information collected mostly in the last two decades has been presented lucidly with numerous tables, charts, diagrams and other illustrations. The book is bound to be welcomed by scientists and engineers generally, and the graduate students in limnology and related fields of environmental sciences in particular.

The addition of a subject index and an index to lakes given at the end will be found very useful. The printing and get-up of the book is excellent.

M. B. R. RAO

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PHYSICS AND CHEMISTRY OF THE EARTH, Vol. 10, No. 2, 1977, Eds. L. H. Ahrens, F. Press, and S. K. Runcorn, Pergamon Press, New York.

Nearly a decade of intensive investigations of the lunar samples returned by the American and Russian space missions have generated such an enormous amount of data concerning different areas of lunar science that most interested readers may be lost on the essential conclusions and broad implications thereof. There is therefore an important need to critically assess the research to date so as to focus on the significant findings and to define the directions for further work.

The two review articles on two distinct aspects of lunar science appearing in the 'Physics and Chemistry of the Earth' Vol. 10, No. 2, 1977 serve precisely the above purpose and should hence be welcome to the fraternity of lunar and earth scientists as a whole.

The first article by D. S. Burnett and D. S. Woolum critically examines the available data on the effects of particle bombardment of lunar rocks as distinct from lunar soil. Five different types of irradiations have been demonstrated experimentally which can alter the physical, chemical or isotopic composition of a lunar rock fragment: (1) interplanetary micrometeorites, (2) galactic cosmic rays, (3) solar flare particles, (4) solar wind ions, and (5) ions and atoms from the tenuous lunar atmosphere. The effects of these particle irradiations serve as tracers to study the various lunar surface processes such as formation time of lunar craters, erosion rates for lunar rocks. The article explains the criteria for particle exposure data to relate to physically meaningful events in lunar history and determines 'to what degree the conclusions which can be drawn *in principle* from such data have *in fact* been accomplished'.

The second article by L. E. Nyquist is addressed specifically to the summary and evaluation of the results of the study of returned lunar rocks and soils by the Rb-Sr method. The Rb-Sr systematics in lunar rocks and soil have been related to the various events in lunar chronology, the main episodes being: (1) formation of the Moon about 4.6 A.E. ago, (2) a period of intense bombardment by planetary debris resulting in the formation of the major lunar basins, (3) the end of this period at 3.9 – 4.0 A.E. ago, (4) a period of mare flooding extending from 3.9 to about 3.2 A.E. ago, and (5) a relatively quiescent period from about 3.2 A.E. ago to the present. In addition, the initial $^{87}Sr/^{86}Sr$ ratios in different lunar materials have provided valuable information on the geochemical evolution of the Moon.

Both the articles are well written and will greatly aid the interested reader to grasp the essential findings from the maze of data which have been obtained in the above two areas of lunar science.

K. GOPALAN