PHYSICAL OCEANOGRAPHIC, BIOLOGICAL, AND CHEMICAL DATA - SOUTH ATLANTIC COAST OF THE UNITED STATES

SPECIAL SCIENTIFIC REPORT–FISHERIES No. 178

UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

EXPLANATORY NOTE

The series embodies results of investigations, usually of restricted scope, intended to aid or direct management or utilization practices and as guides for administrative or legislative action. it is issued in limited quantities for official use of Federal, State or cooperating agencies and in processed form for economy and to avoid delay in publication.

United States Department of the Interior, Fred A. Seaton, Secretary
Fish and Wildlife Service, John L. Farley, Director

PHYSICAL OCEANOGRAPHIC, BIOLOGICAL, AND CHEMICAL DATA SOUTH ATLANTIC COAST OF THE UNITED STATES M/V THEODORE N. GILL CRUISE 1

By

William W. Anderson, Fishery Research Biologist
Jack W. Gehringer, Fishery Research Biologist
Edward Cohen, Analytical Chemist
South Atlantic Fishery Investigations
Brunswick, Georgia

Special Scientific Report--Fisheries No. 178

Washington, D.C.

August 1956

CONTENTS

LIST OF TABLES

PHYSICAL OCEANOGRAPHIC, BIOLOGICAL, AND CHEMICAL DATA SOUTH ATLANTIC COAST OF THE UNITED STATES M/V THEODORE N. GILL CRUISE 1

The program of the South Atlantic Fishery Investigations evolved from: (1) the interest of the U. S. Fish and Wildlife Service in the biological and chemical conditions in the offshore waters from Cape Hatteras to Florida Straits; (2) the interest of the South Atlantic Section, Atlantic States Marine Fisheries Commission in these matters; (3) the interest of the U. S. Navy Hydrographic Office in the physical oceanography of the same region; and (4) the interest of the Office of Naval Research in the deep scattering layer and related subjects.

During 1952 the Fish and Wildlife Service M/V Theodore N. Gill was converted and outfitted. She has a length of 97 feet, beam of 21.5 feet, draft of 11.5 feet, displaces187 tons, and has a cruising range of 3500 miles. Navigation and communications equipment includes Sperry Automatic Pilot, CG Model RD-137 Loran, Navy Model SO-1 Radar, Edo AN/UQN-1B Echo Sounder, RCA Transceiver Type CRM, and National Type CNA receiver. The basic oceanographic equipment includes BT winch (1200 foot capacity), Markey hydrographic winch (electric powered, with capacity of 5000 meters of 5/32" stainless steel cable), and a two-drum Stroudsburg trawling winch (hydraulic powered, with 1/4" stainless steel cable) for plankton tows. There are accommodations for eight scientists and a crew of ten.

The initial effort was a cruise in July, 1952. This was a cooperative Navy Hydrographic Office-Office of Naval Research program involving: (1) sound velocity meter tests; (2) scattering layer observations; and (3) the first in a series of twenty-four to forty-eight hour oceanographic stations, termed "standard stations." This work continued until December, 1952.

By the end of 1952 the Fish and Wildlife Service's South Atlantic Fishery Investigations had established headquarters at Brunswick, Georgia, and developed to the operational stage A cooperative operational plan and agreement was reached by the Service, the Navy Hydrographic Office, and the Office of Naval Research. The Service set up a pattern of 80 regular stations between Jupiter Light (Florida Straits) and Cape Hatteras extending in area from near the beaches to beyond the axis of the Gulf Stream. These stations were 20 miles apart on the east-west lines, which were in turn, 40 miles apart in the north-south direction, with stations established inshore between some of the east-west lines. The standard station was maintained in its location off Elbow Cay, Bahamas. Additionally, at the request of the Navy Hydrographic Office, nine special stations were located farther offshore. This basic cruise plan is shown in Figure 1.

The ultimate objective of the investigations is to ascertain the potential productivity of those waters adjacent to our coast from Cape Hatteras on the north to the Florida Straits on the south As a beginning to this study, a general survey of the waters was projected that had three major objectives:

1. To ascertain the distribution and concentrations of nutrients and the relations between these nutrients and the distributions and concentrations of the fishes, as a means of delimiting potentially productive fishing areas.

2. To determine the presence, identity, distribution, and interrelationships of marine forms in the area as an aid in understanding the presence, abundance, availability, and fluctuations of the fishes. Special attention is directed to the distribution and abundance of fish eggs, larvae, and juveniles; and to the early life history of important species of the area.

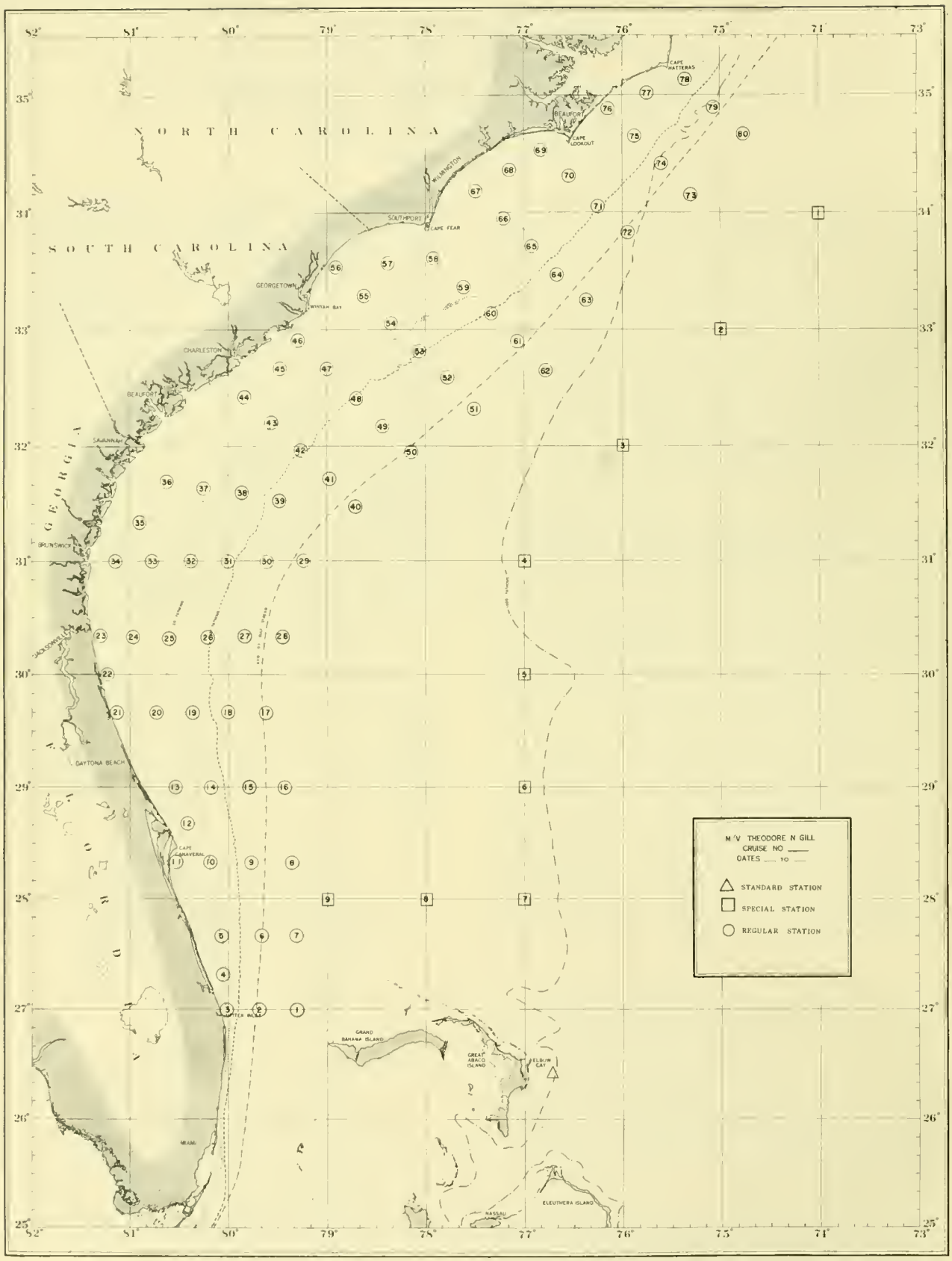

Figure 1.--Basic station plan.

3. To determine through oceanographic techniques, the flow pattern of the major currents of the region, and trends in temperatures and salinities.

The program developed as a cooperative venture between the Fish and Wildlife Service and the several agencies: the Navy Hydrographic Office and the Office of Naval Research in physical oceanography and related studies; the Georgia Game and Fish Commission in the biological inventory and nutrient studies; and the Florida State Board of Conservation (through the Marine Laboratory of the University of Miami) in biological studies. The Woods Hole Oceanographic Institution is cooperating in the processing and analysis of data relating to physical oceanography.

Field operations comprised nine cruises over the established station pattern during the period January, 1953, to December, 1954. It was agreed by the cooperating agencies that the basic data from the cruises of the Theodore N. Gill would be made available in an assembled form for each cruise. This report is to explain the program, operational procedure, and methods; and to present the assembled data for Cruise 1.

PROCEDURES ON STATION

Regular and Special Stations

1. General observations including barometer reading, wet and dry bulb air temperatures, wind direction and velocity, and observed sky, sea, and wave conditions were recorded.

2. BT casts were taken on each station. Three bathythermographs with ranges of 180, 450, and 900 feet were available:

3. Nansen bottle casts were made at standard wire depths, using 12 bottles or less per cast. A 30 cm. Secchi disc was attached directly to the hydrographic cable, and readings taken on stations during daylight hours.

4. Oxygen determinations were conducted aboard vessel immediately after each cast, using Wooster's modification of the Winkler method of dissolved oxygen analysis.

5. Salinity samples were collected for each cast (determinations were made in the Service's laboratory at Brunswick, Georgia).

6. Water samples for use in the determination of inorganic phosphate, total phosphorous, carbohydrates, proteins, and nitrate-nitrite were collected for each cast (analyses were accomplished in the Service's laboratory at Brunswick, Georgia.

7. Bottom sediment samples were obtained, using a modified orange peel dredge (lead weights were added and covers were placed over the blades to prevent the sample from washing out). Half of each sample was furnished to the Navy Hydrographic Office for analysis.

8 GEK measurements from the Gill were found impractical, and use of the instrument was abandoned very early in the program.

9. Plankton tows with a half-meter silk net were made on each station. The continuous plankton sampler was run continuously.

10. Dip-net fishing was conducted on each station as conditions permitted.

11. Feather and bone jigs were trolled between stations.

Standard Station

The water depth in the area of operation was too great for anchoring, so the position of 26°21.5'N and 76°46'W was held within the limits of the navigational equipment aboard. This station was located so that it was free of the effects of the Gulf Stream. It was of 48 hours duration when conditions permitted. Observations were similar to those taken for regular and special stations except:

1. BT lowerings were made to 900 feet before and after each Nansen bottle cast.

2. Nansen bottle casts were lowered two hours after completion of the previous cast, and were made to a depth of 700 meters with 12 bottles spaced at standard depths. Samples for oxygen and salinity determinations were drawn for each cast and treated as on regular stations. Water samples for the other chemical determinations were drawn on four casts during the standard station (these at dawn, mid-day, dusk, and mid-night as nearly as possible).

3. Special plankton tows were made for the Office of Naval Research for deep scattering layer investigation (four tows with half-meter silk nets during the station timed to represent the periods of dawn, mid-day, dusk, and mid-night). Towing depths were surface, 100, and 200 meters.

4. Hydrophone and special echo-ranging observations were made by the Office of Naval Research.

5. Dip-netting was conducted continuously.

CHEMICAL METHODS AND PROCEDURES

General

Containers used for collection of samples

1. Total phosphorous and salinity - 4 oz. prescription bottles having plastic screw caps with vinyl liners.

2. Inorganic phosphate - 200 mm. culture tubes with polyethylene screw caps.

3. Carbohydrates and proteins - 125 mm. culture tubes with plastic screw caps having polyethylene inserts.

4. Nitrate-nitrite - 60 mm. vials with plastic screw caps having polyethylene inserts.

5. Oxygen - standard 250 ml. oxygen bottles.

Initial preparation of containers

Culture tubes and vials were aged in concentrated sulfuric acid for approximately one week, thoroughly rinsed with tap water, followed by three rinses with distilled water.

Prescription and oxygen bottles were washed with a detergent, rinsed with tap water, followed by three rinses with distilled water.

A small amount of thorium carbonate was added to each total phosphorous sample bottle at the shore laboratory (to prevent loss of organic phosphorous by attachment to the sides of the bottle).

Notes on collection of samples at sea

Total phosphorous sample bottles "baited with thorium carbonate were not rinsed at sea before drawing samples. All other bottles, tubes, and vials were rinsed twice with sea water from the Nansen bottles before samples were drawn.

Vials and tubes containing samples for inorganic phosphate, carbohydrates, proteins, and nitrate-nitrite were prepared for freezing by taping the junction of the cap and the tube with plastic electrician's tape (to prevent contamination of samples by ethylene glycol). 1/ They were then immersed in 38% ethylene glycol freeze bath until completely frozen, after which they were removed from the bath and stored in a deep-freezer at 0° to -10° F (Collier and Marvin 1953).

General notes on methods

Stock solutions of standards were prepared with distilled water, and subsequent dilutions made with synthetic sea water. Synthetic sea water for total phosphorous, inorganic phosphate, and carbohydrate analyses was prepared by dissolving 35 gm. sodium chloride in distilled water and diluting to one liter; for nitrate-nitrite, 20 ml. conc. hydrochloric acid was added to distilled water and diluted to one liter; and for proteins, by dissolving 35 gm. sodium chloride and 6.5 gm. magnesium sulphate in distilled water and diluting to one liter.

Chemicals used, with the exception of N-ethylcarbazole, were reagent grade. A set of standards was run with each batch of sea water samples and treated in the same manner as the samples.

A Beckman DU Spectrophotometer was used in the protein determination, and a Fisher AC Electrophotometer used for total phosphorous, inorganic phosphate, nitrate-nitrite, and carbohydrate determinations.

Densities were read from scale "A" on the Fisher instrument, and from the optical density scale on the Beckman instrument, after the instruments were adjusted to zero with a distilled water blank. Density readings were recorded as -log T.

Notes on calculation of concentration values

Standardization curves were prepared for each set of standards by plotting -log T values against concentrations of standards. Those for nitrate-nitrite were fitted as smooth curves through all points, while all others were fitted as straight lines.

Concentration values for nitrate-nitrite were determined by direct reading from standardization curves. Those for total phosphorous and inorganic phosphate were calculated by dividing the -log T values by a factor (equivalent to "the slope of the line" in the standardization curves). Those for carbohydrates and proteins were calculated by subtracting the -log T value for the zero concentration of the standard from the -log T values of the samples, and then dividing by the factor.

Concentration values were calculated to the nearest 0.5 of a unit for nitrate-nitrite, and to the nearest 0.1 of a unit for total phosphorous, inorganic phosphate, carbohydrates, and proteins.

1/ Beginning with Cruise 6, samples for carbohydrates were placed immediately in the deep freeze, to eliminate all contact with ethylene glycol.

METHODS

Dissolved oxygen [1]

Reagents:

1. Manganous Chloride ($MnCl.4H_2O$) - dissolve 800 gm. manganous chloride in 1570 ml. distilled water.

2. Potassium Hydroxide-Potassium Iodide - dissolve 500 gm. potassium hydroxide and 100 gm. potassium iodide in distilled water, dilute to two liters, and store in dark bottle.

3. Concentrated Hydrochloric Acid.

4. Sodium Thiosulfate ($Na_2S_2O_3.5H_2O$) - dissolve 3.5 gm. sodium thiosulfate in one liter freshly boiled distilled water, add 0.1 gm. sodium carbonate, and store in dark bottle.

5. Standard Solution (0.01 N Potassium Biniodate) - dissolve 0.3250 gm. potassium biniodate [$KH(IO_3)_2$] in distilled water, and dilute to one liter.

Procedure: (determination made aboard ship)

Add 2 ml. manganous chloride and 2 ml. potassium hydroxide-potassium iodide to the sample (inserting the tip of the buret to below the surface), replace stopper carefully without trapping any air, and mix thoroughly. Allow to stand until ppt. settles. Add 2 ml. conc. hydrochloric acid and shake until ppt. dissolves. Pipet 100 ml. of sample into a 250 ml. flask, titrate with sodium thiosulfate until color becomes faint yellow, add starch indicator, and continue titrating until the blue color disappears.

1/ Wooster, Warren S., 1950

2/ Harvey, H. W., 1948

Salinity

Two or more chlorinity determinations were run on each sample, employing the Knudsen method; and these were converted to salinity.

Total phosphorous [2]

Reagents:

1. 50% Sulfuric Acid - mix equal volumes of distilled water and conc. sulfuric acid.

2. Molybdic Acid - dissolve 3.3 gm. ammonium molybdate [$(NH_4)_6Mo_7O_{24}.4H_2O$] in a solution of 3 ml. conc. sulfuric acid and 200 ml. distilled water.

3. Stannous Chloride ($SnCl_2.2H_2O$) - dissolve 1.2 gm. stannous chloride in 5 ml. conc. hydrochloric acid, and dilute to 50 ml. with distilled water (solution made up daily).

4. Standard Stock Solution (2000 µg at P/L) - dissolve 0.6120 gm. of di-sodium, beta-glycerophosphoric acid in distilled water, and dilute to one liter.

Procedure:

Add 1.5 ml. of 50% sulfuric acid to 100 ml. of sample. Shake samples and allow to stand until the thorium carbonate is dissolved, usually three or four days. Pipet 25 ml. samples into 60 ml. flasks, cover with 30 ml. beakers, and autoclave for 6 hours at 30-40 lbs. pressure. Remove from autoclave, cool, add 0.75 ml. molybdic acid, swirl, and add 1 drop of stannous chloride [3]. Let stand for 20-30 minutes for maximum color development, transfer to 23 ml. absorption cells, and read densities using a red filter (650 mµ).

3/ Allow a lapse of 30-60 seconds between additions of stannous chloride to samples to ensure equal development time.

Inorganic phosphate [4]

Reagents:

1. Molybdic Acid - dissolve 12.5 gm. of ammonium molybdate [$(NH_4)_6Mo_7O_{24} \cdot 4H_2O$] in 125 ml. distilled water, add 375 ml. 50% sulfuric acid, and store in dark bottle.

2. Stannous Chloride ($SnCl_2 \cdot 2H_2O$) - dissolve 1.2 gm. stannous chloride in 5 ml. conc. hydrochloric acid, and dilute to 50 ml. with distilled water (solution made up daily).

3. Standard Stock Solution (2000 µg at PO_4-P/L) - dissolve 0.2722 gm. of potassium di-hydrogen phosphate in distilled water, and dilute to one liter.

Procedure:

Pipet 25 ml samples into 60 ml. flasks, add 1 ml. of molybdic acid, and mix well by swirling. Add 1 drop of stannous chloride [5] and swirl. Let stand from 20-30 minutes for maximum color development, transfer to 23 ml. absorption cells, and read densities using a red filter (650 mµ).

Nitrate-nitrite [6]

Reagents:

1. 0.3 millimole Strychnidine/L - dissolve 0.0960 gm. strychnidine in one liter of conc. sulfuric acid.

2. Standard Stock Solution (2000 µg at NO_3-NO_2/L) - dissolve 0.1702 gm. of sodium nitrate in distilled water, and dilute to one liter.

4/ Robinson, R.J. and T.S. Thompson, 1948.

5/ Allow a lapse of 30-60 seconds between additions of stannous chloride to samples to ensure equal development time.

6/ Marvin, K. T., 1955.

Procedure:

Pipet 1 ml. samples into 10 ml. test tubes, add 2 ml. distilled water and 3 ml. of reagent, using automatic pipets. The reagent is carefully added by placing rack of test tubes on approximately a 45° angle and allowing reagent to run down side of test tube to avoid boiling. Mix contents by pouring gently from the 10 ml. test tube to a 15 ml test tube and back again. Store samples in darkness for 3-5 hours, transfer to 3 ml. micro cells, and read densities using a green filter (525 mµ).

Carbohydrates [7]

Reagents:

1. N-ethylcarbazole - dissolve 1 gm. of recrystallized [8] N-ethylcarbazole in one liter of conc. sulfuric acid [9] (keep out of sunlight and store in refrigerator).

2. Standard Stock Solution - dissolve 1 gm. of L-arabinose in distilled water, and dilute to one liter.

7/ Collier, Albert, S.M. Ray, A.W. Magnitzky, and Joe O. Bell, 1953.

8/ Recrystallize N-ethylcarbazole as follows: (1) dissolve about 50 gm. of N.E.C. in 500 ml. of warm alcohol, (2) add distilled water slowly while swirling until precipitation is complete, (3) collect precipitate on filter paper, then add water to the filtrate and refilter, (4) redissolve precipitate collected on filter paper in warm alcohol, (5) cool alcohol solution in freezer to crystallize N.E.C., (6) collect crystals on filter paper, then salt out dissolved N.E.C. in filtrate with water, (7) repeat steps 2-6 until filtrate is clear. Dry crystals at 50°C or lower.

9/ Use acid only from bottles that have a plastic insert in screw cap.

Procedure:

Pipet 2.5 ml. samples into 60 ml. flasks, add 22.5 ml. of reagent by buret [10], and mix well by swirling. After HCl has bubbled off, pour a thin film of mineral oil over surface of sample to exclude oxygen. Cover flasks with 30 ml. beakers and hydrolize in water bath at 70°C (± 0.5°) for 15 minutes. Remove and place in refrigerator for 10-15 minutes. Remove from refrigerator, transfer samples to 23 ml. absorption cells, allow to stand for at least 10 minutes, and read densities using a green filter (525 mμ).

Proteins [11]

Reagents:

1. 0.25 N Sodium Hydroxide.

2. Standard Stock Solution - dissolve 1 gm. of dl-tyrosine in sufficient amount of 0.25 N sodium hydroxide to give a clear solution, and dilute to one liter with distilled water.

Procedure:

Pipet equal volumes of samples and 0.25 N sodium hydroxide into 60 ml. flasks, cover with 30 ml beakers, and autoclave for five hours at 30-40 lbs. pressure. Cool, transfer to centrifuge tubes, add a small amount of Celite to each tube, and spin for 10 minutes at 900-1000 r.p.m. Draw off supernatant liquid into a spectrophotometer cell, set instrument at 240 mμ, and read densities.

10/ Buret is an automatic, screw-cap acid bottle type.

11/ This method was developed by Mr. Albert W. Collier, Jr., Chief, Gulf Fishery Investigations, Fort Crockett, Galveston, Texas and his associates. It has not heretofore been published and is in the process of being refined.

12/ Ahlstrom, Elbert H., 1952.

BIOLOGICAL METHODS AND PROCEDURES

Plankton

Method of towing 1/2-meter silk nets [12]

A standard half-meter No. 1 silk net was towed obliquely after departing each station, with the ship on course to the subsequent station. A 40-pound streamline depressor was used as a weight, and an Atlas type current meter suspended in the mouth of the net registered the flow of water into the net. Figure 2.

With the ship underway the net was lowered slowly to a depth of 70 meters (100 meters of cable out), or less in shallow water, and then retrieved at the rate necessary to bring it to the surface in approximately 20 minutes. The ship's speed during the tow was 1-2 knots, and the engine was started and stopped as often as necessary to maintain a cable angle of approximately 45 degrees. This angle of stray, measured continuously with an inclinometer suspended from the towing boom and riding freely on the cable, was recorded every minute, or less frequently in shallow water. Plankton samples were preserved in 5% buffered formalin.

The depth of a tow was calculated by multiplying the cosine of the angle of stray by the amount of cable out.

Volumes of water strained

An estimate of the volume of water strained during a tow was derived from the revolutions registered by the flow meter mounted in the mouth of the net. Flow meters were calibrated by towing them at regular towing speed over a known distance. From this a meter factor of "meters of distance per revolution" was obtained. This factor was multiplied by the area of the net opening, and the product applied to the meter readings for each tow, thus converting the readings to "cubic meters of water strained." Meter pointers were zeroed prior to each tow to prevent double errors in readings.

Figure 2.--Half-meter silk net.

Numbers of organisms

Each plankton sample was examined in 10-ml. portions under a low-power binocular microscope, and the fish eggs, fish larvae, and amphioxi were removed and counted. The wet volumes of plankton were then determined by displacement (drained plankton placed in graduated cylinder containing a known volume of 5 percent buffered formalin).

Numbers of organisms other than fish eggs and larvae and amphioxi were estimated by counting those in aliquot portions of a sample and adjusting the counts to the entire sample volume. The procedure was as follows: (1) the sample was stirred thoroughly, and a 10 ml. portion removed, by dipping with a 10 ml. beaker, to a dish marked with a centimeter grid; (2) the more numerous organisms were counted in six preselected centimeter squares, and the less numerous ones counted in the entire dish; (3) the portion was then returned to sample jar, the sample stirred thoroughly, and a second 10 ml. portion removed; (4) the second portion was treated in same manner as the first; and (5) the counts were averaged and then adjusted to the entire sample volume by multiplying by the appropriate factor. Numbers of the various organisms per cubic meter of water strained were calculated by dividing sample totals by volumes of water strained.

Continuous Plankton Sampler

Plankton samples were also taken with a continuous sampler designed by Albert W. Collier, Jr , Chief, Gulf Fishery Investigations, Fish and Wildlife Service. A description of this sampler has not been published, but general construction details and operational procedure will be presented here. Figure 3. The sampler consists of a circular trough divided into eight compartments, and is driven by an electric motor at the rate of one revolution per eight hours. Extending down from each compartment is a tube fitted at its lower end with a clamp which holds a 1-1/4" No. 1 silk filtering disc. A reverse bend in the discharge tube below the clamp retains sufficient water to cover the silk, thus preventing filtered organisms from drying out. Sea water is pumped from a sea chest located several feet below the ship's water line, through a standard water meter, and into the sampler. As the sampler trough revolves, each compartment receives water for one hour. After one revolution of the trough (eight hours), a timer switch shuts off the sampler and pump motors. The filtering discs are then removed, preserved in 5 percent formalin, and replaced with new silks. Each revolution constitutes a "run". The sampler is permitted to run continuously, except for the time needed to change silks and when the ship is entering or leaving a harbor (where sand and silt may jam the water meter).

The flow of water into the sampler is regulated according to the density of plankton encountered (in shallow waters phytoplankton plugs the filtering disc rapidly if flow is not reduced). A pressure gauge in the line between the meter and the sampler provides for uniform adjustment of the flow. From 50 to 100 gallons of water pass into each compartment during the hour it receives water.

