

GEOLOGICAL MAPPING OF THE LARGE
SEDIMENT BASINS BETWEEN THE EASTERN PART
OF SOFIA SUND AND THE SOUTHERN PART
OF JAMESON LAND.

BASED ON A REPORT RECEIVED FROM HANS STAUBER AND OTHERS

1936—1937.

After acting as assistants to H. BÜTLER for about one month on long journeys to the interior of Hudson Land, thereby gaining experience in the travelling technique in East Greenland, the two geologists HANS STAUBER and H. P. SCHAUB at the end of August arrived at the station on Ella Ø, which was to be their headquarters for the following year. Here they met the persons with whom they were to winter. They at once began to make preparations for their first late summer journey to Drømmebugten on Traill Ø.

In the evening of August 28th they started in the motorboat "Bulldog" under the leadership of KAMMAN, assisted by RICHARD NIELSEN and HARDER JENSEN and the Greenlander KONRAD ARKE. The weather was bright until they reached Haslums Øer. Here they met with fog, which lasted all the way to Drømmebugten. At night, however, they went on by means of the compass, and in the early morning of August 29th they established camp No. 1 on a shore-terrace at the innermost part of Drømmebugten. They saw and shot at a polar bear, but she escaped. On the shore in the vicinity, however, they saw another bear, which was shot. Almost at the same time the motorboat "Polypen" arrived, led by DE LEMOS. This motorboat was to transport two geological parties to Nathorsts Fjord, one led by BÜTLER, the other by G. SAVE-SÖDERBERGH. The "Polypen" left shortly after, while SCHAUB and STAUBER arranged the camp. The motorboat "Bulldog" made a small trip into the fjord, and in the neighbourhood another bear was shot by KAMMAN. Two more bears were shot from the boat. In the evening KAMMAN travelled back to Ella Ø in the "Bulldog". A small rowing boat was left at the camp. On the first day SCHAUB made a small excursion into the valley southwest of the camp.

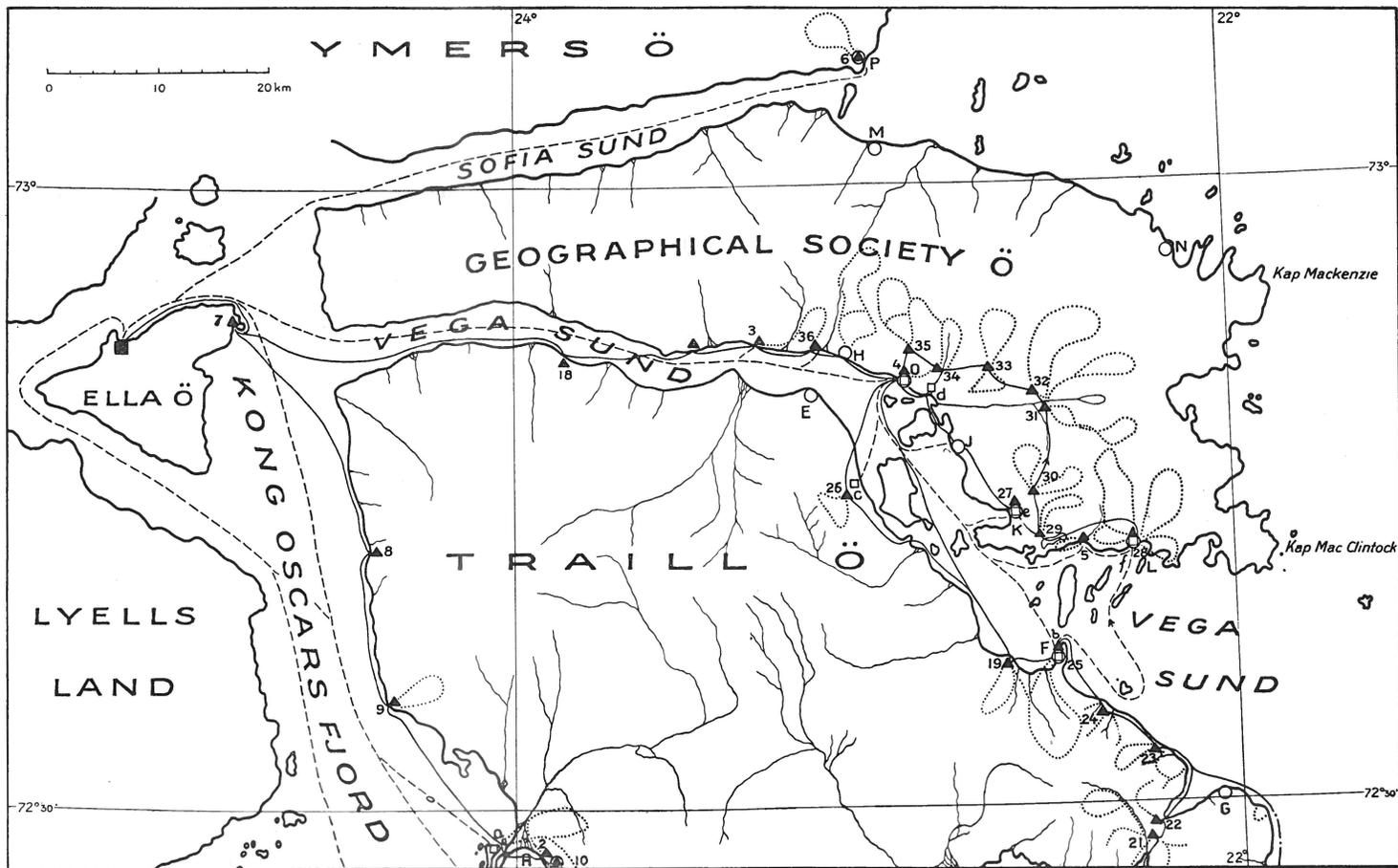


Fig. 198. STAUBER'S travelling routes from Ella Ø 1936—37.

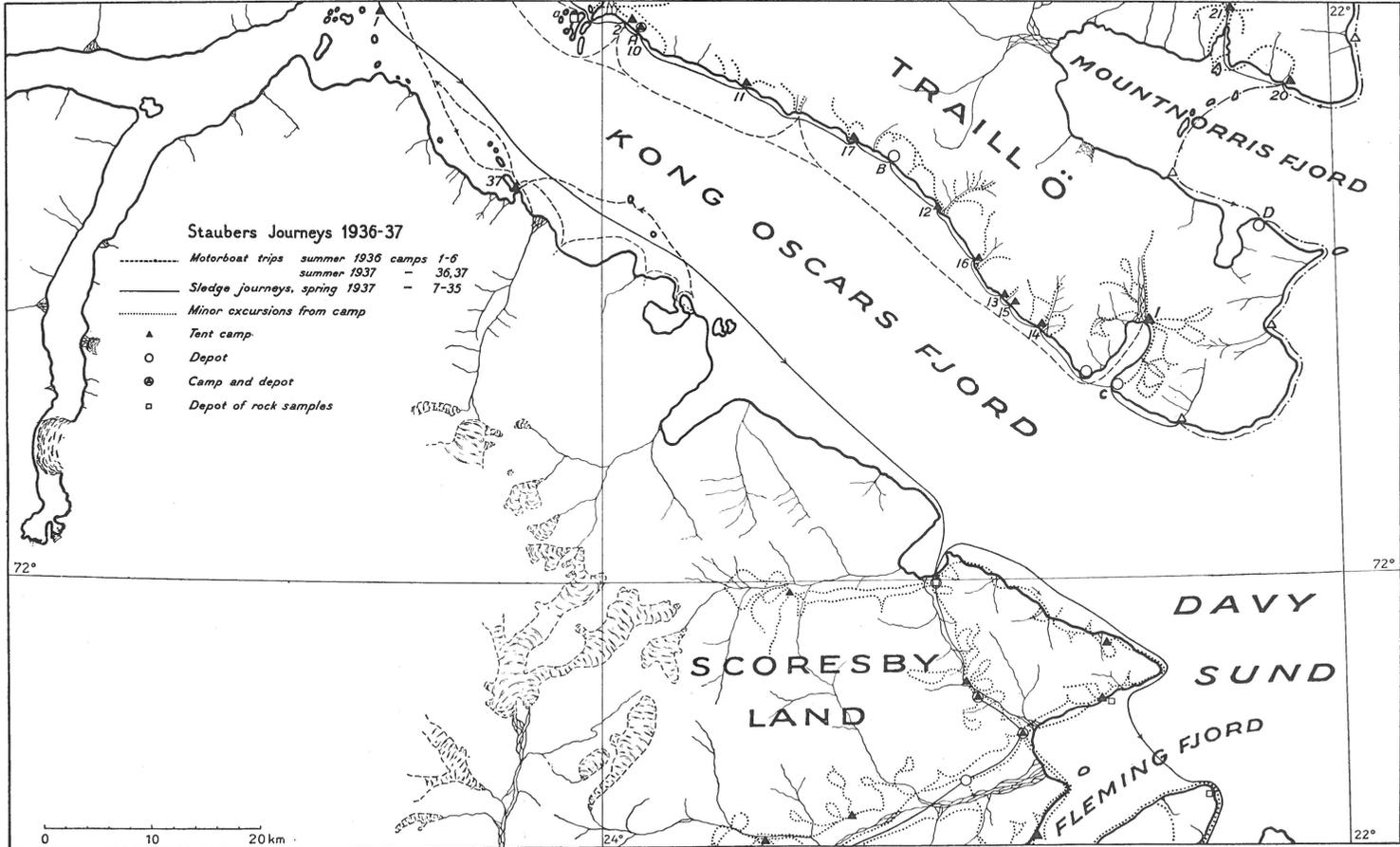


Fig. 199. STAUBER'S journeys 1936—37.

Aug. 30th.—Fine weather, temperature about zero. SCHAUB worked in the valley, as the day before. STAUBER went northward and found Rhaetic and Jurassic conglomerates as well as Cretaceous clay shales, a number of eruptives, and badly preserved *Inoceramas*.

Aug. 31st.—Fine weather. SCHAUB made a trip to the mountain northeast of the camp. STAUBER crossed the river northward at the head of the bay and found olive-green obsidian.

Sept. 1st.—Fine weather, frost. While SCHAUB went northwestward, STAUBER went westward. It appeared that nearly the whole territory mostly consisted of eruptives, basalts and tuffs, as well as coarse-grained syenites. Sediments were rather rare in this district.

Sept. 2nd.—Fine weather. SCHAUB went again up the valley to the northwest. STAUBER first made some packing of the collected rock samples, afterwards he climbed the valley to the northwest and had a view of Mountnorris Fjord.

Sept. 3rd.—Overcast. SCHAUB went again towards the northwest. STAUBER followed the coast towards Purpurfjeld, but found that nearly all the rocks here were eruptives, there were only few sediments, and no determinable fossils.

Sept. 4th.—Fine weather. SCHAUB continued the work to the northwest. STAUBER went up the valley to the northeast. From a distance he saw 2 bears.

Sept. 5th.—Fine weather. SCHAUB still worked to the northwest. STAUBER went eastwards. He saw a bear, which approached the tent. He succeeded in warning SCHAUB by firing a shot, and the bear was driven away into the valley. Afterwards they examined Purpurfjeld, which consisted entirely of eruptive rocks. Some sediments were found, also, mainly clay shales of upper Jurassic and Cretaceous age.

Sept. 6th.—Sky overcast. SCHAUB had now finished his investigations to the northwest and went towards the northeast. STAUBER packed collections, and afterwards he also went northeastward.

Sept. 7th.—Overcast and windy. In the early morning the motor-boat "Polypen" arrived with PHILBERT, RICHARD NIELSEN, and KONRAD. In the vicinity of the camp a bear was seen and shot. At noon they travelled in the "Polypen" to the delta at the east side of Drømmebugten, and SCHAUB and STAUBER made a trip into the valley to examine an occurrence of fluorite which had previously been seen here. At night they returned by boat to the camp.

Sept. 8th.—Overcast. SCHAUB travelled by boat back to the working field of the day before. STAUBER packed collections and climbed a mountain. In the evening they all were assembled at the camp.

Sept. 9th.—The weather was very unsettled. Early in the morning the camp was broken. They travelled out of Drømmebugten and continued

westward along the south coast of Traill Ø. It was blowing up from the east and there was a heavy swell. Therefore it was not possible to make any landing before they were in the lee of Haslums Øer, where they established camp No. 2.

Sept. 10th.—Fine weather. SCHAUB climbed the mountains near the camp. STAUBER at first followed the coast to inspect the depot situated east of the camp. Afterwards he climbed the mountain, made a careful section-measurement of the Carboniferous strata and found a cyclic alternation of the sediments, the strata now consisting of coarse conglomerates, now of sandstones with thin bands of clay shale. Some Carboniferous plants were collected. The descent took place west of the basalt cliff, and in the night STAUBER returned to the camp.

Sept. 11th.—Fine weather. The camp was broken in the morning, but they were delayed owing to motor-repairs. STAUBER made a short trip to the eastern rock-section. At noon they travelled in the "Polypen" past Kongeborgen to Narhvalsund. Here they hunted seals, and in the evening they reached the station. There were now eight men assembled here:

ARNE PHILBERT, leader of the station,
LEO CHRISTIANSEN, wireless operator,
HANS STAUBER, stratigrapher,
H. P. SCHAUB, petrographer,
T. HEINRICHSON, palæontologist,
RICHARD NIELSEN, assistant for HEINRICHSON,
and the two Greenlanders THOMAS and KONRAD.

