

# INSTITUTE OF OCEANOGRAPHIC SCIENCES

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JUR REF.

Professor H. Stommel,  
Woods Hole Oceanographic Institution,  
Woods Hole,  
Massachusetts 02543,  
USA

10 July 1980

Dear Henry,

## Indian Ocean Panel of SCOR Working Group 47

The Indian Ocean Panel met at this Institute on 26 and 27 June 1980. Lists of agenda and participants are attached (1, 2). Some changes were made in the order of items dealt with, but the content of the meeting was substantially as indicated.

The main purpose of the meeting, and most of the time, was devoted to brief accounts by everyone concerned of the present state of working on their Indian Ocean results. Theoretical contributions were included as well as observational ones. It was an opportune time to meet, with the equatorial moorings having been recovered in the previous month by the "Marion Dufresne", and some first looks at their results being just ready. I will not attempt to review these accounts here, but will simply report the outcome of discussions of items of business that the panel had to deal with.

1. Ideas about the proposed meeting of all three panels in Venice were discussed at some length in a small group (Leetmaa, Molinari, Schott, Swallow) before the panel meeting, and the attached statement was drafted as a result (3). It was felt that, from the point of view of the Indian Ocean, the set of global equatorial topics suggested by the Atlantic panel would be too rigid and would not reflect well the range of interests of this panel's members. (We would find Jim Luyten having to deal with three or four equatorial topics on his own, and there being room for only one of us to speak about the Somali Current). In further discussion during the panel meeting, it was recognised that some attempt should be made to synthesize results from different oceans, at least for some topics, and that some statement of "what needs to be done next" might be expected. But there was general agreement that the greatest benefit would come from hearing people talk at first hand about what interests them most in other equatorial oceans. Possible dates were discussed, and Monday to Friday 27 April to 1 May 1981, inclusive, were suggested.

2. It was agreed that closer links between MONEX and the Indian Ocean Panel should be encouraged, and that one method would be to offer a contribution to the Conference on Scientific Results of

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MONEX, scheduled to take place in Indonesia in October 1981. Dr. J. Luyten said he would be willing to review the work of the Indian Ocean panel, at that meeting. It is hoped that funds can be found to enable him to attend.

3. No problems were foreseen in submitting data to National Data Centres. The delay in production of temperature maps for the region off Somalia for the summer of 1979 (promised by N.O.D.C., Washington but not yet received) is becoming increasingly serious. Some of us would have compiled temperature maps on our own before now but have been inhibited by expecting better ones from N.O.D.C. It was agreed that those most concerned would write again to the Director, N.O.D.C.

4. There is an obvious need for much of the recent Indian Ocean work to be written up co-operatively. Several possible topics were discussed, and the following tentative list of titles and authors emerged:

Somali Current transports - Leetmaa, Molinari, Wilson, Schott, Saunders, Quadfasel, Luyten.

Water mass analysis - Swallow, Molinari, Quadfasel, Luyten, Codispoti.

Evolution of near surface features - Swallow, Brown, Evans, Bruce, Fieux.

Time series observations (Somali) - Quadfasel, Schott, Luyten.

Time series (Equatorial) - Luyten, Fieux, Gonella.

Equatorial drifters - Fieux, Gonella, Philander, Cadet, Saint-Guily.

Historical data - Fieux, Brown, Swallow.

Biological and nutrient distributions - Smith, Codispoti.

Acoustic shear profiling - Evans, Crocker.

These are all very provisional. Some of the potential authors named were not at the meeting and have not yet been consulted. Work on some topics is already well advanced, others less so. It does not seem necessary, or feasible, to aim at having all these papers published together, though some will naturally be closely related. It was agreed that a real effort should be made to finish these papers before the Venice meeting. First drafts should be ready by November.

The idea of compiling a "regional package" of results was discussed. It was recommended that Dr. D.R. Johnson (Univ. of Miami) should be asked to make a mailing list of appropriate authorities in Kenya and Somalia, and should send them each a package of relevant reports. Participants are reminded that they should send copies of cruise reports and any relevant papers as soon as possible

to Dr. Johnson for distribution.

