MONTHLY REPORT

ON

MESA-FUNDED RESEARCH

AUGUST 1979

by

NATIONAL MARINE FISHERIES SERVICE
NORTHEAST FISHERIES CENTER
SANDY HOOK LABORATORY
HIGHLANDS, NEW JERSEY 07732

Report No. SH. 79-34 (Sept. 1979)

Title of Study: Water Column Respiration and Release of Dissolved Organic Matter from Natural Populations of Phytoplankton (II.D.6)

Principal Investigator: Dr. James P. Thomas

Institution or Agency: National Marine Fisheries Service
Northeast Fisheries Center
Sandy Hook Laboratory
Highlands, New Jersey 07732

Period of Report: August 1979

Planned Activity:	Actual Accomplishments:
(1) Continue data analysis.	(1) Underway. Vertical profiles of total and dissolved organic matter release, primary productivity proofed and ready for redrafting.
(2) Begin manuscript preparation.	(2) Analyses continued.
(3) Receive data tape from Bigelow.	(3) Data tape received and listing produced, but not yet verified.

Forecast of Activities for September:

1) Continue data analyses. Have vertical profiles redrafted by illustrator for publication. Ocean Pulse cruise from 12-28 September will prevent additional analysis for the month.

Title of Study: Environmentally-induced Mutagenesis, Cytotoxicity and Related Teratogenicity in Planktonic Fish Eggs (III.5)

Principal Investigator: Dr. A. Crosby Longwell

Institution or Agency: National Marine Fisheries Service
Northeast Fisheries Center
Milford Laboratory
Milford, Connecticut 06460

Period of Activity: August 1979

By now procedures for examining the outer egg membrane of mackerel (or other plankton) fish eggs are routine. Sizeable egg samples so examined (D. Perry) will be included in the statistical analyses of correlations between egg condition and contaminant levels at the '78 sample sites in the New York Bight.

Samples of mackerel eggs have been examined cytologically at all available development stages at all '78 sample sites. This includes both stations with chemistry sampling and those additional ones at which only biological samples were taken. When A. Longwell returns from an early October ICES meeting in Poland, she and J. Hughes will analyze additional egg numbers at all the stations, then compile the '78 data for statistical study. The '78 data can be added to the '77 data to increase the total -umber of stations with measurements of contaminant levels. This can be done since the correlation sought is within single sample sites, making the time of sampling of minimal concern. Dr. Scott Overtaon, Oregon State University, will be contacted regarding this final, combined analyses of the '77 and '78 date.

As noted in prior monthly reports, the condition of the mackerel eggs, as appraised by their cytological state, their cytogenetic defect incidence, and also by condition of their chorion varies from sample site to site. Not all stations sporting high incidences of egg abnormalities occur in the Bight apex, but such stations appear more likely to occur there. The biological results of '74 and '77 and '78 cruises all show station-to-station variation.

In recent months the cytological and cytogenetic studies on eggs from the Argo Merchant spill site and on mackerel eggs have been given press notice in, among other places, an Australian fishery magazine and in a Canadian and French newspaper. An American Consulting firm has contacted A. Longwell regarding additional information for a large European chemical company.