During the 10 days' stay at Drømmebugten (camp 1) 15 of the surrounding mountains had been climbed and investigated geologically. Large collections had been secured, and many eruptives had been observed. On the other hand the sediments were only sparsely represented, and when present, they were, as a rule, strongly displaced, so bad sections and hardly any fossils were the result. It was, perhaps, a too complicated working field to begin in, still SCHAUB made some very interesting observations. STAUBER did not get much out of his stay at Drømmebugten.

Sept. 12th—20th.—Stay at the station. Arrangement of the collections. Development of films. A seal-hunt was made with the "Polypen" in order to secure fresh meat. Sept. 20th was spent in preparing for a voyage by motorboat to Vega Sund.

Sept. 21st.—Fine, clear weather. Started in the morning in the "Polypen". Besides the two geologists, PHILBERT, CHRISTIANSEN, and the two Greenlanders took part in the voyage. They travelled near to the shore in order to inspect the depots. During the voyage a bear was

shot. They camped at camp 3. From here they made minor trips inland as well as along the coast, where a depot was inspected. It had only been slightly disturbed by bears.

Sept. 22nd.—Fine weather. SCHAUB and STAUBER made a trip westward along the coast. Then they went inland and found Triassic fossils. However, the ground was now covered with new-fallen snow. In the evening they travelled to camp 4 at a trapper's hut.

Sept. 23rd.—Fine weather. From the camp they continued by motorboat in between the basalt islands and out into Vega Sund. On the islands they saw 4 bears, of which 3 were shot. They went on to camp 5. SCHAUB made a trip to the north, STAUBER went along the coast and here found Cretaceous and clay shales containing *Inoceramus*. A bear was observed and shot from the "Polypen".

Sept. 24th.—Fine weather. SCHAUB went westward along the shore. STAUBER went towards the east and here found Cretaceous shales. The "Polypen" brought with her provisions to depot 1, and continued to Kap Palander in order to inspect a depot; it appeared to be undisturbed. SCHAUB and STAUBER made a small excursion, and afterwards the boat proceeded eastward. Another depot was inspected, it had been disturbed by bears, the provisions lay scattered about and were no longer to be found under the snow. A new depot was established at a trapper's hut, and in the evening they travelled back to camp 4.

Sept. 25th.—Fine weather. In the morning a motorboat voyage in between the basalt islands. Searched in vain for depot 9. After hunting birds and seals, SCHAUB and STAUBER remained for some days alone in camp 4 at the small trapper's hut. The others went home with the motorboat, inspecting a depot at the south coast of Vega Sund during the voyage.

Sept. 26th.—Fine weather. Joint tour northward. The snow on the land was still not particularly deep. They mapped thick basalt terraces, between which were thin beds of clay and Cretaceous shales. In the basalt there were chalcedony and quartz crystal formations.

Sept. 27th.—Fine, cold weather. Later on rather warm and westerly foehn. Excursions were made both along the coast and inland, and some fairly well preserved sediments were found. A snowy owl was shot.

Sept. 28th.—Fine weather. SCHAUB made a trip northward, STAUBER a trip to the coast and the mountains to the west, where he measured sections and found fossiliferous Trias.

Sept. 29th.—Fine weather. Joint tour to the high mountain terraces and across the large flat inner mountainous area to Julekagen, and the steep basalt peaks, 1100 metres high, were climbed. Poorly preserved Jurassic and Cretaceous fossils were found here, and sediment blocks as big as houses were enclosed in the basalt.



Fig. 200. Dog-team in deep snow.

Sept. 30th.—Fine weather. Packing of collections, and a small trip in the vicinity of the camp.

Oct. 1st.—Foggy. Both the geologists made trips along the coast to the west, and here found poorly preserved, sometimes metamorphosed, sediments.

Oct. 2nd.—Foggy, but clearing. The collections were packed, and at noon the "Polypen" arrived with PHILBERT and KONRAD. The depot on Traill Ø had been somewhat disturbed, for which reason a new depot was laid out in the small trapper's hut, which, however, had to be repaired, having been partly destroyed by bears. In the evening they returned to camp 4 after a difficult voyage in between the basalt islands.

Oct. 3rd.—Fine weather, though foggy. A depot was laid out at camp 4; then they returned to Ella Ø after successful seal-hunting.

Oct. 4th—12th.—Stay at Ella Ø. Hunting trip with the "Polypen" in Kempes Fjord, and the two Swiss geologists made minor excursions in the vicinity of the station to study the geological conditions round the station, sometimes accompanied by RICHARD NIELSEN. Returned to the station after a long stay in a tent at Kap Elisabeth.

Oct. 12th—Fine weather. In the morning the two geologists, PHILBERT, and the Greenlanders started with the "Polypen" sailed by PHILBERT to Kap Elisabeth. From here they travelled into Sofia Sund to Kap Humboldt, where they spent the night in a Norwegian trapper's hut.

Oct. 13th.—Bad weather with fog and snow, at times strong wind and a heavy swell. SCHAUB and STAUBER made a geological excursion to the Kap Humboldt area, collecting Carboniferous sediments and some Carboniferous plants. Studied post-Devonian faults. Spent the night in the Norwegian trapper's hut.

Oct. 14th.—Fog and snow. A depot was laid out near the station. In fog they went to Kap Elisabeth, where they fetched HEINRICHSON and NIELSEN, and in the night they arrived at Ella Ø.

Oct. 15th—19th.—Preparations for the wintering. The "Polypen" was hauled ashore on Oct. 16th, and on Oct. 19th the regular winter life began, two men on turn cooking the meals for a week. A few minor excursions on Ella Ø were made during the month of December.

Jan. 31st.—Some sledges arrived from Scoresbysund. When conditions permitted, SCHAUB and STAUBER made minor excursions on Ella Ø; they were particularly interested in studying the tillites. On March 13th the first big sledge journey to Traill Ø and Kong Oscars Fjord was started. In this SCHAUB, STAUBER, PHILBERT, and KONRAD took part. They had at their disposal 3 sledges and 28 dogs. The plan was to follow the south coast of Traill Ø to Drømmebugten, and the object of the journey was a stratigraphical investigation of the Devonian and Carboniferous beds along the coast from Haslums Øer to Kap Simpson. In the autumn 4 depots had been laid out for this journey, but it was impossible to find the three, apparently they had been destroyed by bears, and from the one left they could only find a few things which the bears had spread round about. They therefore had to bring with them more provisions than originally planned. The working conditions were relatively unfavourable because the land was covered with deep, soft snow. There was only little chance of hunting along the coast, and it was very difficult to investigate the steep coast sections. SCHAUB's journey lasted from March 13th—April 6th. STAUBER and KONRAD travelled from March 13th—May 3rd.

March 13th.—Overcast and foggy. Travelled from the station to Kap Elisabeth, and onwards along Kongeborgen, in all 35 km. Exhausting journey in deep snow. Camp 8.

March 14th.—Fine weather. Laborious journey along Kongeborgen. Had to drive twice to carry the loads. During the journey small geological excursions were made. Camped in the evening (Camp 9). SCHAUB was tired and not quite well. In the night a storm blew up.

March 15th.—Fine weather. Sometimes heavy wind. The dogs rested, while the geologists made some minor geological excursions on skis.

March 16th.—Fine weather. The two geologists went ahead on skis to Haslums Øer, where they made geological studies. Camp 10. A depot on Haslums Øer appeared to have been destroyed by bears.

March 17th.—Fine weather. Fetched by sledge various things left behind, and as it seemed that they would hardly find any depots intact, more kerosene, pemmican, and other provisions were fetched. In the meantime SCHAUB made a trip out to the fjord, and STAUBER measured sections in the Carboniferous.

March 18th.—Overcast. SCHAUB made a trip to Haslums Øer. STAUBER continued the section-measurement and the collection of fossils, and again ascertained the periodical cycle. In the evening THOMAS returned with provisions.

March 19th.—Slightly overcast, cold. SCHAUB and STAUBER went together with THOMAS further into the fjord and established camp 11. STAUBER went eastward, measuring sections in the western part of Svinhufvuds Bjerge.

March 20th.—Fine weather. SCHAUB made a small trip up the mountains. STAUBER measured sections up to more than 1000 m above sea-level. Found fish-remains in Upper Carboniferous or Permian.

March 21st.—Fine weather. They travelled onwards, still in deep snow. In the course of the day they were overtaken by PHILBERT and KONRAD, who came with fresh provisions. They looked in vain for a depot. Along the shore the travelling conditions were quite good, the storm from the North having blown away the snow, but sometimes it had also carried big stones more than 100 m out on to the fjord ice. In the night, at camp 12, still stormy weather.

March 22nd.—Fog. STAUBER made a small geological excursion.

March 23rd.—Fine weather. The sledges returned to Ella Ø in order to fetch more provisions. SCHAUB and STAUBER remained alone in camp with a dog. STAUBER went westward and found Cretaceous beds with ammonites.

March 24th.—Fine, later wet weather. STAUBER made a trip into the valley to the highest point of the pass where he had a view of Mount-norris Fjord.

March 25th.—Overcast, cold weather. The two geologists worked in the vicinity of the camp.

March 26th.—Fine, cold weather. The work in the vicinity of the camp was continued.

March 27th.—Fine, cold weather, temperature about 33° C. STAUBER found sections with *Inoceramus*.

March 28th.—Fine weather, but colder. The geological investigations around the camp were continued.

March 29th.—Fine, cold weather. SCHAUB made a trip to Steen-

strups Dal, STAUBER to the west side of Steenstrups Bjerg. Found Upper Jurassic ammonites here.

March 30th.—Fine weather. STAUBER first made a trip on the fjord-ice in order to get a general idea of the coast sections about Steenstrups Bjerg, and afterwards he measured sections.

March 31st.—Fine, cold weather. STAUBER made a trip westward into the valley. In the afternoon the two Greenlanders returned with the sledges from Ella Ø. They reported that already on the homeward journey PHILBERT had suffered from lumbago, so he had to remain at the station.

April 1st.—Snowy weather, some fog. SCHAUB travelled to Forchhammers Dal to take a view of the conditions. STAUBER packed fossils. One of the Greenlanders had 13 dogs, the other 11, for the onward journey.

April 2nd.—Fine weather. STAUBER continued along the fjord, and camped in the camp just left by SCHAUB where he measured sections in the coast-cliffs. Camp 13.

April 3rd.—Foggy. STAUBER continued his measurements, and sent a Greenlander to SCHAUB. In the evening the Greenlander returned with a letter from SCHAUB, stating that there was much snow ahead which made work almost impossible. On the following day he planned to go into Drømmebugten, and if conditions were not better there, he would lay out a depot and go to Ella Ø in order to reach Kap Simpson through Vega Sund. In the evening STAUBER met SCHAUB in camp 14, and from here he made an excursion into the valley to the north.

April 4th.—Fine weather. While SCHAUB travelled into Drømmebugten, STAUBER climbed Forchhammers Bjerg (1352 m) to measure sections. The upper part of the mountain was difficult to climb. While the lower part of the mountain mainly consisted of sandstone (Rhæt-Dogger), the upper part consisted of dark marly slates (Upper Jurassic and Cretaceous) including thick basalt layers and, at the top, syenite. Late in the evening STAUBER returned after an exhausting trip.

April 5th.—Fine weather. SCHAUB interrupted his journey and returned to the Ella Ø station. STAUBER went with the Greenlander KONRAD into Drømmebugten and here laid out a depot for the continuation of SCHAUB's work. He searched in vain for a depot formerly laid out. It was buried under about 1 m of snow. He made a trip farther out towards Kap Simpson, but returned to the camp, as a gale blew up.

April 6th.—Storm in the night had blown much snow away. In the morning it cleared, and STAUBER continued his section-measurements at the south slope of the lower part of Forchhammers Bjerg. Here he found ammonites in the Upper Jurassic beds (*Cardioceras*, etc.).

April 7th.—Fine, cold weather. Section-measurements at the west-

ern slopes of the mountain east of Forchhammers Dal. Rich collections had been secured, which were deposited in this camp to be fetched later by dog sledges.

April 8th.—Bad weather. Collections were packed. The Greenlander fetched depots that were concentrated at the camp. In the afternoon the section measurement and the collection of fossils on the southern slope of Forchhammers Bjerg were continued.

April 9th.—Sky overcast. A new camp was established a little farther westward (camp 15). Continued section measurements near the coast. In the meantime the Greenlander transported the collections. Later in the day a gale sprang up. The dogs were now in a rather poor condition.

April 10th.—Cold snowy weather. As far as conditions permitted, the section measurements were continued. Later on they went to camp 16.

April 11th.—Fine weather. Section measurements towards the southeast and also towards Steenstrups Bjerg.

April 12th.—Overcast. Continued section measurements on the west side of Forchhammers Bjerg. Ammonites were found.

April 13th.—Overcast. New snow had fallen during the night. The temperature was $-5-10^{\circ}$ C. STAUBER made another trip to the place where the ammonites had been found in order to measure sections in the dark Jurassic and Cretaceous marly shales.

April 14th.—Warm, snowy weather. A trip was made into the fjord, to get a general view, after which they travelled to camp 17, whence an excursion was made to the mountains.

April 15th.—Overcast snowy weather. The Greenlander transported the collections to depot B, and he succeeded in shooting a seal. STAUBER measured sections.

April 16th.—The snowy weather continued. Section measurements on the western slope of Steenstrups Bjerg, where Upper Jurassic ammonites were found. The Greenlander gathered the collections at depot B.

April 18th.—Newfallen snow, warm. The Greenlander went out hunting. STAUBER measured sections round the camp.

April 19th.—Fine and warm weather. STAUBER made an excursion out on to the fjord to get a view of the conditions, and afterwards made an excursion to Svinhufvuds Bjerg to a height of 1350 m. Found some fossils in the Upper Jurassic and Cretaceous beds.