5. Plans for future work include:

tentatively a cruise in the "Wilkes" in July-Sept. 1982 to study eddies in the Somali Basin and to the northeast of that area (J. Bruce);

the continued acquisition of satellite infrared images of the sea surface off Somalia, it is hoped for the next two years (O. Brown);

further studies of surface currents and thermal structure using satellite-tracked drifters and XBTs launched from "Marion Dufresne" (M. Fieux, J. Gonella).

6. In thinking about the future of the Indian Ocean panel, we recognised that, given the terms of reference of working group 47, it must soon cease to exist. However, we feel that there is still a need for a co-ordinated effort to understand the response of the western equatorial Indian Ocean to the monsoon winds. The attached note (4) was drafted in an attempt to express this need.

Finally, on behalf of the panel, I should like to thank SCOR and IOC for their continued support.

Yours sincerely,

*John Swallow*

J.C. Swallow  
Chairman, Indian Ocean Panel of SCOR WG 47

Copies to: G.E. Hemmen ✓  
 M. Ruivo  
 P. Hisard  
 B. Taft  
 S.S. Hodkin  
 participants

encs.

SCOR WG47 Indian Ocean Panel Meeting

26 & 27 June 1980, I.O.S. Wormley

- revised tentative agenda -

Thursday 26 June

1. Introduction

0930 - J. Swallow

2. Theory pertinent to Indian Ocean

0945 - Equatorial theoretical panel meeting reviewed -  
D. Moore.

Discussion of equatorial theory - possible contributions  
from D. Anderson, A. Gill, J. McCreary, B. Saint-Guily  
... et al.

1115 - Break

3. Equatorial observations

1130 - J. Luyten

1200 - R. Frassetto

1220 - M. Fieux, J. Gonella

1300-1415 - Break for lunch

4. Arabian Sea Observations

1415 - J. Sastry

5. Indian Ocean Winds

1445 - D. Moore, F. Schott (Somali coast), J. Gonella (equatorial

1530 - Break

6. Somali Current

- 1545 - array measurements - F. Schott
- 1615 - surface temperatures - O. Brown, R. Evans
- 1645 - tanker XBTs, Wilkes survey - J. Bruce
- 1715 - Researcher observations - A. Leetmaa, R. Molinari  
(finish at 1745)

- c. 1800 You are invited to come and spend the evening with the Swallows.

Friday 27 June

6. Somali Current (cont'd)

- 0930 - A. Leetmaa, R. Molinari, D. Wilson
- 1000 - R. Quadfasel, P. Saunders, J. Swallow
- 1045 - S. Smith

1105 - Break

7. General discussion (all topics)

1120 - 1300

1300-1415 - Break for lunch

8. Panel business meeting (all welcome)

- 1415 - (1) discuss proposed 3-panel meeting (Venice, April or May 1981)
- (2) input from panel to other meetings e.g. MONEX (F.S.U. and Malaysia)
- (3) relationships with World Data Centres - review state of input and output.
- (4) consider possible cooperative publications, (including regional compilation of results off Kenya)
- (5) Future work in Indian Ocean. Monitoring?
- (6) Discuss future of panel. Is there a need for a continuing SCOR working group on equatorial oceanography?

8. Panel business meeting (cont'd)

- (7) Draft contributions to report to SCOR
- (8) Any other business

Note: I think item (4) is particularly important, and may be best pursued in small groups having a common interest. I suggest that we try to deal quickly with the other items of business in order to leave time for such groups to continue their discussions.

(Finish by 1700)

