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## STANISLAW SIEDLECKI

# CROSSING WEST SPITSBERGEN FROM SOUTH TO NORTH

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Thanks to the Polish scientific expeditions to Bear Island during the "Polar Year" 1932—33, as well as to Spitsbergen (Torell Land in 1934), great interest in the study of the Arctic Regions has been aroused in Polish scientific circles. Svalbard is a territory showing an unusual variety of glacial activity, and as such, gives an opportunity for comparative studies particularly valuable to solving diluvial problems in Poland.

On our Spitsbergen expedition in 1936 we wished to acquire the greatest possible experience of Polar travelling and organisation and to become well acquainted with this "classical country of polar research". Accordingly, our expedition had a "reconnaissance" and preparatory character.

The members and also initiators of the expedition were: Stefan Bernadzikiewicz, civil engineer, assistant at the Warsaw Polytechnic, leader of the expedition to Spitsbergen in 1934; Dr. Konstanty Narkiewicz-Jodko, assistant of the Physical Institute at the Warsaw University, and Stanislaw Siedlecki, student of geology at the Warsaw University, who participated in the expeditions to Bear Island 1932—33 and Spitsbergen 1934.

We decided to traverse West Spitsbergen, from South to North, and calculated that such an expedition would last two months. We divided the journey, the length of which exceeded 800 km, into two monthly stages of about 400 km each.

In organising the expedition, drawing up the route and preparing the travelling equipment, we were guided by the results of numerous earlier expeditions. We also profited from the experience gained during the mentioned Polish expeditions.

Mr. Adolf Hoel, director of Norges Svalbard- og Ishavs-Undersøkelser rendered us invaluable advice and assistance. I take this opportunity of expressing my sincerest thanks to him.

Our journey through Spitsbergen had been preceded by one of a similar nature. Three Norwegians O. J. Broch, E. Fjeld and A. Høygaard, travelled in 1928 from van Keulen Bay towards Hornsundtind. After trying to reach its summit they went North, with the intention of reaching Kings Bay. In the vicinity of Plateau Lomonosow (according to Wasiliew) or Central Ice Plateau (according to R. A. Frazer), they turned back to Tempel Bay, terminating their expedition owing to snow blindness. The

description of the ground covered by this expedition 1 and the schematic map showing their route, was of great assistance to us in getting acquainted with the territory, as about half of our journey through West Spitsbergen ran along their route. The fact that the cartographical sketch, as given by Messrs. Broch, Fjeld and Høygaard was useful although very simplified, induced me to outline the schematic map (fig. 1). This sketch shows the mountains and glaciers crossed by us, and was prepared on the basis of the existing maps 2 together with my own observations and notes.

For travelling on the glaciers we used a sledge of the Nansen type purchased from the firm Kolbjørn Knutsen in Oslo. We pulled the sledge ourselves, which at the beginning of each stage weighed more than 200 kg. This at times was strenuous work, but had we used dogs our luggage would have been considerably heavier and necessitated an increase in the members of the expedition.<sup>3</sup> Difficulties encountered on the way and the length of the route we decided to follow, forced us to work incessantly and intensively in harness <sup>4</sup> and to speed our march. During such an expedition it is of course difficult to do any systematic research work. Only a collection of plants made during the whole journey may be considered a result of more general interest.

We divided our provisions into two equal parts taking one half with us when landing in Hornsund, the other went in the "Lyngen" to Tempel Bay. Here it was unloaded and stored in a hut in Sassen Valley, owned by the hunter Hilmar Nøis. Mr. Nøis rendered us much help by taking care of our provisions.

Spitsbergen. Map based upon photogrammetric surveys executed during the First Polish Spitsbergen-expedition, June—August 1934. Triangulation executed by Major S. B. Zagrajski. Stereophotogrammetric survey executed by Major A. R. Zawadzki. Autogrammetric work and printing executed by Military geographical institute in Warsaw 1934—1935, under direction of Major A. R. Zawadzki. Scale 1:50 000. Warszawa 1936.

Geological map of New Friesland. (Topography based on the photogrammetric survey by R. A. Frazer, Merton college (Oxford) Arctic expedition, 1923.) — Quarterly journal of the geological society. Vol. 83. Lond. 1927. Pl. 9.

Karte der Wilhelm Filchnerschen Vorexpedition nach Zentral-Spitzbergen im August 1910. Maßstab 1:50 000. — Petermanns Mitteilungen. Ergh. 179. Gotha 1914. Pl. 15.

