

# The Andree Balloon Flight

## —A Classic of Exploration

*Geography*

LETTERS FROM THE ANDREE PARTY, in *McClure's Magazine*, Vol. X, No. 5, March, 1898.

ON the 11th of last July, one Sunday afternoon, S. A. Andree, with two companions, Nils Strindberg and Knut Fraenkel, ascended from Danes' Island in the balloon "Ornen" (The Eagle) and sailed away northward, hoping by this untried means to reach the North Pole. Daring even to foolhardiness as Andree's project may well seem, it had been very coolly and prudently matured and systematically prepared for. . . .

Andree's first design was to sail in the summer of 1896. The balloon and all stores and appliances were conveyed to Danes' Island; a balloon house was erected, and engines set up for producing hydrogen gas and inflating the balloon. All, indeed, was made ready; but the south wind they wanted for the start did not come. They waited for it until the season had advanced too far for a safe venture, and then came back to Sweden. In May, 1897, they returned, and by July 1 again had everything ready for a start. And again the south wind refused to come. They had to wait ten days for it. We have a very interesting view of the party at this trying time, as well as a full account of the work they had had to do in getting ready, in the following letter, written by Andree's companion, Nils Strindberg, to his brother in New York and not before published:

### Letter from Nils Strindberg

"Yes, now the folks at home believe us to be ascended. From Anna I had no letter, and papa was very doubtful about his letter reaching me. But alas! it is true that we have not yet departed. As you have probably heard through the papers or letters from home, we anchored the 30th of May in Virgo Harbor, after having been detained by the ice in Danes' Gate. It seems to have been an exceptionally mild winter. There is considerably less snow this year than last, which still was milder than the average winter. The

The bodies of Andree and at least one of his companions were found on August 6 of this year, on an island northeast of Franz Josef Land, now called Fridtjof Nansen Land in honor of another Arctic explorer. In the 33 years since the flight described in this "Classic," except for one message brought back within a short time by a carrier pigeon and several afterward found floating in the sea, all of which gave positions of the balloon far off the course the explorers had hoped to follow toward the Pole, no clues to the fate of the party have ever been found. When the records found with the bodies have been thawed out enough to be read, they will furnish the long-awaited last chapters in an outstanding Arctic mystery.

balloon house stood when we arrived, but was so damaged by the winter storms that it was on the verge of collapsing. But one must remember that it was only calculated to remain for one summer. With the aid of tackle and buttresses it was soon fixed, and June 14 we brought the balloon from the *Virgo* to the balloon house. On the 16th the balloon was stretched out on the floor, which had been covered with thick, coarse felt. The *Virgo* left Danes' Island on the 16th. And now we had our hands full to make the balloon tight and to inflate it. To make it tight we had to varnish all the seams on the outside as well as the inside. In order to varnish the inside the balloon is partly inflated with air by a large bellows, and the workmen crawl in through the lower opening. Svedenborg, Fraenkel, Machuron, and myself take turns in the superintending of the inside varnishing. The interior of the balloon is a very strange sight. It looks like a low vault of stone masonry. . . . There we were, eight men, each with a pot of varnish and a brush, and varnished every seam of the upper half of the balloon. The varnish makes the air very bad, and after some time one begins to feel a pain in one's eyes, as of onions.

"On Saturday, the 17th, at 7 o'clock in the morning, the hydrogen apparatus was started and put

in connection with the balloon, and at 12 o'clock, midnight, between the 22d and 23d, it was inflated. Then it had to be tested as to its tightness and the principal holes fixed. This was done by a new method invented by Mr. Stake. It is simply to allow the few particles of hydrogen sulphide, which are always produced with the hydrogen, to accompany the hydrogen into the balloon. If pieces of muslin saturated with a solution of acetate of lead are put on the balloon, the smallest leakage may be discovered by the escaping hydrogen sulphide, which causes the muslin to turn black. This method proved to be very practical, and we discovered several small holes which could be fixed. During these operations one walks around on top of the balloon, which only yields imperceptibly. . . .

### Ready to Fly

"After these preparations we have succeeded in getting the balloon in pretty good shape; at all events much better than last year. It loses daily about 45 kilos (a fraction over 99 pounds) in carrying capacity; but as we have possibilities of throwing out 1700 kilos (about 3748 pounds) of ballast, we will easily float for more than a month.

