

tidal dissipation has been established by Christopher Garrett.

The ESSA (Miami) group is getting set for employing Filloux tide gauges during September to study the  $M_2$  node in the Gulf of Mexico and the tide in Yucatan Channel. Current meters will be deployed in the latter location. One principal goal is to study the  $M_2$ - $S_2$  difference in this location.

The ESSA (Seattle) group under the leadership of Capt. Barbee has been making measurements of internal tides off the continental shelf. Apparently, such internal tides are generated at the break of the shelf by mode coupling and propagating seaward along predictable "rays".

At the Scripps Institution we have occupied stations offshore from California, and these form the basis of the paper by Munk, Snodgrass, and Wimbush: Tides Off-Shore: Transition from California Coastal to Deep-Sea Waters, Geophysical Fluid Dynamics, Vol. 1, pp. 161-235, 1970. I think the work has served to clarify the cotidal structure in this part of the world. We now plan for a special cruise this October to occupy stations surrounding the alleged  $M_2$  amphidrome.

Frank Snodgrass made a successful drop and recovery of three capsules at  $40^\circ$ ,  $50^\circ$  and  $60^\circ$ S between Australia and Antarctica. The duration was approximately a month. Most of the equipment worked, and the tides show a sensible continuity between the Antarctic and Australian continents.

Our main emphasis for the next year will be the design and construction of a capsule which is to remain on the sea floor unattended for one year.

Walter H. Munk, Chairman

ANNEX VI

REPORT ON SCOR WORKING GROUP 28  
AIR-SEA INTERACTION

Interim Report of Proceedings, 1967-1970

Meetings

The Joint Committee met in Lucerne (September 1967) and in Princeton (January 1969). Minutes of these meetings have been widely circulated. A third meeting planned for Tokyo (September 1970) was postponed until the XV General Assembly (Moscow July/August 1971).

Members of the Committee have met informally on several occasions to discuss particular aspects of the work.

Composition

The Committee is now sponsored by SCOR as well as IAMAP and IAPSO and the terms of reference have been amended accordingly. It is also designated SCOR Working Group 28.

Coordination has been maintained with IOC and WMO and especially with the ICSU/WMO JOC for GARP. At the suggestion of JOC, Dr. K. Bryan and Professor S.S. Zilitinkevich have been co-opted to the Committee.

## Symposia

No IAMAP/IAPSO/SCOR symposium on air-sea interaction has been held since the XIV General Assembly but two to three days will be devoted to this topic at the Moscow General Assembly.

Air-sea interaction has been discussed at many meetings, however; its importance to both meteorology and oceanography is now well appreciated.

The Committee urges that the strong links between IAMAP and IAPSO be maintained and regrets that there is to be no inter-Assembly meeting between them.

## Activities

The intercalibration trials have proved valuable. Results from those at UBC (August 1968) have already been published.

The land trials in Australia have been followed by a series in the USSR.

Continuing efforts are being made to advise the JOC for GARP on the incorporation of the oceanic and atmospheric boundary layers into numerical models of the general circulation of the atmosphere. The difficulties involved, in both concept and technique, are being increasingly recognized; rapid progress is not to be expected.

Members of the Committee took part in a meeting of the Interim Planning Group on the GARP Tropical Experiment in the Atlantic (London, July 1970) and it is likely that the Committee will be asked to advise the Tropical Experiment Board when it is set up.

The Committee was represented at an IGOSS Executive Coordination Committee Meeting (Paris, July 1970) where attempts were made to put the IGOSS proposals into a more realistic basis.

## Future Activities

It is hoped that the Committee will meet in Moscow at the XV General Assembly, where symposia on Air-Sea Interaction are being organized.

The terms of reference of the Committee require it to review the requirements and foster research within the field of air-sea interaction. This has so far been done by personal example and precept. Now individual work is gradually being integrated into national efforts and no opportunity for international collaboration is being lost.

Apart from this, the Committee's function is largely advisory, particularly to bodies like the JOC for GARP. The initial difficulties of specifying the problems and identifying realistic proposals have largely been overcome and this aspect of the work seems likely to be increasingly useful in the future.

H. Charnock, Chairman  
Southampton, 1 September 1970