

This issue

Large-scale evolution of Scoresby Sund trough-mouth-fan system
Work in progress by Lara Pérez

Page 2

The last but not least of the transferrable skills courses for GLANAM

By Benjamin Bellwald

Page 4



Herr Bellwald thanking Tony Calzone for the excellent Italian food and sincere hospitality (see p. 4).



Part of team GLANAM with Tony Prideaux (right) on the "Dealing with the Media" training course

Lara in Tromsø: a secondment with CAGE and UiT

As part of my GLANAM postdoc project I was on secondment at Centre for Arctic Gas Hydrate, Environment and Climate (CAGE) and Tromsø University (UiT) under the supervision of Prof. Karin Andreassen in February and March 2016. During these months I worked on swath bathymetry, chirp sub-bottom profiles and high resolution single channel seismic acquired along the lower slope off Liverpool Land (east Greenland) in 2013 by Prof. Tine Rasmussen (UiT) and T. Nielsen (GEUS). I am

currently working on a manuscript that summarize the insights reached at CAGE-UiT with help of the scientific advice of Tine Rasmussen, Karin Andreassen, and her research group (in particular Monica Winsborrow). I would like to thanks also GLANAM fellows, Dimitrios Ktenas and Emilia Piasecka, for their help during my stay in Tromsø.

Lara Pérez



Large-scale evolution of Scoresby Sund trough mouth fan system

Trough-mouth fans (TMFs) are depositional features that form along glaciated margins at the shelf-edge terminus of major ice-streams (Vorren and Laberg, 1997). Fast-flowing ice-streams erode the sedimentary cover as they pass over the continental shelf. When the ice reaches the shelf edge, the eroded sediments are deposited along the continental slope (Bart et al., 1999). The morphology and stratigraphy of TMFs have been used to infer the position of grounding ice and history of glacial dynamics, both in the Northern and Southern hemisphere (e.g. O'Brien et al., 2004; Batchelor and Dowdeswell, 2014).

The continental shelf along the East Greenland margin is characterised by several, ice-stream carved transverse troughs that constitute the oceanward

extension of the major fjords. The Greenland ice-sheet has repeatedly generated intense ice-streams passing through the major outlet fjords. The Scoresby Sund Fjord in central East Greenland represents one of the major outlets on the east margin of Greenland (Fig. 1a), and has an associated prominent glacial fan; the Scoresby Sund TMF (Larsen, 1990).

Several multichannel seismic profiles have been obtained offshore Scoresby Sund Fjord with commercial and scientific purposes. Seismic facies have been analysed within these data in terms of identification of major seismic units, erosive areas, reflections terminations, morphology and configuration (Fig. 1b). These morpho-structural and seismic-stratigraphic analyses have resulted in structural and isochore maps that reveal the

sediment distribution of the main seismic units. Age estimations have been done based on the ODP site 987 located in the abyssal plain off Scoresby Sund (Fig. 1; Channell et al., 1999).

Our results reveal the existence of an ice-stream through Scoresby Sund Fjord and onto the continental shelf since late Miocene, coeval with the onset of the large glaciation of Greenland (Larsen et al., 1994). This ice-stream has formed several major troughs across the continental shelf since the Miocene/Pliocene boundary. Variations in the trend of the troughs are identified across the sedimentary record, mainly related with major episodes of glacial advance. Two main episodes of significant ice-stream activity occurred during early Pliocene and at the Pliocene/Pleistocene boundary, separated by a period of less ice-stream

