Preface

Lake sediments which reflect a yearly cycle of sedimentation, that is they are annually laminated or varved, afford invaluable archives when studying the history of land use. This is because of the exact dating they provide, in actual numbers of years, for the environmental changes which are recorded in the sediments. This close chronological – annual or sometimes even seasonal control – also makes it possible to trace former natural or man-made events of short duration in the surroundings of a lake and to study their impact on the lake itself.

The annual cycle of sedimentation, although simple in principle, is reflected in the structure of a varve in various, and often complicated, ways which are dependant on climatic conditions and sedimentological and biological processes. Therefore, the crucial importance of the accuracy of varve identification and counting cannot be overemphasized.

Various techniques have been developed for varve identification and analysis, long petrological thin sections and x-ray radiography to mention but two. The sampling of varved sediment sequences, especially the loose upper part, also requires a special approach. The development of a technique which freezes the sediment *in situ* has greatly improved the possibilities of using laminated sediments for accurate dating and thus as archives of environmental history, which was the topic of a PACT meeting held at Ravello, 11-14th June, 1991.

The growing interest in laminated sediments is indicated by the establishment of a Working Group on Laminated Sediments in Ottawa in 1987 in association with the INQUA Holocene Commission. The Proceedings of a Workshop of this Group, held at Lammi Biological Station, 4-6th June, 1990 have recently been published (Saarnisto, M. and Kahra, A. (eds), 1992, *Geological Survey of Finland Special Paper*, 14). In addition the Ravello meeting was followed by a Workshop on Varved Lake Sediments at Luzern, Switzerland, 16-20th June, 1991, organized by EAWAG (Eidgenössische Anstalt für Wasserversorgung, Abwasserreinigung und Gewässerschutz), and focusing on varve identification, documentation and counting techniques.

The present volume contains most of the papers which were given at the PACT meeting in Ravello entitled « Laminated Sediments : Archives of Environmental History ». Some of the articles are in the form of an extended abstract and some contain a longer, more comprehensive account of the given topic. The contributions cover a wider range of methodological aspects as well as studies of the dynmamics of both natural vegetation and that under human influence, the history of forest fires, and the applications of laminated sediments in archaeology.

We hope the present volume offers a stimulus for the development of further applications of laminated sediments in the study of environmental changes, both natural and influenced by man. We are grateful to Professor Tony Hackens for his constant support and to the staff of Villa Rufolo for their help in organizing the meeting.

The Editors