

## *Preface*

This little book is a first attempt to consider the biogeochemistry of the globe from a holistic point of view. To date investigations have been focused on the flux and reservoir amounts of individual substances, primarily carbon, nitrogen, phosphorus, sulphur, and water because of their major biological importance. The Scientific Committee on Problems of the Environment (SCOPE) has initiated and sponsored numerous workshops and symposia on these individual cycles and several important publications have emerged. However, it has become increasingly apparent that a realistic understanding of individual cycles is not possible in isolation from other interacting cycles, and although integrative analyses are awesome, it is clear that attempts must be made to take a more holistic approach to global biogeochemistry. This new approach is especially important now because of man's increasing alteration of global cycles. Distortion of cycles by human activities may now equal or exceed present-day natural fluxes for certain elements (e.g. sulphur and carbon) or processes (e.g. erosion). Currently two major, widespread environmental problems, carbon dioxide effects on climate and acid precipitation, illustrate the urgency for quantitative answers relative to changes in the atmospheric emissions of carbon, sulphur, and nitrogen due to increased combustion of fossil fuels. These perturbations affect a variety of other cycles and, obviously, other cycles affect them, all combining to affect human welfare.

The papers of this symposium, presented in Stockholm during June of 1979, point to some of the interactions, raise some of the questions and problems of empirical measurement and socio-economic impact, provide some future directions for research and monitoring, and list some goals. It will remain for future research and publications to provide quantitative answers to these questions on a global scale.

*February 1980*

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