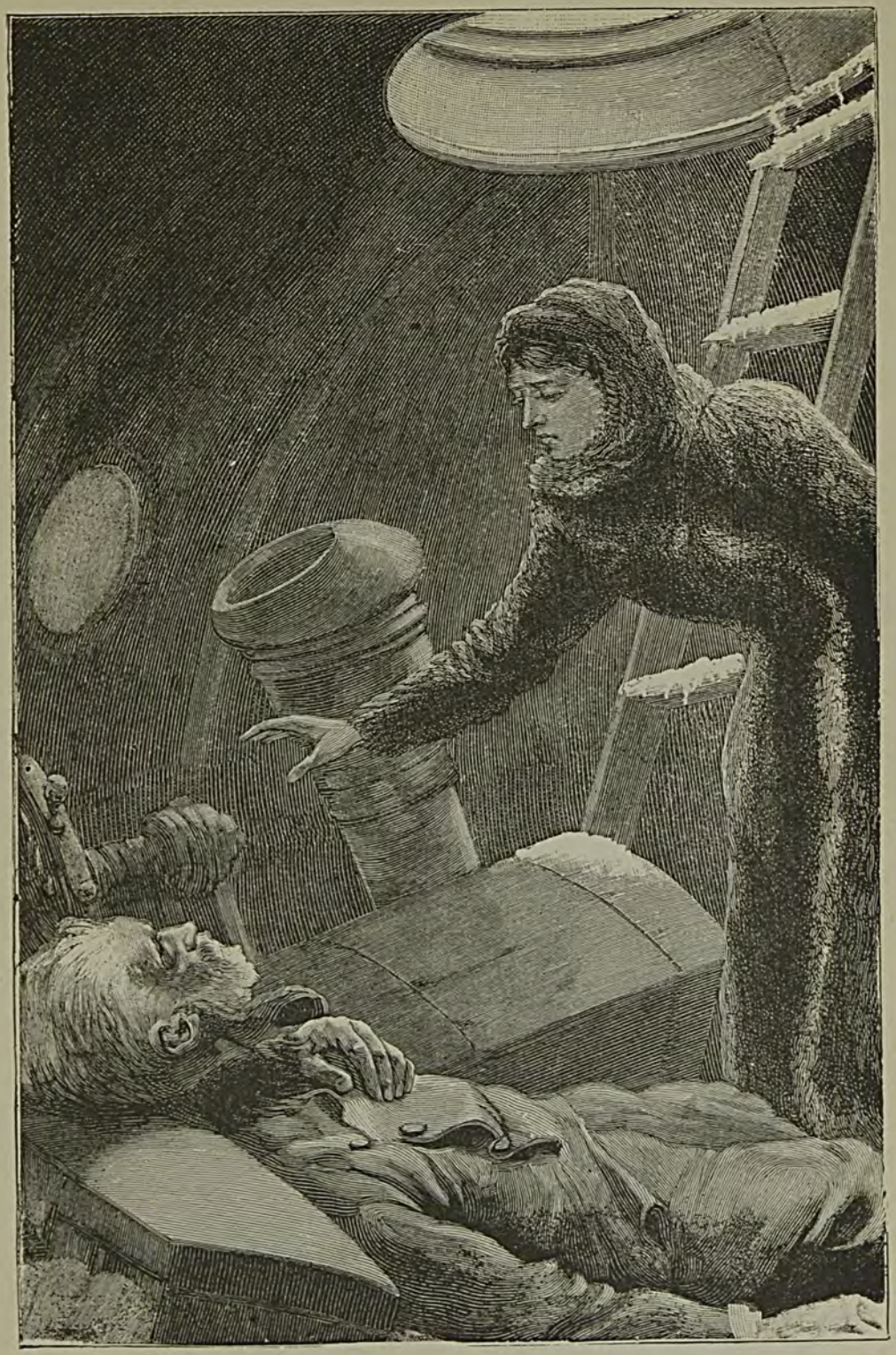
Her despair was immense. But as she was a woman of energy she began every effort to keep her father alive.

It was thus that Hubert D'Ermont had discovered her, with Salvator excitedly struggling to scratch in a way to her through the ice. For while the girl at the peril of her own life was devoting herself to her father, the pitiless cold was gradually shutting in the passage above her and burying her with the poor lost ones.

Meanwhile the temperature continued subject to strangest variations. The snowstorm did not last very long, and by the 1st of September the weather was clear.

A consultation became necessary. The season was so advanced that any attempt to go further would apparently have to be given up. But with health, energy and resolution returned to De Keralio. He in his turn told the story of his adventure.

"Yes," said he, "I have seen the Pole; and I only just missed reaching it. This wall of ice which rises before you is not of the same composition as the palæocrystic blocks on which you now stand. It is not in contact with the sea."



ISABELLE FINDS HER FATHER.

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"Quite so," said D'Ermont. "Lieutenant Pol and I clearly saw that to be the case. It rests on a ledge of thick hard rocks, the base of which is deep down in the ocean. But there is nothing to show that there are no fissures in this foundation, like tunnels, for instance, or submarine passages."

"These passages exist, my dear boy, and I cannot do better than repeat what I wrote on the paper you took from my bottle. They exist. We passed through them. But when we got to the other side of this granite belt, we were driven back with irresistible force by a sort of prodigious eddy which threw us outside the periphery; and, had it not been for the necessity of our returning we would have tried to overcome this centrifugal force."

"The necessity, did you say?" asked Isabelle.

"The absolute, implacable necessity. And that is the most regrettable thing in my report. I am obliged to suspect some one. I have to make an accusation all the more serious that it demands that some one should be punished for it. If my two sailors are dead, if I have been almost dead myself, it is because our fuel suddenly gave out."

"The fuel?" asked Hubert. "Did you not take several tubes of the liquefied hydrogen? Did you not have enough of them?"

"On the contrary, the quantity would have been more than enough, for we took ten tubes representing altogether about eight hundred thousand litres of gas. The boat required less than half that to work it. Judge then of my

amazement and despair when I found that of the ten tubes five were empty!"

"Empty!" exclaimed all his hearers at once, in surprise and indignation.

"Empty," continued De Keralio; "or, rather, emptied by foul play. The screw had been loosened, and for a long time the tubes had contained not an atom of gas. The crime—for it is a crime—must have been committed either on board or while we were in winter quarters at Cape Ritter. I dare not mention names; but there is one which comes spontaneously to my lips."

"Hermann Schnecker!" said Hubert, boldly. "I have said it."

"Do not accuse any one, my dear Hubert," interrupted De Keralio. "Time will reveal this tissue of wickedness. We will inquire into it seriously."

Then he recounted all the circumstances of this exciting campaign; the return after the repulse to the submarine boat from the centrifugal force; the shipwreck, then the journey over the pack; two long days of a storm of unexampled severity, which had broken the pack as you break an empty egg-shell; the desperate search for the frail vessel that contained all their hopes; then the recovery of the submarine boat under a heap of ice, the return into its icy interior of the three men, the two sailors to die the same day four hours afterwards. At last De Keralio also struck down to infallibly perish if it had not been for the miraculous intervention of his daughter.

The recital made a deep impression on all who heard it. The emotion was at its height when Isabelle's father, returning to his fixed idea, added,—

"But if the absence of hydrogen prevented me from realizing my project, that hindrance does not now exist. You are abundantly provided with that beneficent gas. Clear away the boat, get her out from her prison of ice, and I will resume the enterprise. It shall not be said that I failed in sight of port."

Hubert thereupon intervened and spoke his whole thought.

"My uncle," he said, "one of my plans has been to bring this expedition to its appropriate end. But you must understand that we cannot ask you to share in our fatigues and our labours, after the terrible experiences you have just been through. Besides, Dr. Servan will give you the best advice that his knowledge and friendship dictate. The boat can take five men. We only want three to crown the enterprise; Guerbraz, I, and a third we will choose."

A voice was heard, ringing and sonorous, the voice of Isabelle.

"The third will be Isabelle. As my father's health will not allow him to share in it, his daughter will take his place; and I undertake that you will not find her useless."

Vainly did they endeavour to dissuade Isabelle, De Keralio trying more than all. But they could not convince her or shake her enthusiasm.

Then as time was pressing, and they had to avail themselves of the last days of summer, it was decided to proceed at once. Everything was considered, and calculated and weighed with care. Eight days at the outside would suffice for the adventurous explorers to reach the axis of the world and return. De Keralio, however great was his desire, yielded to the wise advice of his doctor. It was agreed that he should remain in the tent awaiting the return of the boat, or, guided by a detachment of sailors, regain the shelter of the *Polar Star* in winter quarters at Courbet Island. The first of these alternatives was chosen not without many sighs of regret.

Everything being thus arranged, the boat was got out of its icy hill comparatively uninjured. It was inspected thoroughly from stem to stern, from keel to deck; its carlines, its beams, its shaft, its screw, its engines. Every part of this marvellous work in sheet aluminum was gone over and made good down to every rivet.

Then her loading was proceeded with, a fortnight's provisions being put on board.

On the 2nd of September all was ready. The boat was dragged to the edge of the sea and floated all day with a triple load in her.

Finally, on the 3rd of September, when she had been found thoroughly sound and seaworthy, Isabelle, Hubert D'Ermont, and Guerbraz embarked in her, after warmly shaking hands with their friends.

The boat was composed essentially of five parts; the engine in the centre; in the bow a torpedo tube to clear

the way in case of obstacle, and also two beds for the sailors; in the stern the officers' cabin, with a passage leading to the engine. Hubert gave up the cabin to his cousin, and contented himself with the passage.

Below and on the sides of the boat were two water-tanks of vast dimensions, to be filled and emptied according to the depth desired. Above was an air-chamber for the requirements of respiration, in which Hubert, as a measure of precaution, had put six tubes of oxygen liquefied in the way already known.

But the most wonderful thing was the gas motor, which De Keralio had contrived with the collaboration of the brothers D'Ermont.

It was arranged as follows:—

The hydrogen on its exit from the steel tube first entered an expansion chamber to reduce its strength, and it was then introduced into the cylinder containing the piston by an alternating motion of a slide valve. In its passage it was mixed with a certain quantity of atmospheric air, and traversed by the spark of a Ruhmkorff coil. The result of this was the combination of the hydrogen with the ambient oxygen, yielding water which flowed into a reservoir and was pumped overboard while the expansion of the rest of the mixture on each face of the piston alternately produced the movement. As the gas was used it escaped through capillary tubes which were too fine in bore for water to pass through. The mechanism of distribution thus consisted in the oscillation of the slide valves opening and closing the parts of the cylinder

and in the alternate opening of the circuits causing the passage of the electric spark through the inflammatory gas.

This was, in a way, the last thing in submarine navigation, and the travellers had in their hands the most powerful of agents in the tubes containing the liquefied or solidified hydrogen.

Before he went on board Hubert had verified these tubes, and was delighted to find that none of them had been tampered with in the way De Keralio had discovered.

The hour chosen for the departure was noon. At noon precisely the water chambers of the boat began to fill with their tell-tale gurgling, and the boat gradually sank under water.

So clear was the palæocrystic sea that for more than five minutes the spectators of the scene could follow the boat in its descent.

Having reached two hundred and fifty fathoms, the boat rose to the surface. In the open air it could cross the belt of ocean encircling the Pole, and there was no need to waste the precious gas before reaching the shelf of granite which supported the ice.

During that passage of three hours, the boat, though capable of being driven at twelve knots, was worked entirely by her sails and oars. When she reached the cliffs, Hubert, after carefully studying them, resolved to go a few seconds towards the east. There the jointing of the rocks seemed to show that in that direction they would more

easily find the subterranean passages discovered by De Keralio.

At half-past two o'clock the boat again went under water. She did so prudently, slowly, while a constant look-out was kept on the wall of rock which barred the way to the Pole, and of which every crevice was revealed by the powerful electric light she carried.

