

EDITORS' PREFACE

The following admonition was printed at the top of Bulletin 770 from the US Geological Survey on The Data on Geochemistry by F.W. Clark (1924): "Please do not destroy or throw away this publication. If you have no further use for it, write to the Geological Survey at Washington for a frank to return it". Nobody making any kind of global budget for the main biogeochemical elements can honestly write for that frank, since a great deal of the data needed has to be taken from Clark's compilation or from papers citing his work. This reflects not only the validity of Clark's work but also the need to put an intensive effort in collecting a more modern data base.

The statement above also reflects the philosophy of that time, viz., to reuse material as far as possible rather than to discard it. This pattern is recognizable in the strategy of natural ecosystems concerning vital elements.

In September 1975, at the initiative of Professors J.W.M. la Rivière and V.A. Kovda, co-chairman of the SCOPE project on biogeochemical cycles, the Swedish National SCOPE Committee of the Royal Swedish Academy of Sciences offered to carry out a project surveying the present state of knowledge of the biogeochemical cycles of three such elements, viz., nitrogen, phosphorus and sulphur. During the autumn of 1975 a preliminary document concerning the three cycles was jointly prepared by staff of the Department of Microbiology, the Swedish University of Agriculture, Forestry and Veterinary Medicine, Uppsala, the Departments of Meteorology and Geology, University of Stockholm, and the Department of Limnology and the Division of Hydrology of the Department of Physical Geography, University of Uppsala.

A workshop was arranged by the Swedish SCOPE Committee during December 14–18 at Friiberghs Herrgård, a conference hotel close to Uppsala, Sweden. In order to ensure careful discussion and thorough criticism of the document compiled, international experts from different disciplines related to the cycling of nitrogen, phosphorus and sulphur were invited to the workshop. A list of participants is given at the end of this volume.

After consideration of suggestions made by the participants at the meeting concerning new data supplied, further literature for checking and verbal structuring of selected parts of the cycles, the final reports are now presented.

During the preparation of the preliminary document for the workshop and during the meeting it was felt that apart of the three main chapters on nitrogen, phosphorus and sulphur, and some special subjects related to the cycling of the three elements should be dealt with in separate papers. Therefore some other reports also appear in this volume. It should also be pointed out that, as a result of a preparatory SCOPE meeting in Moscow in November 1974, a report has been published in the USSR which is very pertinent to the present volume, viz., Kovda, V.A. 1976. *Biogeochemical Cycles in Nature and their Modification by Man*. Soviet Committee for SCOPE and Publishing House Nauka: Moscow, 74 pp.

The workshop participants are greatly thanked for their readiness to impart their knowledge and scientific spirit at the workshop discussions and subsequently in inspiring correspondence with the various authors. The editors would also like to thank R.E. Munn, who critically checked the manuscripts and offered many valuable suggestions.

We wish to record our appreciation of G. Pettersson for her skill and patience in typing and retyping manuscripts for the workshop as well as for this volume. We would also like to thank R. Kumar, who thoroughly read all the manuscripts for language and also translated some texts. Finally, thanks are given to all the authors for creating a cooperative atmosphere, which made the editorial work an easy and pleasurable task.

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B.H. Svensson & R. Söderlund