The silks are examined individually, and counts made of all organisms present. The counts are then adjusted to "Number per cubic meter of water strained". The position of the ship at the time the center of each compartment is reached is accepted as the location of sampling for the compartment involved. Generally, the trough does not make one revolution in exactly eight hours, and the time for each compartment is adjusted accordingly.

Dip-netting

Dip-netting for larval and juvenile forms of fish was conducted on station when seas and weather conditions permitted. Dip nets used were 18 inches in diameter, lined with 1/4-inch nylon mesh, and were fitted with 12-foot bamboo handles. Spot and floodlights were used at night to attract fish. In general, dip-netting at night under the lights proved more productive than dip-netting during the

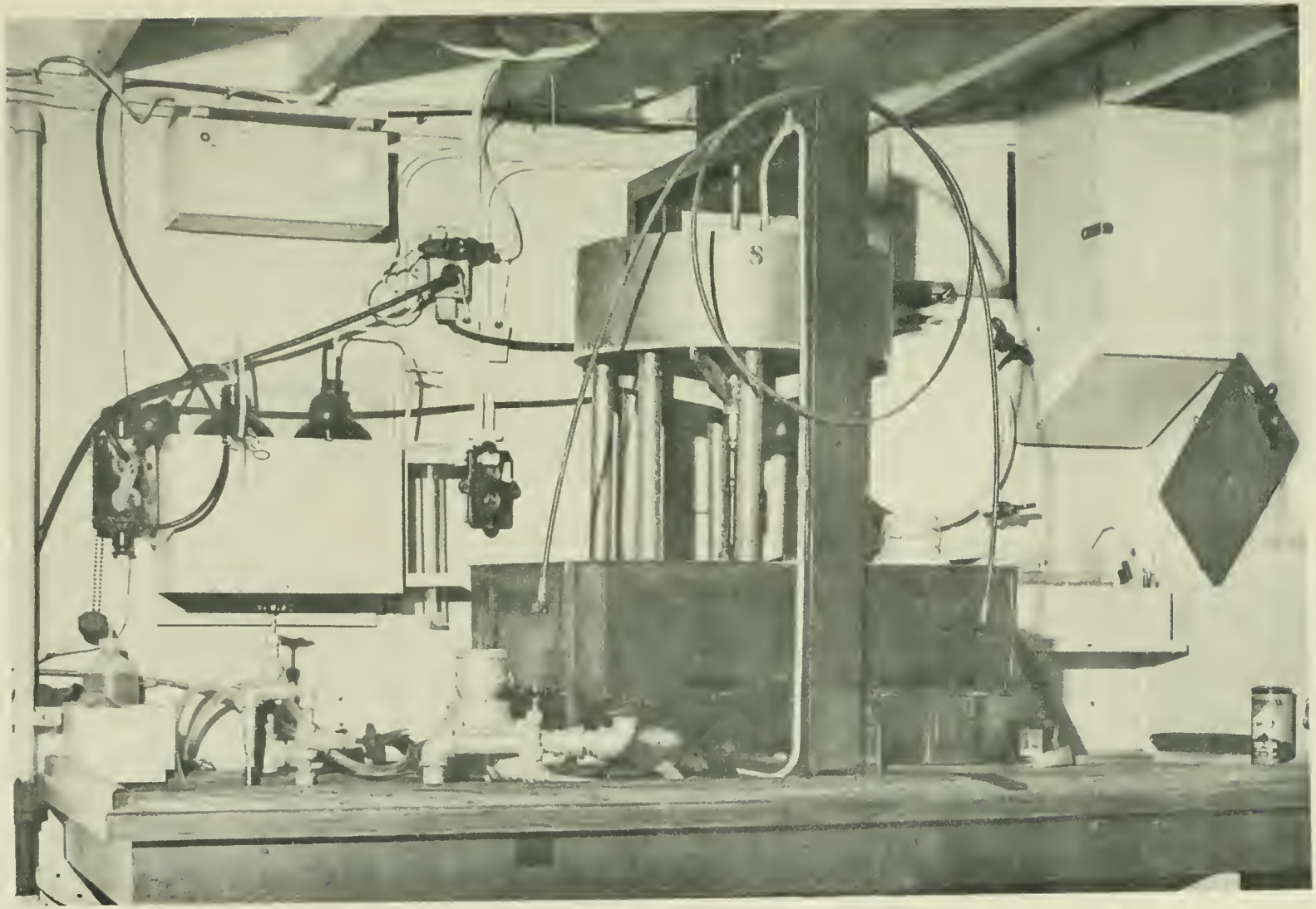

Figure 3.--Continuous plankton sampler.

day, for most species.

Trolling

Three-ounce red and white nylon jigs were trolled at 9-10 knots between all stations during daylight hours, and hand-lines using cut or live bait were fished on some shallow stations. All fish caught were identified, weighed, and measured, and stomach contents were preserved.

OCEANOGRAPHIC METHODS AND PROCEDURES

Standard methods employed by the U. S. Navy Hydrographic Office were used aboard the Gill and in processing the data.

Salinity, temperature, and density profiles were prepared by Mr. Dean Bumpus of the Woods Hole Oceanographic Institution.

NARRATIVE ACCOUNT OF CRUISE 1

The Theodore N. Gill departed from Brunswick, Georgia on February 10, 1953, and proceeded to the standard station along the track as shown in Figure 4. Hourly bathythermograph observations were made while enroute, except when passing through the Gulf Stream and the Antilles Current when BT lowerings were made every half hour. The site was reached on February 12. Nine nansen bottle casts were made to 700 meters, at intervals of about two hours. Half-hourly bathythermograph observations, Secchi disc readings during daylight casts, simultaneous routine meteorological observations, and special plankton tows for deep scattering layer studies were also made during the occupation of the standard station. Thirty-four hours (interrupted on February 13 by a trip to Nassau, BWI, for winch repairs) were spent on the standard station.

Upon completion of the standard station the Gill proceeded to and began occupying the series of regular stations of the southern leg on February 16, 1953. Due to high winds and heavy seas, only 16 of the proposed 34 regular stations could be made. On several occasions it was necessary for the vessel to proceed to the nearest shelter until the weather moderated. The Gill returned to Brunswick on February 22, 1953.

After a brief stopover in Brunswick for supplies, the Gill departed on February 26, 1953, and proceeded northward to occupy regular stations 35 through 80 and special stations 1 through 4 of the northern leg of the cruise. Adverse weather conditions in the Cape Hatteras area prevented occupation of 10 regular and the 4 special stations. The vessel returned to Brunswick on March 10, 1953. Cruise track chart is given in Figure 4.

During the cruise, Nansen casts were made on all regular stations occupied. Bottom samples were obtained on southern leg stations and a few northern leg stations with the orange peel sampler (sampler lost early on northern leg). Coring was attempted using Phleger corer, but it proved ineffective on the types of bottom encountered. Water samples were collected for salinity, nitrate, carbohydrates, inorganic phosphate, total phosphorous, and proteins on each station. Oxygen determinations were made aboard vessel for each station. BT's and associated meteorological observations were taken on each station and hourly between stations. Oblique plankton hauls with a half-meter silk net were made on each station. Dip-netting was carried out day and night when conditions permitted. Artificial lures were trolled between stations for capture of larger fish.

Scientific personnel participating in the cruise were:

I. Southern Leg

U.S. Fish and Wildlife Service and Cooperators:

W.W. Anderson	Chief Scientist
J. W. Gehringer	Biologist

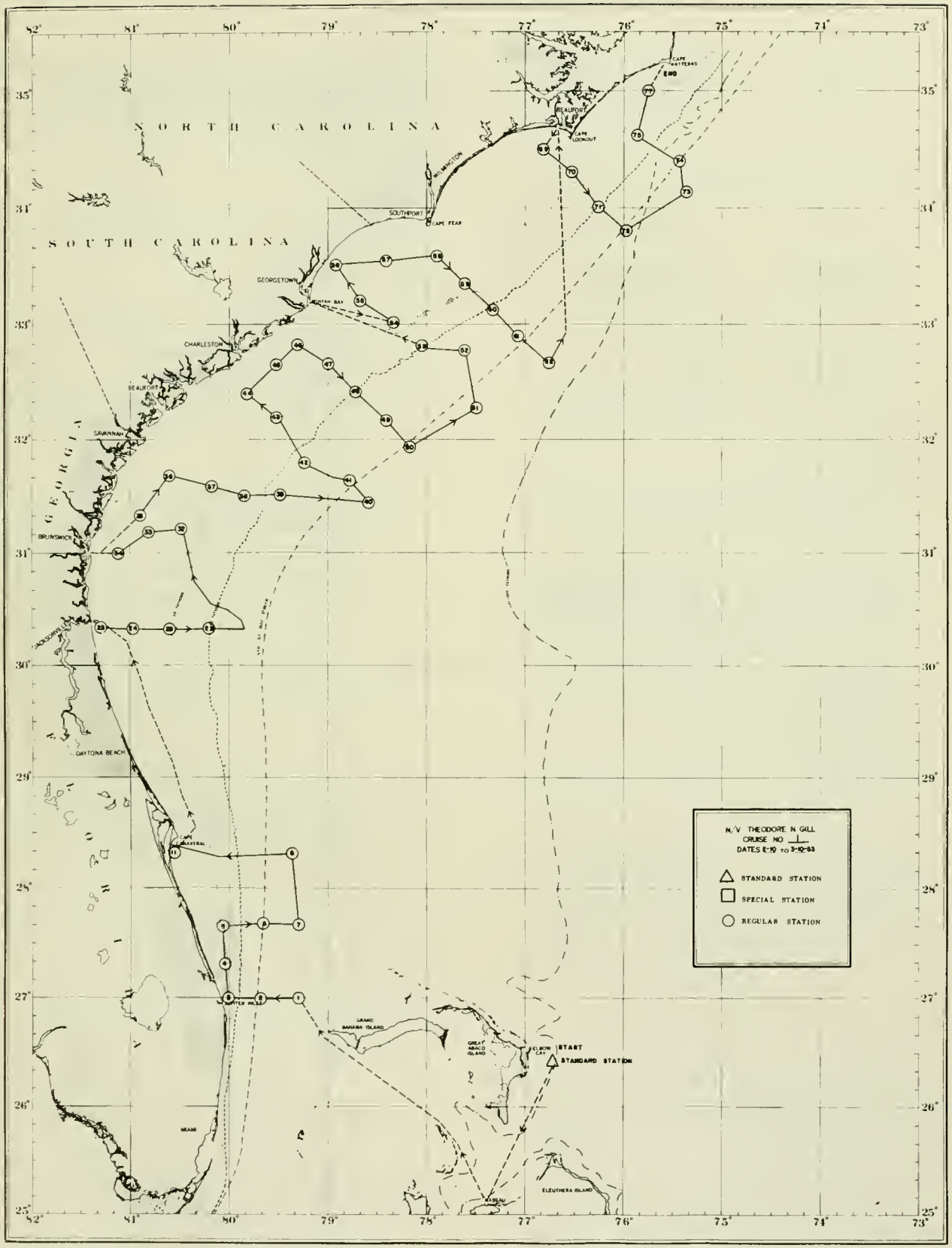

Figure 4.--Track chart.

G.F. Arata, Jr.	Biologist (Florida State Board of Conservation)
W.C.Pittman	Biological Aid

Navy Hydrographic Office:

F.X.Doherty	Senior Oceanographer
E.K.Stanton	Oceanographer
C.W.Backus	Technician

Office of Naval Research:

S.S.Galler	Head Biologist

II Northern Leg

U.S. Fish and Wildlife Service and Cooperators:

W.W.Anderson	Chief Scientist
G.F.Arata, Jr.	Biologist (Florida State Board of Conservation)
W.C.Pittman	Biological Aid
C.C.Bryant	Chemical Aid

Navy Hydrographic Office:

E.K.Stanton	Senior Oceanographer
F.J. Reynolds	Oceanographer
L.Silverstein	Oceanographer
C.W.Backus	Technician

EXPLANATION OF DATA SHEETS AND TABLES

Oceanographic and Chemical

Each of the items appearing on the station data pages is explained below. All doubtful data are indicated and were not used in the construction of the curves from which the interpolated values (standard depth values) were derived. Observed values which were obviously false were omitted entirely. A dash in a table means that no value was available. Interpolations for standard depth values for temperature, salinity, sigma-t, and oxygen were for the most part IBM calculations, but in a few instances they are manual interpolations from hand drawn curves; those for the chemical constituents were derived from straight lines between observed values.

The profiles of salinity, temperature, and density were prepared from these data, and appear as Figures 5 - 15.

1. Cruise Number. The first cruise over the established station pattern (Figure 1) will be numbered Gill 1, and subsequent cruises, Gill 2 through Gill 9 (only Gill 1 is covered by the present report).

2. Station Number. Stations are numbered consecutively, starting with one, at the beginning of each cruise. The station pattern and numbers as shown in Figure 1 were maintained on each cruise. If a station or series of stations was not occupied, these station numbers are omitted. Regular stations have numbers only; standard and special stations are specifically indicated.

3. Date. Month, day, and year are given.

4. Latitude and Longitude. The position of the station is given in degrees and minutes.

5. Time. Given in Greenwich Mean Time and is that hour nearest to the start of the first cast.

6. Depth. Is the observed uncorrected sonic sounding for the station, recorded in meters.

7. Wind. Wind speed is given in meters per second. Direction from which the wind blows is coded in degrees true to the nearest ten degrees. The last zero is omitted. North is 36 on this scale and calm is 00. See Table 1, "Compass Direction Conversion Table for Wind, Sea, and Swell Directions."

8. Barometer. The barometric pressure is coded in millibars, neglecting the 900 or 1000. Thus 996 millibars is coded as 96 and 1008 millibars is coded as 08.

9. Air Temprature. Dry bulb and wet bulb temperatures are entered to the nearest tenth of a degree (centigrade).

10. Humidity. The percent of humidity is coded directly.

11. Weather. Weather is coded as indicated in Table 2, "Numerical Weather Codes - Present Weather."

12. Clouds. Cloud type and amount are coded as indicated in Table 3, "Cloud Type"; and Table 4, "Cloud Amount"

13. Sea. Sea direction and amount are coded as indicated in Table 5, "Sea Amount"; and Table 1.

14. Swell. Swell directions and amount are coded as indicated in Table 6, "Swell Amount"; and Table 1.

15. Visibility. Visibility is coded as indicated in Table 7, "Visibility."

16. Water Transparency. Given as meters to which a Secchi disc is visible.

Subsurface Observations

1. Sample Depth. Observed (actual) depth of each sample is given in meters. Interpolated values at standard depths are also given. The standard depths in meters are: 0, 10, 20, 30, 50, 75, 100, 150, 200, 250, 300, 400, 500, 600, 700, 800, 1000, 1200, 1500, 2000, 2500, 3000, and thence every 1000 meters.

2. Temperature. The centigrade temperature is given in degrees and hundredths.

3. Salinity. Salinity is given in parts per thousand to two decimal places.

4. Sigma-t. To convert to density divide by 1000 and add 1. Thus, a sigma-t value of 22.35 converts to a density of 1.02235.

5. Dissolved Oxygen. These values are given in milliliters per liter to two decimal places.

6. Total Phosphorous. Values are given in microgram atoms per liter to the nearest 0.1 of a unit.

7. Inorganic Phosphate. Values are given in microgram atoms per liter to the nearest 0.1 of a unit.

8. Nitrate-nitrite. These values are given in microgram atoms per liter to the nearest 0.5 of a unit.

9. Carbohydrates (Arabinose). These values are given in terms of milligrams per liter to the nearest 0.1 of a unit. Collier et al. (1953) presented a technique for estimating certain elements of the organic materials in sea water which react to the test for carbohydrates. The carbohydrate values are given as arabinose equivalents, and are not necessarily the actual concentration of carbohydrate substances.

10. Proteins (Tyrosine). These values are given to the nearest 0.1 of a unit as milligrams per liter of protein material in sea water, which reacts to the test for tyrosine.

Biological

1. Plankton volumes (half-meter silk net), Table 8. The position given is that at beginning of the tow. The depth of the haul is given from 0 to the greatest depth reached. The volumes as given are "wet volumes" (procedures for determination are given under methods). Very few samples contained large organisms such as jellyfish (which were removed), so that the volumes represent

smaller organisms.

2 Numbers of plankton organisms per cubic meter of water (half-meter net), Table 9. The procedures for plankton tows, methods for sorting and counting, and calculations of numbers of organisms were described under methods. Counts are given for major groups as indicated.

3. Numbers of plankton organisms per cubic meter of water (continuous plankton sampler), Table 10. Description of this sampler, its use, and methods of calculating numbers of organisms were given under methods. Counts are given by compartment for major groups as indicated.

4. Numbers and species of fish taken by trolling, Table 11. The stage of gonad development is based on International Council classifications of gonad maturity for the herring (International Councils Rapports et Proces-Verbaux des Reunions, Vol. LXXIV, pp. 117, March 1931). The scale is only a guide to general classifications and must be treated as such.

This scale follows:

Stage I. Virgin individuals. Very small sexual organs close under vertebral column. Wine-coloured torpedo-shaped ovaries about 2-3 cm. long and 2-3 mm. thick. Eggs invisible to naked eye. Whitish or grayish brown knife-shaped testes 2-3 cm. long and 2-3 mm. broad.

Stage II Maturing virgins or recovering spents. Ovaries somewhat longer than half the length of ventral cavity, about 1 cm. diameter. Eggs small but visible to naked eye. Milt whitish, somewhat bloodshot, same size as ovaries, but still thin and knife-shaped.

Stage III. Sexual organs more swollen, occupying about half of ventral cavity.

Stage IV. Ovaries and testes nearly filling 2/3 of ventral cavity. Eggs not transparent, milt whitish, swollen.

Stage V. Sexual organs filling ventral cavity. Ovaries with some large transparent eggs. Milt white, not yet running.

Stage VI. Roe and milt running (spawning).

Stage VII. Spents. Ovaries slack with residual eggs. Testes baggy, bloodshot. Doubtful cases are indicated by quoting two stages e.g. "St. I-II, St. VII II," etc.

5. Numbers and species of fish taken by dip net, Table 12. There is shown, by family, the genera and species taken. Numbers of specimens from each station are given in parentheses, followed by the approximate size or size range of standard length, in millimeters.

ACKNOWLEDGMENTS

Acknowledgment is made to the following agencies and individuals for contributions in securing and processing the material presented. To the Navy Hydrographic Office for their cooperation in planning and executing the field program and for processing the physical oceanographic data. To the Office of Naval Research, and Dr. Sidney S. Galler in particular, for help in planning and executing the field program. To the Georgia Game and Fish Commission for their cooperation in the biological and chemical studies; through Frank T. Knapp, biologist and Joseph L. Moore, chemist. To the Florida State Board of Conservation (through the Marine Laboratory of the University of Miami) for their cooperation in the biological studies, through George F. Arata, Jr., biologist.

From our own staff we wish to acknowledge Kenneth A. Honey, Fishery Research Biologist, for making plankton organism counts, and Frederick H. Berry, Fishery Research Biologist, for identification of fishes from dip net collections. We are appreciative of the assistance of other staff members who participated in various phases of processing of data and preparation of this manuscript: Fanny Lee, F. Elaine Whiteford, Charles P. Goodwin, Clyde C. Bryant, Herbert R. Gordy, Vibert L. Strock, and Elizabeth H. Swindell. Acknowledgment is also made of the excellent cooperation of crew members of the M/V Theodore N. Gill, and Captain Mauritz C. Fredricksen in particular.

LITERATURE CITED

Ahlstrom, Elbert H.
1952. Pilchard eggs and larvae and other fish larvae, Pacific Coast, 1950. U.S. Fish and Wildl. Serv., Spec. Sci. Rept.: Fish. No. 80, 58 pp., 2 figs.

Collier, Albert, S.M. Ray, A.W. Magnitzky, and Joe O. Bell.
1953. Effect of dissolved organic substances on oysters. Fish Bull. Fish and Wildl. Serv., 54(84): 167-185, 14 figs.

Harvey, H. W.
1948. The estimation of phosphates and total phosphorous in sea water. J. Mar. Biol. Ass. U. K., 27(2): 337-359, figs. 1-11.

Marvin, Kenneth T.
1955. Notes on the precision of a modified routine nitrate-nitrite analysis. J. Mar. Res., 14(1):79-87, figs. 1-4.

Robinson, Rex J. and Thomas G. Thompson.
1948. The determination of phosphates in sea waters. J. Mar. Res., 7(1):33-41.

Wooster, Warren S.
1950. Methods in chemical oceanography ...employed in the California Cooperative Sardine Research Program. Scripps Inst. Oceanogr., Tech. Rept., iii-24 pp., 8 figs. Mimeo.

Table 1. Compass direction conversion table for wind, sea, and swell directions

Code	Direction
00	Calm
01	5° to 14°
02	15° to 24° NNE
03	25° to 34°
04	35° to 44°
05	45° to 54° NE
06	55° to 64°
07	65° to 74° ENE
08	75° to 84°
09	85° to 94° E
10	95° to 104°
11	105° to 114° ESE
12	115° to 124°
13	125° to 134°
14	135° to 144° SE
15	145° to 154°
16	155° to 164° SSE
17	165° to 174°
18	175° to 184° S
19	185° to 194°
20	195° to 204° SSW
21	205° to 214°
22	215° to 224°
23	225° to 234° SW
24	235° to 244°
25	245° to 254° WSW
26	255° to 264°
27	265° to 274° W
28	275° to 284°
29	285° to 294° WNW
30	295° to 304°
31	305° to 314°
32	315° to 324° NW
33	325° to 334°
34	335° to 344° NNW
35	345° to 354°
36	355° to 4° N

TABLE II NUMERICAL WEATHER CODES—PRESENT WEATHER

00 Cloud development NOT observed or NOT observable during past hour.	**01** Clouds generally dissolving or becoming less developed during past hour	**02** State of sky on the whole unchanged during past hour	**03** Clouds generally forming or developing during past hour	**04** Visibility reduced by smoke	**05** Haze	**06** Widespread dust in suspension in the air, NOT raised by wind, at time of observation.	**07** Dust or sand raised by wind, at time of observation.	**08** Well developed dust devil(s) within past hour	**09** Duststorm or sandstorm within sight of or at station during past hour
10 Light fog	**11** Patches of shallow fog at station, NOT deeper than 6 feet on land	**12** More or less continuous shallow fog at station, NOT deeper than 6 feet on land.	**13** Lightning visible, no thunder heard	**14** Precipitation within sight, but NOT reaching the ground.	**15** Precipitation within sight, reaching the ground, but distant from station.	**16** Precipitation within sight, reaching the ground, near to but NOT at station.	**17** Thunder heard, but no precipitation at the station.	**18** Squall(s) within sight during past hour	**19** Funnel cloud(s) within sight during past hour
20 Drizzle (NOT freezing and NOT falling as showers) during past hour, but NOT at time of ob	**21** Rain (NOT freezing and NOT falling as showers) during past hour, but NOT at time of ob	**22** Snow (NOT falling as showers) during past hour, but NOT at time of observation.	**23** Rain and snow (NOT falling as showers) during past hour, but NOT at time of observation	**24** Freezing drizzle or freezing rain (NOT falling as showers) during past hour, but NOT at time of observation.	**25** Showers of rain during past hour, but NOT at time of observation	**26** Showers of snow, or of rain and snow, during past hour, but NOT at time of observation.	**27** Showers of hail, or of hail and rain, during past hour, but NOT at time of observation	**28** Fog during past hour, but NOT at time of observation	**29** Thunderstorm (with or without precipitation) during past hour, but NOT at time of observation
30 Slight or moderate duststorm or sandstorm has decreased during past hour.	**31** Slight or moderate duststorm or sandstorm no appreciable change during past hour	**32** Slight or moderate duststorm or sandstorm has increased during past hour.	**33** Severe duststorm or sandstorm has decreased during past hour	**34** Severe duststorm or sandstorm, no appreciable change during past hour.	**35** Severe duststorm or sandstorm, has increased during past hour	**36** Slight or moderate drifting snow, generally low	**37** Heavy drifting snow, generally low	**38** Slight or moderate drifting snow, generally high	**39** Heavy drifting snow generally high
40 Fog at distance at time of observation, but NOT at station during past hour.	**41** Fog in patches.	**42** Fog, sky discernible, has become thinner during past hour	**43** Fog, sky NOT discernible, has become thinner during past hour.	**44** Fog, sky discernible, no appreciable change during past hour	**45** Fog, sky NOT discernible no appreciable change during past hour	**46** Fog, sky discernible, has begun or become thicker during past hour.	**47** Fog, sky NOT discernible, has begun or become thicker during past hour.	**48** Fog, depositing rime, sky discernible	**49** Fog, depositing rime, sky not discernible
50 Intermittent drizzle (NOT freezing) slight at time of observation.	**51** Continuous drizzle (NOT freezing) slight at time of observation.	**52** Intermittent drizzle (NOT freezing) moderate at time of ob.	**53** Continuous drizzle (NOT freezing), moderate at time of ob.	**54** Intermittent drizzle (NOT freezing), thick at time of observation	**55** Continuous drizzle (NOT freezing), thick at time of observation	**56** Slight freezing drizzle	**57** Moderate or thick freezing drizzle	**58** Drizzle and rain, slight	**59** Drizzle and rain, moderate or heavy
60 Intermittent rain (NOT freezing), slight at time of observation.	**61** Continuous rain (NOT freezing), slight at time of observation.	**62** Intermittent rain (NOT freezing), moderate at time of ob.	**63** Continuous rain (NOT freezing), moderate at time of observation.	**64** Intermittent rain (NOT freezing), heavy at time of observation.	**65** Continuous rain (NOT freezing), heavy at time of observation.	**66** Slight freezing rain	**67** Moderate or heavy freezing rain	**68** Rain or drizzle and snow, slight	**69** Rain or drizzle and snow, moderate or heavy
70 Intermittent fall of snowflakes, slight at time of observation.	**71** Continuous fall of snowflakes, slight at time of observation.	**72** Intermittent fall of snowflakes, moderate at time of observation.	**73** Continuous fall of snowflakes, moderate at time of observation.	**74** Intermittent fall of snowflakes, heavy at time of observation.	**75** Continuous fall of snowflakes, heavy at time of observation.	**76** Ice needles (with or without fog).	**77** Granular snow (with or without fog).	**78** Isolated starlike snow crystals (with or without fog).	**79** Ice pellets (sleet, U. S. definition)
80 Slight rain shower(s).	**81** Moderate or heavy rain shower(s).	**82** Violent rain shower(s).	**83** Slight shower(s) of rain and snow mixed	**84** Moderate or heavy shower(s) of rain and snow mixed.	**85** Slight snow shower(s)	**86** Moderate or heavy snow shower(s).	**87** Slight shower(s) of soft or small hail with or without rain or rain and snow mixed	**88** Moderate or heavy shower(s) of soft or small hail with or without rain or rain and snow mixed	**89** Slight shower(s) of hail, with or without rain or rain and snow mixed, not associated with thunder
90 Moderate or heavy shower(s) of hail, with or without rain or rain and snow mixed, not associated with thunder.	**91** Slight rain at time of ob., thunderstorm during past hour, but NOT at time of observation.	**92** Moderate or heavy rain at time of ob., thunderstorm during past hour, but NOT at time of observation.	**93** Slight snow or rain and snow mixed or hail at time of observation., thunderstorm during past hour, but not at time of observations	**94** Mod. or heavy snow, or rain and snow mixed or hail at time of ob., thunderstorm during past hour, but NOT at time of observation.	**95** Slight or mod. thunderstorm without hail but with rain and/or snow at time of observation.	**96** Slight or moderate thunderstorm, with hail at time of observation.	**97** Heavy thunderstorm, without hail, but with rain and/or snow at time of observation	**98** Thunderstorm combined with duststorm or sandstorm at time of observation.	**99** Heavy thunderstorm with hail at time of observation.

