



Polarforschung 78 (3), 110, 2008 (erschienen 2009)

With Niels Reeh in Greenland 1988-1998

by Hans Oerter

It was in summer 1988 when I for the first time went to Greenland together with Niels Reeh. At that time Niels stayed as a guest scientist at the Alfred Wegener Institute for Polar and Marine Research (AWI) at Bremerhaven, Germany, before he got a permanent position during the years 1989 through 1992. In 1988 he had initiated a glaciological programme at the margin of the Greenland ice sheet in the Paakitsoq area. His idea was that it should be possible to get a similar stable-isotope record when taking ice samples from the ice surface at the margin of the ice sheet as when drilling in the centre to the bottom of the ice sheet. This would be in accordance with the ice flow lines, and he wanted to proof it. It was hard work to creep on ones knees across the ice in order to take ice samples every 50 cm or along some profiles even at shorter intervals. But it finally was a successful work.

The $\delta^{18}\text{O}$ record from the “horizontal core” from Paakitsoq was very similar to the $\delta^{18}\text{O}$ record of the GRIP ice core. With his deep knowledge of the Greenland ice sheet Niels was looking for more promising locations for such work. The engagement of GGU/GEUS opened the possibility to go also to Northeast Greenland to Storstrømmen, to the western edge of Dronning Louises Land, to Kronprins Christian Land or to a rather remote location high above Heinkel Glacier in East Greenland. An overview of the work was presented by Niels during the International Symposium on Ice Cores and Climate held in Kangerlussuaq, Greenland, August 2001 (REEH et al. 2002).

The fieldwork was supplemented by geodetic surveying to get the positions of the profile lines as well as the positions of stakes in the ice in order to calculate ice flow velocities. In addition, in cooperation with Carl Egede Bøggild also mass-balance studies were carried out in the marginal area of the ice sheet.

During his stay at AWI, Niels compiled data sets as input data for ice sheet modelling carried out at that time at AWI. Niels used flow line models himself to verify the results of the Greenlandic fieldwork. Besides Paakitsoq in West Greenland, Storstrømmen in Northeast Greenland was one of his favourite places in Greenland. Niels measured, in cooperation with colleagues from Copenhagen University and AWI the highly dynamic flow regime (surge type glacier) of this ice stream during the 1990ies, compared aerial photographs and satellite images and used the data for successful numerical modelling of acceleration and slow down of Storstrømmen (REEH et al. 2003). The time series of observations go back to the Danmark-Expedition 1906/08. J.P. Koch and A. Wegener (KOCH & WEGENER 1911) published the first map of the front of Storstrømmen, where they later spent the winter 1912/13 before crossing the ice sheet in summer 1913.



Fig. 1: Niels Reeh sitting in front of the eastern margin of Storstrømmen, Germania Land, Northeast Greenland in July 1989 (Foto: H. Oerter)

This short text can only mention some highlights of the work, which Niels carried out at AWI. I learned a lot about Greenland and Glaciology from him and so did the other colleagues at AWI. Niels introduced me to the easy way of living in a small field camp, using what is available and not missing what is far away. He himself was always very modest regarding his personal belongings, however, a meltstream had to be very wide and a peak extremely unaccessible to hinder Niels from reaching the goal of the project. A careful planning at home did not substitute an even more careful reconnaissance in the field. I always enjoyed doing fieldwork together with him. I am very grateful that I had met Niels Reeh, I owe him a debt of gratitude.

References

- Reeh, N., Oerter, H. & Thomsen, H.H. (2002): Comparison between ice-margin and ice core oxygen-18 records.- *Annals Glaciol.* 35: 136-144.
- Reeh, N., Mohr, J.J., Madsen, S.N., Oerter, H. & Gundestrup, N. (2003): Three-dimensional glacier surface velocities of the Storstrømmen glacier, Greenland, derived from radar interferometry and ice-sounding radar measurements.- *J. Glaciol.* 49, No. 165: 201-209.
- Koch, J.P. & Wegener, A. (1911): Die glaciologischen Beobachtungen der Danmark-Expedition.- *Meddelelser om Grønland XLVI*, 1-77, 4 maps.

