

ANNEX I

REPORT OF THE FIFTH MEETING OF THE CONSULTATIVE COMMITTEE
FOR INDIAN OCEAN BIOLOGICAL CENTRE HELD FROM FEBRUARY 28
TO MARCH 8, 1967, AT NEW DELHI AND ERNAKULAM (INDIA).

The fifth meeting of the Consultative Committee for Indian Ocean Biological Centre was held from February 28 to March 8, 1967. The Conference was held in two parts, in Delhi from February 28 to March 4 and in Ernakulam from March 6 to 8. The first Session of the Consultative Committee was held at the India International Centre on February 28 at 2.30 p.m. The Session was presided over by Prof. J. Krey, Chairman of the Consultative Committee. (List of participants is enclosed Appendix V).*

1. WELCOME BY THE CHAIRMAN

The Chairman welcomed the members and invitees of the meeting. He said the background papers for the meeting had been circulated amongst the participants, and expressed his satisfaction that from these documents one can see that a great deal of progress has been made in sorting and sub-sorting of samples, and initiating the work of general properties atlas of the Indian Ocean. The agenda as proposed for the meeting was approved, and the details of the agenda items to be discussed at Delhi and Ernakulam were finalised. He asked the Director, IOBC, to give a brief report of the IOBC for the preceding year.

2. REVIEW OF THE PREVIOUS YEAR'S WORK BY THE DIRECTOR
AND THE CURATOR OF IOBC

(a) Report of the Director of the IOBC:

Dr. N. K. Panikkar, Director of the IOBC, briefly summarised his report (Appendix I). The Centre has proved its usefulness and in order to provide continuation of the work in progress at IOBC and its further expansion a five-year contract has been entered into between the CSIR of India and UNESCO (Appendix II). It was stated inter alia that: -

- (i) During the past years the Indian Ocean Biological Centre has made steady progress in the sorting of zooplankton collections and in the development of plankton research activities.
- (ii) The IOBC continued to be housed in one wing of the Oceanographic Laboratory of the Kerala University. These arrangements are temporary and with the acquisition of a site of 1.1 acres at Ernakulam, steps will be taken for the construction of a permanent building for the Centre.

* The appendices originally attached to this Report are omitted in this Annex.

- (iii) The laboratory facilities continued to grow and efforts are being made to supplement the existing literature through the CSIR and the co-operation of subject specialists. There was no special change in the scientific and ancillary staff; the present strength of scientific and ancillary personnel is 41, who are working under the guidance of Dr. Raghu Prasad, Chief Scientist-in-charge and the Curator. The equipment position continued to be the same; it was not possible to place any orders for specialised equipment during the preceding year.
- (iv) The sorting of the samples proceeded at a steady rate. A total of 2188 samples have been received at the IOBC; out of these, 1213 samples were sorted up to the beginning of the year 1966; during 1966, 336 samples have been sorted and in December 1966, 639 samples were unsorted.
- (v) The work at IOBC is entering the second phase of specialised studies. The more experienced personnel amongst the sorting assistants have progressed towards specialised studies of different groups. The work of the advanced sorters includes sub-sorting of selected groups, consultation of scientific and technical literature relevant to his group and planning the course of future research in his group.
- (b) Report of the Curator of IOBC (Appendix III):

Dr. E. Brinton, UNESCO, Curator for IOBC, gave his report for the period from January 1966 to February 1967.

During 1966, 343 samples were received at IOBC. These were from the following institutions: -

Division of Sea Fisheries, South Africa	- 194
Institute of Oceanology, USSR	- 29
CSIRO, Australia	- 88
Fisheries College, Shimonoseki, Japan	- 32

The IOBC collection now consists of 2144 samples and 90% of these are Indian Ocean Standard Net samples. The geographical distribution of these samples during two seasons of six months' period each (mid-April and mid-December are limits of the season) has good coverage. The mid-ocean area south of 20°S, continues to be sparsely covered. He also gave details of the processing of samples, sub-sorting, specialised studies of the staff and distribution of sorted material to the specialists and visits of specialists at IOBC.

The Handbook of IOBC collections has been compiled and it consists of a mimeographed list of collections with the pertinent data and keys appended. The early publication of the Handbook is essential for the full utilisation of the collections.

Regarding Atlas preparation, preliminary charts of "General Properties", i.e. total Copepoda, fish larvae, chaetognaths, etc. have been prepared, based on average densities for 5 Marsden Squares. The data for these charts come from the 1285 Standard Samples sorted so far.