Table 3. Cloud type

Code	
0	Stratus or Fractostratus
1	Cirrus
2	Cirrostratus
3	Cirrocumulus
4	Altocumulus
5	Altostratus
6	Stratuscumulus
7	Nimbostratus
8	Cumulus or Fractocumulus
9	Cumulonumbus

Table 4. Cloud amount

Code	
0	No clouds
1	Less than 1/10 or 1/10
2	2/10 and 3/10
3	4/10
4	5/10
5	6/10
6	7/10 and 8/10
7	9/10 and 9/10 plus
8	10/10
9	Sky obscured

Table 5. Sea amount

Code	Approximate Height (feet)	Description
0	------	Calm
1	Less than 1	Smooth
2	1 to 3	Slight
3	3 to 5	Moderate
4	5 to 8	Rough
5	8 to 12	Very rough
6	12 to 20	High
7	20 to 40	Very high
8	40 and over	Mountainous
9	------	Very rough confused sea

Table 6. Swell amount

Code	Approximate Height (feet)	Description		Approximate Length (feet)
0	----	No swell		----
1	1 to 6	Low swell	Short or Average	0 to 600
2			Long	Above 600
3	6 to 12	Moderate	Short	0 to 300
4			Average	300 to 600
5			Long	Above 600
6	Greater than 12	High	Short	0 to 300
7			Average	300 to 600
8			Long	Above 600
9	----	Confused		----

Table 7. Visibility

Code

0 Dense fog ---------- 50 yards
1 Thick fog ---------- 200 yards
2 Fog ---------- 400 yards
3 Moderate fog ---------- 1000 yards
4 Thin fog or mist ---------- 1 mile
5 Visibility poor ---------- 2 miles
6 Visibility moderate ---------- 5 miles
7 Visibility good ---------- 10 miles
8 Visibility very good ---------- 30 miles
9 Visibility excellent ----------Over 30 miles

Table 8.--Plankton volumes (half-meter silk net)

Sta.	Position N. Lat.	Position W. Long.	(1953) Date	Time (EST) Start	Time (EST) End	Vol. water strained (m^3)	Depth of haul in meters	Vol. per m^3 strained (ml)
1	26°59'	79°18.5'	Feb. 17	0147	0217	230.2	0-64	0.078
2	26°58'	79°41'	Feb. 17	0617	0647	401.9	0-71	0.027
3	27°00'	80°03.5'	Feb. 17	1023	1044	147.5	0-8	0.224
4	27°20'	80°03'	Feb. 17	1309	1329	156.8	0-7	0.249
5	27°40'	80°03'	Feb. 17	1552	1614	98.5	0-21	0.203
6	27°40'	79°41'	Feb. 17	1955	2024	188.6	0-64	0.064
7	27°40'	79°18'	Feb. 18	0015	0043	223.3	0-67	0.098
11	28°20'	80°33'	Feb. 19	0910	0930	179.4	0-3	-
23	30°20'	81°20'	Feb. 21	1515	1537	187.4	0-4	0.171
24	30°20'	80°58'	Feb. 21	1814	1835	175.8	0-11	0.102
25	30°20'	80°35'	Feb. 21	2117	2139	69.9	0-13	1.216
26	30°20'	80°10'	Feb. 22	0120	0144	116.8	0-82	0.445
32	31°13.5'	80°31.5'	Feb. 22	0956	1021	98.3	0-19	0.590
33	31°11'	80°49'	Feb. 22	1250	1317	135.6	0-11	0.103
34	31°00'	81°09'	Feb. 22	1712	1733	172.2	0-4	0.203
35	31°20'	80°52'	Feb. 26	1935	1955	198.3	0-9	0.131
36	31°42'	80°36'	Feb. 26-27	2350	0010	197.0	0-8	0.213
37	31°36	80°10'	Feb. 27	0235	0258	186.4	0-13	0.365
38	31°31'	79°52'	Feb. 27	0525	0546	124.1	0-13	0.661
39	31°32'	79°28'	Feb. 27	2135	2157	190.6	0-45	0.079
40	31°27'	78°34'	Feb. 27	1431	1461	217.7	0-48	0.037
41	31°38'	78°45'	Feb. 27	1835	1902	211.8	0-53	0.123
42	31°47'	79°16'	Feb. 28	0045	0115	101.7	0-57	0.836
43	32°12'	79°32'	Feb. 28	0428	0450	82.2	0-11	1.703
44	32°25'	79°50'	Feb. 28	0801	0824	195.4	0-12	0.210
45	32°40'	79°32'	Feb. 28	1032	1053	205.4	0-3	0.097
46	32°51'	79°18'	Feb. 28	1326	1346	218.1	Surface	0.142
47	32°40'	79°00'	Feb. 28	1610	1630	87.9	0-11	0.967
48	32°24'	78°43'	Feb. 28	2004	2031	141.9	0-48	0.599
49	32°11'	78°25'	Feb. 28-Mar. 1	2336	0002	181.6	0-42	0.176
50	31°57'	78°09'	Mar. 1	0305	0330	194.7	0-59	0.077
51	32°18'	77°30'	Mar. 1	0819	0846	222.3	0-54	0.063
52	32°47'	77°37'	Mar. 1	1140	1205	165.8	0-53	0.814
53	32°48'	78°04'	Mar. 1	1534	1558	140.6	0-48	0.427
54	33°02'	78°21'	Mar. 2	1931	1952	239.5	0-9	0.104
55	33°12'	78°38'	Mar. 2	2205	2226	200.4	0-3	0.100
56	33°32'	78°55'	Mar. 3	0020	0040	219.6	Surface	0.055

Table 8.--Plankton volumes (half-meter silk net), cont'd

Sta.	Position N. Lat.	Position W. Long.	(1953) Date	Time (EST) Start	Time (EST) End	Vol. water strained (m^3)	Depth of haul in meters	Vol. per m^3 strained (ml)
57	33°33.5'	78°24.5'	Mar. 3	1550	1610	189.3	0-6	0.111
59	33°22'	77°36.5'	Mar. 3	1114	1138	97.5	0-11	0.769
60	33°08'	77°20'	Mar. 3	1434	1459	111.1	0-59	0.540
61	32°54'	77°03'	Mar. 3	1756	1821	93.0	0-70	0.731
62	32°41'	76°45'	Mar. 3	2210	2238	166.3	0-77	0.096
69	34°32'	76°49'	Mar. 6	0815	0837	133.7	0-9	0.224
70	34°18'	76°31.5'	Mar. 6	1104	1125	144.5	0-9	0.450
71	34°03'	76°15'	Mar. 6	1349	1413	82.5	0-35	1.273
72	33°50'	75°59'	Mar. 6	1744	1810	214.1	0-44	0.164
73	34°09'	75°22'	Mar. 6	2317	2343	173.5	0-57	0.196
74	34°25'	75°26'	Mar. 7	0459	0525	117.5	0-81	0.323
75	34°38'	75°51'	Mar. 7	0934	0955	77.9	0-16	1.309
77	35°01'	75°45'	Mar. 7	1333	1355	97.6	0-13	0.820

Table 9.--Numbers of plankton organisms per cubic meter of water (half-meter net)

Station Number	Reg. 1	Reg. 2	Reg. 3	Reg. 4	Reg. 5	Reg. 6	Reg. 7	Reg. 11
Protozoa	28.5	12.1	70.4	123.0	26.8	28.1	17.0	2.1
Coelenterata	2.9	1.3	13.8	10.6	6.9	3.1	1.3	-
Chaetognatha	6.0	2.2	27.7	17.0	13.0	4.2	4.9	0.1
Misc. Worms	1.6	0.7	1.8	0.5	0.2	0.3	0.5	0.2
Copepoda	87.5	29.5	448.4	496.2	198.0	47.2	39.4	10.0
Ostracoda	4.8	1.5	26.3	4.1	150.7	13.5	4.2	-
Mysidacea	-	-	-	0.6	-	-	-	-
Amphipoda	0.6	0.2	-	9.3	2.0	0.6	0.3	-
Isopoda	-	-	-	-	-	0.1	0.1	-
Stomatopoda	-	-	0.8	-	-	-	-	-
Euphausiacea	0.3	0.1	-	0.4	-	1.7	2.1	-
Shrimp	2.4	0.9	1.9	3.2	4.3	2.0	0.6	1.1
Crabs	0.3	-	21.2	7.3	1.6	0.1	0.4	5.5
Misc. Crustaceans	2.0	0.2	12.3	0.4	3.4	-	-	0.1
Pteropoda	0.3	0.2	4.1	3.8	2.6	0.7	0.2	-
Misc. Mollusca	0.9	0.4	9.9	1.8	10.2	2.8	2.1	0.2
Larvacea	0.6	1.4	11.5	10.8	37.2	1.1	5.6	0.1
Misc. Tunicata	0.4	0.2	0.1	1.4	1.0	0.7	-	0.1
Leptocardia	0.11	0.05	-	-	-	-	0.06	-
Misc. Organisms	1.0	0.2	1.2	-	0.8	0.8	0.6	-
Subtotal	140.2	51.2	651.4	690.4	458.7	107.0	79.4	19.5
Fish Eggs	0.13	0.04	9.19	107.35	39.80	0.02	0.03	0.07
Fish Larvae	0.68	0.16	1.04	1.03	4.28	0.33	0.37	0.02
Total	141.0	51.4	661.6	798.8	502.8	107.4	79.8	19.6

Table 9.--Numbers of plankton organisms per cubic meter of water (half-meter net), cont'd

Station Number	Reg. 23	Reg. 24	Reg. 25	Reg. 26	Reg. 32	Reg. 33	Reg. 34	Reg. 35
Protozoa	2.6	4.0	3.7	116.2	-	3.2	329.9	15.7
Coelenterata	-	1.9	2.0	3.6	2.2	4.7	-	0.3
Chaetognatha	1.1	12.2	17.4	11.6	23.6	11.6	3.0	3.5
Misc. Worms	0.1	0.2	2.9	0.8	1.0	0.1	0.8	0.2
Copepoda	1198.0	137.5	333.6	248.7	248.0	279.4	716.5	447.9
Ostracoda	-	2.2	39.2	181.5	69.0	4.7	-	1.1
Mysidacea	-	-	0.8	2.2	7.3	-	-	0.1
Amphipoda	-	0.9	4.0	2.7	3.7	4.0	-	0.7
Isopoda	-	-	0.6	-	-	-	-	0.1
Stomatopoda	-	0.7	-	-	1.0	-	0.6	1.2
Euphausiacea	-	-	-	0.2	-	0.4	-	-
Shrimp	0.3	1.2	8.0	2.0	3.7	3.1	-	1.2
Crabs	0.8	8.9	32.6	2.6	8.1	2.1	1.2	10.2
Misc. Crustaceans	9.8	4.9	38.9	5.3	3.9	1.3	9.4	2.5
Pteropoda	-	-	2.9	1.2	0.4	0.1	-	-
Misc. Mollusca	0.2	1.1	15.2	3.4	1.0	1.3	16.6	10.7
Larvacea	-	66.3	44.6	21.4	88.4	8.8	5.6	5.8
Misc. Tunicata	-	-	50.4	1.2	20.5	-	-	-
Leptocardia	-	-	0.01	-	-	-	-	-
Misc. Organisms	-	-	1.4	1.7	0.8	-	-	-
Subtotal	1212.9	242.0	598.2	606.3	482.6	324.8	1083.6	501.2
Fish Eggs	2.17	0.74	1.07	1.04	0.69	0.93	0.06	0.53
Fish Larvae	0.02	0.05	4.99	2.85	0.78	0.04	0.03	0.02
Total	1215.1	242.8	604.3	610.2	484.1	325.8	1083.7	501.8

Table 9.--Numbers of plankton organisms per cubic meter of water (half-meter net), cont'd

Station Number	Reg. 36	Reg. 37	Reg. 38	Reg. 39	Reg. 40	Reg. 41	Reg. 42	Reg. 43
Protozoa	0.2	8.8	-	6.2	12.2	10.6	-	-
Coelenterata	0.9	1.6	6.1	1.5	2.6	5.9	0.6	1.2
Chaetognatha	30.9	16.5	13.7	8.7	4.0	7.5	19.1	16.3
Misc. Worms	1.0	0.8	0.3	0.3	0.3	0.9	1.0	1.5
Copepoda	294.9	210.4	256.2	120.1	31.9	76.1	387.7	304.3
Ostracoda	73.2	26.2	131.5	2.7	-	2.9	14.0	283.7
Mysidacea	1.8	0.3	3.1	-	-	0.4	-	7.8
Amphipoda	3.0	3.9	21.9	1.2	0.1	0.6	31.1	10.5
Isopoda	-	0.3	0.2	-	-	0.3	0.4	0.5
Stomatopoda	-	-	0.6	-	-	0.1	-	-
Euphausiacea	-	-	0.2	-	-	0.9	-	-
Shrimp	0.3	4.5	20.8	1.2	1.6	2.1	12.4	2.2
Crabs	4.2	2.9	6.0	0.1	-	0.2	1.8	1.9
Misc. Crustaceans	-	7.5	15.0	0.3	-	1.8	5.3	14.1
Pteropoda	0.8	0.5	1.6	1.2	0.1	0.7	-	-
Misc. Mollusca	1.4	9.0	2.4	2.4	2.6	1.6	1.8	2.7
Larvacea	0.6	6.6	6.4	2.4	0.3	2.3	55.6	190.8
Misc. Tunicata	-	9.5	21.6	1.4	0.1	0.5	10.6	15.6
Leptocardia	<0.01	-	-	-	-	0.01	-	-
Misc. Organisms	-	0.8	-	-	-	2.0	-	0.2
Subtotal	413.2	310.1	507.6	149.7	55.5	117.3	541.4	853.3
Fish Eggs	0.65	0.11	2.80	0.12	0.06	0.03	2.54	2.09
Fish Larvae	0.12	0.29	0.48	0.45	0.10	0.32	0.74	2.02
Total	414.0	310.5	510.9	150.3	55.7	117.7	544.7	857.4

Table 9.--Numbers of plankton organisms per cubic meter of water (half-meter net), cont'd

Station Number	Reg. 44	Reg. 45	Reg. 46	Reg. 47	Reg. 48	Reg. 49	Reg. 50	Reg. 51
Protozoa	3.0	1.0	-	-	-	5.7	10.1	9.7
Coelenterata	0.1	0.7	2.4	1.1	2.7	3.1	5.0	6.6
Chaetognatha	9.2	5.2	12.3	64.8	11.4	12.0	9.2	6.6
Misc. Worms	0.2	0.2	-	0.7	0.4	0.3	0.5	0.4
Copepoda	179.0	397.4	761.1	446.2	410.8	98.1	86.0	93.4
Ostracoda	0.5	1.6	0.2	154.4	101.6	5.1	3.3	0.6
Mysidacea	-	-	-	-	-	-	-	-
Amphipoda	1.0	0.1	-	15.9	8.2	0.4	0.7	0.4
Isopoda	-	-	-	0.2	0.4	0.2	0.4	0.4
Stomatopoda	-	-	-	-	-	-	-	-
Euphausiacea	-	-	-	-	0.3	1.2	3.6	1.4
Shrimp	1.8	-	0.1	4.8	5.8	1.9	0.1	0.5
Crabs	2.8	0.9	0.1	16.2	3.0	0.2	-	-
Misc. Crustaceans	-	0.9	-	1.4	-	1.0	0.6	0.6
Pteropoda	0.1	-	-	3.0	1.4	1.0	2.4	0.8
Misc. Mollusca	17.4	1.0	-	1.1	2.5	2.0	3.0	1.9
Larvacea	0.9	3.5	0.4	19.3	11.7	24.2	0.1	1.4
Misc. Tunicata	0.3	-	-	28.4	32.3	1.1	0.6	0.3
Leptocardia	-	-	-	-	-	0.01	-	-
Misc. Organisms	-	-	-	-	-	-	-	-
Subtotal	216.3	412.5	776.4	757.5	592.5	157.5	125.6	125.0
Fish Eggs	0.22	0.03	0.01	1.06	1.58	0.07	0.04	0.01
Fish Larvae	0.07	0.01	0.02	0.52	1.58	1.00	0.12	0.14
Total	216.6	412.5	776.4	759.1	595.7	158.6	125.8	125.2

Table 9.--Numbers of plankton organisms per cubic meter of water (half-meter net), cont'd

Station Number	Reg. 52	Reg. 53	Reg. 54	Reg. 55	Reg. 56	Reg. 57	Reg. 59	Reg. 60
Protozoa	-	-	7.1	2.8	-	164.6	1.2	-
Coelenterata	2.3	1.3	1.3	0.4	0.4	0.2	2.5	2.3
Chaetognatha	13.5	12.2	11.2	5.9	3.0	12.6	13.1	16.4
Misc. Worms	0.2	0.6	0.2	0.7	0.5	1.2	1.2	1.1
Copepoda	213.5	241.2	92.0	672.8	317.6	224.0	232.6	505.7
Ostracoda	49.9	41.1	1.2	3.4	0.4	70.6	50.0	13.0
Mysidacea	-	-	0.7	1.7	0.4	3.8	-	-
Amphipoda	1.3	2.0	0.8	0.3	0.1	19.5	9.2	3.6
Isopoda	0.7	-	0.2	-	-	-	-	0.4
Stomatopoda	-	-	-	-	-	-	0.2	-
Euphausiacea	-	0.3	-	-	-	-	0.2	0.5
Shrimp	2.8	4.8	1.2	1.1	0.4	1.0	5.9	4.1
Crabs	0.7	0.1	2.6	0.1	0.2	1.0	3.5	1.8
Misc. Crustaceans	9.4	5.7	3.7	4.5	15.5	4.2	6.2	45.0
Pteropoda	1.9	1.7	0.5	-	-	-	1.0	1.6
Misc. Mollusca	-	3.8	3.4	4.2	11.7	4.5	2.2	0.9
Larvacea	17.0	5.3	0.3	3.0	-	0.2	2.0	6.8
Misc. Tunicata	168.8	12.9	3.8	0.2	-	-	8.6	75.2
Leptocardia	-	-	-	0.23	-	0.04	-	-
Misc. Organisms	-	-	-	-	-	-	-	-
Subtotal	482.0	333.0	130.2	701.3	350.1	507.4	339.6	678.4
Fish Eggs	0.07	1.03	0.78	0.49	<0.01	0.19	5.73	0.63
Fish Larvae	0.80	1.62	0.03	0.01	0.01	0.08	1.90	2.28
Total	482.9	335.6	131.0	701.8	350.1	507.7	347.2	681.3

Table 9.--Numbers of plankton organisms per cubic meter of water (half-meter net), cont'd

Station Number	Reg. 61	Reg. 62	Reg. 69	Reg. 70	Reg. 71	Reg. 72	Reg. 73	Reg. 74
Protozoa	-	9.1	12.4	7.0	-	8.0	8.6	4.4
Coelenterata	1.5	6.8	1.5	4.7	4.4	1.7	6.1	2.0
Chaetognatha	9.5	5.4	16.3	18.8	5.8	6.2	6.3	11.2
Misc. Worms	1.1	0.7	0.7	0.8	1.4	0.7	0.6	1.7
Copepoda	745.4	89.2	610.5	717.4	226.1	91.7	124.6	2634.2
Ostracoda	9.5	6.6	133.2	0.3	14.8	4.1	7.6	8.0
Mysidacea	-	-	-	-	-	-	-	0.5
Amphipoda	1.1	0.2	4.5	6.8	2.9	2.4	0.6	1.4
Isopoda	-	-	-	-	-	-	-	-
Stomatopoda	-	-	-	-	-	-	-	-
Euphausiacea	-	1.3	-	0.1	0.2	5.3	2.4	3.2
Shrimp	6.0	5.4	1.6	0.1	5.6	1.1	3.9	1.7
Crabs	0.9	0.5	3.3	3.3	3.9	-	0.1	0.8
Misc. Crustaceans	33.8	0.1	1.5	7.5	9.4	-	0.3	4.4
Pteropoda	1.9	1.4	1.6	0.8	1.9	0.9	0.8	2.4
Misc. Mollusca	1.5	1.4	1.3	0.8	0.5	1.8	0.7	2.7
Larvacea	12.5	1.9	21.8	1.5	2.9	2.2	1.2	10.2
Misc. Tunicata	40.6	0.1	0.4	1.5	290.4	4.6	0.7	58.9
Leptocardia	-	0.01	-	-	-	-	-	-
Misc. Organisms	-	-	0.2	-	-	0.3	-	-
Subtotal	865.3	130.1	810.8	771.4	570.2	131.0	164.5	2747.7
Fish Eggs	0.08	0.12	1.15	3.96	0.07	0.02	0.06	0.06
Fish Larvae	2.39	0.57	0.30	0.33	3.13	0.30	0.65	1.23
Total	867.8	130.8	812.2	775.7	573.4	131.3	165.2	2749.0

Table 9.--Numbers of plankton organisms per cubic meter of water (half-meter net), cont'd

Station Number	Reg. 75	Reg. 77
Protozoa	4.6	0.4
Coelenterata	4.1	2.2
Chaetognatha	21.8	9.2
Misc. Worms	0.5	0.2
Copepoda	356.5	473.5
Ostracoda	11.0	1.2
Mysidacea	-	-
Amphipoda	2.6	0.6
Isopoda	-	-
Stomatopoda	-	-
Euphausiacea	0.2	-
Shrimp	2.8	10.2
Crabs	1.5	1.2
Misc. Crustaceans	1.3	0.8
Pteropoda	1.0	0.6
Misc. Mollusca	0.2	0.6
Larvacea	20.8	4.1
Misc. Tunicata	204.1	9.8
Leptocardia	-	-
Misc. Organisms	-	-
Subtotal	633.0	514.6
Fish Eggs	0.77	0.27
Fish Larvae	0.19	0.22
Total	634.0	515.1

Table 10.--Numbers of plankton organisms per cubic meter of water (continuous plankton sampler)

Run No. 1, Date February 16-17, 1953

Compartment No.	1	2	3	4	5	6	7	8
Time (EST)	2250	2350	0050	0150	0250	0350	0450	0550
Position of Ship: (N. Lat.	26°59'	26°59'	26°59'	26°59'	26°59'	26°59'	26°58'	26°58'
(W. Long.	79°18'	79°18'	79°18'	79°18'	79°23'	79°35'	79°41'	79°41'
Protozoa	-	-	-	-	-	-	-	-
Coelenterata	-	-	-	-	-	-	-	3.1
Chaetognatha	-	-	-	-	-	-	-	-
Misc. Worms	-	-	-	3.1	3.1	3.1	-	-
Copepoda	12.4	3.1	9.3	12.4	12.4	15.4	61.8	6.2
Ostracoda	-	-	3.1	-	6.2	-	-	-
Amphipoda	-	-	-	-	-	-	-	-
Shrimp	-	-	-	-	-	-	-	-
Crabs	-	-	3.1	-	-	-	-	-
Misc. Crustaceans	-	-	-	-	-	-	3.1	-
Mollusca	-	-	-	3.1	-	-	-	-
Invertebrate Eggs	-	-	3.1	-	-	12.4	3.1	6.2
Misc. Organisms	-	-	-	6.4	-	3.1	-	-
Subtotal	12.4	3.1	18.6	24.8	21.7	34.0	68.0	15.5
Fish Eggs	-	-	-	-	-	-	-	-
Fish Larvae	3.1	-	-	-	-	-	-	-
Total	15.5	3.1	18.6	24.8	21.7	34.0	68.0	15.5

Run No. 2, Date February 17, 1953

Compartment No.	1	2	3	4	5	6	7	8
Time (EST)	0748	0844	0940	1036	1132	1228	1324	1420
Position of Ship: (N. Lat.	27°00'	27°00'	27°00'	27°00'	27°06'	27°15'	27°22'	27°28'
(W. Long.	79°48'	79°57'	80°03'	80°03'	80°03'	80°03'	80°03'	80°03'
Protozoa	-	3.6	-	7.2	3.6	-	-	-
Coelenterata	-	10.7	-	-	-	-	-	-
Chaetognatha	-	-	-	-	-	3.6	-	3.6
Misc. Worms	-	3.6	3.6	7.2	-	-	3.6	-
Copepoda	43.0	39.4	100.2	143.2	28.6	10.7	50.1	32.2
Ostracoda	-	-	-	-	-	-	-	-
Amphipoda	-	-	3.6	-	-	-	-	-
Shrimp	-	-	-	-	3.6	-	-	-
Crabs	-	-	14.3	7.2	-	3.6	-	-
Misc. Crustaceans	-	-	-	7.2	-	-	-	-
Mollusca	-	-	-	7.2	-	-	-	-
Invertebrate Eggs	-	3.6	21.5	17.9	-	-	10.7	-
Misc. Organisms	-	-	-	-	-	-	-	-
Subtotal	43.0	60.9	143.2	197.1	35.8	17.9	64.4	35.8
Fish Eggs	-	-	3.6	7.2	3.6	46.5	-	21.5
Fish Larvae	-	-	-	-	-	-	-	-
Total	43.0	60.9	146.8	204.3	39.4	64.4	64.4	57.3

Table 10.--Numbers of plankton organisms per cubic meter of water (continuous plankton sampler), cont'd