Océan glacial arctique. Spitzberg. Région des travaux de l'expédition de l'Académie des sciences de Russie pour la mésure d'un arc de méridien 1899—1901. Sous la rédaction de O. S. Stubendorff par A. S. Wassiliew. Échelle de 1:200000. [Leningr. 1925.] 3 sheets.

<sup>&</sup>lt;sup>1</sup> Broch, O. J., E. Fjeld and A. Høygaard. Paa ski over den sydøstlige del av Spitsbergen. — Norsk Geografisk Tidsskrift. B. 2. H. (3—4.) Oslo 1928. Pp. 240—55.

<sup>&</sup>lt;sup>2</sup> Kart yver Svalbard. Spitsbergen, Kong Karl-Øyane, Hopen og Kvitøya. Målestokk 1:500 000. Utarb. av dei Norske Svalbardekspedisjonane ved Adolf Hoel og Gunnar Isachsen. Oslo 1925. [exists only in proof copies.]

### Description of the Route.

On July 7, 1936 our party of three landed in the Gås Harbour in Hornsund, in the vicinity of a hunter's small, ruined hut. The s.s. "Lyngen" sailed immediately, fearing numerous floating icebergs around the fjord.

On July 8 we carried the whole outfit from our first camp, that is from the west angle of Gås Harbour to the front of the glacier bearing that name. Patches of snow here and there on flat parts of land fronting the glacier allowed us sometimes to make use of our sledge. It took us, however, the whole day to traverse these few kilometres. Each stretch of the route had to be covered three times, to transport our equipment.

On July 9 we crossed the Gås Glacier, which was completely snow covered, heading for the pass hidden in the SSE angle of the glacier. We encountered but few crevices. The whole glacier was still covered with névé.

Karta över Spetsbergens inland mellan Belsund och Storfjorden med Sveagruvans kolfält och hamnområde, av Gerard de Geer 1918. 1:100 000. — Ymer. B. 39. Sth. 1919. P. 240.

Kartskisse over den sydøstlige del av Spitsbergen. [by] O. J. Broch, E. Fjeld og A. Høygaard. Maalestokk ca. 1:900 000. — Norsk Geografisk Tidsskrift. B. 2. H. (3-4) Oslo 1928. Pp. 244-45.

The territory between South Cape Land and the Rabot glacier would have presented difficulties for a dog-team, on account of the alpine character of the glaciers, the corries of which and particularly the snowless tongues are often uneven and cracked. On the other hand, on the route between the von Post glacier and the northern extremity of the New Friesland Ice Plateau, a team of dogs would have proved very useful throughout the whole summer.

We drew the sledge on skis or in hobnailed boots. A single walled tent was used. It was therefore light; nevertheless it proved that a somewhat heavier double walled tent would have been much more satisfactory and warmer. An important item of our equipment were three small special rubber "sponge mattresses", which we used under our shoulders and hips when sleeping on the glaciers. They were very light and protected us from cold and water, which often seeped through our imperfect rainproof tent on to the rubber flooring. Owing to the ice and snow melting less during the night hours, we generally endeavoured to pitch tent during the day and proceeded on our way during the "night". In this manner we met with better snow for the sledge and skis and had less trouble with the flooded parts and streams on the glaciers.

After three hours march we came to the conclusion that the sledge was overloaded. Hence we had to throw away a number of tin packs and one plywood case, also a saucepan and a small quantity of food. The result of getting rid of even such a small quantity of food was that a fortnight later we were forced to shoot seagulls to make soup or roast them.

From the above mentioned pass we descended southwards and crossed a gentle ice elevation and got to the upper part of the Bunge Glacier (Vallée Est, according to Wasiliew). After another 12 hours' march we pitched tent.

On July 10, with splendid snow and weather conditions, we crossed the Serghiewski Pass (Wasiliew) and descended SE to "Vallée Moyenne". This we managed crosswise, in SE direction and camped under the Achmatow Pass, somewhat to the north of Mt. Haitanna.

On July 11, leaving the tent and a quantity of equipment where we camped, we set out with light sledge direct South down the Vallée Moyenne Glacier and then down the Olsok Glacier (which is an extension of V. Moyenne and on Wasiliew's map is indicated as Belopolsky Glacier). On the way, in a several kilometres wide area of intensively melting snow, we encountered a considerable number of microscopic algae which coloured the snow a brilliant red over a large expanse. The tongue of the Olsok Glacier was a hard test for the sledge, as the naked and hard glacier ice at that point was very uneven, crisscrossed by furrows and grooves. In such terrain the sledge overturns incessantly and the runners wear out with frightening rapidity. On the tongues of practically all glaciers we came on to large expanses of this kind. These were perhaps the most unpleasant obstacles of our entire journey.

