Introduction

Some 50 participants attended the annual TSGS (Tectonic and Structural Geology Studies) group meeting at the Norwegian Institute of Technology (NTH) in Trondheim on 4th and 5th of November 1993. The theme of the meeting was 'Strike-slip Tectonics' and 22 papers were presented over two days. Six of the papers are presented in full in this volume, the remainder as abstracts.

The meeting began with a session on theoretical studies. **A. G. Milnes** gave an introduction to the theme of the meeting and raised the important topic of distinguishing between instantaneous and incremental (finite) strain. The following talk **H. Fossen** (co-authors B. Tokoff and C. Teyssier) on strain models of transpression and transtension developed the same theme. Analogue modelling of pull-apart basins by finite element methods was described by **M. Gölke** (abstract, co-author S. Cloetingh), who showed that the shape of the basin is largely controlled by fault geometry, whereas the elastic properties determine its depth. **S. Ottesen** (abstract, co-author R. Gabrielsen) presented the results of plaster case modelling carried out at the University of Bergen on the effects of transtensional movement along a basement lineament on the seidmentary cover using the Swæn Graben in the Barents Sea as an example. In the final paper of the session, **A. Koestler** (abstract) showed field examples demonstrating the complexity of fault linkages and terminations and the significance of oblique-slip in these situations.

The second session comprised a collection of papers on the structural evolution of parts of the Tornquist Zone and the Skagerrak Graben. **N. R. Deeks** (abstract, co-author S. Thomas) presented the results of interpretation of both conventional and deep seismic (BABEL project) data in the southern Baltic area around Bornholm and showed that the late Paleozoic–Mesozoic grabens in the area can be interpreted as the result of a large-scale releasing bend in a dextral strike-slip system. Inversion structures in the late Cretaceous–early Tertiary formed during dextral transpression. The deep seismic profile shows a wide area of lower crustal deformation and a shallow Moho under the Tornquist Zone. **T. Morgensen** (abstract) presented the results of seismic interpretation in the Kattegat. He showed that the late Paleozoic rifting in the area was associated with up to 10 km of dextral strike-slip displacement. Further dextral movements of the order of a few kilometers occurred during Triassic and Jurassic–early Cretaceous extension phases. Late cretaceous–early Tertiary inversion was caused by dextral transpression of 1–2 km. **S. Fanavoll** (co-author S. Lippard) presented a detailed study of a NE–SW trending fault zone in the Skagerrak Graben which is interpreted in terms of sinistral strike-slip, complementary to the dextral strike-slip in the Tornquist Zone, during the late Paleozoic.

The final session on the first day continued the theme of offshore studies based largely on seismic interpretation with presentations by **S. Lippard** (abstract), on a transfer zone in the Stord Basin in the North Sea, and **I. Grunnaleite** (abstract), on shear tectonics in the Bjørnøyrenna Fault Complex in the Barents Sea. **R. Muir-Wood** (abstract) presented a review of the role of strike-slip tectonics in the Tertiary evolution of Britain and linked this with the tectonic evolution of the NW European plate. The final presentation of the day was given by **S. Pallesen,** who showed slides (mostly taken by R. Arrowsmith, Stanford University) of the San Andreas Fault System in California.

The theme of the second day was onshore case studies from Norway and Svalbard. The first presentation was given by **M. Séranne** (abstract), an invited speaker who presented evidence of sinistral strike-slip along the Møre–Trøndelag Fault Zone during the late orogenic collapse of the Caledonian mountain belt which led to the development of Devonian basins in the coastal region. **M. Heim** (abstract), in a detailed study of late to post-orogenic faulting in the Snåsa–Sanddøla area at the northeast end of the MTFZ, showed evidence of late sinistral displacements of up to a few kilometers on several faults.

Turning to the Svalbard Archipelago, **L. K. Stølen** (abstract, co-author D. Gee) presented a review of Precambrian and Caledonian tectonics. The three terranes recognized on Svalbard, with distinctive tectonometamorphic histories, provide compelling evidence for major sinistral? strike-slip on the N–S trending lineaments that separated them during Caledonian time. **Y. Ohta** (abstract, co-authors A. Kransilscikov and C. Lepvrier) used a variety of geological and geophysical data to establish dextral strike-slip movement of at least 30 km along the eastern margin of the Folandsundet Graben on Spitzbergen.

Attention was then drawn to the North Varanger region in Finnmark, northern Norway, where **A. H. N. Rice** (co-author W. Reiz) expressed doubts about published evidence which suggests that the Precambrian Båtsfjord dykes were emplaced after folding of the host metasedimentary rocks. **A. Krill** (abstract, co-author P. Robinson) presented evidence from the Western Gneiss Region supporting Séranne's model for an extensive phase of sinistral shear during the late extensional phase of the Caledonian orogeny. **O. P. Wennberg** (co-author A. G. Milnes) recognized dextral movements on the Fensfjord Fault Zone on the northeastern margin of the Bergen Arc System and related these to late Caledonian

collapse of the orogen and the development of the Devonian basins. However, in the upper part of the major Bergen Arc sequence a sinistral shear sense is observed.

Returning to the north, two papers were presented on the structure and development of the Trollfjord–Komagelv Fault Zone. **M. R. Karpuz** (abstract, co-authors D. Roberts, T. Herrevold and R. Gabrielsen) presented a study of the fault zone in East Finnmark and on the western Kola Peninsula based on multiple data sets. These provide evidence of a complex history of dip- and strike-slip movements. Dextral strike-slip on the Sredni and Rybachi peninsulas appears to have followed a phase of SW-directed inversion tectonics. Late transtensional and tensional movements are recognized mainly offshore. In a study of the late Precambian and Lower Paleozoic sediments on the western part of the Varanger Peninsula, **A. H. N. Rice** (abstract, co-author R. Herrgoß) showed that differences in sediment thicknesses suggest normal displacements across the TKFZ followed by dextral strike-slip during Caledonian deformation.

The final paper of the meeting was presented by **O. Olesen** (abstract, co-authors H. Henkel, Ø. Sanderud and T. Skogseth), who described evidence of recent postglacial movements on the Båsmoen Fault in Nordland and plans to set up a GPS network to measure active strain across the fault zone.

Despite the late time of the year, 11 persons took part in a post-meeting field excursion led by Michel Séranne and Allan Krill to the Fosen area to examine the Devonian basin development and its relation to the Møre–Trøndelag Fault Zone.

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