

Herbert Aubrey Cole

1911-1984



Dr H. A. Cole, CMG, D.Sc., FI Biol., Director of the Lowestoft Fisheries Laboratory during 1959-74, died on 23 July 1984 at the age of 73. Dr Cole was a United Kingdom Commissioner to the International Commission for the Northwest Atlantic Fisheries (ICNAF), predecessor of NAFO, from 1965 until his retirement, and, during that time he was Chairman of Panel 1 (West Greenland) from 1964 to 1966, Chairman of Panel 3 in 1966/67 and Scientific Adviser to Panel 3 (Newfoundland) during 1967-73. Those years covered the period when increasing levels of exploitation and international competition emphasized the need for fisheries management to progress beyond such technical measures as minimum mesh size in order to control the amount of fishing. They also covered the protracted discussions on the relative merits of catch quotas versus effort control and the initial introduction by ICNAF of a system of catch quota regulations, the first for the North Atlantic Ocean. Management systems have evolved since then, and international participation has changed with the advent of extended economic zones, but the crucial decisions that established the basic

framework for present day fishery management were taken during the period of Dr Cole's contribution. One can well appreciate in retrospect the wisdom of his apparently austere but nevertheless kindly and invariably wise advice, especially in regard to the balance between politics and science and what could or could not be achieved at one time.

Dr Cole's career began in 1933 when he joined the UK Ministry of Agriculture and Food Shellfish Laboratory at Conwy, North Wales, following his Master's Degree at the University College of North Wales at Bangor. Even then, his research anticipated many of the problems that were fundamental to modern developments in aquaculture, with his studies on reproduction and larval survival in oysters. He transferred to agricultural work during the war years (1939-46), and, although he is well remembered for his committee work in rationalizing aspects of production, it had an adverse effect on his health, and he was less able to engage in robust field work when he returned to Conwy in 1946.

Dr Cole moved to a new Shellfish Laboratory at Burham-on-Crouch in 1953 and integrated the work there with the continuing program at Conwy. He became Deputy Director of Fisheries Research at Lowestoft in 1958 and Director in 1959. Apart from his involvement in Northwest Atlantic fishery affairs, the 1960's saw a rapid expansion of the Fisheries Directorate both in staff and facilities, including the acquisition of four new research vessels. This was an effectively-argued response to the increased demand for both scientific understanding, and, based upon it, management advice in respect of fish resources in the early years and comparable growth in responsibilities concerning environmental problems. In that context, Dr Cole made a significant contribution on behalf of the United Kingdom as an advisor and representative to the Oslo and London Conventions and the United Nations Stockholm Conference on the Human Environment.

His services in general and to fishery research in particular were recognized by his appointment as Companion of the Order of St. Michael and St. George (CMG) in 1967. Both this and his later career reflected progressively greater involvement in the administration of science and committee duties across the range of national issues. Throughout his career, Dr Cole was keenly aware and a firm advocate of the necessity of international collaboration in marine science if it were

to be seen as mastering the complex problems of marine ecosystems and their environment. Apart from his contribution to ICNAF, Dr Cole was dedicated to the principles and efficient functioning of the International Council for the Exploration of the Sea (ICES), serving variously as Committee Chairman, UK Delegate and Vice-president, as the ICES structure was revised to reflect its changing role and increasing advisory responsibilities.

In all these activities, he brought to bear a keen intellect, charm and kindness which belied an apparently austere presence. He was always sensitive and sympathetic yet firm with his staff, and history will record that the Fisheries Laboratory, Lowestoft, flourished under his stewardship. He was the right man on the spot at the right time. He leaves his widow, Betty, and three children, and congenial memories as a professional and a man that one is pleased to have known.

D. J. Garrod
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Lowestoft, Suffolk, England

NOTICE

Design and Evaluation of Biological Surveys in Relation to Stock Assessments

Special Session of the Scientific Council of NAFO
Dartmouth, Nova Scotia, Canada, 4-6 September 1985

Specific Topics

1. Survey design and operations
 - a) Stratified-random groundfish surveys (standard bottom trawls)
 - b) Surveys designed for pelagic species (hydroacoustic, midwater-trawl and aerial surveys)
 - c) Surveys of invertebrate stocks (e.g. photographic and trap surveys)
 - d) Surveys of marine mammals (e.g. aerial surveys)
 - e) Surveys of early life stages of fish and invertebrates (e.g. eggs, larvae and juveniles) for stock assessment purposes
2. Survey gear, performance and catchability
 - a) Determination of gear parameters
 - b) Variability of parameters according to towing speed, bottom conditions and topography, currents, etc.
3. Environmental factors affecting variation in catchability of survey gears
4. Evaluation of survey data
 - a) Survey indices
 - b) Abundance and biomass estimates
 - c) Reliability of survey estimates
5. Importance and value of survey data for stock assessments

Deadlines

Authors are requested to send titles and brief descriptions of their potential contributions to the Convener by **15 April 1985**. Papers will be selected on the basis of their relevance to the topics indicated above. Authors of selected contributions will be informed by 15 May 1985.