We left our sledge on the front of the Olsok Glacier and, after having descended, proceeded towards the southern point of West Spitsbergen. Wandering in the mist amongst the flooded parts and streams of the tundra we walked around Kistefjell from the West. As the goal of our wanderings we chose the point on the shore directly south of Kistefjell, which from compass readings, seemed to us most southerly. That day we slept in an abandoned huntsman's hut, several kilometres NW of the before mentioned point.

On July 12 we returned to the camp under the Achmatow Pass, which was a seven hours' walk.

On July 13 in thick mist and rain, we crossed the Achmatow Pass and descended to the "Vallée Ouest" Glacier, or, in other words, to the upper parts of the Wasiliew Glacier. (On the map of Wasiliew the valley situated eastwards from "Vallée Moyenne" is called "Vallée Ouest".) We ascended the pass without difficulty but the descent eastwards was steeper and the glacier more fissured.

On July 14 we crossed the Vallée Ouest leading north, at first going upwards and then descending towards Horn Glacier. The nearer we approached the latter, the more crevices were met with. We avoided these by walking along the left (west) part of the glacier. We pitched tent after having traversed the abt. 50 metres high and very strongly fissured brink which is situated on the Vallée Ouest Glacier some kilometres to the north of Mt. Tchernaia. These seracs can be traversed from the west side with sledge.

July 15 we traversed the Horn Glacier crosswise. It is greatly fissured and is actually one large field of crevices. The crevices are arranged mostly in one direction, from north to south. We took advantage of this and with a certain amount of caution were able to avoid danger. The Horn Glacier was the most fissured glacier encountered during our expedition. We traversed it for a distance of about 8 km from the front of the glacier, which took us 11 hours with rather changing weather.

On July 16 we crossed the Plateau Mendeleev and pitched tent about 5 km south of hillocks called "Biela Blancs" (Wasiliew). The following day we crossed the pass, which borders Biela Blancs on the east, and descended to the lower parts of the Glacier of Poles. On July 18 we passed from the Glacier of Poles on the north to the Nathorst Glacier, with which it is connected, and reached the western edge of the Arrhenius massif. This was one of the most exhausting days of our expedition. It had been sunny and warm, and therefore we met with numerous streams running down the glacier. Eleven of these compelled us either to change our course entirely, or to unload the sledge and to haul with ropes part of our equipment over the water. Twice part of our luggage was under water.

July 19 we devoted to repairing the damaged sledge and other objects of our equipment. On the 20th we proceeded first westwards about 2 km along the Nathorst Glacier, alongside a surface medial moraine. The glacier here was quite bare of snow and most uneven. We carried our equipment along the stone ridges, which at that point

are several metres high, and pitched tent at the north side of the moraine, i. e., on the lowest parts of the Doctor Glacier.

On July 21 with poor weather, we moved northwards on the wide Doctor Glacier up to the foot of the high and snow covered rocky ridge, which divided the upper parts of the glacier into two large corries, a western and an eastern one. The lower part of the glacier was exceedingly uneven and awkward for sledge travelling.

Throughout the next day (July 22), we had strong wind with alternating snow or rain. The mist made all orientation impossible. We moved northwards only for 4 hours, being guided by that part of the Doctor Glacier which lies on the western side of the abovementioned mountain ridge.

On July 23 we skied to the neighbouring mountains to the east. As a result of this reconnaissance we agreed to return to the eastern cirque of the Doctor Glacier. We therefore came back down the previous day's route, then turned NE and after four hours march we emerged without difficulty through a steep slope on the pass, lying NE of the glacier corrie. As we saw below us about 10 km distant the Strong Glacier, we went down ENE and pitched tent on an unnamed glacier adjoining the Strong Glacier.

On July 24 we descended first to the tongue of the Strong Glacier, then turned NW, and after three hours reached the southern extremity of the mountains dividing the Strong Glacier into one part facing NW and another wider one rising towards the north (Wasiliew's map is most inaccurate in this place). On July 25 we proceeded NW for several hours by this narrower and steeper left branch of the Strong Glacier. After crossing the culminating point of the ice, we began to descend the Paula Glacier. By this means we reached the mouth of the Bakanin Valley (Wasiliew).

