

THE SECOND INTERNATIONAL CONFERENCE ON
GEOPHYSICS OF THE EARTH AND THE OCEANS,

JANUARY 15-19, 1973, SYDNEY

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ABSTRACT

The Second International Conference on Geophysics of the Earth and the Oceans was held at Sydney University in January. Over 450 delegates attended the Conference from all over Australia and from many overseas countries. The undoubted success of this Second Conference has established it as a continuing series of Conferences. A particularly wide range of topics were covered both in the Invited Papers and in the many excellent contributed articles. The rapid development of the field of geophysics was reflected in the introduction of several topics that were not discussed at the First Conference in 1970.

The history of the International Conference on Geophysics of the Earth and the Oceans goes back to a date late in 1968. Professor Beryl Nashar and Professor C.D. Ellyett, both of the University of Newcastle, discussed the possibility of running a Conference to review the status of geophysical exploration at that time. In due course, a Committee was formed early in 1969, with Professor Ellyett in the chair, and held regular monthly meetings at the School of Physics, in the University of New South Wales. The result of this activity was the First International Conference on Geophysics of the Earth and the Oceans, which was held in January 1970, at the Science

Theatre of the University of New South Wales. The Conference was a tremendous success with 420 delegates attending from most parts of Australia and from a few overseas countries.

One of the important aspects of this Conference was that it was the first opportunity for geophysicists to meet each other. The Australian Society of Exploration Geophysicists held a preliminary meeting during the Conference; it has since become a well established professional society with a Bulletin that is rapidly acquiring international status.

During the period after the Confer-

ference it was decided to initiate the organization of the Second Conference. The membership of the Committee changed a little but with Professor Ellyett remaining in the chair it was assured of continuing its purpose efficiently. In the light of experience gained from the First Conference the Committee allowed itself 2 years to prepare for the Second Conference.

In the period between the two Conferences the mining industry and in particular the exploration activity had gone from boom to recession. At one stage the Committee seriously considered either postponing or cancelling the Conference. The financial situation however became sufficiently stable to allow the Conference to proceed with a somewhat limited budget.

On January 15, 1973, Mr. H.D.Black, Chancellor of the University of Sydney, and Dr. N.Fisher, Director of the Bureau of Mineral Resources, Canberra, together opened the Second International Conference on Geophysics of the Earth and the Oceans. Mr. Black gave an economic "overview" of Australia in relation to expansion of the economy and the changing international relations. Dr. Fisher reported on the present level of geophysical activity in Australia.

Following the Opening Ceremony, Dr. P.N.S. O'Brien, from the B.P. Research Group in London and the first of the Invited Speakers, gave a very informative talk on the present and future trends in research in the seismic method of prospecting for oil. The contributed papers that followed included Dr.Levin's analysis

of the accuracy of velocities from seismic data and Mr. D.King's talk on digital processing of the data from the Warramunga seismic array at Tennant Creek. The parallel session was entirely devoted to geophysics in the search for groundwater.

The second day of the Conference saw Dr. D.S.Parasnis give an illuminating talk on the problems encountered in mining geophysics. He also raised some interesting concepts of the future trends in techniques. The main session of contributed papers was devoted to topics related to the geophysics of post- Pre-Cambrian deposits and techniques that could be applied in these regions. The parallel session was an exceedingly informative group of papers related to largely marine geophysical investigations from the Alpine Fault in New Zealand northwards to New Britain.

The third day of the Conference was the occasion for Dr. X.Le Pichon to give his account of the continent-continent collision region between the Indian and Asian plates. It appears that the subduction of a continental plate is similar to the subduction of an oceanic plate but is much more difficult. The papers that followed were concentrated on the northeast Indian ocean. The parallel session was devoted to geochemical exploration tools.

Professor S.H. Ward gave a stimulating paper on multi-frequency electromagnetic methods and showed the results of his research groups' activities in this area. The contributed papers that followed in the morning were devoted to Pre-Cambrian shield

geophysics. The afternoon papers were devoted to various aspects of the field of remote sensing including an account of the Earth Resources Technology Satellite.

The parallel session had a disappointing start with the non-arrival of some of the speakers. The Conference did however get a chance to see picturesque Himalayan geology and inferences were made on the relationship of new observations to the older concepts of continental overriding. The afternoon session contained an interesting group of papers on the Pre-Cambrian shield areas of Western Australia.

Due to the unavailability of Dr. Barringer, who was "somewhere in Africa", Professor Ward was able to give a second talk on numerical inversion of electromagnetic data. This proved to be a very interesting session and has certainly caused many Australian geophysicists to have another look at the possibilities of inversion techniques. The contributed papers that followed were devoted to the newer techniques of modelling and exploration in electromagnetic methods. Some new work on the induced polarisation method was also interesting. The last part of the session was devoted to down-hole geophysics which appears to have reached a useful stage. The parallel session was devoted to large scale seismology but again the session was depleted by the non-arrival of speakers.

In summary therefore the Conference brought together geophysicists to hear about geophysics in the Australian region and the relationship of this to current international developments.

The preparation of a volume of proceedings is presently underway and it should appear in Geoexploration around the end

of the year. This will contain the full text of the Invited Speakers' talks and also revised versions of the Abstracts. There are plenty of spare copies of the Abstracts circulated at the Conference; these are available from the Secretary.

Both Geoexploration and the Bulletin of the A.S.E.G. have expressed interest in publishing the full text of some of the contributed papers. Some papers will be appearing in other journals but it is intended to keep an index of publications arising from the Conference.

At the most recent Conference Committee meeting it was decided that a Third Conference was to be held. A preliminary meeting is scheduled for the 8th May at Sydney University. This meeting will be responsible for selecting a venue, a date and a new Committee. If any person wishes to make any relevant suggestions concerning the proposed Conference they should write to myself or to the Editor of the Bulletin.

My final comment is to sincerely thank all those who made the Conference a success.