Run No. 3, Date February 17, 1953

Compartment No.	1	2	3	4	5	6	7	8
Time (EST)	1526	1623	1719	1816	1912	2009	2105	2202
Position of Ship: (N. Lat.	27°40'	27°40'	27°40'	27°40'	27°41'	27°41'	27°42'	27°41'
(W. Long.	80°03'	80°00'	79°52'	79°44'	79°40'	79°40'	79°36'	79°27'
Protozoa	14.8	-	-	-	-	-	-	-
Coelenterata	-	-	-	-	-	-	-	3.7
Chaetognatha	-	-	3.7	3.7	3.7	-	-	3.7
Misc. Worms	-	7.4	-	3.7	-	-	-	-
Copepoda	96.5	11.1	59.4	37.1	18.6	22.3	11.1	14.8
Ostracoda	11.1	-	-	-	-	-	-	-
Amphipoda	-	-	-	-	-	-	-	-
Shrimp	-	3.7	-	-	3.7	-	-	-
Crabs	3.7	-	-	-	-	-	-	-
Misc. Crustaceans	-	-	-	-	-	-	-	-
Mollusca	-	-	-	-	-	-	-	-
Invertebrate Eggs	-	11.1	7.4	-	-	3.7	11.1	-
Misc. Organisms	-	-	7.4	-	-	-	-	-
Subtotal	126.1	33.3	77.9	44.5	26.0	26.0	22.2	22.2
Fish Eggs	37.1	-	22.3	-	-	3.7	-	7.4
Fish Larvae	-	-	-	-	-	-	-	-
Total	163.2	33.3	100.2	44.5	26.0	29.7	22.2	29.6

Run No. 4, Date February 17-18, 1953

Compartment No.	1	2	3	4	5	6	7	8
Time (EST)	2314	0011	0108	0205	0302	0359	0456	0553
Position of Ship: (N. Lat.	27°40'	27°40'	27°48'	28°00'	28°10'	28°21'	28°25'	28°21'
(W. Long.	79°18'	79°18'	79°20'	79°23'	79°26'	79°26'	79°26'	79°29'
Protozoa	-	4.2	-	-	4.2	-	-	4.2
Coelenterata	-	-	-	-	-	-	-	-
Chaetognatha	-	-	-	4.2	-	-	-	-
Misc. Worms	-	-	-	-	4.2	-	-	4.2
Copepoda	25.3	16.9	33.8	16.9	16.9	4.2	12.7	8.4
Ostracoda	-	4.2	-	-	-	-	-	-
Amphipoda	-	-	-	-	-	-	-	-
Shrimp	4.2	-	-	4.2	-	-	-	-
Crabs	-	-	-	-	-	-	-	-
Misc. Crustaceans	-	-	-	-	-	4.2	-	-
Mollusca	-	-	-	-	-	-	-	-
Invertebrate Eggs	-	-	4.2	-	-	-	8.4	-
Misc. Organisms	-	-	-	-	-	-	-	-
Subtotal	29.5	25.3	38.0	25.3	25.3	8.4	21.1	16.8
Fish Eggs	4.2	4.2	-	-	-	-	-	-
Fish Larvae	-	-	-	-	-	-	-	-
Total	33.7	29.5	38.0	25.3	25.3	8.4	21.1	16.8

Table 10.--Numbers of plankton organisms per cubic meter of water (continuous plankton sampler), cont'd

Run No. 5, Date February 18, 1953

Compartment No.	1	2	3	4	5	6	7	8
Time (EST)	0712	0812	0912	1012	1112	1212	1312	1412
Position of Ship: (N. Lat.)	28°20'	28°18'	28°15'	28°18'	28°20'	28°22'	28°23'	28°24'
(W. Long.)	79°40'	79°48'	79°56'	80°06'	80°12'	80°18'	80°24'	80°29'
Protozoa	-	-	-	4.6	4.6	4.6	-	-
Coelenterata	-	-	-	-	-	-	-	-
Chaetognatha	-	-	4.6	4.6	4.6	-	-	-
Misc. Worms	-	-	-	9.2	-	-	-	-
Copepoda	27.7	-	4.6	78.5	27.7	13.9	50.8	32.3
Ostracoda	-	-	-	-	-	-	-	-
Amphipoda	-	-	-	-	-	-	-	-
Shrimp	-	-	-	-	-	-	-	-
Crabs	-	-	-	-	-	-	4.6	-
Misc. Crustaceans	-	-	4.6	-	-	-	-	-
Mollusca	-	-	-	-	-	-	-	-
Invertebrate Eggs	-	-	-	9.2	-	-	-	4.6
Misc. Organisms	4.6	-	-	-	-	-	9.2	-
Subtotal	32.3	-	13.8	106.1	36.9	18.5	64.6	36.9
Fish Eggs	-	-	-	-	-	13.9	9.2	-
Fish Larvae	-	-	-	-	-	-	-	-
Total	32.3	-	13.8	106.1	36.9	32.4	73.8	36.9

Run No. 6, Date February 19, 1953

Compartment No.	1	2	3	4	5	6	7	8
Time (EST)	0829	0927	1025	1123	1221	1319	1417	1515
Position of Ship: (N. Lat.)	28°23'	28°20'	28°24'	28°31'	28°36'	28°45'	28°53'	29°02'
(W. Long.)	80°32'	80°32'	80°26'	80°21'	80°22'	80°26'	80°29'	80°32'
Protozoa	-	-	-	-	-	-	-	-
Coelenterata	-	-	-	-	-	-	-	3.0
Chaetognatha	-	-	-	-	-	5.9	3.0	-
Misc. Worms	3.0	-	-	-	-	3.0	-	-
Copepoda	32.4	5.9	35.4	59.0	29.5	32.4	73.8	44.2
Ostracoda	-	-	-	-	-	-	-	-
Amphipoda	-	-	-	-	-	-	-	-
Shrimp	3.0	-	-	-	-	-	-	-
Crabs	5.9	-	8.8	11.8	3.0	20.6	23.6	8.8
Misc. Crustaceans	3.0	-	3.0	-	3.0	14.8	5.9	-
Mollusca	-	-	-	-	-	-	5.9	-
Invertebrate Eggs	3.0	-	-	5.9	-	3.0	11.8	-
Misc. Organisms	-	-	-	-	-	-	-	-
Subtotal	50.3	5.9	47.2	76.7	35.5	79.7	124.0	56.0
Fish Eggs	-	-	-	-	3.0	14.8	5.9	-
Fish Larvae	-	-	-	-	-	-	-	-
Total	50.3	5.9	47.2	76.7	38.5	94.5	129.9	56.0

Table 10.--Numbers of plankton organisms per cubic meter of water (continuous plankton sampler), cont'd

Run No. 7 Date February 21, 1953

Compartment No.	1	2	3	4	5	6	7	8
Time (EST)	1442	1539	1636	1733	1830	1927	2024	2121
Position of (N. Lat.	30°20'	30°20'	30°20'	30°20'	30°20'	30°20'	30°20'	30°20'
Ship: (W. Long.	81°20'	81°20'	81°09'	81°01'	80°55'	80°46'	80°38'	80°34'
Protozoa	-	3.5	-	3.5	-	-	-	-
Coelenterata	-	-	-	-	-	-	-	-
Chaetognatha	-	-	-	10.6	3.5	3.5	-	7.1
Misc. Worms	-	-	-	-	7.1	-	28.2	49.4
Copepoda	165.9	158.8	134.1	60.0	95.3	67.1	197.7	208.3
Ostracoda	-	-	-	-	-	-	10.6	-
Amphipoda	-	-	-	-	-	-	-	7.1
Shrimp	-	-	3.5	-	-	14.1	3.5	3.5
Crabs	-	-	-	3.5	3.5	-	7.1	3.5
Misc. Crustaceans	-	3.5	7.1	-	-	3.5	17.6	17.6
Mollusca	-	-	-	-	-	-	7.1	-
Invertebrate Eggs	-	-	-	-	3.5	-	-	-
Misc. Organisms	-	-	-	-	-	-	-	-
Subtotal	165.9	165.8	144.7	77.6	112.9	88.2	271.8	296.5
Fish Eggs	-	-	-	-	-	-	-	-
Fish Larvae	-	-	-	-	-	-	-	-
Total	165.9	165.8	144.7	77.6	112.9	88.2	271.8	296.5

Run No. 8, Date February 21-22, 1953

Compartment No.	1	2	3	4	5	6	7	8
Time (EST)	2233	2332	0032	0131	0231			
Position of (N. Lat.	30°20'	30°20'	30°20'	30°20'	30°20'			
Ship: (W. Long.	80°25'	80°15'	80°10'	80°07'	79°56'			
Protozoa	-	-	-	-	-			
Coelenterata	-	-	-	-	3.5			
Chaetognatha	-	-	7.0	-	7.0			
Misc. Worms	-	-	-	-	-			
Copepoda	179.5	126.7	119.7	14.1	161.9			
Ostracoda	3.5	133.8	116.2	-	38.7			
Amphipoda	-	-	-	-	-			
Shrimp	-	3.5	3.5	-	-			
Crabs	-	-	-	-	-			
Misc. Crustaceans	7.0	-	-	-	-			
Mollusca	-	3.5	-	-	3.5			
Invertebrate Eggs	-	-	3.5	3.5	3.5			
Misc. Organisms	-	3.5	3.5	-	-			
Subtotal	190.0	271.0	253.4	17.6	218.1			
Fish Eggs	-	-	-	-	-			
Fish Larvae	-	-	7.0	-	3.5			
Total	190.0	271.0	260.4	17.6	221.6			

Table 10.--Numbers of plankton organisms per cubic meter of water (continuous plankton sampler), cont'd

Run No. 9, Date February 22, 1953

Compartment No.	1	2	3	4	5	6	7	8
Time (EST)	0849	0947	1045	1143	1241	1339	1437	1535
Position of Ship: (N. Lat.	31°09'	31°13'	31°13'	31°12'	31°11'	31°09'	31°06'	31°04'
(W. Long.	80°27'	80°31'	80°37'	80°44'	80°49'	80°53'	80°58'	81°04'
Protozoa	-	-	-	-	11.0	3.7	3.7	18.3
Coelenterata	3.7	-	-	-	-	-	-	-
Chaetognatha	-	-	3.7	-	-	-	-	-
Misc. Worms	-	-	3.7	-	-	-	-	-
Copepoda	446.5	164.7	54.9	22.0	40.3	98.8	109.8	164.7
Ostracoda	7.3	3.7	76.9	25.6	-	-	-	-
Amphipoda	7.3	-	-	-	-	-	-	3.7
Shrimp	3.7	3.7	-	-	-	3.7	-	-
Crabs	3.7	-	-	-	-	-	-	-
Misc. Crustaceans	18.3	-	-	-	3.7	3.7	3.7	3.7
Mollusca	3.7	-	-	-	-	-	3.7	3.7
Invertebrate Eggs	3.7	11.0	3.7	-	7.3	3.7	3.7	3.7
Misc. Organisms	-	-	-	-	-	-	-	-
Subtotal	497.9	183.1	142.9	47.6	62.3	113.6	124.6	197.8
Fish Eggs	-	-	-	-	3.7	-	7.3	-
Fish Larvae	-	-	-	-	-	-	-	-
Total	497.9	183.1	142.9	47.6	66.0	113.6	131.9	197.8

Run No.10, Date February 22, 1953

Compartment No.	1	2	3	4	5	6	7	8
Time (EST)	1644	1744	1844					
Position of Ship: (N. Lat.	31°00'	31°03'	31°07'					
(W. Long.	81°09'	81°14'	81°22'					
Protozoa	-	-	-					
Coelenterata	-	-	-					
Chaetognatha	-	-	-					
Misc. Worms	-	-	4.1					
Copepoda	268.4	45.4	140.4					
Ostracoda	-	-	-					
Amphipoda	-	-	-					
Shrimp	-	-	-					
Crabs	-	-	-					
Misc. Crustaceans	4.1	-	-					
Mollusca	8.3	4.1	-					
Invertebrate Eggs	-	-	-					
Misc. Organisms	-	-	-					
Subtotal	280.8	49.5	144.5					
Fish Eggs	-	-	-					
Fish Larvae	-	-	-					
Total	280.8	49.5	144.5					

Table 10.--Numbers of plankton organisms per cubic meter of water (continuous plankton sampler), cont'd

Run No. 11, Date February 26-27, 1953

Compartment No.	1	2	3	4	5	6	7	8
Time (EST)	1743	1841	1938	2036	2133	2231	2328	0026
Position of (N. Lat.	31°08'	31°13'	31°18'	31°20'	31°25'	31°34'	31°42'	31°40'
Ship: (W. Long.	81°10'	81°02'	80°55'	80°52'	80°44'	80°39'	80°36'	80°28'
Protozoa	154.8	-	-	-	-	12.6	-	3.2
Coelenterata	-	-	-	-	-	-	-	-
Chaetognatha	-	-	-	-	-	3.2	-	12.6
Misc. Worms	-	-	-	-	-	-	-	-
Copepoda	246.5	123.2	208.6	151.7	56.9	113.8	75.8	63.2
Ostracoda	6.3	-	-	-	-	12.6	6.3	9.5
Amphipoda	-	-	-	-	-	-	-	-
Shrimp	-	-	-	-	-	-	-	-
Crabs	-	-	-	-	-	-	9.5	-
Misc. Crustaceans	25.3	-	-	6.3	-	-	-	-
Mollusca	-	-	-	-	3.2	-	-	-
Invertebrate Eggs	-	-	-	-	-	-	-	-
Misc. Organisms	-	-	-	-	3.2	-	-	-
Subtotal	432.9	123.2	208.6	158.0	63.3	142.2	91.6	88.5
Fish Eggs	3.2	-	-	-	-	-	-	-
Fish Larvae	-	-	-	-	-	-	-	-
Total	436.1	123.2	208.6	158.0	63.3	142.2	91.6	88.5

Run No. 12, Date February 27, 1953

Compartment No.	1	2	3	4	5	6	7	8
Time (EST)	0138	0238	0338	0438	0538	0638	0738	
Position of (N. Lat.	31°38'	31°36'	31°34'	31°32'	31°31'	31°31'	31°31'	
Ship: (W. Long.	80°17'	80°14'	80°08'	79°58'	79°52'	79°45'	79°33'	
Protozoa	2.9	-	5.8	-	8.7	5.8	23.2	
Coelenterata	-	-	-	-	-	-	2.9	
Chaetognatha	2.9	-	8.7	8.7	2.9	5.8	-	
Misc. Worms	-	-	-	-	-	5.8	-	
Copepoda	84.1	81.2	159.5	139.2	29.0	258.1	142.1	
Ostracoda	14.5	2.9	5.8	11.6	-	5.8	-	
Amphipoda	-	-	-	2.9	-	-	-	
Shrimp	-	-	5.8	2.9	11.6	29.0	-	
Crabs	2.9	2.9	-	2.9	2.9	-	-	
Misc. Crustaceans	-	-	-	2.9	-	14.5	-	
Mollusca	2.9	-	-	-	-	-	2.9	
Invertebrate Eggs	-	-	8.7	-	2.9	8.7	-	
Misc. Organisms	-	-	-	-	-	-	2.9	
Subtotal	110.2	87.0	194.3	171.1	58.0	333.5	174.0	
Fish Eggs	-	-	-	-	-	-	5.8	
Fish Larvae	-	-	-	-	-	-	-	
Total	110.2	87.0	194.3	171.1	58.0	333.5	179.8	

Table 10.--Numbers of plankton organisms per cubic meter of water (continuous plankton sampler), cont'd

Run No. 13, Date February 27, 1953

Compartment No.	1	2	3	4	5	6	7	8
Time (EST)	1230	1330	1430					
Position of Ship: (N. Lat.	31°29'	31°27'	31°27'					
(W. Long.	78°55'	78°34'	78°34'					
Protozoa	-	-	-					
Coelenterata	-	4.9	-					
Chaetognatha	4.9	-	-					
Misc. Worms	-	-	-					
Copepoda	19.7	19.7	19.7					
Ostracoda	-	-	-					
Amphipoda	-	-	-					
Shrimp	-	-	-					
Crabs	-	-	-					
Misc. Crustaceans	-	-	9.9					
Mollusca	-	-	-					
Invertebrate Eggs	-	-	-					
Misc. Organisms	-	-	-					
Subtotal	24.6	24.6	29.6					
Fish Eggs	-	-	-					
Fish Larvae	-	-	-					
Total	24.6	24.6	29.6					

Run No. 14, Date February 27, 1953

Compartment No.	1	2	3	4	5	6	7	8
Time (EST)	1905							
Position of Ship: (N. Lat.	31°39'							
(W. Long.	78°45'							
Protozoa	10.6							
Coelenterata	-							
Chaetognatha	10.6							
Misc. Worms	-							
Copepoda	47.5							
Ostracoda	-							
Amphipoda	-							
Shrimp	-							
Crabs	-							
Misc. Crustaceans	-							
Mollusca	5.3							
Invertebrate Eggs	-							
Misc. Organisms	10.6							
Subtotal	84.6							
Fish Eggs	-							
Fish Larvae	-							
Total	84.6							

Table 11.--Numbers and species of fish taken by trolling

Species	Date 1953	Time (EST)	Location N.Lat.	Location W.Long.	Sex	Stage Gonad Devel.	Length (mm.)	Weight (lbs.)	Stomach Contents
Euthynnus alletteratus (Rafinesque)	Feb. 11	1320	28°35'	80°10'	M	I-II	495	-	fish remains, unidentified
"	Feb. 11	1340	28°30'	80°08'	F	II-III	606	8.2	fish remains, unidentified
"	Feb. 11	1340	28°30'	80°08'	M	II	578	7.2	fish remains, unidentified
"	Feb. 11	1400	28°28'	80°03'	M	I-II	610	6.6	fish remains, unidentified
"	Feb. 19	1345	28°48'	80°27'	M	I-II	648	8.8	none
"	Feb. 19	1445	28°57'	80°03'	F	II-III	559	7.7	none
"	Feb. 19	1500	28°59'	80°31'	F	II	660	9.9	none
"	Feb. 19	1510	29°02'	80°31'	F	II	521	4.4	fish remains, unidentified
"	Feb. 19	1550	29°07'	80°34'	F	II	584	6.6	Etrumeus sadina (Mitchill)(1); squid (1)
"	Feb. 19	1615	29°10'	80°35'	M	I	584	6.6	squid (1)
"	Feb. 19	1650	29°15'	80°37'	F	II	622	7.7	none
"	Feb. 22	1140	31°11'	80°42'	F	II-III	699	9.9	fish remains, unidentified; squid (1)
"	Mar. 1	1652	32°52'	78°14'	F	II-III	654	8.8	none
"	Mar. 1	1750	32°57'	78°27'	M	I	591	7.2	Etrumeus sadina (Mitchill) (5); other Clupeidae (112); Congermuraena impressa (Poey) (1); Scomber sp. (1); squid (1)
"	Mar. 3	1200	33°20'	77°34'	M	I	527	4.4	none
"	Mar. 3	1200	33°20'	77°34'	M	I	508	3.8	fish remains, unidentified
"	Mar. 6	1200	34°14'	76°26'	F	II	495	3.3	none
"	Mar. 6	1201	34°14'	76°26'	M	I	508	3.8	none
"	Mar. 6	1240	34°11'	76°22'	F	II	502	4.4	none
Thunnus argentivittatus (Cuv. and Val.)	Feb. 12	1020	27°20'	78°00'	M	I	978	35.3	Pseudupeneus maculatus (Bloch) (2); Acanthurus hepatus (Linnaeus) (3)
Katsuwonus pelamis (Linnaeus)	Feb. 17	0930	27°00'	80°02'	M	I	480	4.4	Etrumeus sadina (Mitchill) (1)

Table 12.--Numbers and species of fish taken by dip net

Species	Location of capture, number and size range of specimens
LEPTOCEPHALI	
Unidentified	-Abaco Light Anchorage, 25°50'N: 77°10'W (5) 105.5 to 123.5 mm.
SYNODIDAE	
Unidentified	-Abaco Light Anchorage, (1) 36.5 mm. Reg. 1, (2) 40.5 and 41.5 mm.
Synodus sp.	-Abaco Light Anchorage, (3) 35.5 to 37.5 mm.
MYCTOPHIDAE	
Myctophum affine (Lutken)	-Reg. 73, (3) 21 to 29 mm.
Myctophum obtusirostris Taning	-Reg. 1, (2) 22.5 and 25 mm. Abaco Light Anchorage, (1) 81 mm.
Diaphus dumerili Bleeker	-Abaco Light Anchorage, (2) 63.5 and 66 mm.
BELONIDAE	
Strongylura sp.	-Reg. 73, (1) 40.5 mm.
SCOMBERESOCIDAE	
Scomberesox saurus (Walbaum)	-Reg. 73, (8) 51.5 to 63 mm.
HEMIRAMPHIDAE	
Hemiramphus brasiliensis (Linnaeus)	-Reg. 1, (1) 173 mm.
EXOCOETIDAE	
Parexocoetus brachypterus Richardson	-Reg. 1, (1) 113 mm.
Exocoetus obtusirostris Gunther	-Reg. 73, (2) 28.5 and 38 mm.
Cypselurus heterurus (Rafinesque)	-Reg. 6, (1) 81 mm.
Hirundichthys affinis (Gunther)	-Reg. 73, (3) 55 to 129.5 mm.
Danichthys rondeletii (Cuv. and Val.)	-Reg. 73, (1) 61 mm.
GADIDAE	
Urophycis regius (Walbaum)	-Reg. 35, (1) 39.5 mm.
SYNGNATHIDAE	
Syngnathus dunckeri Metzelaar	-Abaco Light Anchorage, (4) 35 to 49 mm.

Table 12.--Numbers and species of fish taken by dip net (cont'd)

Species	Location of capture, number and size range of specimens
SPHYRAENIDAE	
Sphyraena picudilla Poey	-Abaco Light Anchorage, (1) 250 mm.
MUGILIDAE	
Mugil cephalus Linnaeus	-Mayport, Fla., Naval Basin (St. Johns River), (71) 18.5 to 27 mm. Reg. 35, (1) 22.5 mm. Reg. 73, (8) 22.5 to 27 mm.
Mugil curema Cuv. and Val.(?)	-Cape Canaveral Anchorage, (1) 25 mm.
ATHERINIDAE	
Allanetta harringtonensis (Goode)	-Abaco Light Anchorage, (11) 21.5 to 65 mm.
Membras martinica (Cuv. and Val.)	-Cape Canaveral Anchorage, 35°14'N: 75°34'W, (2) 74.5 and 77 mm.
CORYPHAENIDAE	
Coryphaena hippurus Linnaeus	-Reg. 73, (1) 72.5 mm.
MULLIDAE	
Mullus auratus Jordan and Gilbert	-Reg. 73, (1) 16 mm.
Pseudupeneus maculatus (Bloch)	-Abaco Light Anchorage, (10) 54 to 59.5 mm.
ANTENNARIDAE	
Histrio gibba (Mitchill)	-Reg. 73, (1) 14.5 mm.

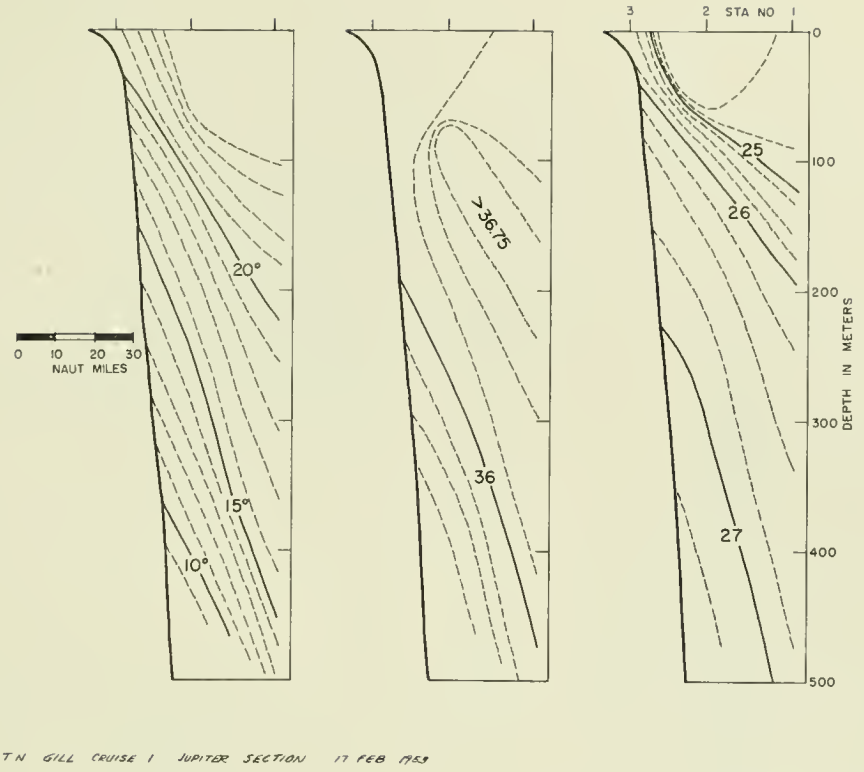

Figure 5.--Distribution of temperature (°C), salinity (‰), and density (σ_t) across section of stations 1, 2, and 3 (Jupiter Section).

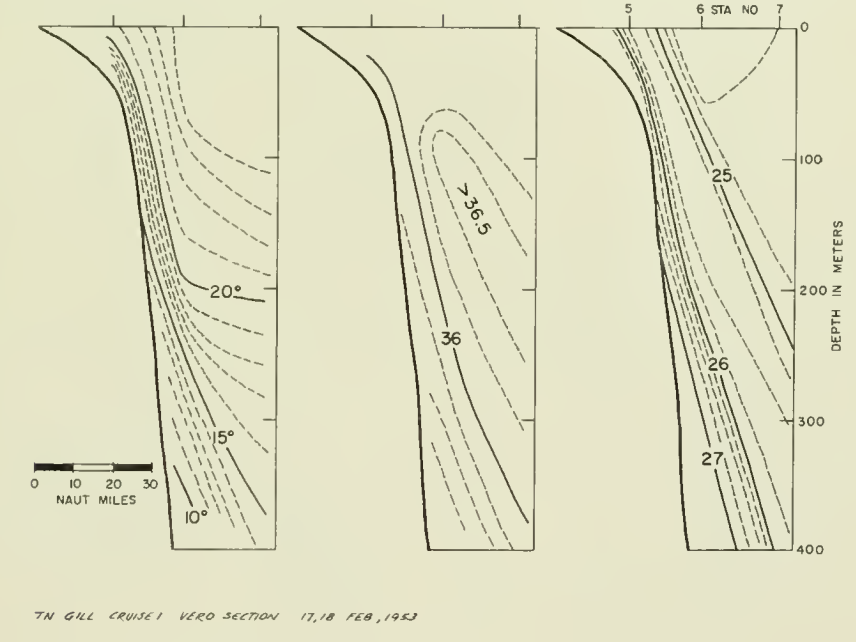

Figure 6.--Distribution of temperature (°C), salinity (‰), and density (σ_t) across section of stations 5, 6, and 7 (Vero Section).