Completed manuscripts (typescript or good quality photocopy) must arrive at the NAFO Secretariat for mimeographing by **20 August 1985**, addressed to Assistant Executive Secretary, Northwest Atlantic Fisheries Organization, Bedford Institute of Oceanography, P. O. Box 638, Dartmouth, Nova Scotia, Canada, B2Y 3Y9.

Publication

Publication in the *Journal of Northwest Atlantic Fishery Science* or *NAFO Scientific Council Studies* will depend on the nature and quality of individual contributions.

Convener

Further information may be obtained from the NAFO Secretariat or from the Convener:

Dr J. Messtorff
Institut für Seefischerei
Fischkai
D-2850 Bremerhaven 29
Federal Republic of Germany
Telex: 41-215716

NOTICE

**Recent Advances in Understanding Recruitment in Marine
Fishes of the Northwest Atlantic, with Particular
Emphasis on Georges Bank and Flemish Cap**

Special Session in September 1986

This theme was chosen by the Scientific Council of NAFO for a 3-day special session in advance of its Annual Meeting in September 1986. Details of organizational arrangements, including time and place, outline of topics to be covered, and deadlines for the submission of abstracts and completed manuscripts, will be finalized at the September 1985 Meeting of the Scientific Council.

Information For Authors

Form of Manuscript

Authors should submit the original manuscript and two good reproductions (preferably photocopies instead of carbon copies). The manuscript should be typed in English on good quality paper about 21 × 28 cm in size. All typing should be double-spaced with at least 2.5 cm margins around the page. Avoid breaking words at the end of lines. Number all pages consecutively with arabic numerals in the center of the top margin. The sequence of the material should be title page, abstract, text, tables, list of figures and figures.

Content of Manuscript

Title Page

This page should contain the name(s) and complete address(es) of the author(s), including professional affiliation. Short titles of papers are preferred.

Abstract

An informative abstract, not a summary of the contents, should not exceed one double-spaced page or about 250 words, the ultimate length being dependent on the size of the manuscript.

Text

In general, papers should be organized with Introduction, Materials and Methods, Results, Discussion, Acknowledgements, and References. Authors should be guided by papers published in the Journal and by the Council of Biological Editors (CBE) Style Manual. All measurements should be given in numerals in the metric system. If other units are essential to the material presented, equivalents in metric units must be included. Footnotes should be avoided, but where necessary they should be numbered consecutively in the text and placed below a horizontal line at the bottom of each relevant page. Only those words to be printed in italics should be underlined.

Tables

All tables must be discussed or mentioned in the text. Tables should be carefully constructed so that the data presented are readily understood. Each table should start on a separate page and be headed by a

description which, together with the column headings, makes the table intelligible without reference to the text. Tables should be numbered consecutively with arabic numerals. The required positions of tables in the text should be clearly indicated in the left margin of the relevant pages.

Figures

Each photograph or drawing, described or mentioned in the text, must be on a separate sheet in a form suitable for good quality reproduction and numbered consecutively with arabic numerals. Lettering must withstand reduction of the figure to page width (17 cm) or half-page (single column) width (8 cm). To avoid using excessive space, many kinds of illustrations are adequately intelligible if reduced to half-page width, provided that some thought is given to the design and lettering. Black-ink line drawings or glossy photographs are acceptable. Over-sized line drawings should be submitted as glossy photographs no larger than 17 cm wide and about 20 cm high, preferably smaller. The original drawings, if larger than 17 × 20 cm, should be retained by the author and forwarded only if requested by the editor. The figure number should be indicated on the back or in the margin of each illustration together with the name(s) of the author(s). Figure legends should be typed double-spaced on a separate sheet, which follows the tables in paging sequence. The approximate location of each figure in the text should be indicated in the left margin of the relevant page. Three complete sets of illustrations must accompany the original and two copies of the manuscript.

Bibliographic style

Literature references cited in the text must be by author's surname and date, viz,

It was reported that (Collins, 1960) ...

Collins (1960) reported that ...