"We do not intend to start until we get a favorable wind, to avoid being pushed right back to Spitsbergen by contrary winds. If we get the right wind we ought to be able to go some distance in these thirty days. With a fairly strong wind we will make from 10 to 20 knots an hour, and will reach the Pole, or a point near it, in from thirty to sixty hours. Once having reached the northernmost point, we don't care where the wind carries us. Of course, we would rather land in Alaska near the Mackenzie River, where we would very likely meet American whalers, who are favorably disposed toward the expedition. It would really be a glorious thing to succeed so well. But even if we were obliged to leave the balloon and proceed over the ice, we shouldn't

consider ourselves lost. We have sledges and provisions for four months, guns, and ammunition; hence are just as well equipped as other expeditions as far as that is concerned. I would not object to such a trip. The worst thing is that the folks at home will feel uneasy if we don't appear in the fall, but are obliged to spend the winter in the Arctic regions. My body is now in such good condition, and I have got so accustomed to the Arctic life, that a winter up here don't seem terrible at all. One gets used to everything. But the best thing would be to come home in the fall. . . .

"Well, I hope we shall soon have favorable winds. On the 8th day of July we had a strong southerly wind, but then it was too strong. It was almost a gale, and it would have been impossible to ascend without damage to the balloon. Later it shifted over to the west too much. If we don't get a southerly wind before the 15th of July we intend to try with a southeasterly, to be carried north of Greenland, and there possibly utilize the south winds which, according to Lieutenant Peary, are prevalent during summer.

"Well, goodbye, now, brother; just wonder if we will meet next time in New York. . . .

"Your brother,  
NILS."

*ACCOUNT OF THE START OF ANDREE, by Axel Stake. Published by McClure Syndicate, March 13, 1898.*

I was the chemist of the expedition which fitted out Andree for his North Pole journey. I made the gas which carried his balloon away to the north. I kept a diary of all the events that happened from the time the expedition was first assembled in Sweden until Andree and his companions disappeared beyond Fogelsang on the northern horizon. From what I have seen printed in the papers both here and abroad I do not think that all of the happenings of the departure can be known to the public at large. For instance, it may not be known generally that Andree was very reluctant to depart on his voyage on that rather memorable July 11. His own wish was to defer the start to the next day. I do not believe he would have gone on the 11th had he not been urged to go by his companions. He is very



"The Tightest Balloon Bag Ever Made"

painstaking and careful as a rule, and in his middle age far more discreet than the youth of his companions allowed them to be. But Strindberg and Frankel had waited so long and hoped so much for a breeze from the south that they were eager to be off. They were afraid the breeze would die away and the expedition would be left stranded on Danes' Island, as it was in 1896.

#### The South Wind

I remember very well the morning of the 11th. Strindberg and I occupied the same cabin on board the Swedish gunboat which carried us up to the island. Strindberg came running to me that morning and awoke me in my bunk, crying, "The breeze! the breeze! We shall sail today. The wind is from the south." I laughed at him, for I did not believe it was possible. But when I came out on the deck, I found that the preparations for the start had already begun. Andree was doubtful. In his mind this southerly wind might be a false alarm. He thought they had better wait a day or so and see if it would continue. A conference was held on the vessel, after which, reluctant as yet, Andree went ashore to the balloon house to see if the breeze was quite as strong there as it was on board the gunboat. During the morning he had been making meteorological

observations, and the results added force to the pleadings of his companions. He came on board the vessel again, and a second conference was held. It was finally decided to go that day, and immediately the order to knock down the front section of the balloon house was given. This was at 10:30 a. m. At 2:30 in the afternoon the balloon sailed away.

Andree went away with the impression that the balloon would float at least six weeks. Indeed, it was his idea in 1896 that he could keep in the air for a year or more if necessary, but the trouble we had with the escaping gas soon dispelled this notion. I think that even after he found how impossible it was to confine the gas he overrated the time he would be able to keep afloat. The expert from the balloon factory and I made a minute calculation of how long the gas would remain in the bag, taking into consideration its slow escape through the minute interstices which we found it impossible to close up. Our calculation was that the balloon would remain afloat, barring accidents, not longer than fifteen days. The "Ornen" probably was the tightest balloon bag ever made, but we could not close up some of the holes. I invented a process for detecting the escape of the gas. After the balloon was inflated we spread long strips of sheeting saturated with acetate of lead

over the top. The confined hydrogen sulphide as it escaped would, on coming in contact with the sheeting, cause the latter to become discolored. Thus the exact location of every hole could be ascertained.