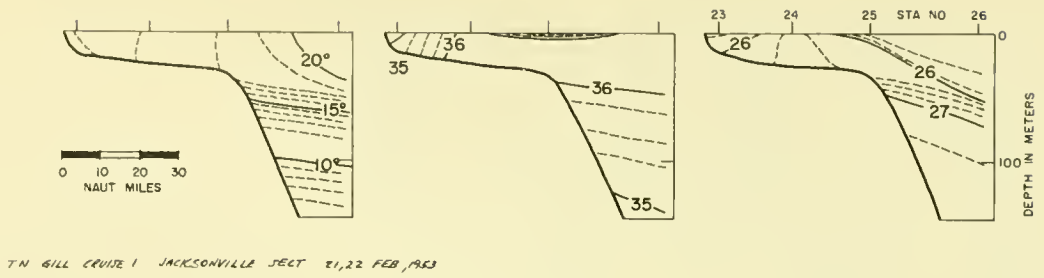

Figure 7.--Distribution of temperature (°C), salinity (‰), and density (σ_t) across section of stations 23, 24, 25, and 26 (Jacksonville Section).

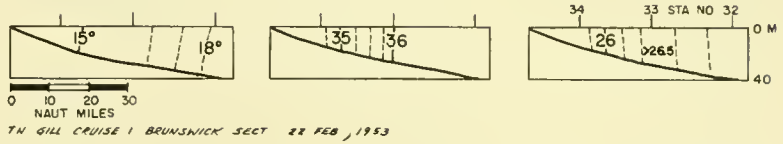

Figure 8.--Distribution of temperature (°C), salinity (‰), and density (σ_t) across section of stations 32, 33, and 34 (Brunswick Section).

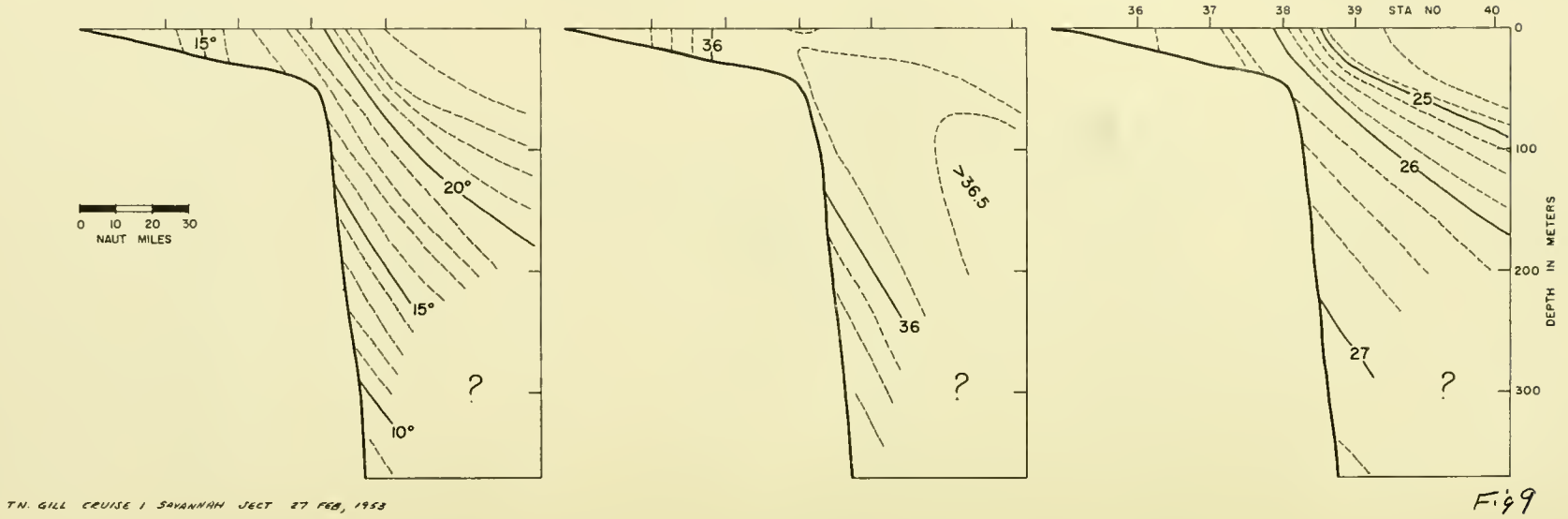

Figure 9.--Distribution of temperature (°C), salinity (‰), and density (σ_t) across section of stations 36, 37, 38, 39, and 40 (Savannah Section).

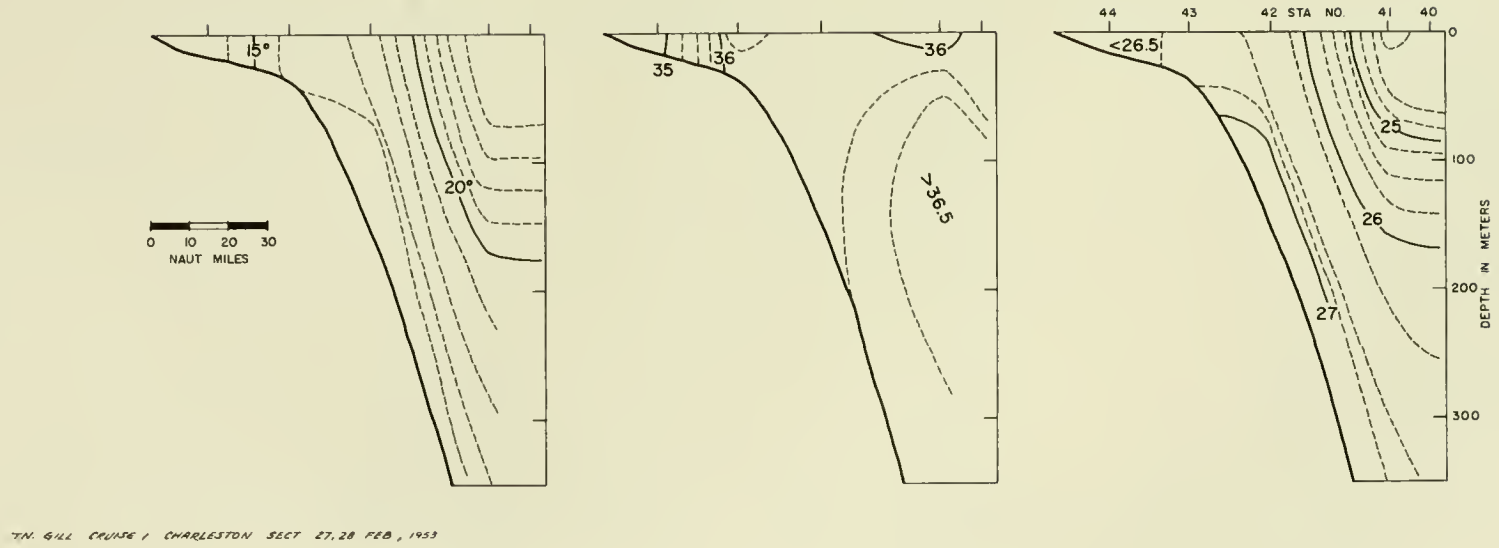

Figure 10.--Distribution of temperature (°C), salinity (‰), and density (σ_t) across section of stations 40, 41, 42, 43, and 44 (Charleston Section).

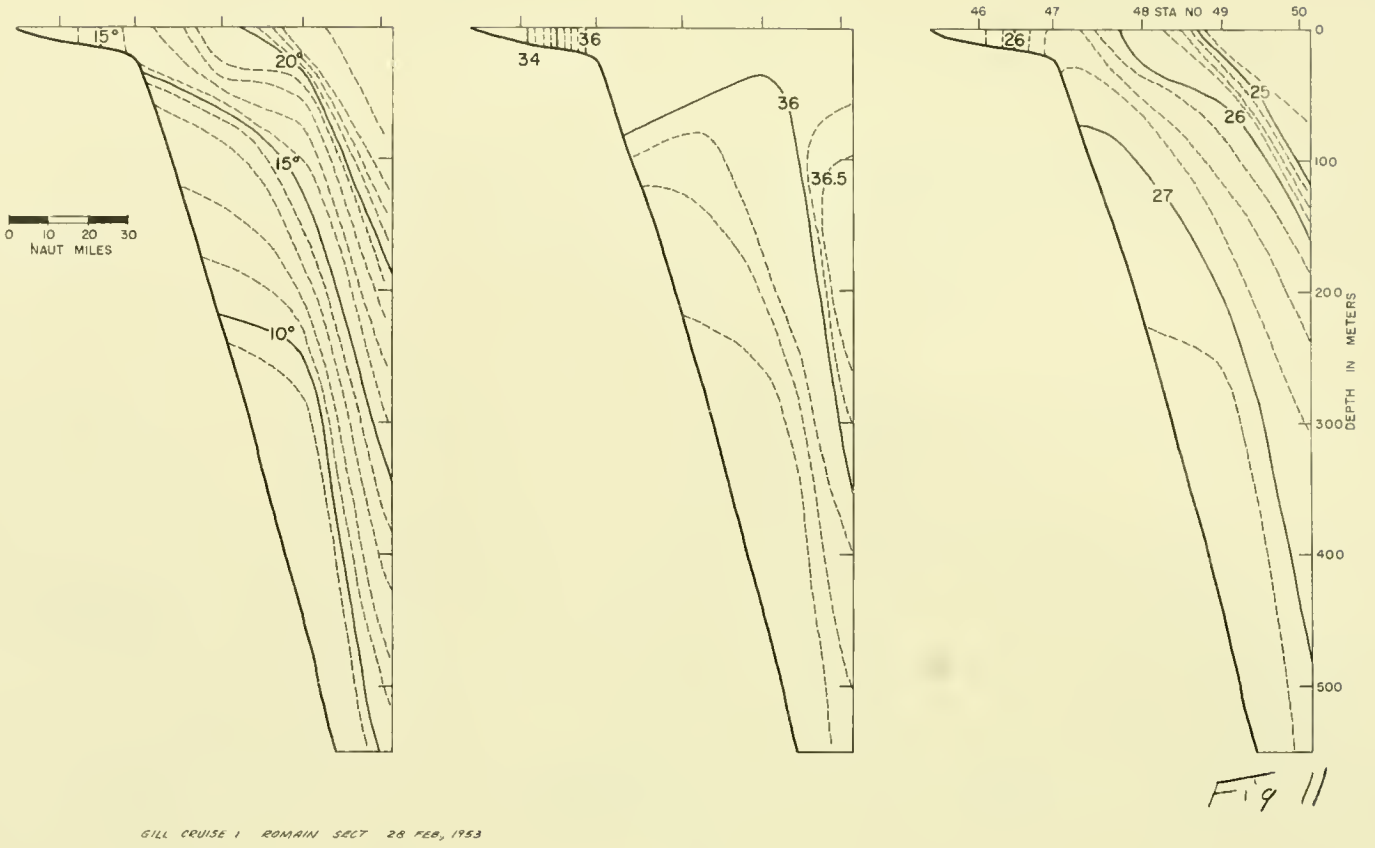

Figure 11.--Distribution of temperature (°C), salinity (‰), and density (σ_t) across section of stations 46, 47, 48, 49, and 50 (Cape Romain Section).

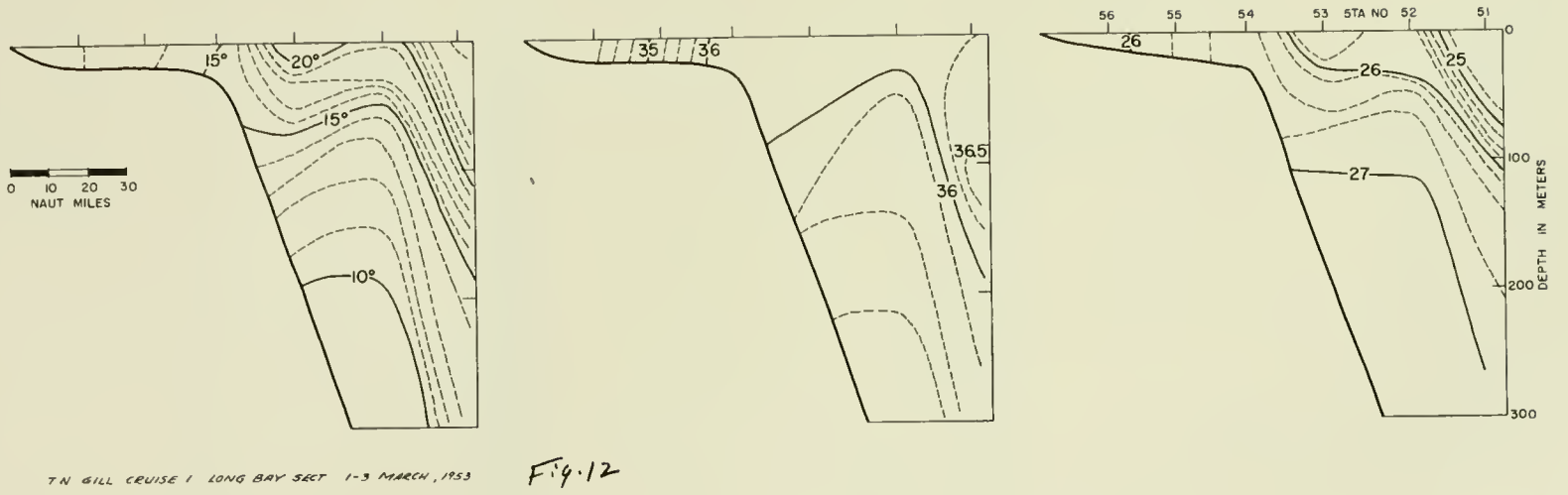

Figure 12.--Distribution of temperature (°C), salinity (‰), and density (σ_t) across section of stations 51, 52, 53, 54, 55, and 56 (Long Bay Section).

Figure 13.--Distribution of temperature (°C), salinity (‰), and density (σ_t) across section of stations 58, 59, 60, 61, and 62 (Cape Fear Section).

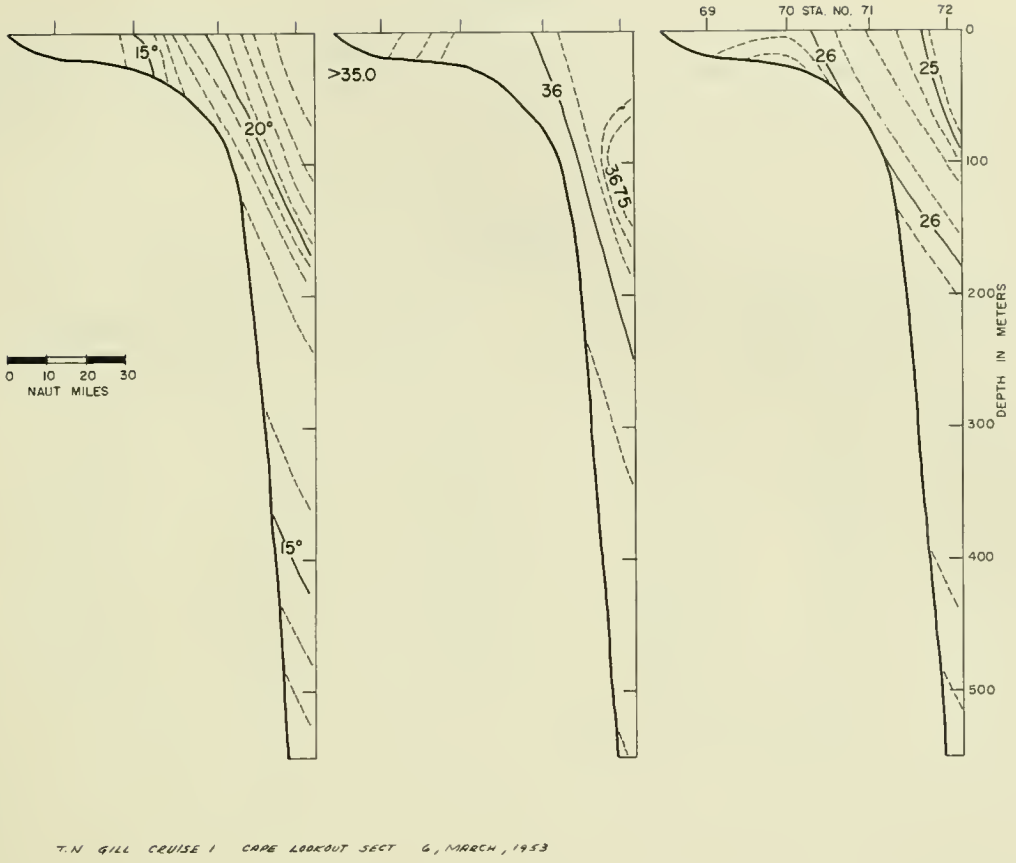

Figure 14.--Distribution of temperature (°C), salinity (‰), and density (σ_t) across section of stations 69, 70, 71, and 72 (Cape Lookout Section).

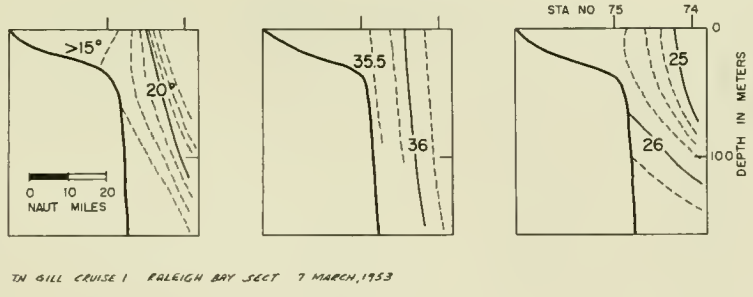

Figure 15.--Distribution of temperature (°C), salinity (‰), and density (σ_t) across section of stations 74 and 75 (Raleigh Bay Section).

STATION 1

DATE Feb. 17, 1953 LAT. 26° 59'N. LONG. 79° 18'W. TIME 05
DEPTH 597 WIND - , - BAR. 21 AIR TEMP: dry 20.0°C, wet 16.1°C
HUMIDITY 28% WEATHER 00 CLOUDS: type - , amt. - SEA: dir. - , amt. 1
SWELL: dir. - , amt. - VIS. 8 WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	24.30	36.35	24.59	4.68
10	25.39*	36.33	24.25	4.64
20	24.27	36.36	24.61	4.61
50	24.23	36.36	24.62	4.44
100	24.01	36.47	24.77	4.27
200	20.36	36.80	26.06	3.67
300	18.02	36.47	26.41	4.16
400	16.30	36.27	26.67	4.20
500	13.80	35.84	26.90	3.66

* Value questionable

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	24.30	36.35	24.59	4.68
10	24.29	36.33	24.58	4.64
20	24.27	36.36	24.61	4.61
30	24.26	36.36	24.61	4.55
50	24.23	36.36	24.62	4.44
75	24.15	36.41	24.68	4.37
100	24.01	36.47	24.77	4.27
150	22.02	36.72	25.54	3.83
200	20.36	36.80	26.06	3.67
250	19.11	36.62	26.25	3.97
300	18.02	36.47	26.41	4.16
400	16.30	36.27	26.67	4.20
500	13.80	35.84	26.90	3.66

STATION 1

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	0.4	<0.1	0.0	1.3	1.5
10	0.4	0.1	0.0	0.9	2.1
20	0.5	<0.1	<0.5	-	1.3
50	0.6	0.1	0.5	2.1	0.6
100	0.9	0.0	0.0	-	0.7
200	0.6	<0.1	1.0	-	1.3
300	0.4	0.2	1.0	-	1.2
400	0.5	0.2	3.0	-	1.0
500	0.8	0.6	7.5	4.4	0.6

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	0.4	0.1	0.0	1.3	1.5
10	0.4	0.1	0.0	0.9	2.1
20	0.5	<0.1	<0.5	1.2	1.3
30	0.5	<0.1	<0.5	1.5	1.0
50	0.6	0.1	0.5	2.1	0.6
75	0.8	<0.1	<0.5	-	0.7
100	0.9	0.0	0.0	-	0.7
150	0.8	0.0	0.5	-	1.0
200	0.6	<0.1	1.0	-	1.3
250	0.5	0.1	1.0	-	1.3
300	0.4	0.2	1.0	-	1.2
400	0.5	0.2	3.0	-	1.0
500	0.8	0.6	7.5	4.4	0.6

STATION 2

DATE Feb. 17, 1953 LAT. 26° 58'N. LONG. 79° 41'W. TIME 11
DEPTH 539 . WIND 1 , 27 BAR. 21 AIR TEMP: dry 19.4°C, wet 15.6°C
HUMIDITY 22% WEATHER 03 CLOUDS: type 8 , amt. 7 SEA: dir. - , amt. 2
SWELL: dir. - , amt. - VIS. 8 WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	24.80**	36.18	24.31	-
9	27.00*	36.13	23.59	-
17	24.63	36.24	24.41	-
44	24.67	36.15	24.33	-
88	21.95	36.87	25.67	-
176	17.00	36.38	26.59	-
263	14.29	35.99	26.91	-
351	11.18	35.46	27.12	-
439	8.15	35.01	27.28	-

** From BT
* Value questionable

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	24.80	36.18	24.31	-
10	24.70	36.15	24.32	-
20	24.64	36.21	24.39	-
30	24.65	36.15	24.34	-
50	24.29	36.29	24.55	-
75	22.74	36.72	25.33	-
100	21.14	36.80	25.84	-
150	18.23	36.51	26.39	-
200	16.29	36.29	26.69	-
250	14.72	36.06	26.87	-
300	12.97	35.76	27.01	-
400	9.48	35.20	27.22	-

STATION 2

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	0.7	0.1	0.0	-	0.7
9	0.3	0.3	0.0	-	1.0
17	0.4	0.0	0.5	-	0.1
44	0.2	0.1	0.5	2.2	1.5
88	0.5	0.3	3.0	-	0.1
176	0.7	0.6	3.5	2.3	0.5
263	0.9	0.4	7.0	-	0.2
351	-	1.2	-	2.2	0.1
439	-	1.7	5.5	-	0.9

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	0.7	0.1	0.0	-	0.7
10	0.3	0.3	0.0	-	0.9
20	0.4	0.0	0.5	-	0.2
30	0.3	0.1	0.5	-	0.8
50	0.2	0.1	1.0	2.2	1.3
75	0.4	0.2	2.5	2.2	0.5
100	0.5	0.3	3.0	2.2	0.2
150	0.6	0.5	3.5	2.3	0.4
200	0.8	0.5	4.5	2.2	0.4
250	0.9	0.4	6.5	2.2	0.3
300	-	0.7	6.5	2.2	0.2
400	-	1.5	6.0	-	0.5

STATION 3

DATE Feb. 17, 1953 LAT. 27° 00'N. LONG. 80° 04'W. TIME 15
DEPTH 19 WIND 4 , 36 BAR. 24 AIR TEMP: dry 19.4°C, wet 16.1°C
HUMIDITY 30% WEATHER 03 CLOUDS: type 0 , amt. 8 SEA: dir. 36 , amt. 2
SWELL: dir. - , amt. - VIS. 8 WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	20.53	36.18	25.54	5.11
10	20.54	36.15	25.51	5.59

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	20.53	36.18	25.54	5.11
10	20.54	36.15	25.51	5.59

STATION 3

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	0.3	0.2	0.0	0.0	0.0
10	0.4	<0.1	0.5	0.6	0.1

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	0.3	0.2	0.0	0.0	0.0
10	0.4	<0.1	0.5	0.6	0.1

STATION 4

DATE Feb. 17, 1953 LAT. 27° 20'N. LONG. 80° 03'W. TIME 18
DEPTH 24 WIND 1 , 32 BAR. 23 AIR TEMP: dry 17.5°C, wet 13.3°C
HUMIDITY 16% WEATHER 02 CLOUDS: type 0 , amt. 4 SEA: dir. 32 , amt. 1
SWELL: dir. - , amt. - VIS. 8 WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	19.70	36.22	25.79	5.70
10	19.49	36.29	25.90	5.79

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	19.70	36.22	25.79	5.70
10	19.49	36.29	25.90	5.79

STATION 4

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	0.2	0.4	2.0	-	2.0
10	0.2	0.2	1.0	-	0.1

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	0.2	0.4	2.0	-	2.0
10	0.2	0.2	1.0	-	0.1

STATION 5

DATE Feb. 17, 1953 LAT. 27° 40' N. LONG. 80° 03' W. TIME 21
DEPTH 38 WIND 2 , 34 BAR. 22 AIR TEMP: dry 18.1°C, wet 13.9°C
HUMIDITY 18% WEATHER 02 CLOUDS: type 0 , amt. 4 SEA: dir. 34 , amt. 1
SWELL: dir. - , amt. - VIS. 8 WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	20.73	36.17	25.48	5.33
10	20.40	36.18	25.57	5.39
20	-	36.08	-	4.87
30	15.93	35.90	26.47	3.69

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	20.73	36.17	25.48	5.33
10	20.40	36.18	25.56	5.39
20	18.81	36.08	25.91	4.87
30	15.93	35.90	26.47	3.69

STATION 5

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	0.3	<0.1	<0.5	-	0.1
10	0.3	0.0	0.5	6.2	1.8
20	-	0.2	1.5	2.2	<0.1
30	-	0.9	13.0	-	1.3

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	0.3	<0.1	<0.5	-	0.1
10	0.3	0.0	0.5	6.2	1.8
20	-	0.2	1.5	2.2	<0.1
30	-	0.9	13.0	-	1.3

STATION 6

DATE Feb. 17, 1953 LAT. 27° 40'N. LONG. 79° 41'W. TIME 24
DEPTH 475 WIND 4 , 36 BAR. 23 AIR TEMP: dry 20.0°C, wet 15.6°C
HUMIDITY - % WEATHER 02 CLOUDS: type 5 , amt. 7 SEA: dir. 36 , amt. 2
SWELL: dir. - , amt. - VIS. 8 WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	24.52	36.15	24.38	5.13
10	24.51	36.11	24.35	3.28
19	26.56*	36.13	23.73	3.53
29	24.50	36.11	24.35	4.15
46	24.53	36.11	24.34	4.43
92	22.94	36.64	25.21	4.76
184	20.44	36.18	25.56	4.68
276	12.81	35.64	26.94	4.76
368	9.17	35.10	27.19	2.96