On July 26 we traversed the Bakanin Valley, also finding that Wasiliew's map at this point was entirely misleading and that the Bakanin Glacier did not run directly north, but first NNE and after its highest point turned ENE. The Bakanin Glacier forms an easy way between the Paula and Inglefield Glaciers, but from our expedition's point of view, it would be better to travel on the glacier, which primarily runs parallel to the Bakanin Glacier and adjoins Paula Glacier nearer the van Mijen Fjord than the Bakanin Glacier.

On July 27 we crossed the Inglefield and Edward Glaciers. The latter has an exceptionally even tongue and is convenient for sledge

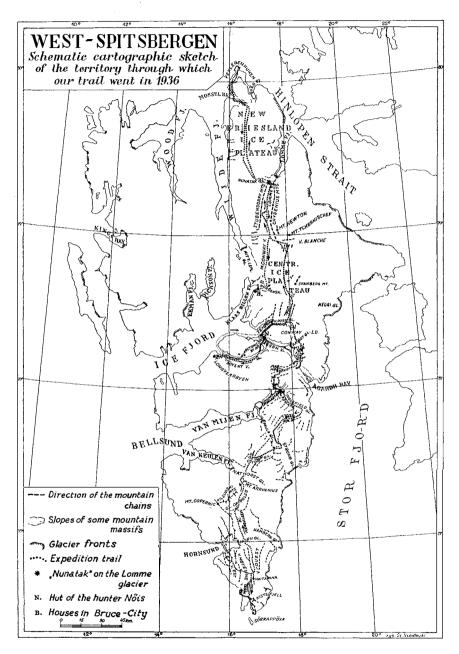


Fig. 1.

drives. We pitched tent above the central part of the terminal moraine of the Edward Glacier, to the right of a large stream which flows to the Kjellström Valley.

On the 28th we had a most difficult time in transporting our equipment across the Kjellström Valley and alongside the Skut Valley. Among the terminal moraines of the Edward Glacier we sank into thick and deep mud. This was easily washed off, as we had to cross a group of rivers in the Kjellström and Skut Valleys. The water at the deepest points of the largest of these rivers (during the night hours) reached up to our hips. We carried our equipment in three parts, although at times it was possible to pull the sledge over the tundra.

On July 29 we carried our equipment over to the above mentioned Glacier closing the Skut Valley. We reached the front of the glacier, which in its lowest parts is steep and inaccessible from its west side. In the Skut Valley we encountered eight reindeer.

On the 30th we crossed northwards in deep mist, over the Skut Glacier, through the pass which lies to the North of it, and on the following day we reached the Marmor Glacier (according to Broch, Fjeld and Høygaard). Across the southern part of this glacier, and moving carefully amongst frequent fissures, but keeping more or less to the right, we descended in four hours to the front of it. That evening, for the first time, we shot two snow-white ivory gulls, Pagophila eburnea, (Norw. "ismåse"). They were a valuable supplement to our meagre provisions and they tasted excellent. These gulls were the only birds that approached us in the central parts of the island. During the whole expedition we often encountered seagulls: Fulmarus glacialis, Larus glaucus and Rissa tridactyla, flying rather high over the glaciers across Spitsbergen from coast to coast.

On Aug. 1 we descended without any difficulty on the east side from the front of the Marmor Glacier. In this manner we found ourselves on the tongue of the Ivory Glacier, above Agardh Valley. From this point we proceeded north and traversed the Ivory Glacier, keeping to the left. After 6 hours we pitched tent on the pass which is a direct extension of the glacier line, West of the Wallenberg mountain massif. On the following day we crossed over a wide pass lying NE of our camp and eventually found ourselves above an unnamed glacier, which on the Filchner map is marked on the 18° 20′ long. E. In one hour we had descended this glacier towards the Rabot Glacier, lying about 400 metres lower.

The snowless tongue of the Rabot Glacier was very uneven, but neither the unpleasant glacier hillocks nor the two or three surface moraines were too difficult to pass.

It took us several hours to go through this glacier crosswise, and we proceeded north slowly ascending to a large and even glacier of Conway Land. We traversed this glacier on the following day keeping direct North, reached the Maria Glacier (according to Filchner's map), and then down to the von Post Glacier. Thus on Aug. 4 we passed, keeping strictly to the left side of the glacier above Tempel Bay.

On Aug. 5 we left our sledge at the glacier front and proceeded alongside the steep south coast of Tempel Bay to the hut of the hunter Hilmar Nøis, built at the mouth of Sassen Valley. He was absent, but we found our stores without difficulty.

