The Lithosphere in Finland - a Geophysical Perspective

editor L.J. Pesonen

Preface

The First Finnish Lithosphere Seminar was held at the Department of Geology of the University of Helsinki in November 20-21, 1995. This seminar, organized by Ilmari Haapala and Lauri Pesonen, was attended by 50 graduate students and professionals active in lithospheric research and teaching. The seminar is a product of the *Lithosphere Graduate School* of Finland, lead by Ilmari Haapala, which is funded by the Ministry of Education and by the Finnish Academy and by the universities and research institutes in Finland. The first seminar launched a series of other seminars and workshops sponsored by the Lithosphere Graduate School, all with the intended goal of fostering better cooperation among the gradute students and staff members of the universities and institutes involved in geosciences.

In the first seminar 18 presentations were given on various topics related to the lithosphere research in Finland including its structure, physical properties, composition, age, origin and relative movements. A majority of the presented papers that dealt with **geophysical** topics are included here in this special issue of GEOPHYSICA (***The Lithosphere in Finland - a Geophysical Perspective***). The papers concerned with **geological** aspects will be published elsewhere.

The six papers of this special issue provide an updated review of the lithosphere in Finland in the light of new geophysical results and interpretations. The structure of the lithosphere, based on seismic refraction and wide-angle reflection data, is given by Urmas Luosto (Institute of Seismology, University of Helsinki). The electromagnetic perspective of the lithosphere is described by Toivo Korja (Department of Geophysics, University of Uppsala) and the gravimetric overview of the lithosphere is outlined by Seppo Elo (Department of Geophysics, Geological Survey of Finland). Satu Mertanen and Lauri Pesonen (Department of Geophysics, Geological Survey of Finland) provide an updated view of the kinematic evolution of the Fennoscandian Shield by describing its drift history on the basis of palaeomagnetic measurements. The fifth paper, by Juhani Kakkuri (Finnish Geodetic Institute), provides an analysis of the horizontal and vertical movements taking place in Fennoscandia at present times as measured by geodetic methods. The forces causing these movements are also discussed. Finally, in the last paper a palaeomagnetic case-history of Archaean and Proterozoic rocks from several blocks in Finland is discussed by Kalle Neuvonen (Department of Geology, University of Turku) and his co-workers to provide an insight into the difficulties encountered in tracing block movements with palaeomagnetism. Although the last paper was not presented in this form in the seminar, it is included here since the results was discussed in some other presentations in the seminar.

Despite the absence from this volume of some important geophysical topics of lithosphere research (e.g., heat flow data and studies of crustal magnetism), I hope that it nevertheless provides a useful updated handbook of the geophysical properties of the Finnish lithosphere and will inspire the younger generation to tackle the existing problems in our current understanding of the the lithosphere in Finland.

Espoo, March 12, 1997
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editor