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The Work of FAO Fisheries Division Biology Branch -- A Report to ICNAF

The following notes report the activities of Biology Branch since the last meeting of the Commission and which have some relevance to the Commission's own work.

1. Bibliographic Operations

We have continued and to some extent expanded on searching of literature and have prepared a list of roughly 2,000 periodicals which to our knowledge may carry articles on fisheries biology or related fields. Each item gives the full and short titles of the periodical, and an indication of the abstracting services which search the periodical. Of the listed periodicals nearly 500 are being searched systematically by the Branch. This paper is now available for general distribution and will be sent to fishery institutions and individual workers throughout the world, with a view to obtaining suggestions for further periodicals which ought to be included, and indications of the priority which should be accorded to the periodicals by an abstracting service operating for the benefit of fishery biologists.

Library cards are made for the titles of all papers of interest bearing, in most cases, annotations up to 50 words. They, with the title, inform the reader of the scope of work reported in the paper, the methods used, the objects of investigation (chiefly species studies) and the geographic situation of the work. They do not attempt to summarize results and conclusions, since this is regarded as being the function of an abstracting service proper.

Copies of our cards are given to editors of the *Bibliographia Oceanographica* and they make copies of theirs for us. In this way a very broad coverage is obtained in the fields of oceanography and marine fisheries. We edit the translation into English of the Italian annotations made for the

Bibliographia Oceanographica so that the volumes from 1950 onwards are in both languages.

At the end of 1956, we had the benefit of a visit from Dr. Holstrom of Unesco, an expert in techniques of bibliography and documentation, who studied our operations closely, and proposed some improvements of them. In particular, he has proposed that we use what are called "optical punch cards" to index our bibliographies comprehensively. This proposal is now being considered in conjunction with other matters concerning our participation in the development of effective bibliographic services for fisheries biology. The whole field is a complicated one, and the Branch is preparing a general study describing the situation which we will present at the documentation meeting being convened in Washington in 1958 by the US National Academy of Sciences. We hope at that time to be able to arrange a general discussion between representatives of several services interested in this field including "Biological Abstracts", the Journal du Conseil of ICES, and Bibliographia Oceanographica.

2. Terminology and Classification

Our work on the decimal classification for fisheries science has been virtually in suspense since the meeting in Biarritz of the group of consultants. Similarly, our work on terminology has been interrupted by pressure of other work although we have been systematically gathering relevant source material. It is expected that in the second half of the current year these two lines of work will be developed actively and result in the production of a substantive paper by the end of the year.

3. Contributions to Methodology

Apart from the contribution to the current "Workshop", there are certain other lines of work which may be reported. Firstly, we would draw attention to the draft paper by John Gulland on "Sampling Problems and Methods in Fisheries Research." This is the initial action taken by the Branch to follow up intentions announced at the Biarritz Meeting. We hope that Mr. Gulland will, in 1958, develop this paper into a much more comprehensive account of these

problems and methods.

Attention may also be drawn to the paper on biometrical work on clupeoids prepared for the Branch by Mario Ruivo, of which copies are available for distribution. Mr. Ruivo has reviewed the methods used for various purposes and has made various suggestions as to the next steps that should be taken in order to examine more carefully the relative merits of the different methods, with the idea that there might eventually be agreement on those best to be used. We hope to be able to continue work of this kind in engaging various consultants to examine particular sectors of the methodology of Fisheries Biology.

We have been unable so far to make systematic inventory of methods being used in Fisheries Biology or to initiate work to examine the possibility of mechanizing some of these operations. The difficulty here was chiefly a budgetary problem and it is hoped that the Branch's proposals for budgetary provision for work in this field in 1958 will be approved by the FAO Conference at the end of this year.

The Commission may be interested to note that the Branch is participating in the arrangements for the symposium which will be convened by ICES with assistance from UNESCO to discuss methods of measuring basic production in the sea. On the invitation of Unesco, we have indicated to the convenors of this meeting what could be the useful outcome of it. A copy of this statement ... is attached hereto; it indicates the contributions that we would make to the discussions. This symposium will be a useful forerunner to a world symposium on the productivity of the seas which will be organized jointly by Unesco and FAO in 1958.

4. Resources Survey

Work has continued actively in this field in the past year. Considerable progress has been made in developing the techniques for compiling significant information on species of economic importance. In this connection the Committee may consider the paper S/16 prepared by the Branch for the Work Shop.

In addition, there will be available for inspection by Committee Members copies of the synopses prepared on the genera Rastrelliger and Hilsa for the Indo-Pacific Fisheries Council. These examples illustrate the type of synopses being prepared as part of what we call the "Species and Stocks Thesaurus." A fuller account of the work on these thesauruses is contained in a Working Paper presented to the IPFC of which copies will be available for the Committee. In addition, there are available copies of the general synopses prepared for the IPFC on the fishery resources of the Indo-Pacific Region. Preoccupation with the development of systems, with production of material for the IPFC and with the Work Shop have prevented us from making progress on the review of resources of the ICAAF area, but we hope to be able to continue this work within the current year.

POINTS REQUESTED BY FAO TO ISSUE FROM THE SYMPOSIUM ON THE MEASUREMENT
OF BASIC MARINE PRODUCTION, TO BE ORGANIZED BY THE INTERNATIONAL COUNCIL
FOR THE EXPLORATION OF THE SEA

The FAO requirement in connection with the methods of production is to have a thorough listing, description and appraisal of all methods that are being used at present for the measurement of basic production in the sea or, if such a review could not be completed at the Symposium, we require, with respect to those parts of the review that could not be completed, some guidance as to the steps that should be taken to complete the review. In this review we would require to have an examination of the details of each method with a view to exposing the weaknesses or errors of the method and especially with a view to estimating the precision of the method and the accuracy of its determination of the value of the natural phenomena it is measuring. We consider that this requirement means also a realistic appraisal of what is known of the systems being observed and of the processes being measured and that it calls for an examination of our understanding of the conditions of life of phytoplankton. We also believe that this means, since zooplankton constitute the most important biotic element affecting the phytoplankton, that some consideration must also be given exclusively from the point of view of the problems of measuring phytoplankton populations to the conditions of life of zooplankton. We believe that the contributions which we propose to offer to the symposium will assist the organizers of the symposium of meeting of this requirement. Our principle contribution will be a paper dealing with methods of plankton research, and we presume that the contributions to the symposium will correct and supplement this document which will in fact be a working paper. The paper on phytoplankton will serve as a check list on the ecological, physiological and other factors that must be taken into consideration in any work in measuring phytoplankton processes either in situ or in vitro. Finally, our paper on zooplankton will serve to check the ecological significance of the zooplankton in the task of studying phytoplankton.