* Value questionable

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	24.52	36.15	24.38	5.13
10	24.51	36.11	24.35	3.28
20	24.51	36.13	24.36	3.61
30	24.51	36.11	24.35	4.17
50	24.38	36.18	24.44	4.47
75	23.50	36.50	24.94	4.67
100	22.80	36.60	25.22	4.75
150	21.96	36.36	25.28	4.69
200	18.83	36.09	25.92	4.69
250	14.56	35.79	26.69	4.75
300	11.48	35.50	27.09	4.47

STATION 6

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	-	1.4	5.0	2.8	0.1
10	-	1.1	20.5*	2.2	0.4
19	-	0.6	5.5	-	1.5
29	-	<0.1	1.5	-	2.1
46	0.4	0.2	0.0	1.9	0.6
92	1.7	<0.1	0.5	1.2	0.1
184	0.5	0.1	0.0	1.4	0.9
276	0.2	0.1	0.0	-	0.2
368	0.2	0.1	1.0	-	0.9

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	-	1.4	5.0	2.8	0.1
10	-	1.1	5.5	2.2	0.4
20	-	0.6	5.5	2.1	1.5
30	-	<0.1	1.5	2.0	2.1
50	0.5	0.2	<0.5	1.8	0.6
75	1.2	0.1	0.5	1.5	0.3
100	1.6	0.1	0.5	1.2	0.2
150	0.9	0.1	<0.5	1.3	0.6
200	0.4	0.1	0.0	1.4	0.8
250	0.3	0.1	0.0	-	0.4
300	0.2	0.1	0.5	-	0.3

* Value questionable

STATION 7

DATE Feb. 18, 1953 LAT. 27° 40'N. LONG. 79° 18'W. TIME 04
DEPTH 667 WIND 2 , 32 BAR. 24 AIR TEMP: dry 21.1°C, wet 17.2°C
HUMIDITY 67% WEATHER 00 CLOUDS: type - , amt. 2 SEA: dir. 32 , amt. 2
SWELL: dir. - , amt. - VIS. 8 WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	24.27	36.18	24.47	4.88
10	24.28	36.27	24.54	4.76
20	24.33	36.24	24.50	4.88
30	24.27	36.26	24.53	5.38
49	24.27	36.20	24.49	4.47
98	24.18	36.38	24.65	4.64
195	20.66	36.62	25.84	4.31
293	16.65	36.26	26.58	3.90
391	14.56	35.95	26.82	3.69

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	24.27	36.18	24.47	4.88
10	24.28	36.27	24.54	4.76
20	24.33	36.24	24.50	4.88
30	24.27	36.26	24.53	5.38
50	24.27	36.20	24.49	4.48
75	24.22	36.30	24.58	4.59
100	24.11	36.39	24.68	4.63
150	22.35	36.58	25.34	4.47
200	20.41	36.60	25.89	4.28
250	18.17	36.41	26.33	4.06
300	16.44	36.24	26.62	3.88

STATION 7

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	1.0	0.0	0.0	-	1.2
10	0.8	0.1	-	-	1.2
20	0.3	0.2	1.0	-	0.3
30	0.3	0.2	0.0	7.4	-
49	0.5	0.0	0.5	0.0	0.8
98	0.1	0.1	0.5	1.7	0.5
195	0.7	0.2	3.5	0.7	1.4
293	1.8	0.5	11.0	7.1	-
391	2.0	0.7	2.0	3.4	1.2

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	1.0	0.0	0.0	-	1.2
10	0.8	0.1	0.5	-	1.2
20	0.3	0.2	1.0	-	0.3
30	0.3	0.2	0.0	7.4	0.5
50	0.5	0.0	0.5	0.0	0.8
75	0.3	<0.1	0.5	0.8	0.7
100	0.1	0.1	0.5	1.7	0.5
150	0.4	0.2	2.0	1.2	1.0
200	0.6	0.2	3.5	0.7	1.4
250	1.3	0.4	7.5	3.9	1.3
300	1.8	0.5	11.0	7.1	1.3
400	2.0	0.7	2.0	3.4	1.2

STATION 8

DATE Feb. 18, 1953 LAT. 28° 21'N. LONG. 79° 26'W. TIME 09
DEPTH 741 WIND 7 , 32 BAR. 23 AIR TEMP: dry 18.3°C, wet 15.6°C
HUMIDITY 75% WEATHER 00 CLOUDS: type - , amt. - SEA: dir. 32 , amt. 2
SWELL: dir. - , amt. - VIS. 8 WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	24.44	36.22	24.45	4.72
10	24.48	36.18	24.41	4.58
30	-	36.18	-	4.97
49	24.47	36.18	24.41	5.05
99	24.26	36.35	24.61	4.56
197	19.50	36.65	26.17	3.90
393	18.81*	35.97	25.83	3.57
591	9.47	35.14	27.17	2.91
691	7.82	35.01	27.33	2.91

* Value questionable

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	24.44	36.22	24.45	4.72
10	24.48	36.18	24.41	4.58
20	24.48	36.18	24.41	4.81
30	24.47	36.18	24.41	4.97
50	24.46	36.18	24.42	5.04
75	24.40	36.27	24.50	4.78
100	24.20	36.36	24.63	4.55
150	21.42	36.56	25.58	4.18
200	19.35	36.64	26.20	3.90
250	17.68	36.48	26.50	3.84
300	16.25	36.31	26.71	3.77
400	13.73	35.93	26.98	3.53
500	11.42	35.43	27.05	3.10
600	9.30	35.12	27.18	2.91

STATION 8

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	0.5	0.0	0.0	-	1.5
10	0.8	<0.1	0.5	1.0	0.7
30	0.2	0.0	0.5	2.2	1.0
49	0.3	0.0	<0.5	0.9	0.3
99	0.3	0.0	5.0	1.4	1.3
197	0.3	0.1	3.5	3.0	0.1
393	2.0	0.8	-	-	0.5
591	1.5	1.3	3.0	-	1.9
691	4.2	1.7	8.0	-	0.1

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	0.5	0.0	0.0	-	1.5
10	0.8	<0.1	0.5	1.0	0.7
20	0.5	<0.1	0.5	1.6	0.9
30	0.2	0.0	0.5	2.2	1.0
50	0.3	0.0	<0.5	0.9	0.3
75	0.3	0.0	2.5	1.2	0.8
100	0.3	0.0	5.0	1.4	1.3
150	0.3	0.1	4.5	2.2	0.7
200	0.3	0.1	3.5	3.0	0.1
250	0.8	0.3	3.5	-	0.2
300	1.2	0.5	3.5	-	0.3
400	2.0	0.8	3.5	-	0.5
500	1.8	1.1	3.0	-	1.2
600	1.5	1.3	3.0	-	1.9
700	4.2	1.7	8.0	-	0.1

STATION 11

DATE Feb. 19, 1953 LAT. 28° 20'N. LONG. 80° 33'W. TIME 14
DEPTH 13 WIND 2 , 09 BAR. 27 AIR TEMP: dry 20.6 °C, wet 20.6 °C
HUMIDITY 99 % WEATHER 01 CLOUDS: type 6 , amt. 7 SEA: dir. 09 , amt. 2
SWELL: dir. - , amt. - VIS. 7 WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	18.15	36.09	26.09	5.30
10	18.18	36.17	26.14	5.25

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	18.15	36.09	26.09	5.30
10	18.18	36.17	26.14	5.25

STATION 11

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	-	0.7	1.0	4.9	0.6
10	0.4	0.3	0.0	0.0	0.1

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	-	0.7	1.0	4.9	0.6
10	0.4	0.3	0.0	0.0	0.1

STATION 23

DATE Feb. 21, 1953 LAT. 30° 20'N. LONG. 81° 20'W. TIME 20
DEPTH 15 WIND 1 , 14 BAR. 22 AIR TEMP: dry 20.6°C, wet 20.6°C
HUMIDITY 99% WEATHER 02 CLOUDS: type 8 , amt. 2 SEA: dir. - , amt. 2
SWELL: dir. - , amt. - VIS. 8 WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	16.11	34.94	25.69	5.82
10	15.73	35.10	25.90	5.54

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	16.11	34.94	25.69	5.82
10	15.73	35.10	25.90	5.54

STATION 23

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	0.4	0.2	<0.5	0.4	0.9
10	2.6	0.3	0.5	0.1	2.1

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	0.4	0.2	<0.5	0.4	0.9
10	2.6	0.3	0.5	0.1	2.1

STATION 24

DATE Feb. 21, 1953 LAT. 30° 20' N. LONG. 80° 58' W. TIME 23
DEPTH 25 WIND 2 , 11 BAR. 22 AIR TEMP: dry 20.0°C, wet 20.0°C
HUMIDITY 99% WEATHER 02 CLOUDS: type - , amt. - SEA: dir. - , amt. 2
SWELL: dir. - , amt. - VIS. - WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	17.27	36.17	26.36	5.54
10	17.28	36.17	26.36	5.58
20	17.30	36.26	26.43	5.45

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	17.27	36.17	26.36	5.54
10	17.28	36.17	26.36	5.58
20	17.30	36.26	26.43	5.45

STATION 24

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	0.3	0.1	0.0	1.8	1.0
10	0.6	0.1	0.0	0.0	0.2
20	0.3	<0.1	0.0	0.1	1.1

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	0.3	0.1	0.0	1.8	1.0
10	0.6	0.1	0.0	0.0	0.2
20	0.3	<0.1	0.0	0.1	1.1

STATION 25

DATE Feb. 22, 1953 LAT. 30° 20'N. LONG. 80° 35'W. TIME 02
DEPTH 33 WIND 1 , 18 BAR. 24 AIR TEMP: dry 20.6°C, wet 20.3°C
HUMIDITY 97% WEATHER 02 CLOUDS: type - , amt. - SEA: dir. - , amt. 2
SWELL: dir. - , amt. - VIS. - WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	18.18	36.11	26.09	5.58
10	18.19	36.13	26.11	5.66
20	18.22	36.13	26.10	5.37
30	18.16	36.15	26.13	5.33

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	18.18	36.11	26.09	5.58
10	18.19	36.13	26.11	5.66
20	18.22	36.13	26.10	5.37
30	18.16	36.15	26.13	5.33

STATION 25

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	0.4	0.3	1.5	-	0.7
10	0.3	0.3	0.0	2.8	0.5
20	-	0.8	2.0	0.9	0.1
30	0.3	0.2	1.0	1.1	0.3

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	0.4	0.3	1.5	-	0.7
10	0.3	0.3	0.0	2.8	0.5
20	-	0.8	2.0	0.9	0.1
30	0.3	0.2	1.0	1.1	0.3

STATION 26

DATE Feb. 22, 1953 LAT. 30° 20'N. LONG. 80° 10'W. TIME 05
DEPTH 219 WIND 2 , 22 BAR. - AIR TEMP: dry - °C, wet - °C
HUMIDITY - % WEATHER 81 CLOUDS: type -, amt. - SEA: dir. -, amt. 2
SWELL: dir. -, amt. - VIS. - WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	20.94	36.20	25.44	5.23
10	20.91	36.18	25.43	5.12
19	20.91	36.17	25.43	5.29
29	20.62	36.13	25.48	5.31
49	18.19	35.99	26.00	4.18
73	12.41	35.62	27.01	2.85
98	11.29*	35.32	26.99	2.86
144	6.87	34.96	27.43	3.22
195	6.92	34.99	27.44	3.25

* Value questionable

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	20.94	36.20	25.44	5.23
10	20.91	36.18	25.43	5.12
20	20.91	36.17	25.43	5.31
30	20.55	36.13	25.49	5.25
50	18.00	35.97	26.03	4.10
75	12.02	35.59	27.06	2.85
100	8.76	35.30	27.41	2.88
150	6.88	34.96	27.42	3.24

STATION 26

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	1.9	0.3	0.5	-	0.2
10	0.5	0.3	0.0	2.2	2.9
19	0.3	0.1	0.5	-	0.4
29	0.2	0.1	2.0	-	0.8
49	0.4	-	2.5	-	0.3
73	-	0.9	9.5	-	0.2
98	0.7	0.5	13.5	0.0	1.0
144	-	1.7	9.0	2.2	0.0
195	-	1.8	3.5	-	0.6

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	1.9	0.3	0.5	-	0.2
10	0.5	0.3	0.0	2.2	2.9
20	0.3	0.1	0.5	-	0.4
30	0.2	0.1	2.0	-	0.8
50	0.4	0.4	2.5	-	0.3
75	-	0.9	9.5	-	0.3
100	0.7	0.5	13.5	0.0	1.0
150	-	1.7	8.5	2.2	0.1
200	-	1.8	3.5	-	0.6

STATION 32

DATE Feb. 22, 1953 LAT. 31° 14'N. LONG. 80° 32'W. TIME 15
DEPTH 37 WIND 2 , 32 BAR. - AIR TEMP: dry - °C, wet - °C
HUMIDITY - % WEATHER 01 CLOUDS: type -, amt. - SEA: dir. -, amt. 2
SWELL: dir. -, amt. - VIS. - WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	18.14	36.18	26.16	5.45
10	18.15	36.22	26.19	5.41
20	18.20	36.20	26.16	5.45
30	18.15	36.20	26.17	5.45

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	18.14	36.18	26.16	5.45
10	18.15	36.22	26.19	5.41
20	18.20	36.20	26.16	5.45
30	18.15	36.20	26.17	5.45

STATION 32

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	1.3	0.1	0.5	0.5	-
10	0.4	0.1	0.0	0.7	0.9
20	3.0	<0.1	0.0	0.9	1.0
30	0.3	0.1	0.0	0.5	0.9

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	1.3	0.1	0.5	0.5	-
10	0.4	0.1	0.0	0.7	0.9
20	3.0	<0.1	0.0	0.9	1.0
30	0.3	0.1	0.0	0.5	0.9

STATION 33

DATE Feb. 22, 1953 LAT. 31° 11'N. LONG. 80° 49'W. TIME 18
DEPTH 27 WIND 1 , 32 BAR. - AIR TEMP: dry - °C, wet - °C
HUMIDITY - % WEATHER 03 CLOUDS: type -, amt. - SEA: dir. -, amt. 2
SWELL: dir. -, amt. - VIS. - WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	15.61	35.97	26.60	5.61
10	15.62	36 00	26.62	5.60
20	15.65	36.00	26.61	5.61

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	15.61	35.97	26.60	5.61
10	15.62	36.00	26.62	5.60
20	15.65	36.00	26.61	5.61

STATION 33

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	1.9	0.0	<0.5	-	1.3
10	1.6	<0.1	2.0	-	0.8
20	-	0.2	0.5	-	0.3

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	1.9	0.0	<0.5	-	1.3
10	1.6	<0.1	2.0	-	0.8
20	-	0.2	0.5	-	0.3

STATION 34

DATE Feb. 22, 1953 LAT. 31° 00'N. LONG. 81° 09'W. TIME 22
DEPTH 13 WIND 5 , 36 BAR. - AIR TEMP: dry - °C, wet - °C
HUMIDITY - % WEATHER - CLOUDS: type -, amt. - SEA: dir. -, amt. 2
SWELL: dir. -, amt. - VIS. - WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	14.80	34.56	25.70	5.78
10	14.83	24.54	25.67	5.78

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	14.80	34.56	25.70	5.78
10	14.83	34.54	25.67	5.78

STATION 34

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	0.9	0.3	0.5	-	0.7
10	0.4	0.3	0.5	-	1.8

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	0.9	0.3	0.5	-	0.7
10	0.4	0.3	0.5	-	1.8

STATION 35

DATE Feb. 27, 1953 LAT. 31° 20'N. LONG. 80° 52'W. TIME 01
DEPTH 16 WIND 2 , 07 BAR. - AIR TEMP: dry - °C, wet - °C
HUMIDITY - % WEATHER 01 CLOUDS: type - , amt. - SEA: dir. - , amt. 1
SWELL: dir. - , amt. - VIS. - WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	14.20	34.76	25.98	6.13
10	14.11	35.01	26.19	5.73

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	14.20	34.76	25.98	6.13
10	14.11	35.01	26.19	5.73

STATION 35

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	-	0.1	0.0	-	-
10	-	0.1	<0.5	-	0.8

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	-	0.1	0.0	-	-
10	-	0.1	<0.5	-	0.8

STATION 36

DATE Feb. 27, 1953 LAT. 31° 42'N. LONG. 80° 36'W. TIME 05
DEPTH 16 WIND 2 , 25 BAR. - AIR TEMP: dry - °C, wet - °C
HUMIDITY - % WEATHER - CLOUDS: type -, amt. - SEA: dir. -, amt. 1
SWELL: dir. -, amt. - VIS. - WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	13.75	35.25	26.45	5.73
10	13.70	35.25	26.46	5.69

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	13.75	35.25	26.45	5.73
10	13.70	35.25	26.46	5.69

STATION 36

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	-	0.1	0.5	1.9	0.1
10	-	0.0	0.0	-	-

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	-	0.1	0.5	1.9	0.1
10	-	0.0	0.0	-	-

STATION 37

DATE Feb. 27, 1953 LAT. 31° 36'N. LONG. 80° 10'W. TIME 07
DEPTH 32 WIND 4 , 25 BAR. - AIR TEMP: dry - °C, wet - °C
HUMIDITY - % WEATHER 02 CLOUDS: type - , amt. - SEA: dir. - , amt. 1
SWELL: dir. - , amt. - VIS. - WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	16.27	36.15	26.59	5.37
10	16.21	36.17	26.62	5.37
20	16.24	36.17	26.61	5.51
30	16.23	36.18	26.62	5.47

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	16.27	36.15	26.59	5.37
10	16.21	36.17	26.62	5.37
20	16.24	36.17	26.61	5.51
30	16.23	36.18	26.62	5.47

STATION 37

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	-	0.1	0.0	-	1.3
10	-	0.2	0.0	-	0.3
20	-	0.1	0.0	4.2	0.1
30	-	0.1	1.5	-	0.0

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	-	0.1	0.0	-	1.3
10	-	0.2	0.0	-	0.3
20	-	0.1	0.0	4.2	0.1
30	-	0.1	1.5	-	0.0

STATION 38

DATE Feb. 27, 1953 LAT. 31° 31'N. LONG. 79° 52'W. TIME 10
DEPTH 45 WIND 4 , 25 BAR. - AIR TEMP: dry - °C, wet - °C
HUMIDITY - % WEATHER 01 CLOUDS: type - , amt. - SEA: dir. - , amt. 2
SWELL: dir. - , amt. - VIS. - WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	19.40**	36.36	25.97	-
10	19.21	36.18	25.89	5.17
20	18.95	36.36	26.09	5.13
30	17.93	36.13	26.17	4.57
40	17.93	36.11	26.16	4.55

** From BT

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	19.40	36.36	25.97	-
10	19.21	36.18	25.89	5.17
20	18.95	36.36	26.09	5.13
30	17.93	36.13	26.17	4.57

STATION 38

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	-	<0.1	<0.5	-	0.0
10	-	0.2	-	-	0.2
20	-	0.2	1.0	-	0.4
30	-	0.4	3.0	-	0.2
40	-	0.3	1.0	1.8	0.0

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	-	<0.1	<0.5	-	0.0
10	-	0.2	0.5	-	0.2
20	-	0.2	1.0	-	0.4
30	-	0.4	3.0	1.8	0.2

STATION 39

DATE Feb. 27, 1953 LAT. 31° 32'N. LONG. 79° 28'W. TIME 13
DEPTH 512 WIND 7 , 34 BAR. - AIR TEMP: dry - °C, wet - °C
HUMIDITY - % WEATHER 02 CLOUDS: type - , amt. - SEA: dir. - , amt. -
SWELL: dir. - , amt. - VIS. - WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	24.10**	36.20	24.54	4.88
7	23.95	36.22	24.60	4.69
22	23.92	36.24	24.62	4.73
36	22.44	36.27	25.08	4.73
72	19.86	36.38	25.87	4.13
143	16.92	36.29	26.54	3.56
216	14.00	35.82	26.84	3.24
290	11.12	35.37	27.06	3.12
367	8.50	35.08	27.28	3.00

** From BT

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	24.10	36.20	24.54	4.88
10	23.94	36.22	24.60	4.73
20	23.93	36.24	24.62	4.73
30	23.04	36.26	24.90	4.73
50	21.35	36.33	25.43	4.51
75	19.73	36.38	25.90	4.12
100	18.69	36.35	26.15	3.87
150	16.64	36.24	26.57	3.52
200	14.63	35.92	26.78	3.28
250	12.63	35.59	26.94	3.18
300	10.76	35.32	27.09	3.09

STATION 39

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	-	<0.1	-	2.3	0.3
7	-	0.2	0.5	1.4	0.9
22	-	0.2	0.0	-	0.0
36	-	0.3	-	-	0.1
72	-	0.1	2.5	3.5	-
143	-	0.4	4.5	-	0.7
216	-	0.6	15.0	-	1.1
290	-	0.8	14.0	3.6	0.1
367	-	1.1	18.5	-	0.5

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	-	<0.1	-	2.3	0.3
10	-	0.2	<0.5	1.5	0.8
20	-	0.2	<0.5	1.8	0.2
30	-	0.3	0.5	2.2	<0.1
50	-	0.2	1.5	2.8	0.2
75	-	0.1	2.5	3.5	0.3
100	-	0.2	3.5	3.5	0.5
150	-	0.4	5.5	3.5	0.8
200	-	0.6	12.5	3.6	1.0
250	-	0.7	14.5	3.6	0.6
300	-	0.8	14.5	3.6	0.2

STATION 40

DATE Feb. 27, 1953 LAT. 31° 27' N. LONG. 78° 34' W. TIME 19
DEPTH 585 WIND 4 , 27 BAR. - AIR TEMP: dry - °C, wet - °C
HUMIDITY - % WEATHER 02 CLOUDS: type - , amt. - SEA: dir. - , amt. 3
SWELL: dir. - , amt. - VIS. - WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	24.47	36.18	24.41	4.81
10	24.46	36.13	24.38	4.65
29	24.46	36.11	24.36	4.61
49	24.43	36.13	24.39	3.72
98	22.83	36.73	25.31	4.13
195	19.46	36.67	26.20	4.05
293	14.01*	36.51	27.37	4.17
391	16.73	36.35	26.63	4.13
488	15.24	35.71*	26.48	3.72

* Value questionable

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	24.47	36.18	24.41	4.81
10	24.46	36.13	24.38	4.65
20	24.46	36.12	24.37	4.63
30	24.46	36.12	24.37	4.55
50	24.43	36.16	24.41	3.73
75	23.65	36.48	24.88	3.98
100	22.71	36.72	25.34	4.13
150	21.08	36.70	25.78	4.06

STATION 40

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	-	0.1	1.5	8.5	0.0
10	-	0.1	0.0	1.0	0.2
29	-	0.1	0.0	0.0	0.8
49	-	0.1	0.0	-	0.3
98	-	0.4	2.5	0.3	1.7
195	-	0.5	2.5	-	0.5
293	-	0.2	-	1.3	0.9
391	-	0.5	12.5	-	-
488	-	0.6	2.5	1.1	0.4

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	-	0.1	1.5	8.5	0.0
10	-	0.1	0.0	1.0	0.2
20	-	0.1	0.0	0.5	0.5
30	-	0.1	0.0	0.0	0.8
50	-	0.1	0.0	0.1	0.3
75	-	0.3	1.5	0.2	0.9
100	-	0.4	2.5	0.3	1.5
150	-	0.4	2.5	0.6	1.0
200	-	0.5	2.5	0.8	0.5
250	-	0.3	5.0	1.0	0.7
300	-	0.2	7.5	1.3	0.9
400	-	0.5	12.5	1.2	0.6

STATION 41

DATE Feb. 27, 1953 LAT. 31° 38' N. LONG. 78° 45' W. TIME 23
DEPTH 475 WIND 4 , 27 BAR. - AIR TEMP: dry - °C, wet - °C
HUMIDITY - % WEATHER 02 CLOUDS: type -, amt. - SEA: dir. -, amt. 2
SWELL: dir. -, amt. - VIS. - WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	24.63	35.93	24.18	4.50
9	24.62	35.84	24.11	4.25
17	24.63	36.17	24.36	4.50
43	24.49	36.29	24.49	3.68
65	24.08	36.64	24.88	3.58
87*	24.60	36.18	24.37	3.84
174	19.98	36.73	26.10	3.68
261	18.25	36.51	26.38	4.39
348	16.97	36.44	26.64	4.07

* Questionable

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	24.63	35.93	24.18	4.50
10	24.62	35.89	24.15	4.29
20	24.63	36.17	24.36	4.37
30	24.61	36.19	24.38	3.99
50	24.36	36.49	24.68	3.61
75	23.88	36.40	24.76	3.59
100	23.20	36.31	24.89	3.60
150	21.30	36.66	25.69	3.64
200	19.42	36.65	26.19	3.86
250	18.44	36.53	26.35	4.28
300	17.62	36.46	26.50	4.25

STATION 41

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	-	0.1	1.5	-	1.0
9	-	0.2	0.5	-	0.6
17	-	0.1	<0.5	-	0.5
43	-	0.4	0.5	0.3	1.0
65	0.3	0.2	1.5	3.2	0.9
87	0.3	0.0	1.0	-	1.2
174	0.5	0.3	1.5	-	0.2
261	0.8	0.5	3.0	-	1.0
348	0.4	0.4	1.5	-	0.1

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	-	0.1	1.5	-	1.0
10	-	0.2	0.5	-	0.6
20	-	0.2	<0.5	-	0.6
30	-	0.3	0.5	-	0.8
50	-	0.3	1.0	1.8	1.0
75	0.3	0.1	1.0	-	1.1
100	0.3	<0.1	1.0	-	1.0
150	0.4	0.2	1.5	-	0.5
200	0.6	0.3	2.0	-	0.4
250	0.8	0.5	3.0	-	0.9
300	0.6	0.5	2.5	-	0.6

STATION 42

DATE Feb. 28, 1953 LAT. 31° 47' N. LONG. 79° 16' W. TIME 05
DEPTH 154 WIND 7 , 22 BAR. - AIR TEMP: dry - °C, wet - °C
HUMIDITY - % WEATHER 02 CLOUDS: type -, amt. - SEA: dir. -, amt. 3
SWELL: dir. -, amt. - VIS. - WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	17.16	36.22	26.43	4.95
10	17.09	36.22	26.45	5.36
20	17.14	36.00	26.27	5.36
29	17.11	36.22	26.44	5.24
49	17.11	36.22	26.44	5.19
74	15.61	36.09	26.69	4.09
99	15.92*	36.27	26.76	3.68

* Value questionable

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	17.16	36.22	26.43	4.95
10	17.09	36.22	26.45	5.36
20	17.14	36.00	26.27	5.36
30	17.11	36.22	26.44	5.24
50	17.02	36.21	26.46	5.13
75	15.59	36.09	26.70	4.06