- D. Anderson Dept. of Applied Mathematics and Theoretical Physics,  
Silver Street, Cambridge CB3 9EW U.K.
- O. Brown R.S.M.A.S., University of Miami, 4600 Rickenbacker Causeway,  
Miami, Florida 33149, U.S.A.
- J. Bruce Woods Hole Oceanographic Institution, Woods Hole,  
Massachusetts 02540, U.S.A.
- R. Evans R.S.M.A.S., University of Miami, 4600 Rickenbacker Causeway,  
Miami, Florida 33149, U.S.A.
- M. Fieux Laboratoire Oceanographie Physique-MNHN, 43 rue Cuvier,  
75005 Paris, France
- R. Frassetto Palazzo Papadopoli, 1364 San Polo, Venice 30125, Italy
- A. Gill Dept. of Applied Maths. & Theoretical Physics, Silver Street,  
Cambridge, CB3 9EW U.K.
- J. Gonella Lab. Oceanographie Physique-Museum,  
43-45 rue Cuvier, 75231 Paris Cedex 05, France
- A. Leetmaa NOAA/AOML/PhOL, 15 Rickenbacker Causeway, Miami, Florida 33149,  
U.S.A.
- J. Luyten Woods Hole Oceanographic Inst., Woods Hole, Massachusetts 02540  
U.S.A.
- J. McCreary Nova University, Ocean Sciences Centre, 8000 N. Oceans Drive,  
Dania, Florida, U.S.A.
- R. Molinari NOAA/AOML/PhOL, 15 Rickenbacker Causeway, Miami, Florida 33149,  
U.S.A.
- D. Moore JIMAR, 2525 Correa Road, Honolulu, Hawaii 96822, U.S.A.
- R. Quadfasel Inst. of Oceanographic Sciences, Wormley, Godalming, Surrey, U.K.
- B. Saint-Guilly Laboratoire Oceanographie Physique-Museum, 43-45 rue Cuvier,  
75231 Paris Cedex 05, France
- J. Sastry National Institute of Oceanography, P.O. NIO, Dona Paula,  
Goa 403004, India
- P. Saunders Inst. of Oceanographic Sciences, Wormley, Godalming, Surrey U.K.
- F. Schott R.S.M.A.S., University of Miami, 4600 Rickenbacker Causeway,  
Miami, Florida 33149, U.S.A.
- S. Smith Brookhaven National Laboratory, Building 318, Upton,  
New York 11973, U.S.A.
- J. Swallow I.O.S., Wormley, Godalming, Surrey, U.K.
- D. Wilson R.S.M.A.S., University of Miami, 4600 Rickenbacker Causeway,  
Miami, Florida 33149, U.S.A.

A) Venice Meeting:

The most useful function of the Venice meeting would be to have a joint presentation of results taken during 1979 from the equatorial regions of the three oceans to facilitate exchange of ideas between investigators from the different oceans. How can this be most effectively done? It seems to us that to achieve this, the structure of the meeting should consider the following points:

- 1 There should be plenty of time for informal discussions and meetings.
- 2) There should be the best possible, concise, formal presentation of the results from each ocean.

This might best be done by structuring the meeting as follows:-

Formal presentations in the morning perhaps limited to a total of 3 hours - one morning per ocean - the number and type of presentations during each session would be determined by the panel of each ocean to best display their results;

The afternoons would be free for poster sessions and informal discussions;

The poster presentations would be up for the duration of the meeting;

There could be a fourth morning session to discuss advances that were made in theoretical studies of the equatorial oceans;

Possibly one session could be organised to summarise the observed similarities between phenomena in the three oceans (if enough material exists).

What is the Future of the Indian Ocean Panel of SCOR WG 47?

1 Since by the May 1981 Venice meeting this panel will have served its function for the FGGE program, we feel that it at that time should be dissolved. However, needs for co-operation in analysis of previously taken data and planning for future experiments, dictate the need for the formation of a new SCOR Working Group.

2) We propose the formation of a new SCOR Working Group  
"The Monsoon Response of the Western Equatorial Indian Ocean"

Terms of Reference:- To extract from the present still diffuse body of information about seasonally varying circulations in the Western Indian Ocean a clear plan for future studies in this area, and to assist in the design of the proposed CINCWIO program.

- To plan and co-ordinate studies of the effects of time-varying equatorial phenomena on the generation of currents along the East African coast.

- A program needs to be designed to study the circulation patterns during the NE Monsoon about which little is known at present.

The need for such a group is dictated by the following considerations:-

Studies conducted during the past five years suggest a radically different picture of the circulation patterns that was set forth on the basis of the IIOE results. A thorough study of all existing data needs to be conducted to come up with a uniform picture.

Future studies require co-ordination between investigators from different countries (including the USSR) and help in obtaining permission to work with and in the waters of the coastal states along the East African coast.