At eighty fathoms the rampart seemed to be torn apart. The boat was in front of a vault like a tunnel under the rocky mass. After what De Keralio had said as to the structure of these giant reefs, Hubert did not doubt for an instant but that he was in front of one of those passages through which the boat had once before journeyed to the north.

He let the boat descend another six fathoms. He was right. What he had seen was but the top of the subterranean passage. Below, the opening enlarged enormously. What was but a fissure at eighty fathoms became a cupola or dome at a hundred and fifty. And the wondering eyes of the explorers at the windows of the boat gazed admiringly at the fairy picture developing before them.

It was a veritable fairy palace they were passing through.

To the right, to the left, in enormous depths carpeted with dense shadows, were successive halls held up by giant pillars. Here and there were what seemed like fragments of fantastic architecture. Here were spires, and there were pediments; further away were strange edifices in which unknown forms seemed to be moving.

Now and then, amid the mysterious night, a ray of light would stream forth, blue or violet, yellow or opal, and suddenly the sea would reveal its immeasurable depths.

"Look you, Isabelle," said Hubert, all of a sudden. "I find here the explanation of the aurora borealis which is so frequent in these icy regions. It is manifest to me that the two Poles are immense condensers of fluids, and that the marvellous illuminations of these waters must project into the sky the strange lights which we have so much admired during the past winter."

"You may be right, Hubert," said Isabelle. "But what can be the cause of that?"

"I am trying to find out," said the young man, "and I do not yet see it. To explain the luminous effluences at the same time as the centrifugal force which drove your father back, we must admit the existence at the Pole of an extraordinarily active source of motion, something like a giant cataract displacing millions of gallons of water."

"And would such a cause explain all we see?"

"Certainly. For heat, light, electricity are but modes of the same principle: motion."

They were interrupted by a shout from Guerbraz. The sailor who was on the look-out forward, with his eyes at the porthole watching the course ahead, had just exclaimed,—

"Captain! we are going up, I think: look and see!"

Hubert rushed to the upper panel and opened the

second row of portholes. A stream of daylight inundated the interior of the boat.

And in this sudden expansion of daylight the incandescent lamps appeared to burn yellow and rusty.

The young officer rushed to the manometer to see the pressure.

"But no!" he said. "We are not going up!"

Moved by the same feeling of curiosity, Isabelle took off the rest of the hatches. A triple cry of admiration broke forth from the boat.

"We are floating in broad daylight!" said the enthusiastic girl.

It was true, and yet it was untrue. If they had not had the walls and columns of this marvellous edifice to show them where they were, they would have thought themselves transported into the open air, under the very rays of the sun. A hundred yards over their heads the explorers saw what seemed to be a roof of crystal. The walls and columns were glittering like prisms. Sapphires, emeralds, amethysts were there amid the rippling gleam of diamonds. In the depths they could see cascades of precious stones that were strange to them. The water had become invisible, and given place to an atmosphere of light.

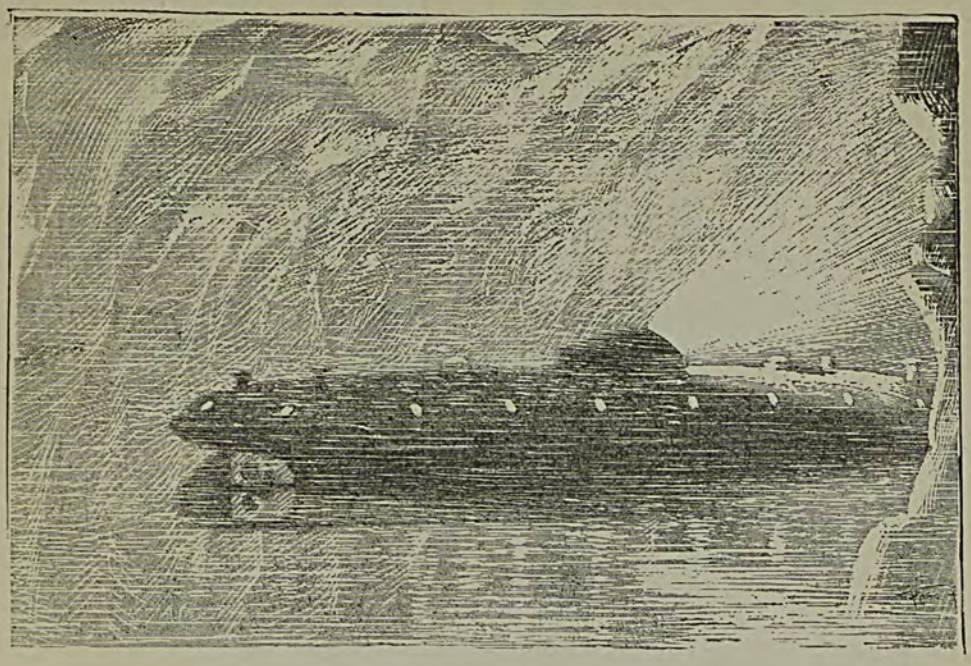
"My God!" said Isabelle, addressing a prayer to the Creator, "Thy works are beautiful!"

The temperature was of springtide mildness. The explorers in their polar costumes were too warm. They threw off all that they found too heavy.

"Where are we?" asked Hubert, with vague uneasiness.

As if in reply the light suddenly went out, and they were in dense darkness.

At the same time a violent shock shook the boat in every frame, and it stopped dead.



CHAPTER XIII.

TO THE POLE.

IT was a moment of indescribable amazement.

The violence of the commotion had shaken everything. Isabelle had lost her balance, and without the aid of Hubert's arm she would have inevitably broken her head against the side of the boat.

But this sudden darkness lasted only for an instant. In, as it were, a flash of lightning, the light appeared again, and Hubert intuitively guessed the secret of the accident.

In this subterranean ocean, saturated with electricity, certain parts of the vault, of the pillars, and the walls,

acted as accumulators. It had happened that in approaching within range of the rocks, the boat had caused an electrical discharge sufficiently strong to suddenly extinguish the light. But the extreme penetrability of the medium had preserved her from destruction.

Unfortunately, the shock had caused a breakage in part of the rocky mass, and blocked the way in which they were going.

Some means had to be found of overcoming this difficulty. In front a heap of huge blocks had been thrown together to form a regular barricade, to remove which would require a machine, but which an explosive might perhaps clear at once.

Isabelle was the first to see what ought to be done.

"It is time to try a torpedo!" she said.

"So I think," said Hubert, "but is it wise to take such extreme measures?"

"What are you afraid of? Blowing up the vault?"

"That would be a small mishap and a danger of little importance. No. What I am afraid of is the eddy the reaction would produce in so restricted a space. Supposing we are dashed against the wall?"

"Do you prefer to be buried in this liquid shroud?"

"No," replied D'Ermont, "and as we have no choice we must use the only means we have of clearing the way."

The boat was backed about three hundred yards. The cavity extended much further along under the vault. The part of the submarine grotto in which they were was a

sort of niche, of which it was at first sight impossible to calculate the dimensions. But Hubert felt little anxiety. He had only to back the boat as the torpedo drove ahead, to save her from the sudden displacement of the water.

It did not take long to execute the manœuvre. The torpedo was launched from the tube forward as the boat went full speed astern, and heading straight at the barricade of rocks it exploded.

The water was violently agitated, and shook the boat as if she were in a furious sea. But this was not nearly so dangerous as if it had dashed her against the rocky wall. There were no signs of this, however, and driving ahead again, D'Ermont saw that a large hole had been made.

Resolutely then he put on all the speed he could, and, taking care to keep clear of the walls, he swiftly passed onward amid the depths.

But somehow he must get out of this. In consulting the chronometers he found that it was eighteen hours since they left the field of ice, and ten since they had been under water. In spite of all his precautions and the oxygen given out by the apparatus, the atmosphere had grown heavy within the boat. The carbonic acid was evidently becoming excessive. Guerbraz, kneeling down to pick up something, nearly fainted. He would not have got up again had not D'Ermont, who saw what was the matter, gone to him instantly and raised him.

He took advantage of the incident to warn the sailor and Isabelle of the danger they ran in stooping. But at

the same time he warned them that it was becoming urgent for them to leave this subterranean passage as quickly as possible, in order not to exhaust the store of oxygen which they would need for their return.

In consequence of this, he advised Isabelle to take a little repose. He prescribed the same thing to Guerbraz, promising to wake him in four hours, and Isabelle in six. He had several reasons for hoping that in that time the boat would have got through this terrible passage.

Up to then he had only run sixty kilometres since the immersion, allowing for all the windings and cautious explorings.

When his two companions were tired out and asleep, Hubert, as being in sole charge, found his duties tripled. Guerbraz had been the look-out, and Isabelle had kept an eye on the compass and instruments ; but now Hubert had to do all this.

As a measure of precaution he arranged a series of lighted candles at different heights, which, by their successive extinction, would show the gradual rise and increase of the carbonic acid.

Having put them in place, the lieutenant gave an affectionate look at the brave Guerbraz, and at the young and beautiful creature destined to become his bride at the end of this perilous adventure ; and then he took up his position in the middle of the boat and increased her speed to the utmost.

He was going at fourteen knots.

D'Ermont, however, was not at ease. As soon as he

was alone and had no reason for masking his anxiety, his face became serious and thoughtful. De Keralio had told him of this subterranean voyage, but had said nothing of its duration; and this duration was now becoming long.

The continued immersion under the waves frightened him; a feeling of sickness was gaining on him. It seemed that this vault was about to crush in upon him. For a moment he thought this was due to the effect on his mind of the extraordinary situation in which he found himself. He soon recognized that it was due to a purely physical cause, which threatened a very serious danger.

The atmosphere was changing from worse to worse. The lower strata, under the pressure of the breathable air, was slowly disengaging carbonic oxide. The gas was rising. It was now a foot above the deck. Two of the lighted candles had gone out.

Around, the sea continued luminous, absolutely saturated with electrical effluences. The boat was passing through a permanent and liquid aurora.

Hubert anxiously looked ahead. He thought the colours were a trifle fainter. He turned on more hydrogen into the motor. He was running nearly sixteen knots.

But then a curious phenomenon occurred.

With his eyes fixed on the compass, the reversed needle of which indicated the north *a contrario*, he saw with amazement that the boat was drifting at an angle of forty-five degrees.

At the very moment he noticed this, the submarine light

suddenly began to fade, and in a few minutes darkness reigned around.

Hubert lighted his lamp and looked out. Nothing could he see but water. There was no wall, no basaltic column, no vault in sight.

"Are we out of the tunnel?" he asked.

To assure himself of this the only thing to do was to rise to the surface.

This he decided to do.

But the water-tanks had to be emptied, and he had to awake Guerbraz, whose help was indispensable. Together they succeeded in working the valves and letting the water out.

