



THIRD ANNUAL MEETING.

Program of statistical, hydrographic, and biological investigations to be carried out by Spain in Subareas 3 and 4 in February - March 1953.

Received at Headquarters 2 March 1953 from Subsecretaría de la Marina Mercante, Dirección General de Pesca Marítima, Madrid. (Translated from the Spanish text).

The investigations stated below will be carried out from the Spanish fishing vessel "Vendaval" in the waters off Newfoundland during February and March 1953 under the direction of

Rafael López Costa, hydrographer and
Olegario Rodríguez Martín, biologist.

Program of Work

1. Catch per unit of effort

- a. Total catch per haul
- b. Quantity discarded from each haul
- c. Qualitative composition of catch

2. Studies of samples of the most important species
(cod, haddock, pollock)

A. Classification by sizes

- a. large (grandes)
- b. medium (medianos)
- c. small (pequeños)
- d. very small (bajarilla)
- e. discarded as too small

B. Length measurements

- a. total length
- b. body without head, etc.

C. Weight

- a. round, fresh (entero)
- b. gutted (desviscerado)
- c. dried (secado)

D. Sex and maturity

- a. sex
- b. stage of maturity
- c. weight of gonads

E. Liver, weight and color

F. Content of stomachs

- a. stomach: empty, half filled, full, very full
- b. volume of stomach content
- c. samplings of stomach content for later examination

- G. Fat content: without fat, little fat, some fat, much fat
- H. Parasites found in fish
- I. Samplings of otoliths for age determination
(mainly cod and flatfishes)
- J. Samplings of scales for age determination
(mainly haddock and redfish)
- K. Countings of vertebrae and observations of anomalies in
vertebral column

3. Hydrographic observations

- A. Measurements of temperature of sea-water in various
depths by means of reversing thermometers
- B. Determinations of salinity in various depths
 - a. by areometers
 - b. by collecting water samples for titration
- C. Determinations of content of phosphates in the surface
as well as in various depths
- D. Determinations of content of oxygen in the surface and
at the bottom

4. Other researches

- A. Samplings of plankton by means of nets and by special
plankton - indicators
- B. Collecting of samples of bottom (Legar system)

The research-cruise will cover mainly Subarea 3, but some work will be carried out in Subarea 4 as well. The vessel is expected back to Spain in April and it is hoped that a report of the cruise can be given at the Commission meeting in May. The main aim of the cruise is the gathering of observations and experience necessary to form a more definite program for the future researches to be carried out by Spain in the areas in which Spanish fishing vessels are operating.

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