When all samples from particular regions are processed, atlases for those regions could be prepared. For example, data for the Arabian Sea to the equator are now complete. The Bay of Bengal will be completed in two to three months.

The projection which has been adopted provisionally for use is the same sinusoidal equal-area projection which is in use for the IIOE physical data.

Dr. R. Prasad and Dr. Brinton presented the various biomass data and specialised group charts prepared at the IOBC.

3. ROUTINE SORTING AND SUB-SORTING OF THE INTERNATIONAL COLLECTIONS

The Chairman proposed for discussion routine sorting and sub-sorting of the international collections. Dr. Brinton gave a brief resumé of the sorting work, present and proposed. This was followed by discussions.

Dr. Pamikkar recalled the idea of Fellowships, raised in earlier years. The meeting authorised the Chairman to raise this point at the joint meeting of the Advisory Board and Consultative Committee, and to request the CSIR authorities to earmark four to six fellowships for tenure at the IOBC.

The Joint Meeting of the Indian Advisory Board and the UNESCO Consultative Committee for IOBC was held in the forenoon of the 1st March, 1967, in the CSIR Conference Room, under the Chairmanship of Dr. D. N. Wadia, Chairman, Indian National Committee on Oceanic Research (Report is enclosed - Appendix IV).

Dr. Brinton reviewed the "Progress to date in sorting and sub-sorting". In the course of this review, Dr. Brinton also referred to the visit of Dr. Ahlstrom and of his setting up a scheme of study of fish larvae, and of his report to UNESCO which was included as item 7 of the background papers circulated among Consultative Committee Members.

In the ensuing discussions, the dominating points were (a) that the work of basic sorting would be speeded up by the appointment of two year research fellows; (b) that these fellowships should be open for award also to scientists from other countries bordering on the Indian Ocean; (c) that Unesco may award one-year fellowships to students from other countries to come to IOBC for training in sorting; (d) that Unesco may provide fellowships to enable IOBC scientists to go abroad for specialised training.

Mr. Tranter expressed concern that Unesco did not act on the previous year's recommendation about the supply of specialised equipment to IOBC.

The following recommendations were formulated and adopted: -

(1) Equipment for sorting and research:

The Consultative Committee recommends that the Curator, guided by the UNESCO-CSIR contract, should request microscopes, camera lucidae and other necessary equipment from UNESCO to meet present and future needs and that priority of requirements should be indicated.

(2) Fellowships at the IOBC:

- 2.1 - The Consultative Committee recommends that CSIR allocate 4 to 6 two-year fellowships to the IOBC to expedite the programmes of basic sorting, sub-sorting, and research, these fellowships to be made available to candidates from the Indian Ocean region.
- 2.2 - The Consultative Committee recommends that UNESCO allocate one-year fellowships to students from the Indian Ocean region who wish to be trained at the IOBC in the systematics of tropical zooplankton.
- 2.3 - The Consultative Committee recommends that UNESCO allocate 2 to 3 fellowships each year to scientists at the IOBC for specialist training at other laboratories and that UNESCO encourage bilateral arrangements between India and other countries to the same end.

4. SPECIAL ANALYSES OF THE INTERNATIONAL COLLECTIONS BY TAXONOMISTS

The Chairman invited the comments of Dr. Brinton, Curator, regarding the analysis of international collections by taxonomists. Dr. Brinton briefly reviewed the progress.

- (i) Decapoda are being ~~sub-sorted~~ sorted to family, and, in some cases, to genus. Two of the staff are doing this work under the direction of Mr. Krishna Menon. This sub-sorting is proceeding well, and more than half the samples are subsorted.
- (ii) Larval fishes are now being sub-sorted to family, and, in some cases, to genus. The procedure of sorting the fish fraction to order has been replaced by the more detailed sorting started by K. J. Peter and developed in consultation with visiting scientists. Four of the staff are presently engaged in this sub-sorting.
- (iii) Planktonic polychaetes and anthozoan larvae are being subsorted and examined by two of the staff in preparation for their engaging in the taxonomic study in collaboration with, or under the guidance of, recognised specialists.