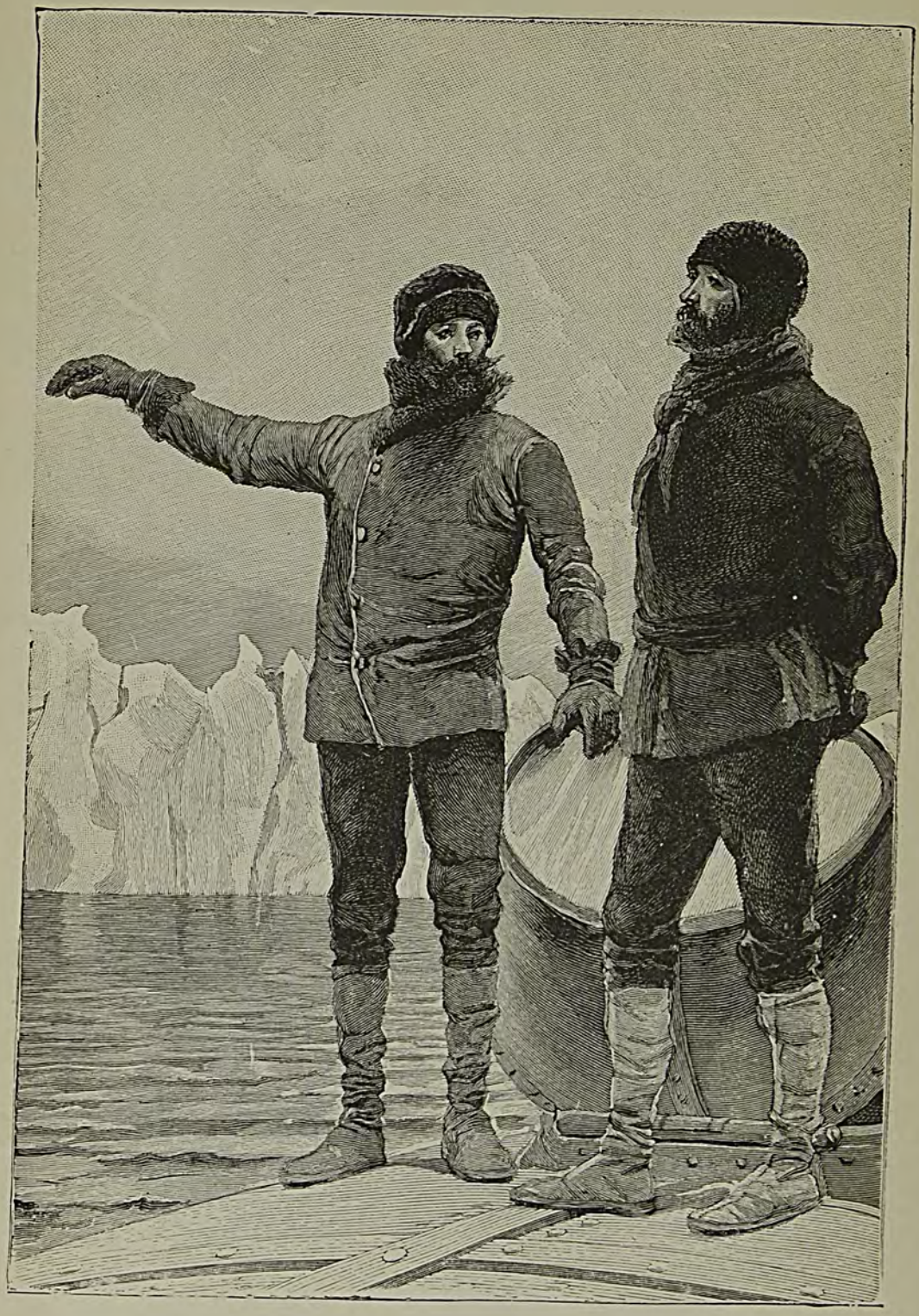
They had not long to wait for the result. The boat, relieved, rose with the rapidity of the bubbles of gas which break on the surface in contact with the air.

At the same time the sea resumed its internal illumination. The immense electric source of light deep down in its depths dispersed its faint violet light in all directions.

But as soon as the boat reached the open air, and Hubert, with a hymn of thankfulness, slipped open the hood to let in the pure atmosphere, he saw the explanation of the movement of deviation he had been unable to comprehend.

He was on the inner side of the barrier of ice accumulated on the rocky girdle of the Pole. The sea on which he was floating was entirely free and of milky whiteness. It was violently agitated, and a continuous roar was heard.

Above, the sky was of a pale blue, and of limitless depth. Although it was daylight, the stars could be seen. Round



THEN HE EXPLAINED THE MATTER TO THE SAILOR.

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the horizon the two men saw that the blue sky formed a circle below which were stormy grey clouds, indicating that here along the belt of palæocrystic ice the cold recovered its rights.

The boat continued to drift. The angle, which had been forty-five, was now sixty, showing that the boat was not heading straight for the Pole, but turning at a tangent to a polar circle. The truth flashed on D'Ermont.

"The rotation of the earth!" he said in a whisper to Guerbraz, who looked and did not understand.

And then he explained the matter to the sailor.

Instead of steering straight for the Pole, which was impossible owing to the enormous centrifugal force that kept the waves moving in the same direction as the earth was spinning round its axis, the boat was headed so as to attack the concentric eddies obliquely. There was no fear of being sucked into the centre, for, unlike the Maelstrom, the eddy moved from within, outwards.

Isabelle had been asleep more than six hours. Hubert, thinking her rest had been long enough, and not wishing to deprive her of the sight of the spectacle, resolved to wake her, so that she might be in readiness for anything sudden and unexpected.

It was an exclamation of joy that escaped from her lips.

And so the problem, the object of their investigations and their researches, had received its solution while she slept. She had fallen asleep deep down in the waters; she awoke in open day, breathing pure, fresh air. And the Pole was

there quite near to them, a few kilometres from the circle of their rotation.

"Are we going there?" she asked without preamble.

"Yes," said D'Ermont, laughing, "we are going there."

And stretching out his hand he showed on the horizon, a few thousand fathoms away, a white line above which floated a ring or crown of cloud.

The boat continued to leap inwards from one circle to the other.

It drove on, gaining yard by yard, to the crest of the funnel.

Suddenly there was heard a sharp noise; at the same instant the mist cleared, and revealed the mysterious centre of the abyss.

It was a marvellous picture, a sight the like of which the human eye had never seen.

The centre of the Pole was an island.

But what an island, and what a centre!

Around it the sea rose in a gigantic roll of water quite sixty feet high, the slope of it like a crystal hill. On the summit was a fringe of foam bounding upwards in dazzling snow, and dashing its glittering spray high in the air.

Faster and faster sped the boat. At last this crest was reached, and the wondering explorers stood amazed at the incomparable beauty of the picture. They could imagine they were in some supernatural world.

Above them the polar land covered with brilliant verdure looked like a living emerald. Dwarf shrubs,

thickly covered with foliage, displayed all the attractions of a flora unknown in any other part of the globe. By the extraordinary mildness of the temperature, it was soon seen that eternal spring reigned in this motionless centre on which the only breeze was that coming from the circling eddy of the ocean, and the only rain the delicate vapour from the spray falling in imponderable dust.

The boat had only just passed the level of the roll when she glided by her own weight on the compact mass of condensed water, as on the face of a mirror, and gently grounded on the sand that girt the polar island.

"In truth," said Isabelle, clapping her hands, "this ought to be the entrance into Paradise."

"That is true," replied Hubert. "And I must say it completely upsets all the ideas I had of the Pole."

"I had always understood," said Guerbraz, "that the Pole was occupied either by a boundless sea or by a volcano in constant eruption."

"Yes, Guerbraz," said D'Ermont, "and scientists had every reason to believe so. But they did not allow for all the phenomena of rotation; and it is manifest to us that this centrifugal force will explain it all. There is only one thing I cannot understand."

"And what is that?" asked Isabelle.

"This. The duration of the polar night at the Pole itself ought to be exactly six months. What becomes of this happy climate during the absence of the sun?"

There was no reply, for only nature herself could furnish the explanation of this inconceivable singularity.

The officer had remarked that, as the bow of the boat touched the shore, there had been a flash of light in front and a rather powerful shock had thrown the boat back into the sea. But an instant afterwards, after a series of small sparks along the ground, the frail hull of aluminum had rested on the beach.

This observation put him on his guard.

He said to himself that the whole island was like a Leyden jar, and that any contact might destroy the equilibrium of the magnetic forces spread over its surface.

Consequently it was not advisable to set foot on the island without an endeavour to diminish the shock of the electric discharge. He therefore ran to the bow and took a boathook, which he was going to use as a leaping pole.

He had no chance of trying his theory before an experiment confirmed it.

In fact, Isabelle, without attending to her cousin's advice, and having no suspicion of the danger she might be running, jumped ashore from the deck of the boat.

A cry of terror warned Hubert, who with one spring, aided by the boat-hook, had also landed.

But Isabelle's terror was not of long duration. The first shock had knocked her down. But she rose safe and sound, and ran up laughing to meet her cousin.

"Well, Hubert," she said, "you see I am not dead."

"You are very thoughtless, Isabelle," said the young man, affectionately. "Did you not see that this ground is absolutely saturated with electricity?"

"No, really I did not. But now the thing is done there

is no need to return to the subject. What an enchanted place this Pole is!"

"Ah! my word, yes!" said Guerbraz, who had just landed as Isabelle did, and, like her, had been knocked over.

"Well," said D'Ermont, "I suppose we had better explore our island."

And they walked along the shore. This first view was a long subject of astonishment and admiring curiosity.

They noticed, in the first place, the strange density of the water encircling the island like the counterscarp of a fortress. As if drawn up by some gigantic suction, the wave rose in a gentle slope about fifty yards wide to a height of twenty yards, forming with the island a regular basin, of which the ground they were on was the bottom.

And the shore ran far out under this rampart of waves, that were so dense as to appear solidified.

Hubert, more and more amazed, endeavoured to discover the solution of the strange problem.

One solution he found, but it only satisfied half the conditions.

The island was evidently a single mass of granite, with no fissure in it through which there was communication with the sea. In this way it was intelligible that the globe's rotation round its axis would be enough to keep the surrounding waters above the level of the land, and that this wonderful barrier would thus rise as if it were a dyke and be much more lasting than any similar work from the hand of man, though the millenary

influence of the precession of the equinoxes might one day modify this state of things which was so puzzling to human reason.

But this hypothesis had to be verified, and there were hardly the means to do so then.

The three companions went towards the centre of the island.

The compass was of no use. The needle was literally distracted, and gave no precise indication. It would remain in any direction it was thought fit to give it. There were no stars clear enough to serve as guides, although, in spite of the daylight, several could be distinguished, and more especially the Great Bear.

Some artificial method must be tried. Hubert took the boat for his starting point. He stepped the mast and hoisted the tricolour. Then, taking the shore as his base he walked inland at right angles to it.

The way lay through a sort of dwarf forest. Plants of all species, from the fern of the humid temperates to the palm of the tropics, lay thick around them, and through them there was difficulty in finding a path. The fauna was even more singular. Here and there a few butterflies rose above orchid flowers of the strangest aspect. A few birds, like swallows and snow buntings, were chasing them. Lizards of curious appearance crept among the fragments of a soil so compact that it looked like hard clay rubble.

But as they went onwards the explorers felt the ground sloping downwards. Evidently rotation not only affected the sea, but the land. The Pole, already so full of

surprising revelations, had doubtless many others in reserve.

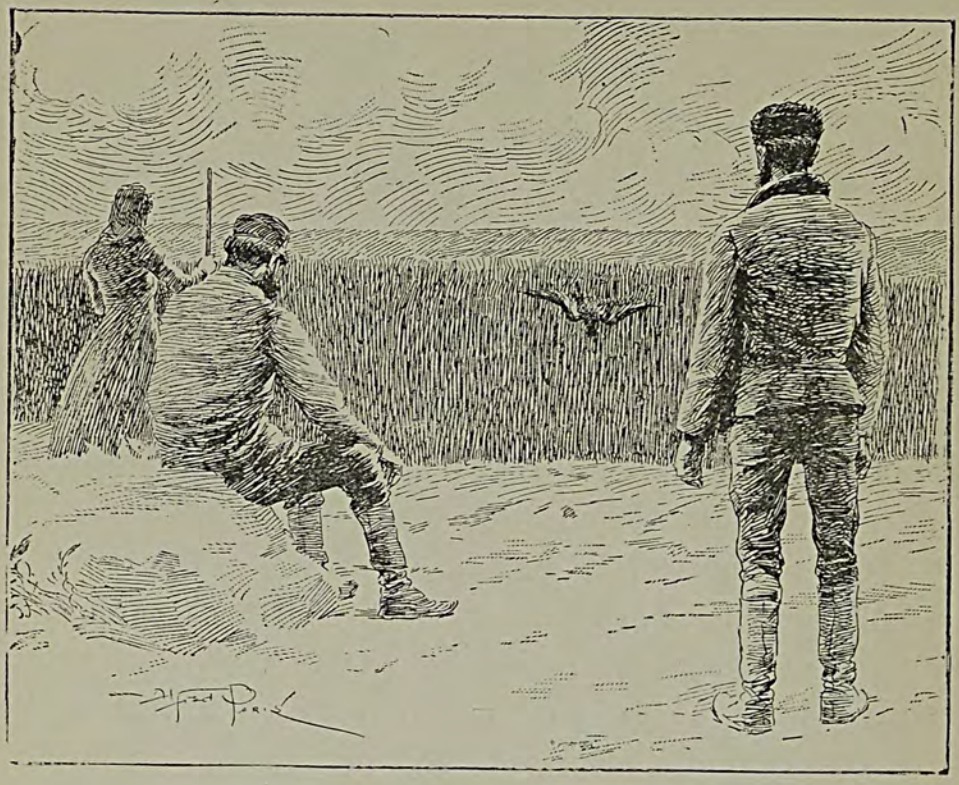
"If we go on like this," said Isabelle, gaily, "the centre of the world may be a hole."