We crossed the widespreading river in Sassen Valley a distance of approximately 3 km from its mouth. At 4 a. m. we struck a depth of about 1 metre. The currents were not too strong but the bottom was sticky and in places very boggy. From Sassen Valley to Advent Valley we followed a narrow valley, which in places bore resemblance to a canyon running north and south. We encountered several reindeer in this valley. We waded through the Advent River at its source, and I believe that crossing this river at the middle or lower part would prove very difficult.

After a short stay in Longyearbyen, we chartered a small fishing boat which took us back from Advent Bay to the hut at the mouth of Sassen Valley. We now found Mr. Nøis at home. The hours spent at his hut we regard as the most pleasant of our whole expedition.

On Aug. 10 we approached firstly the northern side of the front of von Post Glacier, with Mr. Nøis's motor boat. Here we ascertained that the glacier was terribly uneven and more fissured than on the south side. We therefore returned to our sledge, and on the 11th we began the second stage of our march.

Right up to the Hampus Nunatak line we moved alongside the western edge of the glacier and then turned to its centre. On the following day we crossed from the Philipp Glacier to the great gently undulating "Central Ice Plateau" (according to Frazer) or "Plaine Lomonossow" (according to Wasiliew). Constant mist and gales casting snow about made it very hard for us to find our way. We moved forward slowly, so that sometimes only two of us worked in harness and the third walked behind carefully watching the compass on the



Bernadzikiewicz, phot.

Fig. 2. View from the highest point of Martin Conway Valley to the north. On the right the southern hills of the Chydenius Mountains. Centre the Lomme Glacier lying between the Chydenius and Stubendorff Mountains. Along the slopes of the high mountains, seen on the left of the background, runs towards W a rather broad glacier (here invisible) which according to Wasiliew's map may be called Stubendorff Glacier.

sleigh, and guiding his companions by shouting. In such manner we walked "blind" due north.

On Aug. 16 we found that we were on the north-east edge of Central Ice Plateau. Towards the NE ran a rather narrow glacier, later widening, which seemingly might be regarded as one of the southern tributaries of Vallée Grouzdiew (Wasiliew). Wasiliew's map at this point is very inaccurate, the same may be said of Frazer's map. With steadily improving weather we descended from Central Ice Plateau through a glacier about 2 km wide straight to the corrie of the glacier lying below. This corrie is surrounded by steep hills and runs eastwards. From the maps in my possession I would describe this as a part of the Vallée Blanche Glacier (or in other words Vallée Grouzdiew). However, both the English and Russian maps sensibly differ from each other as from the territory itself.

This glacier corrie rises westwards and then narrows, finally leading to a pass which lies about 1200 metres above sea-level. Behind the pass lies Vallée Martin Conway (Wassiliew). This pass represents a kind of boundary between the Central Ice Plateau and the first elevation of a chain of the Chydenius Mountains.

I must emphasize here that the range of mountains, the northern part of which on R. A. Frazer's map bears the name of Chydenius Mts.,

actually does run at first more or less in a S—N direction, then SSW—NNE, and borders the upper parts of the Martin Conway Valley, then the Stubendorff Glacier, and finally the Lomme Glacier. Proceeding direct north from Central Ice Plateau alongside the western slope of these mountains and going straight, one passes beyond Martin Conway Valley and the Stubendorff Glacier to the Lomme Glacier, and not to the Bear Bay Glacier, as it would appear from the English map. This is just how we proceeded. Going practically all the time northwards from Central Ice Plateau, we ascended smoothly at first along the very wide highest parts of Martin Conway Glacier. After a journey of several kilometres we began to descend to the corrie of the Stubendorff Glacier (according to Wasiliew's map), and after a day's march reached without difficulty the highest elevation of the Lomme Glacier, about 1100 metres above sea level.

Here on Aug. 17 we came upon fresh tracks of a sledge drawn by dogs. These tracks led towards ESE. This was the first fresh human sign we had met with during the whole of our journey on the glaciers.

In constant bad weather during two days we made short reconnoitering trips towards the interior of the Stubendorff Mountains. On Aug. 19 we traversed the Lomme Glacier due north up to that part from where we could see the limit of Lomme Bay. Here on the left side of the glacier at the foot of the hillocks marked on the Hoel and Isachsen map as "Veteranen" we found a small flat "nunatak" about 10 m high protruding from the ice. At this characteristic rock, representing a splendid landmark, we left part of our provisions and equipment.