- (iv) Sub-sorting of Amphipoda has been put off, pending a possible visit by Dr. Gruner after October, 1967.
- (v) Euphausiacea are being studied and identified by one of the staff and the Curator (Dr. Brinton).
- (vi) The cosmatoous pteropods and Heteropoda are being studied by two of the staff, under guidance (by correspondence) from Dr. J.A. McGowan.
- (vii) Ostracoda are being identified by one of the staff, with guidance from Drs. McKenzie and Iles.
- (viii) Preliminary study of Chaetognatha has been started by one of the staff. It is expected that this person will work in collaboration with one or two recognised specialists.
- (ix) Mackerel larvae are being identified by one of the staff.
- (x) Sub-sorting and the preliminary study of Polychaetes and anthozoans have been started, as has been mentioned above.
- (xi) Studies of decapod larvae, with Penaeids and Pandalids to be given priority, can soon be started by the Decapod Group. Available outside specialists for this diverse group are scarce. We are fortunate to have the guidance of Mr. Krishna Menon, a recognised authority, particularly on Penaeids. Dr. Williamson's proposed visit has been put off, pending the availability of travel funds.

Visit of experts during 1966

The scientists and the taxonomists who visited IOBC for specialised taxonomic studies and delivered lectures have been dealt with under the item no. 2(a) - Report of the Director, IOBC.

Preparation of the handbook on the International Collections

The Consultative Committee recommends that the Curator should finish the Handbook within the next month and submit it for publication by CSIR.

The Consultative Committee recommends that a second volume of the Handbook be prepared listing the environmental data relating to the International Collections.

Distribution of material to institutions and individuals and liaison with other institutions and individuals engaged in the analysis of plankton from the Indian Ocean.

The Consultative Committee recommends that the Curator should invite specialists to correspond with senior sorters at the IOBC to ensure the best possible standard of sub-sorting.

5. SELECTION OF TAXONOMIC SPECIALISTS

Selection of specialists for particular groups:

The Consultative Committee recommends that where several specialists express their interest in a particular taxonomic group one of these should be recognised by the Curator as "Senior Specialist" for that group and should be vested with the authority, in correspondence with the Curator, to collaborate with the others to ensure that the material in that group will be handled to the best advantage.

The Consultative Committee recommended the following scientists for specialised studies: -

- 5.1 Stomatopod Larvae: Senior specialist; K. H. Alikunhi
Possible collaboration with Reger
- 5.2 Foraminifera: Senior specialists;
Possible collaboration with Asano
- 5.3 Amphipoda: Senior specialist; Gruner
Collaboration with Vinogradov
Possible collaboration with Bowman and others
- 5.4 Polychaeta: Senior specialist; Tebble
Collaborators; George Peter, larval polychaete
specialist to be sought
- 5.5 Chaetognatha: Senior specialist; T.S.S. Rao
Collaboration with Mrs. Nair (specialist sub-sorter),
Alvarino and Tokioka
- 5.6 Cephalopoda: Chief specialist; Taki
Collaborator; Okutani
- 5.7 Sergestidae: Senior specialist; Tirmizhi
- 5.8 Siphonophora: Senior specialist; Mrs. Daniel
Collaboration with Dr. Daniel
- 5.9 Anthozoan Larvae: Panikkar and Balachandra Menon
- 5.10 Tornaria: Burdon Jones
- 5.11 Cirripede Larvae
- 5.12 Cyphonautes Larvae: Cook
- 5.13 Amphioxus Larvae: Wickstead
- 5.14 Copepoda: Senior specialist; Fleminger

- 5.14.1 The Consultative Committee requests Dr. Fleminger to draw up a plan of action for the Copepods, bearing in mind all available copepod specialists, and to submit this to the members of the Consultative Committee for approval
- 5.15 Peneidae: Krishna Menon
- 5.16 Other Decapod Larvae: Chief specialist; Williamson
- 5.17 Fish Larvae
- 5.17.1 Ahlstrom report: Consultative Committee recommends that the report be not published in present form but that the author be asked to edit it with a view to publication by UNESCO in the IIOE Newsletter giving more emphasis to the factual aspects of the report rather than to recommendations
- 5.17.2 Literature: Consultative Committee recommends that Ahlstrom be asked to compile a list of the literature essential for fish larvae identification; that K. J. Peter, the Senior specialist sorter, be asked to determine which of these references are available at the IOBC; and that UNESCO be asked to obtain the remainder through Dr. Ahlstrom
- 5.17.3 Overseas training for specialist sub-sorters of fish larvae
- The Consultative Committee recommends that arrangements be made for K. J. Peter to visit the laboratory of Professor Rass (Moscow) on his return from Copenhagen with the special purpose of training in the systematics of Scombroid larvae
- 5.17.4 Senior specialist: Rass
- The Consultative Committee recommends that Professor Rass be asked to prepare a plan of action for co-ordinating the study of the fish eggs and larvae component of the collections, and that he be asked to visit the IOBC as soon as possible
- 5.18 Salps and Doliolids: Senior specialist; Tokioka
Collaborators; Berner, trainee specialist - possibly Nagabhushanam
- 5.19 Cubomedusae: Ralph
- 5.20 Scyphomedusae: Thiele (if available)
- 5.21 Euphausiacea: The Consultative Committee agrees that further decisions on the selection of specialists may be made between meetings upon the recommendation of the Curator and majority decision of the Consultative Committee