"You could not have been nearer the mark," said Guerbraz. "Just look down there!"

They had just reached a point in the descent where, through a break in the curtain of verdure, the eye could see into the very heart of the island. All round there was a carpet of verdure, and there was every sign of a mild and equable climate. A circular valley was at the bottom, and in the valley was a lake with the water so calm and limpid that they might have taken it for a silver mirror, had it not been for the presence, in its very centre, of a jet of water of prodigious height, breaking aloft into a glittering sheaf, radiant with all the hues of the rainbow.

Hardly believing their eyes, the three companions hurried downward and reached the lake.

Isabelle de Keralio was right; the centre of the earth was a hole.



CHAPTER XIV.

FROM THE CENTRE.

YES, the centre of the globe was a hole, for when the travellers reached its borders the jet of water existed no longer, the silver lake had disappeared, and in its place all they saw was a frightful abyss, a chasm of from a thousand to twelve hundred metres in diameter, with almost smooth perpendicular walls, the bottom of which was invisible, the open void being full of fleecy vapours, which rose in capricious undulations to within thirty feet of the surface but never reached it.

The three explorers were of the same mind; they said the same thing.

"We have been the sport of a dream or a mirage."

However, fatigue was overcoming them. The continuous daylight had been strangely abused, and excited by the marvels they met at every step, they had lost all count of the hours. When Hubert looked at his watch he saw that twenty-two more hours had elapsed since their landing on the island.

Twenty-two hours, a night and a day! Nature claimed her rights and demanded sleep.

They pitched the tent. The sleeping bags were useless under such a temperature. They did not open them, therefore, and they threw themselves down clothed as they were.

A long, deep sleep kept them still for hours. When they awoke great was their surprise to find that the lake had reappeared, and that the column of water was rising as before to a hundred and fifty feet in height, and breaking into the shower of liquid diamonds.

"Ho! ho!" exclaimed D'Ermont, "I begin to understand. This is an intermittent fountain, a sort of marvellous geyser. The surface it discloses is, owing to the motion of the earth, sometimes above, sometimes below the orifice we see. Hence the regular flow of the water outwards, and its return inwards every twelve hours. The jet of water is certainly due to some additional pressure, and its great height is due to the lesser weight of the air at the Pole than at the Equator."

This second hypothesis could easily be tested, and it was immediately confirmed by the barometer. To test the first hypothesis, D'Ermont had recourse to a very simple proceeding.

He went to the opposite side of the lake and threw in a branch of a tree which he had previously stripped of its foliage, and marked with a piece of coloured rag.

At first the branch seemed as though it was not going to move.

But in time it gradually moved away from the bank, not in a straight line to the centre, but in a curve which took it in succession through every point of the compass. At the end of six hours the water had disappeared into its bed of mist.

The fifth day had elapsed since leaving their companions on the field of ice. They had only brought a fortnight's provisions with them, and they had to think of getting back. Hubert repeated with variations La Fontaine's line,—

"We cannot see all, we must get out from here."

Up to then they had been completely successful. With the exception of a few incidents of detail, incidents more picturesque than disquieting, they had found the road open to them. Now the problem was of exceptional gravity.

This land of the Pole, this remarkable island, was situated some four hundred yards above the level of the sea. More than that, the sea encircled it with an impassable mound of waves; and beyond was the rocky barrier under which they had come, by a road they had again to find.

The question was formidable ; and its solution had to be set about forthwith.

Their first attempt was to endeavour to drive the boat into the belt of water, so as to mount to the crest and go over it. This failed.

The frail craft of aluminum could not triumph over the resistance of the waters. The gyratory movement of the circle was exercised with the same force on both sides of its line, but on the inner side the boat could not be submerged, owing to a slope of sixty feet, without any liquid support having to be dealt with.

The disappointment was great. At one moment it almost changed to despair.

"Are we doomed to remain imprisoned at the Pole?" asked Isabelle.

She smiled as she said this, but her tone was anxious.

"No," said Hubert, thinking only of reassuring her. "We shall get out all right. But I am sorry we did not bring the balloon with us. The centrifugal force which prevented our reaching the Pole would now be of great use in helping us out of it."

Two days went by amid these perplexities and anxieties.

Every day the lieutenant returned to the border of the lake and looked down into its gloomy depths. His many observations only added to his anxiety. The insects, the butterflies, for instance, were not strong enough in their flight to have come from the distant icy lands that lie around the Pole. It followed that they must have come into existence on the island.

One morning Hubert noticed that the fauna was increased. There were one or two birds he had not seen before. These were large owls such as are found in the mines dug by the hand of man, as well as in the icy deserts of the north. As he watched the flight of one of them he saw the bird plunge down into the abyss left by the retreat of the waters of the lake. He concluded that the gulf must consist of large cavities sometimes dry, sometimes submerged. He had already discovered that the water of the lake was not salt.

From that to a plan of escaping from the Pole down through the lake was but a step.

A series of calculations showed him that the plan was not only reasonable but relatively easy of accomplishment.

He and Guerbraz set to work. They took the boat to pieces, and built it up again on the lake shore.

"What are you going to do?" asked Isabelle, curiously.

Hubert smiled and explained his plan.

"My dear Isabelle," said he, "you will see very quickly. The water of this lake is fresh water, which proves that it has no communication with the sea. It takes twelve hours to fill a cavity sixty fathoms deep and a mile across. That shows that an immense subterranean sheet of water must extend round here reaching to at least sixty kilometres away. At every revolution of the earth, this water returns to its point of departure. It sweeps round the compass and consequently it must cross the forty-first degree of west longtitude. We have, therefore, only to descend into

the entrails of the earth for this water to take us to the extreme point where it is in communication with the land. We know that the girdle of rocks is about forty kilometres from here and that the surface of our island is a circle of some twenty-five square miles in area. If we let ourselves be borne along by a branch of this underground current we are sure of reaching one of the islands in the open sea. The presence of that sea and the existence of this prodigious amount of magnetic force assures us that the hypothesis is certainly correct."

He spoke with such conviction that Isabelle was conquered at once.

"Bravo!" she said, "forward, then, by the subterranean corridor."

It was the eighth day. D'Ermont's calculations told him that to reach the outer boundary of the underground waters in the vicinity of the forty-first meridian, he must start at noon precisely.

The boat was accordingly launched and the embarkation took place.

As he had expected, the descent of this internal sea took place circularly.

In this way the boat passed round all sides of the gulf.

Down to thirty fathoms the lake was a cylindrical pit, the smooth clean walls of which seemed to have been built in masonry.

But at this depth the well suddenly opened out into a series of tunnels and boundless caves, like those the boat had been through on its voyage under the reef.

Hubert soon saw that his calculations as to the depth were not exact. When he reached the sixty fathoms where he expected to find the bottom, the boat was floating on an immense sheet of water under a rocky vault brilliantly illuminated by electric effluences, while the sounding line showed a depth of two hundred and forty fathoms more.

The truth flashed on the explorers.

The difference in the lake's level was due to the difference in height between the extreme points of the Pole caused by the inclination of the earth's axis.

The internal cave emptied and filled according as its position was above or below that axis. This was why the well became lake or precipice according to the time of day.

Being in this way satisfied as to the true state of affairs, Hubert had only to devote his attention to steering the boat into safety.

Up till then they had remained on the surface.

Now the height of the vault overhead and the vast dimensions of the cave permitted them to repeat the manœuvre they had found answer so well in passing the reefs. All the hatches were shut down, every opening was closed, and the boat sank into the water. But this time it was fresh water through which they had to go.

Fortunately the internal illumination of this fairy grotto, the heat given off by the powerful electric centre, rendered the voyage less fatiguing and less dangerous than the first.

All their fears had ceased but one: that of entering into some passage without an outlet where they would be

abandoned by the waves. But Hubert hastened to assure his companions against these chimerical hypotheses. The presence of breathable air at such depths, and even of a certain gentle breeze, showed that there was an atmospheric current in these wonderful tunnels. Besides, their enormous dimensions denoted that they also must be partly emptied at every revolution of the globe.

The three friends joined in a prayer to the Almighty, and, comforted by the Divine Power, boldly entered the subterranean caves.

But this time to their amazement was added a feeling of legitimate terror at meeting with something totally unexpected.

Up to now they had to contend only with the ocean, and the mysterious shadows and phantoms that peopled it. This battle with the inanimate had its dangers undoubtedly, but they had seen nothing of the extraordinary and supernatural with which so much of the life of the seamen is occupied.

Here, in the depths of these limpid waters, they were to meet with many strange apparitions, and with shapes worthy of the most awful nightmares described in teratological legend.

"Captain!" suddenly shouted Guerbraz, beckoning as he did so. "Come and look at this horror!"

Hubert and Isabelle rushed to the windows.

A monster had just risen out of the shadow of one of the pillars, and was swimming right at the boat. The body was twenty feet long, and provided with fins, or

rather short paws, like those of the cetaceans: there was a neck almost as long, ending in a relatively small head, in shape like a lizard's. Behind this strange specimen of a form that has disappeared for thousands of years were others still larger, half way between a whale and a crocodile, beasts with walrus heads, facetted eyes and saurian teeth.

D'Ermont could not restrain a cry of alarm as well as surprise.

"Mercy on us! The fossils have come to life!"

And mechanically he began to tell their names and enumerate their species.

"That one with the swan's neck is the plesiosaurus, that other is an ichthyosaurus. Up there on the ledge of the rock is a megalosaurus; overhead are whole families of giant dog-fishes, swordfishes, sharks, sawfishes, hammer-heads."

"What will happen to us?" murmured Isabelle.

Matters were indeed becoming alarming. The frail boat was running amid a perfect swarm of the monsters of all ages prior to the quaternary. These had survived the catastrophes of the globe. In these fresh, warm waters in the earth's interior they had found shelter against the cold on the surface. And the presence of this intruder, this fish in plated armour, inferior in size to many among them, for the boat was not more than forty feet long, had at first astonished them, and had now enraged them.

Grouped around it, forming a sort of tacit line, they advanced in serried ranks to the assault; and a combined

attack would have certainly shattered the vessel to pieces.

D'Ermont was equal to the occasion. He had recourse to radical measures on the spot.

Assembling in connection all the couples of the battery used in electrically lighting the boat, he put this new kind of voltaic pile in immediate contact with the boat's outer skin, and for the moment transformed it into a coil of enormous power.

"Look out!" he cried, "and catch hold of the glass handles. We may feel a shock."

He had not finished speaking when six of the terrible creatures dashed at the boat.

The shock was tremendous. Twenty-two cells coupled up had given the boat a charge powerful enough to knock over a herd of cattle. The monsters did not wait for another shock to pass through them into the whole troop that crowded around as this had done. In a twinkling the army was in flight in all directions.

"It was time," said Hubert with a sigh of relief. "Heaven be praised! If this had not succeeded, I had only one more chance, and I have my doubts if it would have been of any good."

"And what was that?" asked Isabelle, still agitated by her emotion.

"I would have put one of our tubes of liquid hydrogen in contact with the water and opened it suddenly. There would have been a terrific lowering of the temperature, and we should have killed off a respectable number of

these rascally things that have had the bad taste to live on to these days."