Direct northwards behind the above-mentioned nunatak a glacier about 5 km long rose rather steeply in a westerly direction to the New Friesland Plateau. This glacier is a splendid way of communication between the Lomme Glacier and the New Friesland Plateau, as it reaches the southern edge of the latter and as its front is connected with Lomme Glacier in that part of its tongue, where uneven snowless ice commences, and which is very difficult to traverse. For convenience we called this the "Nunatak Glacier".

Mr. A. R. Glen with two companions paid a short visit to this region at this time to supplement the work of the Oxford University Expedition to Spitsbergen 1933 of which Glen was also the leader. Ed. note.

On Aug. 20 we passed over moraines, running north from the "Nunatak" and having crossed over the "Nunatak Glacier" we came to a plateau rising to 1050 m from a height of about 500 m above sea-level. On Aug. 22 and 23, we moved quickly across the flat ice plains. On the New Friesland Glacier, at heights sometimes exceeding 1000 m, we met with melting névé and most frequently there were also rainfalls which at times were very heavy. Apparently that was due to the stronger influence of the Gulf Stream in that part.

On Aug. 23 we descended to the Mossel Bay by a short steep glacier which lies in the upper part of the valley in direct line with the bay, and on Aug. 24 we reached Verlegenhuken, the most northern point of West Spitsbergen. The same day we returned to our sledge left on the glacier beyond Mossel Bay.

Along the whole expanse between Mossel Bay and the north cape of West Spitsbergen, we moved over a territory consisting of gneiss or of mica-schist.

On Aug. 25 and 26 we marched sharply towards "Nunatak Glacier". On the 26th we found ourselves in mist somewhere in the vicinity of the south border of the New Friesland Ice Plateau. Being unable to find a descent to the Lomme Glacier, we had to wait for better weather conditions. On that day we ran short of fuel for our "Primus". Owing to an increasing gale and the possibility of a longer stay in one place, we limited our already meagre food rations. On Aug. 28, in spite of the persevering snowstorm and mist, we set out thoroughly soaked and frozen, and after about 6 hours we found the descent to the "Nunatak Glacier". We descended it to the Lomme Glacier where, without difficulty, we found our provision store.

On Aug. 29 we proceeded southwards alongside the Stubendorff mountains to the highest point of the Lomme Glacier. Aug. 30 brought us beautiful and frosty weather, and we proceeded further south, keeping nearer the base of the Chydenius mountains. We crossed the elevations dividing the highest part of the Stubendorff Glacier from the Martin Conway Valley, and descended to the latter. Here we went SSW for several hours, either walking up or going down numerous gentle slopes, which are plentiful on the glacier in the Martin Conway Valley.

On Aug. 31 we crossed a ridge, running NE of the De Geer Mountains and from here we descended to the Nordenskiöld Glacier. This glacier is tremendously fissured and uneven, especially in the

northern and central parts. We therefore immediately proceeded to its southern border. We passed the slopes of Mount Terrier and descended to the front of the glacier above Klaas Billen Fjord. Within 8 km of our journey's end our already greatly worn sledge crashed completely on the unevenness of this glacier. On Sept. 1 we crossed over the terminal moraine, and after half an hour found ourselves in the deserted huts of Bruce City. On Sept. 5 we were taken on board the s.s. "Lyngen".

Our expedition lasted 56 days, 47 days of which we had marched, and rested 9 days owing either to weather conditions, or voluntarily, for instance in Mr. Nøis's hut and in Longyearbyen. We covered a distance of 800 km, the average speed during the whole expedition being about 14 km per day. We kept to the principle of devoting 8 hours daily to marching alone. On the second stage of our journey we marched 10 hours daily. The maximum we could do in one day, with sledge, was about 40 km. The whole time we were in excellent health and strength.

During the expedition, we had, on the whole, rather poor weather conditions. During the first part of July, while in the Sørkapp region we had several days of sunshine. After that period, we never enjoyed three consecutive days of fine weather. Frequent mists and high winds were experienced. We encountered snowstorms chiefly in the middle of August in Garwood Land, and rain on the heights of New Friesland. We encountered mists during the whole trail, although oftener in the lower parts of the glaciers than in their névé regions. Temperature was mostly about  $0^{\circ}$  C. The lowest temperature of  $\div$  7.3° was recorded on the Lomme Glacier on Aug. 30 at 5.15 a.m., at a height of 1000 metres above sea level. Temperatures between 5° and 10° were recorded in the Kjellström, Sassen and Advent valleys.

The plants collected by Mr. Bernadzikiewicz were handed over to the Institute of Systematic Botany in Warsaw, for closer study.

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