April 20th.—Snowy weather again. STAUBER sent the Greenlander to Ella Ø for further particulars about SCHAUB's journey. The Greenlander took 2 boxes of fossils with him, which he deposited at Haslums Øer. Afterwards he continued to Ella Ø. STAUBER measured sections, and for some days he was alone in the camp, his only companion being a dog.

April 21st.—Snow. Stay in the camp.

April 22nd.—Fine, cold weather. Made a long mountaineering trip to Svinhufvuds Bjerg. Found large numbers of Eotriassic ammonites and Triassic fishes. Took large numbers of specimens in spite of the snow, and reached the camp after a difficult descent from the mountain.

April 23rd.—Fine weather. Ascended the mountain again to continue the collection of fossils. Measured sections up to a basalt peak (about 1200 m). Found Upper Triassic series with fossils and intricate tectonic conditions. Difficult descent with the many fossils.

April 24th.—Fine weather. KONRAD returned from Ella Ø with provisions, letters, and telegrams. It appeared that SCHAUB had not left for Vega Sund until April 23rd, and had met KONRAD at Kap Elisabeth. At the Ella Ø station they were short of dogs' food. In the course of the day, STAUBER measured profiles in the Carboniferous, Permian, and Triassic strata and found large numbers of fossils.

April 25th.—Fine weather. Later on storm. STAUBER made a mountain excursion to continue the measurement of profiles. The Greenlander transported the collections to Haslums Øer.

April 26th.—Fine weather, later on fog and snow-storm. While the Greenlander continued the transport of collections to Haslums Øer, STAUBER measured profiles in the mountains, particularly Permian and Triassic sections.

April 27th.—Snowy, rather warm. STAUBER stayed in the tent all day to arrange his notes and have a rest after the last days' fatiguing mountain-trips.

April 28th.—The weather was clearing. STAUBER and the Greenlander travelled again towards the east to measure a section in the rock wall, which was here difficult to climb, but rather high up a fish-horizon was found in the Eotrias. Owing to a large number of collections it was difficult to descend across the steep face of the mountain. The collections were deposited for the night in camp B.

April 29th.—Fine weather. Continued eastwards to camp 14 and another section was measured through the Permian and Triassic. Many fossils.

April 30th.—Snowy weather. Permian sections were measured. Returned to camp B.

May 1st.—Gradually it cleared. They travelled eastward, STAUBER made an excursion out on to the fjord to get a view of the sections, and then returned to camp A. KONRAD arrived late owing to unsuccessful bear-hunting.

May 2nd.—Fine weather. Travelled to the large depot on the west side of Haslums Øer after packing the collections, in all 13 boxes, two of which belonged to SCHAUB.

May 3rd.—Fine weather. STAUBER made a mountain climb to measure sections in the Carboniferous strata. Afterwards an excursion by sledge was made along the coast, then another mountain-climb, and a provision depot at camp A was laid out. In the night they travelled northward to camp 8.

May 4th.—After a stay here they continued towards Kap Elisabeth, and arrived at midnight at the Ella Ø station.

Summary of the sledge journey.

During the period March 13th—May 4th a detailed measurement of profiles was carried out along the 60 km long coast from Drømmebugten to Haslums Øer. As the depots had generally been disturbed by bears, and the snow conditions were rather bad, the working programme was repeatedly altered. The whole steep coast area was systematically investigated, importance being especially attached to the measurement of as many profiles as possible and the collection of fossils. In particular, collections were made in the sediments, but also samples of eruptives were taken. In this area beds from the Carboniferous to the Cretaceous were found. In all, 130 profiles were measured, many of them up to the highest mountain-tops. About 1600 samples of rocks were collected, about 160 sketches were drawn, and more than 200 photographs were taken. All the collections were deposited on Haslums Øer to be fetched by motorboat in the summer.

May 5th.—13th.—Stay at the station. In this period it was arranged over the wireless that STAUBER was to winter the following year on a new station to be established in Fleming Fjord with the main object of investigating the interior of Jameson Land. STAUBER arranged his notes and profiles, and made preparations for a journey. The weather was generally fine. HEINRICHSON left for Kap Elisabeth in order to begin the collections there.

Sledge-journey to Vega Sund and the north-eastern part of Traill Ø.

May 13th.—STAUBER was accompanied by KONRAD with a sledge and 9 dogs. The plan was to examine Vega Sund, at first with headquarters in camp 4 (see fig. 199) north of the basalt islands. Furthermore he wanted to meet SCHAUB to hear something about his investigations. Several depots had been laid out during the summer and autumn of 1936, but it appeared that most of them had been destroyed by bears. The journey therefore had to be based on the provisions they brought with them, and in part on hunting. The going and the weather was now

much better than during the first sledge-journey. In the outer part of Vega Sund, however, as well as on the land north and south of this sound there was much snow, and the sections between the thick basalt strata were generally small and poorly developed. In the evening they left Ella Ø, and after some seal- and ptarmigan-hunting they travelled along the north coast of Traill Ø.

May 14th.—In the early morning they made a short stay at the Norwegian trapper's hut. Here SCHAUB had been at work from April 23rd to 25th. In the evening they travelled to Geographical Society Ø and stayed there for a while at the Norwegian trapper's hut.

May 15th.—Fine weather. The journey continued all the night. They did not succeed in finding the depot laid out here, but they shot a seal and continued to camp 4. Here they met SCHAUB's Greenlander, who had an excellent dog-team. The two Greenlanders went out hunting together.

May 16th.—Fog. In the evening they travelled, together with the two Greenlanders, in between the basalt islands in Vega Sund. The going was bad, and they often met open water. In the morning they camped at a Norwegian hut west of Kap Palander.

May 17th.—Overcast and warm. A large seal was shot, and STAUBER worked on the mountain ridge at Kap Palander, where he found Cretaceous shales containing fossils.

May 18th.—Fine weather. Travelled to the east coast of Traill Ø.

May 19th.—After an exhausting journey, they continued into Æbeltoft Vig, crossed a pass about 100 m high, and proceeded to Begtrup Vig and some distance further northward in Mountnorris Fjord, where they met SCHAUB and PHILBERT. In the evening SCHAUB, PHILBERT, and one of the Greenlanders travelled across the fjord to Knebel Vig. SCHAUB intended to travel via Kap Simpson and Drømmebugten to Haslums Øer, so as not to reach Ella Ø until the middle of June. Subsequently he would possibly continue the spring work in Vega Sund.

May 20th.—Fine, cold weather. STAUBER made an excursion to the land near Begtrup Vig and found many dark marly shales with fossil remains (Echinoderms, *Inoceramus*). Owing to many basalt layers, some of the shales had been metamorphosed. The camp was moved into the bay, and they had successful seal-hunting.

May 21st.—Fine, cold weather. STAUBER made an excursion across the bay and inland to Mols Bjerge, where a section was measured in the Cretaceous strata.

May 22nd.—Fine weather, but windy. STAUBER climbed Ellemandsbjerge and there found Cretaceous beds and eruptives; he continued along Polypen Gl. to camp 22.

May 23rd.—Fine weather. Mountain tour to the west. Various Cretaceous profiles. Collection of fossils. Proceeded in the evening to camp 23. The Greenlander transported the collections to Kap Palander. Bear tracks were seen.

May 24th.—Fine, warm weather. Sections were measured in the vicinity of the camp. The goose migration had begun. In the night KONRAD returned with a large seal.

May 25th.—Fine weather. In the evening STAUBER travelled with the Greenlander to the outer coast near Kap Parry to get a view of the conditions. The Greenlander continued eastward after they had found some bear tracks, and saw about 10 new tracks there.

May 26th.—STAUBER returned to the camp. Arranged collections and notes. A seal was caught.

May 27th.—Overcast and foggy. Profiles were measured and fossils collected in the vicinity. After unsuccessful hunting at Kap Parry, the Greenlander returned, and at night they camped at camp 24.

May 28th.—Cold, foggy weather. The first river with flowing water was observed. Profiles were measured near the camp, and Triassic fossils were collected.

May 29th.—Fog and light snowfall, but later it cleared. The Greenlander shot a seal and afterwards transported collections to Kap Palander. STAUBER measured profiles near the camp and found Triassic, Rhaetic, and Jurassic beds there.

May 30th.—After a long night's walk he returned to the camp. It was overcast and foggy. The Greenlander returned from Kap Palander bringing with him some geese and goose eggs. He had observed bear tracks. In the afternoon they made an excursion inland to measure profiles through the Triassic strata. After a difficult descent, STAUBER returned to the camp, and in the evening the camp was moved to Kap Palander. Near this place there were many geese and gulls. They were hunted, and eggs were collected.

May 31st.—Fog and snow, later it cleared. In the afternoon and night STAUBER made a trip to the mountains in the bay to the west. Ascended the highest mountain ridge of Mols Bjerge. Here he took an important view of the geology.

June 1st.—Fine weather. In the evening they travelled to camp 4, which they reached in the morning of June 2nd. Along the road they observed many geese, ptarmigans, and foxes. The going was bad, and there was much open water between the islands. The Greenlander had to return with the dogs to Ella Ø, while STAUBER determined to remain in this place with a dog in order to start the actual spring work.

Summary of the second sledge-journey 1937.

The journey, which had lasted from May 13th to June 1st, comprised 15 working days on the north coast of Traill Ø between Mountnorris Fjord and Vega Sund. The sediment-areas were stratigraphically examined, in so far as the snow conditions permitted. Owing to comparatively good hunting and fine weather the work was carried out according to the programme in spite of the destroyed depots. Triassic, Rhaetic, Jurassic, and Cretaceous beds occurred here, particularly frequent were Cretaceous clay shales containing poorly preserved fossils, always heavily penetrated by basalts. All the series could easily be compared with the layers in the south coast of Traill Ø. Here the Triassic layers were fairly complete, but unfortunately contained only few fossils. The Rhaetic consisted of coarse sandstones with plant fossils. The Lower Jurassic beds were likewise mainly sandstones. The Upper Jurassic consisted mostly of clay shales. Forty-eight sections were measured, 55 sketches were drawn, and about 1000 rock samples were collected.

The work during the snow-melting period in Vega Sund.

This period was utilised in the following way: STAUBER stayed on Traill Ø at camp 4 from June 3rd—10th and on Geographical Society Ø from June 10th to August 7th when the motor-boat "Polypen" fetched him to Ella Ø.

STAUBER was alone all the time, only accompanied by a dog. He brought with him a ski-sledge fitted with a box containing the whole equipment. He mainly concentrated his work on the territory around Mols Bjerge on Traill Ø, subsequently he investigated the area round Freycinet Bjerg on Geographical Society Ø, and the area west thereof to the Devonian boundary.

To serve during the spring work, a great number of depots had been laid out, but the greater number of them had been destroyed by bears in the autumn. However, as the depots were calculated to suffice for SCHAUB, also, the provisions in the depots left were quite sufficient when added to the provisions he brought with him. The thaw was very prolonged, particularly in the eastern areas, because fog was frequent, the snow was deep, and many of the sections did not become free from snow till late in the spring. In spite of bad weather the continuous Triassic section at Rold Bjerge was measured. A large fault right through the mountain was observed. Finally many gliding-horizons were found, and about 200 rock samples were collected.

Traill Ø.

June 2nd.—Fine weather. Preparations for the journey. Took leave of the Greenlander, who returned to Ella Ø.

June 3rd.—Fine weather. Travelled across Vega Sund to camp 25. In the morning ascent of Rold Bjerge right to the top. Permian (?) was found, Trias to the Multicoloured series, finding of *Anodontophora*, reptile tracks, gliding-horizons. From the summit there was a splendid view in all directions.

June 4th.—Returned to the camp after a long trip in the morning. The weather changed, and it grew foggy. The day was spent packing collections.

June 5th.—Foggy, had to stay in the tent.

June 6th.—Cold, overcast. In the evening, excursion to the surrounding country. In a small Cretaceous section with dark clay shales, many specimens of *Inoceramus* as well as Aptian belemnites were found.

June 7th.—Overcast and foggy. Escursion in the surroundings to collect Cretaceous fossils.

June 8th.—Overcast and foggy. Found nearby a new Cretaceous section with fossils (Aptian), but the Cretaceous beds were much disturbed by basalt and gliding-horizons.

June 9th.—The weather cleared. The camp was broken, and with some difficulty he reached the shore with two boxes full of samples, and the camp equipment. The collections were deposited, and afterwards the strenuous journey continued across Vega Sund, where there were many places with open water. To camp 4.

2nd Stage.

June 10th.—Foggy. Had to stay in the camp.

June 11th.—Fine weather. It was now necessary to work at night, as the snow was too wet to move on in the day. Tried at first to cross the river to depot E on Traill Ø, but without success. Continued afterwards along the shore to a small Norwegian hut at depot J. Both the depot and the hut had been completely destroyed by bears. Everything lay spread about and buried below the snow. The animal life was very rich here: geese and various other birds, and foxes.

June 12th.—Fine weather. Left the winter sleeping-bag behind, and travelled over land to camp 27, after having passed 3 large rivers.

June 13th.—Fine weather. Large patches on the land were now free from snow. Reached a Norwegian trappers' hut still buried in snow (camp 28). Abundant provisions for STAUBER were found here.

June 14th.—Fine, cold, windy weather. STAUBER went westward up the valley. Drew a panorama of the basalt-landscape, which was still heavily covered with snow. Higher up he found small Cretaceous sections and at the promontory of Freycinet Bjerg dark Cretaceous shales, sandstones with badly preserved fossils, and thick basalt sills. Built a cairn, and afterwards went back to the hut.