While this conversation was in progress the boat was running at full speed away from these dangerous monsters. It had entered a spacious corridor, which it followed along its whole length. For four hours the voyage continued without any perilous incident.

At length, by the gradual diminution of the internal illumination, the explorers perceived that they were emerging from the magnetic zone to enter one less favoured. They had to bring into use again the lights of the boat, and the first rays disclosed that the bed of the water was less than twenty fathoms below them.

The boat emptied her reservoirs and rose to the surface.

It was as Hubert had expected.

They were afloat on a surface of fresh water of marvellous limpidity in a cavern similar in nearly all respects to that at the Pole. A light, like a ray from a lens, could be seen to the south. Guerbraz steered towards it.

This was the opening into the cave ; its communication with the outer air. The waters of the lake there formed in summer a cascade three hundred feet high ; but at this time of the year the cold had solidified the upper falls into steps of crystal. Above stretched the wall of ice which formed the outer girdle of the Pole, and below that the open sea was beating against the rocks.

"We are saved!" exclaimed Isabelle.

Assuredly, they were not yet at the end of their dangers

THEY TOOK THE BOAT TO PIECES.

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and fatigues, and cruel sufferings were still in store for them. But, at least, they had reached their object, and obtained the desired result. They had succeeded in penetrating to the Pole, and had returned, bringing precise information regarding it.

Henceforth it would be known not only in the world of science, but in the ordinary world, that the North Pole is an island where there reigns a spring climate due to the combined influence of solar rays and magnetic effluences; that this island is washed by an open sea separated into two zones by a wall of rocks surmounted by perennial ice, and that it is not impossible to discover in this wall the fissures, by which the two concentric circles of the palæocrystic ocean communicate. Perhaps this passage might allow of a ship reaching the centre of the globe.

It was also known that a series of subterranean and submarine passages put in communication not only the two seas but the arctic lands and the Pole itself, and that travellers availing themselves of the same means could repeat the adventurous attempt which two men and a woman had conducted so successfully.

These reflections poured sweet consolation into the hearts of the explorers. Said Hubert,—

"We have not yet finished our work. We have to carry our boat to the edge of the walls of rock, and that is not going to be easy."

It was a very long affair. It took ten hours to take the boat to pieces, to carry her, and to put her together again.

The worst part of the task was the transport of the pieces

over the ragged slippery icebergs. Nevertheless at the end of the ten hours the boat was peacefully afloat on the waves of the open sea, and the three companions, now sure of return, had moored her in the shelter of some high rocks while they went to sleep.

When this well-earned rest was over, Hubert accurately fixed the position of the subterranean tunnel.

It was in 41° 48″ longitude west from Paris.

Twelve entire days had elapsed since their departure, when the bold explorers came alongside the field of ice on which their friends awaited them. Three of them only were there. The others had been prudently sent back, and among them De Keralio.

Lieutenant Pol, Doctor Servan and a sailor had remained behind at their dangerous post on the ice.

They had with them a sledge and the team of dogs required to draw it. The first living being to welcome the travellers was the brave Salvator. They could not keep him away. He threw himself into the sea and swam out to meet the boat, into which Guerbraz and Isabelle helped him.

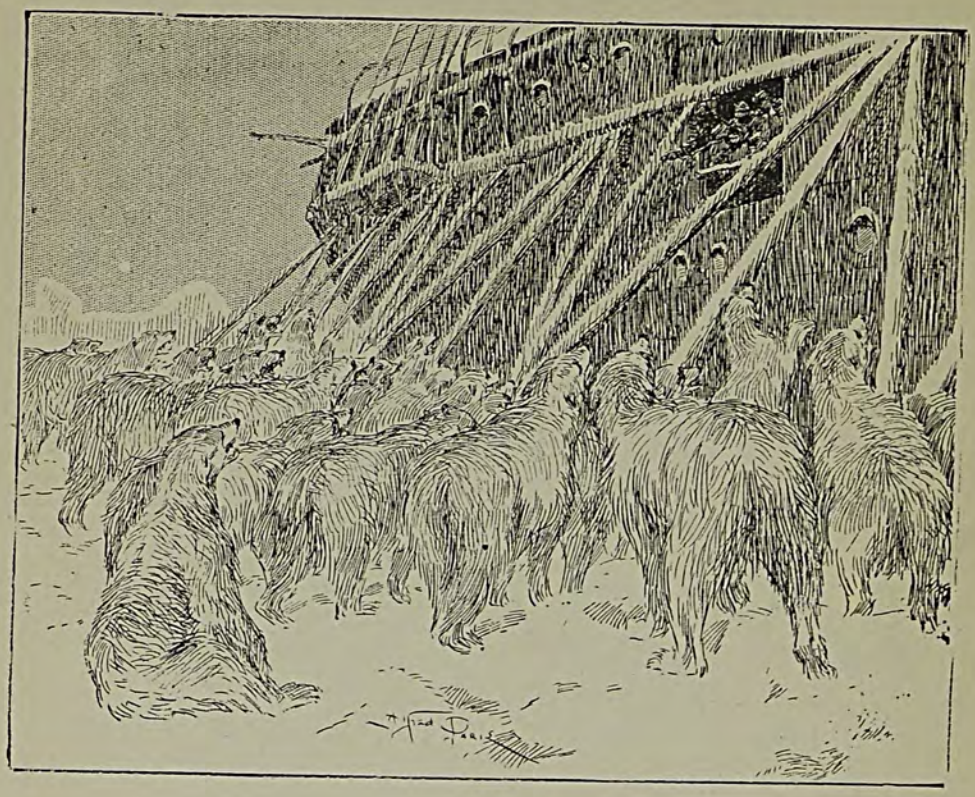
The brave dog was enthusiastic in his demonstrations. His transports of joy were indescribable. It seemed that he would never be satisfied at the sight of Isabelle. While by his barking, his jumping and his caressing he manifested his joy at her return.

They were no longer in the mild atmosphere of the Pole; they had again entered the kingdom of the cold.

The journey to Courbet Island was laborious beyond expression in a temperature of about 40 degrees below zero. But the happiness of returning to the station, the satisfaction of having surmounted all obstacles, sustained the strength and courage of the little troop. On the 20th of September, after having been met by a rescue party from the ship, they at length reached the *Polar Star*.

Alas! bad news awaited them. Not only did they learn of the treason and ill-omened projects of Schnecker; but they also heard that two sailors had died. They had also the sorrow of hearing bad news from Cape Washington, where death had removed two men from the ranks, and, what affected Isabelle more than anything else, Tina Le Floc'h was very ill on board the ship, and Doctor Le Sieur did not think she would survive many days.

The expedition's second wintering, in spite of the success obtained, had begun under the most melancholy auspices.



CHAPTER XV.

A SIEGE.

ASSUREDLY the actual position of the expedition was as good as it could be.

The *Polar Star* was in excellent shelter at Long Creek, and safe from the outside storms and the shocks of the ice field. Solidly fixed in her cradle, and guarded by two high walls of syenite, she had but to wait for the end of the bad weather to resume the voyage to France, through the seas to the south of her.

There was no scarcity of provisions; independently of the

reserve of liquefied hydrogen, they had enough coal for the daily heating. There would also be plenty of light, and if they did not possess the same abundance of fresh provisions, if they were wanting in the marvellous resources of the mould improvised the winter before, they had still preserved things enough to furnish all the requirements of the most voracious appetite.

Besides, the hunters had not lost hope of some fortunate shooting before the return of the formidable polar night. They had even received from Cape Washington the glad tidings of the presence of game as varied as numerous for the guns in the autumn campaign.

There was, therefore, no need to be anxious about the men who were in good health.

Unfortunately they were not all in good spirits. The thought of the deaths occurring so quickly one after the other had clouded their brows and relaxed their energies. They had learnt, on De Keralio's return, what had been the lot of his two companions in bravery and misery. Besides, a few cases of scurvy had appeared, soon complicated by exhausting diarrhœa, which if it did nothing else, reduced the sufferers to a state of physical weakness and intellectual destitution.

Isabelle had at once begun to look after the sick, and she had enough to do. She was everywhere dispensing medicine and comfort and hope. But she herself wanted all her courage to reanimate that of her companions, in the presence of her own private sorrow concerning the illness of her nurse Tina Le Floc'h.

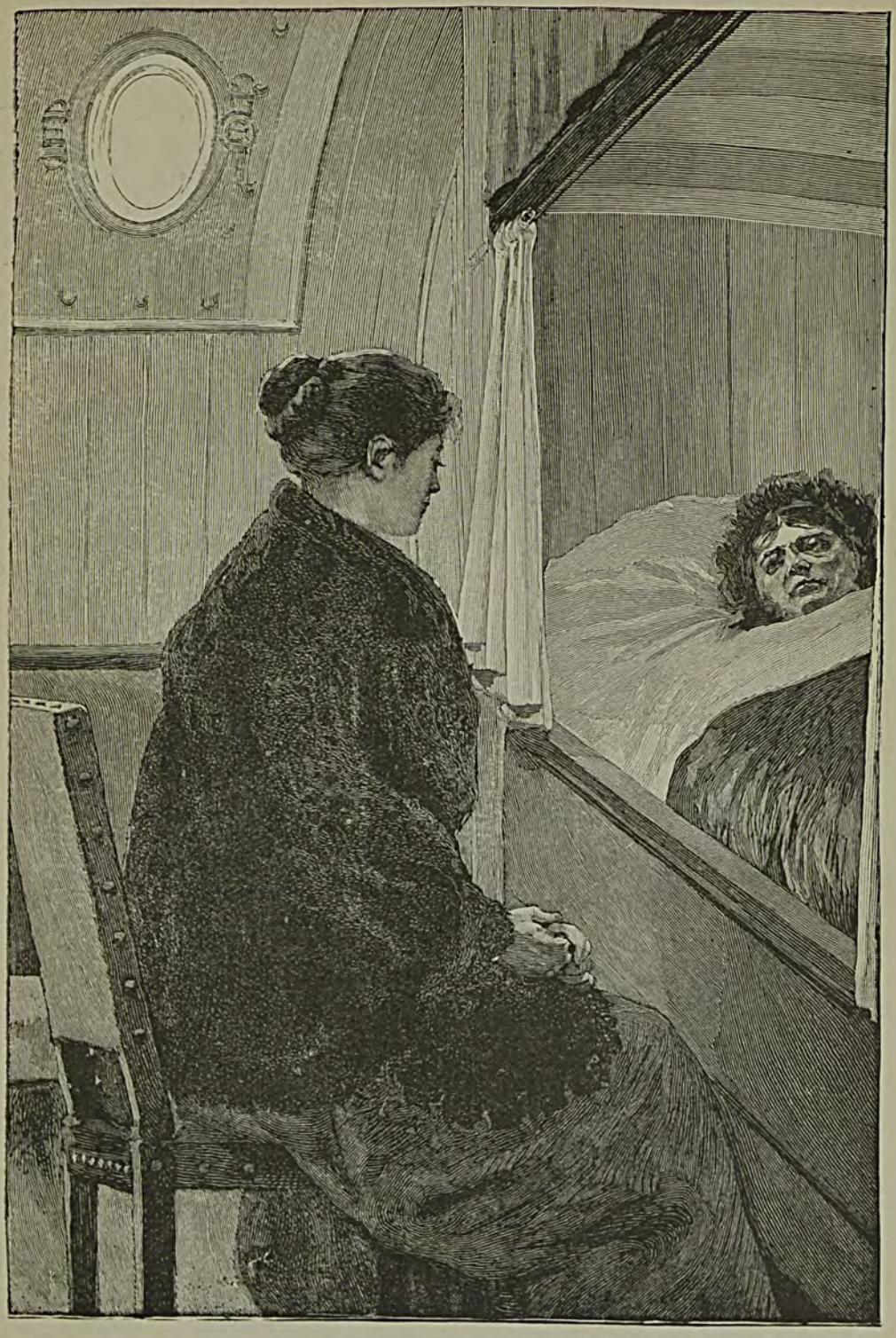
The poor Breton was lost, and she knew it. With admirable resignation she yielded to the decree which deprived her of the days she might have lived in sunny France. She had not a bitter word, but her face showed the joy she felt at having near her the child she had nourished, and to whom she had been a second mother.