The names of two authors may be used in a citation, but if more than two authors are involved the citation should be (Collins *et al.*, 1960). All papers referred to in the text must be listed alphabetically by the senior author's surname and initials in the References, followed by the initials and surnames of other authors (if any), the year of publication, full title of the paper, abbreviated name of the periodical, volume or number, and range of pages. Abbreviations of periodicals

should, if possible, follow the "World List of Aquatic Sciences and Fisheries Serial Titles" published periodically by the Food and Agriculture Organization (FAO). References to monographs should, in addition to the author, year and title, contain the name of the publisher, place, and number of pages in the volume. Reference to papers submitted but not yet published should be indicated as being "In press" or "Submitted for publication". The accuracy of all references is the responsibility of the author.

Proofs

All proofs of manuscripts must be corrected and returned to the Editor within 3 days of receipt. Only corrections of typographical errors are permitted at the proof stage. Any proposed additional alterations to the text will be at the discretion of the Editor.

Reprints

A total of 50 free reprints will be provided to the senior author and 25 free reprints to each additional author. Additional reprints may be ordered, when page proofs are returned at charges based on the length of the paper.

Submission of Manuscripts

Manuscripts to be considered for publication (original and two copies) should be addressed to:

Editor
Journal of Northwest Atlantic Fishery Science
Northwest Atlantic Fisheries Organization
Bedford Institute of Oceanography
P. O. Box 638
Dartmouth, Nova Scotia
Canada B2Y 3Y9

Scientific Publications of the Northwest Atlantic Fisheries Organization

Journal of Northwest Atlantic Fishery Science

This publication replaced the ICNAF Research Bulletin which terminated with No. 14 in September 1979. Each annual volume consists of one or more numbers.

- Vol. 1 — One number, 10 papers, 112 pages (Published December 1980)
- Vol. 2 — One number, 10 papers, 76 pages (Published October 1981)
- Vol. 3 — Two numbers, 17 papers, 180 pages (Published May and December 1982)
- Vol. 4 — One number, special issue on early stages of marine fishes, 424 pages (Published July 1983)
- Vol. 5 — Two numbers, 26 papers, 224 pages (Published January and November 1984)

NAFO Scientific Council Studies

This publication replaced ICNAF Special Publication, which terminated with Number 11 (revised) in August 1980, and ICNAF Selected Papers, which terminated with Number 6 in January 1980. One or more numbers are published annually.

- No. 1 — Miscellaneous papers (11), 101 pages (Published March 1981)
- No. 2 — Manual on groundfish surveys, 56 pages (Published December 1981)
- No. 3 — Miscellaneous papers (8), 82 pages (Published April 1982)
- No. 4 — Papers on remote-sensing applications to fishery science (12), 98 pages (Published September 1982)
- No. 5 — Papers on environmental conditions in 1970-79 (12), 114 pages (Published December 1982)
- No. 6 — Miscellaneous papers (8), 104 pages (Published December 1983)
- No. 7 — Miscellaneous papers (9), 98 pages (Published August 1984)
- No. 8 — Miscellaneous papers (12), 96 pages (Published April 1985)

NAFO Scientific Council Reports

This publication (issued annually) replaced ICNAF Redbook which terminated with the issue in December 1979.

- 1980 — Reports of seven meetings in 1979 and 1980, 190 pages (Published December 1980)
- 1981 — Reports of four meetings in 1981, 148 pages (Published December 1981)
- 1982 — Reports of two meetings in 1982, 110 pages (Published December 1982)
- 1983 — Reports of three meetings in 1983, 152 pages (Published December 1983)
- 1984 — Reports of three meetings in 1984, 126 pages (Published December 1984)

NAFO Statistical Bulletin

This publication (issued annually) replaced ICNAF Statistical Bulletin which terminated with Vol. 28 (revised). The volume numbering continues the series.

- Vol. 29— Fishery statistics for 1979, 290 pages (Originally published July 1981; revised edition published November 1984)
- Vol. 30— Fishery statistics for 1980, 280 pages (Originally published August 1982; revised edition published October 1984)
- Vol. 31— Fishery statistics for 1981, 276 pages (Originally published September 1983; revised edition published March 1985)
- Vol. 32— Fishery statistics for 1982, 284 pages (Published December 1984)

NAFO List of Fishing Vessels

This triennial publication replaced ICNAF List of Fishing Vessels which terminated with the 1977 list in April 1980.

- 1980 — List for 1980, 48 pages (Published March 1983)
- 1983 — List for 1983, 43 pages (Published April 1985).

A price list for these publications may be obtained upon request. Orders for current and back issues and standing orders for future issues should be forwarded to the Executive Secretary, Northwest Atlantic Fisheries Organization, Bedford Institute of Oceanography, P. O. Box 638, Dartmouth, Nova Scotia, Canada B2Y 3Y9.

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