June 15th.—Foggy, with storm and driving snow. Stayed in the hut.

June 16th.—Weather unchanged. A snowy-owl which had stayed in the hut for a long time, tried to get into the stove pipe.

June 17th.—Fine, cold weather. Still windy. Went westward out on to the fjord-ice in order to get a view of the conditions. Measured sections in a mountain side 200 m high, where *Inoceramus* was found.

June 18th.—Fine weather. Made an excursion westward with sledge and dog. Inland there were some rather dangerous river-crossings, but it appeared to be easy to travel on the fjord-ice. A section was measured in the Cretaceous below the basalt. Found again *Inoceramus*. A rich animal life, with many geese and gulls, and fresh bear tracks were met with here. In the evening another trip eastward from the hut, but no sediments were found below the basalt. Nearly all the birds now had eggs.

June 19th.—Fine weather. Returned to the hut in the morning. Later east wind with fog from the open sea. Had to stay in the hut.

June 20th.—Fine weather. Still strong east wind and fog. Travelled in the evening with sledge, provisions, and equipment up to a mountain-top 200 m high to establish a depot, but owing to fog he had to return to the hut. Above this a section was measured in the Cretaceous beds.

June 21st.—Fine weather with some fog. Looked for Cretaceous sections nearby. Arranged the collections and travelled in the evening with sledge to the depot on the mountain terrace. Everything was wet now, and it was rather difficult to travel on the land owing to wet snow and dangerous river-crossings. After a very strenuous journey, he camped (camp 29).

June 22nd.—Fine weather. Sections were measured near the camp. Found large specimens of *Inoceramus*. Climbed a mountain.

June 23rd.—Continued the journey in the mountains. Sections were measured, still in the Upper Cretaceous; sandstones with big specimens of *Inoceramus*. In the afternoon return to camp 29.

June 24th.—Went northward and laid out a depot at camp 30. Owing to a strong north wind it was difficult to pitch the tent. In the course of the day bear tracks were seen.

June 25th.—Better weather. The wind had subsided. Fetched a depot by sledge. Climbed a mountain opposite camp 30. Went up the valley to the highest point of the pass northwards in order to take a view of the conditions. Found, on the way back, Cretaceous sections with up to 30 cm large fossils, probably *Inoceramus* (Senonian?). With his sledge heavily loaded with collections, STAUBER returned to the camp.

June 26th.—Overcast. Travelled in the evening by sledge with part of the equipment to a pass 250 m above sea-level, and onwards through the valley towards Freycinet Bjerg, but owing to bad weather he did

not reach this mountain. Observed strong tectonic disturbances in the Cretaceous. Back to Camp 30.

June 27th.—In the night gale and overcast. The gale continued, with rain and snowfall. Had to stay in the tent.

June 28th.—Overcast, and storm. Wet new-fallen snow. Travelled with the collections down to the coast near depot J.

June 29th.—Clearing, but still northerly wind. Travelled in the night back to the camp, and removed the camp to the pass.

June 30th.—Clear, cold weather with wind. Travelled northward into the valley, passed many difficult places; found Cretaceous sections with much disturbed beds. Established camp 31. In the course of the day the weather grew fine and warm. In the night STAUBER climbed the northwestern side of Freycinet Bjerg to the summit (920 m), where a large cairn was erected. The mountain is built up of thick basalts and Cretaceous shales and sandstones. *Inoceramus Pterii* was found here. (Senonian?).

July 1st.—The weather continued fine. Measurement of sections during the whole night, and after a long and difficult journey, STAUBER returned to camp 31. In the evening rather bad weather. The camp was moved across the river northward to camp 32. In the evening STAUBER tried in vain to go westward.

July 2nd.—Very bad weather. Snowstorm. Remained in the tent.

July 3rd.—Overcast, rain and wind. When the weather got better, STAUBER moved the camp. Skied to camp 4 in the hope of meeting SCHAUB, but found no one. Large ice floes still occurred in Vega Sund.

July 4th.—Overcast. Made a trip to the mountain terrace to the west to depot H, hoping to meet SCHAUB there.

July 5th.—Better weather. Travelled again inland and moved to camp 33. Difficult travelling.

July 6th.—Fine weather. Mountain trips from camp 33. Many Cretaceous sections with fossils.

July 7th.—Fine weather. Transported the fossils on the sledge towards camp 4 on the last snow drifts. Very difficult journey. Collected fossils near camp 33.

July 8th.—Fine weather. Crossed a large river and laid out a depot on the terrace above the shore. Went to camp 4, and spent the night there.

July 9th.—Fine weather, but cold. Went with dog and sledge, and established camp 34. Found many small, but unfortunately not very good Cretaceous profiles between thick basalt beds.

July 11th.—Fine weather. Had a good general view of the ice conditions in Vega Sund, which near the coast and the delta was now free from ice, but otherwise presented a rather continuous ice-covering, as

there had been no storms so far. It was now nearly impossible to sledge on the snow drifts. Camp 35 was established. There were many gnats. Excursions were made during the night.

July 12th.—Fine weather Found a brood of young owls Measured a Cretaceous section with fossils. In the afternoon the weather grew bad In the evening the collections were transported to station 4.

July 13th.—Rain. Remained at the camp.

July 14th.—Still heavy rain. Worked in the house.

July 15th.—Continuous rain. Expected the motorboat, as Vega Sund had been easy to navigate for the last 10 days. STAUBER wondered why SCHAUB did not arrive, as agreed upon. STAUBER felt the strain of the last days' hard work. In the evening the motorboat arrived to fetch him, and he learned that SCHAUB and PHILBERT were both ill and unable to accomplish the journey. The motorboat "Polyphen" was in wireless communication with the expedition ship, and STAUBER received 4 telegrams from the leader of the expedition.

July 16th.—Still bad weather, but slowly clearing. In the night they travelled by motorboat to various coast camps and depots to fetch collections, and proceeded to Ella Ø, where they arrived on July 17th.

Summary of 2nd stage.

While the weather impeded the 1st stage of the journey, STAUBER had 35 working days in the southern part of Geographical Society Ø, which was stratigraphically investigated and the geological conditions studied in great detail A planned trip inland could not be made owing to the difficult travelling conditions.

About 50 sections were measured, and about 150 samples were collected.

Stauber's Journey to Scoresbysund and onwards to Gurreholm in the autumn of 1937.

STAUBER stayed at Ella Ø until November 10th. On this date he started towards Scoresbysund with the big sledge-caravan (10 sledges) which, under the leadership of DE LEMOS, had brought goods to the station. The caravan was joined by the two Greenlanders from Ella Ø and the wireless operator CHRISTIANSEN, who were to go to Scoresbysund, whence STAUBER was later to continue to Gurreholm.

Nov. 10th.—Fog, later it cleared. Start in the morning. In the evening tent-camp on the ice near Kap Peterséns.

Nov 11th —Cold and clear weather. Reached Antarctica Havn in the course of the day. At Kap Syenit a bear was shot.

Nov. 12th.—In the morning departure from Antarctica Havn. Fine

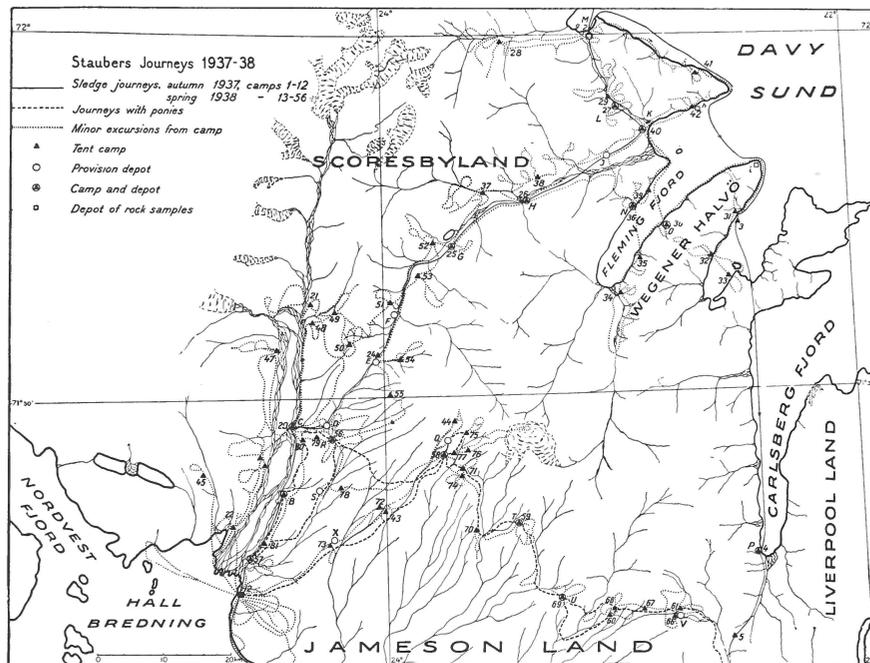


Fig. 201. Showing STAUBER'S travelling routes 1937—38.

going southwards. In the evening they camped at Calamiteselv in Nathorst's Fjord.

Nov. 13th.—Fine weather. In Carlsberg Fjord much snow. In the evening they camped at the head of the fjord.

Nov. 14th.—Clear, but a cold north wind. Travelled to the upper part of Ryders Elv, where they camped. In the innermost part of Carlsberg Fjord a depot was laid out for later use.

Nov. 15th.—The weather was still clear and cold. In the valley south of Carlsberg Fjord there was not much snow. Started in the early morning, and reached the colony in the evening.

Nov. 20th.—Fine weather. STAUBER started towards Gurreholm, accompanied by EIGIL NIELSEN, TVERMOSE, KLEIBER, and two Greenlanders. Besides, the two Greenlanders THOMAS and KONRAD accompanied them to Kap Hope, whence they travelled northwards to Ella Ø. The others camped at Kap Stewart.

Nov. 21st.—22nd.—Fine, clear weather. Travelled along the coast of Jameson Land.

Nov. 23rd.—Fine weather. There was a good deal of snow on the ice, which made the journey exhausting. Camped near the coast. Tracks of 5 musk-oxen, leading westward across the fjord, were passed during the day.

Nov. 24th.—Approaching Gurreholm they met more and more snow on the ice. They arrived in the afternoon to Gurreholm, where POULSEN, HÜBSCHER, MALTE ANDERSSON, and PÁLL PÁLLSON stayed. There were 5 wintering ponies at the station.

Nov. 27th.—EIGIL NIELSEN, KLEIBER, MALTE ANDERSSON, and two Greenlanders departed. STAUBER, POULSEN, HÜBSCHER, TVERMOSE, and PÁLL PÁLLSON stayed at the station from Nov. 24th. to Febr. 16th. During the winter STAUBER studied the air photos from his flight and made small excursions in the surroundings. There were, however, no geological profiles in the vicinity, the station being situated in a very flat terrain. They had to fetch ice and melt it (ca. 100 l) for the ponies every day. During the winter they tried to make various topographical surveys, as far the light permitted. On the whole the weather was fine, but often hurricane-like foehn winds blew out of Nordvestfjord. These gales made the going around the station fairly good, as the snow was blown hard.

From Jan. 4th to Jan. 11th they experienced a period of cold weather with a temperature below -40° C. During the whole winter they were in wireless connection with Ella Ø, Scoresbysund, and Eskimonæs.

On Nov. 29th they were informed that THOMAS and KONRAD had arrived at Ella Ø after a journey of 6 days.

They still made minor excursions, to hunt and to lay out depots; thus on Dec. 8th a depot was laid out 27 km from the station.

On Dec. 22nd one of the ponies was shot owing to illness.

On Jan. 2nd the snow around Gurreholm was about 65 cm deep. At Ella Ø it was reported to be 20 cm at the same time. The average temperature of December at Gurreholm was -23° C., at Ella Ø -16° C.

On Jan. 5th and 6th HÜBSCHER and POULSEN made theodolite observations to determine the exact position of the station.

On Jan. 7th the temperature at Gurreholm was from -36° C to -49° C. Scoresbysund had -39° C, Ella Ø -36° C, and Eskimonæs -35° C.

On Jan 8th a temperature of -46° to -50° C. was registered.

Febr. 2nd.—POULSEN and TVERMOSE made a small excursion to enlarge depot No. 1, 27 km north of the station.

About Febr. 1st the various Greenlandic wireless stations began anxiously to follow the drift of the four Russians who from the North Pole, with PAPANIN as a leader, were drifting rapidly down along the East Greenland coast.

On Febr. 4th it was reported that the Russians were almost off Clavering Ø.

