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INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION
(of Unesco)

CONTRIBUTION OF THE FEDERAL REPUBLIC OF GERMANY
IN SUPPORT OF THE UNESCO/IOC PROGRAMME IN THE EASTERN MEDITERRANEAN (POEM)
AND THE IOC PROGRAMMES IN THE INDIAN OCEAN AND ADJACENT SEAS AND GULFS

10 MARS 1986

1. INTRODUCTION

The Government of the Federal Republic of Germany wishes to contribute to the Unesco/IOC programmes on Physical Oceanography of the Eastern Mediterranean (POEM) as well as to the IOC Programme in the North Central Indian Ocean (IOCINDIO) by sending its new research Vessel R.V. "Meteor" on expedition to the above regions during 1986 and 1987 and by organizing regional training courses in specialized fields.

The expedition will be open to participation of scientists from several countries bordering the Eastern Mediterranean Sea, the Red Sea, and the Western and Eastern Indian Ocean as well. The cruise will be in the tradition of the International Indian Ocean Expedition in which the former METEOR participated at her maiden voyage more than 20 years ago.

2. EXPEDITION OF R.V. METEOR

2.1 PROGRAMME

The investigations will be carried out in the interdisciplinary fields of ocean sciences, with biological oceanography playing a prominent role. In the research programme the following important project proposals listed by the IOC/Unesco Workshop on regional co-operation in Marine Science in the Central Indian Ocean and Adjacent Seas and Gulfs, Colombo, 8-13 July 1985 are included:

- distribution of oceanic marine resources in relation to the environment in the Arabian Sea (including studies in ichthyoplankton and mesopelagic fish);
- oceanic environmental, pelagic production and living resources of the North Arabian Sea;
- environment and living resources of the Red Sea;
- taxonomic research on marine fauna of the Indian Ocean;
- river input into the Indian Ocean (particularly River Indus);
- geological/geophysical mapping in the CINCWIO area;
- bathymetric survey of continental shelves;
- deep water sediments.

The expedition will consist of 9 legs. In the attached Annex it is outlined in a table how the expedition is scheduled, which oceanic areas will be covered, the number of berths available for invited scientists and which person will be chief scientist at each of the leg. Some more detailed information on the research programmes planned for the selected areas are listed below:

Eastern Mediterranean

- Quantitative distribution of deep water benthos and plankton and its relationship with the hydrography of the region.
- Deep water formation and circulation, chemical oceanography, including modern methodology for nutrient and trace element distribution studies, interbasin exchange, assay of pollutant and biochemical parameters.
(The plans for this leg - as outlined in the POEM Newsletter - take into account the joint attempts by IOC and Unesco to develop a regional network on research and training in physical oceanography in the Eastern Mediterranean).

Red Sea

- Primary production and plankton distribution in relation to physical parameters, such as circulation, currents, salinity and temperature.
- Special studies on sedimentation and degradation of calciferous plankton organisms.
- Distribution and activity of benthos.

Southern Red Sea and Gulf of Aden

- Studies of crustal structures, tectonic and geology.

North Arabian Sea

- Microscale variabilities in the biological, chemical and physical parameters in the upper 150 m water column.
- Physiological reaction of mesopelagic fish to low oxygen environmental situations.

- Sedimentation processes in relation to hydrography.
- Influence of Indus River discharge on the distribution of plankton community.

South Java Sea

- Variabilities in the local circulation of the South-Java current and its influence on the distribution of marine organisms.
- Taxonomy of the marine organisms.

Southern Western Indian Ocean

- Geophysical observations and bathymetric charting.

Overall co-ordinator of the cruise is:

Professor Dr. W. Nellen
Institut für Meereskunde
Düsternbrooker-Weg
D-2300 Kiel, FRG
Tel: 0431 557 45 24
Telex: IFMKD 292619

Prof. Nellen can be contacted for any additional information concerning the cruise and application for participation.