Painfully she dragged out this doomed existence between the plank walls of this stationary house, in this atmosphere so little favourable for respiration, in the factitious light of electric lamps. The polar night seemed to weigh on her more heavily than on others, but she submitted without a murmur.

The winter was of extreme severity. The great cold of the preceding year was exceeded. On the 20th of November the mercury in the thermometer was frozen. On the 1st of December it was the turn of the acids and alcohols to thicken into a sort of syrup. From that date the temperature remained almost constantly at 40 degrees below zero. In the early days of January it descended to levels, in which the cold was tremendous: 50, 52, 54, 56 degrees below zero. The most careful medical precautions were ordered and taken; the men were forbidden to go out, and kept indoors for an entire week.

Then the coal fires were withdrawn and hydrogen was burnt in the stoves, in the forecastle and cabins; and in this way a constant temperature was maintained of four degrees.

Fortunately, if the winter was terrible it was also relatively short.



ISABELLE NURSES TINA LE FLOC'H.

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On the 15th of January the temperature suddenly mounted to the freezing point of mercury. At the same time an increase of barometric pressure announced the arrival of a storm from the south.

It lasted two days and was terrible. Notwithstanding her sheltered position, the *Polar Star* had a narrow escape.

An enormous piece of rock fell down from the cliff, and smashing the mizen top crashed to the deck. Among the cabins damaged by this accident were those of Isabelle and her nurse. This fall also cost the lives of two sailors. One was killed on the spot, and the other had his legs broken, and died after an amputation which was inevitable. These were causes of grief which the return of the sun was not likely to dissipate.

When February came the cold was not much more than from twenty-five to thirty-two degrees. As a change for the men Captain Lacrosse ordered them out on expeditions. The first detachment, under the command of the valiant Guerbraz, went off to Cape Washington and reached it after six days' hard work. He left there two of his men and brought back serious news. Lieutenant Remois had succumbed to an internal complaint due to the extreme cold, and with him two sailors, both Canadians, had died.

These three deaths made up the number of the victims of the expedition to twelve.

There remained thirty-one men and two women. A conference took place on board the ship to decide if they should maintain the two stations. It seemed in fact to be

more practical and more prudent to unite the crew either on the steamer or in the house at Cape Washington. That would make it easier to attend to the invalids, and enable the two doctors to work together. And what was a valuable advantage, it would considerably reduce the expenditure of light and fuel.

It was decided to recall the men from the southern station, and bring them as soon as possible on board the *Polar Star*.

A consultation also took place with regard to the fate of Schnecker, who had all the time been under guard.

Pronounced guilty unanimously, and condemned to death, the chemist only owed his safety to the prayers of Isabelle, who presented herself with tears in her eyes before his judges.

"Gentlemen," she said, "I only bring forward one thing to induce you to be merciful. Twelve of us have already died on the field of honour of our enterprise. Others, whose number we as yet know not, will probably die before long, and my heart is already in mourning for a life which is particularly dear to me. I entreat you, by the execution of a sentence as rigorous as it is just, not to add a new means to those by which death has mowed into our ranks. Do not let a stain of blood, however honourable, rest on your hands. I know that the man is a scoundrel, and that he has attempted the lives of us all and of everyone in the ship. I know that through his crime two of our bravest are dead, and that the chief of our expedition, my father himself, has been the victim of

a veritable attempt at assassination directed against him by this wretch. But I would forget his crimes in the remembrance of the services he has rendered, and above all that this man has been the companion of our sufferings and our efforts. Give him time to realize the greatness of his crime and to repent."

The council were touched at this affecting appeal.

At once they ordered the rascal to be brought into the presence of his improvised advocate, and he was told that, on her demand, they had given him the benefit of extenuating circumstances, and that consequently he would be kept on board under guard until their return. But once he was landed in French territory, his judges would hand him over to a competent authority before which he would have to answer to the charge.

Schnecker thanked his benefactress in a way that showed his gratitude was considerably less than his satisfaction at escaping immediate execution. He was then taken back to his cabin and placed under the guard of a sailor who was relieved every two hours. Soon, owing to the manifest impossibility of escape, this vigilance was relaxed and he was allowed to move about as he pleased.

The crew then began the necessary preparations, not only for the return of the men from Cape Washington, but also for the eventual departure of the steamer. The continual rise in the temperature, the prevalence of storms from the south, and the breaking up of the ice field, gave every sign of an early and exceptionally mild spring.

Meantime Hubert D'Ermont, Lieutenant Hardy, Doctor

Servan, DeKeralio and Isabelle employed a part of their leisure in drawing up a report of their voyage, a record of this unprecedented expedition, so full of moving dangers and unexpected results.

On the 10th of March the men from Cape Washington arrived, and that under circumstances which none of the members of the expedition were ever likely to forget.

As soon as the decision had been come to and notified to the winterers on the Greenland coast, a detachment of six men went out every day from the ship, and ventured as far away on the pack as they could go to meet those whose coming was expected. These excursions were not without danger, for the ice was daily subject to profound alterations on its surface and in its constitution. At every step the well-known obstacles arose; the ocean whose presence was felt in the incessant agitation of the unstable crust which covered its surface, displayed the same terrible snares; cracks closing as soon as they opened; strips of unexpected water, fissures in the hummocks. And according to the observations of Lockwood and Brainard, the men of the *Polar Star* were justified in thinking that in spite of the terrible cold of winter, the Greenland coast was not so safe as the sheet of ice which stretched beyond it.

On this occasion the column had gone out about six miles when they saw before them the party they had come to meet.

The twelve men who composed it seemed to be coming at their best speed. They were running as fast as the snowshoes they wore would permit. They had with them

only one sledge and a few dogs. It became manifest to the *Polar Star* men that their companions were in flight from some imminent danger.

Soon there was no doubt as to this.

The first to come up explained the motives of their flight.

They had got about seven kilometres from Cape Washington when the dogs had given signs of terror. Justly surprised at this, the sailors had gathered round the sledges, and greatly to their disgust saw two gigantic bears a few hundred yards ahead. Contrary to their usual indifference, these formidable plantigrades had not beaten a retreat: but they had moved off a little when fired at.

This first meeting had been almost forgotten, when at the end of another ten kilometres, three other bears showed themselves. These had seemed to be less bold but more tenacious than their predecessors, and they had followed the party, but at a respectful distance, up to the place of its encampment. During the night the poor sailors passed on the ice, they were haunted by terrible dreams; but luckily their ferocious travelling companions had kept at a distance. Inborn caution made them distrust the proximity of men with fire-arms.

The sailors owed to this the fact that they were not attacked during the night.

But at the rising of the sun, their terrors were increased beyond measure.

It was no longer three bears with whom they had to deal, but twelve, a bear to each man.

The danger had thus become very great, and if the unfortunate men had not during the day traversed the seventy kilometres which separated them from the *Polar Star,* they were only too certain to be attacked during the coming night.

The imminence of their peril had given them wings, and their efforts had been superhuman.

But the hungry beasts, understanding probably that their prey was about to escape them, drew nearer and nearer, and the moment came when they formed in line of attack at less than 500 metres of the fugitives.

The men had, however, cleared two-thirds of the journey, and could hope to reach without too much encumbrance the ship that was to be their refuge, when suddenly a new detachment of bears appeared.

Then they had taken heroic measures.

Unharnessing one of the two sledges, they had left it behind, taking care to uncover everything that could be eaten. The dogs were added to the first sledge, on which they had put the men most exhausted by the fatigue of this forced march; and they had literally run over the pack.

But this was only a momentary respite. The assailants had soon attacked the pieces and quarrelled over the fragments; and then refreshed by their meal, they had resumed their pursuit.

As the fugitives came on, the relief party saw the vanguard of their enemies.

"There are at least twenty," said Guilvinec the boat-

swain, who commanded the detachment since the death of Lieutenant Remois.

Luckily the distance from the steamer was not very great. Lieutenant Hardy, who was in charge of the relief party, sent on the new comers on the sledges while he and five companions covered the retreat.

And not being able to resist the temptation of a good shot, he waited until one of the bears was within range to favour him with a steel pointed bullet in the politest manner possible.

He had the joy and pride to see that he had made a hit. The bear received the bullet in its heart and fell dead. Notwithstanding the serious state of affairs, the men could not help expressing their admiration of this magnificent result.

"Bravo, captain!" they exclaimed raising their fur caps.

But this exploit was not quite useless, for the hungry animals swarmed round their dead comrade, and with many a growl soon shared his carcase amongst them.

And when that was done, without any further thought of their brutal action, the plantigrades hurried off again on the track of the fugitives.

But these, helped and protected by their comrades of the steamer, had at last reached the ship, and the growling bears only came up to the *Polar Star* when the last members of the party were clambering up the ladders and ropes thrown over for them to climb on board.

Already, by one of the ports skilfully adapted by the master carpenter, the dogs and sledges had been run up into the ship.

The bears were thus considerably disappointed. But, as bears are patient, philosophical animals, they assembled in council round the ship and lay siege to it in due form.

Their presence was not so much alarming as embarrassing. While these inconvenient neighbours remained outside there could be no thought of the walks abroad required by the most elementary rules of health, and it became necessary to clear them away as soon as possible.

It was decided not to waste words on the way in which it was done, but to do it at once.

The besieged were divided into three sections of ten men each, the first being under Captain Lacrosse, the second under Hubert D'Ermont, the third under Lieutenant Hardy.

Each of these had its day of duty and its special work.

The enemy had been very lightly thought of, but his numbers increased rapidly, and he soon became the object of the greatest attention.

"Why, it rains bears in this country!" exclaimed Lieutenant Pol, going up on deck and looking out over the pack.

"What do you say?" asked Lacrosse, who had heard the exclamation.

"Come and look," said the lieutenant. "Yesterday there were twenty-two of these brutes around us. To-day there are fifty."

Captain Lacrosse had only to cast a glance around to see that the lieutenant had not been exaggerating. The bears were on all sides, and, extraordinary as it may be, fifty was but a moderate estimate of their number.

"Something unusual must have happened in these parts," said the captain anxiously.

A consultation was held. The position, without being critical, was none the less disquieting.

It had become impossible to go ashore, and the presence of these dangerous guests indicated that the time might come when the whole army, urged by hunger, would attack the steamer.

In the ship the state of the invalids did not improve. About the 15th of March an increase of the cold compelled the crew to shut themselves in more closely. The mercury had again frozen and the pack ice, which had appeared to be breaking up, increased in thickness and solidity.

Among the men in the three detachments scurvy had appeared.

On the 20th only twenty-four sailors were fit for duty, and Dr. Le Sieur, the assistant and friend of Dr. Servan, had to take to his bed owing to the excessive hard work he had imposed on himself. This illness of the doctor had anything but a cheering effect on the crew.

But the most depressing experience of the witnesses of this lugubrious drama was the slow agony of Tina Le Floc'h. The poor nurse, in fact, was dying, and her last hours were saddened by the impossibility of affording her any alleviation.

Isabelle, almost worn out, never left her companion's bedside. Tina was quite resigned to her fate, and had but one regret, that of not being able to see her native Breton land once again.

And Isabelle increased to the utmost her energy and attention in prolonging a life that was doomed.

The atmosphere of the ship was becoming unbreathable. The store of liquefied oxygen had been exhausted, and there was left only one tube reserved specially for extreme cases and medical use. The aeration of the quarters was urgent, and this had only been done hitherto by opening some of the ports; but this means was insufficient and the invasion of carbonic acid made complete ventilation absolutely necessary. It was not only the gas used daily for heating purposes that fed this mephitic atmosphere, it was the accumulated respirations of all including the invalids, and the exhalations from the kitchen, the rank odours of which not only poisoned the air, but excited the voracious appetites of the bears outside.