Febr. 13th.—A small sledge-journey was undertaken southwards along the coast. It was now possible to collect a few fossils in the river

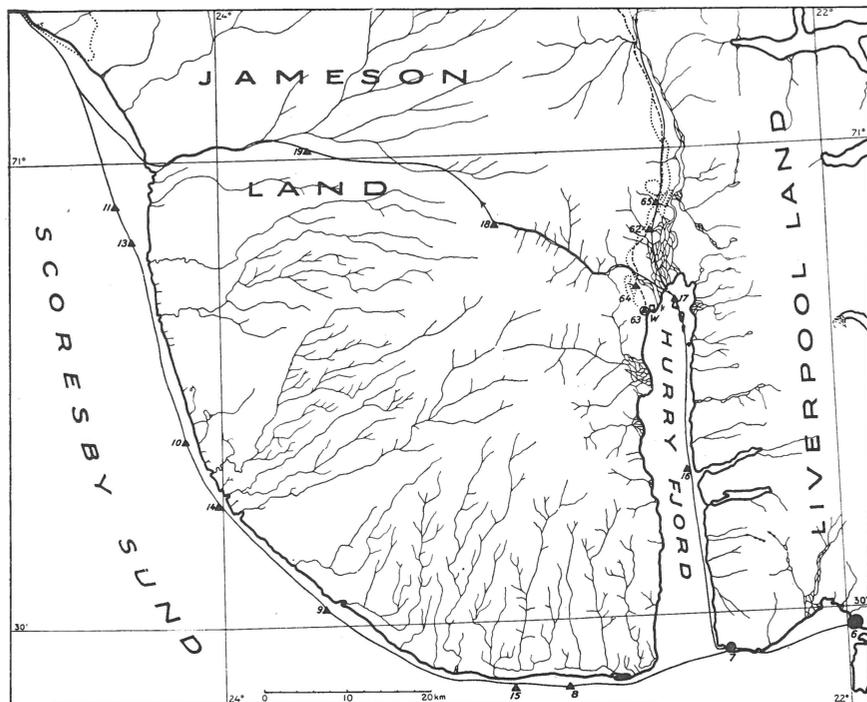


Fig. 202. STAUBER'S journey south of and across Jameson Land.

beds. POULSEN made some theodolite observations. The Russians were now off the north point of Liverpool Land.

Febr. 14th.—POULSEN and STAUBER made preparations for a sledge journey over land to Scoresbysund to make surveys, during the home-ward journey, about 300 m above sea-level in the interior of Jameson Land. Many telegrams were received daily regarding the position of the Russians.

First sledge journey 1938.

Febr. 17th.—POULSEN and STAUBER left for Scoresbysund bringing with them wireless outfit to be able to establish an emergency wireless station at the outer coast of Liverpool Land so that they might contact the Russians if desired. The weather was fine.

Febr. 18th.—Fine weather, later foehn wind with heavy snowdrift. They camped near Kap Hooker.

Febr. 19th.—They continued in fine weather southwards along the coast.

Febr. 20th.—The going grew better and better the nearer they got to Hurry Fjord. As they reached this fjord, a strong northerly wind blew out of the fjord. They left their camp, 8 km west of Kap Stewart,



Fig. 203. Icebergs in Nordvestfjord.

and reached Kap Hope in the course of the day; in the evening they arrived at the colony of Scoresbysund, where they learned that the Russians had already been saved 2 days earlier by means of an ice-breaker that had been sent out to rescue them.

Stayed at the colony till Febr. 23rd, and in fine weather they commenced the journey back to Gurreholm, accompanied by MALTE ANDERSON and the Greenlander JAKOB. Camped in Hurry Fjord.

Febr. 24th.—Camped at Fame Øer.

Febr. 25th.—Remained here owing to bad weather.

Febr. 26th.—Continued to the valleys of Jameson Land. STAUBER made geological investigations and collected fossils.

Febr. 27th.—In the night strong wind, which, however, soon subsided. In the day they travelled in sunshine. The journey continued across Jameson Land, across a plateau at an altitude of about 450 m. On the top of the plateau they found remnants of old moraines.

Febr. 28th.—After a long and difficult journey they reached Gurreholm in the evening after 14 hours' work.

First part of March 1938.

It was decided to use the first half of this month for pushing as far into the valley of Schucherts Flod as possible, and to make cartographic surveys, preferably in the vicinity of, and north of, the station.



Fig. 204. On a winter excursion from Gurreholm.

March 3rd.—Set out on a sledge journey northwards. The weather was fine. The temperature was -38° C, and a short distance past Gurreholm the going was fine. The participants in the journey were STAUBER, HÜBSCHER, POULSEN, and JAKOB. They camped at depot 5.

March 4th.—The temperature was -34° C. North-westerly wind, but on the whole fine weather. STAUBER and JAKOB travelled by sledge into the valley of Schucherts Flod, across the pass, and into Ørsteds Dal. HÜBSCHER went on skis across Schucherts Flod in order to place bamboo-canes with flags for the mapping. Tent camp in Ørsteds Dal.

March 5th.—The snow in the inner part of Schucherts Flod grew constantly deeper. STAUBER and JAKOB returned with an empty sledge to the valley of Schucherts Flod. STAUBER climbed the mountains to 2—300 m to place bamboo-canes with flags.

March 6th.—Fine weather. STAUBER made a ski-trip to the high plateau of Jameson Land, and in the evening they returned to the camp at depot 5. The day before this camp had been left by HÜBSCHER and POULSEN, who had returned to Gurreholm.

March 7th.—The temperature had risen to -15° C. As it grew foggy, STAUBER and JAKOB returned to Gurreholm.

March 8th.—Fine weather. POULSEN and JAKOB went out by sledge to measure a base for cartographic purposes.

March 9th.—Somewhat misty, but on the whole fine weather. STAUBER made an excursion on skis inland. The rest of the station personnel was engaged in measuring a 1500 m long base on the fjord in front of the station with a view to the topographical mapping.

March 10th.—Fine weather, later on foggy on the fjord, -34° C. STAUBER made a ski-ing trip inland, placing several flags on bamboos for the mapping. POULSEN and JAKOB were occupied in mapping from the measured base.

March 11th.—Almost clear weather. STAUBER and JAKOB travelled to the spit of land in the middle of the delta of Schucherts Flod. STAUBER established a camp there in order to examine a geological section. The rest of the staff of the station was engaged in cartographical measurements.

March 12th.—During the day heavy wind and fog, which compelled STAUBER to stay in camp. The position of Gurreholm was measured to be $71^{\circ} 18'$ N. lat. and $24^{\circ} 30'$ W. long.

March 13th.—Very strong foehn wind increasing to the force of a hurricane. Later in the night the weather improved. STAUBER's tent was blown down, and not till the afternoon was he able to leave for Gurreholm, having the wind on his back. In the evening KONRAD and THOMAS arrived at the station from Ella Ø. Their journey over land from Antarcetics Havn had lasted 3 days.

Main sledge journey to Ørsteds Dal, Antarcetics Havn and the Fleming Fjord-region. March 15th to May 10th, 1938.

The participants in this journey were: STAUBER, HÜBSCHER, MALTE ANDERSSON, POULSEN, JAKOB, and, from Gurreholm to Antarcetics Havn, THOMAS and KONRAD. The plan was to go directly to Antarcetics Havn if possible, then to enter the whole northern Jameson Land area south of the working field of BIERTHER (boundary 72° N. lat.) and also to investigate Ørsteds Dal, Fleming Fjord, the southern part of Wegeners Halvø, and to contact KLEIBER, who was at work in Nathorsts Fjord. The natural conditions during the journey were mostly good with relatively little wind, and generally cold weather. In the valleys and the fjords there was a good deal of soft snow, which sometimes gave some trouble.

March 15th.—Cold. Not quite clear. Travelled into the valley of Schucherts Flod. Camped near depot 5. STAUBER found many Permian fossils.

March 16th.—Fine, clear weather. STAUBER and HÜBSCHER worked in the vicinity of the camp. In the evening they met at depot 5. During the day several fossil horizons were found.

March 17th.—A cold night, -35° C. Later wind and overcast. Trips on skis near the camp were undertaken. During the day strata containing Rhætic plants were observed.

March 18th.—The temperature had risen to -14° C. In the mountains fog, which slowly approached the lower-lying regions. STAUBER and

HÜBSCHER made a trip on skis to the pass leading across to Ørsteds Dal, and also a trip down into this valley.

March 19th.—North wind, -22° C, gradually clearing. STAUBER HÜBSCHER, and MALTE ANDERSSON made ski-trips in the neighbourhood. POULSEN and JAKOB made a sledge-trip across the valley of Schucherts Flod.

March 20th.—Fine weather, -24° C. THOMAS and JAKOB arrived at the camp. STAUBER made some excursions near the camp, and afterwards they camped in Ørsteds Dal. HÜBSCHER and POULSEN, also, arrived at this camp, after undertaking a trip into one of the tributary valleys of Ørsteds Dal.

March 21st.—Temperature -18° C. The going was, in general, good. All sledges drove out through Ørsteds Dal.

March 22nd.—Gale all night, and cold. Travelling impossible.

March 23rd.—In the forenoon windy. Later it cleared and grew calmer. In the afternoon a trip westward into a tributary valley. In the evening they reached Antartics Havn, where they met BIERTHER and got the message that EIGIL NIELSEN had been there the day before, but had left again for the south. He had arrived from Scoresbysund with 4 sledges, mainly loaded with goods destined for Ella Ø and Eskimonæs

March 24th.—Fine, clear weather. -30° C. In the night STAUBER, HÜBSCHER, BIERTHER, ANDERSSON, and the two Greenlanders travelled into the valley of Antartics Havn. POULSEN and KONRAD returned to Ørsteds Dal.

March 25th.—In the night -28° C. All the geologists made excursions into the valley, and fine geological finds were made.

March 26th.—In the morning it was cold, -32° C. Otherwise fine, clear weather. All the geologists worked in various directions from the camp, often at altitudes of 5—600 m.

March 27th.—The temperature in the night still less than -32° C. In the day overcast. The geological work was continued. POULSEN arrived at the camp, and intended to travel to Ella Ø with KONRAD.

March 28th.—Cold in the night. Overcast. They camped at the station in Antartics Havn, after finishing the geological work in the valley.

March 29th.—Calm and clear. STAUBER and HÜBSCHER departed from BIETHER and ANDERSSON and travelled southwards.

March 30th.—Clear and cold. STAUBER and HÜBSCHER went on skis into Porsdalen.

March 31st.—Fine weather. HÜBSCHER and STAUBER made an excursion inland to the north-east.

Apr. 5th.—Fine weather. Camp 29. STAUBER and HÜBSCHER worked



Fig. 205. Camping in the winter.

in the vicinity of the camp. **POULSEN**, **THOMAS**, and **JAKOB** returned with sledges from *Ella Ø*.

Apr. 6th.—Fine weather. Camp No. 29. Worked near the camp. **JAKOB** returned to **BIERTHER**. **HÜBSCHER** and **THOMAS** travelled to *Gurreholm*.

Apr. 7th.—Fine weather. Camp 29. **STAUBER** worked around the camp. **JAKOB** returned from **BIERTHER**.

Apr. 8th.—Fine weather. Camps 29—30. After section-measurements around the camp, they moved to the house at *Kap Brown*.

Apr. 9th.—Overcast. **STAUBER** and **JAKOB** met **KLEIBER** accompanied by two Greenlanders in *Nathorsts Fjord*. On March 19th **KLEIBER** had arrived at *Kap Brown* together with **NIELSEN**, who at once proceeded onwards.

Apr. 10th.—Fog and snow. Rather warm. Camp 31. Discussions on the geological problems.

Apr. 11th.—Clearing, a little windy. **STAUBER**, **KLEIBER**, and **JAKOB** travelled into *Nathorsts Fjord* and onwards to *Depotø*. Camps 31—32.

Apr. 12th.—Overcast, rather warm. **STAUBER** and **KLEIBER** climbed the east side of *Ravnefjeld*, and found fossils near the top. Camp 32.

Apr. 13th.—Fine weather. Camps 32—33. **STAUBER** travelled to *Nordenskiölds Bjerg* and established a new camp here. **STAUBER** worked together with **KLEIBER**.

Apr. 14th.—East wind and fog. Camps 33—32. Investigations

round the camp. In the evening towards the west to the camp at Paradigmabjerg.

Apr. 15th.—Camps 32—30. Fine weather. KLEIBER made an excursion into Jameson Land. STAUBER and JAKOB travelled first to Calamiteselv, then to the house at Kap Brown.

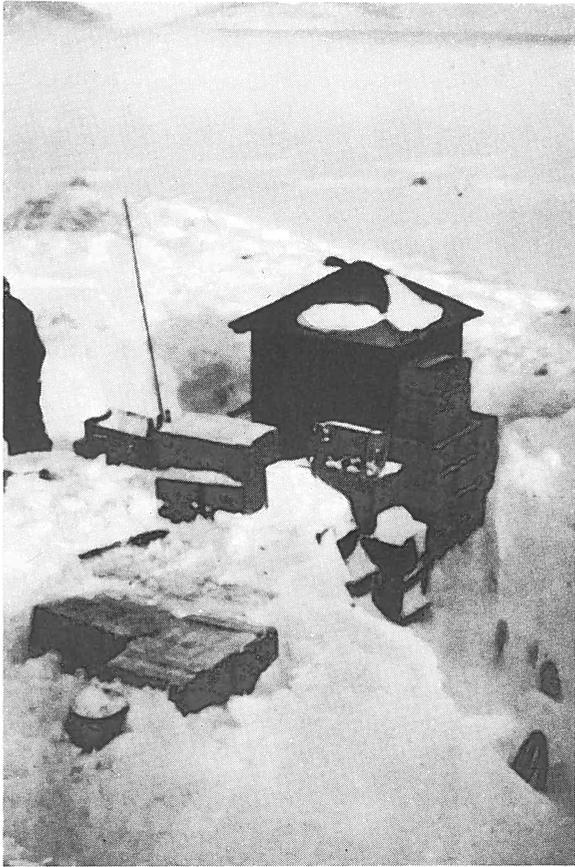


Fig. 206. Depot in spring time.

Apr. 16th.—Fine weather. STAUBER and JAKOB travelled to the interior of Fleming Fjord. Camps 30—34. Here they met EIGIL NIELSEN, who came from Scoresbysund with a Greenlander.

Apr. 17th.—Fine, clear weather. Camp 34. STAUBER measured sections behind the trapper's hut in the interior of Fleming Fjord. The section comprises typical Triassic beds with gypsum and salt pseudomorphoses. Furthermore Rhætic was found. Big collections were made. NIELSEN stayed in the camp.