STATION 42

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	0.6	-	-	-	-
10	0.5	-	-	-	-
20	-	-	-	-	-
29	0.4	-	-	-	-
49	-	-	-	-	-
74	0.5	-	-	-	-
99	0.6	-	-	-	-

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	0.6	-	-	-	-
10	0.5	-	-	-	-
20	0.5	-	-	-	-
30	0.4	-	-	-	-
50	0.5	-	-	-	-
75	0.5	-	-	-	-
100	0.6	-	-	-	-

STATION 43

DATE Feb. 28, 1953 LAT. 32° 12'N. LONG. 79° 32'W. TIME 09
DEPTH 36 WIND 7 , 22 BAR. - AIR TEMP: dry - °C, wet ____ °C
HUMIDITY - % WEATHER 02 CLOUDS: type - , amt. - SEA: dir. - , amt. 4
SWELL: dir. - , amt. - VIS. - WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	16.55	36.29	26.63	5.32
10	16.50	36.27	26.62	5.32
20	16.54	36.22	26.58	5.32

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	16.55	36.29	26.63	5.32
10	16.50	36.27	26.62	5.32
20	16.54	36.22	26.58	5.32

STATION 43

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	0.3	0.2	0.0	2.6	1.3
10	-	0.1	0.0	0.2	0.2
20	0.6	0.2	8.0	-	0.6

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	0.3	0.2	0.0	2.6	1.3
10	0.5	0.1	0.0	0.2	0.2
20	0.6	0.2	8.0	-	0.6

STATION 44

DATE Feb. 28, 1953 LAT. 32° 25' N. LONG. 79° 50' W. TIME 13
DEPTH 16 WIND 7 , 22 BAR. - AIR TEMP: dry - °C, wet - °C
HUMIDITY - % WEATHER 02 CLOUDS: type - , amt. - SEA: dir. - , amt. 2
SWELL: dir. - , amt. - VIS. - WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	13.39	34.92	26.27	6.01
10	13.40	34.99	26.32	5.98

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	13.39	34.92	26.27	6.01
10	13.40	34.99	26.32	5.98

STATION 44

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	0.3	0.2	0.0	0.6	-
10	0.5	0.1	-	0.3	0.9

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	0.3	0.2	0.0	0.6	-
10	0.5	0.1	-	0.3	0.9

STATION 45

DATE Feb. 28, 1953 LAT. 32° 40' N. LONG. 79° 32' W. TIME 16
DEPTH 15 WIND 4 ,34 BAR. - AIR TEMP: dry - °C, wet - °C
HUMIDITY - % WEATHER 02 CLOUDS: type - ,amt. - SEA: dir. - ,amt. 1
SWELL: dir. - ,amt. - VIS. - WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	13.50**	33.64	25.26	5.47
10	13.48	34.69	26.07	5.91

** From BT

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	13.50	33.64	25.26	5.47
10	13.48	34.69	26.07	5.91

STATION 45

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	0.7	0.4	0.5	-	0.8
10	-	0.0	0.0	-	0.2

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	0.7	0.4	0.5	-	0.8
10	-	0.0	0.0	-	0.2

STATION 46

DATE Feb. 28, 1953 LAT. 32° 51' N. LONG. 79° 18' W. TIME 18
DEPTH 9 WIND 2 , 04 BAR. - AIR TEMP: dry - °C, wet - °C
HUMIDITY - % WEATHER 02 CLOUDS: type - , amt. - SEA: dir. - , amt. 1
SWELL: dir. - , amt. - VIS. - WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	13.30	33.82	25.44	6.03
10	13.16	34.22	25.78	5.91

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	13.30	33.82	25.44	6.03
10	13.16	34.22	25.78	5.91

STATION 46

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	0.3	0.3	0.0	-	0.3
10	0.4	0.0	0.0	-	0.3

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	0.3	0.3	0.0	-	0.3
10	0.4	0.0	0.0	-	0.3

STATION 47

DATE Feb. 28, 1953 LAT. 32° 40'N. LONG. 79° 00'W. TIME 21
DEPTH 24 WIND 2 , 04 BAR. - AIR TEMP: dry - °C, wet - °C
HUMIDITY - % WEATHER 03 CLOUDS: type - , amt. - SEA: dir. - , amt. 1
SWELL: dir. - , amt. - VIS. - WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	16.80**	36.27	26.55	5.71
10	16.74	36.26	26.56	5.66
20	16.74	36.26	26.56	5.60

** From BT

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	16.80	36.27	26.55	5.71
10	16.74	36.26	26.56	5.66
20	16.74	36.26	26.56	5.60

STATION 47

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	0.5	0.2	< 0.5	-	0.4
10	0.5	0.1	0.0	4.2	0.1
20	0.5	0.2	< 0.5	-	0.2

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	0.5	0.2	< 0.5	-	0.4
10	0.5	0.1	0.0	4.2	0.1
20	0.5	0.2	< 0.5	-	0.2

STATION 48

DATE March 1, 1953 LAT. 32° 24' N. LONG. 78° 43' W. TIME 01
DEPTH 219 WIND 4 , 04 BAR. - AIR TEMP: dry - °C, wet - °C
HUMIDITY - % WEATHER 03 CLOUDS: type - , amt. - SEA: dir. - , amt. 1
SWELL: dir. - , amt. - VIS. - WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	19.71	36.22	25.79	5.46
10	19.61	36.20	25.80	5.34
20	19.66	36.18	25.77	5.38
30	18.64	36.20	26.05	4.97
50	16.88	36.15	26.44	4.23
75	13.62	35.81	26.91	3.37
100	11.04*	35.62	27.27	3.28
200	10.69	35.30	27.08	3.12

* Value questionable

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	19.71	36.22	25.79	5.46
10	19.61	36.20	25.80	5.34
20	19.66	36.18	25.77	5.38
30	18.64	36.20	26.05	4.97
50	16.88	36.15	26.44	4.23
75	13.62	35.81	26.91	3.37
100	12.25	35.62	27.04	3.28
150	11.18	35.37	27.05	3.16
200	10.69	35.30	27.08	3.12

STATION 48

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	0.2	<0.1	0.5	-	0.6
10	0.5	0.0	<0.5	-	0.4
20	0.3	0.2	2.0	3.3	-
30	-	0.2	<0.5	7.5	0.4
50	0.6	0.6	8.5	-	1.3
75	-	0.9	9.5	1.7	0.4
100	-	1.0	5.0	-	1.1
200	-	1.5	7.0	-	0.2

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	0.2	<0.1	0.5	-	0.6
10	0.5	0.0	<0.5	-	0.4
20	0.3	0.2	2.0	3.3	0.4
30	0.4	0.2	<0.5	7.5	0.4
50	0.6	0.6	8.5	4.7	1.3
75	-	0.9	9.5	1.7	0.4
100	-	1.0	5.0	-	1.1
150	-	1.3	6.0	-	0.6
200	-	1.5	7.0	-	0.2

STATION 49

DATE March 1, 1953 LAT. 32° 11' N. LONG. 78° 25' W. TIME 04
DEPTH 430 WIND 4 , 04 BAR. - AIR TEMP: dry - °C, wet - °C
HUMIDITY - % WEATHER 02 CLOUDS: type - , amt. - SEA: dir. - , amt. 2
SWELL: dir. - , amt. - VIS. - WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	23.64	36.27	24.73	4.80
7	23.61	36.24	24.71	4.76
14	23.49	36.22	24.74	4.93
36	19.87	36.00	25.58	4.60
54	18.08	35.95	26.00	4.21
71	17.89*	36.11*	26.17	4.79*
143	18.59*	35.88	25.82	3.61
216	11.47	35.44	27.05	2.69
288	8.39	35.16	27.36	3.12

* Value questionable

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	23.64	36.27	24.73	4.80
10	23.59	36.23	24.71	4.85
20	22.35	36.14	25.00	4.86
30	20.70	36.04	25.39	4.71
50	18.34	35.95	25.93	4.28
75	17.81	35.95	26.06	4.05
100	17.30	35.94	26.18	3.90
150	15.23	35.83	26.58	3.46
200	12.45	35.52	26.92	2.77
250	9.78	35.29	27.24	2.73

STATION 49

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	0.3	0.2	0.5	-	-
7	0.3	0.1	1.0	-	1.3
14	0.4	0.1	1.5	1.8	0.1
36	-	0.4	1.5	1.9	1.1
54	0.5	0.4	3.5	-	-
71	0.6	0.4	2.0	-	-
143	2.3	0.9	16.0	-	0.6
216	2.5	1.1	5.0	2.7	0.1
288	2.9	1.4	5.0	-	0.6

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	0.3	0.2	0.5	-	-
10	0.3	0.1	1.0	-	0.7
20	0.4	0.2	1.5	1.8	0.3
30	0.3	0.3	1.5	1.9	0.8
50	0.4	0.4	3.5	-	1.0
75	0.7	0.4	2.0	-	0.9
100	1.3	0.6	7.0	-	0.8
150	2.3	0.9	16.0	-	0.6
200	2.5	1.1	7.5	2.6	0.2
250	2.7	1.2	5.0	-	0.2

STATION 50

DATE March 1, 1953 LAT. 31° 57' N. LONG. 78° 09' W. TIME 07
DEPTH 677 WIND 2 , 11 BAR. - AIR TEMP: dry - °C, wet - °C
HUMIDITY - % WEATHER 03 CLOUDS: type -, amt. - SEA: dir. -, amt. 1
SWELL: dir. -, amt. - VIS. - WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	24.20**	36.22	24.52	4.60
9	24.14	36.17	24.50	4.43
45	24.19	36.18	24.50	4.56
91	23.86	36.44	24.79	3.80
181	19.21	36.73	26.31	3.56
271	16.20	36.27	26.69	3.45
362	13.96	35.81	26.84	3.10
452	12.09	35.57	27.03	2.96
543	10.12	35.32	27.20	2.83

** From BT

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	24.20	36.22	24.52	4.60
10	24.15	36.17	24.50	4.44
20	24.18	36.17	24.49	4.53
30	24.19	36.18	24.50	4.58
50	24.15	36.21	24.53	4.45
75	24.01	36.35	24.68	4.01
100	23.32	36.50	25.00	3.77
150	20.63	36.71	25.91	3.62
200	18.51	36.63	26.41	3.55
250	16.83	36.37	26.62	3.49
300	15.45	36.09	26.73	3.31
400	13.18	35.70	26.92	3.03
500	11.06	35.43	27.12	2.88

STATION 50

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	0.2	0.2	0.0	-	0.6
9	1.4	0.0	1.5	-	-
45	-	0.1	1.0	-	3.6
91	-	0.5	0.5	1.2	0.4
181	-	0.3	2.5	-	-
271	2.9	0.6	2.0	1.6	0.2
362	3.0	1.0	4.0	-	0.3
452	-	0.9	5.0	-	0.5
543	3.5	1.6	5.0	-	0.9

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	0.2	0.2	0.0	-	0.6
10	1.4	0.0	1.5	-	1.2
20	-	<0.1	1.5	-	1.8
30	-	0.1	1.0	-	2.6
50	-	0.2	1.0	-	3.2
75	-	0.4	0.5	-	1.0
100	-	0.5	1.0	1.2	0.4
150	-	0.4	2.0	1.3	0.3
200	-	0.4	2.5	1.5	0.3
250	-	0.5	2.0	1.6	0.2
300	3.0	0.7	2.5	-	0.2
400	3.1	1.0	4.5	-	0.4
500	3.3	1.3	5.0	-	0.7

STATION 51

DATE March 1, 1953 LAT. 32° 18' N. LONG. 77° 30' W. TIME 12
DEPTH 585 WIND 2 , 11 BAR. - AIR TEMP: dry - °C, wet - °C
HUMIDITY - % WEATHER 03 CLOUDS: type -, amt. - SEA: dir. -, amt. 1
SWELL: dir. -, amt. - VIS. - WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	24.03	36.24	24.59	4.56
8	23.90	36.33	24.70	4.47
39	23.96	36.27	24.63	4.47
115*	17.47	36.42	26.51	4.45
116	18.35	36.60	26.43	4.40
144	16.50	36.22	26.59	4.30
174	-	36.02	-	4.10
232	13.56	35.77	26.89	4.00
293	13.56*	35.70	26.84	3.95

* Value questionable

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	24.03	36.24	24.59	4.56
10	23.91	36.32	24.69	4.47
20	23.93	36.30	24.67	4.47
30	23.96	36.28	24.64	4.47
50	23.50	36.29	24.79	4.45
75	21.90	36.42	25.34	4.43
100	19.90	36.55	25.99	4.41
150	16.19	36.18	26.63	4.25
200	14.23	35.89	26.84	4.05
250	-	35.73	-	3.98

STATION 51

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	1.5	0.1	<0.5	-	0.1
8	1.6	0.2	0.0	3.8	0.9
39	1.3	0.1	0.0	-	0.7
116	1.6	0.2	4.5	4.4	0.6
144	-	0.4	3.5	3.0	0.7
174	-	0.8	13.5	0.3	1.6
232	2.5	0.9	1.5*	2.1	0.3
293	4.3	1.0	9.0	-	0.0

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	1.5	0.1	<0.5	-	0.1
10	1.6	0.2	0.0	3.8	0.9
20	1.5	0.2	0.0	3.9	0.8
30	1.4	0.2	0.0	3.9	0.8
50	1.3	0.1	0.5	4.0	0.7
75	1.5	0.2	2.0	4.2	0.7
100	1.5	0.2	3.5	4.3	0.6
150	1.8	0.5	3.5	2.3	0.9
200	2.3	0.8	12.5	1.1	1.0
250	3.0	0.9	10.5	-	0.2
300	4.3	1.0	9.0	-	0.0

* Value questionable

STATION 52

DATE March 1, 1953 LAT. 32° 47'N. LONG. 77° 37'W. TIME 16
DEPTH 384 WIND 4 , 18 BAR. - AIR TEMP: dry - °C, wet - °C
HUMIDITY - % WEATHER 03 CLOUDS: type -, amt. - SEA: dir. -, amt. 1
SWELL: dir. -, amt. - VIS. - WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	19.12	36.11	25.86	5.46
10	18.94	36.11	25.90	5.42
19	18.95	36.11	25.90	5.34
28	18.57	35.97	25.89	5.09
47	15.52	35.75	26.45	3.82
71	13.40	35.61	26.80	3.37
95	-	35.61	-	3.11
189	10.03	35.32	27.22	2.91
284	9.07	35.14	27.24	2.96

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	19.12	36.11	25.86	5.46
10	18.94	36.11	25.90	5.42
20	18.94	36.09	25.89	5.32
30	18.19	35.94	25.96	4.92
50	15.23	35.72	26.49	3.75
75	13.25	35.61	26.83	3.32
100	12.35	35.59	27.00	3.09
150	10.88	35.43	27.15	2.96
200	9.84	35.29	27.22	2.92
250	9.38	35.19	27.22	2.94

STATION 52

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	-	0.2	0.5	-	0.7
10	1.5	0.3	1.0	-	-
19	1.9	0.1	1.0	2.2	0.3
28	0.3	0.2	1.0	-	0.9
47	2.1	1.0	9.0	-	1.0
71	-	1.3	16.0	-	0.5
95	-	1.2	3.5*	-	1.0
189	-	1.2	22.0	2.0	2.0
284	-	1.8	11.5	1.2	0.5

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	-	0.2	0.5	-	0.7
10	1.5	0.3	1.0	-	0.5
20	1.9	0.1	1.0	2.2	0.3
30	0.5	0.3	1.5	-	0.9
50	2.1	1.0	9.0	-	0.9
75	-	1.3	16.0	-	0.6
100	-	1.2	17.5	-	1.1
150	-	1.2	20.0	-	1.6
200	-	1.3	20.5	2.0	1.8
250	-	1.6	15.0	1.5	1.0

* Value questionable

STATION 53

DATE March 1, 1953 LAT. 32° 48'N. LONG. 78° 04'W. TIME 20
DEPTH 183 WIND 2 , 18 BAR. - AIR TEMP: dry - °C, wet - °C
HUMIDITY - % WEATHER 03 CLOUDS: type -, amt. - SEA: dir. -, amt. 1
SWELL: dir. -, amt. - VIS. - WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	20.18	36.20	25.65	4.04
10	20.08	36.18	25.66	4.04
20	19.73	36.15	25.73	4.04
30	18.04	36.11	26.13	3.63
50	17.18	36.08	26.32	3.37
75	14.73	35.84	26.70	3.33
100	12.23*	35.79	27.18	3.29
150	11.14	35.44	27.11	3.20

* Value questionable

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	20.18	36.20	25.65	4.04
10	20.08	36.18	25.66	4.04
20	19.73	36.15	25.73	4.04
30	18.04	36.11	26.13	3.63
50	17.18	36.08	26.32	3.37
75	14.73	35.84	26.70	3.33
100	13.25	35.79	26.97	3.29
150	11.14	35.44	27.11	3.20

STATION 53

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	1.4	0.2	0.0	-	0.2
10	2.8	0.8	<0.5	-	1.5
20	1.4	0.2	1.0	2.2	-
30	1.7	0.6	5.5	-	-
50	1.1	0.7	5.5	-	0.4
75	-	1.1	3.0	-	0.1
100	-	1.1	4.5	-	0.1
150	-	1.4	8.0	1.7	1.4

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	1.4	0.2	0.0	-	0.2
10	2.8	0.8	<0.5	-	1.5
20	1.4	0.2	1.0	2.2	1.2
30	1.7	0.6	5.5	-	0.9
50	1.1	0.7	5.5	-	0.4
75	-	1.1	3.0	-	0.1
100	-	1.1	4.5	-	0.1
150	-	1.4	8.0	1.7	1.4

STATION 54

DATE March 2,1953 LAT. 33° 02'N. LONG. 78° 21'W. TIME 24
DEPTH 29 WIND 7 ,04 BAR. - AIR TEMP: dry - °C, wet - °C
HUMIDITY - % WEATHER 00 CLOUDS:type -,amt.- SEA:dir. -,amt.2
SWELL:dir. -,amt.- VIS.- WATER TRANS.-

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	14.12	33.93*	25.36	6.08
10	15.55	36.13	26.74	5.42
20	15.62	36.11	26.71	5.44

* Value questionable

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	14.12	-	-	6.08
10	15.55	36.13	26.74	5.42
20	15.62	36.11	26.71	5.44

STATION 54

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	0.9	-	0.0	0.5	1.1
10	-	0.1	0.0	-	1.4
20	1.6	0.2	1.0	0.0	0.3

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	0.9	-	0.0	0.5	1.1
10	1.2	0.1	0.0	0.3	1.4
20	1.6	0.2	1.0	0.0	0.3

STATION 55

DATE March 3, 1953 LAT. 33° 12'N. LONG. 78° 38'W. TIME 04
DEPTH 20 WIND 7 , 04 BAR. - AIR TEMP: dry - °C, wet - °C
HUMIDITY - % WEATHER 00 CLOUDS: type - , amt. - SEA: dir. - , amt. -
SWELL: dir. - , amt. - VIS. - WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	13.35	-	-	5.89
10	13.29	-	-	5.88

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	13.35	-	-	5.89
10	13.29	-	-	5.88

STATION 55

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	-	0.2	0.5	0.8	1.4
10	-	0.1	0.0	-	0.4

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	-	0.2	0.5	0.8	1.4
10	-	0.1	0.0	-	0.4

STATION 56

DATE March 3, 1953 LAT. 33° 32' N. LONG. 78° 55' W. TIME 05
DEPTH 9 WIND 6 , 04 BAR. - AIR TEMP: dry - °C, wet - °C
HUMIDITY - % WEATHER 00 CLOUDS: type - , amt. - SEA: dir. - , amt. 2
SWELL: dir. - , amt. - VIS. - WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	-	34.13	-	6.07

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	-	34.13	-	6.07

STATION 56

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	1.0	0.2	<0.5	-	-

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	1.0	0.2	<0.5	-	-

STATION 57

DATE March 3, 1953 LAT. 33° 34' N. LONG. 78° 24' W. TIME 09
DEPTH 20 WIND 7 , 04 BAR. - AIR TEMP: dry - °C, wet ____ °C
HUMIDITY - % WEATHER 50 CLOUDS: type - , amt. - SEA: dir. - , amt. 2
SWELL: dir. - , amt. - VIS. - WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	12.10**	35.90	27.29	5.79
10	14.14	35.95	26.91	5.75

** From BT

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	12.10	35.90	27.29	5.79
10	14.14	35.95	26.91	5.75

STATION 57

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	1.5	0.1	2.0	-	0.4
10	1.9	0.1	<0.5	-	0.2

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	1.5	0.1	2.0	-	0.4
10	1.9	0.1	<0.5	-	0.2

STATION 58

DATE March 3, 1953 LAT. 33° 36'N. LONG. 77° 54'W. TIME 13
DEPTH 18 WIND 7 , 04 BAR. - AIR TEMP: dry - °C, wet - °C
HUMIDITY - % WEATHER 50 CLOUDS: type - , amt. - SEA: dir. - , amt. 2
SWELL: dir. - , amt. - VIS. - WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	12.67	34.18	25.84	5.92
10	12.81	34.61	26.15	5.89

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	12.67	34.18	25.84	5.92
10	12.81	34.61	26.15	5.89

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	2.8	0.4	0.0	-	0.2
10	1.6	0.3	<0.5	-	0.3

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	2.8	0.4	0.0	-	0.2
10	1.6	0.3	<0.5	-	0.3

STATION 59

DATE March 3, 1953 LAT. 33° 22' N. LONG. 77° 36' W. TIME 16
DEPTH 24 WIND 7 , 07 BAR. - - AIR TEMP: dry - °C, wet - °C
HUMIDITY - % WEATHER 01 CLOUDS: type - , amt. - SEA: dir. - , amt. 2
SWELL: dir. - , amt. - VIS. - WATER TRANS. 7

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	18.10**	36.17	26.16	5.32
10	18.21	36.20	26.16	5.34
20	18.22	36.18	26.14	5.40

** From BT

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	18.10	36.17	26.16	5.32
10	18.21	36.20	26.16	5.34
20	18.22	36.18	26.14	5.40

STATION 59

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	1.9	0.2	1.0	-	0.6
10	1.0	0.2	1.5	1.5	1.4
20	0.5	0.2	0.0	-	0.3

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	1.9	0.2	1.0	-	0.6
10	1.0	0.2	1.5	1.5	1.4
20	0.5	0.2	0.0	-	0.3

STATION 60

DATE March 3, 1953 LAT. 33° 08' N. LONG. 77° 20' W. TIME 20
DEPTH 219 WIND 4 , 11 BAR. - AIR TEMP: dry - °C, wet - °C
HUMIDITY - % WEATHER 01 CLOUDS: type -, amt. - SEA: dir. -, amt. 2
SWELL: dir. -, amt. - VIS. - WATER TRANS. 12

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	20.38	35.99	25.43	5.17
10	20.24	35.97	25.46	5.34
20	19.99	35.97	25.52	5.05
30	19.88	35.99	25.57	5.01
49	17.42	36.09	26.27	3.98
74	16.74	36.24	26.54	3.65
98	-	36.02*	-	3.45
137	14.34	35.73	26.70	3.24
183*	15.51	36.00	26.65	3.33

* Questionable

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	20.38	35.99	25.43	5.17
10	20.24	35.97	25.46	5.34
20	19.99	35.97	25.52	5.05
30	19.88	35.99	25.57	5.01
50	17.40	36.10	26.28	3.96
75	16.71	36.22	26.54	3.64
100	15.87	35.99	26.56	3.44

STATION 60

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	1.2	0.2	<0.5	0.2	<0.1
10	1.9	0.2	1.0	-	0.1
20	0.6	0.3	0.5	0.7	1.1
30	1.1	0.2	1.5	2.3	0.3
49	1.1	0.4	8.0	-	1.2
74	-	0.7	10.0	-	0.2
98	1.6	0.9	7.5	0.0	0.1
137	5.0	1.0	12.0	6.2	1.4
183	-	0.9	1.0*	-	0.9

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	1.2	0.2	<0.5	0.2	<0.1
10	1.9	0.2	1.0	0.5	0.1
20	0.6	0.3	0.5	0.7	1.1
30	1.1	0.2	1.5	2.3	0.3
50	1.1	0.4	8.0	-	1.2
75	1.4	0.7	10.0	-	0.2
100	1.6	0.9	7.5	0.0	0.2
150	5.0	1.0	12.0	6.2	1.2

* Value questionable

STATION 61

DATE March 3, 1953 LAT. 32° 54'N. LONG. 77° 03'W. TIME 22
DEPTH 388 WIND 4 , 14 BAR. - AIR TEMP: dry - °C, wet - °C
HUMIDITY - % WEATHER 02 CLOUDS: type - , amt. - SEA: dir. - , amt. 2
SWELL: dir. - , amt. - VIS. - WATER TRANS. 12

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	20.17	36.06	25.54	5.30
10	20.10	36.06	25.56	5.34
20	19.36	36.06	25.76	5.21
29	19.22	36.02	25.76	5.13
49	17.87	35.97	26.06	4.76
98	16.77	35.91	26.28	4.52
148	12.87	35.57	26.88	3.24
197	11.35	35.48	27.10	3.12
295	8.14	34.97	27.25	3.12

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	20.17	36.06	25.54	5.30
10	20.10	36.06	25.56	5.34
20	19.36	36.06	25.76	5.21
30	19.14	36.02	25.78	5.11
50	17.87	35.97	26.06	4.75
75	17.30	35.97	26.20	4.62
100	16.57	35.89	26.32	4.45
150	12.81	35.57	26.89	3.23
200	11.26	35.47	27.11	3.12
250	9.64	35.26	27.24	3.12

STATIÓN 61

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	0.1	0.1	1.0	-	1.5
10	0.3	0.1	1.5	-	0.5
20	-	0.1	-	0.9	4.6
29	0.4	0.1	0.5	-	0.4
49	-	0.5	0.0	-	3.7
98	1.6	0.4	2.5	3.4	<0.1
148	-	1.4	9.0	3.4	1.5
197	-	1.3	6.5	-	1.0
295	5.4	1.7	11.5	-	1.6

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	0.1	0.1	1.0	-	1.5
10	0.3	0.1	1.5	-	0.5
20	0.4	0.1	1.0	0.9	4.6
30	0.4	0.1	0.5	1.2	0.4
50	0.7	0.5	0.0	1.9	3.7
75	1.2	0.5	1.5	2.7	1.9
100	1.6	0.4	2.5	3.4	0.2
150	2.6	1.4	9.0	3.4	1.5
200	3.6	1.3	6.5	-	1.0
250	4.5	1.5	9.0	-	1.3
300	5.4	1.7	11.5	-	1.6