The Consultative Committee confirms that when Dr. Brinton, the Senior specialist, returns to his home laboratory the euphausiid material may be transferred to the care of that laboratory for the duration of the study

6. PROGRESS IN PREPARATION OF IOOE ATLAS
AND THE PROBLEMS THEREOF

6.1 'General Properties' Atlas:

The Consultative Committee recommends that the 'General Properties' Atlas being produced under the direction of Dr. Brinton and Dr. Panikkar should acknowledge also the individual work of other collaborators

6.2 'Species' Atlas:

The Consultative Committee recommends that the Atlas of Species should appear in loose leaf form for later re-assembly, since the data relating to species will become available at varying intervals over a period of years

7. OTHER ITEMS WITH THE PERMISSION OF THE CHAIRMAN:

(a) Preservation of plankton samples:

Following a reference to the Committee on the state of preservation of samples at the IOBC, the Consultative Committee recommended that the Curator investigate the merits of replacing the formalin in which calcareous material is fixed with alcohol or other suitable preservative.

The Consultative Committee recommends that a member of the IOBC staff be encouraged to develop an experimental interest in the problems of plankton preservation.

(b) Care and safety of the International Collections:

The Consultative Committee recommends that CSIR provide an air-conditioned room to house the sub-sorted material and reference collections, and appoint a 'Collection Tender' whose sole responsibility is the safety and condition of the collections.

(c) Publicity and promotion of the IOBC:

The Consultative Committee recommended that UNESCO distribute a pamphlet prepared by the Curator in consultation with CSIR, advertising the facilities and opportunities available at the IOBC for visiting research workers.

(d) Data arising from the International Collections:

The Consultative Committee recommended that the Curator should lodge all data arising from the International Collections with World Data Centres, by way of NODC India, as soon as scientists entrusted with each phase of the work can make their data available for general circulation.

(e) Arrangements for 6th Consultative Committee Meeting, 1968:

The Consultative Committee recommends that the next meeting be held entirely at Ernakulam, commencing February 22, the members assembling at Bombay on February 21.

(f) The Consultative Committee also discussed the consideration of taxonomic specialists and in this connection took note of the suggestion of Dr. Panikkar that the CSIR could invite Prof. Rass of Moscow to work at IOBC and evaluate the fish larvae at IOBC.

The Committee further recommended that Prof. Rass be invited to prepare a plan of action for co-ordinating the studies of the fish eggs and larvae component of the collections and that he be asked to visit IOBC as soon as possible.

(g) Regular discussions:

The Consultative Committee recommended that regular weekly or fortnightly discussions or seminars be held to promote scientific interest among the staff.

Dr. Krishnaswamy stressed the need to encourage the senior-most of the sorters to do advanced studies of individual species, as well as on taxonomic work, with the supervision and approval of the Director, IOBC.

(h) Species Monographs:

The Consultative Committee recommends that senior sorters be allowed to specialise in biological studies on individual species, as well as on taxonomic work, with the supervision and approval of the Director of IOBC.

Keeping in view the experience of partly bad preservation of the material in the international collections of the Indian Ocean Biological Centre the Committee concludes that in future expeditions greater care should be given to the methodology of collection, handling and storage of plankton samples.

(i) Curatorship:

The Consultative Committee recommends that UNESCO take steps to ensure that the position of Curator of the international collection is not left vacant after Dr. Brinton's departure.

(j) Agreement between CSIR (India) and UNESCO regarding IOBC:

Although not a regular item of the agenda, there was considerable discussion and exchange of views on the contract between CSIR and UNESCO on the IOBC. The general feeling of the members was that it was a satisfactory contract. The members of the Committee required clarification on many aspects of the contract and the position from the point of view of UNESCO, CSIR, the Director and Curator was explained respectively by Dr. Evstafiev, Dr. Panikkar and Dr. Brinton. The Chairman summed up the discussion and concluded that any further additions or changes to the contract could be made in the light of experience gained in the working of the IOBC, emanating as recommendations of the Consultative Committee, to be considered by UNESCO and CSIR at the appropriate time.