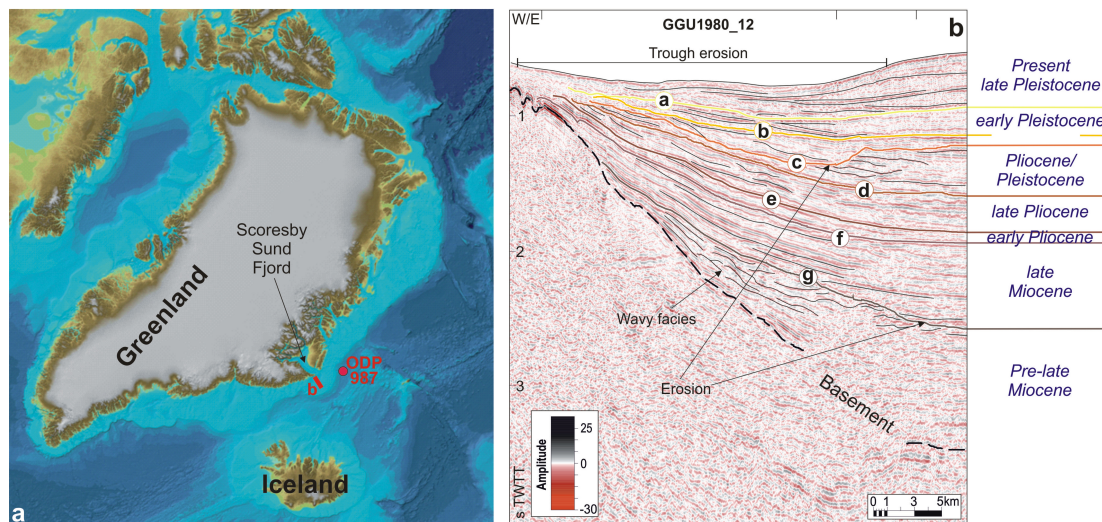


Fig. 1.- a) Location map of the Scoresby Sund Fjord. Bathymetry based in the International Bathymetric Chart of the Arctic Ocean (IBCAO; Jacobsson et al., 2012). Note location of ODP site 987 and seismic profile segment shown in b. b) Multichannel Seismic Profile off Scoresby Sund Fjord. Main seismic features are shown.

activity during the late Pliocene. Notably, this low ice-stream activity is coeval with interpreted glacial advances along the southeast Greenland, Iceland, Alaska and the Arctic Canada (Jansen et al., 2000; Myhre et al., 1995;). A continued ice-stream activity is interpreted in the Scoresby Sund Fjord area since the Pliocene/Pleistocene boundary to Present.

