

TR-091

Cruise Report

R/V TRIDENT

TR-091

December 11 - December 19, 1970

Schedule:

A 9-day cruise was made, leaving St. George, Bermuda at 1200, December 11, and arriving at Narragansett at 1200, December 19, 1970. The operations included collection of water samples and sediment cores at stations along the cruise track.

Scientific Party:

Michael E. Q. Pilson	Chief Scientist, GSO
William Hahn	Marine Technician, GSO
Frances Steinhilper	Marine Technician, GSO
Kent Fanning	Graduate Student, GSO
Peter Betzer	Graduate Student, GSO
William Plank	Graduate Student, Oregon State Univ.
Robert Betzer	Volunteer Assistant, GSO
John Rehlen	Graduate Student, GSO

Station List:

The following stations were occupied:

<u>No.</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Depth</u>	<u>Date</u>
1	32°10'N	64°30'W	3505	Dec. 11
2	30°49'N	67°32'W	5060	Dec. 12
3	30°51'N	69°10.9'W	5230	Dec. 13
4	31°02.5'N	71°02.1'W	5355	Dec. 14
5	33°20'N	71°10'W	5327	Dec. 15
6	35°45'N	70°31'W	4430	Dec. 16

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List of Cores:

<u>Core #</u>	<u>Position</u>	<u>Depth (uncorr. meters)</u>	<u>Date</u>	<u>Comment</u>
TR-091-1	30°49'N, 67°32.5'W	5073	12/12	Brown lutite
TR-091-2	30°49'N, 67°32.5'W	5094	12/12	Brown lutite
TR-091-3	30°51'N, 67°33'W	5045 5092	12/12	Brown lutite
TR-091-4	30°53.7'N, 67°30.9'W	5070	12/12	Brown lutite
TR-091-5	31°02.5'N, 71°02.1'W	5355	12/14	Upper, brn lutite Lower, green turbidite
TR-091-6	31°02'N, 70°58.9'W	5355	12/14	Short core, brown lutite
TR-091-7	31°02'N, 70°58.9'W	5355	12/14	Phleger core next to TR-091-6
TR-091-8	33°21.1'N, 71°08.5'W	5327	12/15	Short: to Dr. Schnitker
TR-091-9	33°21.1'N, 71°08.5'W	5333	12/15	Short: 6 inches

Hydrographic Wire:

The wire was aluminized steel, installed on the ship December 12, 1969. The first several hundred meters were beginning to show evident pinhole rust spots and some large rust spots. A length of 525 meters was cut off the wire and discarded, leaving about 3500 meters on the winch. This appeared to be in good condition.

During the cruise the total length of wire run out was 100.3 kilometers.

Preliminary Results:

At each station hydrocasts were taken using a pinger to place the bottom bottle close to the bottom (at various times 25-100 m from the bottom). Water samples were taken with 30-L and with 5-L Niskin bottles. Data taken immediately were temperature, salinity, oxygen

(only on some bottles), particle counts (Coulter Counter), and light scattering. Thirty-liter water samples were filtered for determination of particulate iron and some other constituents. Preliminary data show the presence of a nepheloid layer near the bottom.

Samples from some stations were brought back for determination of soluble iron, fluoride, and strontium.

Nine cores were taken on the Bermuda Rise and the Hatteras Abyssal Plain.

Several cores will be used to investigate the diffusion of substances out of marine sediments.

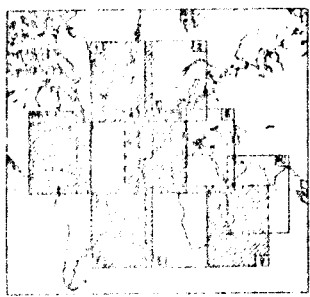
Two cores were squeezed to obtain interstitial waters for chemical analysis; one core was used to investigate the effect of temperature of squeezing on the chemical constituents of the interstitial waters. Chemical parameters to be measured are silicate, phosphate, pH, alkalinity, and chlorinity.

Samples from the top few centimeters were taken from two cores and preserved for Dr. Detmar Schnitker, at the University of Maine, who is studying the distribution of benthonic foraminifera.

The second hydrocast at station 6 was cancelled on December 16 due to bad weather. During the subsequent 2½ days we experienced rough seas and gale-force winds, and no further station work was accomplished.