STATION 62

DATE March 4, 1953 LAT. 32° 41' N. LONG. 76° 45' W. TIME 02
DEPTH 713 WIND 7 , 18 BAR. - AIR TEMP: dry - °C, wet - °C
HUMIDITY - % WEATHER 02 CLOUDS: type -, amt. - SEA: dir. -, amt. 2
SWELL: dir. -, amt. - VIS. - WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	24.16	36.17	24.50	4.76
9	24.14	36.27	24.58	4.68
19	24.15	36.20	24.52	4.60
47	24.13	36.20	24.53	4.52
94	23.66	36.58	24.96	4.02
188	19.76	36.67	26.12	3.69
282	19.19*	36.45	26.10	3.69
470	14.02	35.86	26.86	3.12
658	8.08	35.07	27.34	3.04

* Value questionable

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	24.16	36.17	24.50	4.76
10	24.14	36.26	24.57	4.67
20	24.15	36.20	24.52	4.60
30	24.14	36.20	24.53	4.59
50	24.13	36.23	24.55	4.48
75	23.97	36.45	24.77	4.20
100	23.31	36.60	25.08	3.99
150	21.50	36.67	25.65	3.78
200	19.55	36.64	26.15	3.69
250	18.55	36.53	26.32	3.69
300	17.67	36.40	26.44	3.61
400	15.75	36.10	26.67	3.27
500	13.12	35.75	26.97	3.07
600	9.99	35.34	27.24	3.05

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	-	0.1	0.5	-	0.8
9	<0.1	0.0	1.0	2.8	0.8
19	0.8	0.0	0.5	-	-
47	0.1	0.0	0.0	0.5	1.0
94	1.3	-	2.0	1.4	1.3
188	-	0.3	4.0	-	0.4
282	-	0.4	6.0	1.2	1.1
470	-	1.2	13.0	-	-
658	-	1.5	3.0	2.2	0.6

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	-	0.1	0.5	-	0.8
10	<0.1	0.0	1.0	2.8	0.8
20	0.8	0.0	0.5	2.2	0.9
30	0.6	0.0	<0.5	1.6	0.9
50	0.2	0.0	<0.5	0.6	1.0
75	0.8	<0.1	1.0	1.0	1.2
100	1.3	0.1	2.0	1.4	1.2
150	-	0.2	3.0	1.3	0.7
200	-	0.3	4.5	1.3	0.5
250	-	0.4	5.5	1.2	0.9
300	-	0.5	7.0	1.2	1.1
400	-	0.9	10.5	1.5	0.9
500	-	1.2	10.5	1.8	0.8
600	-	1.4	6.0	2.0	0.7

STATION 69

DATE March 6, 1953 LAT. 34° 32' N. LONG. 76° 49' W. TIME 13
DEPTH 18 WIND -, - BAR. - AIR TEMP: dry - °C, wet - °C
HUMIDITY - % WEATHER 02 CLOUDS: type -, amt. - SEA: dir. -, amt. -
SWELL: dir. -, amt. - VIS. - WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	13.64	35.01	26.29	5.89
10	13.56	35.14	26.41	5.91

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	13.64	35.01	26.29	5.89
10	13.56	35.14	26.41	5.91

STATION 69

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	-	0.1	<0.5	-	0.2
10	-	0.0	<0.5		0.4

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	-	0.1	<0.5	-	0.2
10	-	0.0	<0.5	-	0.4

STATION 70

DATE March 6, 1953 LAT. 34° 18' N. LONG. 76° 32' W. TIME 16
DEPTH 27 WIND - , - BAR. - AIR TEMP: dry - °C, wet - °C
HUMIDITY - % WEATHER 02 CLOUDS: type - , amt. - SEA: dir. - , amt. 0
SWELL: dir. - , amt. - VIS. - WATER TRANS. 16

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	15.90**	35.81	26.41	5.61
10	14.04*	35.93	26.91	5.62
20	14.54	35.88	26.77	5.69

* Value questionable
** From BT

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	15.90	35.81	26.41	5.61
10	15.20	35.93	26.66	5.62
20	14.54	35.88	26.77	5.69

STATION 70

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	-	0.0	0.5	3.0	0.0
10	-	0.0	0.0	0.0	0.2
20	-	<0.1	<0.5	-	1.7

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	-	0.0	0.5	3.0	0.0
10	-	0.0	0.0	0.0	0.2
20	-	<0.1	<0.5	-	1.7

STATION 71

DATE March 6, 1953 LAT. 34° 03' N. LONG. 76° 15' W. TIME 19
DEPTH 77 WIND 2 , 22 BAR. - AIR TEMP: dry - °C, wet - °C
HUMIDITY - % WEATHER 02 CLOUDS: type - , amt. - SEA: dir. - , amt. 1
SWELL: dir. - , amt. - VIS. - WATER TRANS. 20

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	20.81	36.17	25.45	5.03
10	20.37	36.11	25.53	5.05
20	20.00	36.11	25.63	5.00
30	19.74	35.97	25.59	4.97

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	20.81	36.17	25.45	5.03
10	20.37	36.11	25.53	5.05
20	20.00	36.11	25.63	5.00
30	19.74	35.97	25.59	4.97

STATION 71

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	0.6	<0.1	0.5	-	1.4
10	-	0.1	0.0	-	1.1
20	-	0.6	2.0	-	0.5
30	-	0.1	0.5	-	0.9

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	0.6	<0.1	0.5	-	1.4
10	-	0.1	0.0	-	1.1
20	-	0.6	2.0	-	0.5
30	-	0.1	0.5	-	0.9

STATION 72

DATE March 6, 1953 LAT. 33° 50' N. LONG. 75° 59' W. TIME 22
DEPTH 658 WIND 4 , 22 BAR. - AIR TEMP: dry - °C, wet - °C
HUMIDITY - % WEATHER 02 CLOUDS: type -, amt. - SEA: dir. -, amt. 1
SWELL: dir. -, amt. - VIS. - WATER TRANS. 20

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	24.15	36.44	24.71	4.49
9	24.12	36.27	24.59	4.49
18	24.12	36.27	24.59	4.49
45	24.05	36.29	24.62	4.41
90	22.94	36.82	25.35	3.68
136	21.32	36.67	25.69	3.60
181	17.70*	36.13	26.23	3.52
362	15.72	35.70	26.37	3.56
543	12.15	35.50	26.97	2.96

* Value questionable

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	24.15	36.44	24.71	4.49
10	24.12	36.27	24.59	4.49
20	24.11	36.27	24.59	4.49
30	24.08	36.28	24.61	4.49
50	23.95	36.38	24.72	4.30
75	23.36	36.72	25.15	3.85
100	22.64	36.82	25.44	3.66
150	20.72	36.48	25.71	3.57
200	19.03	36.07	25.85	3.53
250	17.85	35.94	26.05	3.54
300	16.84	35.82	26.20	3.55
400	15.00	35.64	26.48	3.49
500	13.14	35.53	26.79	3.16

STATION 72

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	0.1	0.1	0.0	2.6	-
9	-	0.1	1.0	-	0.1
18	-	0.0	1.0	-	0.2
45	-	< 0.1	1.5	0.6	0.6
90	-	0.1	1.5	-	0.4
136	-	< 0.1	1.0	-	0.3
181	0.5	0.2	5.5	-	1.0
362	-	0.4	4.0	-	0.2
543	-	0.8	2.5	1.6	1.2

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	0.1	0.1	0.0	2.6	-
10	-	0.1	1.0	2.2	0.1
20	-	< 0.1	1.0	1.8	0.2
30	-	< 0.1	1.0	1.4	0.4
50	-	< 0.1	1.5	0.6	0.6
75	-	0.1	1.5	-	0.5
100	-	0.1	1.5	-	0.4
150	-	0.1	2.5	-	0.5
200	0.5	0.2	5.5	-	0.9
250	-	0.3	5.0	-	0.7
300	-	0.3	4.5	-	0.5
400	-	0.4	3.5	-	0.4
500	-	0.7	3.0	1.6	1.0

STATION 74

DATE March 7, 1953 LAT. 34° 25'N. LONG. 75° 26'W. TIME 08
DEPTH 1463 WIND 4 , 32 BAR. - AIR TEMP: dry - °C, wet - °C
HUMIDITY - % WEATHER 02 CLOUDS: type - , amt. - SEA: dir. - , amt. 2
SWELL: dir. - , amt. - VIS. - WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	23.44	36.36	24.86	4.66
6	-	36.36	-	4.58
12	23.58	36.27	24.75	4.12
18	-	36.33*	-	4.46
30	23.40	36.29	24.81	4.52
60	23.04	36.27	24.90	4.78
90	23.69*	36.26	24.71	4.62
121	19.26	36.38	26.03	3.93
154	16.90	36.18	26.46	3.49

* Value questionable

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	23.44	36.36	24.86	4.66
10	23.57	36.30	24.77	4.18
20	23.50	36.28	24.78	4.47
30	23.40	36.29	24.81	4.52
50	23.15	36.28	24.88	4.74
75	22.45	36.27	25.07	4.76
100	20.85	36.33	25.57	4.37
150	17.13	36.22	26.44	3.53

STATION 74

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	1.1	0.0	0.0	0.4	1.1
6	-	<0.1	0.5	1.5	0.7
12	-	<0.1	<0.5	-	0.2
18	-	0.1	<0.5	5.7	0.2
30	0.3	0.2	0.5	-	0.8
60	-	0.1	<0.5	-	-
90	-	0.1	-	2.9	0.2
121	1.2	0.5	3.0	-	0.4
154	-	0.8	8.0	2.8	-

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	1.1	0.0	0.0	0.4	1.1
10	-	<0.1	<0.5	2.8	0.4
20	-	0.1	<0.5	5.5	0.3
30	0.3	0.2	0.5	4.8	0.8
50	-	0.1	<0.5	4.5	0.6
75	-	0.1	1.0	3.6	0.3
100	1.2	0.2	2.0	2.9	0.2
150	-	0.8	8.0	2.8	-

STATION 75

DATE March 7, 1953 LAT. 34° 38' N. LONG. 75° 51' W. TIME 14
DEPTH 37 WIND 7 , 32 BAR. - AIR TEMP: dry - °C, wet - °C
HUMIDITY - % WEATHER 02 CLOUDS: type - , amt. - SEA: dir. - , amt. 2
SWELL: dir. - , amt. - VIS. - WATER TRANS. 13

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	16.87	35.35	25.83	5.60
10	-	35.35	-	5.51
20	17.15	35.35	25.76	5.51

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	16.87	35.35	25.83	5.60
10	16.94	35.35	25.81	5.51
20	17.15	35.35	25.76	5.51

STATION 75

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	-	0.1	0.5	0.9	-
10	-	0.4	<0.5	-	0.9
20	2.3	0.1	0.0	1.9	0.0

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	-	0.1	0.5	0.9	-
10	-	0.4	<0.5	1.4	0.9
20	2.3	0.1	0.0	1.9	0.0

STATION 77

DATE March 7, 1953 LAT. 35° 01'N. LONG. 75° 45'W. TIME 18
DEPTH 21 WIND -, - BAR. - AIR TEMP: dry - °C, wet - °C
HUMIDITY - % WEATHER - CLOUDS: type -, amt. - SEA: dir. -, amt. -
SWELL: dir. -, amt. - VIS. - WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	14.65	33.01	34.54	6.08
10	-	33.86	-	6.00

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	14.65	33.01	24.54	6.08
10	-	33.86	-	6.00

STATION 77

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	-	0.2	0.5	-	0.2
10	-	0.1	1.5	-	0.8

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	-	0.2	0.5	-	0.2
10	-	0.1	1.5	-	0.8

STATION Standard 1

DATE Feb. 12, 1953 LAT. 26° 21'N. LONG. 76° 44'W. TIME 23
DEPTH 4206 WIND 4 , 20 BAR. 15 AIR TEMP: dry 22.8°C, wet 20.0°C
HUMIDITY 59% WEATHER 01 CLOUDS: type 8 , amt. 2 SEA: dir. - , amt. 2
SWELL: dir. - , amt. - VIS. 8 WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	22.91	36.65	25.23	-
9	22.86	36.65	25.24	-
27	22.93	36.62	25.20	-
44	23.90*	36.64	24.93	-
88	22.80	36.62	25.24	-
223	18.80	36.56	26.28	-
361	17.39	36.35	26.47	-
457	17.80*	36.17	26.23	-
555	14.34	35.90	26.83	-
654	12.58	35.61	26.97	-

* Value questionable

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	22.91	36.65	25.23	-
10	22.86	36.65	25.25	-
20	22.87	36.63	25.23	-
30	22.92	36.62	25.20	-
50	22.88	36.64	25.23	-
75	22.83	36.63	25.24	-
100	22.34	36.62	25.37	-
150	20.64	36.61	25.84	-
200	19.30	36.58	26.17	-
250	18.49	36.52	26.33	-
300	18.02	36.45	26.39	-
400	16.92	36.29	26.54	-
500	15.25	36.05	26.74	-
600	13.61	35.77	26.88	-

STATION Standard 2

DATE Feb. 13, 1953 LAT. 26° 24'N. LONG. 76° 42'W. TIME 02
DEPTH 4206 WIND 4 , 20 BAR. 15 AIR TEMP: dry 22.8°C, wet 20.3°C
HUMIDITY 59% WEATHER 01 CLOUDS: type 8 , amt. 2 SEA: dir. - , amt. 2
SWELL: dir. - , amt. - VIS. 8 WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	22.80**	36.65	25.26	4.54
9	22.84	36.60	25.21	4.45
28	22.88	36.65	25.24	4.34
46	24.60*	36.64	24.72	4.19
92	22.80	36.69	25.29	4.29
230	18.82	36.58	26.29	4.36
369	17.47	36.44	26.52	4.18

** From BT
* Value questionable

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	22.80	36.65	25.26	4.54
10	22.84	36.60	25.21	4.45
20	22.86	36.63	25.23	4.40
30	22.88	36.65	25.24	4.30
50	22.85	36.65	25.25	4.19
75	22.82	36.67	25.27	4.25
100	22.50	36.69	25.38	4.30
150	20.81	36.64	25.81	4.35
200	19.46	36.60	26.14	4.36
250	18.46	36.54	26.35	4.35
300	17.81	36.48	26.47	4.30

STATION Standard 3"

DATE Feb. 13, 1953 LAT. 26° 25'N. LONG. 76° 42'W. TIME 05
DEPTH 4343 WIND 7 , 20 BAR. - AIR TEMP: dry 22.8°C, wet 20.6°C
HUMIDITY 72% WEATHER 01 CLOUDS: type 08, amt. 2 SEA: dir. - , amt. 3
SWELL: dir. - , amt. - VIS. 8 WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	22.80**	36.67	25.28	-
9	22.87	36.67	25.26	-
28	22.87	36.67	25.26	-
47	24.62*	36.67	24.74	-
95	22.49	36.64	25.34	-
238	18.92	36.44	26.16	-
381	17.35	36.42	26.54	-
477	12.49*	36.38	27.58	-
573	15.76	36.22	26.76	-
670	14.56	35.96	26.83	-

** From BT
* Value questionable

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	22.80	36.67	25.28	-
10	22.87	36.67	25.26	-
20	22.87	36.67	25.26	-
30	22.86	36.67	25.26	-
50	22.75	36.67	25.29	-
75	22.60	36.65	25.32	-
100	22.33	36.63	25.38	-
150	20.88	36.54	25.72	-
200	19.67	36.48	26.00	-
250	18.76	36.44	26.20	-
300	18.30	36.44	26.32	-
400	17.19	36.42	26.58	-
500	16.40	36.35	26.71	-
600	15.50	36.16	26.77	-

STATION Standard 4

DATE Feb. 13, 1953 LAT. 26° 25'N. LONG. 76° 40'W. TIME 09
DEPTH 4370 WIND 7 , 20 BAR. - AIR TEMP: dry - °C, wet - °C
HUMIDITY - % WEATHER 01 CLOUDS: type 8 , amt. 2 SEA: dir. - , amt. 3
SWELL: dir. - , amt. - VIS. 8 WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	-	36.69	-	3.73
10	22.83	36.62	25.23	3.79
29	22.90	36.67	25.25	4.01
48	23.83*	36.67	24.98	3.79
95	22.63	36.69	25.34	4.63
237	18.95	36.64	26.30	4.41

* Value questionable

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	-	36.69	-	3.73
10	22.83	36.62	25.23	3.79
20	22.87	36.65	25.24	3.95
30	22.90	36.67	25.25	3.90
50	22.82	36.67	25.27	3.81
75	22.71	36.68	25.31	4.44
100	22.50	36.69	25.38	4.63
150	21.21	36.68	25.73	4.55
200	19.92	36.66	26.07	4.47

STATION Standard 5

DATE Feb. 13, 1953 LAT. 26° 25'N. LONG. 76° 40'W. TIME 12
DEPTH 4370 WIND 7 , 22 BAR. 14 AIR TEMP: dry 22.8°C, wet 21.1°C
HUMIDITY 72% WEATHER 01 CLOUDS: type 8 , amt. 2 SEA: dir. - , amt. 3
SWELL: dir. - , amt. - VIS. 8 WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	22.80	36.67	25.28	-
10	22.81	36.65	25.26	-
28	23.74*	36.64	24.99	-
47	22.82	36.65	25.26	-
95	22.74	36.64	25.27	-
239	18.85	36.60	26.30	-
384	-	36.49*	-	-
580	14.02	35.97	26.95	-
678	12.14	35.59	27.04	-

* Value questionable

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	22.80	36.67	25.28	-
10	22.81	36.65	25.26	-
20	22.81	36.64	25.25	-
30	22.82	36.64	25.25	-
50	22.82	36.65	25.26	-
75	22.80	36.64	25.25	-
100	22.59	36.64	25.31	-
150	21.12	36.63	25.72	-
200	19.79	36.62	26.07	-
250	18.74	36.60	26.33	-
300	18.03	36.54	26.46	-
400	16.58	36.36	26.68	-
500	15.18	36.14	26.83	-
600	13.65	35.90	26.97	-

STATION Standard 6

DATE Feb. 13, 1953 LAT. 26° 25'N. LONG. 76° 43'W. TIME 17
DEPTH 4389 WIND 4 , 22 BAR. 15 AIR TEMP: dry 23.9°C, wet 22.2°C
HUMIDITY 73% WEATHER 20 CLOUDS: type 0 , amt. 6 SEA: dir. - , amt. 2
SWELL: dir. - , amt. - VIS. 6 WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	22.91	36.67	25.25	5.19
9	22.91	36.65	25.23	4.56
27	21.62*	36.65	25.60	4.75
45	22.81	36.65	25.26	4.69
91	22.51	36.60	25.31	4.60
230	19.04	36.60	26.25	4.35
375	-	36.42	-	4.03
572	14.28	35.90	26.84	3.70
672	12.03	35.57	27.04	3.36

* Value questionable

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	22.91	36.67	25.25	5.19
10	22.91	36.65	25.23	4.56
20	22.88	36.65	25.24	4.71
30	22.85	36.65	25.25	4.75
50	22.80	36.64	25.25	4.68
75	22.66	36.61	25.27	4.63
100	22.26	36.60	25.38	4.58
150	20.93	36.60	25.75	4.50
200	19.71	36.60	26.08	4.41
250	18.89	36.59	26.28	4.31
300	17.95	36.53	26.47	4.20
400	16.61	36.36	26.67	3.99
500	15.29	36.11	26.78	3.82
600	13.69	35.81	26.90	3.62

STATION Standard 6

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	0.3	-	<0.5	-	0.1
9	0.4	0.2	<0.5	-	1.3
27	0.4	0.2	0.0	-	0.3
45	0.2	<0.1	0.0	-	0.9
91	-	0.2	0.5	0.0	0.2
230	-	0.3	0.0	0.0	0.2
375	1.2	0.3	6.5	1.1	0.5
572	0.9	0.9	2.5	-	-
672	3.4	1.1	19.5	-	0.2

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	0.3	-	<0.5	-	0.1
10	0.4	0.2	<0.5	-	1.3
20	0.4	0.2	<0.5	-	0.9
30	0.4	0.2	0.0	-	0.5
50	0.2	0.1	<0.5	-	0.8
75	-	0.1	0.5	-	0.5
100	-	0.2	0.5	0.0	0.2
150	-	0.2	0.5	0.0	0.2
200	-	0.3	<0.5	0.0	0.2
250	-	0.3	1.0	0.2	0.3
300	-	0.3	3.0	0.5	0.3
400	1.2	0.4	6.0	-	0.5
500	1.0	0.7	4.0	-	0.4
600	1.6	1.0	7.0	-	0.3

STATION Standard 7

DATE Feb. 15, 1953 LAT. 26° 21'N. LONG. 76° 44'W. TIME 06
DEPTH 4389 WIND 7 , 18 BAR. 15 AIR TEMP: dry 22.8°C, wet 21.1°C
HUMIDITY 72% WEATHER 02 CLOUDS: type 0 , amt. 0 SEA: dir. - , amt. 4
SWELL: dir. - , amt. - VIS. 8 WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	22.90**	36.69	25.26	4.94
10	22.90**	36.65	25.23	4.99
29	22.73	36.62	25.26	4.96
49	22.56	36.71	25.38	4.96
99	21.48	36.69	25.67	4.71
247	18.58	36.65	26.41	4.56
394	16.95	36.42	26.63	4.24
592	13.09	35.75	26.97	3.69
690	10.77	35.41	27.16	3.31

** From BT

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	22.90	36.69	25.26	4.94
10	22.90	36.65	25.23	4.99
20	22.81	36.62	25.24	4.98
30	22.73	36.63	25.27	4.96
50	22.54	36.71	25.38	4.96
75	21.99	36.70	25.53	4.82
100	21.46	36.69	25.67	4.71
150	20.34	36.68	25.97	4.65
200	19.36	36.66	26.21	4.61
250	18.56	36.65	26.41	4.55
300	18.11	36.59	26.48	4.45
400	16.85	36.40	26.64	4.23
500	15.02	36.06	26.80	3.97
600	12.91	35.72	26.99	3.63

STATION Standard 7

OBSERVED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
1	0.4	0.0	0.0	-	0.1
10	0.4	0.1	<0.5	3.8	1.0
29	4.1	0.1	-	-	1.5
49	0.4	0.0	0.0	0.8	0.5
99	0.6	0.2	0.5	3.2	1.8
247	0.4	0.0	-	-	1.6
394	0.6	0.4	3.0	3.3	0.0
592	1.5	0.8	9.0	0.8	0.2
690	-	1.2	8.5	-	0.7

INTERPOLATED

DEPTH (m)	TOTAL P (µg at/l)	PO_4-P (µg at/l)	NO_3-NO_2 (µg at/l)	ARABINOSE (mg/l)	TYROSINE (mg/l)
0	0.4	0.0	0.0	-	0.1
10	0.4	0.1	<0.5	3.8	1.0
20	2.3	0.1	<0.5	3.0	1.3
30	4.1	0.1	0.0	2.2	1.5
50	0.4	0.0	0.0	0.9	0.5
75	0.5	0.1	<0.5	2.1	1.2
100	0.6	0.2	0.5	3.2	1.8
150	0.5	0.1	1.0	3.2	1.8
200	0.5	0.1	1.5	3.2	1.7
250	0.4	<0.1	2.0	3.2	1.5
300	0.5	0.1	2.0	3.2	1.0
400	0.6	0.4	3.0	3.2	0.0
500	1.1	0.6	6.0	2.0	0.1
600	1.5	0.8	9.0	0.8	0.3
700	-	1.2	8.5	-	0.7

STATION Standard 8

DATE Feb. 15, 1953 LAT. 26° 21'N. LONG. 76° 46'W. TIME 09
DEPTH 4389 WIND 7 , 18 BAR. 14 AIR TEMP: dry 22.8°C, wet 21.1°C
HUMIDITY 72% WEATHER 01 CLOUDS: type 0 , amt. 0 SEA: dir. - , amt. 4
SWELL: dir. - , amt. - VIS. 7 WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	22.85	36.76	25.33	-
10	22.72	36.78	25.38	-
29	22.84	36.85	25.40	-
49	22.80	36.83	25.40	-
98	22.62	36.83	25.45	-
246	18.84	36.67	26.36	-
394	17.30	36.62	26.70	-
594	13.90	36.02	27.01	-
693	11.90	35.64	27.12	-

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	22.85	36.76	25.33	-
10	22.72	36.78	25.38	-
20	22.80	36.83	25.40	-
30	22.84	36.85	25.40	-
50	22.80	36.83	25.40	-
75	22.77	36.83	25.41	-
100	22.55	36.83	25.47	-
150	21.04	36.76	25.84	-
200	19.77	36.71	26.14	-
250	18.81	36.67	26.36	-
300	18.37	36.65	26.46	-
400	17.21	36.61	26.72	-
500	15.60	36.33	26.88	-
600	13.78	36.00	27.02	-

STATION Standard 9

DATE Feb. 15, 1953 LAT. 26° 21'N. LONG. 76° 46'W. TIME 12
DEPTH 4389 WIND 7 , 18 BAR. 14 AIR TEMP: dry 23.3°C, wet 21.7°C
HUMIDITY 86% WEATHER 03 CLOUDS: type 6 , amt. 6 SEA: dir. - , amt. 3
SWELL: dir. - , amt. - VIS. 8 WATER TRANS. -

OBSERVED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
1	22.89	36.67	25.25	4.86
10	21.78*	36.65	25.55	4.86
30	22.87	36.67	25.26	4.85
50	22.86	36.64	25.24	5.20
100	22.57	36.62	25.31	5.18
250	18.67	36.56	26.31	-
400	17.24	36.36	26.52	4.18
600	13.57	35.79	26.91	4.89
700	11.43	35.48	27.09	3.35

* Value questionable

INTERPOLATED AND CALCULATED

DEPTH (m)	T (°C)	S (‰)	σ_t	O_2 (ml/l)
0	22.89	36.67	25.25	4.86
10	22.88	36.65	25.24	4.86
20	22.87	36.67	25.26	4.86
30	22.87	36.67	25.26	4.85
50	22.86	36.64	25.24	5.20
75	22.78	36.63	25.25	5.19
100	22.57	36.62	25.31	5.18
150	21.00	36.62	25.74	5.03
200	19.70	36.60	26.08	4.83
250	18.67	36.56	26.31	4.66
300	18.32	36.51	26.37	4.50
400	17.24	36.36	26.52	4.18
500	15.51	36.08	26.71	4.24
600	13.57	35.79	26.91	4.89
700	11.43	35.48	27.09	3.35

INT.-DUP. SEC., WASH., D.C. 3087