Apr. 18th.—Camp 34. Overcast and foggy. NIELSEN and the

Greenlander left. STAUBER made geological investigations in the vicinity of the camp.

Apr. 19th.—Camp 34. Still overcast. Late in the evening it cleared. STAUBER and JAKOB fetched a collection with sledge to the camp.

Apr. 20th.—Fine weather. Camp 34. STAUBER collected fossils in the Eotrassic strata.

Apr. 21st.—Camps 34—35. STAUBER and JAKOB travelled into the second tributary valley in Fleming Fjord, to measure sections.

Apr. 22nd.—Fine weather. Camps 35—36. STAUBER and JAKOB travelled across the fjord to Solfaldsdal, and measured sections there.

Apr. 23rd.—Camps 36—26. Strong east wind with snow. They travelled across Solfaldsdal to the pass in Ørsteds Dal. Here they found a snowy owl's nest.

Apr. 24th.—Camps 26—25. In the night wind from the east, later southwest wind. Sections were measured, and in the evening they returned to camp 25.

Apr. 25th.—Camps 25—37. STAUBER made an excursion across Ørsteds Dal to the mountains at the head of Nordvestdalen towards Schucherts Flod. A new camp was established at Nordvestdalen.

Apr. 26th.—Fine weather. Camp 37. STAUBER made geological excursions around the camp.

Apr. 27th.—Camps 37—38. The weather cleared. In the forenoon POULSEN and HÜBSCHER came by sledges to the camp. HÜBSCHER together with PÁLLSON and TVERMOSE, had collected about 12 boxes of Permian fossils at Schucherts Flod. In the evening POULSEN and HÜBSCHER travelled with the two Greenlanders onwards to the hut in Ørsteds Dal, while STAUBER and JAKOB moved the camp.

Apr. 28th.—Clear, cold weather. Camp 38. STAUBER measured sections in the vicinity of the camp.

Apr. 29th.—Camp 38. Snow and wind. Remained at the camp.

Apr. 30th.—Gradually the weather improved. Camp 38. STAUBER worked around the camp. In the evening POULSEN and JAKOB returned from their journey into Ørsteds Dal.

May 1st.—Camp 38. Fine weather. STAUBER worked again around the camp. HÜBSCHER and POULSEN made theodolite observations.

May 2nd.—Camps 39—40. Fine weather. STAUBER and JAKOB travelled down to near Solfaldsdal, established a camp here, and worked geologically from this.

May 3rd.—Camp 40 (—42). At first strong gale, later fine weather and good going. POULSEN and HÜBSCHER went down to the fjord, and they all went on to a camp near Kap Biot.

May 4th.—Camp 42 (—40). Fine weather. STAUBER measured sections. In the evening he was fetched by POULSEN to camp 40, and they

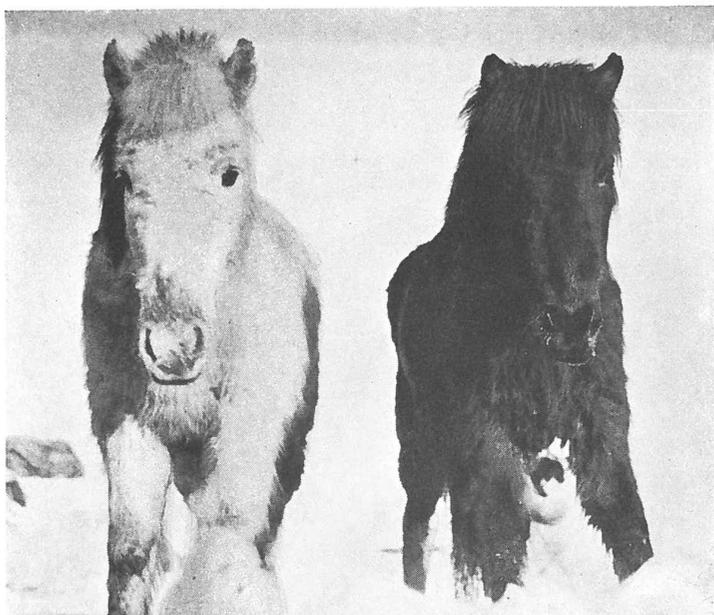


Fig. 207. Two ponies at Gurreholm at the end of the winter.

travelled together through Flexurdal to Antarcitics Havn. HÜBSCHER and JAKOB had travelled into Ørsteds Dal.

May 5th.—Camp 2. Fine weather. Warm sunshine. STAUBER made section measurements in the mountains east of Antarcitics Havn. POULSEN made cartographic measurements.

May 6th.—Camp 2 (—41). Foggy, fine going, very cold. STAUBER and POULSEN travelled eastwards. Established a new camp in the neighbourhood of Kap Biot (41). Topographical measurements as well as geological section measurements were made.

May 7th.—Camp 41, 42—40. Fog. Still working geologically and topographically, they travelled into Ørsteds Dal during the day.

May 8th.—Depot camp 26 + H. Fine weather. STAUBER and POULSEN arrived at the hut in Ørsteds Dal (camp 26). STAUBER found Dogger fossils on the south side of Claudius Clavus Bjerge.

May 9th.—Camps 26—25—24—20. Fine weather. STAUBER and POULSEN travelled in the evening from the hut in Ørsteds Dal to depot G. Afterwards into Ørsteds Dal and through Major Paars Dal.

May 10th.—Fine weather, fine going. STAUBER and POULSEN travelled across the pass in Major Paars Dal, then further on along Schucherts Flod, arriving in the evening at Gurreholm. From Scoresbysund came the message that the manager of the colony, HØEGH, and EIGIL NIELSEN had set out for Gurreholm.

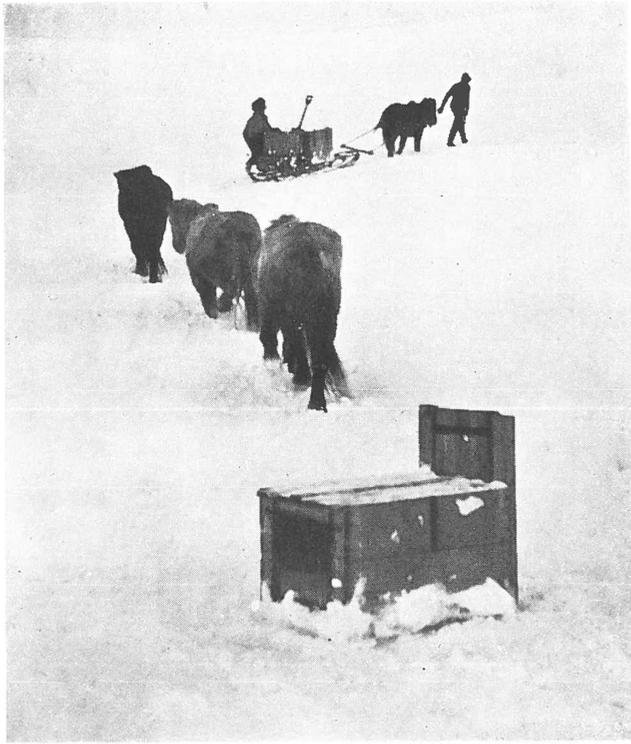


Fig. 208. Ponies at Gurreholm at the end of the winter.

May 11th.—Fine weather. Visit from Scoresbysund by the manager HØEGH and EIGIL NIELSEN and several Greenlanders.

Sledge Journey May 12th—14th.

Camps 43—44. STAUBER was accompanied by 3 Greenlanders from Scoresbysund, each of them having a sledge. The object of the journey was to lay out a big depot in the centre of Jameson Land for the benefit of the summer work there. The depot consisted of hay and concentrated fodder for the horses, food boxes, paraffin oil, and packing materials for the fossils. Owing to snow in the valley it was impossible to measure sections, but a large number of height measurements were performed.

May 12th.—Departure from Gurreholm.

May 13th.—Camp 43. Fine weather.

May 14th.—Not quite clear. Camps 43—44. In the evening they reached the place where the depot was to be laid out, and in the night they left the camp, which was situated at a height of 1040 m above sea-level. They covered the 40 km to Gurreholm in about 4 hours.

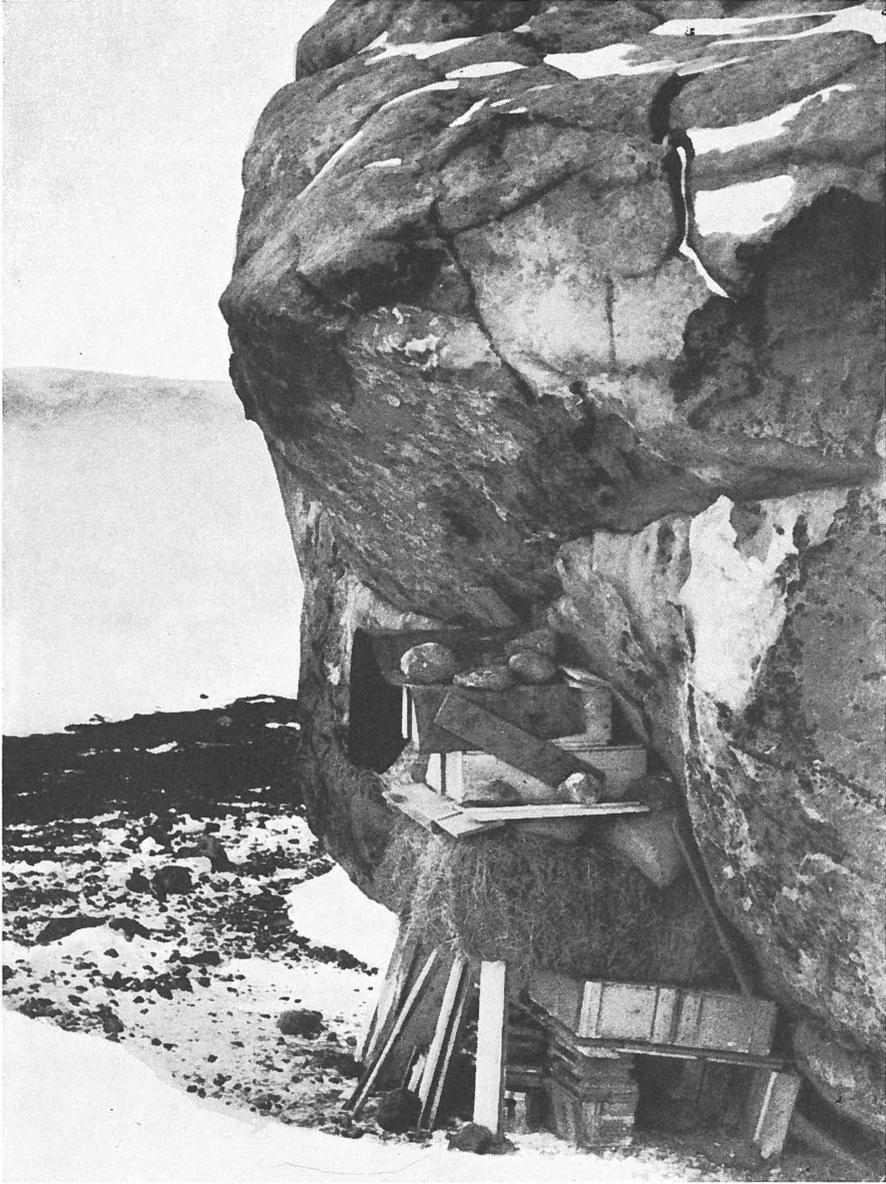


Fig. 209. Depot in the interior of Jameson Land.

Sledge Journey May 15th—June 2nd.

Camps 45—56. Participants: STAUBER and JAKOB with a sledge. The object was to visit the still unknown territories on the west side of and at the interior of Schucherts Flod, the upper Ørstedes Dal, and Central Jameson Land. The natural conditions were favourable, the weather



Fig. 210. The western part of Jameson Land.

during the latter half of May being good, with the exception of a few days about June 1st. They ascertained Carboniferous and Permian west of Schucherts Flod.

May 15th.—In the evening STAUBER and HÜBSCHER travelled with JAKOB to the spit of land in Gurreholms Dal (camp 45). HÜBSCHER travelled a little farther to collect sand samples.

May 16th.—Camp 45. STAUBER made geological investigations in the vicinity of the camp, especially in the Permian beds.

May 17th.—Camp 46. STAUBER and HÜBSCHER went together on a geological excursion to the gypsum section at the spit of land, afterwards they went up along the west side of Schucherts Flod, where there are excellent Permian sections.

May 18th.—Camps 40—47. STAUBER and HÜBSCHER worked together. They found new sections with numerous fossils (Permian). The camp was moved some distance northward.

May 19th.—Camps 47—20. STAUBER and HÜBSCHER worked northwards, preferably in the Permian sections, but had to return to camp 20, as it was impossible to cross Schucherts Flod farther northward owing to the many torrential rivers already found in the valley.

May 20th.—Camp 20. STAUBER measured sections in Major Paars Dal. HÜBSCHER collected sand samples.

May 21st.—Camps 20—48. STAUBER travelled with JAKOB along



Fig. 211. Crossing a river in Jameson Land.

the east side of Schucherts Flod northwards to Triasdalen. Camped here and worked geologically the rest of the day.

May 22nd.—Camp 48. The geological work was carried on in the Triasdal gorge.

May 23rd.—Camps 48—49. Having worked all day in the vicinity of the camp, they travelled northwards and established camp 49.

May 24th.—They measured sections around the camp.

May 25th.—Camp 49. The geological work was continued.

May 26th.—Camps 49—50. After several geological excursions the camp was moved in the evening to a basalt hill at the west side of upper Ørsteds Dal.