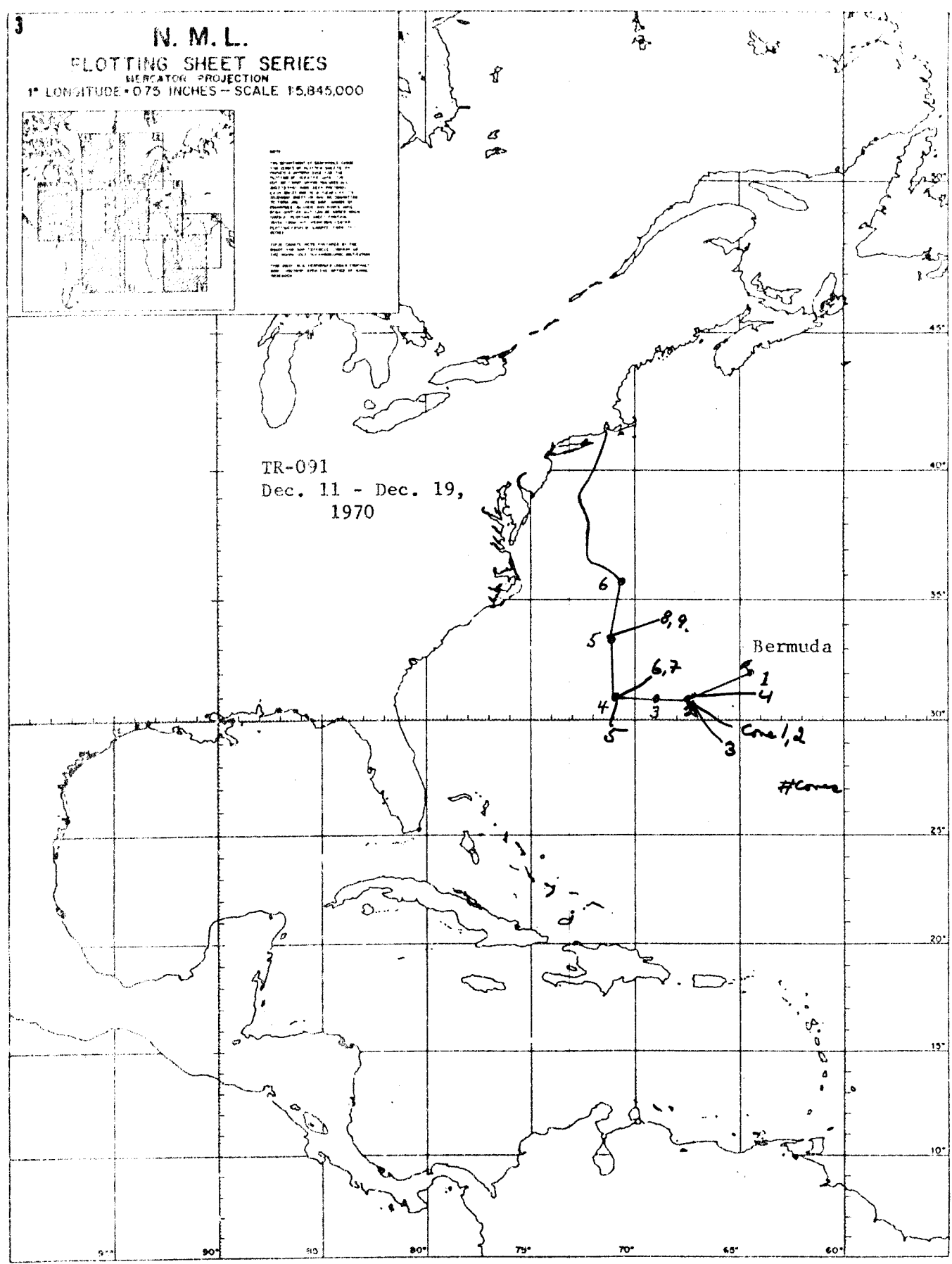
N. M. L. PLOTING SHEET SERIES

MERCATOR PROJECTION
1" LONGITUDE = 0.75 INCHES - SCALE 1:5,845,000



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Dec. 11 - Dec. 19,
1970



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