Lara Pérez

References

- Bart, P. J., M. De Batist, and W. Jokat (1999), Interglacial collapse of crary trough-mouth fan, weddell sea, antarctica: implications for antarctic glacial history, *J. Sediment. Res.*, 69(6), 1276-1289.
- Batchelor, C. L., and J. A. Dowdeswell (2014), The physiography of High Arctic cross-shelf troughs, *Quaternary Science Reviews*, 92, 68-96, doi:10.1016/j.quascirev.2013.05.025.
- Channell, J. E. T., M. Smelror, E. Jansen, S. M. Higgins, B. Lehman, T. Eidvin, and A. Solheim (1999), Age models for glacial fan deposits off East Greenland and Svalbard (Sites 986 and 987), *Proceedings of the Ocean Drilling Program: Scientific Results*, 162, 149-166.
- Jakobsson, M., L. Mayer, B. Coakley, J. A. Dowdeswell, S. Forbes, B. Fridman, H. Hodnesdal, R. Noormets, R. Pedersen, M. Rebesco, H. W. Schenke, Y. Zarayskaya, D. Accettella, A. Armstrong, R. M. Anderson, P. Bienhoff, A. Camerlenghi, I. Church, M. Edwards, J. V. Gardner, J. K. Hall, B. Hell, O. Hestvik, Y. Kristoffersen, C. Marcussen, R. Mohammad, D. Mosher, S. V. Nghiem, M. T. Pedrosa, P. G. Travaglini, and P. Weatherall (2012), The International Bathymetric Chart of the Arctic Ocean (IBCAO) Version 3.0, *Geophysical Research Letters*, 39(12), doi:10.1029/2012GL052219.
- Jansen, E., T. Fronval, F. Rack, and J. E. T. Channell (2000), Pliocene-Pleistocene ice rafting history and cyclicity in the Nordic Seas during the last 3.5 Myr, *Paleoceanography*, 15(6), 709-721, doi:10.1029/1999pa000435.
- Larsen, H. C. (1990), The east Greenland shelf, in *The Arctic Ocean region*, edited by A. Grantz, et al. , pp. 185-210, Geological Society of America, *Geology of North America*, Boulder, Colorado.
- Larsen, H. C., A. D. Saunders, P. D. Clift, J. Ali, J. Begét, H. Cambray, A. Demant, G. Fitton, M. S. Fram, K. Fukuma, J. Gieskes, M. A. Holmes, J. Hunt, C. Lacasse, L. M. Larsen, H. Lykke-Anderson, A. Meltser, M. L. Morrison, N. Nemoto, N. Okay, S. Saito, C. Sinton, S. Spezzaferri, R. Stax, T. L. Vallier, D. Vandamme, W. Wei, and R. Werner (1994), Seven million years of glaciation in Greenland, *SCIENCE*, 264(5161), 952-955.
- Myhre, A. M., J. Thiede, and J. V. Firth (1995), *Proceedings, initial reports, Ocean Drilling Program, Leg 151, North Atlantic-Arctic gateways: I. ODP, Texas A&M University, College Station*
- O'Brien, P. E., A. K. Cooper, F. Florindo, D. A. Handwerger, M. Lavelle, S. Passchier, J. J. Pospichal, P. G. Quilty, C. Richter, K. M. Theissen, and J. M. Whitehead (2004), Prydz channel fan and the history of extreme ice advances in Prydz Bay, *Proceedings of the Ocean Drilling Program: Scientific Results*, 188.
- Vorren, T. O., and J. S. Laberg (1997), Trough mouth fans - Palaeoclimate and ice-sheet monitors, *Quaternary Science Reviews*, 16(8), 865-881.

Dealing with the media: last, but definitely not least

Durham, May 4th 2016: After having successfully participated in the previous courses, the GLANAM fellows met for a fourth transferrable skill course, this time focusing on “Dealing with the media”. Within two days, experts from InsideEdge (<http://www.insideedgetraining.co.uk/>) taught us the different aspects the media is waiting for us. The incredible Tony Prideaux

communicate ours. We learnt how to successfully engage with print journalists, how to do press releases and how to make our research newsworthy. Afterwards we learnt about writing academic articles for the internet and how to maintain academic rigor in short articles. The afternoon of the first day was under the topic “creating an effective social media strategy for researchers”, and we were

dealing with questions such as “is social media really worth the time and effort?” or the benefits and pitfalls of social media for an academic.

We spent all the second day

and Chris Jameson, having extensive experience as senior BBC network producers, reporters and journalists, led us in a droll and passionate way through the 2 days. On their webpage, they promote their course with the slogan “For us, it’s control and authenticity”, which they successfully preached to the tribe of GLANAM.

The workshop focused on different aspects: From print, online and social media up to broadcast media. The first message they sent was that research matters, and that we should not be too shy to

doing broadcast training. Chris and Tony showed us the importance of achieving impact both in radio and TV interviews, and how to communicate effectively and generate the biggest impact. In the end we were then all interviewed in “On Air simulations”. Enriched with the skills of dealing with the media, the GLANAM fellows finished the workshop with Italian food and wine, and some foxy dancing afterwards.

Benjamin Bellwald

Editor:
Riccardo Arosio

Assistants:
Lara Pérez
Benjamin Bellwald

Advisors
Prof. Mike Bentley
Prof. Colm Ó Cofaigh

email:
riccardo.ariosio@sams.ac.uk
web:
www.glanam.org

GLANAM is an Initial Training Network (ITN) funded under the EU Marie Curie Programme.