The equinox had passed. The breaking up of the cold weather which had been hoped for was still delayed.

On the 2nd the officers, on Dr. Servan's advice, decided that they would open the hatches, and that in spite of the temperature of thirty degrees below zero they would allow the external air to enter the ship for a few minutes, as after a long discussion it had been decided not to make use of the last tube of oxygen.

Every precaution was consequently taken to minimize the sudden admission of the cold, for there could be no doubt that the opening of the hatches would bring about a very great lowering of the temperature, which still remained at six degrees in the interior of the ship owing to the heating by hydrogen.

To graduate the admission as much as possible, the ports were opened one after the other. When the level of the temperature was thus reduced to zero, the gas heating was turned off ready to be resumed at a moment's notice. Then the main hatch was thrown back.

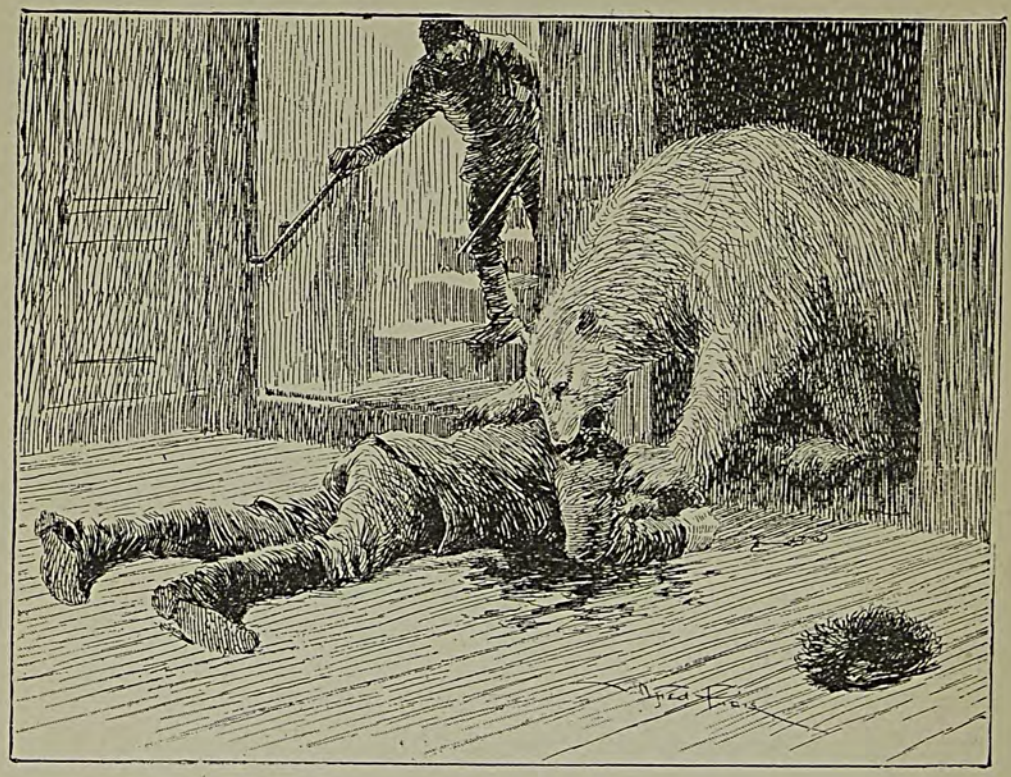
At this moment a strange noise on deck attracted the crew's attention.

Heavy steps, significant scratchings, a sound of much small breakage indicated the presence of unwelcome guests. At the first alarm the men recognized the kind of visitors with whom they had to deal.

"Bears!" said Guerbraz, who was superintending the ventilating arrangements.

He had no time to say more. The planks of the hatch cracked under a considerable weight and broke in like a trap bending up on its twisted support.

The bleeding throat and red eyes of a bear appeared in the opening at the same time as a current of icy air rushed violently down into the ship.



CHAPTER XVI.

BATTLE AND DELIVERANCE.

THE position, this time, was critical.

Allured by the emanations from the steamer, the terrible plantigrades, overcoming their fears, and encouraged by the absence of all movement on board, had resolved to swarm on the ship. They had done this without resistance, and the opening of the hatchways now enabled them to attack the crew of the *Polar Star* in their last entrenchments.

The hatch which had broken under the weight of the

bear, had fallen on the shoulders of Guerbraz, and given him a formidable blow. The strong man went down the ladder with his companions, and gave the alarm within the ship.

The bear finding the place open and the road free, entered, sniffing as he went, and when the men returned with their weapons, they found the gigantic animal at the entrance of the gangway.

Immediately he received a warm welcome from carabines and revolvers, and at the second step he made on the waterproof carpet he fell dead.

Unfortunately three other bears had entered behind him.

Two of them, frightened at the sound of the fire-arms, returned up the ladder much more quickly than they had come.

The third, also thoroughly frightened, mistook the way and rushed into the passage leading to the cabins.

This was where the sick were installed. At the moment Isabelle was seated near her nurse, endeavouring to console the poor woman. A pious conversation was in progress between them, and Isabelle was talking to the Breton of the strengthening hope of immortality.

"Life is short, my good nurse; all of us must leave it some day. Happily it is but a journey, and beyond the grave we enter the true life where mourning and suffering are unknown, where we rejoice in limitless happiness in the presence of those we have loved in this world."

She was speaking thus, wiping away the tears which flowed from the poor woman's eyes, putting all her heart in her words. And the dying woman was comforted, and thought of these things with a smile, and replied in the language she had been accustomed to use in her early years.

"Ah, my dear little child," she said, "you have always been to me what you used to be long ago, the kind, good, little girl, loving God, and pitying and helping the poor! I am happy to die with you near me, I feel that in your hands, under your eyes, and in your hearing, death will be less painful for me."

Suddenly the report of fire-arms made the two women jump.

Isabelle sprang up, left her chair, and ran to the door, which she half opened.

She recoiled terror-stricken and screaming.

The bear was but a yard away, seeking a way to escape. At the sight of the half-open door he rushed at it.

Isabelle, fortunately, had time to shut it, and, palpitating with fear, stood with her back against it to diminish as much as possible the effect of the animal's push.

The push never came.

Had the bear changed his mind, or had he retreated?

While she was wondering, the drama she had just escaped was being enacted at the end of the passage, and resulting in an unexpected catastrophe.

It was here that was situated the cabin of the chemist Schnecker.

The traitor, notwithstanding the mercy that had been shown him, had in no way abjured his hatred or his resentment. Since he had been informed of his fate as soon as the *Polar Star* was in French waters, he had lived only for his anger, and was slowly preparing his vengeance.

"Death for death," he said to himself. "I may as well die in my own way in destroying every trace of this expedition which will confer so much glory on the men who have sentenced me, and whom I execrate."

The opportunity came for him to put his infernal project into execution.

The order had been given to put out the fires for a few minutes, to allow the external air to purify the atmosphere, and consequently the stoves remained ready to resume combustion, and the tubes remained open with the gas still passing into the expansion chamber.

All that Schnecker had to do was to get at this, open the tap, and bring a flame near it to bring about a frightful catastrophe. A formidable explosion would follow, and the hydrogen, on account of the carburets of which it is the generator, and which are known among miners under the comprehensive name of fire-damp, would expand in whirlwinds of flame, destroying everything as it passed and burning the ship and all she held.

Everything favoured the plan. The crew were posted at all the points where their presence was necessary, and the unexpected arrival of the bears had concentrated them in one spot. The chemist could thus reach the

engine-room without being interfered with. It was empty.

But when he got there he saw that, as a precautionary measure, Hubert D'Ermont had disconnected the tube from the expansion chamber. In the pipes there was only the hydrogen that had not reached the stoves when the tap was turned. To get at that one of the pipes must be broken, and that could only be done with a violent blow.

Schnecker had no tools in his hand.

He returned to his cabin at a run, forgetting to shut the door behind him, and seized a hammer and a pair of pincers.

Suddenly a gruff breath, a sort of grunt, made him turn round.

He stopped, livid, voiceless, his hair standing on end.

The bear, seeking an outlet, and not finding one at Isabelle's door, had pushed in. The traitor had never expected such a violation of his domicile.

Then a dreadful scene occurred.

The angry brute rose on his hind legs, filling up the narrow cabin with the enormous volume of his body.

Schnecker uttered a piercing inarticulate cry. He tried to escape.

But the monster, thinking doubtless he was about to be attacked, became the aggressor. A furious struggle began. It did not last long. It could not. In a moment or so the chemist was knocked over, seized in the bear's paws, and

crushed in the powerful arms. And twice did the hideous mouth close on Schnecker's head and reduce it to pulp. The animal roused by this giving him a feast where he sought only an escape, set to work to devour the chemist's body.

However, his cry had been heard. The men came running up from all parts.

But before all, Isabelle de Keralio, carried away by her generous bravery, had flown to the help of the miserable traitor.

She had seized from the shelf at the head of the patient's bed the revolver which formed part of the general arsenal of the ship. To load it and run outside took but an instant.

But prompt as were her movements, she had been preceded.

Salvator, the faithful Salvator, had understood that those he loved were in great danger.

And with an impulse, without thinking of the danger he was facing, he had leapt straight at the bear's throat.

But the poor dog had rated his strength too high. Brave as he might be, he could not emerge victorious from such a strife. The monster had caught him under his enormous paw, and threatened to crush him under its pressure, and Salvator only owed his safety to a very ordinary circumstance.

The bear being disturbed in his occupation, which was that of devouring the miserable Schnecker, had risen for an instant, and falling back on his paws, had knocked over

the dog under him. And Salvator, who was half suffocated, just escaped the fatal hug.

At this moment Isabelle very opportunely intervened.

The revolver did marvels. Isabelle fired four shots, and these all lodged in the bear's head and neck.

One would have been enough, had it been well placed. Unfortunately these wounds, although serious, only exasperated the animal. He rose for the third time, shook the dog, and threw himself on Isabelle.

