

ley, but field work was also undertaken during part of August in the south-western end of the valley.

In addition to reflection work using the new equipment, long-range and medium-range refraction shooting was undertaken. Gravity, magnetic and micro-seismic measurements were also made.

No detailed results from the survey are yet available.

Drilling group

A group led by H. Jørgensen undertook a drilling programme using a Craelius Prosper 25 core drill belonging to the Danish Atomic Energy Commission, Risø. Difficulties encountered during the 1971 drilling programme were largely mechanical or due to lack of experience in drilling in such rocks in a permafrost area. With a new water pump and with the 1971 experience to go on, it was hoped that a successful programme could be carried out in 1972.

Drilling was undertaken at Tuperssuartâ, 7 km west of Niaqornat, at Tuper-sussat, close to Niaqornat, at Niaqorssuaq, 6 km east of Niaqornat, on the coast 5 km east of Niaqorssuaq and the south-west end of the Itivdle valley.

As in 1971, the programme was beset with difficulties. Some core was recovered from the first, third and fourth of the localities mentioned, but the total recovered during the summer was very disappointing.

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INVESTIGATIONS OF QUATERNARY GEOLOGY IN THE AREA SOUTH OF DISKO BUGT, CENTRAL WEST GREENLAND

Joakim J. Donner

During the summer an area between latitudes 68°30' and 68°40' N on the west coast was investigated, including the islands south of Sarqardlip nunâ in the west and the islands and the mainland in Sydostbugten and Orpigsôq in the east. The work concerned a description of marine Quaternary deposits and the collection of shell samples from these deposits for radiocarbon dating.

Glacial striations

The strong frost wedging of the bedrock, mostly gneiss, has resulted in a rough surface with very few striae. However, those preserved under the drift on rock surfaces recently exposed at the shores, show that the strongest ice advance in the area was from the east or south-east, the striae both east and west of Nivâq being in the direction of 265° – 280° and west of the Orpigsôq fjord 290° (accepting a declination of 50° W). At the shore of Lersletten in Sydostbugten the striae strike almost due north, in a direction of 340° – 360° . Apart from glacial striae, short floating-ice striations are found in several places on exposed bedrock at the present shore.

Deposits

The main moraine in the area is the Fjord Stage as described by Weidick (1972a) from Disko Bugt dated at about 8300–8100 B. P. This stage is represented by the moraine on the western shore of the Tasiussarssuaq fjord, facing Lersletten, and the moraine near the mouth of Orpigsôq (as shown on the Quaternary map of Greenland by the Geological Survey of Greenland, scale 1:2 500 000). Between this moraine and the Inland Ice margin there is a younger moraine, representing the Mt. Keglen stage dated at about 7000–7600 B. P. (Weidick, 1972a), but none of the older ice margin stages found further south in West Greenland can be traced in the area investigated: a fact seen from the summary by Weidick (1972a) and the Quaternary map mentioned above.

Apart from till and solifluction sediments derived from till, the Quaternary sediments of the investigated area are marine. In the coastal archipelago west of Nivâq the marine deposits consist of sands and gravels, sometimes forming shore bars, in small isolated occurrences surrounded by exposed bedrock. Often these sediments contain shells. In Sydostbugten marine silts and clays occur as well, the best known and most extensive being in the flat area, dissected by rivers, of Lersletten, forming at the coast a 50 m high cliff. Similar clays and silts also occur in the inner part of the Orpigsôq fjord. For the determination of the marine limit the lower limit of perched boulders, when distinct, was used and the measurements were made with an altimeter. The marine limit falls from west to east, being 130 m a. s. l. at Kánala ($68^{\circ}36'N$, $52^{\circ}34'W$), 110 m a. s. l. in the western part of the island of Akugdilit in Sydostbugten and 80 m a. s. l. in the eastern part. Further east, on the small peninsula of Igpik in the Orpigsôq fjord the end moraine of the Fjord Stage has a marginal delta surface at 62 m a. s. l. (measured with a hand level), corresponding to the marine limit at the time of the formation of the moraine. Immediately outside, west of the moraine there is a marine terrace at 68 m a. s. l. In the innermost part of the Orpigsôq fjord the marine terraces reach about 30 m a. s. l. (Harder *et al.*, 1949).

Shell samples

The altitudes of the sites from which the shell samples were collected were all determined by hand level. To exclude the effect of error caused by the tide, which in this area has an amplitude of about 2 m, the well-developed *Balanus* line was used as base level. 100–200 g of shell material were obtained from about 1–2m³ of marine sand and gravel. The highest shell-bearing sediments were found just over 40 m a. s. l., whereas no shells were found in the material of the raised beaches at higher altitudes, the highest being at about 100 m a. s. l., as at Aumat (68°34'N, 52°57'W) or at Qeqertasugssuk (68°33'N, 51°32'W). The shell samples from the marine deposits between the present sea level and 40 m a. s. l. should, together with earlier-dated shell samples from the same area (Weidick, 1972b), enable a reconstruction to be made of the land/sea level changes between about 8000 and 4000 B. P. in an area about 100 km long from west to east, i. e. along a line from the outer coast towards the Inland Ice (see Weidick, 1972a, fig. 5c).

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INVESTIGATIONS ON THE NAGSSUGTOQIDIAN BOUNDARY BETWEEN HOLSTEINSBORG AND KANGÂMIUT, CENTRAL WEST GREENLAND

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The southern boundary of the Nagssugtoqidian mobile belt was first mapped by Noe-Nygaard & Ramberg (1961) on the basis of the progressive deformation of a swarm of basic dykes – the Kangâmiut dyke swarm. Field work in 1969 showed this boundary to have an approximate NE-SW strike (Escher *et al.*, 1970). The object of the summer's field work reported on here was to continue the investigations along the Nagssugtoqidian boundary and to study the deformation-