May 27th.—Camps 50—51. STAUBER made a trip towards the north to the south-west side of Gurreholms Bjerge and found good Rhætic plants.

May 28th.—In the night from camp 51 through Ørsteds Dal to a new camp (52) in the flat bottom of the valley at the south-eastern foot of Gurreholms Bjerge. Here they measured sections, and the following night across Ørsteds Dal to its right side, where a new camp (53) was established.

May 29th.—Geological work around the camp.

May 30th.—Camp 24 (—54). Early in the morning arrival at the depot (E) on the Major Paars Dal side. Several excursions in the neighbourhood. In the evening he travelled with JAKOB to a new camp.

May 31st.—Camp 54. Geological surveys around the camp.

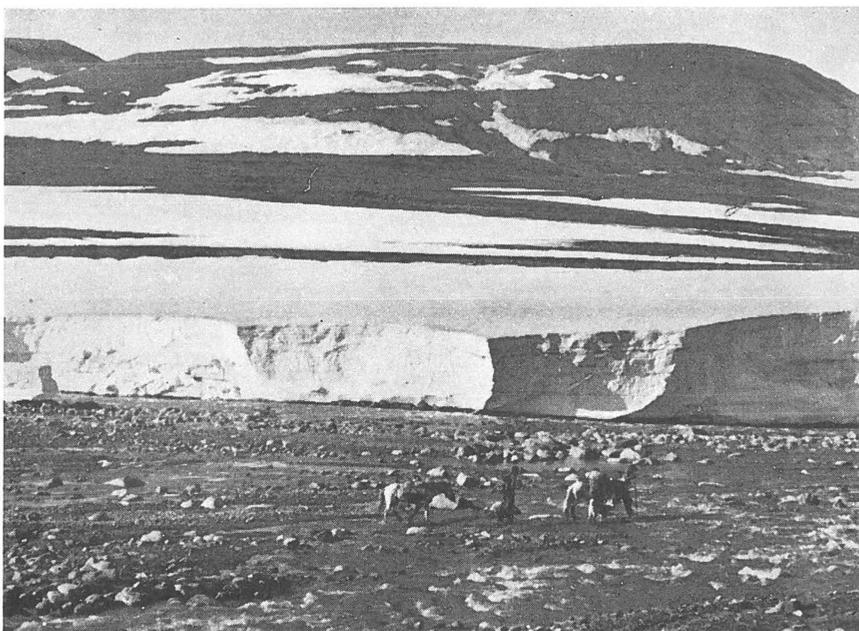


Fig. 212. From the western part of Jameson Land.

June 1st.—Snowy weather. Camps 54—55. In the night the camp was broken, and a new one was established (55), while the Greenlander fetched a depot at the ridge of the pass. Then they proceeded southward.

June 2nd.—Cold gale from the east. Camp 56. STAUBER and JAKOB travelled southwards on the high terrace in the upper part of Major Paars Dal, and STAUBER decided to establish his headquarters during the snow-melting time here. JAKOB fetched two boxes with rock samples and went to Gurreholm. STAUBER stayed alone in camp 56.

The work during the snow-melting period.

From June 3rd to 23rd STAUBER stayed mostly at camp 56, but also at camp 20. From this camp several excursions were made in various directions, and surveys were undertaken in the Major Paars Dal territory and in the northwestern part of Jameson Land. The object was to measure as many sections as possible and to collect fossils. The geological series that were examined were chiefly Rhætic, Liassic, and Upper Triassic, and many sections were measured. Besides, Rhætic fishes and a few reptile remains were collected. Also the basalt sills and dykes were investigated. The weather was very variable. During the last part of the working time the river crossings presented great difficulties



Fig. 213. From the central part of Jameson Land.

June 3rd.—In the night JAKOB fetched two boxes with samples from camp 55 and returned to Gurreholm.

June 3rd—7th.—During these days STAUBER worked from camp 56 in various directions, measuring sections. In the evening of the 7th he camped at Schucherts Flod (camp 20).

June 9th.—STAUBER returned to camp 56 and worked in the vicinity of this camp until the 19th, when he again spent the night at camp 20. In the following days the work was carried on from camp 56.

June 22nd.—TVERMOSE and PÁLLSON arrived to camp 56 with two ponies. Not until this date had it been possible to travel with ponies from Gurreholm. However, soil-flow still presented difficulties to horse-travelling in many places.

June 23rd.—Various geological collections, deposited in the neighbourhood of camp 56, were fetched by ponies.

June 24th.—STAUBER and TVERMOSE travelled with the ponies southwards to camp 57. STAUBER worked here while TVERMOSE transported the collections to Gurreholm on the ponies.

June 25th.—Camp 57. In the afternoon TVERMOSE returned, and he and STAUBER went on to depot 5. Geological measurements were made along the way. In the morning of June 27th they returned to camp



Fig. 214. Crossing a river in Jameson Land.

56. They spent some days in this camp, arranging the large geological collections which had been piled up here.

Summer journey with ponies. June 26th—July 20th.

Hurry Fjord as well as camps 56—58—72.

Depots Q, camp 58, T. U. and W.

Collection-depot: K (at depot W).

Participants in this journey were: STAUBER, TVERMOSE, and during the first part of the journey also PÁLLSON. They had two ponies at their disposal. During the journey the central part of Jameson Land was investigated. They travelled across the high plateau at the inner part of Ryders Elv and Hurry Fjord, and the same way back to camp 58, and from here direct to Gurreholm. During the journey the Central Plateau in the interior of Jameson Land to the eastern edge and to Hurry Fjord was investigated. PÁLLSON remained here to be fetched later on by



Fig. 215. Camp in the interior of Jameson Land.

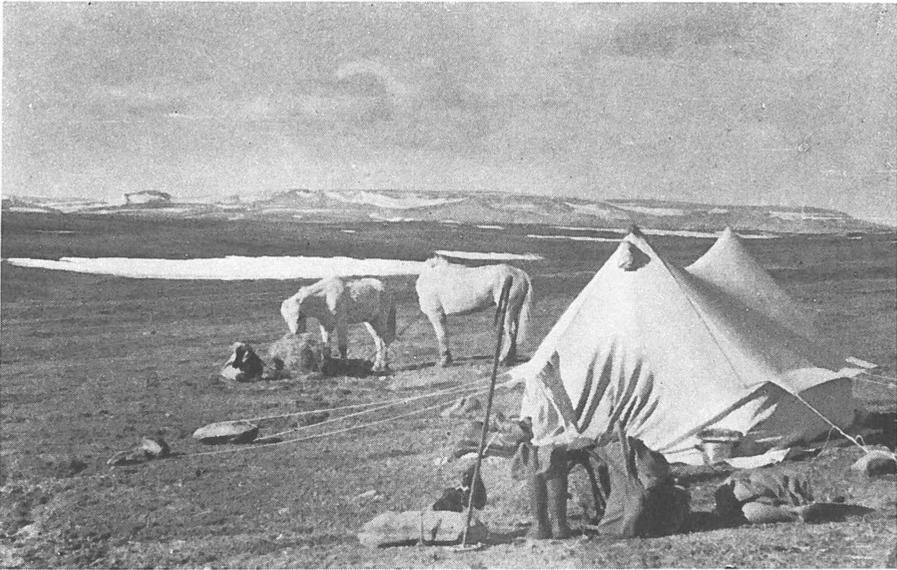


Fig. 216. Camp in the interior of Jameson Land.

motorboat. A great many sections were measured, principally in Lias and Dogger. Further, skeleton remains of a 5—6 m big Plesiosaurus were found in the upper part of Ryders Elv. It was ascertained that a great

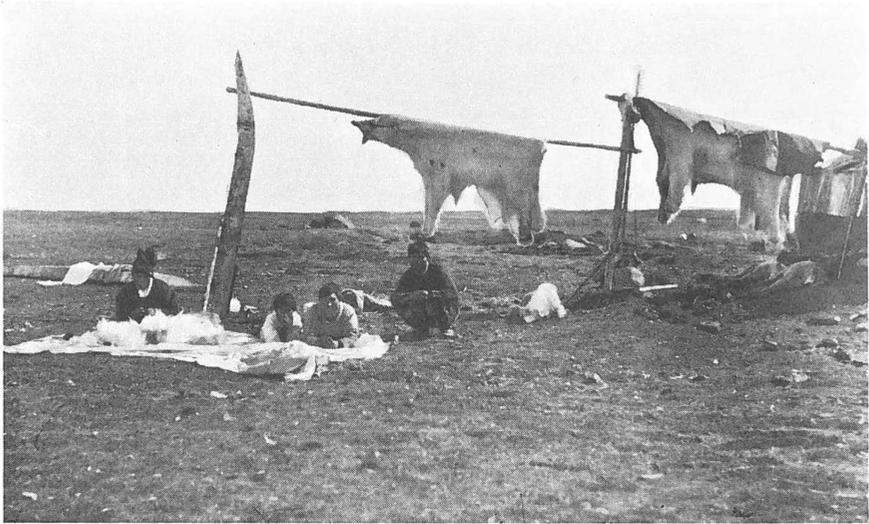


Fig. 217. Drying of bear-skins.

many basalt dykes cut across Jameson Land. Their directions are mainly EW or NW-SE.

June 26th.—In the evening they left camp 56 and arrived in the morning at camp 58, and from here they reached the big depot Q during the day. This depot was laid out on May 14th by sledge. While this depot was fetched, STAUBER worked in the vicinity of camp 58, and here he also worked on June 28th.

June 29th.—They reached camp 59, and during the night STAUBER worked, while TVERMOSE and PÁLLSON fetched new provisions from the depot. The following day they also worked from camp 59. The next day camp 60 was reached after a difficult river crossing, which could only be made by ponies as the river was nearly 50 m broad and 1 m deep.

July 2nd.—They reached camp 61, and STAUBER worked in the evening in the valley of Ryders Elv and at Duséns Bjerg. Here a depot had been laid out by sledge from Scoresbysund by the Greenlanders. The following day they worked from this camp around Duséns Bjerg. The going was difficult for the ponies here.

July 4th.—Crossed Ulveelv, and arrived in the evening at Hurry Fjord, where they met the carpenter and 3 Greenlanders from Scoresbysund, who had travelled here by a rowing boat. Later on they were to be fetched by a motorboat. TVERMOSE and PÁLLSON with the ponies fetched the provision boxes.

July 5th.—STAUBER made an excursion to Nathorsts Fjeld to measure sections. In the night he returned to camp 63 at the shore. He was

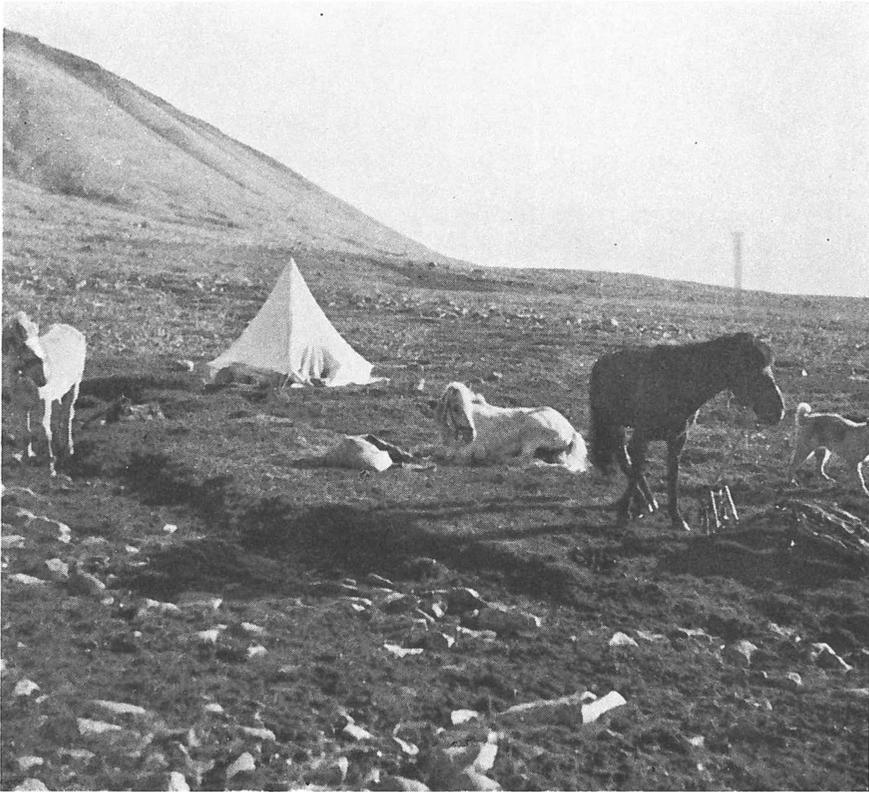


Fig. 218. Camp near Schucherts Flod.

now alone with TVERMOSE. In the night they established a new camp (64) nearer the mountain, and sections were measured west of Nathorsts Fjeld.

July 7th.—TVERMOSE transported the geological collections to camp 63 at the shore, and in the night they continued the journey westwards across Ugleelv, and camped (65) at Elis Bjerg.

July 8th.—Several excursions were made from this camp, and on the following day a new camp was established after the difficult crossing of the river at Duséns Bjerg. The camp was erected near the highest point of the pass.

July 10th.—They worked in various directions from this camp, and STAUBER found the big saurian skeleton.

July 11th.—Travelled to camp 67, and worked on this and the following day in the vicinity of the camp.

July 13th.—Camp 68 was established. They had now gone so far westward that the sections were very small. As there was very little pasture for the horses, and as the hay and concentrated fodder



Fig. 219. The delta of Schucherts Flod.

had come to an end, they passed (July 18th) camp 71, and a depot was laid out.