2.2 SELECTION OF PARTICIPANTS JOINING THE CRUISE AND TERMS OF COOPERATION

Chief scientists responsible for various cruise legs have already contacted some scientists in the region who will be invited to join the work in the expedition. Further applications of scientists of the region are invited by the sponsoring organizations of FRG. All selected scientists will be processed by the IOC Bureau, Alfred-Wegener Institut, D-285 Bremerhaven, Federal Republic of Germany. Selection of scientists will be made on the basis of scientific merit, keeping in mind the specialized nature of proposed investigations. In order that the scientists from the region draw maximum benefit from the research opportunities offered by the FRG, the countries will be requested to nominate scientists who could also serve as observers on behalf of their country. Special consideration will be given to scientists from states which are located in the proximity

of the area of investigation. Participants will be provided free board and lodging during the period of the cruise, but transportation to and from the ports of call should be at national expense or might be provided through IOC travel grants.

A limited number of scientists might find financial support and opportunities in German laboratories for the further analysis of data and material.

Cruise reports, data and part of the scientific material collected during the various legs will be made available to scientists for the purpose of their own scientific analytical studies on request to the national IOC Bureau.

3. TRAINING COURSES

3.1 CHARACTER OF COURSES

The following two regional training courses will be organized from FRG contribution to the IOC Trust Fund:

- (i) a regional training course in marine geology will be held in Colombo, Sri Lanka, August/September 1986, for the benefit of scientists from the Indian Ocean region;
- (ii) a regional training course will be held for the benefit of the countries of the IOCINCWIO region. The lectures and necessary field instructions will be held in Port Louis, Mauritius, June/July 1987. This will be followed by a training cruise on-board R.V. Meteor on the transect between Port Louis and Mombasa, Kenya.

3.2 SELECTION OF TRAINEES

Application for the courses will be invited through IOC Circular Letters to the two regions. Selection of candidates will be made by IOC jointly with authorities in the Federal Republic of Germany. The participants will be provided a return air ticket plus subsistence allowance to cover board and lodging expenses.

ANNEX

PRELIMINARY SCHEDULE, CRUISE NO. 5 OF R.V. METEOR (FRG)
TO THE EASTERN MEDITERRANEAN SEA, THE RED SEA AND THE NORTH ARABIAN SEA (1986/87)

Leg No.	Date and port of embarkation	Transit port of call	Date and port of disembarkation	Fields of investigation	Available berths for invited scientists	Chief scientist
1	15.11.86 Hamburg, FRG	Heraklion (Greece)	06.12.86 Port Said, Egypt	plankton, benthos (E. Mediterranean)	8	H. Weikert
2	09.12.86 Port Said, Egypt	Djibouti	30.02.87 Port Sudan, Sudan	benthos, plankton hydrography (Red Sea)	9	H. Thiel
3	02.02.87 Port Sudan, Sudan	none	03.03.87 Djibouti	geophysics (S. Red Sea)	9	J. Makris
4	06.03.87 Djibouti	none	23.04.87 Bombay, India	plankton, sedimentation, fish physiology (N. Arabian Sea)	3	D. Schnack
5	26.04.87 Bombay, India	none	07.05.87 Karachi, Pakistan	same as leg No.4	6	W. Nellen
6 A	09.05.87 Karachi, Pakistan	none	07.06.87 Waingapu, Indonesia	hydrography, plankton (S. Java Sea)	3	W. Nellen
6 B	09.06.87 Waingapu, Indonesia	none	29.06.87 Jakarta, Indonesia	hydrography, plankton (S. Java Sea)	6	D. Quadfasel
7	02.07.87 Jakarta, Indonesia	Port Louis (Mauritius) Mombasa (Kenya)	24.07.87 Djibouti	bathymetry, geophysics (S. Arabian Sea)	15 (Tr.) 5	W. Battac
8	27.07.87 Djibouti	Port Sudan (Sudan) or Jeddah (Saudi Arabia)	06.09.87 Port Said, (Egypt)	plankton (Red Sea)	5	H. Weikert
9	08.09.87 Port Said, Egypt	Palermo (Italy)	18.10.87 Hamburg, (FRG)	hydrography, chemistry (E. Mediterranean, POEM related)	5	W. Roether