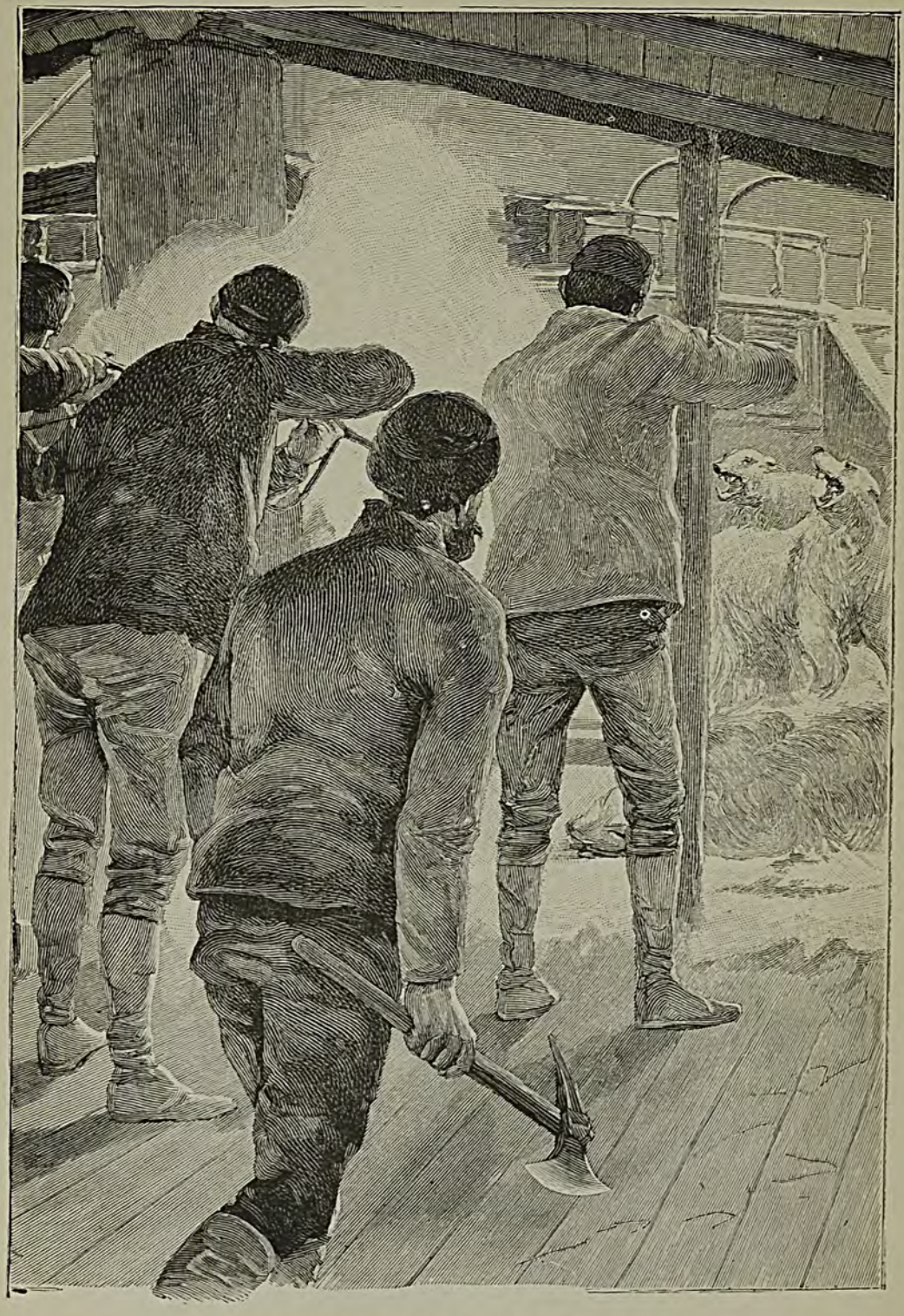
It would have been all up with her, if at the moment Guerbraz had not risen before her armed with an axe.

Brandished by his herculean hand, the weapon cut one of the monster's paws clean off, and while howling with pain, he fell on the ground, a second blow split open his head. This time the huge beast fell never to rise, burying beneath his mass the mutilated corpse of the chemist.

By the open hatchway the external air had penetrated only too well. Intense cold reigned in the parts of the ship which had been so warm. It was urgent to light the fires again.

As quickly as possible they closed the dangerous opening, and allowed the gas to enter the pipes.

At ease for the future, regarding the consequences of this invasion, the men of the *Polar Star* could take counsel together as to what next was to be done. The plan was promptly decided on. It was necessary as soon as possible to get rid of this "vermin," to use the picturesque expression of the Canadians.



THREE WELL-AIMED BULLETS SUFFICED.

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It was again Guerbraz who volunteered to go out in search of information.

The doors from the saloon to the stern gallery were carefully opened. The bold sailor, armed with a magazine rifle, and a six-shot revolver, climbed up to the level of the deck.

The news he brought was satisfactory. Surprised and frightened at the reports, the bears had hastened away from this abode of trepidations and sinister sounds, and only two were left on the deck.

Guerbraz went up again with Hubert, Captain Lacrosse, and Lieutenants Pol and Hardy, as an escort. Three well-aimed bullets sufficed to lay the bears low; after which the three detachments, notwithstanding the severity of the cold, resumed their deck duties, for any further attempt on the part of the bears had to be rendered impossible.

Since the equinox they had again entered into the period of continual day.

In the rays of the midnight sun, they had, except for half an hour of darkness, no want of light. The danger was evidently much less than it had been during the polar night. Nevertheless, short as the night might be, a careful watch had to be kept during its brief duration.

Electric projectors were installed on the main-deck, whence powerful search rays were directed over the misty surface of the ice-field.

At the same time two Hotchkiss revolving guns were prepared for action, and at their first discharge into a

group of the fierce plantigrades, killed six of the vanguard in the midst of their companions.

The cold, after so cruel an increase, began to yield, and on the 28th of March the mercury suddenly thawed and rose without a pause to 10 degrees. On the 29th, a violent storm from the south, with its attendant echoes of the cracking of the ice and the dismal groans of the bergs, awoke fresh hope in an approaching break up; and it drove the bears away for some hours.

On the 31st the effects of the storm were visible. The *Polar Star*, sinking on her cradle, had bent open the steel straps, so that she rested on the ice underneath her keel. A deep crack had appeared in front of her bow. Deliverance was evidently at hand.

But the famished bears again came into sight. There were forty of them, and their watch became more attentive than ever. It was easy to see that the brutes, rendered desperate by hunger, would soon make another attempt on the steamer.

It took place on the next day but one, and the attack was so complete, so unanimous, that after slaying with the guns and revolver cannons a dozen of the assailants, the men had again to beat a retreat and carry on the battle from inside the ship.

In the interval, the corpse of Schnecker had been thrown overboard. The traitor did not even have the honours of burial, and the bears devoured his remains. The scene was horrible enough, but no one complained of the fate of the criminal who had fallen at the very moment he

was hastening to the perpetration of the worst of his crimes.

The six bears that had been killed had been carefully skinned and cut up, and the proverb that there is some good in everything evil was justified to the letter, inasmuch as the adventure had given the crew some excellent furs besides an ample provision of fresh meat.

But it was necessary at all costs to get rid of the surviving bears.

The chemist's idea for the destruction of the ship was adopted by Hubert for her safety. With this object he would have to sacrifice a tube of liquefied hydrogen, and, after consulting his companions, it was decided to burn it on the deck and be ready to put the fire out immediately afterwards.

The method was very simple. The pipes by which the gas was distributed inside the ship were for the moment put in communication with the outside, and so arranged that the current could be interrupted at the first signal. Then all the taps were opened at once and four hundred cubic metres of gas were set free on the deck. A flame from a torch placed at the end of a long pole was then introduced and the hydrogen immediately exploded.

A sheet of flame swept the ship from end to end with a furious deflagration and a roar as of the wind in a chimney. The stays and shrouds being of iron, as well as the other parts of the ship, suffered only slightly from the burst of fire. But the bears on deck, who seemed to have taken up a residential position thereon, were horribly burnt, and

leaving twelve of their number dead or dying, fled for their lives with a wild roar of pain and terror.

This was the end of the long siege which had lasted a fortnight. The means employed yielded from their very violence the most fortunate and at the same time the most unexpected of results. Under the action of this temperature of 1700 degrees the ice was melted to a depth of three feet and the *Polar Star* again found the road of retreat open to her. What had been but a crack the day before was now a large strip of water. The April sun assisted with its more lasting warmth in the effect produced by this violent experiment.

From the tops Captain Lacrosse could see the ocean freeing itself and huge masses of the ice-field drifting off.

The bears had fled. The men descended to the ice and removed section after section of the iron scaffolding which had preserved the ship from the effects of shock and pressure. The steamer, breaking through the thin crust that remained, again floated in clear water.

At last, on the 15th of April, the channel was sufficiently open. Everything was prepared for the departure.

The boilers of the *Polar Star* were kept in steam for two days before the screw was started. The steel prow with its copper facing drove its ram into the broken blocks and the battle with the floe-bergs began.

It was no slight task to overcome the obstacles that ceaselessly rose before the bow of the gallant ship. But her heroic crew had triumphed over difficulties much more

formidable. Invincible ardour animated them, for they all desired to victoriously regain their country.

Clear at last from Long Creek, the *Polar Star* saw the desolate land of Courbet Island sink on the horizon, and the unbroken open sea rise ahead. And then a hymn of joy and gratitude was lifted to the skies. They had losses to deplore: they had known adversity and treachery. Of the forty-three who had sailed out of Cherbourg, there returned only twenty-eight, and this might not be all their losses, for they had still eight sick on board. But hope had sprung up in all their hearts, and they thought no more of the sorrows that were past.

There could be no thought of returning to Cape Washington, for every advantage ought manifestly to be taken of the early and exceptionally warm spring. The house of planks was thus abandoned. The next expedition may perhaps be fortunate enough to find there a shelter ready for them and a store of provisions carefully preserved. Besides, it was absolutely necessary to give the sick the earliest possible opportunity of improving their position if there were still time to do so.

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It was a fine morning in June when the *Polar Star*, after two months of difficult navigation, let go her anchor in Cherbourg roads. Alas! The cruel expectations had been only too well justified. Off the Scottish coast the good nurse, Tina Le Floc'h, had expired in Isabelle's arms, lavishing on her the tenderest words with her dying breath. Isabelle was inconsolable, although the death had been

foreseen for so long, and she brought the body to be buried in that native land of Brittany, in which the poor woman had longed to rest. It took many days to disperse the cloud of sorrow from her charming face.

But she could not help feeling a noble pride in the wild acclamation of the crowd. Called to Paris by the wish of an enthusiastic people, and also by desire of the authorities, the survivors of the expedition found their last journey a march of triumph. They had to submit to all the inconveniences of glory, but they had also its delights.

The President of the Republic desired to receive them and to compliment them at the Elysée. The ministers and the learned societies overwhelmed them with ovations and rewards. Even the decree was applauded that gave the cross of the Legion of Honour to the heroic young Frenchwoman, whose name figured with lustre among those of De Keralio, Captain Lacrosse, Lieutenant Hubert D'Ermont, Lieutenant Pol, Lieutenant Hardy, Doctor Servan, and Boatswain Guerbraz, the other members of the valiant crew having commemorative gold medals.

At the banquet which was given to them, De Keralio, replying to the toast proposed by the Minister of Marine, remarked,—

"Yes, gentlemen, we went to the Pole for the honour of our dear France, but we have done better in showing the way to future explorers."

And Captain Lacrosse said with a sigh,—

"It does not matter, but it is a pity the *Polar Star* could not get through the barrier by herself."

"Captain," said Hubert, "do not worry. Our first effort was crowned with success, but we had too many miseries to put up with. When we go on *our* expedition it will be in a ship entirely of steel, driven by the all-powerful agency that science has given into our hands. That day, my dear captain, we will dynamite the reef that girds the pole, and we will plant the colours of France on the very borders of the lake that traverses the axis of the globe."

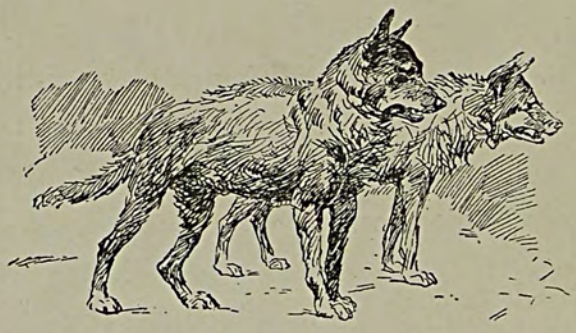
These words of generous confidence were greeted with unanimous acclamations.

It only remained for the explorers to enjoy their well-earned repose. All those who had shared in these fatigues and unprecedented struggles were invited to the festivities that soon took place in honour of the marriage of Isabelle de Keralio with her cousin, Hubert D'Ermont. On that day the naval officer added to his bride's wedding presents the decree raising him to the rank of captain, at the same time as that which gave to Marc D'Ermont, member of the Academy of Sciences, the rosette of an officer of the Legion of Honour.

And, as the wedding took place at the beginning of winter, the marvels of Cape Ritter, of Fort Esperance, and the *Polar Star* were renewed for the occasion. The rooms were lighted electrically and warmed hydrogenically. Excursions were made in Cherbourg roadstead on board the submarine boat, and ten superb white bears, with Guerbraz at their head, came to wish every happiness to the young couple in the Celtic and Franco-Canadian speech of the seventeenth century. Finally, a masterpiece

in fireworks recalled the episode of the artificial fire on the *Polar Star*.

"It is all very well," said Guerbraz, summing up the general opinion, "there may be ice enough at the North Pole, but it is not cold enough to freeze the hearts of brave men!"



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Knowlton
Jon!