July 19th.—Camp 72 was reached. Here they worked all day, and in the evening they continued to Gurreholm, arriving there in the morning of July 20th.

Journey with ponies, Juli 21st—August 9th.

Camps 73 and 81. Depots Q, R, X, C and D.

STAUBER and JAKOB travelled with two ponies until July 26th. From July 27th to August 9th STAUBER travelled alone with two ponies.

The journey went to the central plateau in the interior of Jameson Land and to the northwestern part of this, then to the southeastern slope of Schucherts Flod and back to Gurreholm. During this journey many sections were measured, notably in the Jurassic beds. The course of the basalt dykes were examined and mapped. The work was continued in the Major Paars Dal territory and in Oswald Heers Klintor down towards Gurreholm.

The highest point on Jameson Land, the plateau glacier Olympen, was climbed (about 1350 m). All the deposited boxes with collections from the western part of the plateau were transported to Gurreholm.

July 22nd.—STAUBER and JAKOB started with fresh ponies from Gurreholm. After a long journey they arrived in the evening at camp

73; after a short stay here, they continued to camp 58. From here two provision boxes were fetched. In the evening they camped in camp 74. While STAUBER worked geologically, the Greenlander fetched the provision-boxes by horse from depot 71.



Fig. 220. Ponies in the interior of Jameson Land.

July 26th.—STAUBER worked geologically in the vicinity, while JAKOB with 2 ponies fetched the collections deposited. In the evening TVERMOSE arrived with two ponies from Gurreholm.

July 27th.—TVERMOSE and JAKOB went with three horses loaded with rock samples to Gurreholm. STAUBER started from camp 58 with one horse to camp 75. On July 28th they worked from this camp.

July 29th.—Various collections from camp 58 were deposited, and a new camp was established (76), and on July 30th STAUBER ascended Olympen, the plateau glacier. In the morning of July 31st STAUBER



Fig. 221. Camp in Ørsteds Dal.



Fig. 222. From the interior of Jameson Land.

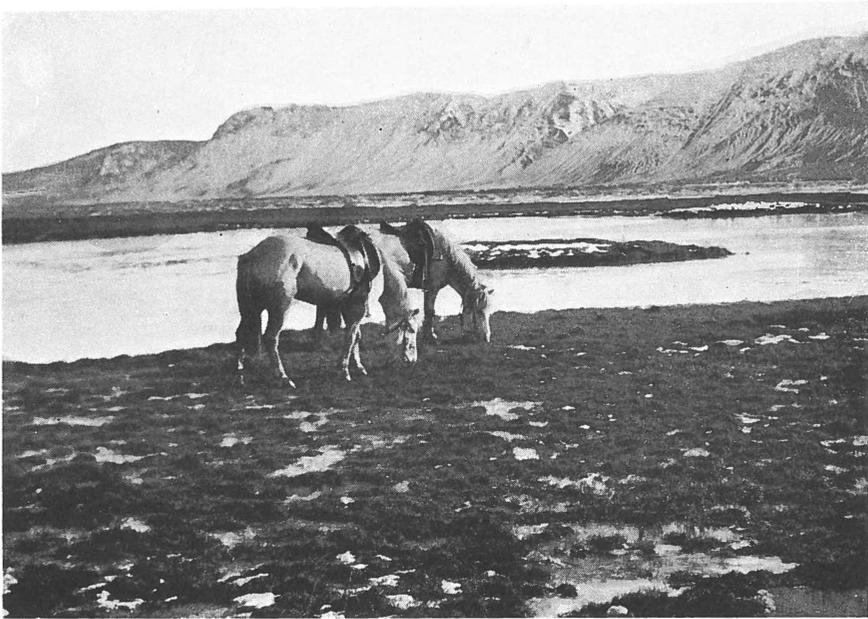


Fig. 223. Landscape near Gurreholm.

returned after a 24 hours' journey. Having laid out a depot in a new camp (77), he returned to camp 58.

Aug. 1st—3rd.—Worked from camps 77 and 78.

Aug. 4th—5th.—Worked from camps 79 and 80.

Aug. 6th.—STAUBER met TVERMOSE and JAKOB.

Aug. 7th.—Worked from camp 80, and the collections were transported to Gurreholm on three ponies.

Aug. 8th and 9th.—STAUBER worked from camps 80 and 81.

Aug. 9th.—TVERMOSE and JAKOB fetched collections by ponies and, in the night of Aug. 10th STAUBER arrived at Gurreholm.

They were informed over the wireless that the ship which was to fetch the Gurreholm party was now off Storfjord in Liverpool Land on her way down from the north.

Aug. 11th.—The ship arrived.

Aug. 13th.—DE LEMOS, TVERMOSE and JAKOB left Gurreholm by the motorboat "Triton", and the next day the ship left Gurreholm.

Aug. 17th.—STAUBER fetched the depot of collections at Kap Brown.

Aug. 18th.—The collections at Antarcities Havn were fetched.

Aug. 19th.—Arrival at Ella Ø. On Aug. 23rd STAUBER started by airplane on his long flight, during which he took a great many photographs from the interior of Jameson Land.

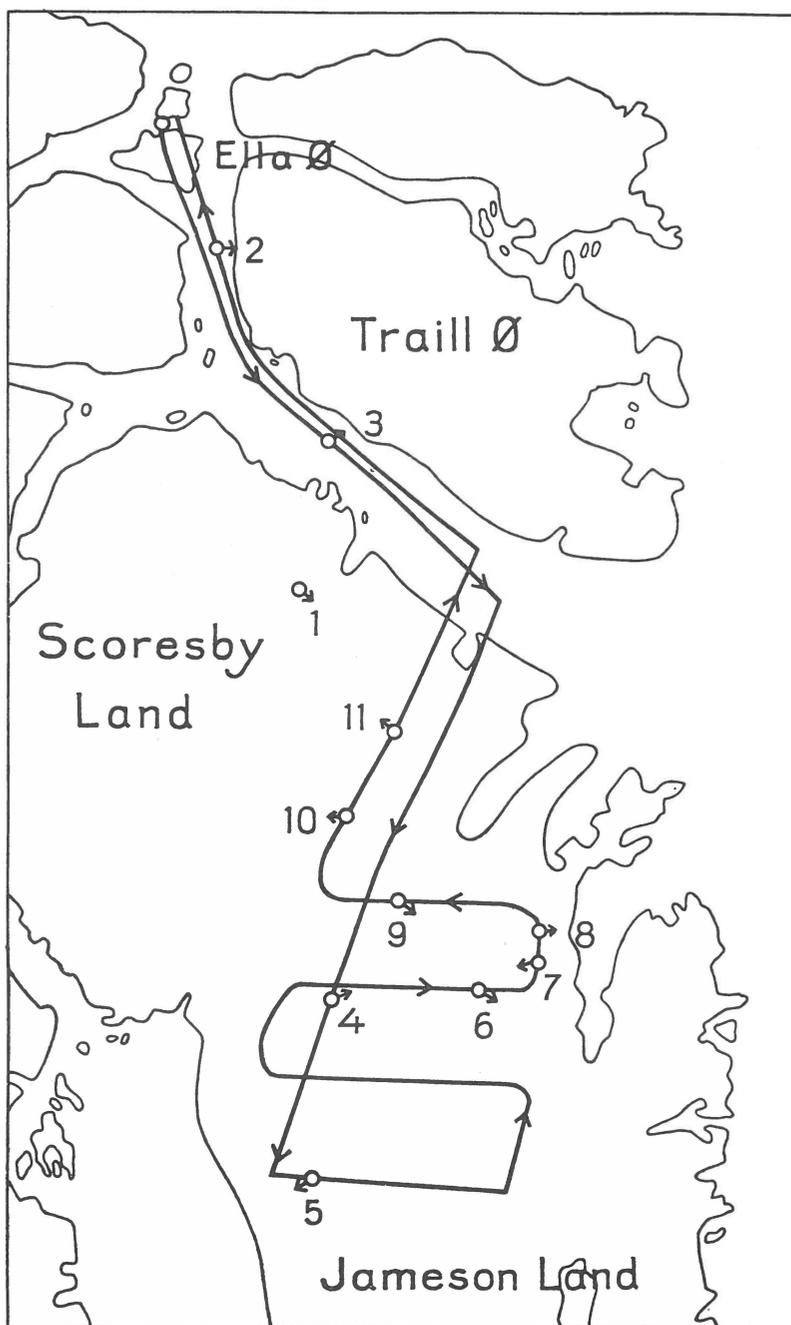


Fig. 224. STAUBER'S flying route over central Jameson Land. The figures indicate the places where the numbered photographs were taken.



Fig. 225. Werner Bjerge, seen from the west. Photo No. 1.



Fig. 226. Air-photograph of a valley in Kongeborgen. Photo No. 2.



Fig. 227. Air-photograph of Svinhufvuds Bjerg. Photo No. 3.

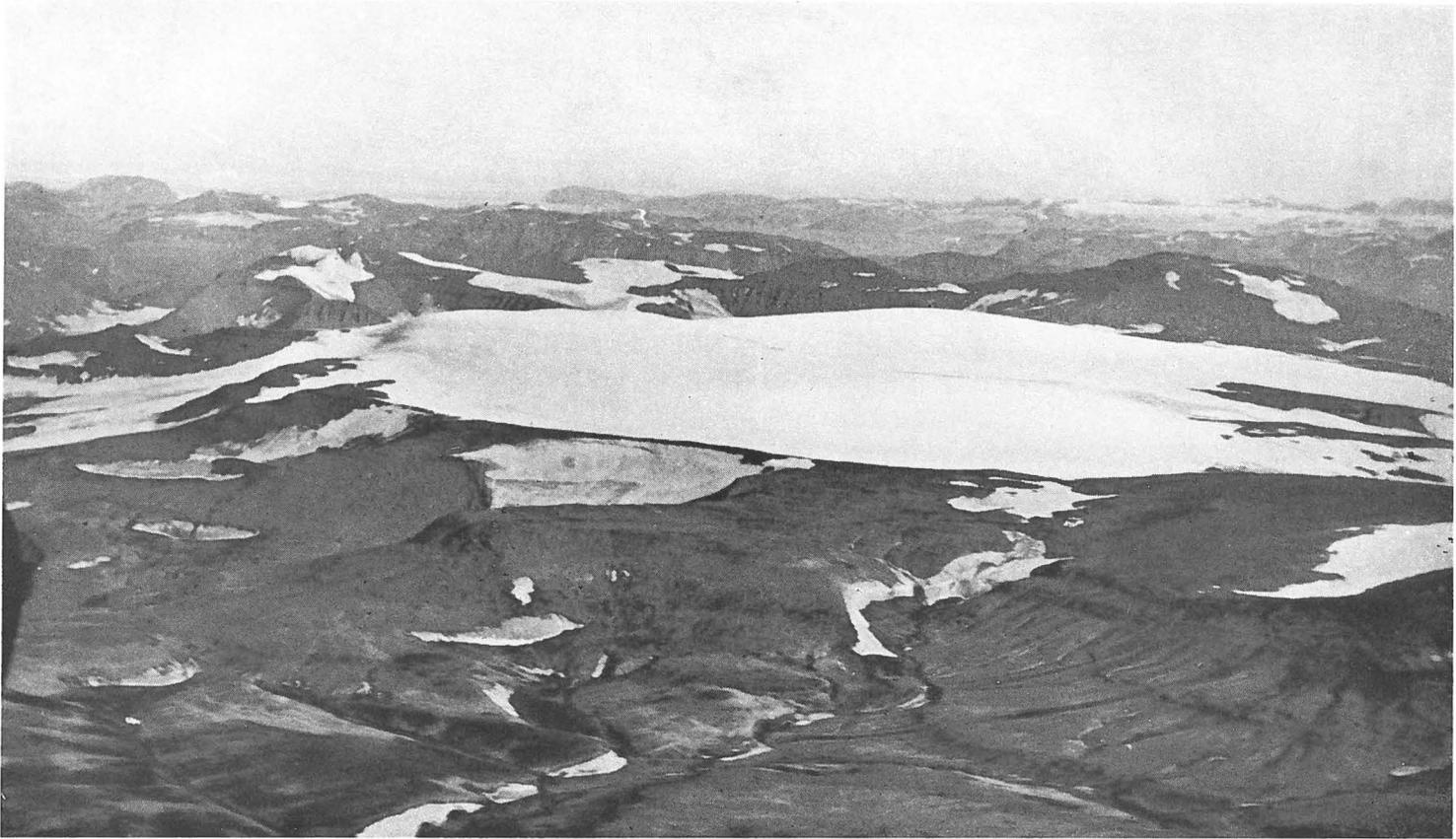


Fig. 228. The highest part of Jameson Land. Photo No. 4.



Fig. 229. Jameson Land south of Gurreholm. Photo No. 5.



Fig. 232. Carlsberg Fjord and the northern part of Liverpool Land, seen from the west. Photo No. 8.



Fig. 230. Eastern part of Jameson Land. In the background the northern part of Liverpool Land. Photo No. 6.



Fig. 231. The highest part of Jameson Land, seen from the east. Photo No. 7.



Fig. 233. Central part of Jameson Land. Photo No. 9.



Fig. 234. Upper part of Schucherts Flod and part of Staunings Alper. Photo No. 10.



Fig. 235. Southern part of Werner Bjerge. In the background Staunings Alper. Photo No. 11.



Fig. 237. Western part of Jameson Land. In the background Staunings Alper.



Fig. 236. Werner Bjerge seen from the air.