

MALTE ANDERSSON'S AND W. BIERTHER'S TRAVELS

According to the plan, BIERTHER and MALTE ANDERSSON were to pass the winter of 1937—38 at Ella Ø and with the station there as a base undertake geological mapping of the geologically almost unknown triangular area bounded on the south by the 72° parallel and on the west by the large fault passing through Skeldal, which separates Staunings Alper from the sedimentary area east of these mountains.

As already mentioned, the "Gustav Holm" was not placed at the disposal of the expedition till August 5th. Off Liverpool Land the ship met so heavy ice masses that the planned building of the station Gurreholm in Fleming Fjord had to be given up, so the ship went into Scoresby Sund, where the station was built at the delta of Schucherts Flod.

As the ice conditions showed no sign of improvement during the first part of August, and it was realised that the ship would hardly be able to go to Ella Ø that summer, BIERTHER and MALTE ANDERSSON went ashore at Gurreholm, to try to travel with ponies over land to Antarcics Havn, to be possibly fetched there by motorboat from Ella Ø.

Aug. 14th.—BIERTHER and MALTE ANDERSSON, accompanied by the geologist HÜBSCHER and the assistants TVERMOSE and PÅLLSON to take care of the ponies, started from Gurreholm to travel across Jameson Land and Scoresby Land to Antarcics Havn, a route which had never been covered before. The weather had been bad for several days, with rain and fog, and after a few hours the party had to camp owing to the bad weather.

The rain continued almost uninterruptedly until August 20th, which, of course, made travelling very difficult and troublesome. The flat tundras along Schucherts Flod, which are usually dry at this season of the year, had been transformed into swamps. Soil-flow occurred on all the slopes, and the many rivers which are usually almost dry at this season, carried large water masses. In several places the ponies sank way into the swampy ground and all hands had to assist to get them out again.

Aug. 16th.—The two assistants went to Gurreholm to fetch more provisions and food for the ponies. They returned in the evening of the 19th.

Aug. 20th.—In the forenoon sunny, but in the afternoon it rained again, and the rain and fog continued all next day.

Aug. 22nd.—The weather improved somewhat. The caravan made its way northward in short day's journeys. When the weather permitted small excursions were made for geological investigations.

Aug. 26th.—A reconnaissance was made, and the area where the Ørsteds Dal river takes its rise was discovered.

Aug. 27th.—The party travelled about 25 km northeastward, and a camp and a depot were erected in Ørsteds Dal. HÜBSCHER started, to return on foot to Gurreholm.

Aug. 28th.—PÁLLSON and TVERMOSE travelled to Gurreholm to fetch more food for the ponies, leaving the two geologists with two ponies at the camp.

During the following days, until Sept. 5th, ANDERSSON and BIERTHER continued northeastward through Ørsteds Dal and the surrounding area to a transverse valley west of Fleming Fjord. Various geological reconnaissances were made in the neighbourhood of the camps.

Sept. 6th.—During the night the temperature fell below 0° C., so the ground was hard and presented good going. Whenever possible, geological investigations had been carried out, but the valleys were broad, and only small sections were exposed. The regions traversed were mostly made up of Triassic beds, red sandstones with thick beds of gypsum, sometimes grey Rhætic sandstones with a sparse content of fossils.

Sept. 7th—8th.—Stayed in camp owing to rain and snow.

Sept. 9th.—Returned to the camp established on August 28th. where they met HÜBSCHER and TVERMOSE, who reported that the "Gustav Holm" had not yet left Scoresbysund, and that the geologists were free to choose whether they wanted to winter at Scoresbysund or at Ella Ø. BIERTHER decided to proceed northward to reach Ella Ø as soon as possible, while MALTE ANDERSSON preferred to return to the "Gustav Holm".

Sept. 10th.—BIERTHER and TVERMOSE started towards Antarctica Havn with all the ponies, while ANDERSSON and HÜBSCHER remained at camp.

Sept. 12th—15th.—Continuous snowfall. The ground was covered with snow, and the rivers frozen over.

Sept. 18th.—Late in the evening TVERMOSE returned from Antarctica Havn, while BIERTHER preferred to stay with the Norwegian trappers till it would be possible for him to proceed to Ella Ø by sledge; Kong Oscars Fjord was so full of ice that it was impossible for the motorboat from Ella Ø to push its way to Antarctica Havn.

Sept. 21st.—Started the return journey to Gurreholm. Travelling was very troublesome, the snow prevented the ponies from grazing, and very little horse's food was left.

Sept. 24th.—One of the ponies had to be shot, as it was entirely worn out. Some hours later the party reached Gurreholm. During the last few days the temperature had been 10° C. below zero.

Sept. 25th to Oct. 6th.—Stay at Gurreholm.

Oct. 7th—16th.—MALTE ANDERSSON and HÜBSCHER, accompanied by TVERMOSE and a Greenlander with dogs and sledges, made a trip into the river valley of Schucherts Flod, where HÜBSCHER carried out sand investigations. ANDERSSON attempted, on skis, to investigate various minor sections, but found no fossils.

Oct. 17th—Nov. 26th.—MALTE ANDERSSON stayed at Gurreholm.

At the end of October BIERTHER was fetched at Antarcctics Havn by dog-sledge from Ella Ø.

November 24th.—Four sledges arrived from Scoresbysund, i. a. with EIGIL NIELSEN and STAUBER, who remained at Gurreholm. The sledges left Gurreholm again on the 27th accompanied by MALTE ANDERSSON, and after an exhausting journey along the west coast of Jameson Land, where there was much loose snow, they reached Scoresbysund in the evening of November 30th.

