

The meeting was immensely successful for all those who took part in it. It was aided by the opportunity to hold preliminary meetings on board the Marco Polo during the Symposium beforehand, but especially by having available the facilities of the Heron Island Research Station, made available by the Director, Dr K. Rohde, and also the assistance in organization of communications and supplies of Dr B. Russell of The Australian Museum. The Group wishes to thank the Heron Island Board, the Director of the Heron Island Research Station, and Dr Russell for this very great assistance which was much appreciated.

The purpose of the meeting was to plan the production of a Handbook of Coral Reef Research methods, and to investigate the relative efficiencies of different techniques and, in the Handbook, to make recommendations. In addition to those present at the meeting, a variety of other authors have been asked to contribute sections to the Handbook. This is under the general editorial direction of Dr Stoddart, with substantial delegation to Dr Johannes (on sections concerning energy and nutrient flux) and to Dr Talbot (in fish). Some sections of the Handbook are already written. Before the Heron Island meeting, discussions had taken place concerning publication. No final plans have been made, but the Group considered it necessary to ensure an appropriate outlet for a volume of this sort with the range of illustration in plates and figures likely to be required.

It is also proposed that work begin on a multilingual dictionary of reef terminology, to be produced by Dr Stoddart, Dr Pichon, and Dr Scheer (covering the English, French and German languages). It was felt that Russian should be added but that no contributor was immediately available. Dr Stoddart agreed to produce and circulate a draft of English terms during 1974.

It was agreed that once the Handbook had been produced the work of the Group had ended, and the Group should at that time be disbanded. The Reef Terminology project would presumably then be continued by the editors as a separate venture, unless SCOR wished to prolong the life of the Group for that purpose.

The Group therefore wishes to recommend that it continue in existence until its report is published, with the possibility of an extension to cover the completion of the terminology project. It is not envisaged that any further Group meetings will be required.

The members of the Group wish to thank SCOR for the financial support which made the Heron Island meeting possible.

## ANNEX X

### SCOR WORKING GROUP 40 - PALEO-OCEANOGRAPHY

Report of meeting Norwich, UK, 19-22 May 1973

WG 40 held its first meeting on 19-22 May, in Norwich, England, on the occasion of a conference on the paleoclimatology and paleo-oceanography of the last glaciation and subsequent times. Members present at the meeting of WG 40 were Imbrie, Lamb, Shackleton, Takanayagi and van Andel; absent were Seibold and Lisitzin. Drs Hays, Gates, Webb, van der Hammen and Collinson attended as observers.

The first part of the meeting was dedicated to an exploration of the framework within which the Working Group will operate. Subsequently, and with the aid of the presentations at the Conference, the group explored the present strength and future development of the field of paleo-oceanographic research.

In so doing, the group recognized the following aspects of this rapidly developing field:

(1) the strongly interdisciplinary nature which requires close cooperation of such diverse specialists as marine geologists and paleontologists, physical oceanographers, numerical modellers in both oceanography and climatology, meteorologists and climatologists, palynologists, glaciologists, Quaternary geologists and tree-ring specialists, as well as many others. The breadth of this spectrum provides exceptional opportunities for correlating and interpreting data from many fields, but also renders difficult the establishment of a full dialogue between scientists who have no traditional common meeting ground.

(2) the rapid development in recent years of mathematical and statistical techniques that have, for the first time, made it possible to quantify environmental parameters derived from the oceanic geologic record in a form suitable for input in dynamic models of the circulation of the ocean and atmosphere. By providing quantitative environmental data for past conditions, it is not only becoming possible to model the dynamics of past circulations, but also to test existing models of the present circulation with regard to their power of explanation.

(3) the availability of large data resources, both in raw and processed form and, conversely, the need for enlarging the data reservoir in certain areas.

(4) the significant social and economic implications of a better understanding of the sensitivity of ocean and climate to human interference and of long-term climatic trends, over a scale of a century or so, as they interact with projected economic and social developments.

For convenience, the area of the Working Group may be subdivided into two separate categories: the paleo-oceanography and paleoclimatology of the late Quaternary, and the paleo-oceanography of the past 50 million years or so. Realistically, at the present time, the paleo-oceanography of the Mesozoic and earlier times is not yet accessible to productive research. The Working Group devoted its first meeting mainly to activities in Quaternary paleo-oceanography, and will address the paleo-oceanography of earlier periods of the earth's history at its next meeting.

From a thorough discussion of the field, the group defined three most useful categories of activities: (1) facilitating interdisciplinary communication at the working level, (2) promoting the communication regarding methodology, opportunities, and results in paleo-oceanographic research in the community-at-large, and (3) assisting, by means of recommendations to appropriate international bodies, in increasing the reservoir and accessibility of needed primary data.

As regards the first category, the Working Group proposes the following:

(1) to explore the feasibility of organizing in the USSR a workshop on paleo-oceanography and paleoclimatology of the late Quaternary. This meeting, however, is dependent on USSR confirming a representative on WG 40.

(2) to organize and locate support for a small technical workshop on mathematical and statistical models that permit quantification of environmental data from the geological record for use in dynamic circulation models.

With respect to the second category;

(3) to organize and convene a Symposium on paleo-oceanography at the Joint Oceanographic Assembly in Edinburgh in 1976 as proposed by CMH and agreed by JOA.

(4) to prepare a draft of a report for general distribution in the oceanographic community detailing the opportunities, problems and methodologies of paleo-oceanographic research, illustrated with appropriate examples and a selected bibliography, to be issued preferably under sponsorship of SCOR.

Under the third category, the group formulated several recommendations which it wishes to have considered by SCOR for forwarding to appropriate international bodies for their attention: these will be included in the report mentioned in (4) above.

## ANNEX XI

### SCOR WORKING GROUP 41

#### Morphological Mapping of the Ocean Floor

Status Report 3 January 1974

A. S. Laughton (Chairman)

No further meetings have been held since 2 and 3 April 1973, after which a report dated 1 May 1973 was written, containing recommendations for a new organization for the preparation of a world series of bathymetric charts. After endorsement by the SCOR Executive in Texel, the report was forwarded to the Director, IHO.

On 5 and 6 June, the ICSU/IHB/IAPSO GEBCO Committee met in Monaco to consider the future of the GEBCO 1:10 million scale chart series and discussed in particular the report of the SCOR WG 41. The following formal recommendations resulted from the meeting:

"1. The GEBCO Committee recognizes the role played by the IHO as a centre for bathymetric data and invites that organization to continue and to develop further this activity which is essential for the GEBCO programme.

2. The GEBCO Committee recognizes that the present GEBCO series at 1:10 million no longer meets present needs of oceanographers. The members feel that a new series should be undertaken, along the general lines of the recommendations of SCOR WG 41 dated 1 May 1973. It recommends particularly that:

(a) a Guiding Committee for the new General Bathymetric Chart of the Oceans be formed by the IHO and the IOC after consultation with SCOR, IAPSO and the CMG. This Committee, which would replace the existing GEBCO Committee, should meet at the earliest possible opportunity and in any case prior to 1 April 1974,