

## BOOK REVIEWS

**EARTH SCIENCE JOURNAL**, published by the Waikato Geological Society, Vol. 1, No. 1, May 1967.

Earth Science Journal appeared on the New Zealand scene in May 1967. The aim of the journal is to present papers reporting original research, and reviews and summaries of the present state of knowledge in the various branches of the earth sciences. In particular it is hoped to present papers which explore the inter-relations of these sciences and describe research which overlaps the borders of traditional disciplines. These aims classify the journal as a valuable addition to the very short list of New Zealand scientific periodicals that cover a relatively wide field.

Page size is  $9\frac{1}{2} \times 7\frac{1}{4}$  inches, and the first issue, of 117 pages comprising nine papers and an informative section of book reviews, is an extremely ambitious undertaking for any organization. It is hoped that circumstances permit this initially high standard to be maintained — and even bettered.

Hydrologists, climatologists, pedologists, geologists, geomorphologists, ecologists, physical geographers and others will surely welcome Earth Science Journal.

P.J.G.

**INTERNATIONAL SYMPOSIUM ON FOREST HYDROLOGY.** Proceedings of a National Science Foundation Advanced Science Seminar held at Pennsylvania State University. 813 pp. Editors W. E. Sopper and H. W. Lull. Oxford, Pergamon Press, March 1967, (U.K.) £15 15s. net.

This well bound and excellently presented book, with a page size of  $10 \times 6\frac{1}{2}$  inches, is the first publication to bring into focus on an international scale the activities and current knowledge in forest hydrology. It will be of immense value to hydrologists and foresters; to the latter concerned with the physiological processes of water economy and wood growth, and also to foresters in the field of watershed management.

The papers are published under the symposium headings:

Session I: Résumés of Forest Hydrology Research (20 papers).

Session II: Forests and Precipitation (12 papers).

Session III: Forests and Soil Water (12 papers).

Session IV: Forests and Evapotranspiration (11 papers).

Session V: Forests and Run-off (9 papers).

Session VI: Forests and Soil Stabilization (9 papers).

Session VII: Research Techniques and Instrumentation (8 papers).

Panel Discussion of New Instruments (5 papers).

Session I must come as somewhat of a revelation to the majority of readers. It enables an improved appreciation of problems in other countries and outlines the research that is being undertaken or proposed. Consequently this general but extremely valuable session supplies the means of assessing national affinities and improving technical liaison. Furthermore, workers in countries with closely related problems may reasonably assess the relative size of their own problems. In this matter we in New Zealand may deduce that many of our forest hydrology problems are closely paralleled in Japan and Taiwan, although the magnitude of Taiwan's problems of flooding and sedimentation is probably greater than that of ours.

From Japan it is of special interest to read (p. 60): "The first forest experiment stations were opened in 1906, seven years later than the experiment at Emmental in Switzerland and four years earlier than the Wagon Wheel Gap Experiment Forest in Colorado." From Czechoslovakia comes the statement (p. 32): ". . . that with extremely heavy rainfall, no forest is able to prevent catastrophic events from developing even in entirely forested watersheds." The same conclusion has been advanced by this reviewer, and it could apply to a great number of New Zealand's forested mountain catchments. Many worthwhile thoughts must arise from Session I alone, and administrators will find much of value concerning the organization and control of this work in other countries.

Following the papers of Sessions I to VII and the panel discussion of new instruments, the ensuing general discussion is published. As all who have attended symposia well know, there is much valuable comment and food for thought conveyed during discussion time. The publication of discussion further enhances the technical standard of this book.

The final paper of each session summarizes the session's content, and in many cases highlights the deficiencies of present knowledge and the need for research in certain directions. Hence in the summary of Session IV (p. 493) we find the author issuing a reminder that foresters are concerned with *forests* (not single trees), and expressing distress that the ecological approach has been somewhat neglected in the papers presented.

In the summary paper of Session II (p. 241) attention was drawn to the fact that there was no discussion of the effect of forests on gross precipitation — the inference being that participants apparently agree with Penman: ". . . that in the absence of convincing data we must carry forward the assumption that the mere presence of forest cover does not of itself affect gross precipitation over an area." Both in this session and in others the need was highlighted for terms to be defined and accepted internationally.

No review could do justice to the technical content of this work, which could be said to serve two important purposes: to bring workers up to date, and to make them more conscious of the deficiencies and empiricisms of forest hydrology. Every reader will find much of interest — indeed almost too much. The subject is too broad; there is a need to collect all knowledge of each facet of forest hydrology and summarize it separately. This is particularly desirable for precipitation sampling, interception loss, vegetation and run-off, and evapotranspiration. A series of follow-up works would be rewarding both for science and for the publisher.

Forest hydrology throughout the world is indebted to the sponsors and organizers of the International Symposium on Forest Hydrology, to the editors for the excellent standard of presentation, and to the publishers for the production of a fine book. It will rank as a monumental work on the science of forest hydrology.

P.J.G.