Febr. 20th.—STAUBER and PÁLLSON arrived at Scoresbysund by sledge from Gurreholm to fetch a Greenlander.

Febr. 23rd.—STAUBER, ANDERSSON, PÁLLSON, and the Greenlander started with two sledges for Gurreholm. Went some distance up Hurry Fjord, as they intended to travel across Jameson Land.

Febr. 24th.—Had to camp on the southernmost of Fame Øer owing to a strong snowstorm. Not till the 26th was it possible for the party to proceed up along Ugleelv and across Jameson Land to the coast, and late in the evening of the 28th they reached Gurreholm after a troublesome journey. In the interior of Jameson Land, especially in the river valleys, the snow was very loose and presented great obstacles.

At the beginning of March two Greenlanders arrived by dogsledge from Ella Ø. They had left BIERTHER at Antarcctics Havn. The journey over land had been easy, the snow having been blown hard by the frequent storms, and on the 16th MALTE ANDERSSON started with four sledges to Antarcctics Havn. Owing to snowstorm they were weather-bound for several days, so not till the evening of the 23rd did they reach the trappers' hut at Antarcctics Havn, where they met BIERTHER.

On March 24th BIERTHER, STAUBER, HÜBSCHER, and ANDERSSON travelled into the valley west of Antarcctics Havn, a camp was established here, whence excursions were made in various directions during the following four days. On the 29th BIERTHER and ANDERSSON went on skis to a camp previously erected by BIERTHER about 8 km northwest of Kap Syenit. Here they stayed from March 30th to April 9th. A zealous search for fossils was made, but only few fossils were found. Numerous well-

preserved plant impressions, probably Rhæt-Liassic, were found in BIERTHER's section 7, at an altitude of ca. 500 m, ca. 5 km west of the camp.

On April 10th the camp was removed by sledge to a place a little south of Kap Syenit, where the party stayed till April 17th. The temperature, which at the beginning of April had been about 25—30° C. below zero, suddenly rose to —11° C., which temperature remained fairly constant during the following time. Very few fossils were found here, mostly poorly preserved mussels, belemnites, and ammonites. On the 17th the Greenlanders THOMAS and KONRAD arrived with a dog-sledge loaded with provisions, which they had fetched at Gurreholm. The camp was removed to Antarcitics Havn, where the collections were packed.

From April 19th to 25th a camp was established some distance up the valley west of Antarcitics Havn. On the 27th the party started with dog-sledge for Skeldal. They struck bad going, and not till the 28th were they able to camp south of Menanders Øer. On the 27th the first snow-sparrow was observed. The two geologists stayed at this camp till May 6th, making numerous excursions along the shore and up the valleys. Carboniferous plant remains were found in several localities.

On an excursion into Skeldal on May 6th numerous fairly well preserved Carboniferous fossils were found in a small section near one of the glaciers.

From May 7th to 12th MALTE ANDERSSON stayed alone in the camp in Skeldal and collected fossils near the first glacier descending into Skeldal from the west. In the meantime BIERTHER and the Greenlander laid out depots in Mesters Vig. The temperature was now positive by daytime, and from the 12th the midnight sun was full. Further localities with Carboniferous plant and fish remains were found in the tributary valleys west of Skeldal.

May 16th—18th.—Removed the camp to Noret, whence the Greenlander returned to Ella Ø. On May 19th—20th plant and fish impressions were observed in the mountain walls a little north of Noret.

On the 21st and 22nd the whole equipment was transported on a drag-sledge to the depot in the interior of Mesters Vig. Heavy going.

From May 22nd to June 17th investigations of the whole Mesters Vig valley and tributary valleys to the northernmost glaciers of Werner Bjerge. The melting of the snow was now in rapid progress, and travelling was often difficult, large water streams suddely breaking through the ice covering. Several fossiliferous horizons were found within the Carboniferous, Permian, and Triassic beds.

From June 17th to July 1st investigations were made in the sediments southwest of Mesters Vig from various camps. On June 23rd the snow had almost disappeared, and the ice of the fjord was covered with water.

On July 1st they crossed the river to the east side of Mersters Vig, and various sections were investigated.

On the 8th they went up the tributary valley to the east and crossed the pass to the Antarcics Havn valley; on the 10th they paid a short visit to the Norwegian hut there but returned in the night to the camp in the valley. Gnats were now abundant. The weather had been fine for some time, but on the 11th to 13th the work was prevented by heavy rain and wind.

From July 14th to 24th the two geologists worked in various valleys east of Mesters Vig. On the 18th BIEROTHER went alone through a tributary valley to Skeldal to complement his previous investigations, while MALTE ANDERSSON transported the collections to a place on the shore, where they were to be fetched by motorboat from Ella Ø. From July 20th the greater part of Mesters Vig was free of ice.

On July 24th DE LEMOS and the two Greenlanders arrived by motorboat from Ella Ø, and in the course of three days the collections deposited in various places along the coast were taken on board the motorboat. In the evening of the 26th the boat started for Ella Ø, arriving there next morning.

On August 2nd the "Godthaab" arrived at Ella Ø.

On August 4th the motorboat with DE LEMOS, BIEROTHER, ANDERSSON, and MAYNC went to Mesters Vig. The party remained there till the 9th to make various supplementary geological investigations and collections.

On August 10th the "Godthaab" arrived, and the geologists went on board to go southward with the ship. A preliminary geological map of the areas investigated has been published by BIEROTHER (M. o. G. Bd. 114, Nr. 6). The plant fossils have not yet been described.
