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See table of contents

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to the non-specialist and is marred only by the omission of a range chart.

I was sorry to see no discussion of fossil dinoflagellate lineages, one of the major breakthroughs of the past decade. Such studies are ultimately providing more biostratigraphic control. Paleoecological studies have also shown the importance of the peridiniacean-gonyaulacacean ratio, which is often a useful guide to water depths and/or proximity to shore.

Any publication reflects the inherent interests of its author. Obviously, Dr. Sarjeant's forte lies in the suprageneric classification of fossil dinoflagellates which is given eight pages in the Appendix. It should be borne in mind however, that the familial classification is somewhat speculative and not universally accepted.

The book is written throughout in a lucid, entertaining style. The illustrations are adequate although the absence of the magnification factor in the text-figures is disconcerting. One is left with the impression of a professional product well worth the purchase price, unless you are fortunate enough to receive a complimentary copy for review.

MS received February 17, 1976.

Geological Survey of Canada Report of Activities, Part C

Officers of the Geological Survey of Canada
Geol. Survey Can. Paper 75-1C, 371 p., soft cover, 1975.
$5.00 ($6.00 outside Canada)

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The *Report of Activities, Part C* which is 371 pages in length, has a convenient 8½ x 11 inch format with a two-column layout giving the authors a choice of one- or two-column widths for figures. The text is easy to read, well written, and well edited. The cover is attractive, and the book is well bound. Except for a few map- and photo-reductions, the figures are well drawn and easily read. Considering the short production period for this report, it is an impressive volume and all who contributed to it are to be congratulated.

The text includes six papers on geochemistry, 13 on geophysics, four on marine geoscience, 11 on mineral deposits, two on Precambrian geology and petrology, 10 on Quaternary geology, and 14 on stratigraphy.

Geochemistry. Lake water samples from Baffin Island, British Columbia, Canadian Shield, and Ontario, and groundwater samples from 2000 wells in the Maritimes were collected for uranium analysis and, in some cases, base metal analysis. The results of those analyses conducted in the field are reported, and the new developments in sampling techniques of lake water are given.

Geophysics. Information on impulse radar, gamma-ray, relative permittivity, and ground magnetic surveys are presented. Part of the studies were done to develop and refine new techniques, and the remainder of the studies were done to apply geophysics to geological investigations such as the bedrock topography of the eastern Niagara Peninsula. For the Cavendish geophysical test range in Ontario, ground magnetic, hammer refraction seismic, and gravity data are specifically recorded. Developments of the "Impulse radar method" and the "Electrical Polarization mechanism model" along with the determination of soil moisture from permittivity measurements are among the new developments.

Marine Geoscience. This subject is dealt with in two papers on foraminifera, one paper on the Meguma Group of sediments, and another on the storage of geological samples.

Mineral Deposits. Project Appalachia is the subject of six of the eleven papers, and eight of the eleven papers deal with statistical analysis and organization of mineral deposits data. "Project Appalachia seeks to develop and apply methods of combining information and concepts on regional geology, mineral deposits, and mathematics in computer-aided regional mineral resources appraisal".

Precambrian Geology. Two papers deal with this subject; one on petrology and another on aerial geology.

Quaternary Geology. Papers are presented on all aspects of Quaternary geology including drilling equipment, mapping and evaluation systems, postglacial sea-level fluctuations, weathering, marine geology, and the Gatineau River.

Stratigraphy. Twelve of the fourteen papers on this section are restricted to northern Canada. Eleven are concerned primarily with areal geology and the remaining three papers deal with processes affecting strata including diagenesis and quantification of sulphur-bearing minerals.

Although this Report is an impressive volume, there is some room for improvement. Some reports lack organization and are too long for such a report of activities. It is recommended that the editor restrict each report to two pages which would make it possible for him to have an organized Table of Contents instead of the random one in this report. Futhermore, it is recommended that wherever possible the report be subdivided into: objective, methods, results, and conclusions with a few pertinent references. In my opinion, the paper by Vilks and Rashid and by Veillette and Nixon are excellent examples being two pages long, well illustrated, and clearly displaying their internal organization.

In many papers only the objective and sampling programs are reported because the laboratory analyses were not available. The report would be much more informative if these results were included.

This report represents a monumental effort on the part of authors, editors, producers, and others. The rapid reporting on last year's activities represents a major achievement. Clearly this report should be in every geological library in North America to inform earth scientists of the activities of our largest geological institution.

MS received February 27, 1976.

Soil Mechanics - New Horizons

Edited by I. K. Lee
American Elsevier Publishing Company, Inc., New York, 286 p., 1974.
$28.50

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This book would be of little interest and of little value to the non-specialist profesisonal earth scientist and of little additional interest and value to the specialist earth scientist. It is largely directed towards the geotechnical engineering community and, specifically, to those persons in that community specializing in predicting quantitatively the behaviour of soil.

The title is very misleading. As a person who is slightly bored in his present technical rut I was looking forward to reading the book, anticipating that I would be challenged by new findings and new ideas related to the "new horizons". I was disappointed in what I found, which was a collection of seven rather unrelated chapters, six of which concern topics which have been parts of soil mechanics and foundation engineering for a long time. This is not to say that the materials contained in the chapters were of pedestrian quality - in most cases the materials were very recent theoretical and analytical achievements concerning these topics, and a title of *Soil Mechanics - Some Recent Theoretical and Analytical Achievements* would have better described the contents but perhaps would not have sold as many copies. The Preface states that the book is a complementary volume to an earlier book *Soil Mechanics - Selected Topics* by the same editor and published by Butterworths, London (1968), and, no doubt, the new book would be valuable if used in this way.

There is one chapter which is an exception to the previous comments and it is entitled *Application of Statistics in Soil Mechanics* by Peter Lumb. This is a new horizon in soil mechanics where it has been traditional to take the deterministic approach when evaluating soil properties and predicting soil behaviour, and Lumb rightly states, as others have done previously, that there are variations in soils which must exist because of random characteristics of certain natural processes. The suggestion that probability theory could help has not been widely accepted by "soil mechanics" people. For my personal taste the chapter is too heavily weighted towards mathematical techniques, which are excellently presented, and it does not deal adequately (in the opinion of a non-user of statistics) with questions concerning the relative merits of deterministic and probabilistic approaches to certain soil mechanics topics and nothing is said concerning the selection of data prior to their inclusion into any analysis.

The book is not worth the price of nearly thirty dollars.

MS received December 10, 1975.