

## REVIEW

## METHODS IN PALEOMAGNETISM

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METHODS IN PALEOMAGNETISM, edited by D. W. Collinson, K. M. Creer, and S. K. Runcorn; Elsevier Publishing Company, Amsterdam, 1967, xviii + 609 pp., 327 illus., 39 tables, \$40.00

This monumental volume, constituting the third in Elsevier's "Developments in Solid Earth Geophysics" series, contains the proceedings of the NATO Advanced Study Institute on Paleomagnetic Methods, held in the Physics Department of the University of Newcastle upon Tyne, April 1-10, 1964. The above statement is largely correct even though a few papers which described recent paleomagnetic results and interpretations have been deleted and others, not presented at the meeting, have been included to provide a more complete account. The reviewer, one of the United States' participants at this meeting, is in whole-hearted agreement with this policy for it tends to ensure as complete coverage of the whole subject of measurement techniques and instrumentation as possible within a single volume at this time. Even though the price is high, the book will prove invaluable for researchers in this field. As noted by the editors, it is indeed unfortunate that the discussions (taped in their entirety) which followed the presentation of papers were omitted; the specific points brought out in these discussions, both pro and con the methods and results described by the individual authors, would have been of inestimable value to others seeking to use their techniques or duplicate their experiments. The omission constitutes a distinct loss to paleomagnetic research.

The volume contains 84 papers by 59 authors, which have been divided into 8 chapters. These are:

- 1) sampling techniques in the field
- 2) measurement of natural remanent magnetization
- 3) procedures to test the stability of magnetization
- 4) presentation and analysis of data
- 5) measurement of isotropic and anisotropic susceptibility

- 6) magnetic measurements in applied fields
- 7) techniques for the study of magnetic components in rocks, and
- 8) miscellaneous laboratory facilities.

The second chapter, primarily instrumental, was further subdivided into sections such as I) astatic magnetometers II) ballistic and spinner magnetometers III) fluxgate magnetometers and IV) principles of measurement.

It is possible that the scope of this study institute may best be illustrated by the character and distribution of those selected as participants. While a large number (64) of the total of 157 in attendance came from England, there were 25 from the United States, 16 from Germany, 14 from the Netherlands, 8 from Norway, 7 from France, 7 from Canada and one or two each from Japan, Greece, Turkey, Italy, Russia, Denmark, Guyana, Rhodesia, Argentina, and India. They came from universities, research laboratories, NSF, geological surveys, oil company research, etc., and from the disciplines of geology, physics, geophysics, oceanography, archeology, meteorology, and other branches of the physical sciences. In regard to international experience in this field, no more thorough coverage could be found at any meeting anywhere . . . and this is shown in the papers of the volume. One cannot review the points made in eighty-four papers; as always, in the case of such profusion, treatment varies from exceedingly thorough to rather sketchy. However, the mean is very high and the content is excellent. The illustrations are well printed and in sufficient number. The bibliographies accompanying each article provide an almost complete listing of work done in this field. By far the most serious criticism which can be made of this work is the poor index provided; the use of less than three pages to enable the reader to locate technical material covering over six hundred pages indicates the futility of this manner of search. Fortunately the table of contents, longer than the index, aids in this regard but leaves a serious problem in a book of this value and cost.