David Banks

EDITOR'S PREFACE

He and Aaron assembled the whole community in front of the rock, and Moses said "Listen, you rebels! Do we have to get water out of this rock for you?". Then Moses raised his stick and struck the rock twice with it, and a great stream of water gushed out and all the people and animals drank.

Numbers 20.10-11 (Good News Bible)

If our eye could penetrate the earth and see its interior from pole to pole, from where we stand to the antipodes, we would glimpse with horror a mass terrifyingly riddled with fissures and caverns.

Thomas Burnet, "Telluris Theoria Sacra", 1681

Hydrogeologists working with hard rock aquifers tend to fall into two camps. Firstly, there are the "Moseses" who are often working with practical water-resources problems, and who tend not to be so interested in hydraulic apertures and log-normal distributions, but who need rules-of-thumb to find locations where water will gush out of the rock. Then there are the "Thomas Burnets" of this world, the theoreticians, who have traditionally been involved in studies for nuclear facilities or geothermal energy, and who see only the complexity of fractured rock aquifers. It is not unknown for "Thomases" to spend years studying the properties of single fractures. These latter are easy to identify, as they converse in the international Latin of modern times, mathematics, and the mere mention of fractal dimensions sends them into ecstasies.

In the summer of 1993, IAH convened a Congress at the Agricultural University of Ås, near Oslo, Norway, to bring these two, traditionally rather separate, groups together to examine the topic of "Hydrogeology of Hard Rocks". We hoped that the "Moseses" would discover that a theoretical understanding of fracture hydraulics can help in practical exploitation of water resources. We hoped also that the "Thomases" would gain an insight into the oily, day-to-day problems of drilling-chip-covered groundwater engineers working on tight budgets in inhospitable terrains.

I've been asked to edit two volumes of "Applied Hydrogeology", containing selected papers from the 24th Congress at Ås. In selecting papers, I have attempted more than anything else to reflect the variety of themes covered - from nuclear waste disposal to groundwater resources in Africa, and from engineering hydrogeology to hydrogeochemistry - and from geographical locations as diverse as Kenya, the Czech Republic, India and Sweden. Despite my previous words of wisdom about bringing together the "Moseses" and "Thomases", I confess that I have fallen into the trap of re-separating the two themes. This volume is given over to the more "applied" aspects of groundwater resources and hydrogeochemistry, whereas the next volume will contain eight papers choc-full of brain-busting equations. I can't wait!

Now would appear to be an ideal opportunity to let the credits roll for the organisation of the Congress at Ås. The Chairmen were those erudite Vikings, Jens-Olaf Englund and Erik Rohr-Torp, ably assisted by an organizing committee from the Geological Survey of Norway and the Agricultural University of Ås, headed by Rognvald Boyd. Thanks are also due to Michel Bakalowicz for *les résumés* and to the team of Scientific Reviewers for the Proceedings Volume and these special "Applied Hydrogeology" editions - namely Nick Barton, Owen Bricker, John Day, Stephen Foster, Roy Gabrielsen, Lars Gottschalk, Gunnar Gustafson, Kaare Høeg, Per Jørgensen, Jiří Krásný, Ole Bernt Lile, John Mather, Carl-Fredrik Mullern, Noelle Odling, Jan Steinar Rønning, Allen Shapiro, Petter Snilsberg, Friedrich Quiel, Geoff Williams and Per Aagaard (yes folks, "Aa" comes right at the very end of the Norwegian alphabet!).

And finally, thanks to my dear, beloved and very short wife, Sheila, who actually did most of the editorial work on the Proceedings Volumes. And while on the subject, the Proceedings (all 1200 pages, 110 articles and two volumes) are available from the Geological Survey of Norway (Postboks 3006-Lade, 7002-TRONDHEIM, Norway) at the bargain-basement price of 500 NoK.

Good reading.

Dave Banks, Trondheim, Norway, December 1993.