Even so, although we varnished and revarnished the silk inside and out, we could not prevent the almost imperceptible holes. The greatest trouble was in the seams where the sections of the great bag were joined. The finest needle hole was sure to show a leak, even after the stitching had been done as neatly as possible. It may not be known that the successive varnishings could be done satisfactorily only on the upper part of the bag, against which the greatest outward pressure of the confined gas was exerted. Of course we would have done the lower part of the balloon more thoroughly, but we had not time. The aeronauts were eager to sail with the first good south wind, and we had to let them go. Strindberg had made some experiments to reduce the outflow of the gas, but they were without success. The constant smearing on of the gutta-percha which we used was really the best we could do. Our estimate of fifteen days' duration for the gas, small as it was, would provide for its retention twice the length of time that gas has ever before been confined in a balloon. I believe that no balloon heretofore has floated longer than a week.

#### Loss of Drag Ropes

Andree was handicapped at the start by the loss of two-thirds of his drag ropes, upon which he depended to steer his balloon. The accident was a curious one, and while it could not have been foreseen, yet the conditions under which it happened might have been avoided if different arrangements had been made. The drag ropes of the balloon, which were about 1,000 feet long, were in three sections, and were joined together by metal screw couplings. The couplings could be screwed apart, the inference being, I suppose, that if Andree wanted to do so he could unscrew and cast off any part of the drag rope. Why he could not just as easily have cut them apart I do not know. Now, when the balloon was ready to start, the drag ropes attached to the lower side of the basket were allowed to trail up over the top edge of the balloon house and down again to the beach along which they were trailed, so as to be clear of all obstructions and ready to follow the balloon out to sea when it rose out of its nest.

But the heavy weight of the ropes defeated this purpose. The part of the ropes which lay outside on the beach offered an immense friction, which the balloon seemed unable to overcome. Instead of following the bag out of the house, uncoiling as they went, the upper sections of the drag ropes twisted, and under the severe strain the couplings unscrewed. For a moment it seemed that the balloon would not get away; that the friction of the heavy ropes would hold her to the shore. Then, to our astonishment, the couplings parted and the airship darted upward.

The question whether or not the loss of these ropes would prevent Andree from steering the balloon has been openly discussed. It is impossible to tell, of course, though he may have remedied the defect by putting out another drag rope composed of the rope which hung from the basket and which for the time being was used as ballast.

When the balloon rose out of the house some portion of it caught on the structure of the balloon house. Andree was heard to exclaim "What was that?" Then we heard Strindberg crying, "Long live old Sweden!" A boat had pulled out from the shore, and as the bag tore away Andree grabbed a speaking trumpet and shouted to those in the boat. From his motions every one believed he was trying to say something about the loss of the drag ropes, but no one could understand what he said, and as the balloon got farther and farther away, the difficulty of making himself understood became greater and greater.

*WHERE IS ANDREE? By Walter Wellman, in McClure's Magazine, Vol. X, No. 5, March, 1898.*

There are three probabilities as to the approximate point of descent, each strong enough to merit attention. The first of these is that the "Ornen" remained in the air till Franz Josef Land was reached. Once over this land, the aeronauts would be able to distinguish it by the changed appearance of the ice-sheet beneath them and by the black cliffs at the edges of the fiords. Here Herr Andree may have become convinced of the uselessness of waiting for further advance toward the Pole, and in consequence decided to descend. In such case, and if the descent were made in safety, the

voyagers might without great trouble make their way to Cape Flora, about the eightieth parallel, where Jackson left a comfortable house and ample supplies for a wintering. In case their descent were made so far from Cape Flora that they were unable to reach the Jackson camp before the winter closed in upon them, Andree and his companions might shoot enough bear, walrus, and seal to support them through the winter, and throw up a hut to live in, as did Nansen and Johansen in the same region.

The second probability is that the "Ornen" came down in the ocean to the southeast of Spitzbergen. When Herr Andree was asked a few days before his start what would happen if they descended in the sea, the adventurer replied, coolly, "Drown."

The third probability is that the air-ship was driven by the winds far to the east or northward of Franz Josef Land. In such case the explorers are probably lost. Assuming that they safely reached the ice-sheet which covers the Polar ocean, saving all their supplies, instruments, and equipment, this was the situation which confronted them: to save their lives they must get to land within eight weeks. Out upon the Polar pack no game can be had, except by rarest good luck a stray bear comes that way. Andree and his men had with them provisions for but four months. With this supply they could live till Christmas, but in order to secure food with which to survive the winter they must reach the land by the end of September at the latest, before the bear, seal, and walrus had disappeared. The distance which they could travel between the probable date of the descent and the closing in of winter may be estimated at 250 miles at the greatest. In August and early September the condition of the ice-pack is at its worst for sledging, being soft and slushy, with many pools half filled with sludge through which a boat cannot be rowed and over which a man cannot walk.

*Science News-Letter, August 30, 1930*

The mushroom known as "Caesar's mushroom" has been esteemed as food since the time of the Greeks and Romans.